Clearing and Settlement

Third Edition

Dermot Turing

Bloomsbury Professional

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Foreword to the First Edition

In recent years the structure for effecting financial market transactions, often referred to as the financial markets infrastructure, has become an area of growing interest for practitioners, policy makers and researchers. Such interest has stemmed from the structural changes in global finance – greater volumes of cross border transactions, as well as the creation of integrated financial areas like the Eurozone.

Such is the importance of financial markets infrastructure that the latest (failed) attempt by the European Commission to deeply reform the system to make it more efficient, given the freedom to trade, the presence of a single currency and the development of a uniform set of rules, has arguably been blocked by a political opposition fearing the such reform would have created a large and very competitive financial system in the continent of Europe.

The post trading system is made of two pillars: laws and contracts on one side as well as information and communication technology on the other. Dermot Turing's book focusses squarely on the first pillar. It is the first piece of work tackling all legal and regulatory aspects of post-trading and, as such, it represents a valuable contribution. This book is to be recommended to all who want to understand the working of the financial system and its likely evolution ahead of us.

Alberto Giovannini
Chief Executive Officer of Unifortune and Former Chief Policy Advisor of the European Commission's Clearance and Settlement Advisory and Monitoring

Preface to the Third Edition

As the second edition of this book was poised to go to press, the voters of the United Kingdom decided that the country should leave the European Union. A supplementary chapter was hurriedly added to that edition, imagining how Brexit might affect post-trade activities. Four years on, Brexit has, more-or-less, taken shape, and it is possible to fold it and its implications into the discussion in the appropriate places. Still, Brexit is a complex business: the United Kingdom will retain almost all EU law, but in its own form. This means that all EU-derived legislation must be looked at from two perspectives: that of the European Union and that of the United Kingdom.

Most of the post-Brexit legislation has been finalised as of summer 2020, when this new edition was prepared. Thus, it is possible to piece together the versions of key post-trade EU legislative instruments such as EMIR and the CSDR in their post-Brexit UK forms; the 'on-shoring' of these Regulations has been done piecemeal, so that the UK forms of these (and their main subordinate appendages) may need reference to several instruments until consolidated UK versions become available. **Table 0.1** provides a reference source for these.

Table 0.1: Brexit – the principal 'onshoring' legislation

European legislation	**Content includes**	**Onshoring (modifying) instrument**	**Remark**
EMIR		SI 2018/1184 SI 2019/335 SI 2019/1416 SI 2020/646	SI 1184 also modifies FSMA Pt 18 SI 1416 addresses the amendments made by 'EMIR Refit' (Regulation (EU) 2019/834) SI 646 addresses the amendments made by 'EMIR 2.2' (Regulation (EU) 2019/2099)
EMIR RTS 152	CCPs capital requirements	Technical Standards (European Market Infrastructure) (Amendment etc.) (EU Exit) (No 1) Instrument 2019	Bank of England legislation available at: www.bankofengland.co.uk/paper/2019/the-boes-amendments-to-financial-services-legislation-under-the-eu-withdrawal-act-2018
EMIR RTS 153	CCPs requirements		

European legislation	Content includes	Onshoring (modifying) instrument	Remark
EMIR RTS 149	Indirect clearing, NFCs	FCA 2019/62 Technical Standards (European Market Infrastructure Regulation) (EU Exit) (No 2) Instrument 2019	FCA legislation available at: www.handbook.fca.org.uk/instrument
EMIR RTS 2205 EMIR RTS 1178	Clearing IRS	Technical Standards (European Market Infrastructure) (Amendment etc.) (EU Exit) (No 2) Instrument 2019	Bank of England legislation (see above)
EMIR RTS 592	Clearing CDS		
EMIR RTS 285	Direct, etc, effect of foreign contracts		
EMIR RTS 2251	Risk mitigation for uncleared contracts	Technical Standards (European Market Infrastructure) (Amendment etc.) (EU Exit) (No 3) Instrument 2019	PRA legislation available at: www.bankofengland.co.uk/paper/2019/the-boes-amendments-to-financial-services-legislation-under-the-eu-withdrawal-act-2018
CSDR		SI 2018/1320	The USRs are also modified by SI 2019/679
CSDR RTS 390	CSDs prudential rules, including for banking-type ancillary services	Technical Standards (Central Securities Depositories) (Amendment etc.) (EU Exit) Instrument 2019; Technical Standards (Central Securities Depositories Offering Ancillary Banking Services) (EU Exit) Instrument 2019	Bank of England legislation (see above
CSDR RTS 392	CSDs requirements		

While the United Kingdom has not, by and large, decided to tear up the EU rulebook as set out in EMIR and the CSDR, Brexit has still introduced some complications. First it may be noted that the powers given under EU legislation to EU bodies such as the European Commission or ESMA are, in the on-shored versions, given to UK bodies; that all non-UK countries become 'third countries', so that any EEA Member States are 'third countries', in a major departure from pre-Brexit practice; and that references to 'the Union' become references to 'the United Kingdom', with the rather odd effect that cross-border privileges exercisable 'throughout the Union' under EU laws become intra-UK privileges exercisable throughout the United Kingdom, which some may consider was something that was self-evident. These curiosities take more serious shape

when it is realised that the vital questions of cross-border recognition of UK infrastructures by the European Union, and the recognition of EU infrastructures by the United Kingdom, depend on these parallel, mirror-image provisions. Much of the new text in this edition is devoted to analysis of the equivalence and recognition processes, which have been the subject of fresh EU legislation as well as the overlay of Brexit. The political outcome of the equivalence and recognition process for CCPs is not settled as this new edition goes to press, even if the basic legal framework is reasonably clear.

Two other developments since the second edition deserve mention in this introduction. First, the crucial and systemically significant role played by CCPs has engaged the attention of many commentators from academia as well as officialdom, leading to an explosion of literature and study. Much has been focused on the difficult question of what to do if a CCP gets into difficulty; the early efforts to design recovery and resolution regimes for CCPs have matured over recent years, leading to a near-final version of an EU Regulation on the subject, which may now stand as an international benchmark to assist other jurisdictions struggling with this issue. The Regulation has not been finalised as this edition goes to press, but its shape is also reasonably clear.

The other important development was the issue in 2017 of the report of the European Post Trade Forum (EPTF). The EPTF re-assessed the post-trade landscape in Europe, concluding that the famous Giovannini Barriers – now almost 20 years old – should be replaced with a new set of 'EPTF Barriers' reflecting the current issues. It is encouraging that some of the Giovannini Barriers were reported to have been dismantled, but as practice, law and technology move on, new ones spring up. There is still much to do, and Brexit does not make it easier to do it.

The need for reform of the post-trade world was for several years championed by Alberto Giovannini. An academic economist of international reputation whose interests spanned many areas, he was also a board director, an important figure in Italian finance and an avid mountain climber. He was also gracious enough to provide a foreword for the first edition of this book. It was, therefore, a shock to learn of his early death in April 2019. The industry was fortunate to receive his attention and remains greatly in his debt.

I have, as usual, had a great deal of support from many people and the benefit of many useful discussions in preparing this new edition. First and foremost I must thank my former colleagues from the EPTF, at the Bank of England, and at the 2020 conference on law and regulation of financial market infrastructures at the Eberhard Karls University in Tübingen, from all of whom I learned a great deal. I should particularly like to thank Paul Bodart, Serena Kern-Libera, Joël Mérère, David Murphy, Manmohan Singh, Marcello Topa and Werner Frey for sharing their insights, and the President and Fellows of Kellogg College, Oxford for a Visiting Fellowship. My publisher Andy Hill and editor Paula Devine have sustained another edition with patience and care as always, and my family have tolerated it without complaint. No doubt many mistakes remain, and these are my responsibility alone.

The law is stated as at 31 August 2020, with limited anticipation in a few minor places. Although Brexit was not complete at that point, it seems that the transitional period (after which EU legislation ceases to have effect in the United Kingdom, and the on-shored versions of EU legislation take effect) would end on 31 December 2020. More difficult to predict is whether a trade agreement

would come into effect and, if so, whether it would make provision for clearing and settlement. The approach taken has been to discuss the post-Brexit versions of EU legislation which will apply in the United Kingdom, but not to speculate about the shape of any political settlement on CCP recognition.

Dermot Turing
Kellogg College, Oxford December 2020

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Table of Abbreviations

Acronyms abound. Many will be familiar to readers but some will not. It is annoying to have to search for the place earlier in a text where an acronym is defined, so a central table may be of assistance; here it is. It is not comprehensive, but picks out the most frequently used acronyms, regardless of their likely familiarity. Where the text explains the term, a cross-reference is given.

ACH	automated clearing house **section 2.30**	ECB	European Central Bank	OTC	over-the-counter
CCP	central counterparty **section 2.2**	EMIR	Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories	OTF	organised trading facility **section 3.5**
CLS	Continuous Linked Settlement **section 2.40**	ESMA	European Securities Markets Authority	Part VII	Part VII, Companies Act 1989 **section 13.16**
CSD	central securities depository **section 2.17**	FMI Principles	Principles for Financial Market Infrastructures **section 7.11.**	RRRs	Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001

CSDR	Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc	FSA	Financial Services Authority (UK)	RTGS	real-time gross settlement **section 2.36**
DNS	daily net settlement **section 2.33**	GCM	general clearing member **section 2.8**	SFD	Settlement Finality Directive
DVP	delivery versus payment **section 18.2**	MiFID	Markets in Financial Instruments Directive	T2S	Target2-Securities **section 2.23**
EBA	1) European Banking Authority; cf 2) EBA Clearing (where EBA used to stand for Ecu/Euro Banking Association)	MTF	multilateral trading facility **section 3.5**	USRs	Uncertificated Securities Regulations 2001

Part I
Processes

1 Introduction to Clearing and Settlement

CLEARING AND SETTLEMENT IN HISTORICAL PERSPECTIVE

1.1 Entering into a transaction has a certain thrill – the knowledge that you have secured a fabulous price for an unworthy asset or snapped up a precious thing for a song. But, as online shoppers know, the cost and inconvenience of postage and packaging needs to be brought into account before the celebrations begin – for no transaction is over until the courier bearing the parcel is outside the door and the payment is in the bank. This book is about the 'postage and packaging' of financial transactions.

Decades ago, securities were in paper form and payments were dependent on paper drafts and cheques. In the UK, securities settlement required delivery of share certificates and stock-transfer forms; the number of shares on the certificate might not match the number traded; title was recorded by company registrars many days after the trade was agreed; there was no simultaneity of delivery and payment. With the volumes of new shares being traded following the wave of privatisations in the 1980s, the UK market began to feel like the United States had in the paper crunch some years before.

> 'The back offices of US securities brokers were not able to handle the sharp increase in trading volumes. The number of "fails", ie failures to deliver securities on the settlement date, soared in consequence, and so did losses from errors at brokerages. … Declining revenues at a time when costs continued to rise resulted in the failures of many brokerage houses. … The Securities and Exchange Commission (SEC) initially reacted to the back office problems by shortening the trading day in August 1967 and in early 1968, but with little effect. In the 1970s, the SEC imposed a compulsory surcharge on the commissions paid on small trades in order to prop up the income of brokerages, but even so expenses of the leading securities firms substantially exceeded income and sizeable backlogs remained. … A 1973 report by the New York Stock Exchange found that three out of 10 investors had experienced lost or late-delivered securities.'[1]

As recently as 1993, the *Economist* wrote: 'London's share settlement is an acknowledged mess. It takes up to two weeks to settle trades, as 800,000 bits of paper are shuffled around. Electronic settlement should speed up and rationalise the process.'[2] This comment heralded the introduction of CREST as the electronic settlement system for UK-listed company shares. Securities are now held in dematerialised, book-entry form; cash obligations are settled across the books of banks; and, more generally, payment by cheque is being phased out in many countries.

1 Ledrut, E, and Upper, C, 'The US Paper Crunch 1967–1970' (December 2007) *BIS Quarterly Review*
2 *The Economist* (US), 27 November 1993

1.1 *Introduction to Clearing and Settlement*

Clearing and settlement processes have been streamlined and centralised. Centralised settlement systems mean that it is no longer necessary for a buyer of shares to get in touch with the keeper of the shareholders' register for the company which issued the shares in order to have his ownership legally registered. Clearing systems cut down the paperwork so that buys and sells can be netted, and reduce the risks associated with broker bankruptcy. Computerisation and standardisation speeds everything up so that delivery and payment can occur together, and post-trade processes are no longer creating a log-jam giving rise to settlement failures and triggering bankruptcies.[3]

Table 1.1 Comparison of Terminology

Securities terms		
European Central Bank glossary[4]	**European Commission**	**Legislation**
Clearing: the process of transmitting, reconciling and, in some cases, confirming transfer orders prior to settlement, potentially including the netting of orders and the establishment of final positions for settlement. Sometimes this term is also used (imprecisely) to cover settlement. For the clearing of futures and options, this term also refers to the daily balancing of profits and losses and the daily calculation of collateral requirements.	*Clearing*: the process of establishing settlement positions, including the calculation of net positions, and the process of checking that securities, cash or both are available.[5] *Clearing* is the process that occurs between trading and settlement. Clearing ensures that the buyer and the seller have agreed on an identical transaction and that the seller is selling securities which it is entitled to sell.[6] *Central counterparty clearing*: the process by which a third party interposes itself, directly or indirectly, between the transaction counterparties in order to assume their rights and obligations, acting as the direct or indirect buyer to every seller and the direct or indirect seller to every buyer.[7]	*Clearing* means the process of establishing positions, including the calculation of net obligations, and ensuring that financial instruments, cash, or both, are available to secure its exposures arising from those positions.[8] *Clearing*, in relation to a central counterparty, means the process of establishing positions, including the calculation of net obligations and ensuring that financial instruments, cash, or both, are available to secure the exposures arising from those positions.[9]

3 See Knott, R, and Mills, A, 'Modelling Risk in Central Counterparty Clearing Houses: A Review' (December 2002) Bank of England Financial Stability Review, p 162

4 European Central Bank, *Glossary of terms related to payment, clearing and settlement systems* (December 2009), www.ecb.eu/pub/pdf/other/glossaryrelatedtopaymentclearingandsettlementsystemsen.pdf

5 European Commission services, *Draft Working Document on Post-Trading* (May 2006), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/draft/draft_en.pdf

6 Commission Decision relating to Clearstream, Case COMP/38.096 – Clearstream (Clearing and Settlement) (July 2009) OJ C165/7

7 European Commission s*ervices, Draft Working Document on Post-*Trading

8 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, art 2(3)

9 Financial Services and Markets Act 2000, s 313(1)

Settlement: the completion of a transaction or of processing with the aim of discharging participants' obligations through the transfer of funds and/or securities. A settlement may be final or provisional.	*Book-entry settlement*: the act of crediting and debiting the transferee's and transferor's accounts respectively, with the aim of completing a transaction in securities.[10] *Settlement* is the final transfer of securities from the seller to the buyer and the final transfer of funds from the buyer to the seller, as well as the relevant annotations in securities accounts.[11]	*Settlement* means the completion of a securities transaction where it is concluded with the aim of discharging the obligations of the parties to that transaction through the transfer of cash or securities, or both.[12]
Payment terms		
European Central Bank glossary		**Legislation**
Automated clearing house (ACH): an electronic clearing system in which payment orders are exchanged among participants (primarily via electronic media) and handled by a data-processing centre.		
Payment system: this term has two meanings: 1) in some cases, it refers to the set of instruments, banking procedures and interbank funds transfer systems which facilitate the circulation of money in a country or currency area; 2) in most cases, it is used as a synonym for 'funds transfer system'.		*Payment system* means a formal arrangement between three or more participants, not counting possible settlement banks, central counterparties, clearing houses or indirect participants, with common rules and standardised arrangements for the execution of transfer orders between the participants.[13] *Payment system* means a funds transfer system with formal and standardised arrangements and common rules for the processing, clearing and/or settlement of payment transactions.[14]

10 European Commission service, *Draft Working Document on Post-Trading*
11 Commission decision relating to Clearstream
12 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc, art 2(1)(7)
13 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28), art 2(1)
14 Regulation 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro, etc, art 2(6)

Payment scheme: a set of interbank rules, practices and standards necessary for the functioning of payment services.		*Payment scheme* means a single set of rules, practices, standards and/or implementation guidelines agreed between [payment service providers] for the execution of payment transactions across the Union and within Member States, and which is separated from any infrastructure or payment system that supports its operation.[15]

CLEARING AND SETTLEMENT DEFINED

1.2 For a person entering into the subject of clearing and settlement, the terminology – particularly the meaning of 'clearing' – is bewildering. Before making a detailed study of the subject, achieving clarity of defined terms is essential. Understanding the functions carried out by the different participants in the post-trade process is the key to understanding the terminology. This book cannot expect to change people's habits, though, so it is important for the reader to remember that other people may use terms in a different sense.

Step 1 – matching

1.3 Two traders meet in electronic space, or, in some markets, on a physical trading floor, and believe they have struck a bargain, say to buy some shares at a given price, with payment and delivery to take place in accordance with the conventions applicable to the market in which they are operating. To be sure that they have indeed reached a binding agreement, there needs to be some mechanism to ensure that each has the same understanding as the other about their transaction. A difference of view on the essential terms of the bargain means that there is no binding contract.[16] Essential terms, in this context, will include the price; the number of shares; and the ISIN or other identification number of the shares. In most markets or trading contexts, the other terms of the bargain will be incorporated expressly under exchange or trading platform rules, or implied by market convention if they are notorious, certain and reasonable.[17] Even some of the essential economic, variable, terms may be generated automatically by the trading system – for example when a trader clicks on a particular offer to accept it, the economic terms will have been evident from the screen.

Nonetheless, the need to ensure that the parties are 'ad idem' requires a *matching* process to weed out perceived trades where there was, in fact, no agreement. Matching systems are discussed in more detail in **section 4.2**. Matching can be

15 Regulation (EU) No 260/2012, art 2(7)

16 There are many cases; but see *Sudbrook Trading Estate v Eggleton* [1983] 1 AC 444 (failure to agree price); *Frederick E Rose (London) v William H Pim Jnr & Co* [1953] 2 QB 450 (failure to agree on type of goods sold)

17 *Cunliffe-Owen v Teather and Greenwood* [1967] 1 WLR 1421

defined as 'the process of reconciliation of transaction details, to ensure there is agreement on these details'. This definition closely follows the definition given by the European Commission's draft Working Document on Post-trading[18] to the term 'verification'.

Note, however, that 'matching', as defined above, does not include any process for repair of defective data or resolving discrepancies. Under English regulatory law,[19] an activity which 'brings about' a bargain between two trading persons is likely to be characterised as akin to broking, and providers of matching services will wish to heed the distinction between reconciliation (reporting a failure of matching) and intervention (resolving the mismatch, and thus bringing about the trade). Regulation of post-trade activities in the United Kingdom is discussed further in **sections 4.27–4.31**.

Step 2 – clearing

1.4 'Clearing' is the most over-used and least-understood term in post-trade services. To understand its purpose, it is probably best to begin with the world of payments, and a short history lesson.

> 'Every profession and every line of business, as well as every trade, develops its own peculiar terms and phrases. Those who become familiar with the routine of the business or the profession use these terms among themselves with a degree of precision and certainty of meaning which sometimes is difficult for one outside of the group to comprehend. The usage in this regard by banks and clearing-houses is no exception to the general rule. … The term "to clear" … takes on a broader meaning, and the only adequate conception of it is afforded by a view of the actual operations of a clearing-house … '.[20]

This was written in 1900, by Mr James G Cannon, Vice-President of the Fourth National Bank of the City of New York, on the subject of bill- and cheque-clearing systems. Unfortunately, usage has not got much more precise in the intervening century, and his comments retain their appropriateness today.

Nevertheless, what Cannon described as the functions of a clearing house is useful to show the current received usage of the term 'clearing'. In the clearing of cheques, representatives from banks which had taken in cheques from payee customers would gather together at a central location – the clearing house – and pile up the cheques drawn on each other bank. The other banks' representatives would exchange these piles of cheques, assess their validity, and agree the balances due between the banks. So far, this process does not need to involve a process of 'multilateral netting', or the striking of a single balance due to or from each participating bank; but indeed the settlement of the balances struck between the banks was done, in clearing houses both in the United States and in London, by reaching a single sum payable to or from all of the other participating banks. These settlement balances would typically be paid to the

18 European Commission services, *Draft Working Document on Post-trading* (May 2006), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/draft/draft_en.pdf

19 Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/544, art 25(1)

20 Cannon, J, *Clearing-Houses, Their History, Methods and Administration* (1900), republished by Lighting Source as ISBN 978-1-44462-475-5, pp 3–4

clearing house itself in the form of cash, with the clearing house acting as agent for the participating banks.[21]

1.5 These functions may still be observed nowadays and may be automated – so that they are performed by an automated clearing house or ACH. ACHs are creatures found only in the clearing and settlement of payment transactions, but the functions of a clearing house in relation to post-trade activities regarding securities transactions are equivalent:

- the delivery and payment obligations of the participants are aggregated;
- a single net balance in respect of each type of obligation is struck for each participant; and
- the net balances are settled with the clearing house.

However, one can identify some differences between clearing of payments and the clearing of securities transactions:

- a securities clearing house may have no role in the validation of the obligations of the participants;
- a securities clearing house will not normally act as the participants' agent, but instead become the counterparty – the central counterparty – in respect of the participants' trading; and
- a securities clearing house will usually have an enhanced role in managing counterparty risk, in particular by taking margin and operating a default management mechanism if a participant fails.

Returning briefly to payment systems: the functions of 'clearing', as just described and of 'settlement', which will be explicated below, can be provided by a single system because only payment obligations are involved. There is no reciprocal exchange of one valuable thing for another in a payment system. Once the system has calculated who owes what to whom, it is only one step away from settling those obligations. Exchange-of-value systems have to be more complex than that: once the clearing system has calculated what the net delivery obligation of a participant is for a particular class of securities, and what the net payment obligation (or entitlement) of the same participant is, there are two obligations to be settled, and the likelihood is that different infrastructures will be engaged in the settlement process for the different obligations.

1.6 However, in the post-trade securities world, 'clearing' and 'settlement' need to be kept separate. 'Clearing' is what central counterparties (CCPs) do. A CCP would historically, at least in the context of futures transactions, have been called a 'clearing house', and indeed 'clearing organisation' is the terminology still used in the Dodd-Frank Act to denote a CCP.[22] However, in the securities clearing context, ambiguity persists in the usage of the word 'clearing'. No doubt following the lead of ACHs established for clearing of payment transactions, the providers of securities settlement services described their activities as 'clearing', and the operator of the UK equities settlement system (CREST – operated by a company with the word 'Euro*clear*' in its name) has historically been regulated as a 'recognised clearing house' under the Financial Services and Markets Act 2000.[23] 'Clearing' is, however, a misleading and unhelpful term to use for the activities of a *settlement* system. In this book, the term 'clearing' is not used

21 Cannon, pp 35ff, 331ff:
22 For example: Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, s 725
23 See **section 8.14**

for settlement services, except in some specific contexts (such as 'Model B Clearing'[24]) where even more confusion would follow from adopting a new term which is not recognised by any market participant. Avoiding ambiguity is essential, particularly as 'clearing' of derivatives products is now mandated by law, and clarity is needed over that thing which must legally now be done. And now, the Financial Services and Markets Act 2000 has been brought into line with modern usage: section 313(1A) says that 'a clearing house does not include a central securities depository, and a central securities depository does not provide clearing services'.

Definitively, then: *clearing* of securities transactions is the activity carried out by central counterparties to manage counterparty risk arising between parties to a transaction up to the moment of settlement. Taking a simple equities trade, what the CCP does is to interpose itself contractually between the buyer and seller, so that it becomes buyer to the seller and seller to the buyer. The process by which this is done is described further in **sections 2.3**–**2.4**. This interposition enables the CCP to offer two benefits to each of its participants. First, it can provide to any one participant multilateral netting of their whole book of trades, regardless of their original counterparty: a trader who has sold 90 securities to party A at 10 am and then purchased 80 securities from party B at 10.15 am would prefer to settle only the net delivery obligation of ten securities; this can be done if the trades are cleared by the CCP, because the trader's counterparty for both original transactions is the CCP, which can net off the delivery obligations and prices against each other. (The reason that settlement systems are called 'clearing houses' is that settlement systems, like payment systems, can also perform this multilateral netting service, although there may be *British Eagle* risk in their doing so – see **Case Study 2.1.**) The second benefit which a CCP offers to its participants is a shield against counterparty default. How they do this is discussed extensively in **Chapter 17**. But the point here is that because the CCP is now the buyer for every sale transaction and the seller for every purchase, each participant faces only the CCP as its continuing counterparty. CCPs thus centralise all counterparty risks for each market they clear; and because of that, they call for margin and take other protective steps to ensure they can handle that concentration of exposure.

1.7 The confusion in defining 'clearing' is heightened because CCPs' membership eligibility criteria are tough – so many traders cannot deal directly with the CCP, having to engage the services of a 'general clearing member' (GCM) instead – who provides the trader with a 'clearing' service. So, the trader now finds that the GCM is buyer for every sale and seller for every purchase, and the GCM sits in the middle between the trader and CCP in what is now becoming a chain of sales and purchases. GCMs' functions are, however, very similar to those of CCPs:[25] they can multilaterally net down the positions of each trader client with all their counterparties; and they assume counterparty risk, and so try to protect themselves against client defaults by calling margin and through other measures. The distinction between the GCM and the CCP is that the CCP is the *central* counterparty, which always faces GCMs and self-clearing traders (called individual clearing members or ICMs), whereas GCMs always have an asymmetry: in one direction they face their clients (traders), in the other they

24 See **section 19.27**
25 See **section 2.10**

face the CCP. Both CCP and GCM are engaged in 'clearing', but without the CCP, no clearing can take place.

1.8 'Clearing' can thus be characterised as the process whereby a person becomes interposed between two parties to a transaction, so that, as regards each party it has assumed the rights and obligations of the other party under that transaction. This definition may be compared with the definitions given by the European Commission Services' 2006 draft Working Document on Post-Trading, as set out in **Table 1.1**.

The Commission Services' suggested definition of 'clearing' fails to capture the essence of clearing as described above. Calculation of settlement positions may be done by agencies such as data repositories which may report to their participants on their net obligations without providing any assurance of the legal effectiveness of the netting process. CCPs and GCMs, which are intimately involved in 'clearing' in most market participants' minds, are not concerned with 'checking' that securities and cash are available – that is their clients' obligation – though by assuming the role of counterparty on a transaction they will become obliged to *deliver* the securities and *pay* the cash, not just check their availability. Settlement systems (whose functions may sometimes be called clearing) will check the availability of securities or cash before effecting a settlement, but to describe this essential part of a settlement function as 'clearing' is to perpetuate the confusion between clearing and settlement. The definition of clearing proposed by the European Commission Services in 2006 should therefore be rejected.

The definition proposed for 'central counterparty clearing' is closer to the mark, though still open to some criticism, as (particularly following the abolition of the concentration rule[26]) there are many ways to trade a particular instrument, so that even a 'central' counterparty will not often capture the whole of the trading in that instrument. What makes it 'central' is that, for a given population of market users, there is no other person carrying out clearing who deals only with GCMs and ICMs; or, to put the same point in different terms, there is no other person taking on counterparty risk in respect of more transactions (as originally entered into).

So, what distinguishes a CCP is not so much what it does (clearing) as who it does clearing for (GCMs and ICMs); it is not necessary to define clearing in terms of the activities of CCPs. The term 'clearing house' would generally be used to describe a CCP, rather than a GCM; but in some geographies 'clearing house' can include GCMs, so this term is avoided as far as possible in this book. (A final note on usage: the term 'automated clearing house' (ACH) continues to be used, quite properly, in the context used by Cannon, for a payments infrastructure, as discussed in **section 2.30(1)**. But for ACHs, the risk of confusion is unlikely to materialise.)

1.9 Various other terms can be encountered, so a short glossary of these is set out below.

(1) *OTC clearing.* This phrase refers to 'clearing', in the sense defined above, for over-the-counter derivatives. The roles of the parties are no different from the case clearing of transactions which were entered into on an exchange or trading platform, except in three main respects: (i) the

26 See **section 3.2**

risks associated with the derivative product are likely to differ from an exchange-traded product; (ii) the derivative is likely to be cash-settled, so that settlement of delivery obligations will usually not be an issue; (iii) EMIR obliges many parties to ensure that their trades are cleared.[27]

(2) *Indirect clearing.* Some persons, being ineligible, cannot become members of CCPs. Yet EMIR may require them to clear certain trades, as discussed in **section 10.11**. It is possible for a non-member to retain a GCM to comply with EMIR; in some cases the GCM may also be the client's counterparty to the derivative trade. Where the GCM is also the counterparty the structure of the transaction is slightly unusual, as described in **section 2.15**. Further, where a party to a trade is a 'client', the opportunity for transfer of its positions and margin to a new GCM will be given under EMIR.[28]

(3) *Bilateral clearing.* This phrase refers to the *absence* of 'clearing' in the sense used in this book. Bilateral 'clearing' means that the parties to the transaction have not used a CCP to manage their counterparty risk. Instead they will typically have a netting agreement such as an ISDA master agreement with or without a credit support annex.[29] This arrangement will achieve netting and margining, and so has effects similar to 'clearing'. But to call it clearing is a misuse of terminology, as multilaterality and the interposition of a new counterparty are essential ingredients of 'clearing' in its true sense. To call it bilateral *netting* would be more accurate and draw a better distinction against the *multilateral netting* function of a person carrying out *clearing.*

1.10 A final word on the subject of clearing may once again come from Mr James G Cannon. 'Occasionally the words "clearance" or "clearances", which, properly employed, designate space or distance, are used in the place of "clearing" and "clearings". Their employment in the place of the latter is not justified by general usage nor by the real meaning of these forms of the word.'[30] Hoorah: what was true in 1900 remains so today.

Step 3 – settlement

1.11 Whether or not a trade is cleared, the parties' obligations must be discharged by the buyer making a payment and the seller (assuming the trade involves the transfer of non-cash assets, rather than being purely cash-settled) making a delivery. Settlement can thus be defined as 'the process of effecting delivery or payment so as to discharge an obligation'.

This definition contrasts with the European Commission Services' 2006 approach,[31] which defines 'book-entry settlement' as 'the act of crediting and debiting the transferee's and transferor's accounts respectively, with the aim of completing a transaction in securities'. This formulation may be open to

27 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories; see **sections 10.10ff**

28 See **section 7.36(3)**

29 International Swaps and Derivatives Association, *2002 ISDA Master Agreement* (January 2003), www.isda.org/publications/isdamasteragrmnt.aspx

30 Cannon, pp 4–5

31 European Commission Services, *Draft Working Document on Post-Trading* (May 2006), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/draft/draft_en.pdf

criticism, because 'completing' is not a term of art, 'aiming' for it is too feeble (by contrast with the finality implicit in discharge of an obligation) and, if anything, the definition restates the problem using a different word. More practically, the Commission Services' approach overlooks the possible involvement of more than one account-provider.

1.12 Settlement will usually occur by means of the transfer of entitlement to cash or assets across the books of a settlement system, which is responsible for keeping definitive records of entitlement. Ultimately, the definitive arbiter of entitlement to cash is the central bank for the currency concerned. Of course, most people do not have accounts at the central bank, and their entitlement to cash is represented by credits to bank accounts or cash accounts provided for them by other intermediaries. Payment systems provide the machinery by which payment obligations are settled (that is to say, by which payments are transferred); often payment systems are operated by central banks. For securities, the functional equivalent of the central bank is typically a central securities depository (CSD), though this is not invariably the case. In particular, it is possible for the role of the person keeping the records which definitively establish the ultimate root of title to be distinct from that of the person providing the securities settlement system – the machinery by which title to securities is transferred. (**Section 2.17** looks in more detail at CSDs and title. **Chapters 5** and **6** are also concerned with entitlements to cash and securities held via an account provided by an intermediary, and the difference between this and cash and securities held directly at a central bank or CSD.)

As with clearing, not all traders will be eligible to participate directly in payment or settlement systems. Where this is the case, they will need to hire a service provider. To return to the European Commission's draft definition, it is possible for the trader to have a securities account and a cash account with his custodian bank, who will in turn participate in the securities settlement system and hold accounts at the central bank and the CSD in order to effectuate transfers of cash and securities across the definitive books of those institutions. Using the Commission's definition it would not be possible to say whether settlement occurred when the book entries were made at the central bank and CSD in relation to the custodian as account holder, or when the custodian made the entries on its own books in favour of the trader. Yet only one of these steps will be effective to discharge the obligation of the trading party with finality.[32]

1.13 Defining a CSD is more challenging. Dr Ruben Lee says that 'two aspects are commonly believed critical. First, a CSD is an entity that holds securities centrally either in certificated or dematerialised form. Second, a CSD enables the central transfer of ownership of securities, namely settlement, typically by means of book-entry transfer between securities accounts maintained on an electronic accounting system'.[33]

1.14 Historically, settlement services have been called 'clearing' services. Settlement functions on the London Stock Exchange, before the introduction of a rule compelling members to clear their trades through a CCP, were carried out by 'clearing firms' who (if they were Model B clearers) guaranteed to the

32 Finality is considered in detail in **section 5.18**

33 Lee, R, *Running the World's Markets: The Governance of Financial Infrastructure* (Princeton University Press, 2011), ISBN 978-0-691-13353-9, p 23

market counterparty that their client would perform its obligations.[34] A 'clearing agreement' may therefore have nothing to do with participation in a CCP, but may be synonymous with a 'settlement services agreement'.

The settlement process can have features which resemble multilateral netting carried out by CCPs. Older settlement systems operate through a process called daily or cyclical net settlement[35] which net down the payment and delivery obligations of each participant. This methodology is subject to greater risk than the more modern real-time gross settlement, so nowadays the activities performed by settlement systems look more distinguishable from those of CCPs.

PAYMENT SCHEMES AND PAYMENT SYSTEMS

1.15 The structure of clearing and settlement of payments closely mirrors that discussed above in relation to securities transactions. Terminology is, again, confusing, with the phrases 'payment schemes' and 'payment systems' sometimes (but wrongly) being used as if they were synonymous. Nonetheless, while the risks assumed by the various participants in payments processing may differ from those applicable to participants carrying out equivalent functions in securities transaction processing, there are visible parallels. The overall 'payments system' can be divided into three stages: the generation of payment instructions; clearing; and settlement. There is an astonishing array of payment methodologies, though, which makes the analysis of the payments system and its substructures highly complex. Added to that, there are different patterns of payment usage in different countries,[36] and national concepts and solutions do not travel easily.

Creation of payment instructions

1.16 In the United Kingdom, the Payments Council (now Payments UK) once noted the following means of making a payment: cash, cheque, direct debit, direct credit, mobile payment, cards, and wholesale (interbank) transfer.[37] Apart from payments in cash, there are statutory rules, contractual rules and market conventions which govern the creation, formatting, transfer, receipt, processing, revocation and settlement of payment instructions. These rules create obligations for each of the participants in the payments process. It is therefore rather challenging to generalise about those obligations and to lay down hard principles which apply to all methodologies. It is, however, possible to distinguish the *creation and formatting* of payment instructions from the subsequent processes, which follow from the instructions, and bring about the *clearing or settlement* of the payment instructions. That distinction allows the formal separation of 'payment schemes' (responsible for instructions) from 'payment systems' (responsible for clearing and settlement). Examples of payment 'schemes', in this narrower sense, are the SEPA credit transfer and

34 Rules 10.13 and 10.14 of the old LSE rules, now repealed. See **section 19.27** for present-day Model B clearing services

35 See **section 2.33**

36 See, for example, Tumpel-Gugerell, G, *The Single Euro Payments Area in a Global Context* (January 2008), Speech, www.bis.org/review/r080123d.pdf

37 Payments Council, *National Payments Plan* (May 2008)

direct debit schemes for euro payments provided by the European Payments Council.

1.17 The phrase 'payment system' thus typically means an organisation (which can include a consortium of banks acting under a commonly agreed rulebook) providing a clearing system or a settlement infrastructure. So, for example, the Office of Fair Trading defined a payment system as 'the shared part of an end-to-end process that offers an account-based transfer service between two final customers and two different banks'.[38] This would, as the OFT intended, capture 'the UK's money transmission clearing schemes … and … debit, credit, and ATM card networks'. A more useful definition is given by the glossary prepared by the Committee on Payment and Settlement Systems: 'a payment system consists of a set of instruments, banking procedures and, typically, interbank funds transfer systems that ensure the circulation of money.'[39]

Clearing and settlement

1.18 The meaning of 'clearing' and 'settlement' can be deduced from the discussion above in relation to securities. Settlement involves the discharge of the payment obligation, and thus implies the transfer of cash (or creation of an asset, such as an obligation owed by a commercial bank, which the parties accept as being functionally equivalent to the receipt of cash) to the payee. Clearing of payments, however, does not necessarily involve the assumption of obligations to the whole marketplace, as it does in relation to clearing of securities. The functions of an ACH were described in **sections 1.4–1.5**: it is possible, indeed it may be common, for an ACH to compile a schedule of the net payment obligations of the clearing system's participants inter se, and inform each of them of their net obligation or entitlement, without itself providing the central mechanism for exchange of the cash necessary to discharge those obligations. However, the ACH may be able to supplement its 'clearing' activity – the striking of net balances – with settlement functionality, for example where it can provide an account into which net payers pay in their net balances and from which the ACH can remit sums to net recipients.

1.19 Thus the phrase 'automated clearing house' denotes a clearing system which computes the settlement obligations of its participants on a multilaterally-netted basis, and then provides a file of net amounts to a central bank across the books of which transfers of cash balances can occur to settle those net obligations. The Euro Banking Association's EURO-1 clearing system historically followed this model. More recently, the trend for large-value payments has been to switch their methodology for settlement towards real-time gross settlement,[40] thereby reducing the process of multilateral netting as part of the settlement process; ACHs thus typically serve the high-volume, low-value retail payments market, dealing with payroll, corporate dividends, interbank reckoning-up from use of ATMs and so forth.

38 Office of Fair Trading, *UK Payment Systems* (May 2003), www.oft.gov.uk/shared_oft/reports/financial_products/oft658.pdf

39 Bank for International Settlements, *A Glossary of Terms Used in Payments and Settlement Systems* (March 2003)

40 See **section 2.36**

1.20 To a large degree the distinction between clearing and settlement in pure payments processing is of academic interest only. This is because, unlike clearing and settlement of securities transactions, regulatory guidance on payments infrastructure treats all payment systems – that is, both clearing and settlement – as subject to the same standards.[41] The important distinction is between payment schemes and payment infrastructures.

Separation of schemes from infrastructures

1.21 Competition is a powerful force in Europe as regards the shape of financial markets infrastructure. In a 2003 report into the banking industry in the United Kingdom, Sir Don Cruickshank 'concluded that there were profound competition problems and inefficiencies associated with payment systems in the UK. The report found that the underlying economic characteristics of the systems did not deliver price transparency, good governance, non-discriminatory access, efficient wholesale pricing and innovation'.[42] Various initiatives were put in place to improve the competitiveness of payment systems. These included a separation of the infrastructure service provider formerly owned by the provider of the UK Bacs payment schemes. A report prepared by . the infrastructure provider, explains:

> 'On the 1st December 2003, the governance structure of BACS and its owner-participants was fundamentally changed:
>
> - The schemes and infrastructure components of BACS were placed in separate companies with no management linkage. …
> - The scheme company, named BACS Payments Schemes Limited ("BPSL"), representing the "buy side" in the clearing system, is now free to appoint any infrastructure provider it so wishes to operate its schemes.
> - The "sell side", the infrastructure company is now able to provide payments infrastructure and other services freely to payments schemes and other potential users of its services in domestic and international markets, and to do so on a fully commercial, for-profit, basis.'[43]

This model has been followed in continental Europe too. Euro payment infrastructures are operated and governed independently: the European Payments Council, which provides the payment schemes making up the Single Euro Payments Area, explains as follows:

> '*Separation of the Scheme from Infrastructure*
>
> It is a key feature of the Scheme that it provides a single set of rules, practices and standards which are then operated by individual Participants and potentially multiple infrastructure providers. Infrastructure providers include [clearing and settlement mechanisms] of various types and the technology

41 See **sections 7.13ff**

42 Office of Fair Trading, *UK Payment Systems* (May 2003), www.oft.gov.uk/shared_oft/reports/financial_products/oft658.pdf, para 1.5

43 Bacs Limited, *A New Legal Framework for Payments in the Internal Market – A Response Submitted to the Commission of the European Communities* (February 2004), http://ec.europa.eu/internal_market/payments/docs/framework/2004-contributions/bacs_en.pdf

platforms and networks that support them. Infrastructure is an area where market forces prevail, based on the decisions of Participants.'[44]

CONSTRUCTION OF EUROPE'S POST-TRADE INFRASTRUCTURE

1.22 Various influences have helped shape the infrastructure of clearing and settlement in Europe since the beginning of the century. These are rooted in a desire for efficiency and a desire for stability. Stability has been the predominant force in shaping payment systems, whereas efficiency has battled with stability for dominance in post-trade issues relating to securities. Latterly, as clearing of OTC derivatives became prominent as a political topic, other forces entered the fray.

Payment systems

1.23 Starting with the Lamfalussy[45] and Allsopp[46] reports, the concern of regulatory authorities has been to assure the safety of payment systems and their durability in a financial crisis. In November 1990, the Committee on Payment and Settlement Systems of the Bank for International Settlements (CPSS) issued a report of a committee chaired by Baron Lamfalussy, setting forth standards to be adhered to by prudently managed 'interbank netting schemes'. The risk being addressed was the danger of unwinding settlements in a system operating under a net settlement structure.[47] A second risk of similar gravity was settlement risk: the danger that one participant pays but receives nothing in return. This risk was addressed in 1996 by a seminal report of a CPSS committee chaired by Mr Peter Allsopp on settlement risk in foreign exchange transactions. Noting that 20 years had elapsed since the failure of Bankhaus Herstatt, with all that had entailed in settlement risk,[48] the CPSS called for action by the banking industry to address the problem. In due course this led directly to the establishment of the CLS system, described in **section 2.40**.

The trend since these reports has been to replace net settlement schemes with real time gross settlement structures and to encourage the development across the globe of a legal framework supporting finality of settlement of payments. These changes were largely completed in Europe at the beginning of the century, and since then there has been little interference at a policy level with the shape of payment systems. Politically, the scene has instead been dominated by European monetary and currency union, and the requirements of that great project to create payment schemes and payment systems which transcend national boundaries: the replacement of the patchwork TARGET system with TARGET-2,[49] and the

44 European Payments Council, *SEPA Credit Transfer Scheme Rulebook,* version 8.2 (March 2016), s 1.5

45 Bank for International Settlements, *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten countries* (November 1990) www.bis.org/publ/cpss04.pdf

46 Bank for International Settlements, *Settlement Risk in Foreign Exchange Transactions* (March 1996)

47 See **Case Study 2.3**

48 See **Case Study 2.4**

49 See **section 2.38**

development of the single euro payments area and associated payment systems to support it.

Securities settlement

1.24 Pressure for change in settlement systems for securities has, by contrast, come from the users of the industry. Paper crises and the need for efficient settlement structures to assist the wider economic needs of the nation have led countries to develop structures and legal rules to enable title to securities to be transferred as simply as cash balances, that is over the electronically-maintained books of a central securities depository (CSD).

International guidance on standards has been led by consortia of industry participants, notably the International Securities Services Association[50] and the Group of Thirty.[51] The standards have focused primarily on efficiency, but with due regard to limitation of risk, in particular strengthening the linkage between transfer of title to securities and the payment (DvP or delivery versus payment). There has been official interest in risk management and safety, with the CPSS in particular issuing recommendations in 2001[52] and periodically following these up.

Since the creation of CSDs and the eurozone, the spotlight has, as with payments, been turned to the elimination of national silos so as to create a single European trading area for securities. Various structures have been tried and commented on: in particular, creating links between CSDs, and the Target2-Securities initiative of the European Central Bank, establishing a single settlement platform to be shared by all participating CSDs. These solutions are intended to enable CSDs to compete for business: competition is a powerful force in European post-trade services,[53] and nowhere is its influence more strongly felt than in the provision of central counterparty clearing services.

Clearing

1.25 Central counterparties (CCPs) have existed for many years. Largely because of the long tenor of the transactions concerned, their role was, until the late twentieth century, focused on the exchange-traded derivatives (futures) markets: most futures exchanges would own or operate a clearing house (CCP), though in London some horizontal consolidation happened with the London Clearing House clearing for a clutch of exchanges, at one stage including the derivatives markets operated by the London International Financial Futures and Options Exchange, the London Metal Exchange, the London Commodity Exchange and the International Petroleum Exchange of London. For cash equities markets, there seemed little need to introduce clearing through a CCP. Pre-settlement counterparty risk was limited in duration, and structures were in

50 International Securities Services Association, *Recommendations 2000* (June 2000) www.issanet.org/pdf/rec2000.pdf

51 Group of Thirty, *Global Clearing and Settlement: A Plan of Action* (January 2003)

52 Bank for International Settlements, *Recommendations for Securities Settlement Systems* (November 2001)

53 See **Chapter 11**

place to ensure that stock exchange participants' obligations were underwritten by adequately robust institutions.

Beginning at the turn of the century, this logic came under challenge. Increased volumes were one factor: having a CCP would allow for greater efficiencies in settlement, as a result of netting; this efficiency gain, coupled with the safety element introduced by having a CCP specialising in containment of counterparty risk, was enough to offset the additional cost of having clearing. The London Stock Exchange moved itself to a cleared structure in 2001. The arguments in favour of clearing for cash equities markets were not wholly apparent: the Group of Thirty reported:

> 'At the clearing level, the key issue that the industry has to tackle is whether to establish CCPs. These have undoubted benefits in terms of reducing both cost and risk, but they are also costly to establish and maintain, and the cost-benefit equation will be different in each market. The Steering Committee expects that in most markets the benefits of using a CCP are likely to outweigh the expense, but does not consider it wise to prejudge the outcome of a full and thorough analysis in specific markets.'[54]

Another paper noted a handful of potential *negative* effects on financial stability if a CCP were introduced: risk concentration, contagion, moral hazard as CCPs may be too big to fail, information asymmetry as participants would not have data about the CCP, limits on the CCP's liability, and the risk of a race to the bottom if CCPs compete with each other on risk issues.[55] These arguments have been more fully developed as, more recently, debate has taken place on the merits of compulsory clearing of OTC derivatives.[56] Nevertheless, with the influence of the International Securities Services Association and the European Securities Forum (ESF), momentum gathered to roll out the clearing model across Europe's cash equities markets.

The question, however, was how. Should there be a single CCP for Europe, as argued by the ESF,[57] or should CCPs compete for business? Competition should reduce costs, but, as explained in **section 7.1**, industry infrastructure is subject to network effects and tipping, such that the most likely outcome (given a level playing-field) would be a single provider of central clearing services which had crowded out any others. But Europe's playing-field is not level, and national champions reign in their countries, and sometimes in their region. In July 2007, there were nine CCPs operating in the EU;[58] at the start of 2016, the European Association of CCP Clearing Houses listed 20 members, of which 17 were in the EEA, though this had not changed in the six years since 2010.[59] Part of the reason for the plethora of providers is that some CCPs are in common ownership with CSDs or exchanges. Another complication is that interoperability links

54 Group of Thirty, *Global Clearing and Settlement: A Plan of Action* (January 2003)

55 Ripatti, K, *Central counterparty clearing: constructing a framework for evaluation of risks and benefits* (December 2004), Bank of Finland Discussion Paper No 30, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=787606

56 See **Chapter 10**

57 European Securities Forum, *EuroCCP: ESF's Blueprint for a Single Pan-European Central Counterparty* (December 2000)

58 Kalogeropoulos, G, Russo, D, and Schönenberger, A, 'Link Arrangements of Central Counterparties in the EU – Results of an ESCB Survey' in *The Role of Central Counterparties* (European Central Bank/Federal Reserve Bank of Chicago, July 2007), www.ecb.eu/pub/pdf/other/rolecentralcounterparties200707en.pdf, p 50

59 For information, see EACH website at www.eachccp.eu

between CCPs are difficult to forge,[60] so that participants wishing to choose different CCPs have not been allowed a real choice and high quality CCPs have not been able to win business in markets where they are not the incumbent. The official policy of the European Commission is in favour of competition;[61] but the voice of the integrators was hard to quell,[62] including in their number even the European Parliament, still arguing for a single pan-European CCP as late as August 2009.[63]

The Giovannini barriers and beyond

1.26 In 2001, a committee chaired by Professor Alberto Giovannini carried out an investigation into cross-border clearing and settlement in the European Union. The committee identified 15 barriers to efficient clearing and settlement of cross-border trades, attributable to the fact that separate clearing and settlement systems had developed nationally, each with the objective of serving their local market.[64] (A 'cross-border securities transaction' involves a market participant buying or selling securities issued outside their home country.)

1.27 The European Commission issued two Communications on clearing and settlement, setting out its vision for resolving the problems highlighted by Professor Giovannini.[65] The European Commission concluded in its Second Communication that four policies should be pursued: 'liberalisation and integration' of securities clearing and settlement systems – that is, the enablement of rights of choice and access; application of competition policy to address restrictive market practices; a common regulatory framework for financial stability and investor protection, 'leading to the mutual recognition of systems'; and the implementation of appropriate governance arrangements.

1.28 The European Commission's narrative remains upbeat, but the reality may be different from the presentation. In 2020, the Commission's website[66] set out the position as follows:

> 'Despite the progress achieved so far, there are still obstacles to EU post-trade systems and collateral markets reaching their full potential including
>
> - market inefficiencies
> - legal barriers
> - insufficient competition

60 See **sections 15.18ff**

61 European Commission Communication, *Clearing and Settlement in the European Union – The way forward* (April 2004), COM(2004) 312 final

62 European Securities Services Forum, *A Vision for Integrated Post-Trade Services in Europe* (August 2009)

63 European Parliament Directorate-General for Internal Policies, *Clearing and Settlement in the EU* (August 2009), IP/A/ECON/ST/2008-31 PE 416.242

64 Giovannini, A, *Cross-Border Clearing and Settlement Arrangements in the European Union* (November 2001) http://ec.europa.eu/internal_market/financial-markets/docs/clearing/first_giovannini_report_en.pdf

65 European Commission, *Clearing and Settlement in the European Union – Main policy issues and future challenges* (May 2002), COM(2002) 257 final; European Commission, *Clearing and* Settlement in the European Union – The way forward (April 2004), COM(2004) 312 final

66 See https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/post-trade-services/financial-markets-infrastructure-policy_en

- low market confidence
- an unlevel playing field.'

This is followed by a status report:

> 'In February 2016, the Commission established the European Post-Trade Forum (EPTF) to help to review progress in removing barriers to cross-border clearing and settlement. The EPTF builds on the work of previous groups in the area of post-trade, including
>
> - European Post Trade Group (EPTG)
> - Expert Group on Market Infrastructures (EGMI)
> - Clearing and Settlement Advisory and Monitoring Expert Group (CESAME 2)
> - Legal Certainty Group
> - Tax Barriers Business Advisory Group (TBAG)
> - Fiscal Compliance Experts' Group (FISCO)
> - Monitoring Group of the Code of Conduct (MOG)
>
> … In August 2017, the EPTF published its report and the Commission launched a consultation on how to further reduce barriers to post-trade services across financial markets.'

Those groups met or reported almost annually between 2006 and 2017, and the outcome was a consultation, but nothing concrete. However, lack of adoption of recommendations by the official sector does not mean the complete absence of progress. According to the EPTF's report,[67] five of the Giovannini barriers have been wholly or mainly dismantled. These appear to be barriers where change was in the hands of the private sector. Unfortunately, and in many cases as a result of regulatory initiatives, new barriers have arisen. The EPTF accordingly issued its own statement of barriers, which should be seen as the replacement for Giovannini's; the status as at the time of the August 2017 consultation is summarised in **Tables 1.2 and 1.3.**

Table 1.2 Giovannini Barriers

Giovannini Barrier	Summary	2017 status per EPTF
GB 1	National differences in information technology and interfaces	EPTF 2
GB 2	National clearing and settlement restrictions that require the use of multiple systems.	Barrier dismantled
GB 3	Differences in national rules relating to corporate actions, beneficial ownership and custody	EPTF 1
GB 4	Absence of intra-day settlement finality	Barrier dismantled

67 European Post Trade Forum, *EPTF Report* (May 2017), https://ec.europa.eu/info/publications/170515-eptf-report_en.

GB 5	Practical impediments to remote access to national clearing and settlement systems	Barrier dismantled
GB 6	National differences in settlement periods	Barrier dismantled
GB 7	National differences in operating hours/ settlement deadlines	Barrier dismantled in T2S markets
GB 8	National differences in securities issuance practice	EPTF 7
GB 9	National restrictions on the location of securities	
GB 10	National restrictions on the activity of primary dealers and market makers	EPTF Watchlist 1
GB 11	Domestic withholding tax regulations serving to disadvantage foreign intermediaries	EPTF 12

Table 1.3 EPTF Barriers

EPTF Barriers	**EPTF Barriers**	**Giovannini Barriers**
EPTF 1	Fragmented corporate actions and general meeting processes	GB 3
EPTF 2	Lack of convergence and harmonisation in information messaging standards	GB 1
EPTF 3	Lack of harmonisation and standardisation of ETF processes	
EPTF 4	Inconsistent application of asset segregation rules for securities accounts	
EPTF 5	Lack of harmonisation of registration and investor identification rules and processes	
EPTF 6	Complexity of post-trade reporting structure	
EPTF 7	Unresolved issues regarding reference data and standardised identifiers	GB 8 & 9 redefined and combined
EPTF 8	Uncertainty as to the legal soundness of risk mitigation techniques used by intermediaries and of CCPs' default management procedures	GB 14
EPTF 9	Deficiencies in the protection of client assets as a result of the fragmented EU legal framework for book entry securities	GB 13
EPTF 10	Shortcomings of EU rules on finality	
EPTF 11	Legal uncertainty as to ownership rights in book entry securities and third-party effects of assignment of claims	GB 15
EPTF 12	Inefficient withholding tax collection procedures	GB 11
EPTF Watchlist 1	National restrictions on the activity of primary dealers and market makers	GB 10

EPTF Barriers	EPTF Barriers	Giovannini Barriers
EPTF Watchlist 2	Obstacles to DvP settlement in foreign currencies at CSDs	
EPTF Watchlist 3	Issues regarding intraday credit to support settlement	
EPTF Watchlist 4	Insufficient collateral mobility	
EPTF Watchlist 5	Non-harmonised procedures to collect transaction taxes	GB 12

1.29 At the beginning of the century, the principal driver for policy in the European Union was a perception that clearing and settlement were expensive and under-regulated. The lack of concern for further reforms by the Commission since the EPTF reported might suggest either that costs are now tolerable, or that other legislative priorities have turned the spotlight elsewhere. Two comments might be made on the question of costs. First, comparison of methodologies merits a whole thesis of its own: it depends who you ask and what you are asking about.[68] Secondly, there are many possible explanations for the US–EU differential, ranging from a fragmented, nationally focused marketplace in Europe to inherent market differences rooted in investor behaviour, trading styles, pension planning, and economic cohesion. Clearing and settlement have remained predominantly single-state activities in Europe, whereas in the United States they have, since the mid-1970s, been carried out country-wide. A study by Oxera in 2014[69] (not included in **Table 1.4** for reasons of comparability) looking into the costs of post-trading at financial market infrastructures across the world (FMIs) concluded:

> 'In terms of total trading and post-trading costs, the FMIs appear to fall into three groups:
>
> - those with fees in excess of 2bp—FMIs in Singapore, Brazil and Spain;
> - those with fees between around 0.3bp and 1.5bp— this is the largest group, covering FMIs in Australia, Hong Kong, Japan, France, Germany, Canada, Denmark and the UK (EuroCCP and LCH.Clearnet);
> - those with fees below 0.3bp—FMIs in South Korea and the USA.
>
> FMIs in the higher-cost group tend to be relatively small and FMIs in the lower-cost group tend to be relatively large, providing evidence of at least some economies of scale in the provision of FMI services.'

68 Oxera Consulting, *Methodology for monitoring prices, costs and volumes of trading and post-trading activities* (July 2007), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/oxera_study_en.pdf

69 Oxera, *What does it cost to clear securities? Benchmarking of financial centres* (August 2014), www.oxera.com/wp-content/uploads/2018/07/What-does-it-cost-to-clear-securities-benchmarking-of-financial-centres.pdf

Table 1.4 Earlier studies of post-trade costs

Study	Cost of clearing and settlement in Europe	Cost of clearing and settlement in the US	Observations
CEPS, 2001[70]	€ 2.98 per transaction	€ 2.77 per transaction	'Operating income per transaction' for securities settlement systems was assessed. With International Central Securities Depositories and without netting the differential was more acute: € 3.10 in Europe compared with € 0.40 in the US
Niels et al, 2001[71]	€ 4.43 per transaction	€ 0.41 per transaction	'Income per transaction' data taken from published accounts of infrastructure providers
NERA, 2004[72]	€ 0.35–0.80 per transaction	€ 0.10 per transaction	Study of tariffs charged by infrastructure providers for equities trades
Oxera, 2009[73]	€ 0.43–2.44 per transaction	No data	Survey of broker-dealers' reports on costs of clearing and settlement for equities trades
Oxera, 2011[74]	€ 0.36 per transaction	No data	Survey (for equities trades) of revenues received by service providers and costs experienced by users divided by transaction number

In Europe, competition has been invoked as a traditional – perhaps over-used – remedy for reduction of costs. **Chapter 11** explores in more detail the role which competition policy has played in shaping European clearing and settlement infrastructure. In the early years of the century, cost and competition policy were in the ascendant: with attacks on interbank processing fees for processing

70 Lannoo, K, and Levin, M, *The Securities Settlement Industry in the EU: Structure, Costs and the Way Forward* (December 2001), Research Report, Centre for European Policy Studies, ISBN 92-9079-362-7

71 Niels, G, Barnes, F and van Dijk, R, 'Unclear and Unsettled: The Debate on Competition in the Clearing and Settlement of Securities Trades' (December 2003) ECLR 634

72 NERA Economic Consulting, *The direct costs of clearing and settlement: An EU–US Comparison* (June 2004) Corporation of London, City Research Series Number 1

73 Oxera Consulting, *Monitoring prices, costs and volumes of trading and post-trading services* (July 2009), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/2009_07_ec_report_oxera_en.pdf, para 7.2.2

74 Oxera Consulting, *Monitoring prices, costs and volumes of trading and post-trading services* (May 2011), MARKT/2007/02/G, Report prepared for European Commission DG Internal Market and Services, http://ec.europa.eu/internal_market/financial-markets/docs/clearing/2011_oxera_study_en.pdf

payments, challenges to the position of ICSDs, development of multiple centres of liquidity for trading, and encouragement of interoperability to facilitate competition in clearing and settlement. Clearing and settlement are not risk-free activities, but cautious attention to risk control increases cost. But then there was a financial crisis, which allowed a more balanced philosophy of infrastructures, risk and regulation to emerge, as well as a clutch of new legislation. EMIR has imposed rules on capital, structure and governance of CCPs. The CSDR[75] does a similar job for CSDs. And internationally accepted standards of safety in payment systems have received legislative status in Europe.[76]

Giovannini revisited

1.30 In 2011, the late Professor Giovannini was quoted as saying: 'Since the interest groups with relatively more effective influence on policymaking are ambivalent about the gains from liberalization (some certain market advantages would be lost), since policymakers are not under pressure to move forward, and may well be concerned about undesired and unforeseen effects of reform, progress has been very slow.'[77] Not much seems to have changed.

The following further observations might be made:

(1) The tension between policy designed to improve market structure and policy designed to facilitate fair competition has been poorly handled. Competition policy sometimes obstructs market development, either through an excess of dogmatism (multiple CCPs are considered desirable regardless of the risk and complexity of interoperability arrangements[78]) or through an excess of zeal (standard-setting, which is necessary to create harmony, can be thought dangerous owing to the penal powers of the European Commission[79]). Without coherence and proper balance of these policy forces, development will be inhibited. Although the activism of the Commission appears to have diminished in the years since the EPTF reported, it remains in the background and competition policy has the potential to thwart innovation.

(2) National incumbents continue to dominate the scene. A sense of prestige concerning national infrastructures is a force for conservatism and confuses debate. One example is whether 'vertical silos' are desirable, since the 'for' arguments may be protectionism disguised in stability and safety clothing.

(3) Legal differences and legal obstacles create real barriers, some of which are difficult to pull down, where the desire to invoke national protectionism is absent. 'Choice of CSD' for issuers will remain out of reach in practice until a clean dividing line is drawn between corporate law (the internal affairs of an issuer) and investment law (the trading and post-trading

75 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc

76 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28)

77 Expert Group on Market Infrastructures (EGMI), *Report* (October 2011), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/egmi/101011_report_en.pdf, p 29

78 See **Chapter 15**

79 See **section 11.34**

affairs).[80] Legal reforms were recommended by Giovannini and repeated, with new details, by the EPTF. The failure to proceed with a Securities Law Directive[81] leaves in place an uncertain patchwork of laws for how to acquire ownership, and how to acquire a security interest, in securities held in an account at an intermediary such as an agent bank. The law and practice on this topic remains mysterious, complex, expensive to understand and encrusted with national differences. Although the Geneva Securities Convention would be an inadequate solution to the problems,[82] that should not forestall work in this important area.

(4) Some types of infrastructure are systemically as vital as clearing and settlement infrastructures. Communications and matching service providers are examples. Barriers, which may be less visible than those identified by Giovannini or the EPTF, can also arise in these sub-sectors of the post-trade space. Control of data and its flow continue to determine who is allowed to provide post-trade services. For example, the need for access to transaction feeds has been identified as a necessity to enable competition among post-trade service providers to take place.[83]

(5) The development of new, innovative services and means of delivery, including through distributed ledger technology,[84] creates new challenges as the old legal and regulatory system struggles to comprehend and manage innovation. It is the responsibility of policy-makers and the legislature to ensure that the law and regulatory system are fit for purpose, to provide proper protection for market users, and to ensure that unnecessary inhibitions are removed so that new solutions can thrive. Leaving the possibility of change in limbo following a consultation is not a discharge of that responsibility.

OTC DERIVATIVES CLEARING

1.31 Following the financial disasters of 2007–2008, central counterparties became regarded as saviours of the day. The various CCPs which had handled the default of Lehman Brothers were deemed to have performed well, and the stability which their processes had engendered was seen as a benefit which could be extended to other areas of financial business, in particular credit default swaps.[85]

The European Commission urged derivatives trading firms to develop clearing solutions for credit derivatives and obtained a written commitment[86] to make clearing via a CCP possible for these products. By July 2009, Internal Market and Services Commissioner McCreevy was able to announce:

80 Cf **section 6.23**
81 See **section 6.8**
82 See **section 6.7**
83 See **sections 4.12–4.14**
84 See **section 2.46**
85 See the European Commission's Communications *Ensuring efficient, safe and sound derivatives markets* (July 2009), COM (2009) 332 final, and *Ensuring efficient, safe and sound derivatives markets: future policy actions* (October 2009), COM (2009) 563 final
86 International Swaps and Derivatives Association, letter to Commissioner McCreevy (March 2009), http://ec.europa.eu/internal_market/financial-markets/docs/derivatives/2009_02_17_isda_letter_en.pdf

> 'Back in October 2008, I called upon the industry to reduce the risks inherent in the credit default swaps market, in particular by moving the clearing of these contracts onto a European central counterparty (CCP). The financial crisis highlighted a number of problems in the credit default swaps market, especially where transparency, market concentration and risk mitigation were concerned. Clearing through central counterparties is key to improving risk management and to increasing the stability of the financial system. I am pleased that the extraordinary efforts by the industry and service providers have made it possible that two European CCPs are starting to clear these products now, with a third aiming to launch its service by the end of the year. The existence and the use of more than one CCP is essential for the proper development of a safe and competitive environment.'[87]

That, however, marked the beginning, not the end. The debate on the merits and implementation of clearing of OTC products merits a discussion of its own, which is reserved for **Chapter 10**.

87 European Commission, press release IP/09/1215 (July 2009), http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1215&format=HTML&aged=0&language=EN&guiLanguage=en

2 What happens in Clearing and Settlement

2.1 This chapter is about infrastructures and their participants. Having established the terminology of clearing and settlement, the next objective is to describe who does what, and how: the essential functions of a CCP, a CSD, and a payment system, the roles which the agent banks which participate in those systems carry out, and where this leaves the end-user clients whose transactions are submitted to them for clearing and settlement.

CLEARING

2.2 Clearing requires the involvement of a CCP.[1] The principal role of the CCP in a securities transaction is to become buyer to every seller and seller to every buyer. In a derivatives transaction, the position is similar: the CCP will become Party A to every Party B and Party B to every Party A – taking an interest rate swap as example, the CCP will become the fixed rate payer to the floating rate payer, and floating rate payer to the fixed rate payer (see **Figure 2.1**).

Novation

2.3 The process by which the CCP becomes the counterparty to the original parties to a trade is typically by novation. Novation is appropriate where the original clients have a binding contractual relationship with each other from the moment that their transaction details are inputted into the relevant trading system and matched. When this is the case, to replace each other as counterparty, the original contract between the traders needs to be torn up and replaced by two new contracts, one between the seller and the CCP and the other between the CCP and the buyer. This is the model in use by CCPs such as LCH[2] and Eurex Clearing for OTC transactions,[3] for example.[4]

1 See **section 1.6**
2 LCH Limited, *General Regulations* (July 2020), reg 12
3 Eurex Clearing AG, *Clearing Conditions* (September 2020), Chapter 1, number 1.2.2(2)
4 Cf **section 17.19**

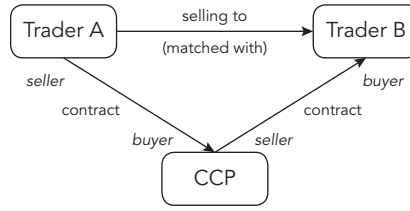


Figure 2.1

Open offer

2.4 An alternative to novation is 'open offer'. This technique was used by the now-defunct foreign exchange clearing house ECHO, and is used by Eurex Clearing for exchange-originated transactions.[5] Open offer is simpler than novation, in that there is never a binding contract between the two original clients: the trading and matching system rules, coupled with the rules of the CCP, provide that a matched bargain gives rise to the two contracts between seller and CCP and between buyer and CCP. The open offer structure, under English law, relies on the doctrine set forth in the well-known (if rarely read) case of *Carlill v Carbolic Smoke Ball Co*,[6] under which a binding contract can be achieved if one party (here, the CCP) states openly that it is willing to be contractually bound if the other party (here, either of the original clients) performs certain acts. The open offer idea is, however, not peculiar to the English law of contract and should be effective under other legal systems.[7]

Multilateral netting

2.5 The impact of the CCP becoming interposed into every transaction is that the number, and size, of each participant's transactions will be reduced by a process of multilateral netting. This is shown in **Figure 2.2**, which takes a rather artificial example of only three trades in the same security for settlement on the same day between three participants. Multilateral netting may thus be regarded as a primary function of a CCP, and sometimes CCPs have been characterised by reference to this aspect of their operations.[8] Although a modern clearing house acts as central counterparty – taking on the contractual performance obligation vis-à-vis each participant – it was not always so.

Clearing houses carry out a useful role in optimising the efficiency of settlements, and for this it is not necessary for the clearing house to become counterparty to each of its members' transactions. On one view, the function of a clearing house is to perform the calculations necessary for the multilateral netting process, without assuming contractual responsibility for the deliveries. Back in the nineteenth century, the clearing house could optimise deliveries among traders so as to avoid the inefficiencies if each pair of contracting parties had

5 Eurex Clearing Conditions, Chapter 1, number 1.2.2(1)
6 [1893] 1 QB 256, CA
7 Cf Zweigert, K, and Kötz, H, *Comparative Law* (3rd edn translated by Tony Weir, Oxford University Press, September 1995), ISBN 0-19-826859-9, ch 26
8 See **Table 1.1**

both to deliver and receive. If the clearing house were to have control of the settlement process, it could determine that the more efficient outcome would be for the deliveries to be arranged as if there were a CCP, simply by informing the participants about what should be delivered and to whom; or, better still, by accepting the net deliveries-in and arranging for the net deliveries-out to take place at its premises.[9]

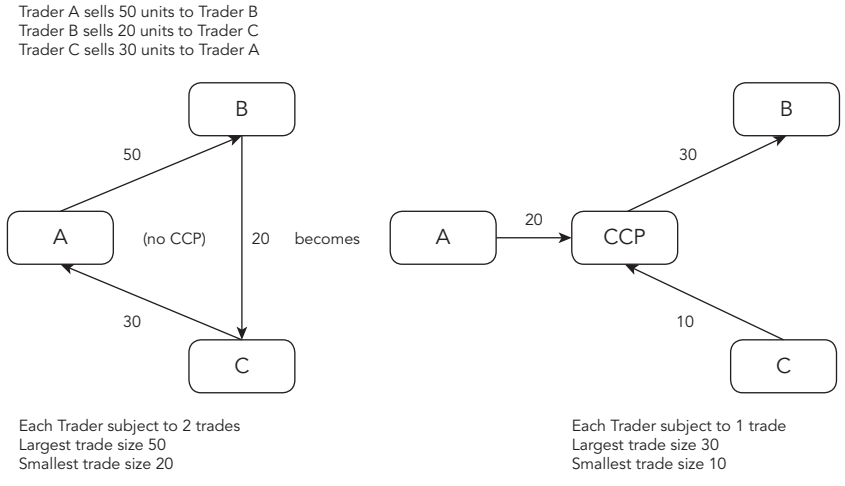


Figure 2.2

2.6 While it is certainly possible for a clearing house to calculate and restate the participants' obligations without becoming contractually bound on their transactions – that is, without becoming a CCP – it is not self-evident that this form of clearing will be legally effective in the event of default by a participant. The effectiveness of a multilateral netting scheme for which the clearing house was not a CCP was tested in the *British Eagle* case (see **Case Study 2.1**). The objection, which struck down the multilateral netting arrangements in use there, was that the distribution of the insolvent participant's assets gave a better return to the other participants in the arrangements than to creditors generally, and that was contrary to the policy of the insolvency laws. The same objection might be made in respect of any clearing house arrangement, but a clearing house which becomes central counterparty has a defence available: because it is the counterparty as principal to all of the insolvent participant's trades, it is merely trying to strike a net balance *bilaterally* with the insolvent participant, and there is no unfairness to creditors provided that the mechanisms for interposing the clearing house as CCP, and for bilateral netting between the clearing house and the insolvent participant, are both effective and can withstand a supervening insolvency.

Case Study 2.1 The *British Eagle* case

British Eagle was an airline which participated in a multilateral netting scheme operated by the International Air Transport Association (IATA)

9 Cf Kroszner, R, 'Central Counterparty Clearing: History, Innovation and Regulation' in *The Role of Central Counterparties* (European Central Bank/Federal Reserve Bank of Chicago, July 2007), www.ecb.eu/pub/pdf/other/rolecentralcounterparties200707en.pdf, pp 30–35

to deal with the criss-crossing payment obligations which arise between airlines which carry each other's passengers, for example when passengers switch flights. IATA would carry out a monthly tally of what each airline owed each other participating airline, calculate a net sum due to or from each airline, and oversee the collection and distribution of the amounts thus calculated. British Eagle went into liquidation and its liquidator objected to the operation of the IATA scheme, asserting that its operation was contrary to the mandatory scheme of distribution of a company's assets in a winding-up. By a majority of 3–2 the House of Lords agreed.[10]

The problem with the IATA set-up was that it could lead to a better outcome for the surviving participants than if they had retained their original obligations and entitlements (see **Table 2.1** for a model illustration as to how this might arise). The enhanced benefit for participants, achieved at the expense of the other creditors of the insolvent participant, was the feature which was contrary to the insolvency rules.

IATA subsequently modified its rules, so that the clearing house became a CCP, and in a more recent airline insolvency case the multilateral netting system was upheld by the Australian courts.[11]

Table 2.1 Why multilateral netting reduces recovery for the unsecured creditors of a defaulter

Position for B's liquidator and creditors with and without multilateral netting based on scenario of Figure 2.2	
B's assets and liabilities without multilateral netting	**B's assets and liabilities with multilateral netting**
Assets: A owes 50 units to B Liabilities: C is owed 20 units by B	*Assets:* CCP owes 30 units to B Liabilities: none
C also has to deliver up the 30 units he owes to A, and as a creditor of B's estate is entitled to a dividend on the 20 units owed by B	B's original obligation to deliver 20 units to B is netted along with the 30 C owes to A C therefore delivers a net 10 units to the CCP
Outcome: B's liquidator gets 50 units for the estate C delivers 30 units immediately and has to wait for the hope of a recovery from B's estate	*Outcome:* B's liquidator gets 30 units for the estate, so the estate is worse off C has immediate satisfaction and no loss – C is not treated as a creditor as C's position is handled outside the estate

2.7 In many jurisdictions, insolvency codes are likely to have difficulties with multilateral netting systems similar to those explored in *British Eagle* because of the detriment to the general body of creditors caused by what is essentially a private mini-liquidation. The solution of converting to bilateral

10 *British Eagle International Air Lines v Compagnie Nationale Air France* [1975] 1 WLR 758, HL

11 *Ansett Australia Holdings Limited v International Air Transport Association* [2006] VSCA 242, Victoria Court of Appeal

netting through interposing the clearing house as principal contracting party may not be available in respect of participants which are wound up under other systems of law. To overcome the difficulty arising from insolvency law objections, CCPs will wish to seek protection under an internationally-recognised legislative measure designed to insulate market infrastructures from interference by liquidators or insolvency laws, such as the Settlement Finality Directive.[12]

CLEARING MEMBERS

2.8 Where an original party to a trade is not a direct participant in the CCP it may be necessary to hire a third party to act as its 'general clearing member' (GCM). The terminology refers to the historical practice whereby members of exchanges were either members of the CCP (thus 'clearing' members *of the exchange*) or not ('non-clearing-members'). Non-clearing members of exchanges (NCMs) need to hire a third party to clear for them if the exchange requires that all trades be cleared; a clearing member willing to clear other members' trades as well as its own will be a 'general' clearing member. Nowadays many transactions do not originate on exchanges and participation in a CCP may not be linked to membership of any exchange, so that 'GCM' may be something of a misnomer when it merely denotes participation in a CCP with a view to providing access to the CCP for persons who are not CCP participants. Nevertheless, EMIR[13] adopts similar usage: participants in CCPs are referred to as 'clearing members', even though there may be no other class of 'member' of the CCP. It may also be noted that a GCM may not actually indulge in trading activity at all – it may specialise in clearing and (where permitted) decline membership of any exchange.

2.9 A GCM may be needed by a trader because the criteria for participation in the CCP are likely to be tougher than those for participation in a trading platform. This is because the CCP is taking on counterparty risk with each new participant it admits to its select club, and its first line of defence against that risk will be in those criteria.[14] On the other hand, members of the exchange or trading platform which can meet the CCP's criteria can (if they choose to do so) 'self-clear', thus being dubbed 'individual clearing members' (ICMs) of the exchange.

Internalised clearing by GCMs

2.10 As clearing becomes more popular, more stress is placed on GCMs, which to a degree centralise counterparty risk in a similar manner to CCPs. Because a GCM provides services to several NCMs, the possibility arises that one NCM (or other market participant) may be selling to another using the same GCM. Depending on how the CCP handles such transactions, the CCP may be cut out of the clearing process altogether, as shown in **Figure 2.3**. If the CCP nets off the transactions immediately where the same GCM is on both the 'buy'

12 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems; see **sections 13.29ff**

13 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

14 See **section 17.12**

and 'sell' sides, the transaction will completely disappear as far as the CCP is concerned. The remaining transactions of a GCM, which remain on the books of the CCP until an opposite transaction is registered or settled, is described as the GCM's 'open interest' in transactions of that type. The immediate netting of opposite trades at the CCP, which leaves the GCM as sole clearer for the open interest in all the transactions effected between its own clients, in effect 'internalises' part of the clearing within the GCM.[15] A risk issue which (in theory) arises when there are very few GCMs in a market is that a GCM which has a very attractive service offering might even find itself taking on more counterparty risk than a CCP.

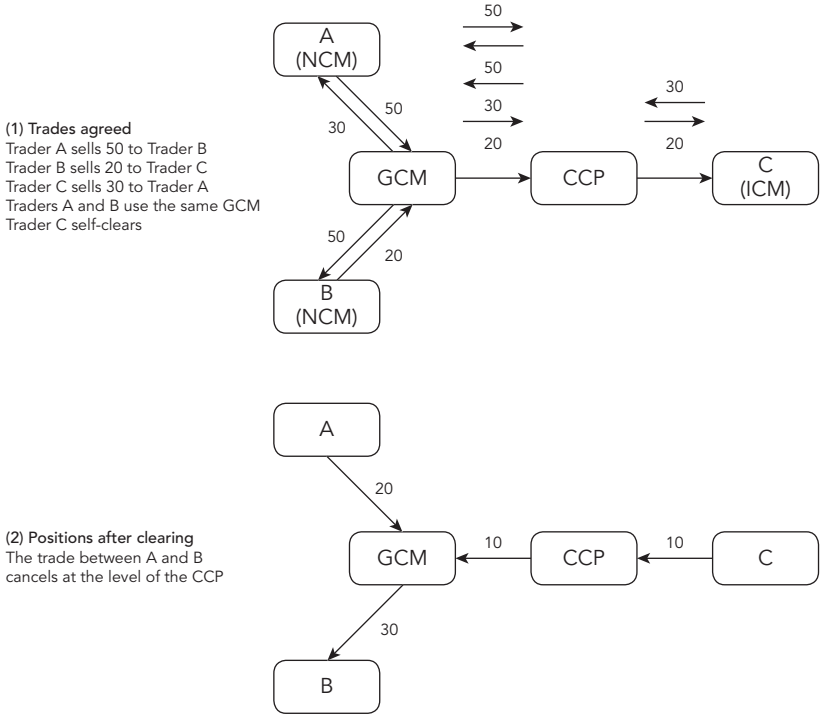


Figure 2.3

2.11 The total disappearance of trades from a CCP where a GCM is shared by buyer and seller is not an inevitable outcome. Whether this is the result will depend on the CCP's practices and procedures. It may be possible for a CCP to adopt a practice of calculating margin on a 'gross' basis – that is, without netting off opposite transactions in the same security or financial product for the same delivery date – but in practice CCPs appear to calculate margin obligations on an aggregated basis.[16] So, a fundamental question is whether the trades done by one client would be booked to the same account as another client's (in which case they can disappear through netting) or whether they are kept separate.

15 See also Committee of European Banking Supervisors, *Report on the outcome of CEBS's call for evidence on custodian banks' internalisation of settlement and CCP-like activities* (April 2009)

16 See **sections 17.21ff** on margin methodology

(A further distinction must be made in relation to settlement instructions. Even though margin is calculated on a net basis per account, it may be that transactions are settled gross. This will occur if the settlement instructions are generated by the platform and sent direct to the CSD, rather than being generated by the CCP. In such a case the CSD may carry out its own netting to reduce the number of criss-crossing settlements.)

GCMs are principals, not agents

2.12 Do not be misled by the treatment in this book of GCMs alongside 'agent banks'. First, as will be shown, GCMs are not usually agents, at least not in the technical legal sense. Secondly, there is no reason why a GCM needs to be configured as a bank, though that might in practice facilitate the provision of GCM services such as the extension of credit. However, the risk profile of clearing services can conveniently be assessed at the same time as other transaction services – and the service providers for settlement and payment services are commonly referred to as 'agent' banks.

2.13 A GCM will ordinarily act as principal, even if it is hired by a client to provide a clearing service. (Other possibilities are considered in **section 2.16**). If the GCM were a mere agent, that could compromise the CCP's counterparty risk management process. A CCP may depend on a strict doctrine that all its participants must deal with it as principal, because this achieves certainty in three principal areas:

(1) *Contractual responsibility*. The CCP will need to know who is responsible for performance of the contractual obligations it is owed in respect of each transaction. Given that the CCP's risk management begins with the selection of suitable persons as participants – whether as GCM or ICM – it would be rash to allow an agency structure to put the CCP into contractual relations with weaker NCMs or other clients of its participants. The rules of CCPs, such as LCH Ltd's General Regulation 12, typically specify the principal-to-principal basis for dealings, and explain that the CCP's responsibilities are owed to no person other than the member. However, the principal-to-principal basis for clearing has not prevented actions under which clearing firms have been alleged to act as agents (see **Case Study 2.2**).

    What emerges is that being treated by CCPs as principals does not preclude brokers from owing agent-like duties to their clients. A distinction might need to be drawn, however, with Model B clearing agents,[17] who assume responsibility vis-à-vis the client's market counterparty for the client's performance (but not the other way round), and with *del credere* agents in international trade activity, who assume responsibility for the counterparty's performance in favour of the agent's client, but not the other way round.

(2) *Margin*. A GCM must take responsibility not just for the performance of the contract itself but also for the timely payment or delivery of margin. A GCM who is only an agent would be able to hide behind the operational inefficiency of his principal; this would ruin the effectiveness of the CCP's risk management. A GCM thus needs to have access to sufficient liquidity

17 See **section 19.27**

to cover any gap, temporary or permanent, which its client may experience in funding.

(3) *Set-off*. Wherever set-off is allowed by insolvency regimes it is almost always essential that there be 'mutuality' between the obligations being set off – that is, that they are owed by two counterparties to each other, and that the counterparties are acting in the same capacity in respect of both obligations. Agency can thus be fatal to mutuality.[18] Indeed, the reason for the decision in *British Eagle* was that IATA had acted as agent for the participating airlines; if it had acted as principal, there would surely have been no difficulty with its scheme.

Case Study 2.2 Clearing members and agency

In *Limako BV v H Hentz & Co Inc*.[19] Hentz acted as broker to Limako. Limako sold 64 cocoa options. Hentz, as the exchange member, sold 64 options on the exchange. All 64 options were exercised on the due date by the CCP, but Hentz only told Limako immediately about the exercise of 20, so Limako instructed Hentz to sell the cocoa held against the remaining 44, which they did. Later, Hentz told Limako that the other 44 options had also been exercised, and the question for the court was whether Hentz or Limako should suffer the loss suffered on the buy-in of replacement cocoa to meet the obligations due under these 44 options. The Court of Appeal upheld Limako's contention that Hentz dealt with them in regard to the options as principal; although Hentz, as broker, was an agent 'to go into the market in order that the price may be fixed and the option thus given content. But at that point Hentz's agency ceases. They are in all other respects principals …'.

In *Brandeis (Brokers) Ltd v Herbert Black,*[20] it was said that 'a broker is not an agent for an undisclosed principal in the sense of creating a contractual relationship between the parties involved in the back-to-back contract, but in all other respects the substance of the relationship is much more closely akin to that of agency than of buyer and seller at arm's length'.

2.14 Accordingly, the chain of contractual relationships can become elongated, as there are more principal-to-principal units arising out of the novation (or open offer) process, as illustrated by **Figure 2.4**. Protecting CCPs by means of the principal-to-principal dealings rule is fine, but when the GCM is insolvent, protection which the CCP has built for its own well-being may be unhelpful to the client. There is a need for special protection, such as segregation and portability rules, which enable the CCP to look beyond its participant to the client in such cases. In accordance with EMIR, CCPs profess that they will try to transfer a client's positions in the event of a GCM's insolvency, though they do not promise to do so.[21] Transfer and look-through arrangements are for exceptional circumstances, since the CCP will regard its participants (GCMs and ICMs), not their clients, as the persons on whom the CCP takes risk. The

18 *Richardson v Stormont Todd & Co Ltd* [1900] 1 QB 701
19 [1979] 2 Lloyd's Rep 23 (CA)
20 [2001] All ER (D) 342
21 Article 48(5) and (6)

reasons for the difficulties in effecting transfer, and the solutions which may be available, are examined in **sections 17.54ff**.

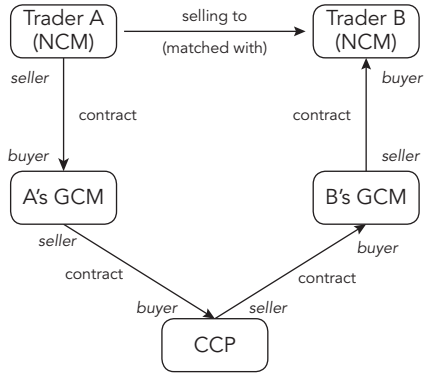


Figure 2.4

OTC derivatives and client clearing

2.15 A final explanation in the context of clearing is called for by the introduction of mandatory clearing of OTC derivatives transactions under EMIR. Where a transaction must be cleared,[22] it may be that one party to the transaction is not a participant in a CCP and needs to engage the services of a GCM to satisfy its clearing obligation. This could lead to a chain of back-to-back transactions as in **Figure 2.4**.

A more subtle variant, however, arises where the non-participant's counterparty is itself a participant in the CCP and can take care of the clearing itself. In order to do so, the participant/counterparty will put on an additional hat: that of GCM for the client. It will thus face the CCP in two capacities: that of counterparty to the cleared transaction, in which capacity the transaction appears in its 'house' account at the CCP, and that of GCM to the client in respect of the same transaction, in which capacity the transaction appears in its 'client' account. It will be noted that the effect of client clearing is that both parties to the transaction will be required to post initial margin to the CCP; even if the client's counterparty is able to perform the clearing function, the need for both sides of the bargain to be margined will still arise.

Sponsored clearing models

2.16 The introduction, via EMIR, of the requirement for CCPs and clearing members to offer individually segregated client accounts[23] has stimulated the development of new clearing structures at many CCPs. The ability to transfer (or 'port') client positions and margin if the clearing member defaults underlies the design of such structures.[24] In summary, transfer is easier if the CCP deals direct with the client without having to deal with the insolvency officer or similar

22 See **section 10.14**
23 EMIR, arts 39(3), (5)
24 See further **sections 17.54ff**

official handling the affairs of the defaulting clearing member. That implies a direct contractual relationship, possibly even amounting to membership, for the client. Several CCPs have created sponsored membership arrangements which allow for this, while respecting the CCP's ability to ensure the creditworthiness of the members to which it is exposed. The examples given in **Table 2.2** may serve as illustrations.

Table 2.2

Service	Sponsoring Member guarantees client positions	Sponsoring Member responsible for client default fund contribution	Client must provide supplementary margin or default fund contribution	Sponsoring Member can provide back office support to client
CME Direct Funding Participant[25]	Yes	Yes	Yes	Yes
Eurex ISA Direct[26]	No, client is itself a member	Yes	No	Yes
ICE Clear Europe Sponsored Principal[27]	Jointly and severally liable	Yes	Yes	Yes
LCH RepoClear Sponsored Clearing[28]	No, client is itself a member	Yes	Yes	Yes

In each case the CCP has a direct relationship with the client; although the client is responsible for meeting margin calls, the typical operational set up is that the client will make use of the member's direct payment system (LCH's PPS, or ICEEU's APS) so that, in practice, the CCP takes the margin from the member. Clients would not ordinarily participate in default management processes as a non-defaulter because the purpose of the structures is to shield clients from defaults (Eurex is explicit about this).

It may be further remarked that a client transaction where the counterparty is a member of the CCP in respect of its own side of the transaction, and also acts as a guarantor of the client's obligations, will have a similar structure to that shown in the lower part of **Figure 2.5**. Where a guarantee structure is chosen, the guarantee will be a one-way arrangement: the client's obligations are guaranteed in favour of the CCP, but not vice versa.

25 DeWaal, G., *Bridging the Week* (July 2016), www.bridgingtheweek.com/Commentary/PrintCommentary/2421

26 DeWaal, G., Bridging the Week (August 2016), /www.bridgingtheweek.com/Commentary/PrintCommentary/2423

27 Ice Clear Europe, *Customer Protection Framework* (July 2019), www.theice.com/publicdocs/clear_europe/Customer_Protection_Framework.pdf

28 LCH, *Sponsored Clearing* (April 2018), www.lch.com/sites/default/files/media/files/LCH_Sponsored_Clearing_040418-17READERclean.pdf

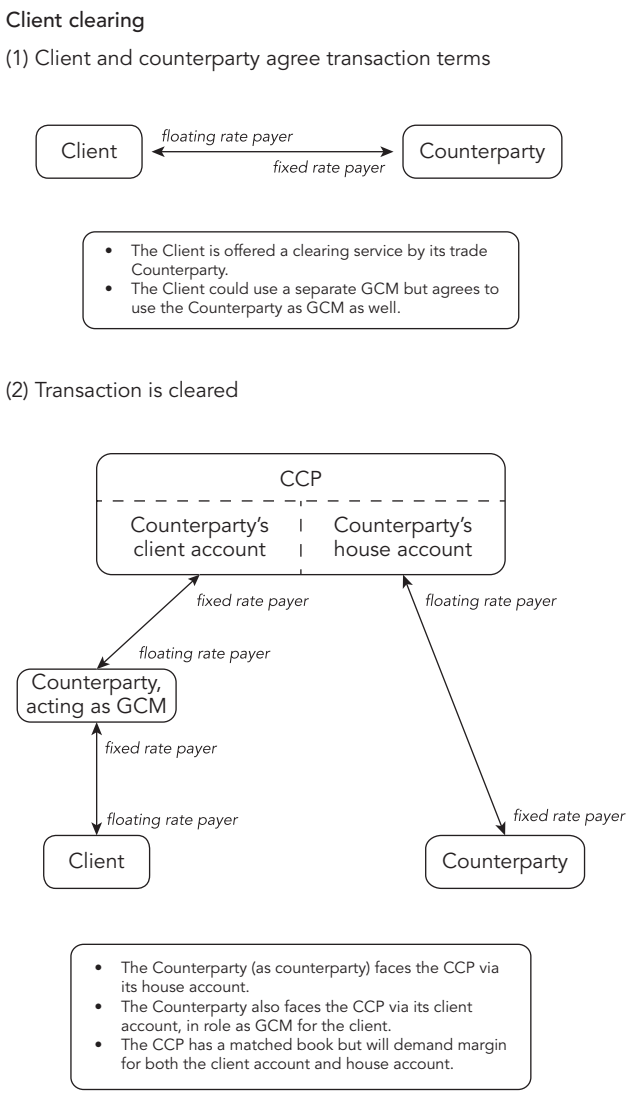


Figure 2.5

In these structures, the client's entitlement as against the CCP will typically be a direct one, insulating the client to a degree against the sponsoring member's failure. This general idea should be qualified: where the client is using the sponsoring member's back office services, including access to the CCP's payment system via the sponsoring member's accounts, it is unlikely that the default of the sponsoring member will have no effect on the client or that the client will be wholly insulated. Further, in the ICE Clear Europe model, the client and the sponsoring member are 'jointly' entitled to the benefit of the client's account at the CCP; this will affect set-offs and potentially give rise to issues as between the client and the defaulted sponsoring member.

If a default occurs, the transfer mechanisms discussed in **section 17.54** should come into operation. A client which itself defaults can have its positions closed out, and the guarantee of liability provided by the member should protect the

CCP. What is perhaps less certain is the outcome if client and member co-default; presumably this explains the uplift in resources required by some of the clearing services. *British Eagle* risk is avoided by placing the member in a relationship of principal, vis-à-vis the CCP, in each of the cases shown in **Table 2.2**; in the Eurex and LCH models the client is elevated to a special category of membership and brought into line with the other members, while the others rely on liability of the member for the client's obligations.

SETTLEMENT – CSDS

2.17 The function of a CSD can most easily be understood in a historical context. In days when the value of securities was embedded in the paper constituting the security (what in Germany is referred to as *Wertpapier* and in English is sometimes incorrectly called a 'document of title'), it made sense to store the securities in vaults, and to have a central depository maintain a record of who was entitled to them. In this way, the CSD (1) held the ultimate record of entitlement and (2) undertook responsibility for carrying out transfers of entitlement when ownership of the securities was intended to change hands. These remain the core functions of CSDs.

The CSDR[29] defines the essential functions of a CSD as operating a securities settlement system and either or both of 'initial recording of securities in a book-entry system ("notary service")' and 'maintaining securities accounts at the top tier level ("central maintenance service")'. In relation to these activities, the following explanation was given:

> 'The CSDs serve three core functions:
>
> 1. the "notary function" that starts at the issuance of securities and ends when they are reimbursed
> 2. the "settlement function" through which securities are paid and delivered every time they change hands following a trade on organised or even OTC venues, and
> 3. the "central safekeeping" function, which may also form part of this triptych. …
>
> The "notary function" of CSDs lies somewhat in between corporate law and financial law … [the European legislator] has however to regulate the notary function in order to ensure that there are no more securities circulating with their settlement participants than there were actually issued …
>
> The "settlement function" is as important, since the Securities Settlement Systems (SSS) operated by the CSDs have a systemically important nature …
>
> The "central safekeeping" function works as a linchpin between the two previous functions. Both the "notary" and the "settlement" functions require

29 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securtiies settlement in the European Union and on central securities depositories etc

in practice the recourse to "securities accounts" for the initial creation of the securities and for their settlement between participants to the SSS.'[30]

Notwithstanding the views thus expressed, the core functions of a CSD are only two in number: the root-of-title function and the settlement function. The root-of-title function is a combination of the notary and safekeeping roles described, but it is misleading to suggest that these could be split apart. The issuer-facing aspect of maintaining the integrity of the issue, described as the 'notary' function, is inseparable from 'safekeeping' in the sense of providing a register of entitlement to the securities credited to accounts of CSD participants. Another safekeeping function may be the physical holding of a document, for example where title to the securities depends on it, but in such a case this is also a necessary component of the root-of-title role, and not somehow to be treated as separate.

2.18 The following comments may also be made:

(1) *Root of title*. A fundamental question for investors – for their very ownership of securities depends on it – is who is responsible for operation of the definitive record of entitlement to the securities. The importance of this title-management function cannot be overstated: inefficiency or operational failure by the operator can lead to expropriation of innocent investors. Having the role carried out centrally by an adequately regulated infrastructure is self-evidently a worthwhile policy objective.

Alternative arrangements have existed. A company may maintain its own register of shareholders, but it is inefficient for each security to have its own idiosyncratic system for recording and transfer of ownership. Abolition of paper crunches in each country requires a movement to dematerialisation of title records, or at least immobilisation of documents of title into a central securities depository.[31] Securities which are not shares may not be well-suited to the corporate-register option: for example, title to Eurobonds is recorded at one of the ICSDs.[32]

Ordinarily it makes sense for the operator of the settlement system also to be the provider of the central register of entitlement – the register of people who own the securities. However, this is not invariably the case. The root-of-title function of a CSD is in effect that carried out by a company's registrar, who maintains the official list of shareholders for the company's investor-relations and corporate governance purposes. In some countries, however, the roles of registrar and CSD may be distinct: as explained in **section 2.19**, in the United Kingdom a company's shareholder register may be maintained not solely at CREST but also by the company's registrar.

(2) *Central role*. Any accounts in which securities are held may be capable of constituting records of entitlement, even if they are not provided by a CSD.[33] Those accounts would not, however, be 'central', if they do not serve the whole market: it is, for example, possible for a custodian to provide such accounts, and even carry out settlements of securities

30 Terret, M-E, *Harmonisation of CSD legislation* (July 2011) European Commission DG Internal Market and Services, Unit MARKT/G2 Info-letter on post-trading, Issue 3, http://ec.europa.eu/internal_market/financial-markets/docs/infoletter/2011_july_en.pdf, p 10

31 CSDR, art 3

32 See **section 2.26**

33 See **section 6.4**

transactions without any change taking place at the root-of-title register.[34] But an essential characteristic of a CSD is that it carries out similar roles for the whole market – ultimately all investors depend on the central set of records provided by the CSD as to ownership of the securities, and for the central settlement system operated by the CSD to carry out transfers between accounts in order to give effect to changes in ownership.[35] The proposed Regulation's concept of the 'top tier level' is designed to give effect to the notion of centrality.

(3) *Other functions*. It might be noted that the European Commission has not regarded it as a defining characteristic of CSDs that they should actually act as a depository at all. Other functions of CSDs, such as being involved in corporate actions processing, fails coverage, or provision of credit for the purposes of facilitating settlement, are considered to be ancillary functions.[36]

2.19 In the United Kingdom, the Uncertificated Securities Regulations 2001[37] (USRs) set out the legal rules under which CREST, the UK CSD operated by Euroclear UK & Ireland (EUI), carries out its functions. The central provision of the USRs is that the 'Operator register of members' – that is, the set of records maintained at CREST by EUI – takes precedence over the entry of a person's name in a company's own register of members, in respect of shares held in uncertificated form.[38] The CSD therefore maintains the 'root of title' – the ultimate record of ownership, than which there is no better title. While the USRs make only limited provision for transfer between accounts maintained by the CSD, the context of the USRs is for the Operator to be approved by the Treasury to operate a 'relevant system', which is a 'computer-based system, and procedures, which enable title to units of a security to be evidenced and transferred without a written instrument'.[39]

2.20 In carrying out its settlement function, a CSD will accept transfer instructions from participants – in the course of a day, many thousands of securities of the same type may need to be transferred either from or to the name of a single participant. A CSD may operate by collecting in all the transfer instructions in respect of each security in advance and reducing them to a net delivery obligation or receive entitlement by a process of multilateral netting. It will immediately be seen that such a procedure could involve *British Eagle* risk, particularly as the CSD is unlikely to assume the role of central counterparty (although that may be the case in some countries). Some form of protection against insolvency challenge will be needed where a CSD adopts this structure. Alternatively, a CSD may transfer securities gross by acting upon each transfer instruction separately. CREST allows for either approach.[40] The 'net' (DNS) and 'gross' (RTGS) methods for acting upon instructions are discussed further in relation to settlement of payment obligations at **sections 2.33ff**.

34 See **section 2.22**
35 Cf European Commission Services, *Draft Working Document on Post-trading* (May 2006), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/draft/draft_en.pdf, para 2.1.3
36 CSDR, Annex
37 SI 2001/3755
38 USRs, reg 24(3)
39 USRs, reg 2(1)
40 See Euroclear, *Enhancing CREST: January 2008 – Competitive Clearing for the London Stock Exchange in CREST* (September 2007)

Agent banks

2.21 Given that CSDs operate the ultimate register of ownership it is important to protect the integrity of that register. Accordingly, only certain persons are accorded the privilege of giving instructions to the CSD to effectuate transfers of ownership. In the United Kingdom, such instructions are referred to as 'properly authenticated dematerialised instructions',[41] the sending of which requires authorisation under the Financial Services and Markets Act 2000.[42] An investor thus has a choice: to hold its securities directly in EUI, and to obtain authorisation, or to hire a duly authorised person to give instructions on its behalf. Indeed, the hiring of an authorised person may go further, so that the investor does not even hold its securities in its own name, but uses its intermediary as a custodian or nominee so that both the holding and the instructing are carried out by the intermediary.

Such intermediaries are sometimes referred to as 'agent banks', though there is no requirement in English law for the regulated activities of 'giving dematerialised instructions' or 'safekeeping and administering investments' to be carried out by banks. More commonly such intermediaries will be called 'custodians', though it can be seen that a settlement agent – a person who is engaged for the purposes of giving dematerialised instructions – need not have custody of the investments at all.

Agent banks will often have custody of their clients' assets – that is to say, will hold legal title to the assets themselves, but acknowledging that they do so as trustee on behalf of their clients who retain beneficial ownership[43] – but it is also possible for the agent bank to act as 'account operator'. Under an account operator arrangement, the agent bank does not in any sense hold the securities, but simply carries out the activity of giving dematerialised instructions. The account operator approach balances one policy objective of allowing investors direct ownership of their assets, without taking custody risk on an agent bank, with another, which is to ensure that dematerialised instructions (which can alter ownership rights and are potentially of systemic importance) are given only by those who are subject to regulatory oversight.

Internalised settlement

2.22 Custodian banks might, in theory, be able to 'internalise' the process of settlement in a similar manner to the 'internalisation' of clearing described at **section 2.10**. If both buyer and seller of securities happen to have custody accounts at the same agent bank, it should be possible to arrange for the obligation to deliver securities to be settled simply by an internal book transfer across the common custodian's books. (Indeed, this is what would be expected in the case of a cash transfer between account holders at the same bank. In such a case the transfer would be referred to as an 'on-us' settlement.)

There has, however, been some controversy over internalised settlement. There are a number of reasons, some of which are less edifying than others. A debate took

41 USRs, reg 35
42 Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/544, art 45
43 Cf **section 6.4**

place between agent banks, who claimed that market infrastructures such as CSDs were encroaching on their position in the market by acting as intermediaries, and others who claimed that the distinction between infrastructures and agents who provide access to infrastructures was artificial.[44] The European Commission's early efforts to understand the dynamics of the post-trade marketplace tended to see everything which followed the trade as part of a single 'clearing and settlement system' – the agent banks were thus part of the system. Whether in practice 'internalised settlement' is easy to do is a matter of conjecture: when settlement instructions originate at the trading platform, it would require special intervention by the agent bank to identify and extract from the ordinary settlement process those trades where coincidentally both buying and selling parties happened to be clients, as well as the operational capability to see that it acts for both buyer and seller so that instructions to the CSD can be cut out of the settlement process. Whether there was a policy problem with internalised settlement was not clarified. After a flurry of studies and commentaries,[45] the outcome is that 'settlement internalisers' (that is persons who execute transfer orders, as defined in the Settlement Finality Directive,[46] other than through a securities settlement system) must report to their regulator the volume and value of transactions they settle outside securities settlement systems.[47]

Target2-Securities

2.23 Target2-Securities (T2S) was introduced by the European Central Bank to remove some of the national differences between settlement practices in different CSDs. 'T2S will provide harmonised delivery versus payment (DvP) settlement in central bank money in a variety of currencies for almost all heavily traded securities circulating in Europe.'[48] Of the 15 Giovannini barriers discussed in **section 1.26**, T2S was intended to alleviate no fewer than six, and according to the European Post Trade Forum has helped to eliminate four completely or partially.[49]

The introduction of T2S does not in theory affect the basic functions of CSDs as described above. Rather, T2S provides a settlement engine to which participating CSDs will outsource the transfer functionality of the CSD, leaving the ultimate record of ownership function, and the legal responsibility for operating the central securities settlement system, with the CSD. CSDs are then to be free to offer enhanced investor and issuer services ('asset servicing') alongside their guardianship of title. This much is the theory. However, in practice T2S will

44 Cf **section 11.21**

45 See, for example, Citigroup, *The optimal market structure for clearing and settlement in the EU* (July 2004), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/2004-consultation/citigroup_en.pdf; Chan, D, et al, *The Securities Custody Industry* (August 2007), European Central Bank Occasional Paper No 68, www.ecb.eu/pub/pdf/scpops/ecbocp68.pdf; Committee of European Banking Supervisors, *Report on the outcome of CEBS's call for evidence on custodian banks' internalisation of settlement and CCP-like activities* (April 2009)

46 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

47 CSDR, art 9

48 European Central Bank, *T2S – Settling without borders* (November 2009), www.ecb.eu/pub/pdf/other/settlingwithoutborders_t2sbrochure112009en.pdf?1438a8761205a512ed5fef97467ba3e8, p 15

49 European Post Trade Forum, *EPTF Report* (May 2017), https://ec.europa.eu/info/publications/170515-eptf-report_en, section 3; see **Table 1.2**

control the registers of the CSDs during daylight hours, leaving the CSDs with no vital components for their basic statutory function.

2.24 T2S may be altering the post-trade landscape in continental Europe. The following comments may be made.

(1) The introduction of a single platform may eliminate the raison d'être of national CSDs, thus facilitating consolidation. Yet that is an idealistic view, paying inadequate regard to the idea of CSDs as symbols of national identity to be protected by their governments. CSDs, having outsourced their primary functions to T2S, will need to look for other activities to vitalise their existence. CSDs will find business development challenging, since the CSDR limits the business which CSDs are permitted to do.[50]

(2) The single platform may allow CSDs to offer one-stop settlement services for securities issued in many countries. This is because CSDs participating in T2S must comply with eligibility criteria,[51] which are designed to provide a level competitive playing-field, and force participating CSDs to offer accounts to other CSDs. In this way interoperability is assured. But, in practice, interoperability among CSDs requires intermediation.[52] Intermediation involves additional cost, as the intermediary will wish to take its fee; and intermediation by CSDs implies encroachment on the competitive space occupied by agent banks, which may be controversial.

(3) T2S itself may introduce cost. As service provider to CSDs, T2S will charge a fee; CSDs will not be viable as businesses unless they charge more.[53]

2.25 In a foretaste of Brexit, the United Kingdom opted not to join the T2S platform, to the evident disappointment of the European Central Bank. The main reason was described as 'governance', which would be the province of the T2S Governing Council. This was anathema to the Bank of England, as securities settled in CREST would typically be bought and sold for GBP, and the cash as well as the securities leg of transactions would be settled using the T2S platform. The Bank was determined to continue to have exclusive and direct control over sterling settlement in T2S, something which could not be reconciled with the T2S governance arrangements. 'This is of critical importance to the Bank because we must have a sterling settlement system that is both robust in its daily operation and under our control in terms of development and modification to meet our changing needs (for instance, as we modify our central bank operations from time to time, something that we have needed to do at short notice in response to the crisis).'[54] But Mr Jean-Michel Godeffroy, chairman of the T2S Programme Board at the European Central Bank, subsequently explained non-EUR currency participation:

> 'Because T2S only settles in central bank money, for T2S to be a genuine multi-currency system, non-euro central banks must be willing to outsource

50 Recital (20) and art 14(2)

51 Decision of the European Central Bank of 16 November 2011 establishing detailed rules and procedures for implementing the eligibility criteria for central securities depositories to access TARGET2-Securities services (2 December 2011), ECB/2011/20, OJ L 319/117

52 See **section 15.45**

53 Cf Lannoo, K, and Valiante, D, *Integrating Europe's Back Office – 10 years of turning in circles* (June 2009), ECMI Policy Brief No 13, www.ceps.eu/ceps/download/1673

54 Bailey, A, Chief Cashier of the Bank of England, letter to Gertrude Tumpel-Gugerell of the European Central Bank, 8 June 2009

the operation of part of their cash accounts to the Eurosystem. Non-euro central banks in T2S: they will open and close accounts at their discretion; they can decide whether or not to grant overdrafts; they can define the related collateral arrangements. As central banks they will have the same rights in T2S as the Eurosystem.'[55]

ICSDs and common depositories

2.26 International Central Securities Depositories carry out the same role as CSDs, except that they do so for 'homeless instruments'. They were established to serve the Eurobond market – that is, bonds issued by corporate issuers for international investors, typically in a non-domestic currency. Eurobonds, unlike domestic securities, do not have a natural CSD, but again they were once paper-based and securely deposited either with the Morgan Guaranty Trust Company in Belgium or Cedel in Luxembourg. The function of the ICSDs, backed by provisions of local legislation assuring ownership rights to investors, was to maintain a register of entitlement to the deposited instruments.

Once the two ICSDs had established themselves and were acting in competition, the question arose as to how an account holder at one ICSD could transfer title to Eurobonds to an account-holder using the other ICSD. This classic problem of interoperability required two developments: first, the opening by each ICSD of an account with the other; and secondly, that the paper instrument constituting the bond itself be held by a neutral third party who could maintain a root-of-title record as to the number of units/bonds held by each ICSD at any given time. The neutral third party is known as the 'common depository' for any particular issue of bonds, and the mechanism between the ICSDs which rebalances their respective accounts at the common depository is often referred to as the 'bridge' between the ICSDs.

What this leads to is the conclusion that the ICSDs may be international, but neither is truly 'central' nor is it a 'depository'. As with much terminology in clearing and settlement, the name is of historical interest but can engender confusion. The ICSDs are certainly infrastructures but serve the wholesale markets and are operated as private enterprises. This feature may be a valid distinction from the national CSDs, which guard title to shares which are invested in by the retail public, and which have historically been either in state ownership or closely supervised by national regulators as a matter of domestic public policy.

The role of the ICSDs has expanded rather beyond Eurobonds. The provision of securities accounts for their members is the central feature of their services, and this function can be put to many uses. These include traditional securities intermediation – effectively providing custody services in relation to securities for which the home (or issuer) CSD is elsewhere; collateral management; and settlement of other international securities such as global depositary receipts.

2.27 In a rare example of cross-border usage of a foreign CSD, Irish securities were historically settled at CREST in London. All that changed with Brexit: although it would still have been formally possible to continue to settle Irish securities transactions in a non-EU CSD, that would depend on an

55 Godeffroy, J-M, *What will T2S mean for the Asian custodian* (November 2011), speech at NeMa Asia Conference 2011

equivalence determination and recognition,[56] something altogether too uncertain for a stable future as the requisite status could be removed at any time and for political reasons. Rather than establish its own CSD, the decision was made to use another entity in the Euroclear group – namely Euroclear Bank SA/NV – which, until Brexit, was principally an ICSD rather than a CSD. However, ICSDs are treated in the same way as CSDs for the purposes of the CSDR. The reasons for choosing Euroclear Bank are unclear, but this was reportedly the preference of Euronext Dublin, the stock exchange on which Irish securities are primarily traded.[57]

In order to give effect to the move, the (Irish) Migration of Participating Securities Act 2019 enables Irish companies to resolve to migrate their shares to a new CSD. The 'title to the relevant participating securities will become and be vested' in the new CSD or its nominee 'for the purpose of the recording of those securities in book-entry form and the settlement of trades in respect of them being effected through that depository's settlement system'.[58] Nothing in the Act is 'to divest the security holders of their relevant rights or interests in the participating securities concerned'.[59] It appears to be left to Belgian law to ensure that the ownership rights of shareholders are preserved through and after the change; in the absence of an EU-wide code of property law specifying such rights where a cross-border chain of intermediaries is involved, it seems possible that some situations may arise where an unexpected difference arises between the common law systems of Ireland (including the rules set out in the Companies Act 1990 (Uncertificated Securities) Regulations 1996,[60] which are the Irish equivalent of the USRs) and the United Kingdom, on the one hand, and the civil law system of Belgium, on the other.

DvP

2.28 Securities settlement is, however, more complex than mere delivery and acceptance of securities between accounts at the CSD. Unless the transfer of securities is free-of-payment, there will need to be a countervailing payment between participants too. The CSD would typically not be responsible for the payment leg of securities settlements but will be connected to a payment system which will take care of this. The need for a connection between the CSD and the payment system involves analysis of the risk that delivery and payment may not be simultaneous or mutually conditional – the question whether there is settlement risk. The analysis of this is developed at **sections 18.2ff**. In the meantime, it is appropriate to consider the types and functions of payment systems.

TYPES OF CASH TRANSFER SYSTEMS

2.29 As observed in **section 1.16**, a distinction should be drawn between payment 'schemes', which set out the standards, rules and obligations for

56 See **sections 7.55** and **7.58**
57 Euroclear secures passporting rights from Central Bank, *Irish Times*, 20 July 2020
58 Migration of Participating Securities Act 2019, s 3(2)
59 Migration of Participating Securities Act 2019, s 3(3)
60 SI 1996/68.

creation and transmission of payment instructions, and 'payment systems' which bring about the clearing and settlement of payment obligations. Again, as with clearing and settlement of securities transfer obligations, infrastructures bringing about discharge are of various types, which ought first to be considered.

2.30 The following types of payment system may be identified.

(1) *Automated Clearing House (ACH).* Automated clearing houses are functionally similar to CCPs, in that they amalgamate and net payment obligations (though, crucially, they do not assume counterparty risk). A typical retail-payments system, such as Bacs in the United Kingdom, operates as a netting system with daily (or possibly more frequent) processing cycles. Details of the proposed payments are submitted to a central processing hub, which calculates a net payment due between each pair of participants. The net payment will take account of all payments due to flow in each direction between those participants. Sophisticated algorithms may be deployed to reduce the payment flows by identifying circular payments (X is due to pay 100 to Y; Y is due to pay 150 to Z; Z is due to pay 90 to X; 90 can be eliminated from the circle leaving net payments of 10 from X to Y and 60 from Y to Z). But in a 'pure ACH' model the payment system itself neither receives nor makes any payment. It generates a set of net payment obligations owing between its participants, which then need to be settled, typically by transfers across the books of the central bank using the central bank's RTGS. (See **sections 2.31**–**2.32**.)

(2) *Multilateral Netting System (DNS).*[61] A more advanced type of ACH provides a settlement function. As with a regular ACH, a DNS system will calculate all the payments due from each participant, and all the payments due to each participant, and net them off against each other, leaving a single net pay-in or pay-out for each participant for each cycle. In this case, the net payment obligations must be settled with or via the central hub, so a payment system operating as DNS system will need to hold an account at a bank, typically a central bank, to and from which transfers representing the net payments can be made. A corollary of this is that the payment system operator may receive deposits from its participants, even if on a very short-term basis, and will therefore expose its participants to credit risk on the payment system operator itself. The EBA Clearing EURO-1 system operates in approximately this manner, though the German law 'single obligation structure' leaves each participant not with a claim on the system operator but a claim on the other participants jointly (but not severally).[62] (See **sections 2.33**–**2.34**.)

(3) *Real-Time Gross Settlement System (RTGS).* Wholesale and large-value transfer systems operate by causing a debit of the payer participant's account and a credit to the payee participant's account on the books of the payment system operator. Typically, though not invariably, the operator is a central bank. Settlement of the payment obligations is achieved through these book transfers. (See **sections 2.36**–**2.37**.)

61 See **section 2.33** for explanation of the acronym

62 ECB, *Payment and Securities Settlement Systems in the European Union* (the Blue Book) (August 2007), www.ecb.eu/pub/pdf/other/ecbbluebookea200708en.pdf, vol 1, p 43; Kokkola, T, (ed), *The Payment System* (European Central Bank, September 2010), ISBN 978-928990632-6

(4) *Exchange of Value System*. Finally, where both parties to a transaction have payment obligations, it may be necessary to have a settlement system similar to a CSD which can move value in two opposite directions simultaneously. This would occur, for example, where a foreign exchange transaction is being settled, so that party A pays currency Ψ to party B at the same time as party B pays currency Φ to party A. The prime operator of this type of system is CLS. (See **sections 2.40**–**2.42**.)

ACHs

2.31 First, then, it is appropriate to look at the role of the ACH. An ACH is a 'clearing' system which assists bulk transfers of payments. Employers who need to pay employees, make dividend payments to investors, or run periodic settlement of outstanding invoices will wish to settle their obligations by providing a composite electronic file to their bank which contains the payees' bank details and the amounts concerned. Suppliers who collect payments from customers by direct debit will also wish to use the electronic file method for instructing their bank about the collections. To process each of these relatively small payments individually would be inefficient; an ACH interposing itself between the banks can collapse the multiple payment obligations into (typically) a net payment or net receipt by each bank, coupled with full information for the receiving banks (or, in the case of direct debit collections, the paying banks) of the accounts to (from) which the payments are due to be made. These net amounts may be settled bilaterally or after multilateral netting.

The role of the ACH can be illustrated by that of EURO-1, the multilateral large-value payment system for euro payments managed by EBA Clearing. EURO-1 is a net settlement system. It handles credit transfers and direct debits. Payment obligations are combined into a 'single obligation' – a pay-in or pay-out amount representing the net payment in respect of all other participants in the system, which automatically adjusts upon processing of each payment message sent or received by a participant. Balances are settled at the end of the day by payments into or out of a settlement account provided for EBA Clearing at the European Central Bank, unless the participating bank is required to pre-fund its settlement account. EBA Clearing also operates the 'STEP1' and 'STEP2' payment systems, which respectively enable banks which do not participate directly in EURO-1 to exchange payments with each other, and provide pan-European reachability for bulk credit and debit transfers in euro. Both STEP1 and STEP2 rely on EURO-1 as their infrastructure.[63]

2.32 While multilateral netting is at the heart of an ACH's operations, one contrast with the operations of a CCP should be highlighted. ACHs do not ordinarily take counterparty risk on their participants. Thus, while ACHs do modify payment obligations, they do not typically collect margin or need elaborate default rules to expunge unsettled transactions from their books. A participant with a net pay-in obligation (referred to as a participant with a short position) may be in breach of the rules and may cause an unwind of settlements if it does not pay, but the victims of non-performance will be the other participants in the ACH rather than the ACH itself. The effect of non-

63 EBA Clearing website, www.ebaclearing.eu/Legal-basis-N=E1_Legalbasis-L=EN.aspx; Kokkola, pp 180–183

performance in netting systems is, however, a troublesome issue, which will now be examined.

DNS systems

2.33 Payment systems relying on multilateral netting are commonly known as 'DNS' systems, originally standing for 'daily net settlement' or, because netting cycles may be completed more frequently than daily, 'deferred net settlement' or 'designated-time net settlement'. DNS Systems have various drawbacks:

(1) In the event of a payment default by a participant, there will be a net shortfall in funds. Unless one participant can be prevailed upon to provide the missing funds, it may be necessary for all the settlements in the system to be unwound.

(2) To minimise the risk of an unwind, the system may require participants to make available liquidity to plug a non-payment by a defaulter and, to minimise the risk to participants, may impose strict position limits. Another solution is to calculate the net pay-in of each participant, and to require prior payment-in from each participant before commencing the netting cycle; but this slows down the performance of the system and does not allow the continuous re-balancing of obligations which a sophisticated system like EURO-1 can provide. Yet another approach is to require participants to lock up collateral with the system operator. However, the method most commonly used is control at the gate: only the most robust banks are allowed to participate directly in the system.[64]

(3) The legal robustness of multilateral netting cannot be relied on in all jurisdictions, giving rise to the possibility that a liquidator of a failed participant (whether or not a net payer) seeks to unwind settlements, by invoking the *British Eagle* principle.[65] Designation under the Settlement Finality Directive[66] should protect the system and its participants from such an attack, but it cannot provide missing money.

Case Study 2.3 The collapse of Barings and the ECU clearing

'The unforeseen collapse of Baring Brothers at the end of February 1995 caused a problem in the ECU clearing. On Friday, 24th February one clearing bank had sent an ECU payment instruction addressed to Barings' correspondent for a relatively small amount for value on Monday, 27th February. After the appointment of an administrator to Barings on 26th February the sending bank sought to cancel the instruction but it found that the rules of the ECU clearing did not permit this; moreover, the receiving bank was legally unable to reverse the transaction. As it turned out, the sending bank happened to find itself in an overall net debit position in the clearing at the end of the day. Under pressure of time the bank agreed to cover that position by borrowing from a long bank, so enabling the settlement of more than ECU 50 billion in payments between

64 Kokkola, p 181
65 See **Case Study 2.1**
66 See **section 13.30**

the 45 banks participating in the clearing eventually to be completed on the due date.'[67]

What was going on here? Barings' correspondent was a net payer-in in the ECU clearing but unwilling to perform owing to the risk it was taking on its now insolvent client. A small unperformed pay-in obligation due from the sending bank jeopardised the whole clearing until the loan was made. The loan from the long bank (a net payee-out) created a new payment obligation in favour of the clearing bank which could cancel out the clearing bank's short position; now there was no shortfall of money in the system compared with pay-in obligations of the participants. So far, so good.

The 'solution' adopted to ensure that the payments went ahead was, however, a fudge. The long bank had to lend to the recalcitrant sending bank – taking credit risk on a bank which, although itself not insolvent, was known to be exposed to Barings and to be unwilling to perform its own obligations in the clearing. The loan made through the system meant that the long bank did not achieve full payment of its entitlements as net recipient and therefore did not achieve finality of settlement. That could have caused liquidity problems for the long bank. What is not answered is how the situation would have resolved if none of the long banks had been willing to step up with a loan.

2.34 Not all payment obligations are cleared through an ACH, and even an ACH needs to arrange for settlement of the net payments into or out of the system. At some point, cash needs to change hands. But the mysterious process of 'transfer' of cash needs elaboration. Unless someone is going to stuff wads of paper currency into their pockets and walk up the street, 'transfer of cash' will involve account entries at banks.[68] The process was analysed by Staughton J in *Libyan Arab Foreign Bank v Bankers Trust Co*,[69] in which the Libyan Bank demanded payment of $131m standing to the credit of their account with Bankers Trust.

> 'An account transfer means the process by which some other person or institution comes to owe money to the Libyan Bank or their nominee, and the obligation of Bankers Trust is extinguished or reduced pro tanto. "Transfer" may be a somewhat misleading word, since the original obligation is not assigned (notwithstanding dicta in one American case which speak of assignment); a new obligation by a new debtor is created.'

The judge went on to describe three methods by which an account transfer might be effected: by both payer and payee having accounts at the same bank, which could effect a book-entry 'transfer' by simultaneous credit and debit of the payee's and payer's accounts ('correspondent transfer'); by credit to the account of a third party who banked with Bankers Trust (the payer bank) ('in-house transfer'); and by a complex set of transfers via intermediaries, whereby for example payer banks with B, who banks with C, and payee banks with E who banks with D, and C and D each have accounts with a Federal Reserve bank,

67 Bank for International Settlements, *Settlement Risk in Foreign Exchange Transactions* (March 1996), www.bis.org/publ/cpss17.pdf?noframes=1, p 8
68 Cf **Chapter 5**
69 [1989] QB 728

with credits and debits being made at each stage in the chain ('complex account transfer'). But the point was that any of these methodologies required that 'sooner or later, if cash [notes and coins] is not used, there must be an in-house transfer at an institution which holds accounts for two beneficiaries, so that the credit balance of one can be increased and that of the other reduced'.

2.35 Payment systems are mechanisms for distilling the many payments due between account holders at different banks into aggregate net payments which will ultimately be discharged through book transfers. Payments infrastructure thus ultimately depends on the existence of banks where any payment obligation can be settled through account transfer – that is, absent any other bank with which all the participants hold accounts, the central bank.

RTGS systems

2.36 Central banks may arrange for payments to be processed by a settlement system of the DNS type, or, more commonly, rely on real-time gross settlement (RTGS) methodology.[70] The principle behind RTGS is that each payment obligation is separately and immediately processed, subject only to the payer having a sufficient balance, and participants make or receive a separate payment into or from the system for each payment. Payers must pay in or borrow in order to fund each payment; if a payer has no funds in the system at the time of the payment, that payer may borrow (subject to provision of collateral) or the payment will fail. The principal drawback of RTGS systems is that they are very intensive users of liquidity. Unless some kind of optimisation algorithm is used, a payer may have to wait for payments to which it is entitled to settle in its favour before it can settle any of its own obligations. So RTGS systems need someone to 'prime the pump', by crediting their account with sufficient funds to start the chain of settlements going, to avoid the system freezing up.

2.37 Modern RTGS systems use a complex set of queuing rules, netting and 'circles processing' to eliminate such blockages. Queuing rules ensure that transactions are processed in the order which minimises the amount of liquidity needed.[71] Netting rules will allow mutual bilateral payment obligations to be settled by a transfer of only the net amount due. Circles processing identifies money moving in a circle (A owes B 60, B owes C 50, C owes A 70) where elimination of the circular payment reduces the liquidity required (if A pays B 10 while simultaneously C pays A 20, all three payment obligations are then discharged). Typically a circles processing algorithm involves, on a small scale, multilateral netting (in this example, A's account will be credited with a net payment of 10, B's account will be credited with a net payment of 10, and C's account will be debited with a net payment of 20, with all three entries happening simultaneously). RTGS algorithms may also take circles processing one step further and operate, in very short timescales, DNS-type multilateral nettings.

Nevertheless, RTGS systems will usually be coupled with a formal borrowing arrangement to enable smooth running. Central banks depend on repo facilities to do this without damaging monetary policy. In the eurozone, the situation is more

70 Fry, M, 'Risk, Cost and Liquidity in Alternative Payment Systems' (February 1999) *Bank of England Quarterly Bulletin*

71 See Fry, pp 82–83 for an example

complex because there are multiple central banks, and the possibility arises of providing repo collateral to a different central bank from that which is providing liquidity. Euro settlement arrangements are provided through TARGET-2, and cross-border repo collateral via CCBM2, which are centralised facilities under the oversight of the European Central Bank.

TARGET-2 and CCBM2

2.38 TARGET-2 is not truly a settlement system. It is, rather, a settlement engine. When an account-holder at one national central bank (NCB) wishes to transfer funds for the account of another account-holder, the processing of debits and credits to the accounts of the participants is effected by software (TARGET-2) provided at the ECB.[72] In effect, the NCB has outsourced to the ECB the responsibility for providing the engine driving its settlement process. Each NCB in the eurozone has done the same thing, with the advantage that all settlements in euro will be done in a common manner and subject to the same procedural rules and standards.

2.39 CCBM2 is the mechanism by which an NCB can provide liquidity to its own participant even if that NCB itself holds no collateral at all for the participant in question. 'CCBM' stands for 'correspondent central bank model', implying that another NCB would receive the collateral on behalf of the liquidity-providing NCB, acting as its correspondent bank and collateral agent. CCBM2 develops this notion by standardising the operational processes and technical requirements and centralising the collateral management engine within the ECB. CCBM2 also allows for collateral posted by a participant with any NCB to be reallocated or released, so as to minimise the amount of securities locked-up as collateral for liquidity purposes.[73]

Case Study 2.4 Bankhaus Herstatt and settlement risk

'On 26th June 1974 the Bundesaufsichtsamt für das Kreditwesen withdrew the banking licence of Bankhaus Herstatt, a small bank in Cologne active in the FX market, and ordered it into liquidation during the banking day but after the close of the interbank payments system in Germany. Prior to the announcement of Herstatt's closure, several of its counterparties had, through their branches or correspondents, irrevocably paid Deutsche Mark to Herstatt on that day through the German payments system against anticipated receipts of US dollars later the same day in New York in respect of maturing spot and forward transactions. Upon the termination of Herstatt's business at 10.30 a.m. New York time on 26th June (3.30 p.m. in Frankfurt), Herstatt's New York correspondent bank suspended outgoing US dollar payments from Herstatt's account. This action left Herstatt's counterparty banks exposed for the full value of the Deutsche Mark deliveries made (credit risk and liquidity risk).'[74]

72 European Central Bank, *Information guide for Target2 users* (October 2009), www.ecb.int/paym/t2/shared/pdf/infoguide_V3_1_0.pdf

73 European Central Bank, *Target2 and CCBM2: Drivers of efficient liquidity management* (September 2009), slide presentation

74 Bank for International Settlements Committee on Payment and Settlement Systems, *Settlement risk in foreign exchange transactions* (March 1996) p 6

'Herstatt risk' is the name sometimes used to describe any situation where the reliability of DvP (delivery versus payment, or in the foreign exchange context, payment versus payment or PvP) is not assured. The parties bear 'principal' or 'gross' settlement risk on each other, because of the risk that the first party to perform pays away the full gross amount of the transaction and may get nothing at all in return. This is far more serious than 'net' or 'market' risk, which occurs where either the countervalue was received but is less valuable than what was disposed of, or neither party performed at all (in which case the non-defaulting party has lost only the replacement cost of the transaction).

CLS

2.40 The CLS system was established specifically to address the problem of settlement risk in foreign exchange transactions. 'CLS' stands for 'continuous linked settlement', which describes the two central notions which underlie CLS: payment-versus-payment (PvP) on a real-time gross basis.

At the moment of settlement, a foreign exchange transaction requires one bank to transfer X amount of one currency in return for a transfer of Y amount of another currency. Before CLS, this could not be done without one bank taking the risk that it would pay in full and receive nothing in return, because the other bank had failed before making its payment. This problem materialised in actuality in the case of the failure of Bankhaus Herstatt in 1974, giving rise to the inevitable spate of litigation.[75] It is perhaps remarkable that it took 25 years for the problem to find a solution.

The solution is a bank, CLS Bank International, which provides settlement accounts for each of its 70 or so participants. Once Bank A has the amount which it is to pay credited to its account, and Bank B has the amount which it is to pay credited to its account, then CLS Bank can simultaneously debit and credit the two accounts so that both banks' obligations are discharged at exactly the same moment. Thus, settlement risk is eliminated, except inasmuch as both Banks A and B are taking credit risk on CLS Bank while their currency is deposited there.

2.41 In practice it is slightly more complicated than this. Participants submit to CLS in advance of settlement day a file with the transactions which they propose to settle for their own account and for their clients. CLS responds to each participant with a pay-in and withdrawal schedule for each currency, and the participant must pay in to its account at CLS, via the large-value transfer system for funds denominated in each pay-in currency, the requisite amount. CLS Bank thus needs to have an account at the central bank for each participating currency, in order to be able to receive pay-ins and from which to disburse pay-outs. For the euro, which is a currency with many central banks, CLS has an account with the European Central Bank.[76]

CLS operates complex algorithms for optimising settlement, including circles processing and partial settlement, and relying on the credit balance of a participant

75 See, for example, *Momm v Barclays Bank* [1977] QB 790

76 European Central Bank, *Explanatory memorandum on the recommendations concerning CLS payments in euro* (February 2001), www.ecb.int/paym/pdf/pol/clsmemo.pdf

in one currency as collateral to cover an overdraft in another currency in order to allow settlements to take place which might not otherwise be possible. Clearly a participant will be unable to withdraw funds if they are still acting as collateral, or if overall CLS has an insufficient amount of that currency because it is still awaiting a pay-in from another participant.[77]

2.42 CLS should be distinguished from a CCP. Foreign exchange contracts are not novated to CLS Bank in the way that they were historically novated to ECHO, a CCP set up specially for clearing of such trades, or as in LCH Limited's ForexClear service. CCPs are designed to manage counterparty defaults in the period between trade and settlement: they are less well-suited to handle settlement risk, that is the danger in an exchange-of-value transaction that Party X performs in full, then Party Y defaults before it has performed at all. CLS, by contrast, is designed specifically to address settlement risk, but not pre-settlement risk. CLS does not have a close-out mechanism and does not take margin to help participants replace lost value on transactions which a failed counterparty will no longer perform. However, it has been noted that CLS does perform some of the ancillary functions that a CCP might undertake, such as trade matching and netting of pay-in and pay-out amounts.[78]

Direct and indirect participation

2.43 The operator of a system which settles payments is evidently exposed to risk, particularly if the participant becomes insolvent. Criteria for participation in systems will therefore aim to exclude from membership any applicant which might introduce an excessive amount of risk.[79] And, as explored in **section 11.12**, competition law will expect the criteria for membership of any system which amounts to an infrastructure to be transparent, non-discriminatory, and justifiable in terms of objectivity and proportionality. Accordingly, many financial institutions and end-users of payment and settlement services will find themselves unable to meet the requirements for direct participation in a system and will therefore need to hire a direct participant to provide them with access. The risk is thereby shifted from the operator of the system to the direct participant, which will under system rules be exclusively responsible for the obligations inherent in its participation and the settlement instructions which it submits.

Another reason why one financial institution may need to hire another in order to access a payment or settlement system is cost. Even where a bank is able to meet the eligibility criteria for direct participation, the volume of settlements processed in the relevant currency may not merit the investment required for direct participation. In such cases indirect participation may be preferable notwithstanding the counterparty risk being assumed.

77 Hills, B, and Rule, D, 'Counterparty credit risk in wholesale payment and settlement systems' (November 1999) Bank of England Financial Stability Review, p 107; Mägerle, J, and Maurer, D, *The Continuous Linked Settlement Foreign Exchange System (CLS)* (November 2009), Swiss National Bank Report, www.snb.ch/en/mmr/reference/continuous_linked_settlement/source; Kokkola, pp 183–186

78 Manning, M, Heath, A, and Whitelaw, J, 'The foreign exchange market and central counterparties' (March 2010) *Reserve Bank of Australia Bulletin*, www.rba.gov.au/publications/bulletin/2010/mar/8.html

79 See **section 16.12(1)**

2.44 The position of a direct participant providing access services to a payment system can be regarded as formally analogous to that of an internalising GCM, discussed at **section 2.10**, in that the direct participant may be operating, on a larger or smaller scale than the system itself, a payment or settlement system in its own right. This problem is referred to as 'tiering'.[80] The direct participant that agrees to provide an access service will therefore wish to have regard not just to the risk issues ordinarily inherent in providing settlement services to a client,[81] but also to the extent to which it is itself providing a multilateral netting system, with the regulatory and special risk implications that brings. In particular, the United Kingdom Treasury has power under section 184 of the Banking Act 2009 to 'specify' an inter-bank payments system as a 'recognised system', which would have the effect of subjecting the system to the regulatory regime described in **section 8.3**. There is no requirement for a recognised system to be legally organised in any particular way or to be incorporated as an infrastructure entity: it is sufficient that the system is of systemic importance.[82]

2.45 Indirect participants will also appreciate that indirect access to a system will involve the indirect participant taking risk on the access provider. Direct participants may wish to point to the protection given to 'participants' in settlement systems which are designated under the Settlement Finality Directive, but that protection is only available in respect of the defaults of other *participants* in the system.[83] Indirect participants can, in theory, be granted protection,[84] but only if they themselves are regarded as of systemic importance. To identify any institution as systemically important is practically the same as saying the institution is 'too big to fail', and before the Financial Stability Board developed a practice of publishing a list of systemically important financial institutions,[85] there was limited appetite for branding banks as 'systemically important' in Europe.[86]

DISTRIBUTED LEDGER TECHNOLOGY

2.46 Since the emergence of Bitcoin and other cryptocurrencies there has been a good deal of interest in the potential of applying similar approaches – distributed ledger technology (DLT) – to financial services, and in particular, to post-trade. In this brief review it is not possible to explore every angle of the possible new developments, but perhaps it is not necessary to do so given that most realised projects have been experimental in nature,[87] and mature solutions still (as of 2020) seem some way off. Accordingly, the approach taken here is to look at the potential use cases in the post-trade environment, and to identify some of the more prominent issues associated with the new technology. To begin with, it may be desirable to introduce some of the novel concepts.

80 See **section 7.11(9)**
81 See **Chapter 19**
82 Banking Act 2009, s 185(1)
83 See **section 13.30**
84 Settlement Finality Directive, art 2(f)
85 Financial Stability Board, *Policy measures to address systemically important financial institutions* (November 2011), www.financialstabilityboard.org/publications/r_111104bb.pdf
86 European Commission, *Evaluation report on the Settlement Finality Directive 98/26/EC (EU25)* (March 2006), COM (2005) 657 final/2, p 6
87 Cf International Monetary Fund, *Distributed ledger technology experiments in payments and settlements* (June 2020), www.imf.org/en/Publications/fintech-notes/Issues/2020/06/25/Distributed-Ledger-Technology-Experiments-in-Payments-and-Settlements-49251

- *Distributed ledgers*. The central idea in the new financial technology approach is that the 'ledger' – typically, in the traditional environment, a register of ownership or an account – is not held by a single person in a single place, but simultaneously in multiple places, each version constituting a perfect copy of the other. The advantages could include greater resilience to cyber-attack and lower dependence on a single intermediary. Clearly, the technology needs to ensure that all copies of the ledger update simultaneously. The actual content of the ledger need not be the traditional record of single asset classes.
- *Block chains*. Updating the ledger may (but need not) be achieved by posting collections of new, approved, transactions. Each collection is called a 'block' and is added to the ledger when duly verified by a sufficient number of the participants in the system who have authority to do so. In this way, the 'ledger' is less a register of ownerships than a record of all preceding valid transactions; it might be thought of as analogous to the way title to land was proved in England and Wales before 1926, when it could only be done by producing a documentary history of valid transfers ('title deeds'). The most important component of the block chain is not the blocks, but the validation mechanism and the protocol by which consensus among holders of the distributed ledger is reached as to the validity of the block to be added. Even if transactions are not added to the ledger in blocks, this issue will be relevant to any distributed ledger.
- *Smart contracts.* The ledger itself may be equipped with self-executing code which can identify when a transaction's conditions are satisfied (for example, that the buyer has cash, and that the seller has the deliverable asset) and effectuate performance automatically. Such functionality is described as a 'smart contract'.

Distributed ledgers may offer the most convincing financial services opportunities in trade finance (repeated complex document examination), cross-border payments (multi-intermediary chains of correspondent banks), anti-money-laundering (identity verification), and physical commodity trading (status of warehoused goods); none of these is especially germane to the post-trade environment. 'The industry has identified five main pain points that DLT could address: security, speed, transparency and traceability, risk and cost management.'[88] Applying that to post-trade, the use cases for DLT could include the following.

- *DvP.* Where the assets to be exchanged exist, as is traditionally the case, on different registers, achieving DvP can be challenging. A ledger could be designed in a DLT environment on which both types of asset may exist together, thus enabling DvP. Inter-conditional reciprocal simultaneous settlement effectuated by a smart contract is sometimes called 'atomic settlement'.[89] 'DvP' solutions need not be restricted to cash against securities, but could be cash against cash (PvP) or securities against securities (collateral management).

88 OMFIF and CCB University, *The role of blockchain in banking – Future prospects for cross-border payments* (May 2020), www.omfif.org/wp-content/uploads/2020/05/The-role-of-blockchain-in-banking.pdf

89 Cf. Bech, M et al., *On the future of securities settlement* (March 2020), *BIS Quarterly Review*, pp 67–83

- *Automation of risk management.* Where a transaction involves deferred settlement, counterparty risk will arise. This can be managed through clearing or, where no CCP is involved, bilateral exchange of margin. DLT has the potential to allow for improved netting, real-time margining, and more efficient allocation of collateral. An example is the bilateral payment-netting system CLSNet introduced in 2018; it might be noted, though, that the functionality of the system has similarities to netting structures such as TriOptima which do not rely on DLT.
- *24-hour settlement.* Settlement systems are currently constrained in that they have opening hours and settlement cycles. Continuous 24-hour settlement, regardless of the primary time-zone of the asset, is seen as having the potential for reducing pre-settlement risk and Herstatt risk.[90] The issues arising with real-time settlement are discussed above in **section 2.36**.
- *T+0 settlement*. Properly authenticated bargains recorded to the ledger could be settled instantly. T+0 settlement would eliminate counterparty risk and thus the need for the interposition of any form of clearing or margining. Faster processing, particularly as regards receipt of assets or cash are concerned, appears self-evidently worthwhile. Nevertheless, a move to T+0 has its drawbacks, as discussed further in **section 3.13**, whether or not the interests of intermediaries, which in the traditional model receive processing fees for handling post-trade pre-settlement activities, are taken into account.
- *Cross-border payments*. 'The cross-border payments system relies heavily on correspondent banking networks facilitated by financial intermediaries at multiple levels. A correspondent bank will have either a nostro or vostro account with a counterpart bank in another country … Correspondent banks participating in a transaction must still process the messages individually on their back-end and subsequently settle any transactions through foreign exchange markets.'[91] DLT could alleviate the cost and inefficiency of these processes by adding interoperability, security and faster settlement.
- *Digital currency.* With the development of alternative financial assets such as bitcoin, the possibility of currency-substitutes which act as a means of payment, but without the credit risk inherent in commercial bank deposits or the volatility and opacity of cryptocurrencies, has been promoted by various bodies both private and public. Several central banks have explored the possibility of introducing a tokenised form of money, central bank digital currency (CBDC). CBDC would be a substitute for notes and coins for use by 'real economy' participants, such as businesses and retail users. Like the balances held by banks at central banks, it would exist on the distributed ledger as 'central bank money', but could be held directly by end-users, who might gain direct access to payment systems.[92] The economic role of commercial banks in such an environment would be significantly changed.

Finally, it may be appropriate to set out some of the issues which can arise with DLT.

90 See **section 2.40**
91 OMFIF/CCBU paper
92 Cf Bank of England, *Central bank digital currency* (March 2020), Discussion Paper

- *Verification*. Some DLT offerings, such as Bitcoin, rely on a 'proof of work' protocol to validate a block of transactions. The work involved will typically be a brute-force cryptanalytical task such as finding the two enormous prime numbers which constitute the only factors of an even larger number. The adoption of such a protocol, which demands very large computing resources, makes little sense unless the blockchain operates on an open access model and the amount of effort is a deliberate disincentive to minimise casual alteration of the ledger: alteration is only possible if enough participants have undergone the proof-of-work, for which they have to be rewarded in some way. In post-trade, the proof-of-work model is unlikely to be feasible for efficiency reasons, as the Canadian experience with 'Project Jasper' implies.[93] Instead, proof of identity is likely to be preferred. That model implies that access to modify the ledger will be available only to a limited class of persons holding permission,[94] in a fashion similar to the permission needed under the Regulated Activities Order in the United Kingdom to send properly authenticated dematerialised instructions to CREST.[95] Authentication of a change to the ledger could be achieved, in this oligarchic environment, when a sufficient number of participants have agreed that the change proposed has originated from a duly authorised participant, with authorisation and identification proved by established cryptological methods such as an RSA or AES 256-bit standard. Managing the security of cryptological keys is a non-trivial problem, which can be exacerbated in a distributed environment.
- *High volumes and mass access*. One difference between a central ledger (such as the register of ownership at a CSD) and a distributed ledger is the need for many parties to carry out a process of validation approximately simultaneously and to achieve consensus, without loss of security. The protocols needed for those steps may consume large amounts of computing power at each participating 'node' in the network. A centralised ledger avoids that redundancy and may be able to manage with lower security and authentication standards because it relies on other means, such as membership criteria and its own validation checks, to ensure correctness. Whether it is technically feasible for DLT to achieve the high-speed processing rate suited to high-volume markets is unclear, especially if direct retail access to the ledger is part of the design.
- *Competition and standards*. Where an oligarchic model is chosen, the standards (including those relating to communication protocols, security, authentication of participants, validation of transactions, smart contract functionality, encryption and more) will need to be set. Competition policy has traditionally scrutinised and intervened in the (potentially exclusive) process of setting such standards, as discussed in **section 11.34**. The extent to which competition issues can be overcome within the context of a 'regulatory sandbox' remains to be seen.
- *Blockchain interoperability.* Insofar as an asset (or the record of ostensible ownership of the asset) may need to be 'transferred' from one blockchain

93 See OMFIF and IBM, *Central bank digital currencies* (September 2018), www.omfif.org/ibm/, section 5

94 Cf Lewis, R, McPartland, J, and Ranjan, R, *Blockchain and financial market innovation* (June 2017), Federal Reserve Bank of Chicago Economic Perspectives vol 41, no 7, pp 2–12; Bank of England CBDC Discussion Paper

95 Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/ 544, art 45

to another, a question of interoperability arises. It may be possible to replicate the chain of title, or parts of it, onto the transferee blockchain, but this is likely to involve a vast amount of data and computer processing, depending on the protocols involved.

- *Tokenised assets*. The ledger may record assets, including new classes of asset, as 'digitised tokens'. In essence a digitised token may not differ greatly from a book-entry security, except that its status as property may be even less clear than in the case of book-entry securities.[96] Where a cash balance is recorded on an account, it is something owed; where it is a 'token', it may be something owned, and thus not dependent on the solvency of any intermediary; if access to the token does not depend on the offices of any intermediary, tokenisation may also imply the elimination of custody risk. How to determine the status of the thing is challenging. A further observation is that if the ledger consists of a record of transactions, rather than a register of title, there is no 'notary' function as envisaged by the CSDR.[97]
- *Other legal* issues. Numerous other legal issues may arise.[98] In reference to post-trade business, it is far from clear that the Settlement Finality Directive[99] and statutory finality would apply to settlement done on a distributed ledger. A distributed ledger may exist in many jurisdictions, giving rise to a question about the applicable law (especially as regards property and insolvency law issues). The Committee on Payments and Market Infrastructures has attempted to assist analysis of questions which may arise with an analytical framework, issued in 2017.[100]

In conclusion, it may be observed that distributed ledgers are not necessary to achieve many of the innovations which can sometimes be promoted as benefits of DLT technology. Mr Alan Marquard of the CLS Group was reported as saying '"I have been very clear from the first time we conceived of CLSNet, that it didn't have to be run on blockchain" … CLS could have opted for "a centralized way of doing the calculations".'[101] One might conclude that DLT and its benefits are a catalyst for new developments rather than the only manner in which those developments might be realised.

96 For an English law analysis of virtual currency and ownership, see Gleeson, S, *The Legal Concept of Money* (July 2018), Oxford University Press, chapter 9. For an American analysis of tokenised assets generally, where the status of book entry securities is clearer, see Krimminger, M, Lloyd, C, and Rocks, S, *Custody and Transfer of Digital Assets: Key US Legal Considerations* (October 2019), in Global Legal Insights, *Blockchain & Cryptocurrency Regulation 2020*, www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations

97 Cf European Post Trade Forum, *EPTF Report Annex 3* (May 2017), https://ec.europa.eu/info/sites/info/files/170515-eptf-report-annex-3_en.pdf, section 8.3.1.1

98 Cf EPTF Report, section 8

99 Directive 98/26 of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

100 Bank for International Settlements Committee on Payments and Market Infrastructures, *Distributed ledger technology in payment, clearing and settlement – An analytical framework* (February 2017), CPMI Paper No 157

101 Coindesk.com, *Foreign exchange giant CLS admits: No, we don't need a blockchain for that* (October 2019), www.coindesk.com/foreign-exchange-giant-cls-admits-no-we-dont-need-a-blockchain-for-that

3 Trading

BEFORE THE POST-TRADE

3.1 Without a trade there is no need for post-trade services. A brief overview of trading structures will provide context to the discussion of post-trade issues, as in some respects the manner in which the trading is done shapes and constrains the post-trade services too.

3.2 There are essentially two ways in which a trade in any product can be carried out: either privately (usually referred to as over-the-counter (OTC)) between buyer and seller, who have to seek each other out, or hire brokers to do so; or in an organised marketplace. In some European countries it was considered undesirable to have trading OTC, presumably because private trading impairs the process of price discovery: in those countries it was mandatory for equities trading for retail customers to be carried out on an official stock exchange. This practice – of limiting retail transactions to regulated markets – was known as the 'concentration rule' and was expressly permitted by the Investment Services Directive (ISD)[1] until its repeal in 2007.

3.3 In other countries, such as the United Kingdom, trading has been permitted outside the stock exchange, but an OTC trade carried out by a member of the stock exchange would be treated as an on-exchange trade for certain purposes such as price transparency.[2] Rules such as these had three principal effects:

(1) The cleanliness of the market and the quality of service provided to investors was under the supervision of the stock exchange, which had a regulatory role. For example, to take the United Kingdom again, it is a condition of recognition as a 'recognised investment exchange' that the exchange 'must ensure that business conducted by means of its facilities is conducted in an orderly manner and so as to afford proper protection to investors,' and it 'must be able and willing to promote and maintain high standards of integrity and fair dealing … in the course of using the facilities provided by the exchange.'[3] By concentrating the trading, and in particular control over the disclosure of prices formed by intermediaries, into the hands of the stock exchange, a high degree of integrity could be assured in respect of the stock-exchange's officially published prices of securities; and consequently investors could be assured of 'best execution' of their orders without the need for excessive scrutiny of the conduct of brokers.

1 Council Directive 93/22/EEC of 10 May 1993 on investment services in the securities field
2 Cf London Stock Exchange, *Rules of the London Stock Exchange* (March 2016), r 3000.3
3 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001, SI 2001/995, Schedule, paras 4(1) and 6(1)

(2) Data relating to the price of securities traded on an official exchange was firmly under the control of the exchange. Exchanges' income derives partly from charging trading fees, and partly from selling information about stock prices and movements.

(3) Post-trade clearing and settlement structures were geared around the exchange as the fount of trading. Operational arrangements were set up so as to ensure efficient communication between the exchange and the clearing and settlement infrastructures. In some countries, this was achieved by co-ownership of the trading and post-trading infrastructures; in others, by devising straight-through-processing methodologies. In still others, specific local-market arrangements could be added into the system – for example the tax (stamp duty or stamp duty reserve tax) due on transfers of securities in the United Kingdom is monitored by CREST.[4]

THE COMPETITION IMPERATIVE

3.4 In 1996, concentration rules were in place in Belgium, France, Italy, Spain, Portugal and Greece.[5] But anything which has a monopolistic appearance will be under competition scrutiny in Europe, and trading infrastructures are no exception. In a review of 2000, the European Commission remarked:

> 'The concentration rule of Art. 14(3) of the ISD offers Member States the option of requiring the execution of transactions in certain financial instruments on a "regulated market". This provision was intended to enhance investor protection by limiting "off-market" transactions to professional investors. However, trading in financial instruments could be artificially diverted to a particular regulated market. Investor protection is better served by appropriate provisions addressed to market participants acting on behalf of investors, and by strict enforcement of "best execution" requirements. In order to avoid arbitrary or disproportionate restrictions on competition between "regulated markets", it may be appropriate to examine the continued rationale and/or present form of the "concentration rule". Article 15(5) ISD empowers Member States to restrict the establishment of new markets on their territory. … However, the current provision should be reviewed to ensure that it is not used to obstruct the activities of "regulated markets" authorised by partner country authorities.'[6]

THE MIFID ENVIRONMENT

3.5 In countries which did not have a formal concentration rule, alternative trading methods and venues began to develop. When the Investment Services Directive came up for review, a regime permitting 'multilateral trading facilities' (alternative trading venues) and internalised execution was expressly introduced,

4 See **section 22.5**

5 European Commission, *Investment Services Directive: A European passport available to investment firms from 1 January 1996* (February 1996) Single Market News

6 European Commission, *Upgrading the Investment Services Directive (93/22/EEC)* (November 2000), Communication to the European Parliament and the Council, COM(2000)729 final, p 14

with a view to injecting competition among providers of execution venues.[7] In the result, the Markets in Financial Instruments Directive (MiFID[8]) and an accompanying regulation, MiFIR,[9] contain various options for trading, which must be recognised by Member States:

(1) *Regulated markets*. The old-style stock exchange is called a 'regulated market' in MiFID, and twelve articles of MiFID are devoted to their regulation and duties.[10] Regulated markets provide services going beyond those of alternative trading platforms, in that they must have rules relating to the admission to trading (and removal from trading) of financial instruments.[11] The transparency obligations of competitor trading venues depend on whether an instrument has been admitted to trading on a regulated market, so the position of regulated markets remains essential notwithstanding any fall in their market share of trading activity. Regulated markets also have to ensure that financial instruments which they admit to trading are capable of being traded in a fair, orderly and efficient manner, and that transferable securities are freely negotiable.[12] Finally, regulated markets have to allow a degree of choice over clearing and settlement arrangements to their participants.[13]

(2) *Multilateral trading facilities*. Alternative trading venues where more than two brokers can come together collectively to hunt out the best price are inelegantly termed 'multilateral trading facilities' (MTFs) in MiFID. An MTF is defined as a multilateral system, operated by an investment firm or market operator, which brings together multiple third-party buying and selling interests in financial instruments – in the system and in accordance with non-discretionary rules – in a way that results in a contract.[14] The central difference between an MTF and a regulated market is that MTFs are regulated in the same way as investment firms (brokers), rather than being subject to their own regulatory regime. However, the regime for investment firms is supplemented in the case of MTFs by rules dealing with issues such as pre- and post-trade transparency of prices, trading processes, admission of participants and choice of clearing and settlement arrangements,[15] so the distinctions are in practice not so great as might be imagined. The transparency obligations regarding prices applied only to shares and depended on the instrument being admitted to trading on a regulated market.

(3) *Dark pools*. Regulators have the power to exempt a regulated market or MTF from the obligation to publish pre-trade bid and offer prices 'based on the market model or the type and size of orders.'[16] This opt-out facilitated the development of 'dark pools' where unusual orders, which

7 See European Commission, *Communication from the Commission to the European Parliament and the Council – Upgrading the Investment Services Directive (93/22/EEC)* (November 2000), http://ec.europa.eu/internal_market/securities/docs/isd/2000/com-provision_en.pdf, p 3

8 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments, etc

9 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments, etc

10 MiFID, arts 36–47

11 MiFID, arts 51, 52

12 MiFID, art 51(2)

13 MiFID, art 55; see also **section 11.24**

14 MiFID, art 4(1)(22)

15 MiFID arts 18, 31, 38; MiFIR arts 3, 6

16 MiFIR, art 4

might otherwise have to be executed sub-optimally because the other market participants would quickly see what was going on in a 'lit' venue, could still be carried out.

(4) *Organised trading facilities.* Organised trading facilities (OTFs) are another form of venue, not dissimilar to MTFs. The principal differences are (a) that OTFs do not have to have non-discretionary rules, and (b) that OTFs are regulated only in respect of transactions in bonds, structured finance products, emission allowances and derivatives – and not equities.[17] OTFs are, in essence, what used to be called broker crossing networks, where clients with buying or selling interests could be matched without the trade being exposed to a regulated market or MTF. Transactions done on an OTF are subject to pre- and post-trade transparency rules, and the capital of the OTF operator is not to be put at risk in the process by which trades are brought into being.

(5) *Systematic internalisers*. A systematic internaliser is an investment firm which, on an organised, frequent and systematic basis, deals on its own account by executing client orders outside a regulated market or an MTF.[18] In other words, a systematic internaliser is a broker like an OTF operator whose volume of buy or sell orders in respect of particular stocks is so large that it can match buyers and sellers, but which is exposing itself to the risk on the trade. The regulation of systematic internalisers relates to all types of financial instruments, including, in particular, equities. Systematic internalisers dealing in shares traded on a regulated market are obliged to publish firm quotes for orders up to standard market size. However, the take-up of systematic internaliser status was low,[19] presumably because the obligation to publish quotes was onerous and nothing in MiFID prevented a broker from matching buyers and sellers without systematically publishing quotes.

3.6 Clearly there is diversity of trading infrastructures, but for the purposes of a study of clearing and settlement arrangements they can be grouped into two sets: multilateral venues, such as regulated markets (exchanges) and MTFs, and single-firm arrangements typified by the OTF and systematic internaliser. This distinction is important for an understanding of how clearing and settlement instructions originate and can be carried out. In the first type, clearing and settlement instructions are typically generated by the platform and sent directly to the clearing and settlement system operators. Systematic internalisers may act as buyer to the seller and vice versa – in effect carrying out a mini-CCP type role – obviating the need for clearing. Operators of single-firm trading environments may be able to effect settlement of the trades they arrange between clients by holding client assets in custody and achieving settlement by book transfer on its own books. This process is called 'internalised' or 'on-us' settlement;[20] but in practice the coincidence between custodianship and broking is infrequent, so a more usual model is for each client to have to make its own settlement arrangements. Settlement would be achieved by generation of bespoke settlement instructions sent via the client's custodian, where applicable, to the CSD.

17 MiFID, art 4(1)(23)

18 MiFID, art 4(1)(20)

19 European Commission Services, *Review of the Markets in Financial Instruments Directive (MiFID)* (December 2010), Public Consultation, http://ec.europa.eu/internal_market/consultations/docs/2010/mifid/consultation_paper_en.pdf, para 2.4

20 Cf **section 2.22**

Finally, mention should be made of two other features of the post-MiFID trading environment: smart order routing technology and direct market access by clients.

Smart order routing

3.7 With the proliferation of trading venues and a requirement to achieve best execution for clients, firms need to be able to search around the various possible venues for best prices, and indeed to seize price opportunities for themselves in relation to their own proprietary trading activities. Smart order routing enables this type of scanning to take place and for orders to be sent automatically for execution at the optimum venue. Smart order routing can, however, be complicated. A large sale order may be received by a firm which has another client which has an unfilled order to buy the stock. One option is to split up the large sale and attempt to cross the sale and purchase orders; another is to execute the sale order in small units on the relevant regulated market (or, if more than one, one of them) or an MTF; a third is to expose it to a dark pool; a fourth may be to bargain bilaterally with other brokers who may operate OTFs or act as systematic internalisers or market-makers. If the order, or part of it, is routed to another broker it may move out into the hands of a third broker who might execute in a regulated market or MTF rejected by the smart order routing software of the first broker. For clearing and settlement practice, none of this complexity matters, provided that each step is clearly demarcated in terms of who the counterparty to the trade is, and the price, ISIN and size are reconciled.

Direct market access

3.8 Sophisticated clients such as hedge funds may be eager to seize momentary price advantages in fast-moving markets, advantages which would be lost if they had to submit orders to a broker who executes the order in the traditional manner. Clients like these have demanded and been given 'direct market access', which enables them to enter directly into transactions at the relevant venue, without the intervention of the actual venue participant. The participant remains responsible for the client's trading, in terms of market orderliness and ensuring that arrangements are in place enabling the client's positions to be cleared and settled. In practice this will involve the participant assuming a degree of counterparty risk in relation to a direct market access client, and the suppliers of clearing and settlement services will wish to understand that risk fully.

Algorithmic and high-frequency trading

3.9 Owing to their potential for disrupting the ordinary operations of trading venues, algorithmic and high-frequency trading methodologies are regulated. According to MiFID, 'algorithmic trading' means trading where a computer algorithm automatically determines order parameters,[21] and a 'high-frequency algorithmic trading technique' is characterised by infrastructure intended to minimise network and other types of latencies, system-determination of order

21 MiFID, art 4(1)(39)

initiation or execution, and high intra-day rates of message generation.[22] Firms which engage in algorithmic trading are subject to supplementary regulatory rules on their conduct,[23] and of particular relevance to clearing is the requirement that a GCM must ensure that clearing services are provided only to suitable persons and that risk controls are imposed on their clients.[24]

Trading obligations

3.10 As part of the drive towards centralisation and oversight of derivatives-related risk being assumed by investment firms, MiFIR introduced a derivatives 'trading obligation' (DTO). Affected entities must execute transactions in derivatives on a regulated market, MTF, OTF or third-country trading venue, if the derivatives belong to a class which has been declared subject to the DTO.[25] To become subject to the DTO, the derivatives must (a) already be subject to the clearing obligation in EMIR,[26] and (b) already be traded on a trading venue.[27]

As to the entities which must comply with the DTO, the position is complicated owing to an adjustment made to the clearing obligation in EMIR which has not been transcribed to MiFIR. The DTO is problematic because it imagines that each party to a prospective trade has identified its counterparty before it executes the trade; for OTC trading this may be realistic, but if a broker is engaged, then the choice of counterparty will not be made until bargaining is nearly complete. Having got to this stage, the transaction may have to be stopped in its tracks and a fresh start made on a venue if the counterparty is of the 'wrong' type. What MiFIR prescribes, however, can be summarised as follows:

- if an entity is subject to the clearing obligation in EMIR,[28] it is subject to the DTO;
- if an entity is a UK or EU financial counterparty, it is subject to the DTO, even if it is not subject to the clearing obligation.

The position is complicated further by the departure of the United Kingdom from the European Union. The UK trading obligation works in similar fashion to the EU version; the principal question which arises is what counts as a 'third country trading venue'. The requirement for acceptability (mirroring that which applies in the European Union) is that the third country has a system for recognition of UK venues for trading derivatives subject to the DTO.[29] Another question will be whether the UK trading obligation applies to two non-UK (so, for example, two EU) entities entering into a derivatives transaction: this will depend on whether the transaction has a direct, substantial and foreseeable effect within the United Kingdom.[30]To disentangle these complexities is outside the scope of this work, but it is apparent that a derivatives transaction involving a

22 MiFID, art 4(1)(40)
23 MiFID, art 17
24 MiFID, art 17(6)
25 MiFIR, art 28
26 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories; see **section 10.14**
27 MiFIR, art 32
28 See **section 10.11**
29 MiFIR, art 28(1)(d), as modified by the Markets in Financial Instruments (Amendment) (EU Exit) Regulations 2018, SI 2018/1403, reg 30
30 MiFIR, art 28(2), as so modified

UK bank or GBP rates may be subject to the UK DTO as well as the EU DTO, and without some agreement on recognition the impossible situation where it must be executed on two venues could theoretically arise.

3.11 A separate trading obligation (the STO)applies to transactions in shares admitted to trading on a regulated market or trading venue.[31] In this case the rationale is more likely to do with price transparency where the trading of an instrument is distributed among several venues: Recital (11) to MiFIR takes it as given that it is desirable 'to ensure more trading takes place on regulated trading venues and systematic internalisers'. The STO obliges investment firms (but not other entities such as third-country entities or unregulated persons) to ensure that regular and frequent share transactions take place on a regulated market, MTF, systematic internaliser or third-country trading venue assessed as equivalent in accordance with Article 25(4) of MiFID. Evidently, bespoke transactions can be executed off-market; the STO is not a re-introduction of a concentration rule.

Again, the obligation is affected by Brexit. The UK STO will only apply to firms which are 'investment firms' under the laws of the United Kingdom, which ought to mean those which are incorporated or formed under those laws. From the UK perspective, any EU venue becomes a third country venue, and thus will not benefit from an equivalence assessment under MiFID. The UK equivalence-determination regime is set out in article 23(4) of the modified version of MiFIR applicable in the UK;[32] this allows the Treasury to specify a venue which complies with EU standards on market abuse, transparency and listing. Unlike the DTO, there are no complex reciprocal recognition rules, presumably reflecting that the UK STO is an issue only for UK persons. Compliance with the cross-border STO duality may be achieved through a pair of back-to-back transactions where the cross-border part is structured as an OTC swap (falling outside both the DTO and the STO) replicating a domestic-only cash-market trade done on a venue.

COUNTERPARTY RISK

3.12 From the preceding discussion it is apparent that trading styles engender differing degrees of counterparty risk. Notionally, trading parties take on this risk in relation to each other: if I agree to sell to you, it is, or ought to be, my responsibility to deliver to you; and your responsibility is to pay me the right amount against that delivery. But this is too simplistic. The involvement of clearing and settlement service providers shows that a complex array of differing risk options is the result:

- Where a venue requires that all transactions be cleared through a CCP, unless the market participant is a 'clearing member' of the venue, it will need to hire a GCM to clear for it. The GCM becomes buyer to a selling participant or seller to a buying participant and is therefore involved as counterparty to the trade, assuming counterparty risk on its client (and vice versa). (The role of the GCM is described in **section 2.8**.)
- A market participant may hire a settlement agent who assumes the duty to settle vis-à-vis the participant only, but not in relation to any third party or the operator of the trading venue – this arrangement is sometimes referred

31 MiFIR, art 23
32 Markets in Financial Instruments (Amendment) (EU Exit) Regulations 2018, reg 28(10)

to as 'Model A clearing', to distinguish it from Model B arrangements, described in **section 19.27** (even though there is no 'clearing' involved, in the sense used in this book[33]). But, in practice, as **section 19.17** elaborates, even a Model A settlement agent may take on liabilities in carrying out its role.

- A settlement agent may assume the duty of achieving settlement in relation to other participants in the venue and/or the venue operator, effectively underwriting the participant's obligations – this is what is referred to as 'Model B clearing'.
- Trading participants have clients of their own. A client may have its own custodian or preferred GCM and may therefore make its own clearing and settlement arrangements. These may bypass the trading participant altogether.
- Trades may not be carried out on an organised venue but may take place across the books of a broker operating an OTF or as market-maker or systematic internaliser. In such cases the parties will need to make their own arrangements for settlement of the trades; a trade carried out in an OTF could be settled directly between ultimate buyer and ultimate seller without the need for delivery and payment to cross the books of the network provider. These arrangements will not usually involve a CCP.
- An exception to the last-stated proposition is where the transaction involves an OTC derivative for which mandatory clearing has been prescribed under EMIR. Even though the transaction may not have been entered into on an organised trading venue the interposition of a CCP (and, thus, where needed, GCMs) will be added to the requirement of settlement services.

Settlement period – T+0?

3.13 Counterparty risk arises in securities trading because trades are not settled instantly upon execution. The question thus arises why it is that trades are not settled immediately. Much commentary assumes that elimination of any time period between trade and settlement is a desirable goal, largely because of the consequent elimination of pre-settlement default risk. A brief review of some relevant considerations may therefore be appropriate.

- Where a transaction is executed on a trading venue, the standard settlement period is mandated nowadays by the Central Securities Depositories Regulation to be T+2 ('the second business day after the trading takes place').[34] It was not always thus. On the New York Stock Exchange, the settlement period was T+1 for 140 years, but extended in 1933 to T+2, and then stepwise to T+5 in 1968. In each case the change was due to back offices struggling with the burden of moving paperwork around, in days when share settlement required delivery of share certificates. Automated processing enabled the settlement period to be reduced to T+3 in 1995 and to T+2 in 2017.[35]

33 See **section 1.6**

34 Regulation (EU) No 909/2014 of the European Parliament and Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories, etc, art 5(2)

35 Levine, K, *Was Trade Settlement Always on T+3?* (Summer 1996) *Friends of Financial History*, Issue 56, pp 20–27

- By reducing counterparty risk, a shorter settlement period may therefore remove the need for interposition of a CCP, remove the need for margining, and in certain regimes may cut regulatory capital requirements.
- A move to T+0 would need substantial upgrades to firms' systems: real-time information about inventory and flows is surprisingly hard to obtain, particularly where firms operate with a legacy of interconnected post-merger platforms, where legal entities operate in multiple jurisdictions in several time-zones, where venues and infrastructures have different opening hours and cut-off times. To imagine a domestic T+0 environment in a small, single-jurisdiction market is one thing, but the larger markets are internationally connected, cash and collateral may be sourced from anywhere, and the efficient operation of the whole market depends on full involvement of the globally-active participants.
- Development of distributed ledger technology[36] offers the promise of a solution to the problems of global inventory, opening hours, delayed access to liquidity and cross-border friction, making the prospect of T+0 appear closer. However, if barriers are substantive rather than technological, adoption may not be so swift.
- Instant settlement can create difficulties for market-makers and high-frequency traders, who are not in the market for long-term investment reasons. For them, the ability to net off sales against purchases before settlement is crucial, or the liquidity burdens would be unmanageable. The solution might be one or more settlement cycles throughout the day, but patterns of trading may not adapt to the settlement cycles easily. (A single end-of-day settlement cycle is essentially a T+1 model, whereas T+0 usually means real-time settlement.) As to real-time gross settlement, see further **section 2.36**.
- Traders wishing to take a short position may wish to take advantage of the settlement period to profit from the delay before settlement, which allows them to borrow or buy in securities to cover their delivery obligation. Although official regulatory policy tends to view short strategies with distaste,[37] it is not self-evident that long strategies are better nor that markets must inevitably move upwards. Short transactions taking place away from an exchange may be more opaque and their pricing open to manipulation.

36 See **section 2.46**

37 Cf. Regulation (EU) No 236/2012 of the European Parliament and of the Council of 14 March 2012 on short selling and certain aspects of credit default swaps

4 Post-trade support services

INTRODUCTION

4.1 Post-trade services are not limited to clearing and settlement. The difficulty which the European Commission Services had in pinpointing the characteristic activities of clearing and settlement infrastructures[1] is in part attributable to the wide range of associated and ancillary services which may be needed in order to progress from the trade to the successful delivery of securities to a buyer and payment to the seller. In addition to clearing and settlement, there are at least the following: matching and confirmation; data aggregation and distribution; portfolio compression; communications; and data warehousing (trade repositories). Each of these may be a vital component of the post-trade process. The purpose of this chapter is to look at the roles of these services in the post-trade value chain, and legal and regulatory issues associated with them.

MATCHING AND CONFIRMATION

4.2 Unless you and I both agreed that we have a deal, and what that deal is, there is no trade to clear and settle. Ensuring that there is such an agreement is the role of matching. (In some markets, the operational processes leading to settlement call this 'pre-matching', and additional steps such as signalling readiness to settle are required before a transfer order becomes live. This can lead to confusion as to what actually constitutes 'matching', with steps being known as verification or affirmation. For most purposes, a debate over the correct names for these sub-steps is arid. Let people call them what they wish to but be aware that terms might bear different meanings in different places. Here, the focus is on comparing what each trading party thinks it has agreed upon.)[2] It is essential to capture basic information about transactions in order that clearing and settlement infrastructures know what has been agreed on, so that the bargain can be cleared and settled:

(1) The information that there is indeed a bargain. You may think you sold 100 at a price of 59, but I heard you sell 110 at a price of 59, which was better than the other guy in the market who was offering 110 at a price of 62. Fistfights broke out on trading floors operating by open outcry when this kind of problem surfaced, and exchanges had to have codes of behaviour as part of their objective of maintaining an orderly market. Now

1 European Commission Services, *Draft working document on post-trading* (May 2006), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/draft/draft_en.pdf

2 European Commission Services, *Working document of definitions of post-trading activities* (October 2005), http://ec.europa.eu/internal_market/financial-markets/docs/cesame/ec-docs/20051027_definitions1_en.pdf

that trading tends to be done by clicking on a mouse, there is less scope for this kind of disagreement, but nevertheless it is there. Matching what you said with what I said guarantees that there is a bargain.[3]

(2) The central elements of the bargain. In a sale transaction, these elements identify who is buyer, who is seller, the price, the thing being sold, and the quantity being sold. Some transactions are more complicated, and particularly where OTC derivatives are concerned, there may be more elements. Yet even in a credit derivative transaction there will still be a buyer, a seller, a price, a reference credit (or basket of reference credits), and a notional principal. Additional variability may come in with trigger events, reflecting some optionality in the bargain.

(3) The reference data for the central components and the variable data. Some of the core elements of transaction data are variable, and some are static. The following elements of data ('reference data') are static: the identifiers for the buyer, the seller, and the product. With derivative transactions much energy can be expended on identification of the product, as standardisation is at the heart of straight-through-processing. Obtaining uniformity of standards for recording reference data is surprisingly difficult – it is the twenty-first century's equivalent of agreeing standard screw pitches during the industrial revolution – vital, costly if not done at all, dangerous if done badly, and deeply uninteresting to most business executives focused on the next quarter's profit-and-loss. The other data elements (quantity and price) will be variable; trading platforms aim to minimise the number of different things to be agreed in order to promote liquidity, so will typically impose unitised lot and tick sizes.

4.3 Matching is primarily a matter of capturing inputs, and comparing them. If a transaction is concluded on an exchange or MTF, it should be a simple matter of noting that an offer or bid was accepted; disputes over the existence or fundamentals of the trade should therefore be rare. In an OTC environment the need for a matching service is more acute, because there is no standardised infrastructure on which the offers, counter-offers, acceptances and data elements are recorded. Historically mismatches were picked up at the 'confirmation' stage – that is, when the parties sought to document the particular trade in order to fit it underneath a 'master agreement' governing general aspects of inter-party contractual dealings. Confirmation practices were overhauled before the financial crisis:

> 'Early in 2005 prudential supervisors began to express increasing concern about the size and rapid growth of confirmation backlogs for credit derivatives. … The [Counterparty Risk Management Policy Group II] report, entitled *Toward greater financial stability: a private sector perspective*, which was released in July 2005, highlighted the serious and growing backlogs in the credit derivatives markets and called for an industry round table to be convened to address them. In September 2005, prudential supervisors took the lead and called 14 leading credit derivatives dealers to the Federal Reserve Bank of New York, where the supervisors collectively made clear their concerns about the risks created by the backlogs… By September 2006 these firms had made very substantial progress in reducing existing backlogs and in preventing new backlogs from arising by moving towards an automated processing environment and dedicating appropriate resources to the back office. The

3 See **section 1.3**

> total number of confirmations outstanding had been reduced by 70%. The percentage of trades confirmed electronically had doubled, exceeding 80% of total trade volume.'[4]

Automated data capture and upload to a service provider at the moment of trade is the start of the process; then the matching engine can check that both parties have reached agreement, and reject the trade if there is a mismatch. Confirmation and matching services 'increase efficiency and mitigate credit and counterparty risk'.[5] It is now obligatory for parties to uncleared OTC derivatives contracts to ensure they are confirmed by electronic means wherever possible.[6]

The matching service provider will, by virtue of these activities, be equipped with a useful database of transaction information, which can then be used to feed into clearing and settlement systems or trade repositories.

4.4 There is a tendency for a 'network externality' to develop in respect of matching services, as indeed there is for most post-trade services.[7] In this context it may be noted that MarkitWire serves as the data capture and matching system for both the SwapClear and ICE Clear Europe clearing platforms in respect of OTC credit derivatives transactions.

4.5 Finally, it may be noted that the problem of matching is not confined to derivatives markets. Securities may also be traded over-the-counter, and national differences in matching practices were noted to cause increased costs and risk. Harmonised processes were agreed between the industry and the CSDs in 2006;[8] the use of the Target2-Securities settlement platform is expected to lead to still further harmonisation.

DATA AGGREGATION AND DISTRIBUTION

4.6 Transaction data is an essential commodity for providers of clearing and settlement services. The slow dissolution of national models for trading, clearing and settlement and the opening of Europe as a single financial market have spawned a secondary market for data about trades. It is no longer appropriate to imagine that transaction data can be put into a pipe by the stock exchange, down which it will flow to the CCP and CSD so as to achieve a seamless process from trade to settlement. Rather, there are multiple services providers at many stages. First, and most importantly, there are many venues on which a transaction in a single type of security may be carried out. Different venues may prescribe the use of different CCPs, or there may be competing interoperable CCPs serving a single venue; or the trade may not require to be cleared at all, for example if it is an over-the-counter trade. The CCPs and associated GCMs will need details

4 Bank for International Settlements Committee on Payment and Settlement Systems, *New developments in clearing and settlement arrangements for OTC derivatives* (March 2007), www.bis.org/publ/cpss77.pdf, p 2

5 European Central Bank, *OTC Derivatives and post-trading structures* (September 2009), www.ecb.eu/pub/pdf/other/overthecounterderivatives200909en.pdf, p 19

6 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, art 11(1)

7 See **section 11.1**

8 European Securities Forum and European Central Securities Depositories Association, *Proposals to harmonise and standardise pre-settlement date matching processes throughout Europe* (October 2006), http://ec.europa.eu/internal_market/financial-markets/docs/cesame/giovannini/20061023-esf-ecsda-matching_en.pdf

of the trade in order to take on their primary role of managing risk, collecting margin and netting. Then there is the settlement stage to organise. For so long as competing settlement venues remain an idea for the future, settlement agents compete for the business of providing access to CSDs and payment systems, and they too need to know what their obligations will be.

So a new type of service has been able to emerge: the data aggregator and distributor. However, the primary role of this service-provider has not been the facilitation of clearing and settlement. The Markets in Financial Instruments Directive and Regulation (MiFID[9] and MiFIR[10]) impose a collection of reporting obligations on investment firms with regard to transactions in financial instruments admitted to trading on a regulated market, and require regulated markets, MTFs and investment firms to make public volume and price data about transactions in shares.[11] It is these obligations which created the market for data vendors. First, that market will be reviewed; and then the implications for clearing and settlement will be considered.

MiFID

4.7 The MiFID obligations are partly to facilitate the policing of market abuse, and partly to enable transparency of pricing, which is an essential requirement if trading firms are to select trading venues by reference to the 'best execution' they can achieve for their clients.[12] A distinction may thus be drawn between 'trade reporting' obligations, directed towards market transparency; and 'transaction reporting', directed towards edification of the regulator. (Reporting to trade repositories is considered at **sections 4.22–4.26** below.) The reporting obligations include a duty for firms to report data relating to transactions to the competent authority as quickly as possible;[13] a duty for 'systematic internalisers' to publish quotes relating to shares;[14] a duty for firms, MTFs and regulated markets to publish the volume, price and timing of transactions in shares;[15] and a duty for MTFs and regulated markets to publish bid and offer prices and the depth of trading interests in respect of shares.[16] Under MiFIR, similar transparency obligations are imposed for a wide range of MiFID financial instruments.

4.8 MiFID has introduced a uniform European regulatory regime for data reporting service providers. Three types of data reporting service are identified, each of which will require a licence: an approved publication arrangement (APA – the service of publishing trade reports), providing a consolidated tape (CTP – the service of collecting trade reports and consolidating them into a continuous electronic live data stream providing real-time price and volume data), and an approved reporting mechanism (ARM – the service of reporting details of transactions to regulators).[17] The regulatory regime requires the management

9 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments, etc
10 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments, etc
11 MiFIR arts 6, 7, 20
12 See MiFID, recital (92) in particular
13 MiFIR, art 26
14 MiFIR, art 14
15 MiFIR, arts 6, 7, 20
16 MiFID, arts 29(1), 44(1)
17 MiFID, art 4(1)(52)–(54)

of a data reporting service provider to be of good repute and have sufficient knowledge, skills and experience, and commit sufficient time, to perform their duties. The provider has to be managed in a sound and prudent way and a manner which promotes the integrity of the market and the interests of its clients.[18] Market operators can provide these services without the need for a supplementary licence.[19]

Both APAs and CTPs must be able to publish the information they obtain in close to real time and must disseminate it in a non-discriminatory manner. Specific content requirements apply to both APAs and CTPs. All three types of data reporting service are subject to organisational rules such as avoidance of conflicts of interest, which are replicas of rules applied to the more typical species of investment firm.[20]

4.9 Stock exchanges are ideally positioned to act as data aggregators and distributors, for various reasons. First, as incumbent 'regulated markets' under MiFID, they are likely to be the 'most relevant market in terms of liquidity'.[21] (The significance of this is that the competent authority of such a market must assess for each traded share the standard market size, which affects the obligations of systematic internalisers to publish quotes.[22]) If the exchange is the most liquid market then there will be network effects, attracting more trading, and (as far as the present context is concerned) attracting more buyers for the market data, since a deeper market implies superior accuracy as regards the price of the share. Furthermore, a market participant's obligation to report transactions to its regulator can be waived if the exchange reports the transactions directly.[23] These features may tend to encourage participants to trade on the incumbent exchange and to rely on it both as a data aggregator and a data distributor.

Notwithstanding the importance of control of data and its exploitation in this context, there have been few studies of the effect which the controllers of data may have on the post-trading environment, as contrasted with the *costs* of trading, clearing and settlement, [24] or the *content* of data in respect of which transparency is required.[25] A notable exception is a study by Dr Karel Lannoo,[26] who noted at the inception of MiFID that data consolidation is essential to enable multi-venue trading in a single market; that distribution of financial market data was a big business and that MiFID acknowledged that market data can be commercialised, and that an unregulated market-led approach to post-trade data consolidation might not deliver transparency owing to lack of standardisation and data quality.

4.10 It is not clear that the introduction of regulation has improved the competitive environment for the supply of data, even though the appetite for

18 MiFID, art 63
19 MiFID, art 59(2)
20 MiFID Title V
21 See MiFIR, art 4
22 MiFID, art 27
23 MiFID, art 25(5)
24 Cf European Commission Competition DG, *Competition in EU securities trading and post-trading* (May 2006), Issues Paper, http://ec.europa.eu/competition/sectors/financial_services/securities_trading.pdf
25 Cf Committee of European Securities Regulators, *CESR Technical Advice to the European Commission in the Context of the MiFID Review – Equity Markets – Post-trade Transparency Standards* (October 2010)
26 Lannoo, K, *Financial Market Data and MiFID* (March 2007), ECMI Policy Brief No 6, www.ceps.eu/book/financial-market-data-and-mifid

data has, if anything, grown.[27] The requirement for an APA to obtain a licence would constitute a barrier to entry to the marketplace for any challenger, and so would presumably tend to consolidate the position of the venues who (also presumably) own the data in question. ESMA noted in 2019 that data providers and data consumers disagree about the value for money in data pricing, and concluded that 'MiFID II has not delivered on its objective to reduce the price of market data'.[28]

By 2020, no CTP had emerged in Europe. ESMA attributed this to the lack of a business case, the regulatory requirements constituting a barrier to entering the market, and competition from data vendors not subject to the same regulatory framework.[29]

In the United Kingdom, data reporting service providers must have authorisation under the Data Reporting Services Regulations 2017,[30] which apply to EU service providers no longer able to passport into the United Kingdom after Brexit. Likewise, after Brexit, service providers need to be established in the EU in order to gain a passport to all EU Member States under article 60(2) of MiFIR.

4.11 Since clearing and settlement service providers cannot perform their functions without the flow of trade data, it may be asked who owns the data on which the post-trade services depend? It is unclear if data that originates from market participants' quotes and trades automatically belongs to the venue, so a venue will presumably ensure that its rulebook or other terms and conditions allow it to exploit the information which comes its way.[31]

Transaction data feeds for clearing and settlement

4.12 The purposes of MiFID's requirements are thus to enhance the process of price discovery, to ensure firms to deliver best execution to their clients, and to enable regulators to police the markets. MiFID's rules on transaction data were not intended to improve the flow to other service providers, or to potential competitors, in the clearing and settlement space. Exploitation of data is potentially lucrative in a post-MiFID world. A look at the revenue sources reported in The London Stock Exchange Group's 2019 annual report is instructive. The main profit centres, and their operating profits, are as follows:

- Information Services (fees for data and index services) – £449m
- Post Trade Services (fees from operations of the CCPs LCH and CC&G, and the CSD Monte Titoli) – £431m
- Capital Markets (fees from listings, issuers and traders) – £196m

27 See Oxera, *The design of equity trading markets in Europe* (March 2019), survey for the Federation of European Securities Exchanges, www.oxera.com/publications/trading-markets-europe

28 European Securities and Markets Authority, *MiFID II/MiFIR Review Report No1* (December 2019), ESMA70-156-1606, para 38

29 ESMA, MiFID II/MiFIR Review Report No 1, para 125

30 SI 2017/699

31 For an American analysis, see Mulherin, JH, Netter, JM, and Overdahl, JA, 'Prices are Property: The Organization of Financial Exchanges from a Transaction Cost Perspective' (1991) 34 *Journal of Law and Economics* 591–644

- Technology (software licences, connection and hosting) – £31m.[32]

Although it calls itself a 'stock exchange' group, it is essentially a post-trade enterprise focused on data sales and infrastructure, with activities directly related to being a market operator generating only 18% of the group's profits. In order to exploit data relating to the markets, the exchange must have rights to the information. It is unclear that a trader or investor owns information relating to its trading activity, or an issuer owns information about the price of its stock; it would therefore be difficult to say that an exchange which uses the information it is able to gather, process and disseminate from the trading activity carried out on its systems is anything other than legitimate. Concern in Europe has focused on the costs to brokers of obtaining market data; a study by Oxera suggested that price-regulation would not be straightforward and could distort the market, though greater transparency might be helpful.[33]

4.13 Competition law concerns may arise. The European Commission has investigated three apparent infringements of competition principles in the post-trade data space:

- Standard & Poor's gave formal commitments in 2011 to abolish fees for use of ISIN numbering[34]
- Thomson Reuters gave formal commitments in 2012 which enabled its customers to use reference data regarding securities ('Reuters Instrument Codes') to obtain data from competitor data feed providers, facilitating switching between data providers[35]
- ISDA and Markit gave formal commitments in 2016 concerning access to prices of reference credits, used to value credit default swaps.[36]

4.14 It may also be asked what regulatory or other controls exist to ensure that post-trade infrastructures and service providers are given access to the data, and to regulate the price payable for the data. The following observations may be made.

(1) Pricing may be a real concern: in the United States, where Regulation NMS was implemented at approximately the same time as MiFID, raising similar issues, a study was commissioned by the Securities Industry and Financial Markets Association,[37] which found that two exchanges had dominant positions with the opportunity to exert monopoly pricing power. In Europe, monopolistic behaviour and its attendant abuses tended, as just observed, to be dealt with by ex-post regulatory intervention, rather than through up-front legislative rules, until the post-crisis spate of legislation.[38]

(2) Article 13 of MiFIR obliges venue operators to make pre- and post-trade price and volume data available to the public on a reasonable commercial and non-discriminatory basis, where the data relates to shares, depositary receipts, ETFs, bonds, emission allowances, exchange-traded derivatives and a few other classes of instrument. The data must be made available

32 London Stock Exchange Group, *Annual Report* (December 2019)
33 Oxera, *Pricing of market data services – An economic analysis* (February 2014)
34 Case COMP/39.592
35 Case COMP/D2/39.654, Commission Decision OJ 2013/C326/04 (December 2012)
36 Case AT.39745, Commission Decisions OJ 2016/C378/03 and 2016/378/05 (both July 2016)
37 Securities Litigation & Consulting Group, Inc., *An Economic Study of Securities Market Data Pricing by the Exchanges* (July 2008), www.sifma.org/workarea/downloadasset.aspx?id=22962
38 See **Chapter 11**

free of charge 15 minutes after publication. What constitutes a 'reasonable commercial basis' and a 'non-discriminatory basis' is explicated in secondary legislation,[39] which also obliges venues to ensure that data provision is unbundled and to publish their price lists for data.

(3) In relation to OTC derivatives traded on a venue of execution, that venue is obliged under article 8 of EMIR[40] to provide trade feeds on a non-discriminatory and transparent basis to any CCP that has been authorised to clear those contracts.

(4) Furthermore, article 40 of EMIR gives CCPs a statutory right to have access on a non-discriminatory basis to pricing sources to effectively measure its exposures, and in interoperability arrangements a CCP will have a right under article 51 to non-discriminatory access to the data needed for the performance of its functions from a venue of execution for which it provides services. These additional rights apply regardless of the product cleared.

(5) Under article 36 of MiFIR, a trading venue is obliged to provide trade feeds on a non-discriminatory and transparent basis, including as regards fees related to access, on request to any authorised or recognised CCP that wishes to clear 'financial transactions' executed on that venue.

(6) Finally, under article 53 of the CSDR,[41] trading venues are obliged to 'provide transaction feeds on a non-discriminatory and transparent basis to a CSD upon request by the CSD and may charge a fee for such transaction feeds to the requesting CSD on a cost-plus basis.' This is all very well, but the home state CSD is already in a good bargaining position: the trades cannot settle unless that CSD gets a feed, so a venue which denied a feed to CSDs in which their traded securities settle would rapidly go out of business. What this provision is trying to do is to ensure that feeds are not given exclusively to a single CSD; it is not going to help CCPs, GCMs, or settlement agents.

PORTFOLIO COMPRESSION SERVICES

4.15 The essence of a portfolio compression service is to take a market participant's portfolio of trades, and to squash it down so as to end up with a significantly smaller number of trades with fewer counterparties. At its simplest, two counterparties dealing with each other may have countervailing trades in the same product, such as a US dollar interest rate swap. While these might not net off exactly, it would be possible to tear them both up and replace them with a net swap product which replicates their economic position exactly, possibly involving a balancing payment or delivery of collateral to re-base the new transaction. In practice portfolio compression will be multilateral and to some extent cover a range of transaction types. That can lead to a compression

39 Commission Delegated Regulation (EU) No 2017/567 of 18 May 2016 supplementing [MiFIR] with regard to definitions, transparency, portfolio compression and supervisory measures on product intervention and positions

40 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

41 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc

whereby party A's trades with B, C and D are all cancelled, its trades with E and F are reduced in size, and party A receives a balancing payment from G (with whom it happened to have no trades at all).[42]

4.16 It will immediately be apparent that this type of arrangement is a multilateral netting scheme. The operator of the scheme will not act as central counterparty, so *British Eagle* risk may arise.[43] It should be noted that the *British Eagle* problem does not materialise unless one of the participants in the scheme becomes insolvent, so as an everyday device for risk reduction the possibility of an unwind of a post-insolvency compression does not invalidate the general desirability of the scheme. Indeed, the Committee on Payments and Market Infrastructures has urged that 'market participants should routinely identify trades that could be voluntarily terminated, so as to reduce to the extent possible the positions that would need to be replaced following a default. To that end, they should expand their use of new services that facilitate multilateral voluntary termination of trades'.[44]

In 2012, ISDA observed that:

> 'In many ways, compression works because the risk inherent in large swap portfolios can be relatively modest. In fact, over $100 trillion of swaps have been terminated through compression without significantly changing the risk of the participants' market risk portfolios. Active participants fully realize it is exposure to outright interest rate risk, to curve risk and to spread risk that is most important to risk management, rather than the outstanding notional size of the market. Nonetheless, through compression, it is possible to eliminate the equivalent of trillions of dollars of notional through a small investment of time and resources and a modest change in risk management organization.'[45]

4.17 Provision of portfolio compression services is regulated under MiFIR. MiFIR defines the service as 'a risk reduction service in which two or more counterparties wholly or partially terminate some or all of the derivatives submitted by those counterparties for inclusion in the portfolio compression and replace the terminated derivatives with another derivative whose combined notional value is less than the combined notional value of the terminated derivatives'.[46]

The substantive regulation, in article 31, is limited in extent. Portfolio compressors are exempt from a best execution obligation, and investment firms and market operators providing compression services are subject to publication obligations using an APA.

4.18 It could also be noted that portfolio compression will be unnecessary where there is a CCP in place, as reliable multilateral netting will already operate. Hence, EMIR only demands participation in a portfolio compression in relation to uncleared transactions. The obligation to compress arises under

42 See European Central Bank, *OTC derivatives and post-trading structures* (September 2009), www.ecb.eu/pub/pdf/other/overthecounterderivatives200909en.pdf, p 20

43 See **Case Study 2.1**

44 Committee on Payment and Settlement Systems, *New developments in clearing and settlement arrangements for OTC derivatives* (March 2007), www.bis.org/publ/cpss77.pdf, p 5

45 International Swaps and Derivatives Association, Inc, *Interest rate swaps compression: A progress report* (February 2012)

46 MiFIR, art 2(1)(47)

EMIR RTS 149,[47] which derives its authority from article 11 of EMIR. This allows ESMA to specify in delegated legislation 'appropriate procedures and arrangements … to measure, monitor and mitigate operational risk and counterparty credit risk'. Article 14 of EMIR RTS 149 obliges financial and non-financial counterparties with 500 or more uncleared OTC derivatives contracts outstanding with a single counterparty to consider portfolio compression at least twice a year and to explain to their regulator if they conclude it is not appropriate.

With the drive toward clearing of standardised OTC derivatives transactions – that is, the type of transaction which is most readily amenable to compression – the future demand for portfolio compression is unclear.

COMMUNICATIONS NETWORK PROVIDERS

4.19 Communication links between infrastructures are vital to allow transaction information to flow to where it is needed: from traders to matching agencies; from trading platforms and matching agencies to clearing systems; from platforms or clearing systems to settlement and payment systems. Arguably the most important provider of communications services is SWIFT – the Society for Worldwide Interbank Financial Telecommunication. SWIFT is a member-owned cooperative based in Belgium.[48]

4.20 SWIFT is ignored by the Principles for Financial Market Infrastructures (PFMI),[49] and has no formal regulated status. Despite this, SWIFT is not ignored by the regulatory system. SWIFT is subject to extra-statutory oversight by the National Bank of Belgium (NBB), which has memoranda of understanding with other interested regulators.[50]

The starting point is a set of 'cooperative oversight principles' which are applied by the National Bank of Belgium to the cases of Euroclear and SWIFT. [51] These principles are: notification among central banks of cross-border systems; subjecting systems to oversight, specifically by the home state central bank; oversight of the system as a whole; assessment of the adequacy of the system's settlement and failure-to-settle procedures; and discouragement of the use of unsound systems. These principles seem to have weak, if any, relevance to SWIFT, though the NBB points out in its paper that the principles need to be 'reinterpreted to suit the specificities of a services provider in which the major sources of risk are almost exclusively of an operational nature'.[52] Under this framework the NBB has established various oversight groups composed of G10 central banks, the European Central Bank and the CPSS.

47 Commission Delegated Regulation (EU) No 149/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on indirect clearing arrangements, the clearing obligation, the public register, access to a trading venue, non-financial counterparties, and risk mitigation techniques for OTC derivative contracts not cleared by a CCP

48 See SWIFT website www.swift.com/

49 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012); see **section 7.11**

50 Kokkola, T, (ed), *The Payment System* (European Central Bank, September 2010), ISBN 978-928990632-6

51 National Bank of Belgium, 'High level expectation for the oversight of SWIFT' (June 2007) Financial Stability Review 2007, www.nbb.be/doc/ts/Publications/FSR/FSR_2007EN.pdf, pp 85–101

52 NBB, Financial Stability Review 2007, p 93

SWIFT's regulatory obligations are set out in five High Level Expectations, viz:[53]

(1) Risk identification and management: SWIFT is expected to identify and manage relevant operational and financial risks to its critical services and ensure that its risk management processes are effective.

(2) Information security: SWIFT is expected to implement appropriate policies and procedures, and devote sufficient resources, to ensure the confidentiality and integrity of information, and the availability of its critical services.

(3) Reliability and resilience: Commensurate with its role in the global financial system, SWIFT is expected to implement appropriate policies and procedures, and devote sufficient resources, to ensure that its critical services are available, reliable and resilient and that business continuity management and disaster recovery plans support the timely resumption of its critical services in the event of an outage.

(4) Technology planning: SWIFT is expected to have in place robust methods to plan for the entire lifecycle of the use of technologies and the selection of technological standards.

(5) Communication with users: SWIFT is expected to be transparent to its users and provide them information that is sufficient to enable users to understand well their role and responsibilities in managing risks related to their use of SWIFT.

Assessment methodologies are provided in respect of each of these expectations.

TRADE REPORTING

4.21 The European Post Trade Forum (EPTF) the expansion and diversity of reporting requirements under EU legislation in its 2017 Report.[54] Table P of the Report lists 19 different reporting obligations arising under 14 pieces of primary legislation. The EPTF added post-trade reporting to its list of new, post-Giovannini barriers,[55] citing the lack of a harmonisation across different pieces of legislation (85 data elements reportable under EMIR of which 23 are reportable under MiFID/MiFIR) and different approaches to capture of data (whether the data is pushed to the regulator as in MiFID/MiFIR, or pulled by the regulator as in EMIR and the Securities Financing Transactions Regulation (SFTR)[56]). Managing all this is a complex business, and service providers have moved in to assist. These may be loosely categorised as officially recognised providers and those which merely provide a software application. Unfortunately, there is no clear distinction; only in relation to Trade repositories (TRs) is there harmonised regulatory provision. Providers of other services are considered, in relation to the UK regulatory system, in **sections 4.27ff**.

53 NBB, Financial Stability Review 2007, pp 96–101
54 European Post Trade Forum, *EPTF Report* (May 2017), EPTF Barrier 6
55 See **Tables 1.2** and **1.3**
56 Regulation (EU) No 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of reuse, etc

Trade repositories

4.22 Until the financial crisis of 2008, it would hardly have been imagined that trade repositories would be considered a vital part of the financial system. But the consensus among policymakers, following the financial crisis of 2008, was that opacity was partly to blame. In particular, lack of transparency as regards the extent of key market participants' exposure to each other under OTC derivatives transactions was perceived to have led to reduced willingness to incur exposure, increases in collateral demands, and other self-protective behaviours which collectively worked to reduce liquidity, increase spreads, and deepen and lengthen the economic recession which ensued. Consequently, greater transparency in relation to OTC derivatives has been seen as a useful tool in order to prevent a similar problem in the future.[57]

A trade repository 'is a centralised registry that maintains an electronic database of data relating to transactions. The primary public policy benefit of a TR steps from the improved market transparency facilitated by its record keeping function, the integrity of information it maintains and effective access to this information by relevant authorities and the public in line with their respective information needs'.[58] 'A central data repository collects data … with the purpose of increasing transparency and knowledge. This not only contributes to transparency, but also improves the operational efficiency of the market.'[59]

A trade repository will, often in conjunction with a matching service provider, capture transaction data from OTC traders, store it, and make it available to certain persons. The Depository Trust & Clearing Corporation (DTCC) set up its Trade Information Warehouse in the United States in November 2006. 'The Warehouse centralises OTC credit derivatives contracts and eliminates the risks, inefficiencies, and uncertainties that arise from incomplete documentation. This comprehensive database serves as the repository for all legally binding OTC credit derivatives contracts. The Warehouse services the contracts in its database … provides payment services for these contracts, including calculation of payment amounts, netting of offsetting payment obligations … and, in partnership with CLS Bank International, central settlement of these obligations in multiple currencies.'[60]

The scope of the data collected was once simply a matter of commercial need, but the CPSS and the International Organization of Securities Commissions (IOSCO) have issued recommendations on content: it could include operational data such as transaction numbering, product information, material transaction terms, valuation data such as pricing sources, counterparty information, information about underlying products or reference entities, and time-stamped event data.[61]

57 Cf De Larosière, J, *The High-Level Group on Financial Supervision in the EU, Report* (February 2009), http://ec.europa.eu/economy_finance/publications/publication14527_en.pdf, paras 15, 27, 36, 93

58 CPSS, *Considerations for trade repositories in OTC derivatives markets* (May 2010), consultative report, www.bis.org/publ/cpss90.pdf, s 1

59 European Commission, *Ensuring efficient, safe and sound derivatives markets* (July 2009), Communication COM(2009) 332 final, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0332:FIN:EN:PDF, para 5.2

60 Morris, V, and Goldstein, S, *Guide to Clearance and Settlement* (Lightbulb Press, 2009), ISBN 978-1933569-98-7

61 CPSS and Technical Committee of IOSCO, *Report on OTC derivatives data reporting and aggregation requirements* (January 2012), www.bis.org/publ/cpss100.pdf

However, that has all changed with the introduction of mandatory reporting to TRs in Europe, for derivatives transactions under EMIR,[62] and for repos, securities loans, commodities loans and similar transactions under the SFTR.[63] The content of reports is now legally prescribed, in EMIR RTS 148[64] for derivatives and, in SFTR RTS 356 [65] for securities financing transactions.[66] TRs require to be authorised (or, if non-EU, recognised) under EMIR or the SFTR, as the case may be; in the United Kingdom after Brexit, authorised (or, if non-UK, recognised) under the on-shored versions of those regulations.[67]

It may be noted that market participants may see benefits in participating in a trade repository even without being legally compelled to do so. The benefits are likely to be unconnected to the idea that the regulator has full information about their activities: rather the trade repository is likely to offer ancillary services, such as managing 'life-cycle events' arising in the course of a long-term transaction, such as payments and collateral transfers, portfolio reconciliation, and multilateral tear-up of redundant transactions.[68] Perhaps it is worth a note on what trade repositories may not be willing to do: they are not valuation agencies which calculate the market-to-market position on the registered trades; they are not collateral monitoring agencies which determine what collateral has been posted by one counterparty to another or issue collateral calls; and they are not responsible for interpreting the data in their charge, or interrogating the data they have in order to find answers to questions which might be derived from the data.

4.23 The enthusiasm for trade repositories may also be partly a result of the success which the DTCC had in handling the default of Lehman Brothers in 2008. In relation to the Lehman default, the DTCC reported:

> 'DTCC also acted to minimize risk for its OTC derivatives customers from the Lehman bankruptcy. The actions included stopping the automated central settlement of credit default swap (CDS) payment obligations on Sept. 15 that were maintained in DTCC's Trade Information Warehouse (Warehouse) for counterparties of Lehman Brothers International (Europe) and Lehman Brothers Special Financing, Inc. On Oct. 21, DTCC also completed, without incident, the automated credit event processing of Lehman Brothers Holdings Inc. (LBHI) involving $72 billion of credit default swaps. DTCC calculated and bilaterally netted all amounts due on credit default swaps written on LBHI. This resulted in approximately US$5.2 billion owed from net sellers of protection on LBHI to net buyers of protection. The portion of this net funds

62 Article 9

63 SFTR, art 4

64 Commission Delegated Regulation (EU) No 148/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on the minimum details of the data to be reported to trade repositories

65 Commission Delegated Regulation (EU) No 2019/356 of 13 December 2018 supplementing [SFTR] with regard to regulatory technical standards specifying the details of securities financing transactions (SFTs) to be reported to trade repositories

66 Cf European Securities and Markets Authority, *Draft RTS and ITS under SFTR* (March 2016), Discussion Paper ESMA/2016/356

67 Trade Repositories (Amendment and Transitional Provision) (EU Exit) Regulations 2018, SI 2018/ 1318; Transparency of Securities Financing Transactions and of Reuse (Amendment) (EU Exit) Regulations 2019, SI 2019/542

68 Ledrut, E, and Upper, C, 'Changing post-trading arrangements for OTC derivatives' (December 2007) BIS Quarterly Review, www.bis.org/publ/qtrpdf/r_qt0712i.pdf

settlement allocable to trades between major dealers was handled through the normal settlement procedures of CLS Bank International.'[69]

Issues faced by trade repositories

4.24 If trade repositories are to carry out these roles effectively, they will need to be mindful of the following matters which have a bearing on their work.

(1) *Standardisation.* In order to capture quickly and efficiently the trades entered into by a market participant, it is vital that the trade repository can establish a standardised modality for capture of data pertaining to transactions within the trading firms themselves. It follows that the pre-requisites for a matching service are also needed by a trade repository, since if the details of a purported trade provided by different counterparties do not match, there is no trade, and to report it as such would be misleading. The requirement for standardisation leads also to the conclusion that trade repositories will have limited scope, since the more tailored or uncommon the transaction is, the less likely the trade repository will have designed functionality to capture the essential elements of the transaction. Trade repositories thus walk in the same ground as organised trading platforms and CCPs; they cannot be relied on to 'plug a gap' in transparency left by these alternative transparency-enhancing solutions. Hence, under EMIR, a fall-back option is left to firms to enable them to report to ESMA any transaction which can neither be cleared nor reported to a trade repository.[70]

(2) *Communications.* Likewise, the accuracy of a trade repository's records depends on the integrity of the communications systems under which firms report transactions. The communications network needs to be secure and fast.

(3) *Data storage, correction and backup.* A trade repository is both a data processor and a data storage facility. Numerous legal and regulatory obligations are associated with these functions, which may oblige the trade repository to comply with data protection registration requirements, business continuity and disaster recovery standards, anti-terrorism and anti-money-laundering laws and similar legislation imposed on organisations handling financial data, and bank secrecy and confidentiality restrictions. In some cases the legislation will not apply directly to the trade repository but will apply indirectly, because its participating firms have no choice but to transfer their own requirements to the repository, either because the legislation so requires or because the firm is subject to regulatory outsourcing rules which have the same effect.

(4) *Disclosure.* If a central role of a trade repository is to share the information it gathers with relevant authorities 'and the public', it will need clear legal powers to enable it to do so. There is a balance to be struck between public and private disclosure of a market participant's book. Complete transparency may provide a greater degree of general reassurance in moments of stress, but a trading strategy is a highly secret matter and a policy of general

69 DTCC, *DTCC Successfully closes out Lehman Brothers bankruptcy* (October 2008)
70 Article 9(3)

disclosure could threaten the viability of markets.[71] Even where disclosure to the regulator is concerned, the existence of a power to disclose is not self-evident, especially where confidential information about a firm's trading positions, its strategy and its financial robustness – all information vital to the raison d'être of gathering the information in the first place, but from the firm's viewpoint highly secret – is concerned. The DTCC has reversed its policy of not providing specific counterparty information, and has publicly indicated that 'regulators and other governmental entities can expect that … counterparty names will be included in both aggregate and trade-level information provided by the [Trade Information] Warehouse if the requesting regulator or other governmental entity affirms that it has a material interest in that information in furtherance of its regulatory or governmental responsibilities'.[72] As policy this is unobjectionable. It is more difficult to be confident that the policy is allowable under all relevant legal systems. The subject is discussed further in the CPSS-IOSCO report.[73]

(5) *Cross-border transactions.* Where the parties to a registrable transaction are in different countries, the authorisation regimes of both countries are likely to apply. Issues of mutual recognition, as explored in **sections 7.53ff** in relation to CCPs, will therefore be relevant.

Regulation of trade repositories

4.25 The regulatory approach to trade repositories is recommended by the PFMI[74] and implemented in Europe through Title VII of EMIR and Chapter III of the SFTR. The PFMI state that a trade repository 'should provide timely and accurate data to relevant authorities and the public in line with their respective needs'.[75] The principal risks which were identified by the CPSS[76] are twofold:

- Operational reliability – the need for the trade repository to maintain functionality continuously and accurately, including when there is a threat to business continuity.
- Safeguarding of data – the need for the trade repository to ensure the integrity of the information which it collects and stores, and to avoid loss, leakage, unauthorised access and mis-processing.

Trade repositories are also expected to obey a swathe of other PFMI Principles which were originally designed for infrastructures which handle investors' assets and entitlements: Principles 1 (sound legal basis in all relevant jurisdictions), 2 (governance), 3 (risk management framework), 15 (general business risk controls), 17 (operational risk), 20 (links to other infrastructures), 21 (efficiency and effectiveness), 22 (communication procedures and standards) and 23 (disclosure of rules) are all applied to trade repositories notwithstanding that their role is wholly ancillary to the smooth everyday functioning of financial markets. This might be thought heavy handed. However, some rules such as Principles 13

71 Cf Acharya, V, *A transparency standard for derivatives* (November 2010), http://pages.stern.nyu.edu/~sternfin/vacharya/public_html/Acharya_Proposal_Disclosure_Standard_v3.pdf

72 Depository Trust & Clearing Corporation, *DTCC Policy for Releasing CDS Data to Global Regulators* (March 2010)

73 CPSS 100, www.bis.org/publ/cpss100.pdf

74 Principles 23 and 24

75 PFMI Principle 24

76 CPSS May 2010 consultative report

(default rules), 18 (access conditions) or 19 (tiering) might be thought useful, but are not applied. Unfortunately, regulation is a one-way ratchet, so once rules of doubtful utility are in place, they are unlikely to be repealed.

Oddly, though, there is a regulatory gap in the PFMI. If disclosure to the public and to regulators of information on registered transactions is a core regulated activity for trade repositories, it seems odd that CCPs might be exempt from equivalent obligations. After all, the role of CCPs in this process has been acknowledged, particularly by the European Commission.[77] EMIR, however, does oblige CCPs to make reports to trade repositories of derivative contracts they enter into which fall within paragraphs (4) to (10) of Section C of the Annex to MiFID, either directly or via a reporting service.[78]

4.26 EMIR sets out the European regulatory regime, adopted for securities financing transactions by the SFTR. Trade repositories will require to be authorised by ESMA and will be entitled to passport into all Member States.[79] As regards derivatives, third-country trade repositories may be recognised by ESMA and then provide services to entities established in the EU.[80] Counterparties to derivatives transactions can instead report to a third-country trade repository if the European Commission has given an equivalence ruling with regard to the regulatory regime in the repository's country, and this will constitute compliance with EMIR.[81] The recognition regime may thus be unnecessary. That result seems to have been recognised with regard to securities financing transactions, for which there is no 'recognition' regime, but substituted compliance is allowed where an equivalence ruling applies.[82]

EMIR sets out the compliance obligations of trade repositories for both types of transaction as follows. A trade repository is to have: robust governance arrangements, including internal reporting lines and internal controls;[83] non-discriminatory conditions for access;[84] price transparency;[85] and operational risk management systems, including business continuity and disaster recovery plans.[86] A plan to implement PFMI Principle 22 on communications procedures conforming to open industry standards did not make it to the final text of EMIR. EMIR goes further than the PFMI by requiring trade repositories to keep their trade repository function operationally separate from other services provided by the same body, such as matching and portfolio compression.[87] The central functions of a trade repository are addressed as follows:

- Trade repositories must make 'the necessary information' available to various bodies, including ESMA, the ESRB, the regulator of the reporting party, regulators of CCPs, and others.[88]
- Confidentiality and integrity of the information received are otherwise to be ensured. Use of data received for commercial purposes is prohibited.

77 For example, European Commission Communication COM(2009) 332 final, pp 2, 7, 9, 10 etc
78 Art 9
79 EMIR, art 55; SFTR, art 5
80 EMIR, art 77
81 EMIR, art 13
82 SFTR, art 19
83 EMIR, art 78(1)–(4)
84 EMIR, art 78(7)
85 EMIR, art 78(8)
86 EMIR, art 79
87 EMIR, art 78(5)
88 EMIR, art 81

Records must be kept for ten years and updated as necessary. Parties to a contract must be allowed to access and correct the information held about that contract.[89]

- As regards derivatives, but not securities financing transactions, trade repositories must calculate the positions in respect of each reporting entity by class of derivative.[90] They must publish aggregate positions by class of derivative.[91]

ESMA is given disciplinary powers, including a power to fine a trade repository which fails to comply with these requirements.[92]

REGULATION OF POST-TRADE SERVICES IN THE UNITED KINGDOM

4.27 The discussion of the status of particular classes of post-trade service provider shows two things: first, that it is by no means clear that all post-trade services are subject to regulation at European level; secondly, that regulatory reach is widening, bringing more providers within its grip. Within the United Kingdom, by contrast, there has for many years been a broad requirement for post-trade service providers to seek a regulatory licence. Furthermore, the scope of regulation is also continuing to expand.

4.28 Article 25(2) of the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (RAO)[93] lists the following as a 'specified kind of activity', thereby rendering such activity a criminal offence if carried on in the United Kingdom without authorisation: 'making arrangements with a view to a person who participates in the arrangements buying, selling, subscribing for or underwriting [securities, options, futures, contracts for differences and certain other types of investment] (whether as principal or agent).' Furthermore, 'agreeing to carry on an activity of the kind specified by [article 25(2)]' is also a specified kind of activity.[94] Interpreting these provisions is not easy. If I establish a coffee-shop in the City of London, with a view to City folk carrying out investment transactions while they enjoy my coffee, this would on the face of the legislation require me to obtain a financial services licence. Moreover, a coffee company entering into a franchise arrangement with a shop-owner in the City would also apparently be caught. Case law on article 25(2) is sparse and appears to focus on pre-trade activities.[95] However, the language is wide enough, in theory, to cover post-trade services as well. The Financial Conduct Authority (FCA) has this to say about article 25(2):

> 'It is also the FCA's view that certain arrangements may come within the activity even though the parties may have already committed to the transaction using other arrangements. This would typically apply to a clearing house whose clearing and settlement facilities may be seen to be made with a view to the members of the clearing house, as participants in its arrangements, entering into

89 EMIR, art 80
90 EMIR, art 80(4)
91 EMIR, art 81(1)
92 EMIR, art 73
93 SI 2001/516
94 RAO, art 64
95 *Re Inertia Partnership LLP* [2007] 1 BCLC 739 ; *Watersheds v da Costa and Gentleman* [2009] EWHC 1299 QB

transactions (usually through an investment exchange) which must be cleared through the clearing house to be completed. The clearing house is providing an essential part of the market infrastructure that is necessary to support trading activities. The same principle applies outside the markets context. So for example if a company that wishes to raise capital from private investors tells the potential investors, in order to increase their confidence, that all aspects of paying for and issuing shares will be handled by a particular firm, that firm may come within article 25(2) when it provides those services.'[96]

Evidently all providers of matching, data collection and publication, portfolio compression, communications networks, and trade repositories – not to mention clearing and settlement systems – would prima facie fall within these legislative provisions.

4.29 Various exceptions cut back the scope of article 25(2). Most significantly, article 27 of the RAO states that a person does not carry on the activity specified by article 25(2) 'merely by providing means by which one party to a transaction (or potential transaction) is able to communicate with other such parties.' However, the conclusion is that other types of post-trade service providers may well find themselves caught by the RAO.

The service company regime

4.30 The FCA has a 'service company regime' of light-touch regulation specifically for the providers of services so caught. This regime does not require a person with authorisation to comply with the full gamut of regulation: in particular, the provisions of the FCA's *Handbook of Rules and Guidance* which relate to senior management, systems and controls apply, but the prudential sourcebooks (applying capital requirements) are disapplied and only limited parts of the conduct of business sourcebooks apply. The outcome is to give the FCA formal regulatory oversight over service companies without imposing irrelevant regulatory standards.[97]

Table 4.1 Regulation of Selected Post-trade Service Providers

Service Provider	Principal Services	Regulatory Arrangements
SWIFT (Society for Worldwide Interbank Financial Telecommunication)	Interbank communications including payment, securities settlement and corporate actions messages	National Bank of Belgium leads a group of 12 central banks formed into an oversight group[98] Regulatory standards are set out in specifically created 'High Level Expectations' which have no statutory basis[99]

96 Financial Conduct Authority, *The Perimeter Guidance Manual*, PERG 2.7.7BB G

97 Financial Conduct Authority, *Handbook of Rules and Guidance*, Handbook requirements for service companies, SERV 1.2.2G

98 Bank of England, *Payment Systems Oversight Report 2010* (March 2011), p 7

99 National Bank of Belgium, 'High level expectations for the oversight of SWIFT' (June 2007) Financial Stability Review, pp 95–101; see **section 4.20**

Service Provider	Principal Services	Regulatory Arrangements
DTCC ITP (institutional trade processing, formerly Omgeo)	Automated trade allocation, confirmation, settlement notification	Service company regime
MarkitSERV	Matching of OTC derivatives trades for feeding to CCPs	Service company regime

Service providers to payment systems

4.31 Although this chapter focuses on services more likely to be associated with clearing and securities settlement, it is possible for service providers to support the payment sector as well. Typically, such services will take the form of software or other facilities enabling a payment system to discharge its functions. Under section 206A of the Banking Act 2009, it is open to the Treasury to draw a service provider into the ambit of payment systems regulation. 'Telecommunication or information technology services are examples of the kind of services that may fall within [the power].'[100]

STANDARDISATION

4.32 In order to achieve efficiency in post-trade services, unless all services are to be provided within a single organisation it is essential that the various service providers can interoperate smoothly. This type of interoperation – between complementary, rather than competing, services – demands not only effective communication but also, in order to allow competition between alternative service providers to flourish, standardisation. Unfortunately achieving standardisation has been difficult. The difficulties, which are spelt out in EPTF Barrier 6, can be summarised as follows:

- In the first place, it has been difficult to obtain recognition among both regulated firms and the regulators who supervise them that standardised data and reporting methodologies relating to transactions is desirable. Data is the poor relation of the middle and back office, which itself is frequently not a 'profit centre' and therefore the recipient of little management attention unless things go wrong.
- Secondly, it has been difficult to get regulators to agree that standardisation of data formats and related issues is desirable, let alone agree on what standard approaches should be adopted. Completion of the EU single market is perceived less as a matter of standardisation than of removing national barriers impeding foreign service providers. However, use of Legal Entity Identifiers has been adopted in European legislation where reporting obligations are mandated. Other international efforts, where led by the industry, may achieve results where regulatory cooperation will not happen spontaneously.

100 Banking Act 2009, s 206A(3); see further **section 8.5**

4.33 Possibly more significantly, the European Commission has an embedded institutional distrust of uniformity. Uniformity, especially when requested by an industry, and certainly when requested by the financial sector, arouses suspicions of collusion and anti-competitive behaviour. Scrutiny is needed to ensure that what is demanded as a 'standard' is, in fact, an essential requirement enabling customers to switch from one provider or product to another, and not an excuse for behaviour which forecloses a market to competitors. The Commission's own policy is set forth in an official Communication.[101] The Communication notes the opposing forces in standard-setting. On the one hand, standardisation can promote economic interpenetration, encourage development of new and improved products, and can improve supply conditions: 'standards thus normally increase competition.'[102] On the other hand, standardisation can be restrictive, through reduced price competition, foreclosure of innovative technologies and discrimination by preventing effective access to the standard.[103] To achieve balance between these forces, the Commission sets out four conditions under which standardisation would be unchallenged under article 101 of the Treaty.[104] These can be broadly summarised as follows:[105]

(1) Participation in standard-setting should be unrestricted. The ideal is that all competitors affected by the standard can participate in the process leading to the selection of the standard.

(2) The procedure for adopting the standard should be transparent. Stakeholders should be able to inform themselves of upcoming, on-going and finalised standardisation work in good time.

(3) There should be no obligation to comply with the standard. Moreover, the Communication indicates that whether a standardisation agreement has restrictive effects on competition may depend on whether members of the standard-setting organisation remain free to develop alternatives.[106]

(4) Access to the standard should be provided on 'FRAND' terms. FRAND stands for 'fair, reasonable and non-discriminatory'. The chief difficulty here is that the developers of the standard have typically invested in its development and may wish to recover their outlay through retention of, and licensing of access to, the intellectual property rights in the standard.

DATA PRIVACY

4.34 Privacy, on the other hand, attracts a good deal of attention. There is a collection of legal issues relating to information about trades, which include confidentiality, data protection and bank secrecy. While it may be relatively uncontroversial that a regulator should be entitled to a feed of information about the prices and volumes of securities transactions, debate becomes more animated when it is proposed that the information to be given should include data on the persons involved in the trade, to be precise the end-investors. Customers of

101 European Commission, Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (January 2011), Communication 2011/C11/01, OJ(C)11/1

102 Communication, para 263

103 Communication, para 264

104 See further **section 11.34**

105 Communication, paras 280–286

106 Communication, para 293

banks (and, by implication, brokers) are entitled under English law to have their affairs kept confidential;[107] exceptions include where they have agreed to the disclosure or there is a supervening legal obligation on the part of the banker to disclose. This common-law obligation is buttressed by the Data Protection Act 1998.

4.35 Persons handling transaction information will need to be careful, therefore, whenever that information relates back to a person whose confidence or personal data are being used. In a MiFID transparency context, there should be no danger, because the trade and transaction reporting obligations imposed by MiFID do not require disclosure of this type of information. However, the requirements in EMIR and the SFTR for trade repositories to be informed who is a party to, and who is behind, each reportable transaction[108] has made the issue newly prominent.

4.36 Finally, mention should be made of the dangers of misuse of information. Under the Market Abuse Directive,[109] market manipulation is prohibited.[110] This concept includes 'disseminating information … which gives false or misleading signals as to … a financial instrument'.[111] While this would not ordinarily give rise to difficulty, it imposes a burden of accuracy on data distributors going beyond a mere civil duty to take reasonable care.

107 *Tournier v National Provincial and Union Bank of England* [1924] 1 KB 461
108 EMIR, art 9(5)(a)
109 Directive 2014/57/EU of the European Parliament and of the Council of 16 April 2014 on criminal sanctions for market abuse
110 Market Abuse Directive, art 5
111 Market Abuse Directive, art 5(2)(c)

5 Cash

OWNERSHIP OF CASH

5.1 The question of what you own, when cash is credited to your account at a bank or other financial institution, ought to be very simple; certainly, much simpler than the equivalent question relating to securities.[1] The law was settled a long time ago in the case of *Foley v Hill*[2] that a banker is a debtor, not a trustee, so that a credit to a bank account will merely be a record of indebtedness.

When deposited with a bank, then, cash is not an 'asset' of the bank. Quite the reverse: except for the case of digital currencies,[3] it is a liability of the bank. A deposit of securities, which will be credited to an account on the bank's books, has a completely different accounting result: securities in the hands of the bank remain in the ownership of the depositor, and are neither an asset nor a liability of the bank. Much confusion stems from this distinction, with the wording of a directive even suggesting that a bank's books might show its own cash (an asset) in the same way as a deposit (a liability),[4] which is evidently nonsensical. Although cash in the hands of a bank is not an 'asset' of the bank, the credit to a depositor's bank account is not valueless, and the 'asset' which is being sought is the liability looked at from the other direction – a chose in action against the bank, to which the depositor is entitled.

5.2 Despite the simplicity of the analysis of 'ownership' of cash, some secondary issues arise.

In the first place, it is important to understand the moment at which entitlement to the value represented by the credit arises, and thus the moment of receipt. Deposits are no longer placed in the ordinary course of financial services business by the physical handover of notes and coins: deposits are made by means of inter-bank transfer, so the question is whether a depositor becomes entitled at the moment that his bank receives a credit at the central bank or a correspondent bank, or when the bank receives notification of the transfer in the payment system (whether or not the advice is given after the moment of finality of receipt by the bank), or when the bank actually gets round to crediting the depositor's account. On this subject there is guidance from the courts to the effect that the bank becomes liable to the depositor when it decides to credit the account, even if the account entries are made later.[5] The moment of receipt by the bank and the moment of finality in the payment system would appear to be

1 See **Chapter 6**
2 (1848) 2 HLC 28
3 See **section 2.46**
4 Directive 2011/61 of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers etc, art 21(7)
5 *Momm v Barclays Bank* [1977] QB 790

irrelevant. The question of timing of finality of payment is examined in **section 5.18**.

The implication of this is that a seller of an asset may be told that the settlement system operates on a delivery-versus-payment (DvP)[6] basis, but insofar as the seller accesses the system through an intermediary, there is bound to be a mismatch between the moment of transfer of title to the asset and the moment at which the seller acquires a credit claim on the service provider, unless the service provider is able to provide simultaneous real-time updating of its cash accounts with finality to reflect the DvP receipt it has itself enjoyed.

5.3 Secondly, there is a question as to which legal system governs questions of entitlement as regards cash accounts. Various approaches to this question may be taken:

(1) The Rome I Regulation[7] contains a variety of provisions which appear to solve the problem. Article 3 allows freedom of choice, within limits, for the governing law of a contract. The chosen legal system governs the performance of the contract and the ways of extinguishing obligations.[8] But it can be debated whether the *property* aspects of a contract –the rights in rem arising from the fact that a contractual obligation owed by the counterparty to a contract is a chose in action which can be assigned like other items of property – are subject to the same chosen law. Article 14 addresses voluntary assignment of contractual obligations, and states ambiguously that 'the concept of assignment … includes outright transfers of claims, transfers of claims by way of security and pledges or other security rights over claims,'[9] but the remaining text of article 14 deals with the *contractual* relationship between assignor and assignee, and the *existence and conditions* for assignability, and it is not apparent that article 14 establishes a conflicts-of-laws rule to identify the legal system to be used to solve property questions such as priority among competing claimants. In consequence it is not surprising that different Member States interpret the effects of article 14 differently when it comes to the question of property rights.[10]

(2) One theory is that an intangible asset can be said to have a location – a *situs* – and therefore that the property aspects of the asset fall to be dealt with under the *lex situs.* Under this theory, the *situs* is the place of the 'right of recourse to secure its recovery … in the courts for the place where the debtor resides'.[11] Article 2(9) of the EU Insolvency Regulation (EUIR)[12] allocates cash held in accounts to the Member State indicated

6 See **section 18.2**
7 Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations
8 Rome I Regulation, art 12
9 Rome I Regulation, art 14(3)
10 Møllmann, A, *Security assignment of debts and the conflict of laws,* (May 2011) LMCLQ No 2, pp 262–274
11 Dicey, A, Morris, J, and Collins, L, *The Conflict of Laws* (15th edn, Sweet & Maxwell, December 2018), ISBN 978-0-414-035027, para 24–053
12 Regulation (EU) No 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings

in the account number. There has been debate[13] as to whether article 2(9) of the EUIR establishes a *lex situs* rule, but the better view is that its role is confined to allocation of assets among liquidators in the context of a Regulation which allows for several concurrent insolvency proceedings for a single entity. As far as the United Kingdom is concerned, following its departure from the European Union article 2(9) ceases to apply,[14] and the debate ceases to be of interest. A proposal for another EU Regulation could, if enacted, cause that the law applicable to the deposit account (if cash is held at a bank), or the law of the creditor's domicile (in other cases) governs the third-party effects of an assignment of a cash claim.[15] Meanwhile, it is prudent to check how all relevant laws might address title questions concerning cash.

(3) Notwithstanding the other views, the better view under English law would appear to be that questions of entitlement ought to be decided under the proper law of the contract, subject to the usual policy test of validity of choice of law.[16] If the parties (realistically, this will mean the bank) have failed to specify a chosen governing law in the banking contract, then the property law aspects of the deposit ought to be governed by the system of law of the jurisdiction where the deposit is repayable. Under English law the place where a deposit is repayable is the branch where the account is held;[17] by contrast a bank incorporated in the United States has been held liable to repay in New York a deposit taken in a foreign jurisdiction.[18] So, in relation to clearing and settlement, the currency or the 'home market' of the asset bought or sold would be irrelevant to questions concerning cash such as entitlement as against the account provider, security, and finality, and only the deposit contract is relevant; except where the deposit contract is silent or involves an illegitimate choice of law, in which case the law of the place where the account provider is liable to make repayment will prevail.

5.4 This discussion brings into focus a third question, namely whether a cash balance belongs to the named account holder. The issue came up in a case involving mortgage fraud, in which various accused had obtained cash transfers from building societies by deliberately making false statements. The House of Lords quashed their convictions, stating:

> 'The crucial question, as I see it, is whether the defendant obtained (or attempted to obtain) property belonging to another. Let it be assumed that the lending institution's bank account is in credit, and that there is therefore no difficulty in identifying a credit balance standing in the account

13 Virgos, M, and Garcimartín, F, *The European Insolvency Regulation: Law and Practice* (Kluwer Law International, 2004), ISBN 90-411-2089-0, pp 163–168; Moss, G, et al, *The EC Regulation on Insolvency Proceedings – A Commentary and Annotated Guide* (OUP, October 2002), ISBN 0-19-925109-6, ss 4–14, 6–47

14 Insolvency (Amendment) (EU Exit) Regulations 2019, SI 2019/ 146, Sch, para 3

15 European Commission, Proposal for a Regulation of the European Parliament and of the Council on the law applicable to the third-party effects of assignments of claims (March 2018), COM(2018) 96 final, 2018/0044 (COD)

16 Rome I Regulation, art 3(3)

17 *Joachimson v Swiss Bank* [1921] 3 KB 110, CA; *Libyan Arab Foreign Bank v Bankers Trust Corporation* [1989] QB 728

18 *Wells Fargo Asia Ltd v Citibank NA* 852 F.2d 657 (July 1988); *Citibank NA v Wells Fargo Asia Ltd* 495 US 660, 110 S.Ct. 2034, 109 L.Ed.2d 677 (May 1990); *Wells Fargo Asia Ltd v Citibank NA* 936 F.2d. 723 (June 1991)

> as representing property, ie a chose in action, belonging to the lending institution. The question remains, however, whether the debiting of the lending institution's bank account, and the corresponding crediting of the bank account of the defendant or his solicitor, constitutes obtaining of that property. The difficulty in the way of that conclusion is simply that, when the bank account of the defendant (or his solicitor) is credited, he does not obtain the lending institution's chose in action. On the contrary, that chose in action is extinguished or reduced pro tanto, and a chose in action is brought into existence representing a debt in an equivalent sum owed by a different bank to the defendant or his solicitor. In these circumstances, it is difficult to see how the defendant thereby obtained property belonging to another, ie to the lending institution.'[19]

This case, *R v Preddy*, is also important in the context of clearing and settlement because it makes it absolutely clear that a cash transfer does not involve a transfer of property. It is therefore distinct from a transfer of securities. Cash and securities have to be considered separately, even though many of the ideas and risks which relate to transfers of both types are similar. In fact, cash transfers are simpler than securities transfers, because they involve the discharge and creation of new obligations every time; securities transfers are more confusing, because the credit and debit entries in a securities account provider's books have some aspects resembling the legal effects of cash account entries, but others which could relate to property which exists independently of those entries.[20]

5.5 Fourthly, the analysis of ownership of cash needs to be repeated in respect of recipients of cash who are not 'banks'. In these cases, the judgment in *Foley v Hill* will be of no assistance. An investment firm may receive cash for the account of its client and make credit entries on its books. In these cases there is no legal presumption that the firm owes the money as debtor, and indeed the presumption in the case of a firm regulated by the Financial Conduct Authority (FCA) is that it would be subject to the client money rules[21] and hold funds received from the client (or due to it) as trustee. An alternative analysis may be that the sums in question are held as title-transfer cash collateral.[22] In determining the correct analysis one needs to be mindful that it is a criminal offence to accept deposits by way of business without authorisation under the Financial Services and Markets Act 2000 (FSMA).[23] A 'deposit' is, subject to a variety of exceptions and qualifications, defined in the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (RAO)[24] as a sum of money paid on terms under which it will be repaid:[25] this formulation is wide enough to capture much cash-related activity. Persons who are not banks, and who do not hold FSMA permission to accept deposits, will need to rely on one of the exceptions in order to handle cash which they intend to repay to their clients. This may limit the extent to which a non-bank firm can regard casual cash receipts as 'collateral' and thereby avoid the application of the client money rules.

19 *R v Preddy* [1996] AC 815, HL, per Lord Goff of Chieveley
20 See **section 6.4**
21 See **sections 5.7ff**
22 See **section 5.17**
23 FSMA, s 23; Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/ 544, art 5
24 SI 2001/544
25 RAO, arts 5–9A

The organisations which hold cash balances include CCPs. CCPs are of key importance in the clearing and settlement environment, but may not be configured as banks[26] or investment firms, with the consequence that the client money rules do not apply; nor would the exception in the RAO excluding from the definition of 'deposit' a sum received by a firm with permission to carry on typical investment activities, namely dealing in investments as principal or agent, arranging deals in investments, managing investments or operating funds.[27] Furthermore, CCPs may not ordinarily wish to hold money as trustee. Their acceptance of cash will typically rely on a different RAO exception, covering the case where the money is 'paid by way of security for the performance of a contract or by way of security in respect of loss which may result from the non-performance of a contract'.[28] CCPs may, however, decide to make special arrangements to hold cash margin deposited on behalf of individually segregated clients separate from the estate of the CCP.

5.6 The fifth subsidiary issue to be considered is the distinction between 'central bank money' and 'commercial bank money', considered by the Principles for Financial Market Infrastructures (PFMI)[29] to be a vital choice in relation to the 'settlement asset' for payment and securities settlement systems.[30] A credit balance at the central bank implies no credit risk at all, since what defines a central bank is the absolute ability to issue currency to meet its obligations. The obligation of a commercial bank, by contrast, is only as good as its solvency. The PFMI state:

> '[A Financial Market Infrastructure] should conduct its money settlements using central bank money, where practical and available. … If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk. An alternative to the use of central bank money is commercial bank money. When settling in commercial bank money, a payment obligation is typically discharged by providing the FMI or its participants with a direct claim on the relevant commercial bank. … The use of commercial bank money to settle payment obligations, however, can create additional credit and liquidity risks for the FMI and its participants. For example, if the commercial bank conducting settlement becomes insolvent, the FMI and its participants may not have immediate access to their settlement funds or ultimately receive the full value of their funds.'[31]

It might be noted that it does not follow that all payment systems which provide accounts to their participants are offering central bank money. Nor are providers of access to payment systems. Care is needed to investigate the structure and operations of the system in order to ascertain whose payment obligation is being accepted.

Finally, as this discussion comes full circle, it may be appropriate to contextualise the debate on ownership of cash. The central question about cash is not primarily one about property at all. *R v Preddy* highlights a gap between

26 See **section 9.7**
27 RAO, art 8
28 RAO, art 5(3)(b)
29 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for financial market infrastructures* (April 2012). Available at: www.bis.org/publ/cpss101a.pdf
30 See further **section 5.16**
31 PFMI, paras 3.9.3, 3.9.4

the everyday perception of deposit-taking ('my money in the bank'), reinforced by old-fashioned statutory language ('acceptance of deposits'), and the reality in a modern financial services environment where cash is represented by credit entries in accounts, arising from instructions given via interbank messaging systems. Similar issues are encountered in relation to securities accounts, where the legal problems are more challenging. But questions relating to cash are mostly questions about obligations: questions of credit risk, not questions of property and ownership. The things that matter are therefore made very simple: who is my debtor, does he dispute that he owes me the debt, and can he pay me.

CLIENT MONEY

5.7 Where a firm authorised in the United Kingdom to conduct financial services activities receives money in the course of investment business, the 'client money rules'[32] will govern how the firm deals with cash placed with it by or for the account of the firm's client. Sometimes it is said that the client money rules do not apply to banks – in part, this is true, in that 'deposits' are not client money,[33] but firms were formerly reminded that 'the exemption for deposits is not an absolute exemption from the client money rules'.[34] Nevertheless, the key thing is once again the distinction between the deposit-taker as debtor, who merely owes an obligation to repay, and the non-debtor recipient of cash, who may be a trustee.

5.8 At the core of the client money rules is the statutory trust, derived from section 137B(1) of the Financial Services and Markets Act 2000, which states that rules made by the FCA 'relating to the handling of money held by an authorised person in specific circumstances ("clients' money") may … make provision which results in that clients' money being held on trust in accordance with the rules'. It may be thought curious that the client money rules defer mention of the all-important statutory trust to page 76 of the print version;[35] this is, however, only a minor, if symbolic, instance of the complexity and opacity of the client money rules. The relevant rule is CASS 7.17.2R which states that a firm receives and holds client money as trustee for the purposes of the client money rules, and then sets out a 'waterfall' of priorities of entitlement to the trust property. Other provisions of the client money rules which are relevant to the constitution of the trust are as follows:

(1) What constitutes 'client money' and is therefore the subject of the statutory trust is defined in the FCA Glossary.[36] As far as securities business is concerned, the firm's activities will be classified as 'MiFID business', with the result that client money is money of any currency that a firm receives or holds for, or on behalf of, a client in the course of, or in connection with, investment business classified as such under the Markets in Financial Instruments Directive (MiFID).[37] The definition of 'money' is unhelpful

32 Financial Conduct Authority, *Handbook of Rules and Guidance, Client Assets Sourcebook* (June 2015), CASS 7
33 CASS 7.10.16R
34 CASS 7.1.11G (now repealed)
35 CASS release 53 (August 2020)
36 Financial Conduct Authority, *Handbook of Rules and Guidance, Glossary*
37 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

('any form of money, including cheques and other payable orders'[38]) and hardly reflects modern practice where 'money' or 'cash' is more typically constituted by credits on the accounts of a bank or other third party than any physical instrument. Confusion can follow from this lack of clarity: for example, as to whether a banker accepting funds is impressed with the statutory trust and cannot treat the funds in the same way as other deposits. In order to avoid these conundrums it is necessary to construe 'money' as a credit on a bank account, without somehow assuming that the banker has any corresponding asset to which the 'money' can be traced.

(2) There are some exceptions set forth in CASS, which disapply the client money rules by deeming certain money not to be 'client money'. The first of these, perhaps the most significant from the viewpoint of clearing and settlement, relates to money 'in respect of a delivery versus payment transaction'.[39] For this exception to apply, the transaction must be 'through a commercial settlement system' and there are time limits on the handling of the cash associated with the transaction. For sales, payment must be made by the firm within one day after settlement of the client's delivery obligation, but the firm can delay if the firm's own delivery is delayed. For purchases the rule is more obscure, but the upshot is that payment by the client must be not more than three business days before, and not more than one day after, the firm's own payment obligation matures. These rules on timing do not reflect settlement practices which ought to apply following implementation of the CSDR.[40] It appears that clients who pay in advance for securities may find that their funds are outside the limited protection given by the client money rules, and if their firm fails, they may need to have recourse to the Financial Services Compensation Scheme and its arrangements for protection of investors.

(3) Also excepted is the case 'where a client transfers full ownership of money to a firm for the purpose of securing or otherwise covering present or future, actual or contingent or prospective obligations'.[41] Cash collateral structures are examined below. A firm will need to show that any holding of cash treated as collateral has some reasonable relationship to the obligations which are supposedly covered. It may also be noted that title transfer collateral arrangements are outlawed for use with retail clients.[42]

(4) A third exception is where the money is due to the firm.[43]

If none of the exceptions applies, cash credited to the firm's account will ostensibly be 'client money' and must then be handled in accordance with the client money rules. The rules are of two groups: the segregation rules, and the rules about disposal of the money.

The segregation rules stem from the obligation in MiFID that 'a firm must, when holding client money, make adequate arrangements to safeguard the client's rights and prevent the use of client money for its own account'.[44] On receiving

38 FCA Glossary
39 CASS 7. 11.14R
40 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc
41 CASS 7.11.1R
42 MiFID, art 16(10)
43 CASS 7.11.25R
44 CASS 7.12.1R

any client money, the firm must 'promptly place this money into one or more accounts' with a bank or a qualifying money market fund,[45] and must 'take the necessary steps to ensure that client money deposited in [a bank] is held in an account or accounts identified separately from any accounts used to hold money belonging to the firm'.[46] Although commingling of trust and own property is not fatal to the proper constitution of a trust,[47] the separation of accounting on the books of the bank is important to demonstrate compliance with the general legal duties of a trustee, and will assist the task of identifying the trust property. Firms must also notify the bank of the existence of the trust and obtain an acknowledgment in a prescribed form that the bank will not exercise set-off rights as between the client money account and the firm's own-money account.[48]

5.9 What is more obscure is what the firm is permitted to do with the money so deposited. The client money rules set out only a few rules on this subject, headed 'discharge of fiduciary duty', which state that money ceases to be client money in a few limited circumstances, namely if it is paid to the client, his representative or his bank account, to a third party on the client's instruction (but not including in pursuance of a transaction), to the firm itself, or in cases where a CCP is involved and there is a transfer or leapfrog arrangement (including in relation to indirect clearing).[49] The effect is that money remains client money even if it is transferred to a third party in order to make a payment in the course of a transaction entered into on the client's instructions, which is a surprising result. Transfer in the course of transactions is dealt with separately in the client money rules,[50] permitting the firm to transfer client money to an exchange, clearing house or intermediate broker without discharge of the fiduciary duty owed to the client. But there remains an apparent gap in cases which are not DvP transactions and cash is needed to settle the trade. In these cases, the firm must use its own money for the settlement, and then reimburse itself under the rules for funds due and payable to the firm.[51]

These rules correspond to the provisions of the MiFID Implementing Directive,[52] which require firms to keep good records, hold client funds in separate accounts from funds belonging to the firm, place funds received into a diligently-selected bank or qualifying money market fund, to ensure they are isolated from insolvency and rights of set-off unconnected with the client's business. However, the minimum set of rules laid down under MiFID does not cater for the timing constraints of cash transfers in a modern straight-through-processing environment. Nor do they recognise the difficulties engendered by allowing client funds to be held in an omnibus account. It will be seen that the latter problem is akin to that arising in relation to holdings of clients' securities in an omnibus account, and the issues discussed below travel along a like path.[53]

45 CASS 7.13.3R
46 CASS 7.13.12R
47 *Re Lehman Brothers International (Europe)(in administration)* [2012] UKSC 6
48 CASS 7.18.2R
49 CASS 7.11.34R
50 CASS 7.14.2R
51 CASS 7.11.27G
52 Commission Delegated Directive (EU) 2017/593 of 7 April 2016 supplementing [MiFID] with regard to safeguarding of financial instruments and funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees, commissions or any monetary or non-monetary benefits
53 See **section 6.15**

The alternative approach

5.10 The first additional complexity overlying the MiFID client money rules is the result of a concession, allowing a degree of flexibility for a firm for which the normal approach could 'lead to significant operational risks', such as where 'clients' transactions are complex, numerous, closely related to the firm's proprietary business and/or involve a number of currencies and time zones'.[54] Such firms may opt for an 'alternative approach', which allows firms to handle client money as it were the firm's money and to carry out a daily reconciliation and adjustments of what should be held for clients in the client bank account.[55]

Practical application of the alternative approach caused difficulty in the collapse of Lehman Brothers. The Supreme Court ruled[56] that monies received by Lehmans were impressed with the statutory trust immediately upon receipt, even though Lehmans were using the alternative approach. Moreover, the fact that monies received were paid into Lehmans' general cash account and thereby commingled with 'house' money did not stop them being trust monies; the trust funds 'sink to the bottom' of the cash account so that they are used last – entailing a cumbersome forensic exercise to ascertain the entitlement to the funds remaining in the cash account.

Client money and clearing

5.11 More complexity stems from the fact that a firm may properly pass client money to a CCP, albeit without relieving the firm of its fiduciary duty. Margin calls may thus be settled by direct debit from the GCM's client money account at the GCM's bank, linked to the GCM's 'client' account(s) at the CCP. Practicality intrudes at this point, as the CCP knows first what the amount of the margin call is going to be; while the GCM may know at approximately the same point, it may be much harder for the GCM to obtain cash from the clients whose trades led to the margin call, at least within the timescale needed. The reality is that these clients may pay late. In the meantime, if the GCM's client bank account is an omnibus account, cash belonging to other clients has been drawn by the CCP. This reality has various consequences:

(1) In the first place, the client money rules contain complex reconciliation rules relating to the amount of client money which is supposed to be credited to the client money bank account.[57] These rules are designed to ensure that the client bank account balance is topped up by the firm (the GCM) to enable there to be enough funds to meet all the client entitlements in the event of the firm's failure.

(2) But this structure shows its fundamental flaw: it depends on the firm's solvency to ensure that there is sufficient client money to meet all those entitlements. If a large margin call is made, it may be impossible for the firm to top up the client bank account without jeopardising its own solvency. This situation arose in the case of Griffin Trading Company.

54 CASS 7.13.54G
55 CASS 7.13.54G–7.13.69G
56 *Re Lehman Brothers International (Europe)(in administration)* [2012] UKSC 6
57 CASS 7.16.10R ff

Case Study 5.1 Griffin Trading Company

One of Griffin's clients had entered into an unauthorised large trade in December 1998 giving rise to margin calls totalling £6.5 million which Griffin was unable to satisfy.[58] Griffin's other clients discovered that there was a shortfall in the client money bank balance, and reports were that 'the liquidator expected 50% of their funds to be returned starting in six to eight weeks'.[59] The then UK regulator, the Securities and Futures Authority, commented, without explaining how a shortfall could arise:

> 'To ensure that sufficient client money is held in client bank account(s), the firm is required to make a daily calculation comparing the aggregate balance on the firm's client money accounts with the "client money requirement". The requirement is the total of customers' credit balances, plus the total margined transaction required. The client money requirement is compared with the balance according to the firm's own account records. If there is a deficit on the client money as a result of a client failing to pay, then the firm is obliged by SFA Rules to make good the deficit from its own funds. If it cannot and has no likelihood of being able to make good the deficit from its own funds then it is in effect insolvent. From that point onwards payments and trades will be subject to scrutiny under relevant insolvency law.'[60]

(3) In order to avoid shortfalls, the GCM can either insist on pre-funding or it can provide liquidity. Pre-funding is not straightforward, because the GCM can only guess at the amount required and impose contractual limits on the client in an attempt to keep the client's open interest at a level which will be covered by the pre-funded amount. Those controls may, if the client experiences stress or fraud, be unreliable. Thus, it appears that part of a GCM's function, by virtue of the client money rules, is to guarantee liquidity in relation to margin. One may then ask whether the CCP might wish to impose a limit on the lending which is implied when a GCM satisfies the CCP's margin call but the client has yet to pay. Some CCPs prohibit such lending altogether.[61]

(4) Because of the unpredictable aspects of handling client money in a cleared environment, firms are permitted to over-segregate: 'If it is prudent to do so to prevent a shortfall in client money on the occurrence of [the firm's default], a firm may pay money of its own into a client bank account' – this is called 'prudent segregation'. Money so paid is deemed to be client money and distributable to clients on the firm's default. In the context of cleared business, it may be obligatory for the firm to apply 'prudent segregation'.[62]

(5) A GCM may be able to provide clearing services without triggering the operation of the client money rules (for example by relying on the 'title transfer collateral' rule which keeps cash beyond the scope of the main

58 Securities and Futures Authority, *Board Notice 574* (February 2001)
59 Cavaletti, C, *Griffin lessons of trading*, Futures (Cedar Falls, IA) (March 1999)
60 Securities and Futures Authority (January 1999), Press Release. Available at: www.fsa.gov.uk/pubs/additional/sfa001-99.pdf
61 See, for example, Eurex Clearing AG, *Clearing Conditions* (February 2016), Chapter I, Part 2, Number 6.4
62 CASS 7.13.41R–7.13.53R, 7.13.65R–7.13.69G, 7.13.73R–7.13.77G

client money rules). It may be that this is true only in respect of some clients of the GCM and not others. It would be unusual behaviour for a firm to handle both types of client within a single account at the CCP, and the client money rules disapprove of 'mixed remittances' (ie sums comprising part client and part non-client money) in relation to clearing by firms not using the 'alternative approach'.[63]

(6) Variation margin received from a CCP is likely to fall within the definition of client money. A firm will therefore have to handle it in accordance with the client money rules, unless it has a clear agreement with the client that it constitutes collateral or a deposit or it is 'due to the firm' – in other words that an exception to the client money rules applies. On the other hand, variation margin which the firm and the client were expecting, but which has been reduced by the CCP as part of its recovery management programme,[64] is not money received by the firm and ought not to constitute part of the client's client money entitlement (its 'equity balance').[65] Regrettably, the drafting of the 'equity balance' calculations in the client money rules is deficient in this regard, which might not be surprising given the complexity of the subject matter.

(7) A further consequence is that there are rules to compute the entitlement of a client and to ensure a fair distribution of the funds which may be spread among client bank accounts, CCPs and intermediate brokers.[66] Where a firm holding clients' money becomes subject to an insolvency process or certain regulatory events,[67] the firm's client money balances at its approved banks will be pooled, and the trust fund thereby constituted will be distributed pro rata according to the equity balances of the clients.[68] The calculation of the client money entitlement is not straightforward, and there is a substantial risk that the pool size is too small to satisfy the totality of entitlements. Clients are unlikely to be aware of this side-effect of the client money protection process. (There are still further rules to address what happens if a bank, intermediate broker, settlement agent or OTC counterparty has failed, also leading to a shortfall albeit for different reasons.[69])

EMIR and client money

5.12 It might be assumed that there is correspondence between the beneficiaries of the client money rules and the persons benefiting from the segregation rules in EMIR.[70] Unfortunately, it is not so simple.

Certainly, EMIR says that 'clients' must be segregated; they must be offered at least the choice between an individually segregated client account (ISA) or an omnibus account; and, if they choose an ISA, any surplus margin must be

63 CASS 7.13.71R
64 See **section 14.20**
65 CASS 7.16.28R
66 CASS 7A.2.4R–7A.2.11G
67 See CASS 7A.2.2R
68 CASS 7A.2.4R
69 CASS 7A.3
70 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

left at CCP level rather than in the hands of the clearing member.[71] For these purposes a 'client' is an undertaking with a contractual relationship with a clearing member which enables the client to clear its transactions with a CCP.[72] All such 'clients' are likely to be clients within the meaning of the FCA's client money rules – that is, persons to whom a firm provides a service in the course of a regulated activity or a MiFID ancillary service. But not all 'clients' provided with clearing services will receive client money protection: there are at least four potentially relevant disapplications, viz the professional client opt-out,[73] the case where cash is received as a deposit,[74] the case where cash is received as title transfer collateral[75] and cash payments made in relation to delivery-versus-payment transactions.[76]

In consequence, there are various issues which firms offering clearing services need to consider, since clients may be 'client money' clients or they may not. Cash margin posted to an ISA should not present any particular difficulty, since by virtue of an ISA relating to a single client there is no danger of mixing up client money with other money. Omnibus accounts are more troublesome; it is difficult to see how it would be proper to commingle client money belonging to client money clients with other funds which are margin posted to support 'client' positions, even though under EMIR both classes of client are entitled to segregation from the firm's own monies, and transfer and leapfrog options may apply to both. The conclusion is reinforced by statutory restrictions on set-off where client money has been received in relation to a transaction.[77] Firms owing client money duties to a subset of clients will therefore need to establish multiple accounts.

5.13 If that were not complicated enough, the application of EMIR, with its requirements regarding transfer of client positions and leapfrog payments,[78] has taken the subject to a new level of complexity. The following may be mentioned:

(1) EMIR allows clients to choose whether to have an individually segregated account (ISA) or to share in an omnibus account, which may be margined on a net or a gross basis.[79] If the client elected for an ISA, any surplus margin should be posted to the CCP,[80] so that in theory no client money remains in the hands of the GCM. Still, the balance at the CCP remains client money, though not part of the distributable client money pool.[81] The CCP may, upon the GCM's default, arrange for porting, leapfrog, or transfer of the money to the firm 'for the account of its clients'.[82] If the last of these options is taken, the money escapes from pooling upon receipt by the firm.[83] Choosing an ISA therefore enables a client to opt out of the mutualised loss-sharing otherwise inherent in the client money regime.

71 EMIR, art 39
72 EMIR, art 2(15)
73 CASS 7.10.10R
74 CASS 7.10.16R
75 CASS 7.11.1R
76 CASS 7.11.14R
77 Financial Markets and Insolvency Regulations 1991, SI 1991/880, reg 16; see **section 5.15**
78 See **section 7.36(3)**
79 EMIR, art 39(5); see also **section 17.32**
80 EMIR, art 39(6)
81 CASS 7A.2.4R(1)(b)(ii)
82 EMIR, art 48
83 CASS 7A.2.4R(3) and 7A.2.4AG(2)

(2) Where a client has opted for an omnibus account, things get more complicated. The basic idea is that money transferred to the firm for the account of its clients in relation to a closed-out omnibus account at the CCP does fall within the pooling and loss-sharing regime.[84] But if the CCP can inform the firm of the respective entitlements of the constituent clients participating in the omnibus account, they may escape this consequence;[85] and the client money rules contain a 'sub-pooling' option whereby omnibus account clients can be offered the chance to participate in a pool comprising only their omnibus account peers, in which case the loss-sharing may be to some degree contained.[86]

(3) If instead the CCP operates the porting option for a client account, the intention of the client money rules is that the client's 'equity balance' be reduced by the amount of the sum transferred across to the account in the name of the replacement GCM, and the pooling rules should not apply.[87] As mentioned, the drafting is wanting in some respects, so it is hoped that a 'benignant construction' is applied. The other option is for a direct leapfrog payment to the client. In such a case, again, the client's equity balance should reduce and the pooling rules should not apply.[88]

(4) Finally, it may be mentioned that indirect clearing is also catered for in these rules: where the client is the defaulting firm, monies in the hands of, or transferred by, a GCM, are treated in the same way as if the parties all had roles one rung further up the clearing chain.

5.14 The simplicity of the idea of client funds being held on trust in order to provide clients with protection against the insolvency of their investment firm has thus become too complex to rely on. The complexity makes it impossible for there to be certainty as to whether the investor will get its funds out of the insolvent firm, or the timescale of any distribution. The problems have confounded because insolvency officers have historically not been authorised to deal with assets outside the insolvent estate and which do not fall to be distributed to creditors, though a revised insolvency procedure, enabling administrators to deal with trust property, was introduced in February 2011.[89] Many inadequacies were exposed in the Lehman case.[90] However, the opportunity this gave[91] for a general overhaul of the client money regime in the United Kingdom was not taken, despite the rewriting of much of the rulebook and the introduction of rules to allow for multiple pools, and porting and leapfrog for cleared business. The old complexities remain, the old problems have not been removed, and the new elaborations will not make it easy to comply with the rules, to apply them following a default, or for clients to understand to what extent they might enjoy protection.

84 CASS 7A.2.4R(3)
85 CASS 7A.2.4R(3)(c)
86 CASS 7.19, 7A.2.4R(3)(d)
87 CASS 7A.2.4R(2), 7A.2.4AG, 7A.2.5R
88 CASS 7A.2.4R(3), 7A.2.5R(-1)
89 Investment Bank Special Administration Regulations 2011, SI 2011/ 245; see also **section 13.9**
90 See **section 5.10**
91 Cf Financial Services Authority, Business Plan 2012/13 (March 2012)

Segregation at the CCP

5.15 Mention should be made of the treatment of the client's funds when passed to a CCP. As CCPs are not investment firms in the United Kingdom,[92] CCPs will not be subject to the client money rules. Cash deposited with a CCP as margin will thus be a debt owed by the CCP to its participant. GCMs take credit risk on CCPs with regard to their margin and default fund contributions.

Under section 187 of the Companies Act 1989, which is confusingly named as if it were a mere interpretation section, a substantive segregation obligation is created for CCPs. Section 187 states that 'where a person enters into market contracts in more than one capacity, the provisions of this Part apply … as if the contracts entered into in each different capacity were entered into by different persons'. In order to understand this section fully, first it must be appreciated that 'this Part' sets forth a code of obligations for handling of defaults by CCPs (and other recognised bodies) and gives the CCP immunity from the effects of insolvency laws otherwise applicable to their participants.[93] If a participant enters into a contract in a manner which constitutes him a trustee in respect of 'client money' passed to the CCP, the CCP is obliged to conduct two completely separate sets of default proceedings as if it were dealing with two defaulters: the trustee defaulter, and the own-account defaulter. It follows that the CCP must operate separate sets of accounts reflecting the different capacities of the participant, to avoid muddling the two sets of default proceedings.

Further segregation at the CCP is achieved by two additional measures:

(1) Regulation 16 of the Financial Markets and Insolvency Regulations 1991[94] provides that a member of a recognised clearing house (a term which includes a recognised CCP), and the CCP itself, are deemed to be acting in a different capacity in effecting 'relevant transactions' than when effecting other market contracts, for the purposes of section 187 of the 1989 Act. 'Relevant transactions' means market contracts in relation to which the member receives 'clients' money' under the client money rules. This regulation has the effect that gains or losses on market contracts which are supported by margin constituting client money cannot be set off against losses or gains on other market contracts.

(2) Section 182A of the Companies Act 1989 restricts the operation of statutory insolvency set-off[95] so that positions and assets recorded in a client account at the CCP cannot be set off against positions and assets set off in any other account. Unlike the rest of Part 7 of the Companies Act 1989, this section apparently applies without any limitation as to whose insolvency is under consideration, so that even in the insolvency of the CCP itself there is no risk of setting off house and client accounts. The section has similar effect in the context of indirect clearing, so that positions and assets recorded in a client account at a GCM which relates to indirect clients cannot be set off against house positions of the client.

Once it was the case that margin provided by a defaulter in respect of a house account could not be applied to meet a shortfall on a client account. This was

92 See **section 9.3**
93 See **sections 13.16ff**
94 SI 1991/880
95 See **section 13.12(2)**

the effect of paragraph 28 of the Schedule to the Recognition Requirements Regulations 2001,[96] but that restriction was lifted in 2009[97] and, in any event, paragraph 28 no longer applies to CCPs authorised under EMIR.

CENTRAL AND COMMERCIAL BANK MONEY

5.16 The PFMI strongly recommend that infrastructures use central bank money as their settlement asset.[98] In **section 18.5** the question of central bank money for settlement of the cash leg in a CSD is discussed further; it is noted that central bank money may not be available to all market participants, since accounts (ignoring for these purposes any digital currency) at the central bank are not made available to all. Here the following comments on central bank money may be made:

(1) Central bank money means nothing different from commercial bank money in terms of the 'asset' which is owned, save that it is a claim on the central bank. Of course, a claim on the central bank is the most robust type of claim there is because the central bank ought always to be able to honour its obligations. But there is no ground for supposing that the central bank is immune from operational errors or asserting defences to claims for repayment of what the account holder believes to be due. If, however, the depositor is willing to accept the premise that a central bank is incapable of becoming insolvent, then the benefit of central bank money is that no credit risk is entailed, unlike any balance on an account with a commercial bank.

(2) Central bank money might also be subject to different terms from commercial bank money. Central banks are less likely to lend freely, thereby constraining the ability to use a central bank account as a source of liquidity. Commercial banks may thus provide cash services such as 'contractual settlement',[99] and integrated banking facilities, which would be unavailable to account holders at the central bank. Interest rates are likely to differ, and central banks may impose conditions on withdrawal, for example if the deposit is a reserve deposit.[100]

(3) Infrastructures are expected to use central bank money owing to the lower degree of risk: '[w]ith the use of central bank money, a payment obligation is typically discharged by providing the FMI or its participants with a direct claim on the central bank, that is, the settlement asset is central bank money. Central banks have the lowest credit risk and are the source of liquidity with regard to their currency of issue'.[101] Be that as it may,[102]

96 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001, SI 2001/995

97 Financial Markets and Insolvency Regulations 2009, SI 2009/853

98 PFMI, Principle 9

99 See **section 19.32**

100 Bank of England Act 1998, s 2, Sch 6; Cash Ratio Deposits (Eligible Liabilities) Order 1998, SI 1998/1130

101 PFMI, para 3.9.3

102 Comotto, R, *The Interconnectivity of Central and Commercial Bank Money in the Clearing and Settlement of the European Repo Market* (September 2011), European repo market report for the International Capital Market Association. Available at: www.icmagroup.org/assets/documents/Maket-Practice/Regulatory-Policy/Repo-Markets/Central%20and%20commercial%20bank%20money%20-%20ICMA%20report%20September%202011.pdf

there is also an expectation in the case of a CCP that having an account with the central bank makes it more likely that emergency liquidity support would be available to provide stability in the case of a crisis, for example difficulty in liquidating non-cash margin, or even a shortfall in the default fund. The role of a central bank in supporting a CCP in such circumstances has been hotly debated.[103]

CASH AS COLLATERAL

5.17 Cash collateral can be vitally important, as many clearing and settlement activities entail the extension of credit; the cash involved in the payment leg of a transaction may serve as collateral for this credit extension.

There are two principal techniques for taking cash as collateral. The primary method is to acknowledge that cash received constitutes a debt owed by the recipient, and to confer simply a right of set-off on the recipient so that the cash repayment obligation is used to neutralise the client's credit obligation. Set-off rights are subject to various possible challenges in the client's insolvency[104] and, in consequence, it is common to find that the set-off right is backed up with a charge over the cash deposit. After a deal of academic wrangling, the House of Lords settled that under English law a charge over a deposit in favour of the deposit-taker is a perfectly acceptable construct, but it is functionally equivalent to a set-off.[105] The conclusion is that, where only two parties are involved, a charge adds nothing to a set-off right.

A firm which has avoided the application of the client money rules by acquiring 'full ownership' of the money – 'full ownership', whenever the client money rules do not apply the statutory trust, meaning nothing more complicated than an unencumbered credit to the firm's bank account – will ordinarily use this technique.

In a case where the cash is deposited with a person who is not the client's creditor, the second method – a charge – may be the more appropriate technique. This is because a trilateral set-off arrangement will likely fall foul of the requirement for mutuality under the statutory insolvency set-off rule.[106] Accordingly, a deposit placed with a third party, which represents an obligation owed by the third party, can as a chose in action be assigned by way of security or charged to the creditor.

A firm which is holding a client's funds under the client money rules will have to structure arrangements carefully in order to utilise the cash as collateral. As 'money due and payable to the firm' is released from the statutory trust it ought in most cases to be possible for the firm to appropriate the funds needed without much ado. If the client is insolvent, there may be a question as to whether such appropriation is a void disposition.[107] It may therefore be prudent to back up the power given by the client money rules with a charge.

A third party such as a GCM or settlement agent seeking access to 'client money' by way of security may be unable to achieve its ends. This is because of

103 See **section 17.65**
104 See **section 13.12(2)**
105 *Re Bank of Credit and Commerce International SA (No 8)* [1998] AC 214
106 Insolvency Rules 1986, rr 2.85, 4.90; Bank Insolvency (England and Wales) Rules 2009, r 72; Investment Bank Special Administration (England and Wales) Rules 2011, r 164
107 See **section 13.13(1)**

the difficulties posed by the restrictions on discharge of the fiduciary obligations of the firm handling the client money. Even if the GCM or settlement agent is a third party to whom funds can be passed under CASS 7.14.2R, it will (at least in relation to a 'contingent liability investment') be obliged to waive set-off rights.[108]

FINALITY OF PAYMENTS

5.18 If one accepts the credit risk issues inherent in a receipt of cash, the main question remaining in the context of clearing and settlement of payments will be when the cash has arrived, and whether it has been received with finality. 'Finality' has been defined by the CPMI in the following terms: 'Final settlement is defined as the *irrevocable* and *unconditional* transfer of an asset or financial instrument, or the *discharge* of an obligation by the [financial market infrastructure] or its participants in accordance with the terms of the underlying contract.'[109] The concept of finality causes confusion of bewildering proportions, so at the outset a glossary of frequently heard terms may be useful.

- *Unconditional.* As a definition of finality, unconditionality is unsatisfactory. Confusion is likely to arise because conditions will often relate to a transfer *obligation*, rather than a transfer viewed as a separate event. However, payment systems do have conditions, and without them being satisfied, there is no likelihood of the payment being made; but equally, fulfillment of conditions does not mean that a transfer has been made, let alone made with finality.
- *Irrevocable*. A transfer might be regarded as final when the payer can no longer revoke it, that is when the settlement process can no longer be stopped by the person obliged to pay. However, irrevocability is not yet a guarantee of finality, since the law or the payment system may allow for the non-completion or even the reversal of transfers in particular circumstances.
- *Discharge*. Discharge occurs on the performance of the transfer obligation. Unfortunately, this concept is circular since an obligation to transfer will be discharged when a transfer is made with finality.
- *Irreversible.* A transfer is final when the credit to the payee's account cannot be reversed. Confusion can still linger, though, since there may be legal grounds for reversal even if the rules of the payment system are clear that reversal will not occur. The difficulty here is that the rules of payment systems are contractual and may not withstand an attack under insolvency laws. For example, if a transfer is made via a normal correspondent banking relationship, it is a question of contract terms whether a credit entry in the correspondent's books has to be reversed or not. These may be vulnerable to attack by a liquidator under zero-hour laws, or as preferences, or under other insolvency laws.[110]
- *Immune from challenge.* It may be tempting to think of finality as arising when there are no grounds at all on which the payment made to the payee could be reversed. However, that is probably going too far. Fraud and some

108 CASS 7.18
109 PFMI, para 3.8.1
110 See **section 13.11**

> insolvency risks may be unrelated to the operation of the payment system, and it may be possible for a victim or insolvency officer to challenge the payee in the courts. These dangers should not be seen as a finality problem, since the reversal of the transfer occurs outside the payment system. The irreversibility inherent in a 'final' payment should be seen as irreversibility within the limited world of the payment system.

Perhaps the difference of views on the very definition of finality stems from the different objectives of users of the term. On the one hand there are the regulators and guardians of financial stability, for whom the primary concern is avoidance of systemic risk. On the other is the participant in the financial marketplace, whose concern is that expressed above, namely whether the money has arrived safely so that it can be used for other purposes. The regulatory guidance and legislation is predominantly directed towards the public objective rather than the simple needs of the end-user. This is made starkly apparent when one considers the scope of the protections afforded by the Settlement Finality Directive.[111] Only designated systems and their participants are granted protection, so that the fundamental question for an end-user, as to whether the money has arrived with sufficient safety that it can be used, is left to private risk management.

It has been observed that the problem of finality arises because of the sheer speed of electronic funds transfer, which causes trouble when parties wish to revoke payments, typically in the event of counterparty or client insolvency.[112] To this, it may be said that finality is precisely what the policy of the law should aim to achieve, notwithstanding the 'very fine arguments … sometimes addressed to the courts as to precisely when payment is effected under a funds transfer'. Without clear contractual rules between payment service users and their service providers, however, such arguments will persist.

A final word on the subject of finality of payments is simply to note that the same concepts and risks arise in relation to credits of securities to accounts. The settlement finality legislation is the same as for cash and is directed to the same end. The discussion set out above may thus be applied to questions arising in relation to the transfer of securities. However, the law of transfer and ownership of securities is more complex, and moreover, it enjoys an overlay of legal certainty in that there is now EU legislation which specifies the legal consequences of credits of securities to an account. It is that subject to which the next chapter is devoted.

111 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems; see **sections 13.29ff**

112 Brindle, M, and Cox, R, eds, *The Law of Bank Payments* (4th edn, Sweet & Maxwell/Thomson Reuters, November 2010), ISBN 978-1847035516, para 1-020

6 Securities

OWNERSHIP OF SECURITIES

6.1 In order to settle a transaction contemplating the transfer of securities, the legal requirements for obtaining ownership of the securities should be clear. The same logic applies to transfers which stop short of being attempts to acquire complete ownership immediately, such as creation of a security interest. The law of ownership of securities is, accordingly, as important to the subject of clearing and settlement as the law of ownership of money.

It is perhaps surprising, given that introductory remark, and in a context where the values are huge (€ 461 trillion of securities were settled by Euroclear's CSDs in the first half of 2020),[1] that there should be absence of clarity on the operation of the law in some Member States, lack of uniformity across Europe, and downright confusion as to how ownership questions should be answered when a multi-country tiered holding pattern applies. Effort has been made to introduce greater legal certainty, but it is fair to say that the preservation by Member States of their differing juridical approaches to ownership of securities will continue to generate questions for which there is no legally simple answer.

The starting point for this chapter is to consider the problem of ownership of securities under English law and other European legal systems. The solutions offered at an international level will then be reviewed. Legal implications of the legislation will be considered. Finally, the protection given to clients and the operation of the 'client asset' regime will be assessed.

OWNERSHIP OF SECURITIES UNDER ENGLISH LAW

6.2 Starting with the simple case of a share in a registered company incorporated under the Companies Act 2006, the person who owns the share is presumably the person recorded as member of the company in the register of members required to be maintained under section 113 of that Act. Rectification of the register can be ordered by the court under section 125, and on an application for rectification the court 'may decide any question relating to the title of a person … to have his name entered in or omitted from the register … and generally may decide any question necessary or expedient to be decided for rectification of the register'.[2]

These provisions do not, however, say anything about ownership per se: it is implicit in the status of membership, which confers rights of voting and

1 Euroclear SA/NV *Euroclear H1 2020*, half-year results summary www.euroclear.com/newsandinsights/en/press/2020/2020-mr-10-H1-2020.html

2 Companies Act 2006, s 125(3)

entitlement of distribution of net value on a winding-up, that the status of membership has value proportionate to the size of the shareholding. In that analysis, a shareholding may be regarded as a chose in action constituting a co-ownership interest in a single asset, namely the issuer itself. Professor Roy Goode says 'on a sale or trust of the shares it is not possible to segregate the shares of the subject of the sale or trust from an interest in the remainder of the issuer. In short, such shares are not fungibles at all, they represent co-ownership of a single, identified asset. The same applies to a credit balance in a bank account'.[3] If Professor Goode's analysis were more generally accepted, it would be necessary to analyse the legal aspects of owning shares in the same way as transfer of part of a debt, requiring the assignor to be party to an action by the assignee against the issuer of the shares to establish the assignee's rights.[4]

The position is rendered more confusing by two provisions in the Companies Act 1989 which imply that 'securities and assets' might be set off in insolvency as if they were debt obligations.[5] Since insolvency set-off is not available in relation to things, only debts,[6] for a statutory provision to imagine it were possible for anything other than debt securities would suggest that a balance on a securities account could now be juridically characterised as a purely personal obligation of the account provider, a conclusion which would generally be regarded as wrong-headed.

Ownership and transfer under the Uncertificated Securities Regulations

6.3 Most practitioners, however, take a more pragmatic view of the law, which is to regard each share as a discrete item of property. This is implicit in the Uncertificated Securities Regulations 2001 (USRs),[7] regulation 14 of which provides that 'title to shares in a company … may be transferred by means of a relevant system'.

The USRs derive their authority from article 49(1) of the CSDR,[8] and in relation to United Kingdom issuers' shares, section 785 of the Companies Act 2006, which allows for regulations enabling title to securities to be evidenced and transferred without a written instrument. Section 785 and regulation 14 of the USRs thus make it unnecessary to comply with the Stock Transfer Act 1963 – which would otherwise require a stock transfer form to be used – where the shares have been accepted for uncertificated transfer within CREST, which is a 'relevant system' for the purposes of the USRs.

The USRs address the need for the name of a member of the company – the transferee of shares – to appear on the register of members by providing under regulation 20 that both the issuer of the shares and the Operator of the relevant system maintain registers of members, and that the company must also maintain

3 Goode, R, *Legal Problems of Credit and Security* (3rd edn, Sweet & Maxwell, April 2003), ISBN 0-421-47150-6, para 2-06
4 *Re Steel Wing Co Ltd* [1921] 1 Ch 349
5 Sections 182A and, more significantly, 182B
6 *Eberle's Hotels v E Jonas & Bros* (1887) 18 QBD 459
7 SI 2001/3755
8 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc

a copy of the Operator register of members. So, essentially, the issuer keeps a register of certificated shareholders, and a carbon copy of the Operator's definitive record of ownership of uncertificated shares. Detailed provisions regarding maintenance of these registers and records is set out in Schedule 4 of the USRs, including that the company must ensure that the record of uncertificated shares is regularly reconciled with the Operator register of members.

As regards other types of securities than shares, regulation 19 of the USRs makes similar provision to that in regulation 14, so that title to other securities can be transferred by means of a relevant system: CREST is used to settle 'general public sector securities' and 'eligible debt securities' which consist of securities such as UK gilts and certificates of deposit which used to be settled at the Bank of England.[9]

Transfer of securities is provided for under regulation 27 of the USRs: 'upon settlement of a transfer of uncertificated units of a security in accordance with his rules … an Operator shall register on the relevant Operator register of securities the transfer of title to those units of that security'. Further provisions facilitate the giving of instructions to the Operator to effectuate settlement.[10]

Indirect holdings

6.4 The preceding discussion has been focused on a very simple case, that of 'direct' holding of securities by registration of the owner's name in the register of members of the company. However, investments may not be made in this way, particularly if the investor is located in a different country from the issuer of the securities. In practice a chain of intermediaries (sometimes called 'account providers') will stand in the chain between the investor and the issuer. This is referred to as an indirect holding of securities, but indirect holdings pose particular problems for the law of ownership in many countries, and England is no exception. It is now generally accepted that a person whose name appears on the register of members but who is not the actual investor acts in the capacity of trustee.[11] English law thus has no fundamental problem with the idea that the trustee is merely a 'legal' owner of the securities and that the investor is the 'beneficial' owner; but there are a number of awkward consequences of a simple trust analysis of indirect holdings:

(1) A problem which has exercised academics for some time is whether a trust can validly be created in respect of 10 of the 100 shares credited to an account, owing to a doubt as to certainty of subject-matter. This question has been settled by the ruling in *Hunter v Moss*,[12] which (despite its critics[13]) held that 'there is no objection on grounds of uncertainty to a trust of part of a shareholding of the trustee, and has been followed, in

9 See the Bank of England's webpage *The Future of Money Market Instruments* (papers up to October 2003)

10 USRs, regs 35, 36

11 Yates, M, and Montagu, G, *The Law of Global Custody* (Tottel, February 2009), ISBN 978-1847661425; Benjamin, J, *Interests in Securities* (Oxford University Press, 2000), ISBN 0-19-826992-7, para 2.36

12 [1994] 1 WLR 452, CA

13 For example, Hayton, D, 'Uncertainty of Subject-matter of Trusts' (July 1994) *LQR* vol 110, p 335; Birks, P, *Establishing a Proprietary Base (Re Goldcorp)* (September 1999) *Restitution Law Review* Vol 7, p 83

the United Kingdom in *Re Harvard Securities* [1997] 2 BCLC 369, in Hong Kong in *Re CA Pacific Finance Limited* [2000] 1 BCLC 494, and in Australia in *White v Shortall* [2006] NSW SC 1379'.[14]

(2) The person acknowledged by the registered member/trustee (A) may not be the actual investor (C), but another account provider (B) acting for the investor. English law does not have a problem with the idea that a mere beneficial entitlement is a piece of property which can be made subject to a trust, so that the intermediate account provider B actually holds something for the investor C under a sub-trust. But the property which B holds is different from that which A holds. Like it or not, there is risk involved in A's involvement, and there are operational and contractual aspects of the relationship between A and B which mean that C's experience as investor may be different from that of D, who chose a different holding pattern involving E as his immediate service provider, who in turn used F as custodian and directly registered member, not to mention G, who eschewed intermediaries altogether and became a sponsored participant in CREST and direct holder of the securities. So A's, D's and G's investments in the same securities are not quite identical. This is a different result from the holding of a chattel through a series of trusts and sub-trusts. To put it differently, unless an investor's interest is recorded at the ultimate 'root of title' it will be transformed into something slightly different by virtue of the intermediation arrangement.

(3) Without a legal estate, there is a risk to purchasers of securities from those who are mere beneficial owners. A third party can claim superior title: under English law only a bona fide purchaser of a *legal estate* for value without notice can defeat an equitable claimant. This leaves an acquirer open to challenges to his title on the grounds of priority in time. Difficult rules of equity relating to priority include an examination of whether reasonable steps were taken to obtain priority (for example, by giving notice under the rule in *Dearle v Hall*[15]), whether the subsequent acquirer had notice of the competing interest, whether the holder of the prior interest is estopped from relying on its priority through its conduct, and so forth.

(4) Section 126 of the Companies Act 2006 prohibits the entry on the register of members of any notice of a trust. This legal restriction, commonly reflected in companies' articles of association, entrenches the difficulties indirect investors may have in establishing their ability to be regarded as 'shareholders'. This is important as particular rights have been given to 'shareholders' under European law.[16]

(5) Collateral arrangements under which security is taken in accordance with the Financial Collateral Arrangements Regulations (FCRs)[17] are subject to a conflict of laws rule[18] which requires that only the law of the place where the 'relevant account' is maintained is relevant to legal questions relating to ownership and other proprietary interests in the securities. This is

14 *Re Lehman Brothers International (Europe), Pearson and ors v Lehman Brothers Finance SA and ors,* [2010] EWHC 2914 (Ch), per Briggs J

15 (1828) 3 Russ 1

16 See **section 20.15**

17 Financial Collateral Arrangements (No 2) Regulations 2003, SI 2003/ 3226; see **sections 13.40ff**

18 FCRs, reg 19

incompatible with a strict trust doctrine which would treat such questions as falling to be decided where the 'property' is located, disregarding completely the entries on a trustee's books. Unfortunately, if the strict trust doctrine must apply whenever the FCRs do not, and it is unclear whether the FCRs do apply in any particular case without answering a property law question, the absence of a complete code of law to cover all cases may give rise to irresolvable conflict.

(6) Section 53(1)(c) of the Law of Property Act 1925 requires that 'a disposition of an equitable interest or trust subsisting at the time of the disposition, must be in writing signed by the person disposing of the same' which could, in theory, pose difficulty. Sales and purchases are generally not a problem, either because it can be taken that the Companies Acts and the USRs have abolished the requirement in relation to transfers of uncertificated shares, or because in other cases a written instrument is in any event required by the Stock Transfer Act 1963. In other cases, the requirement for a 'signed' and 'written' instrument is likely to be satisfied, since electronic means of generating and authenticating documents are nowadays in scope.[19] Creation of security interests might be troublesome where the FCRs (which formally abolished the requirements of section 53(1)(c)[20] for eligible financial collateral arrangements) do not assist.

(7) Insofar as 'ownership' of an equitable interest in property is to exist, it appears to require the existence of a specifically enforceable contract.[21] Where the securities bought are freely tradeable, the pre-requisites for specific performance may be difficult to establish.[22]

(8) Where a trustee mixes trust property with its own in an account, the rule in *Re Hallett's Estate*[23] will apply. In broad terms, the rule states that any withdrawals from that account are taken to be withdrawals of the trustee's own assets rather than those of the beneficiary; but that any replenishments made by the trustee do not accrue to the beneficiary but to the trustee itself.

(9) Where there is a shortfall in the property held on trust, it is not consistent with trust law principles to distribute the remaining assets on a *pari passu* basis. While English law has provided for shortfalls to be handled in this manner,[24] it has been argued that this is unjustifiable in relation to trust property, because equity requires appropriation of the property in the fund to the first beneficiary of the trust, so that latecomers receive nothing, and only for equal-priority beneficiaries to suffer reduction of their entitlements pro rata.[25] Statutory intervention has been needed to ensure the application of the *pari passu* principle in cases involving distribution of client assets where there is a shortfall.[26] But it will only apply if the account provider

19 Law Society/CLLS *Practice Note on the Execution of a Document using an Electronic Signature* (July 2016), www.docusign.co.uk/sites/default/files/The%20Law%20Society%20Practice%20Note%20on%20eSignatures.pdf

20 FCRs, reg 4(2)

21 *J Sainsbury plc v O'Connor* [1991] 1 WLR 963, CA

22 Micheler, E, *Property in Securities – A Comparative Study* (Cambridge University Press, August 2006), ISBN 978-0-521-83265-6, section 2.4

23 (1879) 13 Ch D 696, CA

24 *Barlow Clowes International Ltd v Vaughan* [1992] 4 All ER 22, CA

25 See McFarlane, B, and Stevens, R, 'Interests in Securities – Practical Problems and Conceptual Solutions' in Gullifer, L, and Payne, J, eds, *Intermediated Securities – Legal Problems and Practical Issues* (Hart Publishing, November 2009), ISBN 978-1-84946-013-2, pp 40–44

26 Investment Bank Special Administration Regulations 2011, SI 2011/ 245, reg 12(2)

unable to make the shortfall good is an 'investment bank'; in the case of a shortfall at a failed CCP or CSD, neither of which would qualify, the general law of trusts will prevail. The question whether a solvent custodian is obliged to remedy a shortfall which has arisen without fault on the part of the custodian is explored below in **section 6.21**.

(10) It can be difficult to ascertain whether a person is holding securities as beneficial owner or trustee. The factors which indicate the one rather than the other were examined by Briggs J during the course of the *Lehman Brothers* litigation.[27] The judge ruled (inter alia) that: (a) it is not fatal to a person's beneficial ownership of securities that those securities are co-mingled with the trustee's own securities, that the fund is fluctuating, or that the terms of the trust will decide the identity of the trust property at a future date; (b) 'whether B has a proprietary interest in the property acquired by A for B's account depends upon their mutual intention, to be ascertained by an objective assessment of the terms of the agreement or relationship between A and B with reference to that property'; and (c) the fact that A acts as agent or broker for B may suggest the existence of a trust but is not conclusive.

(11) Where the trustee is insolvent, that does not alter the nature of the trust or the duties of the trustee, but the effective management body may have no statutory duty, and possibly no legal power, to deal with the trust assets. Thus, in the Lehman Brothers collapse, the administrators of Lehman Brothers International (Europe) could not be hurried by asset claimants into making an early distribution.[28] English law permits administrators to take over the role of trustee, covering their expenses from the trust assets,[29] but only since the implementation of the Investment Bank Special Administration Regulations has this been a required course of action.[30]

What this discussion illustrates is that, while the practical and operational systems for share ownership and transfer are well understood and for the most part function efficiently, there remains debate at an academic level about how those practical and operational arrangements can be sensibly reconciled with legal rules which were not designed for them. Given the existence of settlement fails,[31] contractual settlement,[32] and use of omnibus accounts,[33] it is readily seen that the kind of forensic analysis theoretically required for trustees is unworkable. In practice the issue only gives rise to difficulty for investors if there is a shortfall on the account which the account provider cannot rectify, either because there are no replacement securities to be had, or because the account provider is insolvent – investors are unlikely to complain when they have got their securities and have no idea that for a short period the account balance did not reconcile. So the academic debate is continued in the court-room.

27 *Re Lehman Brothers International (Europe), Pearson and ors v Lehman Brothers Finance SA and ors* [2010] EWHC 2914 (Ch)

28 *Re Lehman Brothers International (Europe), Four Private Investment Funds v Joint Administrators* [2008] EWHC 2869 (Ch)

29 *In re Berkeley Applegate (Investment Consultants) Ltd* [1989] Ch 32

30 Investment Bank Special Administration Regulations 2011, SI 2011/ 245, Table 1, modifying the Insolvency Act 1986, Sch B1, para 99

31 See **sections 21.10ff**

32 See **section 19.32**

33 See **section 6.15**

This is an unsatisfactory state of affairs. A European Commission project for 'legal certainty',[34] intended to sweep many of these difficulties into oblivion by the expedient of a Securities Law Directive, appears to have run into the sand. In 2019, the Law Commission issued a call for evidence on intermediated securities, with a view to 'identifying issues in the current system of intermediation', but it appears that there is a long road to travel before any formal reforms take place.[35]

OWNERSHIP IN OTHER LEGAL SYSTEMS

6.5 The English experience has, to some extent, been reflected in other jurisdictions. While the detailed issues reflect the legal traditions of the countries where they arise, the conclusion is the same: traditional property law is ill-adapted to the concept of the dematerialised security. Dr Christophe Bernasconi has analysed the problem of interests in securities held through indirect holding systems as follows.[36] Traditional principles of civil and common law dictate that property rights are lost when a person's property is fungible and it is commingled with similar property of other persons, such as the account provider or other clients of the account provider. The unpleasant consequence of rigid adherence to traditional principles would be that the client whose securities are combined, at some level in the holding chain, in an omnibus account would see them replaced by a mere contractual right of delivery-up of the securities or possibly by a co-ownership right. Consequently:

- Some legal systems have forbidden commingling. These are the direct holding systems such as those in Scandinavia.
- Some legal systems recognise only the contractual right of re-delivery, with the consequence that custodians are prohibited from engaging in other activities, to limit the extent to which non-depositor claimants might have any competing rights. This has historically been the situation in (for example) the Netherlands.
- Some legal systems provide for co-ownership, allowing a property right in an undivided share of the property held by the account provider, as in Germany or Spain, or what ought to be held by the account provider, as in Belgium or Luxembourg. This is also the model, using the device of a trust, historically adopted in England.
- Some legal systems provide for look-through, which allows the ultimate investor to have a property right in the underlying securities, casting the intermediaries as mere administrative agents. This has historically been the situation in France.
- In the United States, the whole debate was done away with in 1994 in article 8 of the Uniform Commercial Code. The idea there is that the investor does not have securities at all, but a 'securities entitlement' conferring certain rights against his account provider, including rights to property belonging to the account provider. The article 8 model has been refined to constitute the basis of the Geneva Securities Convention.

34 See **section 6.8**

35 Law Commission, *Intermediated securities – Call for evidence* (August 2019), www.lawcom.gov.uk/project/intermediated-securities/

36 Bernasconi, C, *The law applicable to dispositions of securities held through indirect holding systems* (November 2000), Hague Conference on Private International Law, Convention No 36, Prel Doc No 1, www.hcch.net/index_en.php?act=publications.details&pid=2859&dtid=35

Dr Bernasconi also reported on the difficulties to which the traditional approach gives rise. Quite apart from the complexities which follow from an international holding structure where the issuer, registrar or depositary, custodian, and investor may all be in different countries applying different legal rules to the question of ownership, there are serious practical problems with a look-through approach. These include the absence of records at any level beyond the investor's account provider suggesting any connection between the investor and the asset, the need for collateral takers to 'perfect' their security in every country where an account provider intermediating between itself and the issuer maintains its accounts, and the impracticality of delivering voting rights or other shareholder entitlements in a uniform manner. In a single European market, a more practical and efficient legal solution is needed. But this is not a straightforward matter, as Professor Alberto Giovannini noted in his first report:

> 'The third type of barriers reflects the existence of different legal rules defining the effect of the operation of a system, including different legal structures concerning securities themselves. This type of barrier is of a different order to the others. Barriers of market regulation and of tax can generally be changed or abolished without affecting basic legal concepts. However, laws about what securities are and how they may be owned form a basic and intimate part of the legal systems of Member States, and to change them will have many ramifications. Barriers related to legal certainty trouble securities settlement systems, clearing systems, and market intermediaries equally.'[37]

Specifically, Professor Giovannini recommended the removal of two legal barriers relating to questions concerning ownership of securities: Barrier 13, 'The absence of an EU-wide framework for the treatment of interests in securities' and Barrier 15, 'Uneven application of national conflict of law rules'. In 2017, the European Post Trade Forum (EPTF) recast the barriers as EPTF Barrier 9 (Deficiencies in the protection of client assets as a result of the fragmented EU legal framework for book entry securities) and EPTF Barrier 11 (Legal uncertainty as to ownership rights in book entry securities and third party effects of assignment of claims).[38] These subjects therefore deserve more detailed exploration.

CONFLICT OF LAWS: PRIMA AND THE HAGUE CONVENTION

6.6 One way of dealing with the problem is to agree a universal set of conflict of laws rules, which ensures that all countries agree on whose legal system applies to resolve any question arising in respect of property rights. This is the approach of the Hague Convention.[39] The Hague Convention adopts the 'PRIMA' or 'place of the relevant intermediary approach' – that is to say, the law applicable to certain questions of property law are to be answered exclusively by

37 Giovannini, A, *Cross-Border Clearing and Settlement Arrangements in the European Union* (November 2001), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/first_giovannini_report_en.pdf, p 54

38 European Post Trade Forum, *EPTF report* (May 2017), https://ec.europa.eu/info/publications/170515-eptf-report_en

39 Hague Conference on Private International Law, *Convention on the law applicable to certain rights in respect of securities held with an intermediary* (July 2006), Convention No 36, www.hcch.net/index_en.php?act=conventions.text&cid=72

reference to the law of the relevant account. The central proposition of PRIMA is that there is only one relevant relationship in determining entitlement to securities credited to an account, namely that between the account holder and the account provider. Each link in a long chain of intermediation is looked at separately.

The Hague Convention also specifies that the 'law of the relevant account' is usually the law governing the account agreement.[40] The Convention thus dispenses entirely with any idea that 'location' or '*lex situs*' are relevant to the choice of law, notwithstanding that the choice affects property rights. It is probably for the latter reason that the European Commission, having proposed in 2003 that the EU should sign the Convention, and in 2006 called upon Member States to sign it, in 2009 withdrew its proposals.[41]

Nevertheless, the PRIMA approach is already embedded in the following European legislation, albeit in a more diluted form than envisaged by the Hague Convention. Each of these pieces of legislation refers to the law relevant to an account:

- The Settlement Finality Directive specifies that where the rights of a person with respect to securities provided as collateral in connection with a payment or securities settlement system, or to a central bank, are recorded on a register, account or centralised deposit system located in a Member State, the determination of the rights shall be governed by the law of that Member State.[42] After the United Kingdom's departure from the European Union, the UK version of this provision omits the geographical limitation to EU Member States.[43]
- The Winding-up Directive for credit institutions (WUD)[44] also states that 'the enforcement of proprietary rights in instruments or other rights in such instruments the existence or transfer of which presupposes their recording in a register, an account or a centralised deposit system held or located in a Member State shall be governed by the law of the Member State where the register, account or centralised deposit system in which those rights is recorded is held or located'. After the United Kingdom's departure from the European Union, the UK implementation of this rule is deleted.[45]

The formula used by the SFD and WUD can be criticised: it may point to more than one relevant jurisdiction, and it could even disregard PRIMA altogether if it is interpreted by Member States as requiring look-through to the CSD. Thus, the post-Brexit UK version may make it easier for PRIMA to apply in relation to securities whose root of title is recorded at a CSD. A different approach is used in other EU legislation:

40 Hague Convention, art 4

41 European Commission, Press Releases IP/03/1725 (December 2003); IP/06/930 (July 2006); OJ C71/17 (March 2009); http://ec.europa.eu/internal_market/financial-markets/hague/index_en.htm

42 Directive of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems, 98/26/EC, art 9(2)

43 Financial Markets and Insolvency (Amendment and Transitional Provision) (EU Exit) Regulations 2019, SI 2019/341, reg 8(3)

44 Directive 2001/24/EC of the European Parliament and of the Council of 4 April 2001 on the reorganisation and winding up of credit institutions, art 24

45 Credit Institutions and Insurance Undertakings Reorganisation and Winding Up (Amendment) (EU Exit) Regulations 2019, SI 2019/38, reg 3(15)

- The Financial Collateral Directive (FCD) specifies that any question falling under one of four heads which arises in relation to book entry securities collateral is to be governed by the law of the country in which the relevant account is maintained, disregarding any rule under which reference should be made to the law of another country.[46] The United Kingdom's departure from the European Union leaves the UK implementation of this rule essentially unchanged.[47]
- The EU Insolvency Regulation (EUIR) specifies that the location of book entry securities is the Member State in which the register or account in which the entries are made is maintained.[48] It is made clear that the rule applies to cases where the books are maintained by an intermediary. The rule is perhaps of limited effect, since it is primarily for the purpose of allocating assets among different geographically limited insolvency proceedings affecting the same entity,[49] but it is useful in relation to article 8 of the EUIR, which protects rights *in rem* of creditors where the asset is located in another Member State. After the United Kingdom's departure from the European Union, the asset allocation rules of the EUIR are deleted.[50]

The proposal for the CSDR contained an article to the effect that any question with respect to proprietary aspects in relation to financial instruments held by a CSD should be governed by the law of the country where the account is maintained,[51] but this was dropped during the legislative process. The controversy continues, so that there seems to be little prospect of a Securities Law Directive in accordance with the European Commission Services' preliminary suggestions of late 2010, which would have provided that any question with respect to any of seven specified matters arising in relation to account-held securities should be governed by the national law of the country where the relevant securities account is maintained by the account provider.[52]

These tests for PRIMA are all open to criticism because it may be extremely hard to pinpoint a single jurisdiction for the place where the account is 'maintained'.[53] In any event, choice of law cannot achieve harmony of substantive rights, without which investors face disparities of treatment in respect of simple questions where, in a single market, one would expect identical investments to be treated identically.

46 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements, art 9

47 Financial Markets and Insolvency (Amendment and Transitional Provision) (EU Exit) Regulations 2019, reg 12

48 Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings, art 2(9)(ii)

49 Cf **section 5.3(2)**

50 Insolvency (Amendment) (EU Exit) Regulations 2019, SI 2019/146, reg 3

51 European Commission, *Proposal for a Regulation of the European Parliament and of the Council on improving securities settlement in the European Union and on central securities depositories, etc* (March 2012), COM(2012) 73 final, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52012PC0073:EN:PDF, art 46

52 European Commission Services, *Legislation on legal certainty of securities holding and dispositions* (November 2011), Consultation Document DG Markt G2 MET/OT/acg D(2010) 768690, http://ec.europa.eu/internal_market/consultations/docs/2010/securities/consultation_paper_en.pdf, Principle 14

53 See for example Bernasconi, C, and Potok, R, *PRIMA Convention brings certainty to cross-border deals* (January 2003), International Financial Law Review, pp 11–14

SUBSTANTIVE PROBLEMS OF OWNERSHIP WITH REGARD TO SECURITIES HELD IN AN ACCOUNT

6.7 Accordingly, as a parallel exercise to the Hague Convention, UNIDROIT developed the Geneva Convention on Substantive Rules for Intermediated Securities.[54] This seeks to codify, at international level, the following matters affecting the rights of account holders and the obligations of account providers:

(1) *Rights of an account holder*. The credit of securities to an account confers certain rights on the account holder. These include the right to receive and exercise certain rights attached to the securities, including dividend and voting rights, the right to effect a disposition, and the right to instruct the account provider to cause the securities to be held otherwise than through an account, insofar as permitted by applicable law.[55]

(2) *Obligations of an account provider*. The account provider is obliged to take appropriate measures to enable account holders to exercise those rights, including holding sufficient securities to cover the credits to accounts, steps to isolate the securities held from creditors in the event of its own insolvency, giving effect to the account holder's instructions, not disposing of the securities without authorisation, passing on information necessary for the exercise of rights, and passing on dividends. The obligations of the account provider are limited to what is agreed and supervening law.[56]

(3) *Acquisition and disposition*. Acquisition is by credit to an account; disposition is by debit. Lesser interests in securities can be created in three ways only, each requiring an agreement: if the account provider is the grantee, without further formality; if a 'designating entry' is made on the account in favour of the grantee; and if there is a 'control agreement' in favour of the grantee. Acquisitions and dispositions made in accordance with these rules have effect against third parties. The circumstances in which debits may properly be made are limited.[57]

(4) *Impact of insolvency proceedings*. If the account holder or the account provider becomes insolvent, this does not affect the rights and interests which have become effective against third parties.[58]

(5) *Priority rules*. The innocent acquirer (a person in whose favour a credit or designating entry is made unless he actually knows or ought to know of another person's interest) takes free of other claimants' interests. Other priority rules rank competing interests in other circumstances.[59] This is all very well, but the Convention does not really explain how a bona fide acquirer can obtain good title if a bona fide prior owner retains title according to a different set of account entries, without the 'creation' of additional securities.

(6) *Upper tier attachment*. The ability of a creditor or claimant to 'attach' securities not at the level of the account provider, but at a more remote level

54 International Institute for the Unification of Private Law, *Convention on Substantive Rules for Intermediated Securities* (October 2009)
55 Geneva Convention, art 9
56 Geneva Convention, arts 10, 23
57 Geneva Convention, arts 11, 12, 15
58 Geneva Convention, arts 14, 21
59 Geneva Convention, arts 18, 19

(the 'upper tier') where the account provider's own interest is recorded, is expressly prohibited.[60]

(7) *Shortfalls*. If an account provider finds that there are insufficient securities for its account holders and itself, it must replenish them. If the shortfall arises in the insolvency of the account provider, the account holders bear the loss rateably to the amounts credited to their accounts.[61]

(8) *Collateral arrangements*. Chapter V of the Geneva Convention, which post-dates the FCD,[62] contains eight articles on securities collateral arrangements, covering much of the same ground as the FCD.

Certain matters are not, however, addressed by the Geneva Convention, but are left to 'non-Convention law'. Among these are the consequences of unauthorised debiting of accounts, whether debits or credits are invalid or may be conditional, some priority contests, and the relationship of investor with the issuer on matters such as right to attend and vote at meetings.

Securities Law Directive

6.8 The European Union has not adopted the Geneva Convention, despite participating in its development. The idea of a Securities Law Directive proved controversial.[63] Accordingly, it seems unlikely that the suggestions of the European Commission made in 2011[64] will proceed.

SECURITIES AS COLLATERAL

6.9 In the context of clearing and settlement, securities are not just the subject-matter of transactions but may also constitute a valuable source of collateral. A discussion of issues concerning the ownership of securities must necessarily include coverage of the special considerations which arise when the ownership interest is contingent – that is, the right of a collateral-taker in circumstances typically described as an 'event of default' to take over ownership of the securities, or at least to have a right of sale in respect of the securities.

6.10 There are several techniques for taking securities as collateral.

(1) *Mortgage.* The oldest method of securing a creditor's rights is that of a mortgage, under which title to property is transferred subject to an 'equity of redemption', that is an obligation on the part of the mortgagee to re-convey the property to the mortgagor on repayment of the loan, and in the meantime for the mortgagor to enjoy possession but for the mortgagee to

60 Geneva Convention, art 22
61 Geneva Convention, arts 24, 26
62 See **sections 13.37ff**
63 Cf European Commission Services, *Legislation on legal certainty of securities holding and dispositions – Summary of responses to the Directorate-General Internal Market and Services' second consultation* (September 2011), http://ec.europa.eu/internal_market/consultations/docs/2010/securities/extended_summary_responses_en.pdf
64 European Commission Services, *Legislation on legal certainty of securities holding and dispositions* (November 2010), Consultation Document DG Markt G2 MET/OT/acg D(2010) 768690, http://ec.europa.eu/internal_market/consultations/docs/2010/securities/consultation_paper_en.pdf

have a power of sale, and potentially a power of foreclosure (a right to appropriate the property for himself) on a failure to repay. A mortgage of securities is possible, if the collateral-taker can get himself registered on the record of ownership as the legal owner of the securities. So, for example, in CREST, if the securities are transferred into the CREST account of the collateral-taker, the collateral-taker may have a mortgage. If an account transfer happens at a different level in the holding chain, it is less clear whether a mortgage has been created. Under English law, the property of the collateral-provider may have been a beneficial interest in securities held for him on trust by a custodian or account provider – but they may not, because the securities in question are not English securities and the characterisation of the holding pattern under the relevant legal system may not be to confer a property right in the securities themselves upon the collateral-provider, as discussed above. It is possible to create a mortgage of the collateral-provider's beneficial interest in the securities, where that is what the collateral-provider has to give.[65] This would ordinarily require a transfer of the 'securities' to the account of the collateral-taker, and the entry into documentation indicating clearly that the arrangement was intended to create a security interest.

(2) *Title transfer collateral.* Mortgages are distinguished from title transfer collateral arrangements. Title transfer collateral involves an outright transfer with no equity of redemption – the collateral-provider completely surrenders its rights to the collateral. This technique is accordingly at risk of challenge in a court exercising equitable jurisdiction, on the grounds that a collateral arrangement of necessity involves an equity of redemption, whether or not the parties recognised that and provided for it in their documentation. This risk is called 'recharacterisation risk'. The accepted way of avoiding recharacterisation risk is to ensure that, at the moment the collateral-provider no longer owes anything to the collateral-taker, or upon an event of default, the collateral-taker is contractually obliged to transfer immediately to the collateral-provider securities equivalent to those originally transferred, or their cash value. If the collateral-provider has defaulted, the cash value of the collateral return obligation can be set off against what the collateral-provider owed, giving the same economic effect as a mortgage.

(3) *Charge.* A charge is an encumbrance on the collateral-provider's property which confers a security interest, that is the right to sell on an event of default and any other rights which have been contractually agreed. It is, in essence, a mortgage without the requirement for a conveyance of legal title to the collateral. Charges typically come in two forms: fixed and floating. The distinction once spawned an immense amount of judicial and academic debate, since the consequences of mis-characterisation used to be dire; but now all charges, whether floating or fixed, must be registered under section 860 of the Companies Act 2006,[66] so the only question of substance is less whether the charge is fixed than whether it constitutes a financial collateral arrangement, as discussed in **sections 13.40–13.43.**

(4) *Lien.* A lien in English law is a possessory right, which allows a person who has possession of another person's property to detain it – that is, to

65 Cf. Benjamin, J, *Interests in Securities* (Oxford, December 2000), ISBN 0-19-826992-7, para 5.07

66 See also Companies Act 2006, s 874

refuse to act on instructions to deliver up or transfer the property – until payment is made. Bankers have taken liens over securities for centuries,[67] notwithstanding that the lien applies only to a scrip component of mere evidential value.[68] A lien may take the form of a specific lien covering the price of the specific asset only (that is, a form of purchase-money security interest) or a general lien covering all monies due in respect of an account or a client relationship. A lien may be coupled with a contractual right of sale. It has been held that a contractual possessory lien – a mere right to detain, not to seize possession – coupled with a right of sale is not a 'charge',[69] and thus does not need registration under the Companies Acts. What is more difficult to discern is the extent to which the concept of a lien can be applied to intangible assets such as securities credited to an account. Here it may be noted that the concept of possession of intangible property is not universally accepted by English lawyers.[70] However, assuming that a modern interpretation of 'possession' in this context accommodates the case where securities are credited to an account, a lien should be available over securities credited to an account. (Many banks' modern custody documentation includes a lien; the FCRs[71] contemplate the existence of liens over securities as a form of collateral; and the Financial Conduct Authority's rules restrict the taking of a lien in some circumstances.[72] These matters provide strong evidence that possessory liens relating to securities in accounts are genuine legal constructs.)

6.11 Turning now to examine the merits of the various techniques in a clearing and settlement context, the following comments may be made.

(1) In the first place, securities are rarely a static asset in the hands of a person seeking clearing and settlement services. Securities tend to be stock-in-trade for many heavy users of such services, such as hedge funds or investment firms. It is therefore commercially illogical to expect securities to be 'locked away' in the account equivalent of a tin box for the duration of the exposure by these collateral-providers. Rather, securities collateral arrangements need to be dynamic, constituting floating charges or purchase-money security interests. Constant re-evaluation of the amount of collateral required (typically on an intra-day basis) and achieving real-time transfer of title may be operationally impossible for many service providers. The implication is that mortgages and title transfer collateral arrangements may not be feasible for those situations.

(2) Secondly, in administration, permission of the administrator or of the court is needed to enforce a security interest of any description, whether mortgage, fixed charge or floating charge.[73] If a title transfer collateral arrangement is not feasible (there being no bar in administration to operating the default mechanism under such an arrangement), the only solution to the problem of enforceability is to try to ensure that the collateral arrangement is a 'financial collateral arrangement' as defined

67 *Currie v Misa* (1875–76) LR 1 App Cas 554, HL; there are older cases
68 *In re United Service Company* (1870–71) LR 6 Ch App 212, CA
69 *Trident International Ltd v Barlow & ors* [2000] BCC 602, CA
70 See discussion at **section 13.42**
71 SI 2003/3226; see reg 3, definition of 'security interest', para (e)
72 Financial Conduct Authority, *Handbook of Rules and Guidance, Client Assets Sourcebook* (January 2018), CASS 6.3.6AR
73 Insolvency Act 1986, Sch B1, para 43(2); cf **section 13.12(3)**

in the FCRs. This solution may not be easy to come by, as discussed in **section 13.41**. The chances are that a lien cannot be relied upon to detain securities in administration any more than a charge can be enforced, because the administration moratorium prohibited the airport authority in *Bristol Airport v Powdrill*[74] from exercising a right to detain an aircraft.

(3) Thirdly, unlike the law in some other countries, English law does not reliably give an intermediary a purchase-money security interest. There is an old case[75] confirming that bankers enjoy a 'general lien on all securities deposited with them as bankers' but, given the likely usage of 'lien' connoting a possessory interest over a physical thing at the time of this case, the common-law banker's lien may relate only to assets in paper form, and in any case a simple lien would not include a right of sale. In other countries where a purchase-money lien or security right is available, it appears to protect an agent bank as well as a broker against settlement risk where the agent bank has, in effect, paid for the client's purchase of securities. In such a case the broker or account provider, or a third party, will have paid on the account-holder's behalf, and may wish to reserve title until payment is made. An example is the statutory lien in Italy[76] which allows the unpaid service provider to sell securities received for the account of its client to cover the price paid for them. Similar laws apply in France (which gives the unpaid account provider ownership rights over the securities).[77]

6.12 Mention should also be made of the unique security arrangements available in the CREST system, which add a further layer of complication to the process of taking security in the United Kingdom. If a collateral provider holds its securities directly in CREST, that is in an account opened in its own name (typically where a sponsor is appointed to operate the account, that is to give properly authenticated dematerialised instructions in accordance with the Uncertificated Securities Regulations 2001[78] and the CREST Reference Manual), it may create security in a variety of ways:

(1) The most obvious is a legal mortgage, whereby the securities are transferred to the account of another CREST participant. However, collateral providers shy away from transfer of title even under mortgage terms, and in the clearing and settlement context where a floating charge is essential, this approach is unworkable.

(2) A second option offered in CREST is the 'escrow account', whereby a transfer to the collateral-taker's escrow account visibly preserves the collateral-provider's property interest in the securities; but it is open to the same objection as a mortgage, and, moreover, the escrow account is at risk of being frozen by Euroclear UK & Ireland (EUI), the CREST operator. This is because EUI's practice is to enforce the moratorium in an administration until authorisation by the administrator for the enforcement has been granted. 'In the event of the disablement (suspension) of a member, the CREST system has functionality which … might be utilised, for example, where a bank wishes to enforce its (fixed) charge over the stock

74 [1990] Ch 744, CA
75 *Brandao v Barnett* (1846) 12 Cl & F 787, HL
76 Civil Code, s 2761(2)
77 Code Monétaire et Financier, arts L. 431–3; Code Civil, art 544
78 SI 2001/3755

held in the escrow balance. However, EUI will not permit the settlement of a [transfer from escrow] in these circumstances without being satisfied that the risk of a bad delivery or of a threat to the security, reputation or integrity of the system has been minimised.'[79] It seems to be immaterial from EUI's viewpoint that the arrangements might constitute a financial collateral arrangement and therefore be unaffected by a moratorium.

(3) A third possibility, which can be of great benefit to settlement service providers, is open to CREST settlement banks only. If EUI is satisfied that the charge documentation is in the appropriate form, a charge securing settlement bank exposures can be noted by EUI as eligible for 'fast track' enforcement notwithstanding the implementation of insolvency proceedings. In brief: if the chargee is a settlement bank, EUI will allow the bank to control the chargor's account in CREST and issue 'properly authenticated dematerialised instructions' pertaining to the chargor's account, provided that the CREST requirements for fast track enforcement[80] are met and (if the chargor is disabled by EUI, due to its insolvency) the charge falls within regulation 4 of the Financial Markets and Insolvency Regulations 1996 (FM&I Regulations).[81] Regulation 4 requires that the charge is granted to secure debts or liabilities arising in connection with the transfer or issue of uncertificated securities,[82] and refers in its provisions to the CREST system. The FM&I Regulations apply Part 7 of the Companies Act 1989,[83] and thereby grant protection against the administration moratorium. Additional protection, to the same effect, applies by virtue of the Settlement Finality Regulations 1999;[84] and the FCRs ought also to be available, although again they are not mentioned by EUI in the CREST Reference Manual. Security provided in this way will typically be a floating charge and will typically encompass all the securities in the account of the collateral provider.

OWNERSHIP OF PURCHASED SECURITIES

6.13 In the context of clearing and settlement, a burning question is at what moment a purchaser actually acquires ownership of his securities. 'When the purchaser has his name recorded on the shareholders' register' is a trite answer, given that typical scenarios will involve intermediation by a custodian or broker. Furthermore, registration is not conclusive, since long-standing case law shows that equitable ownership can be transferred without entry on the shareholders' register.[85] The question of time of acquisition of ownership is, at least in the absence of a Securities Law Directive, a question of when the account provider intends to hold the securities acquired on trust for the acquirer. This would make it important for the provider of accounts to specify when ownership is intended to pass. In the absence of any express agreement, transfer of beneficial ownership ought to coincide with delivery (or credit to the account), though there does not

79 EUI, *CREST Reference Manual* (November 2015), ch 7, s 3
80 CREST Reference Manual, ch 6, s 7
81 SI 1996/1469
82 Cf FM&I Regulations, reg 3(2)
83 See **sections 13.16ff**
84 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979; see **section 13.33**
85 *Re Rose, Rose v IRC* [1952] Ch 499, CA

appear to be judicial authority precisely on this point. The following would be helpful if it applied to securities credited to accounts:

> 'Where there is a contract for the sale of unascertained or future goods by description, and goods of that description and in a deliverable state are unconditionally appropriated to the contract, … the property in the goods then passes to the buyer.'[86]

The trust construct leaves open the possibility under English law that credit entries might be made to a securities account without the intention of conferring ownership rights on the account holder, though it is likely that this theoretical line of reasoning may not be consistent with operational practices.

6.14 'Conditional credits' (such as arise in connection with contractual settlement)[87] may be a species of credit entry not intended to confer ownership rights. Conditional credits may be used where the securities have been bought to satisfy the order of an account holder who has not paid for them, as well as to cover the case where delivery has been notified by the CSD but is not legally final. Under English law, equitable title will pass at the moment intended by the parties in creating the trust arrangement. Consequently, in England it is not possible to conclude that an unpaid service provider retains any beneficial interest in the securities once they are credited to a non-payer's account, unless some explicit arrangement to the contrary has been agreed. Given that the non-payer might itself be an intermediary, anomalies can arise. Consider the case where the account holder is a broker, on whose behalf a custodian has paid the purchase price; and now the broker is unable to pay its debts. The broker's securities account may be a client account, with the result that the broker's client may receive title to the purchased assets regardless of whether the client or the broker has paid for them. A more troublesome example is where the end-investor client did pay the broker, who did not pass the price on to the agent bank. Here, title to the securities may pass to the client, but without the prospect of payment being made to the agent bank, unless somehow the bank can assert the client's rights to any share in the pool of client money which the broker should have set aside. Or it may be that the custodian has successfully reserved title to the unpaid-for securities, and (as the broker is insolvent) the client will get nothing even though the client has paid the broker in full.

OMNIBUS AND NOMINEE ACCOUNTS

6.15 An omnibus account is a single account where the assets of multiple clients are commingled.[88] Omnibus accounts have various advantages. The main one is that they allow for net settlement (deliveries in respect of sales can be netted against receipts in respect of purchases) thereby saving cost. Other advantages have been asserted which include the difficulty of establishing large numbers of single-client accounts in the CSD, transfer of shareholder management to the account provider and internalised settlement.[89] However, there are also disadvantages, first among which is the need for some mechanism

86 Sale of Goods Act 1979, s 18, r 5(1)
87 See **section 19.32**
88 See also **section 17.32**
89 Turing, D, *Omnibus Accounts* (August 2005), European Commission Legal Certainty Group working document, http://ec.europa.eu/internal_market/financial-markets/docs/certainty/background/31_8_5_turing_en.pdf

for loss-allocation in the event of a shortfall which cannot be rectified. Other disadvantages which have been mentioned are 'forced lending' – that is, when securities are debited leaving a temporary shortfall, resulting in credit risk on the account provider, distancing the issuer from the investor, and unequal treatment on corporate actions.

6.16 A nominee account is typically an account used by a broker for custody of its clients' securities. The nominee is established as a separate corporate vehicle with limited permissions under the Regulated Activities Order – in particular, not including dealing permissions – with the intention that its function will be restricted to safeguarding and administering the investments of the clients, and where a fully-regulated custodian accepts responsibility for the nominee's activities.[90] The structure will serve to isolate the clients' assets from the insolvency of the broker and thereby provide a second layer of protection (in addition to the trust implicit in the nominee's custody relationship) for the clients. A regulated firm holding a safe custody asset for a client is required to have the security registered in the name of a nominee unless it is registered in the client's name or it is a non-United Kingdom security.[91] Securities held in 'nominee name' are thereby held apart from those in 'street name'. A nominee account does not guarantee to clients that their assets will be returned, as (i) in the ordinary way, the nominee will be under the control of the broker, thereby exposing the assets to the risks associated with fraud and incompetence; and (ii) the nominee's account at the CSD will be an omnibus account. On the other hand, a nominee account will bring to the client the advantages of an omnibus account, and anonymity (as the nominee name appears on the public record of shareholders).

REHYPOTHECATION

6.17 A right of use of a customer's assets would generally be a violation of the duties of a trustee, or, if the reason that the assets have been entrusted to a third party is because of the existence of a mortgage or charge, a clog on the customer's equity of redemption. However, it is permissible for the terms of a trust to give the trustee unimpeded rights to deal with the trust property, including rights to lend, repo, or dispose outright.[92] Furthermore, since the implementation of the FCRs, it is permitted for a security financial collateral arrangement to include a term creating a binding right of use in favour of a collateral-taker.[93] In the strict sense 'rehypothecation' refers to the latter situation only, in circumstances where the collateral-taker needs to use the securities to secure its own obligations; but in common usage all cases of use of a client's assets for purposes other than the client's own may be meant.

Rehypothecation is a controversial practice because the use of a client's property necessarily involves the conversion of the client's asset, which was a piece of property held in safe custody, into a personal claim against the securities

90 Yates, M, and Montagu, G, *The Law of Global Custody* (3rd edn, Tottel, February 2009), ISBN 978-1847661425, para 7.20

91 Financial Conduct Authority, *Handbook of Rules and Guidance, Client Assets Sourcebook* (June 2015), CASS 6.2.3R

92 *Re Lehman Brothers International (Europe), Pearson and ors v Lehman Brothers Finance SA and ors* [2010] EWHC 2914 (Ch)

93 FCRs, reg 16

account provider, and such a claim may be worthless in the event of the account provider's insolvency. Rehypothecation has also been accused of creating a variety of risks, such as systemic risk, delay in return of client assets, ownership contests between 'bona fide purchaser' and original owner, and exacerbation of runs to withdraw assets from hedge funds in times of stress.[94] It may be disingenuous for hedge funds and other sophisticated investors to assert that they were unaware of the implications of rehypothecation for their ownership rights, but before the Lehman crisis prime brokers had only weak obligations to be explicit and timely in their disclosures to clients as to the extent of exercise of rehypothecation rights. Since the Lehman episode, the Securities Financing Transactions Regulation[95] has come into effect, but while it requires consent and risk disclosure wherever title transfer collateral arrangements or rights of use are involved,[96] the Regulation stops short of requiring disclosure about actual exercise of rights of use. In the United Kingdom, rules have been introduced which require prime brokers to provide daily information to their clients on collateral held in respect of transactions where the prime broker has exercised a right of use[97] (though, curiously, no report of the safe custody assets in respect of which a right of use has been exercised is required). All this contrasts with the position in the United States, where a broker or dealer is required to have physical possession of 'excess margin securities', defined as securities having a market value in excess of 140% of the total of the debit balances in the customer's accounts.[98]

CLIENT ASSETS

6.18 Pervading the discussion of ownership of securities has been a recurring theme: that one person may be holding securities for the benefit of another. The investor is thereby placed in a position of dependency on the holder of the securities, that is the provider and operator of the securities account. The weakness of the law of trusts to address fully the needs of the investor implies that there should be a set of regulatory rules to plug the gap.

International standards for investor protection are set out in article 10(2) of the Geneva Securities Convention[99] and a report by IOSCO.[100] The expectations are as follows:

- Intermediaries should maintain accurate and up-to-date records of client assets and provide regular statements.
- Intermediaries should safeguard client securities, in particular so that the securities are unavailable to the intermediary's creditors and are not subject to misuse.

94 Deryugina, M, 'Standardization of Securities Regulation: Rehypothecation and Securities Commingling in the United States and the United Kingdom' (Fall 2009), *Review of Banking Law*, vol 29, pp 253–288

95 Regulation (EU) 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of reuse etc

96 Article 15

97 Financial Conduct Authority, *Handbook of Rules and Guidance, Client Assets Sourcebook* (March 2011), CASS 9.2.1R

98 Securities and Exchange Commission, 17 CFR §240, r 15c3-3

99 See **section 6.7**

100 International Organization of Securities Commissions, *Recommendations Regarding the Protection of Client Assets* (February 2013), Consultation Report

- Intermediaries should act on the client's instructions (or a person acting in the client's name, for example where there is a control agreement), and not act where there is no authorisation.
- Intermediaries should pass on information and distributions relating to the securities.
- Where the securities are 'placed or deposited' (presumably meaning held in custody) in a different jurisdiction, the intermediary should understand the foreign regime.
- Intermediaries should inform the client about the relevant client asset protection arrangements and risks involved.
- Waiver or modification of the protection given should happen only with the client's explicit written consent, following risk disclosure.

By and large the European regulatory system honours these precepts. Some details may be appropriate for examination.

Segregation

6.19 It is commonly expected that the United Kingdom regulatory regime requires 'segregation' of client assets from house assets. In December 2009, HM Treasury noted: 'Although FSMA does not specifically empower the [Financial Services Authority] to make rules to create a statutory trust designed to protect clients' assets, [its Client Assets rulebook] imposes requirements on firms to ensure that adequate arrangements are in place to safeguard clients' interests in client assets. These arrangements will generally involve firms holding client assets subject to implied trusts or other proprietary entitlement in favour of the clients.'[101] Even more surprisingly, when introducing custody rules to implement the original Markets in Financial Instruments Directive,[102] the Financial Services Authority repealed its general custody rule obliging firms to segregate ('A firm must segregate safe custody investments from its own designated investments except to the extent required by law or permitted by the custody rules').[103]

What is meant by segregation causes confusion. The concept means setting up separate accounts *at the firm's account provider* for the firm's own property and its clients'; it is insufficient that the firm's *own* books show what securities are due to the client, for that is no segregation at all. Yet one sometimes hears the expression 'the assets are segregated on our own books', which is meaningless. As shown above, segregation is not necessary under English law in order to establish a trust in favour of the client, though absence of segregation would be highly irregular behaviour by a trustee. Segregation is, however, a highly desirable adjunct which reinforces the distinction between trust 'client' assets and beneficially owned 'house' assets. EMIR thus requires CCPs:

101 HM Treasury, *Establishing resolution arrangements for investment banks,* Consultation document, para 4.15

102 Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments etc

103 Financial Services Authority's edition of CASS 2.2.3R, which ceased to have effect after 31 December 2008

- to keep separate records and accounts which enable it to distinguish *on its own books* assets and positions held for the account of one clearing member from those of another;
- to offer to keep separate 'house' and omnibus 'client' accounts for each clearing member;
- to offer to keep a separate individual 'client' account for each client of each clearing member.[104]

EMIR also requires clearing members to keep records on its own books which separate client and house positions, and to offer individual client segregation as well as an omnibus account. Similar obligations to those imposed on CCPs are imposed on CSDs under the CSDR.[105]

6.20 MiFID[106] states, at article 16(8), that 'an investment firm shall, when holding financial instruments belonging to clients, make adequate arrangements so as to safeguard the ownership rights of clients, especially in the event of the investment firm's insolvency, and to prevent the use of a client's instruments on own account except with the client's express consent'. This principle is amplified by specific, more detailed rules in the MiFID Implementing Directive,[107] which cover record-keeping, reconciliation, segregation, use of custodians, use of client securities, and audit. Highlights from the FCA's rules on the subject[108] may be noted as follows:

(1) A firm must, when holding safe custody assets belonging to a client, made adequate arrangements so as to safeguard clients' ownership rights.[109] This is a direct copy-out of article 16(8) of MiFID. Additionally, firms must 'effect appropriate registration or recording of title … in the name of (1) the client, unless the client is an authorised person acting on behalf of its client, in which case it may be registered in the name of the client of that authorised person; (2) a nominee company which is controlled by (a) the firm; (b) an affiliated company; … (3) any other third party if … (a) the safe custody asset is subject to the law … of a jurisdiction outside the United Kingdom … '[110]

(2) There are detailed rules about the choice and monitoring of third parties with whom safe custody assets are 'deposited' by a firm.[111] 'Depositing' is an unhelpful concept which encourages regulators and clients to visualise securities as pieces of paper; a 'deposit' of dematerialised securities held in custody, like a 'deposit' of cash, involves the creation of a credit entry in an account, though the legal consequences of a securities 'deposit' are quite different.

104 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, art 39
105 Art 38
106 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc
107 Commission Delegated Directive (EU) 2017/593 of 7 April 2016 supplementing [MiFID] with regard to safeguarding of financial instruments and funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees, commissions or any monetary or non-monetary benefits
108 Financial Conduct Authority, *Handbook of Rules and Guidance, Client Assets Sourcebook*, CASS 6
109 CASS 6.2.1R (January 2018)
110 CASS 6.2.3R (June 2015)
111 CASS 6.3.1R – 6.3.4A-1R (January 2018, June 2015)

(3) A firm is not permitted to allow a third party to have a lien, right of retention or right of sale of safe custody assets belonging to a client, except in limited circumstances.[112]

(4) A firm is allowed to borrow or lend out a client's safe custody assets but only if the client's consent has been obtained. Where the account used for lending transactions is an omnibus account, all the clients must consent, or the firm must have systems and controls to limit the use of assets to those belonging to clients who have consented.[113] There is no general prohibition on rehypothecation.[114]

(5) There is an exception to all these rules 'in relation to a delivery versus payment transaction through a commercial settlement system' where the securities 'will be due to the client' within one business day of his payment or 'due to the firm' within one day of 'fulfilment of its payment obligation'.[115] This rule enables brokers which can turn over cash and securities quickly to avoid the burdens of client asset segregation.

It may be noted that these rules (apart from the limitation of liens, which was not then in force) were found wanting in the case of the Lehman insolvency. The exercise of rehypothecation rights appears to have delayed and complicated the return of client assets.[116] In response, IOSCO carried out a study of the effectiveness of client asset protection regimes in 16 countries, including five (France, Germany, Italy, Spain and the United Kingdom) in the European Union.[117] Those (all except the United Kingdom) classified as 'custodial regimes', were noted to have deficiencies such as the risk of shortfalls attributable to rehypothecation, pro-rata sharing by clients of any shortfall with the balance to be made up through a claim on the investor compensation scheme, and no mechanism for the transfer of clients' assets to a solvent substitute firm on the insolvency of the client's original investment firm. The United Kingdom was classified as a 'trust regime', whose deficiencies were shortfalls attributable to rehypothecation, the return of client assets only insofar as the assets can definitively be traced back to the claimant, and the absence of a mechanism for transfer of clients' assets to a solvent substitute firm.

Custodial duties

6.21 A custodian will have common law duties arising under the general law in addition to the specific client asset rules. These include the general law of trusts, but in the context of custody of securities held via an intermediated chain some particular issues can arise. Good custodial practice demands that adhere to the principles of 'no credit without credit' and 'no credit without debit'.[118] 'No credit without credit' means that the custodian should not credit the investor's account without there being a corresponding credit to its own client account

112 CASS 6.3.6AR–6CG (January 2018)
113 CASS 6.4.1R–6.4.3R (January 2018)
114 See **section 6.17**
115 CASS 6.1.12R (January 2015)
116 *In re Lehman Brothers International (Europe), Four Private Investment Funds v Lomas and ors,* [2008] EWHC 2869 (Ch)
117 International Organization of Securities Commissions, *Survey of Regimes for the Protection, Distribution and/or Transfer of Client Assets: Final Report* (March 2011), FR05/11, www.iosco.org/library/pubdocs/pdf/IOSCOPD351.pdf
118 EPTF Report, EPTF Barrier 9, para 1.3

at the CSD or other upper-tier intermediary. 'No credit without debit' means that the custodian should not credit the investor's account without making a debit entry in its books; if the securities were transferred from another client, the principle is obvious, but the same idea applies even if the transferor was not a client, since the custodian should record on its own books, as a debit item, its view of its holdings at the CSD or other upper-tier intermediary. Still, there is a question as to whether the custodian's duties include a duty to 'restore' securities when a shortfall has arisen through no fault of the custodian. The Law Commission's Call for Evidence suggested that such a duty exists,[119] but the law may, in fact, not go that far. The trust property is whatever stands to the credit of the custodian's account on the books of the higher-tier intermediary. What that thing actually is, is beyond the custodian's operational control, and the responsibility of the custodian is limited to safekeeping whatever that thing is, from time to time. If it turns out that the upper-tier intermediary's books are in error, the lower-tier custodian is not itself liable for anything. The 'trust property' which it is obliged to safekeep is the book-entry on the upper tier books, and if that book entry misrepresents holdings further up the chain there is no further duty to 'hold' securities which are not in fact held by the upper-tier intermediary.

In this context, it may be noteworthy that custodians typically do not exclude liability for shortfalls which are not their fault. Some statutory exceptions to the absence of responsibility for upper-tier errors have, however, diluted these basic principles. In particular, where the client of the custodian is a UCITS or AIF (in which case the custodian is called a 'depositary') the upper-tier intermediary is regarded as a delegate and must police the delegate's behaviour.[120]

Client asset protection vs investor compensation

6.22 IOSCO pointed out the link between client asset protection and investor compensation schemes. The Investor Compensation Schemes Directive (ICS Directive)[121] obliges Member States to have schemes which provide cover for claims arising out of an investment firm's inability to return financial instruments belonging to investors and held, administered or managed on their behalf in connection with investment business.[122] Consequently, any gap in the client assets regime ought, at least from a financial perspective, to be plugged by the compensation scheme. The reality is that there are differences. First, coverage of the two regimes is different: professional and institutional investors can be excluded from the compensation scheme, but not client asset protection. Secondly, agreement by a client to rehypothecation or use of its assets converts the client's claim into a monetary claim, not a claim on the compensation scheme for inability to return assets (though it may be a claim on the scheme for inability to repay money owed in connection with investment business). Thirdly, a claim on the scheme is subject to a monetary limit. Fourthly, compensation schemes themselves may be poorly financed, and despite the ICS Directive's three-month

119 Call for Evidence, para 2.50

120 See for example section 3.7 of the FCA's FUND sourcebook, implementing art 21(11) of Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers etc

121 Directive 97/9/EC of the European Parliament and of the Council of 3 March 1997 on investor-compensation schemes

122 ICS Directive, art 2(2)

time-limit for claims handling[123] it may be impossible to deliver compensation to investors as quickly as, in theory, assets can be handed over.

GIOVANNINI AND EPTF BARRIERS

6.23 The Giovannini Reports[124] identified 'national restrictions on the location of securities' as a barrier to efficient cross-border clearing and settlement. The question of 'location of securities' in this context is sometimes difficult to understand, and some commentary may be desirable. The first Giovannini report said:

> 'National restrictions often apply to the location of securities. Such restrictions can limit the choices for issuers when placing their securities and/or make it more complicated to hold and settle those securities in Member States other than the place of issuance. In this context, two types of restrictions have been identified:
>
> First, there is a requirement in some Member States that issues in listed securities be deposited exclusively in the local settlement system and/or that transactions in such securities be capable of settlement exclusively on the books of the local settlement system. This seems also to be the market practice in countries where it is not enshrined in law.
>
> Second, there may be a connection between listing on the regulated market and registration with a local registrar. This can constrain the choice of settlement location available to users because the selection of a foreign settlement system will be less attractive, particularly when the local settlement system is the approved local registrar or has already an established network of links with local registrars.'[125]

After a period of more than ten years the European legislature granted a statutory right for issuers to choose a CSD established in any Member State.[126] In this way, freedom of choice of 'location' for securities is granted. 'Location' in this sense means choice of CSD. It does not have the same meaning as '*situs*' for the purposes of property law questions.[127]

6.24 It would, however, be naïve to assume that this provision alone is capable of creating a single market in which issuers are scattered around CSDs in other Member States. The factors which will tend to encourage issuers to favour their local CSD notwithstanding the international intentions of the CSDR include the following.

(1) *Company law*. The rules under company law for issue of securities, maintaining shareholders' registers, handling corporate actions, and who is entitled to be regarded as a shareholder, are left to the company law of Member States. These laws are not identical. Local CSDs have grown up to specialise in handling with great efficiency the local company law

123 ICS Directive, art 9(2)
124 See **section 1.26**
125 Giovannini, A, et al, *Cross-Border Clearing and Settlement Arrangements in the European Union* (November 2001), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/first_giovannini_report_en.pdf, pp 49–50
126 CSDR, art 49
127 See **section 6.6**

requirements. A challenger may profess to offer equally good or better services of this nature, but the capabilities required to move into another jurisdiction may discourage foreign CSDs from expanding outside their home country.

(2) *Market connectivity*. The issuer's primary concern is likely to be to find a liquid market on which its securities can be traded. The quality of the link between the market and the CSD will be well-established in the case of the issuer's home state regulated market (which may well be the most relevant market in terms of liquidity, owing to the familiarity of local investors with the issuers); these links would need to be established if a new CSD were used. Again, the difficulty is not insuperable, but local stockbrokers serving domestic investors would typically not have in place settlement arrangements with foreign (or newcomer) CSDs.

(3) *Business case*. Issuers may not see an obvious business case in selecting a different CSD even when a free choice is offered. CSDs might be able to offer enhanced investor-relations services for issuers anxious to stay close to investors: ECSDA identified a variety of services potentially provided by CSDs to issuers relating to corporate actions, information supply, general meetings, and securities numbering.[128] The limited range of business activities permitted to CSDs may constrain development of such services.

(4) *Tax*. CSDs are typically interwoven into the transaction tax reclaim process.[129] It may be difficult for challenger CSDs to overcome the difficulties which acting as the tax authority's policeman and collector may involve.

(5) *Multiple connections*. If securities traded at a single venue settle in various places, the brokers serving investors using that venue will need to be connected to all the CSDs, either directly or through agent banks. This is commonplace for MTFs on which all manner of liquid securities are traded. But the implication is that service providers connected to all the CSDs which are relevant will be needed. This could be achieved by CSDs providing 'interoperable' services; however, these are structured, multiple links and intermediation introduce cost.

(6) *Dually rooted securities*. Insofar as two or more CSDs hold the root of title to a single issue of securities, some form of balancing mechanism, akin to the 'bridge' between the ICSDs,[130] would be needed.

6.25 In its reworking of the Giovannini Barriers, the EPTF folded Giovannini Barrier 9 into a new EPTF Barrier 7 ('Unresolved issues regarding reference data and standardised identifiers), signalling that it had been about technical rather than legal requirements. Nonetheless, EPTF Barrier 11 ('Legal uncertainty as to ownership rights in book entry securities and third-party effects of assignment of claims') brings the legal points to the fore. The EPTF called for a single conflicts of laws rule for ownership rights in book entry securities to be introduced. Acknowledging that a Securities Law Directive was an unrealistic goal, the EPTF nonetheless concluded that legal issues concerning clients'

128 European Central Securities Depositories Association, *Issuer Services* (January 2008)
129 See **section 22.5**
130 See **section 2.26**

ownership rights and allocation of shortfalls constitute one of the major post-trade barriers.[131]

Specifically on the subject of client assets, the EPTF adopted and revised Giovannini Barrier 13 as EPTF Barrier 9 ('Deficiencies in the protection of client assets as a result of the fragmented EU legal framework for book entry securities'). The EPTF's recommendation was that:

'EU legislation should be introduced to:

- ensure that an end investor enjoys ownership rights over all securities credited to an account intended to confer ownership, and that the end investor obtains ownership rights when the end investor's account-provider credits his account subject to the principles of "no credit without credit" and "no credit without debit" throughout the custody chain.
- clarify that securities credited to a client account do not belong to the account-provider, regardless of whether the account is an omnibus account or an individually segregated account.
- enable prompt return of the securities in the intermediary's insolvency by establishing common processes for the return of assets.
- specify how losses should be attributed in cases of shortfalls arising in the intermediary's insolvency.'[132]

By 'ownership rights' the EPTF means 'the right to sell, right to receive dividends, right to vote, right to receive other shareholder benefits, [and] right to be recognised as a "shareholder"'.

131 EPTF Report, EPTF Barrier 11, para 1.1.2
132 EPTF Report, EPTF Barrier 9, Summary of proposed action

Part II
Regulation

7 International regulatory standards

INTRODUCTION – THE DEMISE OF SOFT LAW

7.1 Until the financial crisis which unfolded at the end of the first decade of the twenty-first century, it was generally accepted that the regulation of financial market infrastructures would be achieved through 'soft law' measures, rather than international legislation. Certainly, individual Member States might have their local laws and regulations, but there was no need for mandatory international measures to ensure a uniformity of approach. The operators of infrastructures could be relied on to comply with guidance and recommendations laid down at supranational level.

7.2 Quasi-legislation of this nature was once abundant:

- The Bank for International Settlements (BIS) produced a report in 1990 on payment systems which contained five 'minimum standards' for systems which relied on netting.[1]
- The BIS Committee on Payment and Settlement Systems (now the Committee on Payments and Market Infrastructures, CPMI) produced its Core Principles for Systemically Important Payment Systems in 2001.[2]
- The European Central Bank (ECB) created oversight standards for euro retail payment systems in 2003.[3]
- Working with the International Organisation of Securities Commissions, the CPMI produced recommendations for securities settlement systems in 2001[4] and for CCPs in 2004.[5]
- The ECB and the Committee of European Securities Regulators (CESR – now ESMA) produced its own versions of the CPMI Recommendations in

1 BIS, *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten countries* (November 1990), www.bis.org/publ/cpss04.pdf
2 CPSS, *Core Principles for Systemically Important Payment Systems* (January 2001), www.bis.org/publ/cpss43.pdf
3 ECB, *Oversight Standards for Euro Retail Payment Systems* (June 2003), www.ecb.eu/pub/pdf/other/retailpsoversightstandardsen.pdf
4 CPSS and Technical Committee of IOSCO, *Recommendations for Securities Settlement Systems* (November 2001), www.bis.org/publ/cpss46.pdf
5 CPSS and Technical Committee of IOSCO, *Recommendations for Central Counterparties* (November 2004), www.bis.org/publ/cpss64.pdf

2004 (covering securities settlement systems only)[6] and in 2009 (covering both settlement systems and CCPs).[7]

- The ECB produced oversight policies for payment systems in 2009[8] and 2011.[9]

7.3 Yet, as noted in **sections 1.26–1.30**, these recommendations and standards did not achieve all policy objectives, even if the post-trade system tended to work as it should. The European Commission devoted a good deal of energy in the early years of the century to study, with a possible view to legislation, of the causes of high cost and inefficiency in the post-trade area relating to securities. During the years 2000–04 there were three Commission consultations, two Giovannini reports and the establishment of an expert group. In its communications, the Commission contemplated a directive to bring about change. But, by mid-2006, Commissioner McCreevy, then the Commissioner with responsibility for financial services, had concluded that it would be unwise to press ahead with a clearing and settlement directive:

> 'I am convinced that if the Commission were to propose any kind of a regulatory measure, we could slow down, or even block the restructuring process already underway – possibly even for years. A regulation now would be a distraction to market participants. It could lead to an outcome far less optimal than letting things evolve and then assessing what, if anything, is necessary at EU level.'[10]

All that changed when the demise of Lehman Brothers demonstrated the fragility of the previous regulatory environment. Sweeping legislative measures were agreed at the highest international levels to ensure that such a disaster should never recur. And yet the financial market infrastructure had borne up well during the crisis – better than, say, after the stock market crash of 1987[11] or the terrorist attacks of 11 September 2001.[12]

7.4 In controversial areas, soft law still holds sway. Possibly the most difficult subject in the field of financial market infrastructure is the question of resolution of CCPs, so there is a tendency to deal with the subject using soft rather than hard measures:

6 CESR and ECB, *Standards for Securities Clearing and Settlement in the European Union* (September 2004), www.ecb.eu/pub/pdf/other/escb-cesr-standardssecurities2004en.pdf

7 CESR and ECB, *Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union* (May 2009), www.ecb.eu/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf

8 ECB, *Eurosystem Oversight Policy Framework* (February 2009), www.ecb.int/pub/pdf/other/eurosystemoversightpolicyframework2009en.pdf?6f7a2d8dc6dc35374138e76d2be57679

9 ECB, *Eurosystem Oversight Policy Framework* (July 2011), www.ecb.int/pub/pdf/other/eurosystemoversightpolicyframework2011en.pdf?90662f1a6c3f04597b94078271fb7537

10 McCreevy, C, *Clearing and settlement: The way forward* (July 2006), Speech 06/450, http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/06/560&format=PDF&aged=1&language=EN&guiLanguage=en

11 See **section 14.48**

12 Federal Reserve Bank of New York, *Domestic Open Market Operations During 2001* (February 2002)

- The Financial Stability Board (FSB) has issued several papers on this topic.[13]
- The CPMI has participated in the FSB's work, and made contributions on recovery planning by CCPs (a topic which is, in practice, indistinguishable from resolution[14]).[15]

But in other areas, soft law is increasingly becoming replaced by hard legislation. Despite that, it should be recognised that soft law which remains in place can itself become hard. The regulated persons targeted by soft law will tend to understand that it is binding on them, and their regulators will share that view. Even the courts recognise this:

> '[I]t should be noted first of all that the introductory provisions of the Policy Framework present it as having the purpose of "describ[ing] the role of the Eurosystem in the field of oversight". Contrary to the ECB's contentions, the highlighting of a descriptive purpose of this kind does not rule out the possibility that its content is perceived by the parties concerned as mandatory in nature.'[16]

Soft law can thus become hardened and bind the promulgator as well as the community at which it is targeted. Makers of soft law thus need to be careful what they legislate for.

Rationale for infrastructures becoming subject to EU-level regulation

7.5 As discussed in **Chapter 10**, the shift to formal law was at least in part driven by fear of OTC derivatives. Given that the European Union was party to the G-20 pledge to introduce compulsory clearing for OTC derivatives by the end of 2012,[17] the formalisation of regulatory standards for infrastructures in Europe was led by the creation of EMIR.[18] A uniform standard for regulation of CCPs was not essential, though, in order to introduce compulsory clearing. Nor was it self-evident that a European statute for the regulation of CCPs should be twinned with a European statute for the regulation of CSDs. Regulation of CSDs was disentangled from the question of derivatives clearing and found its way

13 FSB, *Guidance on Central Counterparty Resolution and Resolution Planning* (July 2017), www.fsb.org/2017/07/guidance-on-central-counterparty-resolution-and-resolution-planning-2/; *Resilience of central counterparties (CCPs): further guidance on the PFMI – final report* (July 2017), www.fsb.org/2017/07/resilience-of-central-counterparties-ccps-further-guidance-on-the-pfmi-final-report/; *Financial resources to support CCP resolution and the treatment of CCP equity in resolution* (November 2018), www.fsb.org/2018/11/financial-resources-to-support-ccp-resolution-and-the-treatment-of-ccp-equity-in-resolution/

14 See **section 14.7**

15 CPMI, *Recovery of financial market infrastructures – revised report* (July 2017), CPMI 162, www.bis.org/cpmi/publ/d162.htm

16 *United Kingdom v European Central Bank* [2015] 3 CMLR 8, ECJ, para 36

17 G-20, *Progress Report on the Economic and Financial Actions of the London, Washington And Pittsburgh G20 Summits Prepared by the UK Chair of the G20* (November 2009)

18 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

into the CSDR.[19] Payment systems had not come in for any criticism during the crisis, and yet they too have moved into a formal legislative regime.[20]

7.6 As one might expect, the justification given by the European Commission[21] for EMIR was that CCPs should be safe, being 'systemically relevant' institutions. With no choice left for trading firms and investors as to whether certain financial products should be cleared, it is clearly important that minimum standards should be established, and that these minima should apply also to non-EEA CCPs plying their trade in the EU in order to capture the mandatory-clearing market.

However, EMIR is neutral on the important question whether a CCP must be structured as a bank.[22] Prudential and other regulatory standards exist for banks which EMIR does not seek to disapply, thereby perpetuating a lack of uniformity even within Europe.

7.7 The European Commission's commentary, when the CSDR was proposed, explained:

> 'The absence of an efficient single internal market for settlement also raises important concerns. Important barriers to the European post trading market continue to exist, such as for instance the limitation of securities issuers' access to CSDs, different national licensing regimes and rules for CSDs across the EU and limited competition between different national CSDs. These barriers result in a very fragmented market. As a consequence, the cross-border settlement of transactions relies on unnecessarily complex holding "chains" often involving several CSDs and several other intermediaries. This has a negative impact on the efficiency, but also on the risks associated with cross-border transactions.'[23]

It may be questioned whether holding chains do involve 'several CSDs' and, if this is undesirable, why the CSDR and Target2-Securities encourage CSDs to participate in each other. However confused the world is on the removal of Giovannini Barrier 9 (National restrictions on the location of securities)[24] – the apparent objective of the CSDR – the real reason for harmonising regulation of CSDs is competition policy in order to reduce settlement costs. Enabling one CSD to provide services in another CSD's home market requires that there be a basic minimum set of standards to enable passporting to occur without legitimate objection from the host state regulator. In practice, the issues which are uniformly regulated by the CSDR do not necessarily cover everything which might be regarded as of importance, so the attainment of this policy goal remains uncertain.

19 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories, etc

20 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28)

21 European Commission, *Proposal for a Regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories* (September 2010), COM(2010) 484 final, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0484:FIN:EN:PDF, para 4.3.3

22 Cf **section 9.7**

23 European Commission, *Proposal for a Regulation of the European Parliament and of the Council on improving securities settlement in the European Union and on central securities depositories etc* (March 2012), COM(2012) 73 final, p 3

24 See **sections 6.23–6.24**

7.8 With respect to payment systems, the move to regulation on a statutory basis has a different motivation. Historically, the ECB's supervision technique had not been based on a formal rulebook. The supervisory technique previously used is known in the United Kingdom as the 'cup of tea' method, from the historical (possibly apocryphal) practice of the Bank of England, in its pre-2000 role as banking supervisor, inviting senior managers of delinquent banks in for a cup of tea over which misdemeanours might be 'discussed'. The ECB's supervisory tools were described as collection of information, and 'inducing change' through 'moral suasion, public statements, influence stemming from its participation in systems, cooperation with other authorities, and binding regulations (a tool the Eurosystem has not used thus far)'.[25] Since 2014, however, the Eurosystem has adopted a binding Regulation on oversight of systemically important payment systems (the SIPS Regulation),[26] for reasons explained by the ECB when proposing the change:

> 'The [CPMI] principles, which harmonise and strengthen existing international oversight standards, stipulate that in view of their potential to trigger systemic risks, payment systems of systemic importance should be subject to effective oversight against clearly defined and publicly disclosed criteria. In addition, competent authorities should have sufficient powers and resources to carry out their oversight tasks, including taking corrective action. The [CPMI] recommends implementing these principles to the fullest extent allowed under national legal and regulatory frameworks.'[27]

So the ECB was responding to pressure to improve the quality and transparency of supervision – to abandon the 'cup of tea' model – by adopting the CPMI Principles for Financial Market Infrastructures (PFMI)[28] as legislation, rather than to change the substance of the rulebook itself.

7.9 There are further questions which might be asked on the subject of a developing legislative framework for regulation of infrastructures in Europe, including the following:

(1) Why did soft law fail?

It might be thought that the development of formal statutes for regulation of CCPs and CSDs indicated that the self-regulatory approach under the Code of Conduct,[29] heralded by Commissioner McCreevy in 2006,[30] had failed. However, the Code of Conduct had limited objectives, and in retrospect those objectives might be considered fulfilled insofar as reasonably achievable.

25 Kokkola, T, (ed), *The Payment System* (European Central Bank, September 2010), ISBN 978-92-899-0632-6, p 283

26 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28)

27 European Central Bank, *ECB consults on draft regulation on oversight requirements for systemically important payment systems* (June 2013), Press release, www.ecb.europa.eu/press/pr/date/2013/html/pr130607.en.html

28 CPSS and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012)

29 Federation of European Securities Exchanges, European Association of Central Counterparty Clearing Houses, and European Central Securities Depositories Association, *European Code of Conduct for Clearing and Settlement* (November 2006), http://ec.europa.eu/internal_market/financial-markets/docs/code/code_en.pdf; see **section 11.20**

30 McCreevy, Speech 06/450

First, the aims of the Code were to achieve price transparency, to enable access and interoperability, and to unbundle services and account for them separately. Transparency and unbundling have not been regarded as problem areas since the Code came into effect. Interoperability is a major challenge, but there are many reasons for this which cannot be laid at the door of weaknesses in the Code, and among equities CCPs some interoperability has been achieved.[31] Secondly, the scope of the Code was limited to post-trade activities in respect of cash equities transactions. The EU legislation on CCPs is primarily about clearing of OTC derivative transactions. The new agenda is different from the old one: the old agenda was primarily about competition and the reduction of inefficiency in the post-trade arena, whereas the new focus is on safety in the financial sector.

(2) Were the Giovannini barriers dismantled?

It might be thought that the Giovannini barriers have been disregarded in the push for new legislation. With derivatives at the forefront of thinking, the cost of equities clearing and settlement has receded from the priority list. The European Commission's Expert Group on Market Infrastructures[32] wanted to re-boot Giovannini in 2011. So did the Commission's European Post Trade Forum, which issued an ambitious restatement of barriers, noting that a handful of Giovannini's original barriers had been dismantled but that others had risen to take their place.[33] In neither case has the officially commissioned report achieved the status of a blueprint for legislation, nor indeed have the unresolved issues found their way onto the Commission's 'Capital Markets Union' agenda.

(3) Why are payment systems treated differently?

It is notable that the drive towards formal legislative regulation of infrastructures has not significantly touched payment systems. The SIPS Regulation only applies to a small number of payment systems and is limited to the eurozone; soft law continues to apply at an international level to 'retail' payment systems.[34] Payment *services* have hardly been immune from legislative attention, with no fewer than eight European legislative measures passed since 2000.[35] Yet payment infrastructures and payment schemes are not the primary target of these measures. Payment systems might be expected to raise greater concerns about safety and reliability, given their pivotal role in financial stability. But they are largely left in the realm of soft law, even though the ECB has elevated some of its regulatory activity onto a statutory footing.

In part this anomaly can be explained by the creation of the euro. Much of Europe now uses the euro as its currency. The ECB has accordingly established the Target-2 system, and the ECB operates the system under a series of legislative acts.[36] Furthermore, the European System of Central Banks (ESCB) is responsible under the Treaty on the Functioning of the

31 See **Chapter 15**

32 Expert Group on Market Infrastructures, *Report* (October 2011), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/egmi/101011_report_en.pdf

33 European Post Trade Forum, EPTF Report (May 2017), https://ec.europa.eu/info/sites/info/files/170515-eptf-report_en.pdf

34 See **section 7.16**

35 Directive 2000/48/EC; Regulation (EC) No 1781/2006; Directive 2007/64/EC; Regulation (EC) No 924/2009; Directive 2009/110/EC; Regulation (EU) No 260/2012; Regulation (EU) 2015/751; Directive 2015/2366

36 Located at www.ecb.eu/ecb/legal/1003/1349/html/index.en.html

European Union for promoting the smooth operation of payment systems in Europe, even in respect of non-euro countries.[37]

Secondly, however, it may in part be that some important payment systems are operated by central banks. Public general legislation is rarely considered by governments to be an optimal way of regulating themselves or their creatures. An example of this reluctance may be seen in the comment of the International Monetary Fund on the United Kingdom's approach to regulating its own payment systems:

> 'CHAPS is a recognized system under the Banking Act 2009, but the [Bank of England's] RTGS system is not. The RTGS system would have the potential to threaten the stability of, or confidence in, the U.K. financial system if there were any deficiencies in its design or if its operation were disrupted. However, the RTGS is not an interbank payment system for the purposes of the Banking Act 2009, since, of itself, it is not considered to constitute arrangements designed to facilitate or control the transfer of money between financial institutions (the BoE considers it is an arrangement to transfer money between financial institutions' accounts at the BoE, not between the institutions themselves). In addition, the BoE's RTGS system is not designated under the Settlement Finality Regulations.'[38]

7.10 A final introductory observation is that soft law persists. There may be new statute law in Europe, but its coverage is limited and its focus is narrow. Most payment systems and much that is relevant to the operation of CSDs and CCPs are outside the scope of the new legislative regimes. And the fount of soft law, the guidance and recommendations given out by the CPMI, has been overhauled, extended in scope, and made more detailed. The new regulatory template is set down in the PFMI, which are now briefly reviewed.

THE PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

7.11 In April 2012 the CPMI issued a remodelled set of Principles for Financial Market Infrastructures (PFMI),[39] which superseded the Core Principles for Systemically Important Payment Systems and the Recommendations for Securities Settlement Systems and for CCPs. The PFMI are more extensive and detailed than any of their predecessors. New content includes principles addressing 'general business risk' (which also requires infrastructures to have enough capital)[40] and 'tiered participation arrangements'.[41] The PFMI are also addressed to a newly recognised class of infrastructures, namely Trade Repositories, to whom a special Principle on Disclosure of data is addressed.[42]

37 Consolidated Version of the Treaty on the Functioning of the European Union (TFEU) (May 2008), OJ 2008/C115/01, art 127(2)

38 International Monetary Fund, *United Kingdom: Observance by CHAPS of CPSS Core Principles for Systemically Important Payment Systems Detailed Assessment of Observance* (July 2011), Country Report No 11/237, www.imf.org/external/pubs/ft/scr/2011/cr11237.pdf, p 31

39 CPSS and Technical Committee of IOSCO, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf

40 PFMI Principle 15

41 PFMI Principle 19

42 PFMI Principle 24

Each of the Principles consists of a Principle with some 'key considerations' to elaborate it, followed by lengthy commentary. The Principles themselves are set out in **Table 7.1**, which also shows how the Principles have been transposed into European law for CCPs and CSDs. (As to the law transposing the Principles for payment systems, see **section 7.15**.)

Table 7.1 Transposition of Principles for Financial Market Infrastructures

PFMI	CSDR	EMIR
Principle 1: Legal basis An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	Art 43 CSDR RTS 392[43]	[Not covered]
Principle 2: Governance An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.	Arts 26–28 CSDR RTS 392	Arts 26–28 EMIR RTS 153[44]
Principle 3: Framework for the comprehensive management of risks An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	Art 42 CSDR RTS 392	Arts 26(1), 28 EMIR RTS 153
Principle 4: Credit risk An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more complex risk-profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participants and their	Title IV	Title IV, chapter 3

43 Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories

44 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties

PFMI	CSDR	EMIR
affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.		
Principle 5: Collateral An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.	Art 59(3)	Art 46 EMIR RTS 153
Principle 6: Margin A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.	[Not applicable]	Art 41 EMIR RTS 153
Principle 7: Liquidity risk An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.	Art 57(4) but only as regards the CSD's own banking activities, not the obligations of participants	Art 44 EMIR RTS 153
Principle 8: Settlement finality An FMI should provide clear and certain final settlement, at a minimum, by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.	Art 39(5)	[Not covered]

PFMI	CSDR	EMIR
Principle 9: Money settlements An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.	Art 40 [See **section 18.5**]	Art 47
Principle 10: Physical deliveries An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.	Art 3 abolishes physical deliveries	[Not covered]
Principle 11: Central securities depositories A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.	Art 3 (dematerial-isation) Art 37 (integrity)	[Not applicable]
Principle 12: Exchange-of-value settlement systems If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.	Art 39(7)	[Not covered; see **section 13.32(8)**]
Principle 13: Participant-default rules and procedures An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures, and continue to meet its obligations.	Art 41	Arts 45, 48 EMIR RTS 153
Principle 14: Segregation and portability A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.	[Not applicable]	Arts 39, 48

PFMI	CSDR	EMIR
Principle 15: General business risk An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.	Arts 44, 47 CSDR RTS 392 (risk identification) CSDR RTS 390[45] (capital)	EMIR RTS 153 (risk identification) EMIR RTS 152[46] (capital)
Principle 16: Custody and investment risks An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.	Art 38 (safeguarding) Art 46 (investment risk) CSDR RTS 392	EMIR Art 47 EMIR RTS 153
Principle 17: Operational risk An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.	Art 45 CSDR RTS 392	Arts 26, 34, 35 EMIR RTS 153
Principle 18: Access and participation requirements An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	Art 33	Art 37

45 Commission Delegated Regulation (EU) 2017/390 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on certain prudential requirements for central securities depositories and designated credit institutions offering banking-type ancillary services

46 Commission Delegated Regulation (EU) No 152/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on capital requirements for central counterparties

PFMI	CSDR	EMIR
Principle 19: Tiered participation arrangements An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	[Not covered]	[Not covered]
Principle 20: FMI links An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	Art 48 CSDR RTS 392	Title V [limited scope]
Principle 21: Efficiency and effectiveness An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	Art 32	[Not covered]
Principle 22: Communication procedures and standards An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.	Art 35	[Not covered]
Principle 23: Disclosure of rules, key procedures, and market data An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.	Art 32(2) (complaints) Art 33(1) (participation criteria) Art 34 (prices) Art 38(6) (risk) [no express requirements for 'clear and comprehensive rules' or public disclosure]	Aart 36(2) (complaints) Art 38 (participation criteria) Art 38(2) (risk) EMIR RTS 153 (default procedures) [no express requirements for 'clear and comprehensive rules' or public disclosure]
Principle 24: Disclosure of market data by trade repositories A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	[Not applicable]	[Not applicable]

The following comments might be made about the PFMI.

(1) *One size fits all FMIs*. Many of the PFMI are applied generally to all types of infrastructure, without differentiating between their functions or differing risk profiles. There is a table of application, but even this assumes that all payment systems are alike, and treats CSDs and 'Securities

Settlement Systems' as different creatures.[47] The general across-the-board application of the PFMI leads to some anomalies. As regards payment systems, the PFMI specify requirements about collateral: collateral may be used in some payment systems but it is by no means common, and certainly not universal. An ACH which merely operates a multilateral netting system should not be expected to require collateral, if the system operator incurs no credit risk vis-à-vis its participants. When coupled with the rules concerning management of credit risk, the rules relating to collateral could encourage payment systems which take on no credit risk themselves to introduce rules requiring their participants to take collateral from each other. A second anomaly for payment systems springs from the introduction of a rule on custody risk. For FMIs which accept participants' assets, or which are liable to their participants for delivery up of cash or securities, rules like these are wholly understandable; for payment systems which accept no deposits they appear to be overkill. As regards CCPs, it seems curious that the PFMI regard CCPs as 'exchange of value' settlement systems, expecting them to ensure DvP. This is outside the control of most CCPs, which rely on separate settlement arrangements at CSDs and payment systems for this feature. (So it is perhaps unsurprising that EMIR has ignored this particular Principle.) Other examples could be given, but to set out an exhaustive list would be tedious as well as tendentious.

(2) *Scope*. The PFMI cover payment systems, CSDs, and CCPs, but not other types of market infrastructure which might be considered every bit as systemically essential to the functioning of the financial markets and deserving of international regulatory standards, with the exception of trade repositories which, alone among the possible candidates, have been singled out. That choice seems arbitrary, given that trade repositories have no responsibility for handling of investors' money or other assets, and their failure would be unlikely to have any major market detriment. That last point cannot be said of other infrastructures, for example those providing essential communications architecture. Specific comments on the regulatory standards applied to trade repositories are considered in **section 4.26** in relation to their European transposition in EMIR.

(3) *Addressees*. Some standards apply to infrastructures, and some to their participants. Sometimes, in consequence, it is difficult to know if the standard is to be observed by the infrastructure operator itself or by its participants. Examples are the rules on credit and liquidity risk management, which could apply to an infrastructure itself (such as a CCP), or to the design of the infrastructure's rules insofar as they affect the risks assumed by the participants (as with a payment system or CSD).

(4) *Liquidity*. Possibly the most unsatisfactory example of the confusion over addressees relates to the standard on liquidity risk.[48] Standards which appear to be concerned with risk to settlement – in other words the liquidity of the settlement asset, and the potential failure of participants to pay or deliver it – can be interpreted as being directed to the liquidity needs of the system operator. Where the system is a CCP, this gives rise to no difficulty, because as central counterparty the system operator bears direct responsibility for liquidity; to put it differently, a participant's failure

47 PFMI, Annex E
48 PFMI, Principle 7

to deliver or pay becomes the CCP's problem. But for systems which do not handle the settlement asset, and do not assume counterparty risk on their participants, the ambiguity is unsatisfactory. In relation to settlement systems, the standards should therefore be read as applying to the liquidity risk of the participants', not the infrastructure's own, assets.

(5) *Ownership*. The PFMI are directed to both public-sector infrastructures (such as those operated by central banks) and privately-owned or -operated systems. This is appropriate, given the global reality that a mixture of ownership and profit models exists. But the PFMI do not attempt to address how a for-profit model could engender risks in a system which would be absent in a non-profit entity. Such risks could include, for example, inadequate capital; governance less attuned to risk control; and undiversified or inappropriate market structure, which might be possible where the infrastructures are configured as a vertical silo.[49]

(6) *Capital adequacy*. The rules of prudential regulation for infrastructures do not adhere to the prudential principles applied to banks. No doubt this is in part because some infrastructures do not take on risks akin to those shouldered by banks. But some infrastructures do: payment systems may take deposits and make loans; CSDs are engaged on a macro level in custody, which the Capital Requirements Directive considers to be a badge of a banking business;[50] and CCPs assume counterparty risk in relation to transactions in financial instruments, while taking cash and securities as margin, which is enough in some EU countries to require them to be configured as banks.[51] It may therefore be questioned whether infrastructures should in general be permitted to have lower standards of prudential regulation than the agent banks and user communities they are designed to serve. The PFMI apply a single and, as applied to CCPs, inappropriate, measure of capital adequacy:

> 'An FMI should hold sufficient liquid net assets funded by equity … so that it can continue providing services as a going concern if it incurs general business losses. … At a minimum … an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses.'[52]

A CCP should have to comply with robust capital adequacy rules which adequately protect its senior creditors against loss. This PFMI rule fails to do that. Further, the amount of protection needed depends on the liability profile of the infrastructure: infrastructures take on differing degrees of legal responsibility, even when they are not exposed to counterparty risk, and they should be financially able to withstand claims, whether or not they are in run-off.

(7) *Operational risk*. The PFMI cite a typical range of operational risks which may be encountered by infrastructures: inadequate understanding of risk and poor controls, inadequate personnel, inadequate management, failure of critical service providers, and natural and man-made disasters.[53]

49 See **sections 7.33** and **11.23**

50 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms etc, Annex 1, Item 12

51 See **section 9.7**

52 PFMI Principles, para 3.15.5

53 PFMI Principles, para 3.17.2

Infrastructures should not only consider the general range of operational risks which are faced by any financial institution, but should particularly bear in mind those which relate to its systemically important activities. It may be suggested, therefore, that the PFMI ought to have given weight, and more intensive discussion, to the following:

- *Disaster recovery and business continuity*. The PFMI state that an infrastructure should set itself targets for operational reliability, and have procedures for incident management. They should have objectives and procedures for 'rapid' recovery and 'timely' resumption of critical operations following a disruption to service.[54] But these statements could leave it open to infrastructures to choose unambitious service levels and attain standards which underperform the market. This subject is considered further in **section 16.21**. Further, the distinction between 'non-default losses' and 'default losses' may be artificial in some circumstances,[55] which means that CCPs should carefully consider how non-default disasters might be connected with or causally related to defaults.
- *Systems security*. All financial institutions need to consider the risk of fraud and compromise of their firewalls, looking at the risk of internal security breaches as well as external. Infrastructures are no exception, but CSDs may need to be particularly vigilant as the quality of their records affects not just transactions entered into by investors but their title to property.
- *Dependency on other infrastructures*. The PFMI mention the importance of links. Although Principle 20 (FMI links) ostensibly covers links between different types of infrastructure as well as horizontal links,[56] the explanatory note focuses almost exclusively on interoperability of the horizontal type. Principle 9 (cash settlements to be in central bank money) is said[57] to address the issues relevant to linkage between CCPs or CSDs on the one hand and payment systems on the other, but there is little of an operational nature in the relevant explanatory note. As to links between CSDs and CCPs, the discussion treats other infrastructures for the purposes of operational risk management in the same way as participants or service providers.[58] However, that may not be appropriate, given that infrastructures may be grouped together vertically, and that infrastructures may be in a position to assert commercial pressure on other infrastructures which depend on them for data feeds or other essential matters.[59] A thoughtful paper by the FSB investigates interdependencies arising with CCPs.[60]
- *Outsourcing*. Annex F to the PFMI sets out some additional considerations which apply to 'critical service providers.' It seems curious that the risk issues associated with outsourcing have not merited a full Principle. Infrastructures are particularly vulnerable

54 PFMI Principles, para 3.17.13
55 See **section 14.29**
56 PFMI Principles, para 3.20.1
57 PFMI Principles, footnote 156
58 PFMI Principles, paras 3.17.18–3.17.22
59 Cf **sections 11.23** and **4.12ff**
60 FSB, *Analysis of Central Clearing Interdependencies* (August 2018), www.fsb.org/2018/08/analysis-of-central-clearing-interdependencies-2/

to service failure, as they are likely to be highly dependent on IT service providers, and in some cases on other services, to ensure that their systemically important functions are fulfilled.[61] It might also be noted that the issues singled out by the CPMI are by no means a comprehensive recital of the outsourcing risks and mitigants which regulatory bodies commonly expect.[62] It is no surprise to find that the hard law implementation of the PFMI takes outsourcing very seriously, in particular in relation to CSDs.[63]

(8) *Custody*. PFMI Principle 16 specifies that infrastructures should safeguard their own and participants' assets. Here the one-size-fits-all approach obliges the implementing regulatory authorities to apply good sense. In Europe there is a ratchet of compliance with this principle, according to the infrastructure type. Under the SIPS Regulation, systemically important payment systems need only evaluate and understand their exposures to custodian banks;[64] under the CSDR, there is a rule that financial assets be held only at central banks, authorised credit institutions or authorised CSDs;[65] under EMIR, CCPs are limited to using 'securities settlement systems' as custodians of margin and default fund contributions unless they are 'unable' to do so, in which case strict conditions apply to choice of an alternative.[66]

(9) *Tiering*. The subject of indirect participation – which gives rise to the idea that participants are layered in 'tiers' – is usually discussed in relation to payment systems. An indirect participant in a payment system may expose the direct participant to risk, particularly where the indirect participant's business is large in terms of the credit extended by the direct participant relative to the direct participant's ability to withstand a shock. Regulatory distaste for large-scale indirect participation encourages systems to allow indirect participants with inappropriately large-scale activity referable to the system to become direct participants.[67] Direct participation raises difficult questions as to the degree to which regulators should intervene in the commercial relations between financial institutions, and the manner in which eligibility criteria for systems are set, given that these have to balance factors arising from risk, competition law, and the need to preserve designation under the Settlement Finality Directive (SFD) which sets an eligibility criterion for participants.[68] The question is not just for payment systems: the one-size-fits-all approach of the PFMI requires both CCPs and CSDs to consider it too. For CSDs the issues may be elusive: except for 'beneficial owner markets',[69] the concept of tiering is inherent in the

61 Cf Ray, A, and Jaswal, A, *Challenging Times for the Post-Trade Industry – Improving efficiency and achieving stability amidst growing complexity* (October 2015), Celent Report, esp p 29ff

62 Cf **sections 17.6** and **18.23**

63 CSDR, art 30, and Commission Delegated Regulation (EU) 2017/392 of supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories, art 68**;** EMIR, art 35

64 Article 14(3)

65 Article 46(1)

66 Article 47(3), and EMIR RTS 153, art 44

67 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual Report* (March 2015), p 12; Finan, K, Lasaosa, A, and Sunderland, J, *Tiering in CHAPS* (December 2013), *Bank of England Quarterly Bulletin* 2013 Q4, pp 371–378

68 Directive 98/26/EC of the European Parliament and of the Council on settlement finality in payment and securities settlement systems, art 2(a) and (b)

69 See **section 7.50(1)**

service provided. For CCPs, much focus has been given since the 2008 financial crisis to the problem of transferring a client's positions when its clearing member fails – this subject is considered in **sections 17.54–17.64**. For all types of infrastructure, though, some market participants do not have the option of becoming direct participants, and for those that do, the decision whether to do so is likely to be influenced by factors such as the (substantial) costs of direct participation and the likely volume of business.[70] How the CCP itself is supposed to handle the issues which are primarily commercial questions for its participants is not clarified by the PFMI (and has largely been ignored in EMIR).[71]

(10) *User satisfaction*. PFMI Principle 21 is labelled 'Efficiency and effectiveness', but includes a requirement that FMIs meet the needs of their participants and the markets they serve. This approach has been ignored in the implementing European legislation, except in the case of payment systems. Both the SIPS Regulation[72] and the United Kingdom's Financial Services (Banking Reform) Act 2013[73] have taken on board the objective of user satisfaction in relation to payment systems; CCPs and CSDs are allowed to ignore it (but, presumably, at their peril). Both CCPs and CSDs have to work in an environment where users are very likely to be dissatisfied, because use of the infrastructure is mandated by law in many cases; that is not dissimilar to the environment in which payment systems operate, where there may be no law insisting that payers use the infrastructure but the alternatives are not always feasible. It is might be thought surprising that where there is a choice (payers can use cash, at least in theory) there is statutory concern for their welfare, but where there is none, there is none. User committees, required to be established within the governance framework for CSDs[74] – but not for CCPs – are, presumably, expected to fill the gap.

7.12 The EU has been assessed for compliance with the PFMI, at least as regards CCPs and Trade Repositories. The Report[75] prepared in 2015 gave 'consistent' ratings for CCPs supervised under EMIR in 14 out of 22 applicable Principles; the other eight Principles were rated 'broadly' or 'partly' consistent. (It may be noted that CCPs supervised by six national regulators, where superequivalent regulatory standards are in force, were rated 'consistent' against all 22 Principles.) The four serious shortcomings ('partly consistent' rating) observed were in the following areas: credit risk (loss allocation on exhaustion of default funding); general business risk (recovery planning); efficiency and effectiveness; and disclosure of rules etc. The other observed differences related to legal soundness, governance, risk management framework, liquidity risk, money settlements, default rules and operational risk.

70 Cf Bank for International Settlements Committee on the Global Financial System, *The macrofinancial implications of alternative configurations for access to central counterparties in OTC derivatives markets* (November 2011), CGFS Paper No 46, www.bis.org/publ/cgfs46.htm, p 10

71 See further **section 19.40**

72 Article 18

73 See **section 8.11**

74 CSDR, art 28

75 CPMI and Board of IOSCO, *Implementation monitoring of PFMIs: Level 2 assessment report for central counterparties and trade repositories – European Union* (February 2015)

PAYMENT SYSTEM REGULATION

7.13 The ESCB has a Treaty power to oversee payment systems.[76] Article 22 of the ESCB and ECB Statute states that 'the ECB may make regulations to ensure efficient and sound clearing and payment systems within the Union.'[77] In its Oversight Policy Framework,[78] the ECB interprets the oversight role as being given to the 'Eurosystem' (that is, the ECB and the national central banks of the euro area) and in respect of euro area systems.

The ECB's policy is set out in an Explanatory Note[79] and a Revised Oversight Framework for Retail Payment Systems (the Revised Oversight Framework),[80] which were issued when the SIPS Regulation came into force. Essentially, payment systems are classed into one of three classes for the purposes of oversight. The topmost class, systemically important payment systems, are subject to the SIPS Regulation. That leaves 'retail' payment systems, which are 'prominently important' or 'other'. The SIPS Regulation does not apply to the 'retail' classes, but this is not a major distinction in terms of rules, since most of the PFMI are applied as soft law to the retail classes.

7.14 The classification of payment systems is done by reference to the following rules. The SIPS Regulation lays down criteria for 'systemically important' payment systems: *viz* (a) eligibility for designation under the SFD by a eurozone member state; (b) satisfying two out of four tests, of which three are size tests and the fourth is whether the system is 'used for the settlement of other financial market infrastructures' (*sic*).[81] The ECB concluded that four systems met the criteria: TARGET2, EURO1, STEP2-T, and CORE(FR).[82] It might be observed that the ECB decided not to designate CLS, despite the SIPS Regulation having specific provisions addressing PvP settlement systems. In the post-mortem on its failed location policy,[83] the ECB made the following comment with regard to the oversight of CLS:

> 'the Eurosystem has never tried to implement its location policy to the PvP part of CLS, but has instead insisted that it be closely associated to the oversight activities of the central bank with primary oversight responsibility, the Federal Reserve System of the United States'.[84]

CLS would be regarded by most observers as having systemic importance, but it is not established in a eurozone country, even though it may satisfy the other SIPS Regulation criteria. The conflict between the ECB's policy, which aims to ensure that the ECB has oversight across all euro-usage infrastructures, and that

76 TFEU, art 127

77 TFEU, Protocol (No 4) on the Statute of the European System of Central Banks and of the European Central Bank

78 European Central Bank, *Eurosystem Oversight Policy Framework* (September 2015)

79 European Central Bank, *Revision of the Eurosystem Oversight Framework for Payment Systems – Explanatory Note* (August 2014)

80 European Central Bank, *Revised Oversight Framework for Retail Payment Systems* (August 2014)

81 SIPS Regulation, art 1(3)

82 European Central Bank, *ECB identifies systemically important payments systems* (August 2014), Press Release

83 See **section 9.10**

84 European Central Bank, *Eurosystem oversight policy framework* (September 2015), section 6; see also Board of Governors of the Federal Reserve System, *Protocol for the cooperative oversight arrangement of CLS* (November 2008), www.federalreserve.gov/paymentsystems/cls_protocol.htm

of the United Kingdom, which considers location rules to be beyond a regulator's competence, becomes apparent here. The ECB did not (and, in light of the ECJ's decision on CCPs,[85] perhaps cannot) impose a location rule on CLS; whether the SIPS Regulation (drafted by the ECB before the ECJ judgment) excludes non-eurozone euro-using systems in order to affirm that result is a matter for speculation.

'Prominently important' retail payment systems are those whose market share is 25% or higher of total euro-denominated payments by volume, measured at Member State level, and 'other' payment systems are those which fail this test. In both cases the Member State in question must be a eurozone country.[86]

The ECB website historically named retail systems of 'systemic' and 'prominent' importance, which is a slightly different classification than the new ECB policy set forth in the Revised Oversight Framework. The old classification was based on the following thinking. 'Prominent' retail payment systems were formerly those considered by the ECB not to have systemic implications but which could, nonetheless, have a severe impact if disrupted. 'A system is likely to be of systemic importance if at least one of the following is true: i) it is the only payment system in a country, or the principal system in terms of the aggregate value of payments; ii) it mainly handles payments of high individual value; or iii) it is used for the settlement of financial market transactions or the settlement of other payment systems.'[87]

SIPS Regulation

7.15 The SIPS Regulation follows closely, if not slavishly, the PFMI. Rather than adopting the Principles themselves, the SIPS Regulation chooses to take as its text the next level down from the PFMI document – the 'key considerations' which flesh out the Principles. In only a few places does the deviation from the CPMI version merit comment:

- *Defined terms*. The SIPS Regulation defines many terms which are in such common use that a definition might be thought unnecessary (such as credit risk, custodian bank, investment risk); some definitions are not what might be expected (for example, '"the Management" means executive directors, i.e. members of a unitary board who are engaged in the daily management of the SIPS operator and members of a managerial board of the SIPS operator in a dual board system'); and others elaborate concepts which are frequently left open (for example, 'extreme but plausible market conditions').[88]
- *SFD.* SIPS are expected to become designated systems.[89]
- *Eurosystem SIPS*. Eurosystem SIPS, defined as SIPS owned and operated by a Eurosystem central bank (which would thus mean TARGET-2) are

85 *United Kingdom v European Central Bank* [2015] 3 CMLR 8; see **section 9.10**
86 Revised Oversight Framework, para 1
87 European Central Bank, *Oversight Standards for Euro Retail Payment Systems* (June 2003), www.ecb.eu/pub/pdf/other/retailpsoversightstandardsen.pdf, p 2
88 SIPS Regulation, art 2
89 SIPS Regulation, art 3(6)

exempted from certain requirements relating to collateral,[90] capital,[91] and custody and investments.[92]

- *Access*. The ECB opted not to include the key consideration that 'An FMI should allow for fair and open access to its services' in adopting PFMI Principle 18 on access and participation requirements.
- *Interoperability*. The ECB opted not to include PFMI Principle 20 on 'FMI links' at all. This is presumably because the ECB does not envisage links between SIPS. A separate ECB standard applies to links between retail systems.
- *Crime and punishment.* The SIPS Regulation supplements the PFMI with a trio of articles[93] which provide for documents and information to be given to the competent authority, for the competent authority to give corrective directions, and for the ECB to impose sanctions. This puts the ECB in the unusual, possibly unique, position of being legislator, prosecutor, defendant and judge in relation to the behaviour of TARGET-2. Lest there be concern that the ECB is both supervisor and supervisee in the case of TARGET-2, a separate team within the ECB is responsible for oversight.[94]
- *Outsourcing.* The ECB opted not to include Annex F of the PFMI on outsourcing. It may be questioned whether, given the importance of outsourcing issues across the remainder of the regulatory spectrum, it is sufficient for the SIPS Regulation to say 'A SIPS operator shall identify, monitor, and manage the risks that critical participants, other FMIs, and service and utility providers might pose to the SIPS' operations'.[95]

Retail systems

7.16 In the Revised Oversight Framework, the ECB sets out which of the PFMI it believes should be applied to 'prominently important' and 'other' retail payment systems. There are 24 Principles, of which 6 (concerning margin, physical deliveries, CSDs, exchange-of-value, segregation and porting, and trade repository disclosures) will have no relevance to retail payment systems. Looking at the remaining 18 Principles:

- PFMI Principle 20 relates to links between FMIs. The ECB does not apply Principle 20 to retail payment systems; instead it has its own document, the Oversight Expectations for Links between Retail Payment Systems.[96] These are considered further in **section 15.61**. The ECB disapplies the oversight expectation on governance of links for 'other' retail payment systems, otherwise the whole standard applies to both classes of system.
- PFMI Principles 4 (credit risk), 5 (collateral), 7 (liquidity risk), 16 (custody and investment risks) and 19 (tiered participation) are not applied to retail payment systems. The ECB says that these 'are considered too demanding

90 SIPS Regulation, art 7(7)
91 SIPS Regulation, art 13(7)
92 SIPS Regulation, art 14(6)
93 Articles 21, 22 and 23
94 Kokkola, T, (ed), *The Payment System* (European Central Bank, September 2010), ISBN 978-92-899-0632-6, p 271
95 SIPS Regulation, art 15(7)
96 European Central Bank, *Oversight expectations for links between retail payment systems* (November 2012)

for systems that do not pose such a high financial risk to the market'. Probing beneath that rather anodyne comment, it may be that ACHs do not usually assume credit risk on their participants, with the consequence that PFMI Principles 4, 5 and 16 are likely to be of no relevance. Nor would PFMI Principle 7 be relevant unless (as this text argues,[97] in relation to payment and settlement systems) PFMI Principle 7 is directed not so much at the liquidity pressures facing the system operating company but the liquidity issues confronting the participants. Tiered participation may indeed be less of an issue with local ACHs than for large-value payment systems, where entry criteria are likely to be stricter. So the ECB's exclusion of these five PFMI Principles may be justified, unless there has been (as this text believes) a misinterpretation of the purpose of the PFMI Principle on liquidity.

- Three PFMI Principles apply only to 'prominent', and not to 'other', retail payment systems. These are PFMI Principles 9 (central bank money), 15 (general business risk) and 22 (communications procedures and standards).
- Nine PFMI Principles remain, which are applied to both classes of retail payment systems. These are PFMI Principles 1 (legal basis), 2 (governance), 3 (risk management), 8 (settlement finality), 13 (default rules), 17 (operational risk), 18 (access and participation requirements), 21 (efficiency and effectiveness) and 23 (disclosure of rules etc).

For the PFMI which do apply to retail payment systems, the ECB has again studied the 'key considerations' which add detail to the Principles themselves. Selections have been made from the 'key considerations', so that different considerations apply, according as the system is 'prominent' or 'other'. A table of application is set out as Annex 2 to the Revised Oversight Framework.

7.17 The question remains as to who should supervise the retail payment systems. The ECB points out that national laws may assign responsibility to the local central bank, but also that payment systems may not have a clear national anchor, particularly in a Europe which is driving towards a single market, a single currency and a single payment area. National supervisors should, nevertheless, take the lead. Thus the chief supervisory role is expected to be carried out by the central bank of the country where the system is legally incorporated 'unless the Governing Council of the ECB decides otherwise and assigns primary oversight responsibilities to the ECB'.

7.18 Finally, mention may be made of the PE-ACH/CSM (Pan-European ACH/Clearing and Settlement Mechanism) Framework previously created by the European Payments Council (EPC).[98] The EPC's Single Euro Payments Area (SEPA) payment schemes give rise to euro payments which need to be settled through payment systems, and the systems need to be compatible with those schemes. The PE-ACH/CSM Framework established requirements for ACHs which wish to be pan-European, or clearing and settlement mechanisms with less extensive reach, for the settlement of euro transactions subject to the schemes. These included compatibility with the time limits, data formats, and other requirements of the scheme rulebooks; compliance with standard European rules on no-deduction of charges from monies in transit; keeping a

97 See section **7.11(4)**
98 European Payments Council, *PE-ACH/CSM Framework* (June 2008)

count of transactions; having non-discriminatory access criteria and inclusive governance rules; and compliance with the ECB's oversight standards for retail payment systems. At least some of its purpose was 'reachability', a task now substantially left to the SEPA Regulation,[99] along with other aspects of SEPA previously left to self-regulation. In 2013, recognising the move away from self-regulation, the EPC withdrew the PE-ACH/CSM Framework.

7.19 In connection with SEPA, it might also be observed that the SEPA Regulation has limited impact in relation to payment systems regulation. Its main purpose is to drive payers and payees to use the SEPA-compliant payment *schemes* devised by the EPC and to put the content of those schemes into the hands of the European Union legislators. As regards payment *systems*:

- the SEPA Regulation does not apply to 'payment transactions processed and settled through large-value payment systems'.[100] 'Large-value payment systems' are not defined, which may be unhelpful, although a 'retail payment system' is defined as a payment system the main purpose of which is to process, clear or settle credit transfers or direct debits, which are generally bundled together for transmission and are primarily of small amount and low priority, and that is not a large-value payment system.[101]
- there is a requirement for operators of 'retail payment systems' to be technically interoperable.[102]

Designation under the Settlement Finality Directive

7.20 The SFD is not a regulatory instrument. Its purpose is protection of designated payment and settlement systems from attack under insolvency laws.[103] It has one 'regulatory' provision, which says that 'Member States may impose supervision or authorisation requirements on systems which fall under their jurisdiction'.[104] The SFD's approach to regulation of systems can be explained as follows:

> '[D]esignation falls short of "authorising" the system: the arrangement can function without being designated as a system under the Directive. It nevertheless implies that the Member State has a role to play in assessing the risk profile of a system and in imposing measures to reduce risk. Article [10(1)] goes further. It provides that Member States may impose authorisation or supervision requirements on systems governed by their law. It was important to spell this out, as doubts could otherwise have arisen on Member States' further ability to do so. Under the Codified Banking Directive … [t]he host Member State may not impose any further authorisation or supervisory requirements on a passported institution.'[105]

99 Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro, etc

100 SEPA Regulation, art 1(2)(b)

101 SEPA Regulation, art 2(22)

102 SEPA Regulation, art 4(2); see **section 15.63**

103 See **sections 13.29ff**

104 Article 10(1), para 3

105 Vereecken, M, 'Directive 98/26/EC on the European Union Payment Systems and Securities Settlement Systems', in Vereecken, M, and Nijenhuis, A, (eds), *Settlement Finality in the European Union* (Kluwer, April 2003), ISBN 90 130 0487 3, p 64

Although the SFD contains no other 'regulatory' provisions, it is plain that it confers a privileged status on designated systems, and that the competent authorities of Member States have a discretion as to whether to award that status. It would be expected, therefore, that there would be some regulatory *quid pro quo* setting out rules which a designated system should obey in order to retain its privileges. The SFD, equally plainly, does not contain those rules, nor, when the SFD was reviewed in 2006, did this seem to be an important omission.[106] The position would seem to be as follows:

(1) Some Member States, such as the United Kingdom, have introduced limited conditions which have to be adhered to in order to maintain designated status.[107]

(2) Others have concluded that ordinary banking supervision is sufficient to ensure adequate oversight of designated systems.[108]

(3) There are eligibility criteria with which any designated system must comply. These are considered in **section 13.30**.

(4) If any further regulatory rules are sought for designated systems, it ought to follow that they are set out in the PFMI, given that designation is closely linked to the notion of systemic risk management.

7.21 With the departure of the United Kingdom from the European Union, the status in the United Kingdom of designated systems based in EU Member States, and that of UK systems within the European Union, comes into question. The position can be summarised as follows:

- The Financial Markets and Insolvency (Amendment and Transitional Provision) (EU Exit) Regulations 2019[109] enable non-UK systems to seek designation from the Bank of England under the revised Settlement Finality Regulations 1999.[110] Until three years after the end of the implementation period following the United Kingdom's formal departure from the European Union on 31 January 2020, foreign systems which already enjoyed EU designated status and which have notified the Bank of England will be treated as designated for the purposes of protection in the United Kingdom.
- The reciprocal case is more difficult, because the SFD envisages that the law governing a designated system is that of a Member State. Sterling-denominated payment systems – or indeed any other payment, clearing or securities settlement systems operating in the United Kingdom – are unlikely to satisfy this condition. That would appear to rule out the possibility of a United Kingdom payment system, CSD or CCP obtaining EU designation. Whether that is an important result depends on the default actions which might need to be taken and the extent to which they might be impeded from overseas, a question considered further in **section 13.47**.

106 Cf European Commission, *Evaluation report on the Settlement Finality Directive 98/26/EC (EU25)* (March 2006), COM (2005) 657 final/2, http://ec.europa.eu/internal_market/financial-markets/docs/settlement/evaluation_report_en.pdf

107 See **section 8.7**

108 Cf Haag, H, Peters, M, and Schneider, H, 'Implementation of the Settlement Finality Directive in Germany', in Vereecken and Nijenhuis, p 241

109 SI 2019/341

110 SI 1999/2979

EMIR AND CCPS

7.22 EMIR[111] introduced a European scheme of regulation for CCPs, including CCPs clearing instruments other than OTC derivatives. Its content can be reviewed by reference to six aspects of a CCP's function: regulation; ownership and governance; capital; counterparty risk management; internal organisation; and competition.

Regulation

7.23 The principal regulator of a CCP is the competent authority in the Member State where the CCP is incorporated.[112]

7.24 However, CCPs may have foreign operations. A CCP's services may, in a sense, be provided in countries other than the home Member State: a CCP may provide clearing services for platforms which might be based elsewhere; the participants in a CCP may be based elsewhere; the financial products which the CCP clears may be securities issued in other countries or contractual entitlements governed by foreign legal systems. EMIR acknowledges that a CCP may wish 'to extend its business into a Member State other than where it is established'.[113] What EMIR does not explain, however, is how a host state is to determine whether the CCP is conducting its business in that state. Financial services are essentially non-material, and therefore in the absence of a bricks-and-mortar branch it may be difficult to ascribe to a 'location' to the provision of services.[114] Old guidance from the European Commission on the second Banking Coordination Directive[115] suggested that a 'characteristic performance' test should be applied to determine whether a financial service was being conducted in a particular state: 'In order to determine where an activity was carried on, the place of provision of what may be termed the "characteristic performance" of the service, that is the essential supply for which payment is due must be determined.'[116] In the case of clearing services, what constitutes the 'characteristic' performance might also be debated, but using the definition provided by EMIR itself ('the process of establishing positions, including the calculation of net obligations, and ensuring that financial instruments, cash, or both, are available to secure its exposures arising from those positions')[117] one might conclude that none of the 'foreign operations' of CCPs listed at the start of this paragraph would displace the characteristic activities of clearing away from the place where the risk management is carried out. Contrary arguments might, no doubt, be adduced based, for example, on the presence of participants or even end-users or margin assets in other countries; the simplest approach would be to

111 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

112 EMIR, art 14

113 EMIR, art 15(2)

114 Cf **section 10.3**

115 Second Council Directive 89/646/EEC of 15 December 1989 on the coordination of laws, regulations and administrative provisions relating to the taking up and pursuit of the business of credit institutions, etc

116 European Commission, *Freedom to provide services and the interest of the general good in the Second Banking Directive* (June 1997), Commission Interpretative Communication, SEC(97) 1193 final, http://ec.europa.eu/internal_market/bank/docs/sec-1997-1193/sec-1997-1193_en.pdf, p 6

117 EMIR, art 2(3)

assume that CCPs are not extending their business into another Member State unless they set up a physical branch, but this does not appear to be the approach taken by Member State regulators.

7.25 If an EU CCP does extend its business into other Member States, a notification, by the home state regulator to the host state regulator, is required.[118] However, the competent authority of the host state has little involvement in the supervision of the CCP. The supervisory functions of deciding on authorisation, extension of a CCP's activities and services, review of stress-testing, and approval of interoperability arrangements are to be carried out by a college of regulators;[119] and the composition of the college does not automatically ensure that host state regulators are included. The college consists of ESMA, the CCP's home state regulator, the regulators of the three largest participants (measured by default fund contribution), the regulators of trading venues served by the CCP, CSDs linked to the CCP, and interoperating CCPs, and various central banks.[120] The home state regulator, however, has exclusive control over the day-to-day supervision of the CCP.[121] Details on how a college is to be run are set out in EMIR RTS 876.[122]

7.26 CCPs based in the United Kingdom have a different set of international rules to obey after the United Kingdom's departure from the European Union. The college machinery is disapplied,[123] and UK CCPs will (if they have EU participants or there are other reasons to conclude that they conduct their business within the European Union) need to obtain recognition under EMIR as third-country CCPs. International recognition of third-country CCPs under Article 25 of EMIR, and related problems, are discussed in **sections 7.53ff**.

Legal form of CCPs

7.27 As discussed in **section 9.7**, there is a divergence of views in Europe as to whether CCPs should take the form of banks. EMIR does not take sides on this debate. Article 14 requires a CCP to obtain a clearing services licence, but Article 14(5) allows Member States to apply super-equivalent regulatory requirements 'including certain requirements for authorisation under [the Capital Requirements Directive]'.[124]

CCPs cannot be authorised unless they are also designated under the SFD[125] or, in the United Kingdom, under regulation 2(1) of the Settlement Finality Regulations 1999.[126]

118 EMIR, art 15(2)
119 EMIR, art 18(1)
120 EMIR, art 18(2)
121 EMIR, art 21
122 Commission Delegated Regulation (EU) No 876/2013 of 28 May 2013 supplementing EMIR with regard to regulatory technical standards on colleges for central counterparties
123 Over the Counter Derivatives, Central Counterparties and Trade Repositories (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2019, SI 2019/ 335, regs 29 and 30
124 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms etc
125 EMIR, art 17(4)
126 SI 1999/2979

Ownership and governance

7.28 Who should be allowed to own and run a CCP has proved to be a topic of some controversy: the debate is touched on in **Chapter 9**, in relation to governance, and in **Chapter 14**, in relation to responsibility for restoration of a CCP to financial health following a catastrophic loss. EMIR has resisted the call for ownership to be divorced from clearing members, and contains only a few stipulations on the subject.

First, the regulator must be informed of the identity of the owners of the CCP,[127] changes in the degree of control enjoyed by those with voting rights,[128] and approve the suitability of owners and those with 'close links'.[129] In these respects, EMIR reflects the requirements for banks, set out in the Capital Requirements Directive (CRD).[130]

Governance arrangements are also in line with the revised, more detailed approach to governance in banks, introduced under the CRD (which will apply in any case if the CCP is organised as a bank).[131] So, CCPs must have clear reporting lines, effective systems and controls, independent risk management, sound compensation policies, adequate IT, transparent governance, independent audit, high-quality management including independent directors, and a risk committee.[132] The role of the risk committee is important: it is obliged to advise the board on any arrangements that might impact the risk management of the CCP, including the risk model, default procedures, membership criteria, clearing of new products and outsourcing.[133] The risk committee may only comprise representatives of clearing members and clients, and the independent members of the board.[134] Its role is advisory, but the CCP must inform its regulator if it decides not to follow the advice of the risk committee.[135]

Capital of CCPs

7.29 The ownership of a CCP is a subject closely connected to the provision of its equity capital. The 'capital' of a CCP may be considered to consist of its 'own funds', that is liabilities of the CCP to its owners and subordinated creditors, and its default fund, contributed by the clearing members. As to the former, the EMIR has little to say. A CCP is required to have initial equity capital of no less than €7.5 million,[136] which is more than a bank;[137] but instead of the tract of legislation spelling out the risk-based capital requirements which applies to banks, EMIR says that:

- capital should be sufficient to ensure an orderly winding-down or restructuring over an appropriate time span and an adequate protection

127 EMIR, art 30(1)
128 EMIR, art 31(2)
129 EMIR, art 30(2), (3)
130 CRD, arts 14, 22, 23
131 Arts 88ff
132 EMIR, arts 26–28
133 EMIR, art 28(3)
134 EMIR, art 28(1)
135 EMIR, art 28(5)
136 EMIR, art 16(1)
137 CRD, art 12

of the CCP against credit, counterparty, market, operational, legal and business risks; and

- rather more vaguely, '[c]apital including retained earnings and reserves of a CCP shall be proportionate to the risk stemming from the activities of the CCP'.[138]

A CCP may be organised as a bank, in which case the provisions of the Capital Requirements Regulation (CRR)[139] will apply to its credit exposures, as well as imposing capital adequacy strictures in respect of market and operational risks. For CCPs which are banks, EMIR might be regarded as an overlay on the regular rules about capital. However, not all CCPs are banks, as observed above.

7.30 More detail is left to EMIR RTS 152.[140] The text of EMIR RTS 152, in summary, suggests that the principal function of capital is not to provide resources to cover participant defaults; instead the focus is on the appropriate amount of financial backing to cover an orderly wind-down and operational risks.[141]

The following comments may be made on the capitalisation of a CCP in accordance with the EMIR RTS 152 approach.

(1) The principles proceed from the basis that the CCP's capital is needed to carry out a 'lift out' of the CCP's business. For the reasons given in **sections 14.23–14.26**, this may be a difficult outcome to achieve for this type of infrastructure, and to prescribe a capital requirement with an artificial objective in mind may be imprudent.

(2) The capital of a CCP is needed primarily to buffer creditors against the risk that the CCP cannot manage counterparty risk effectively. Although the circumstances and quantum of this risk are different in the case of a CCP, the risk is qualitatively identical to that being taken by banks and investment firms, so it could be argued that CCPs should be capitalised according to the principles set out in the CRR. But this allows a favourable treatment to collateralised exposures.[142] So it is likely that a CCP's capital requirement calculated on the same set of measures as a bank calculating a counterparty-risk-related requirement would lead to a low result.

(3) Unfortunately there is no generally accepted principle for determining the appropriate amount of counterparty-risk-related capital when a CCP has exhausted its default fund. Further, as discussed in **sections 17.34–17.39**, it is hard to quantify an economically viable amount of financial backing which can ensure that a CCP always escapes a loss which exhausts the margin, and to try to repeat the exercise for exhaustion of the default fund is probably impossible. CCPs contend that it is wrong in principle to try to link the amount of a CCP's own contribution to a default waterfall (*sc.* the

138 EMIR, art 16(2)

139 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms etc

140 Commission Delegated Regulation (EU) No 152/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on capital requirements for central counterparties

141 See European Banking Authority, *EBA Discussion Paper on Draft Regulatory Technical Standards on the capital requirements for CCPs under the draft Regulation on OTC derivatives, CCPs and Trade Repositories* (March 2012), EBA/DP/2012/1

142 CRR, Part 3, Title II, Chapter 4

amount of CCP shareholders' funds which are at risk following default) to 'dynamic parameters' such as the size of the default fund.[143]

(4) The EMIR RTS 152 approach to operational-risk-related capital requirements is based on the Basel II approach which, for many banks, uses a multiple of gross income as a proxy for quantification of operational losses.[144] It can be argued that this is not appropriate for CCPs, whose operational risks are likely to be qualitatively different from those of banks.

7.31 Article 43 of EMIR also requires a CCP to maintain sufficient available pre-funded financial resources to cover potential losses that exceed losses covered by margin requirements and the default fund. It is unclear what is meant by this provision: apart from operational risks, losses not covered by margin and default funding will arise out of participant defaults. It is difficult to imagine how a CCP or its regulator should assess the appropriate amount of supplementary pre-funded resources required by this article. With the move towards CCPs having power in their rules to limit their liabilities to clearing members in cases where the default fund is inadequate to cover losses,[145] and with no clear duty to raise equity capital to cover such overflow losses, CCPs first have to choose whether to increase the default fund or to use their loss-sharing rights (both of which hurt the clearing members rather than the providers of equity capital).

As to the size of the default fund, EMIR requires it to be sufficient to enable the CCP to withstand, under extreme but plausible market conditions, the default of the clearing member to which it has the largest exposures (or of the second and third largest clearing members, if larger).[146] EMIR RTS 153 sets out the framework for defining 'extreme but plausible market conditions'.[147] Stress-testing and back-testing are to be carried out to assess the resilience of the default fund and margin requirements.[148] A larger default fund is permitted, however, and may be desirable for derivatives CCPs in view of the provisions of Articles 50a–50d of EMIR.

Hypothetical capital

7.32 Articles 50a–50d of EMIR introduce the concept of 'hypothetical capital' of a CCP. The first point to note about hypothetical capital is that it is not a requirement for a CCP to have capital equal to or greater than its hypothetical capital – the CCP only needs to compute its hypothetical capital in order for its members to be able to calculate the appropriate risk-weighting on their own exposures to the CCP in respect of default fund contributions. Hypothetical capital is, therefore, a kind of soft target which the CCP may choose to meet in order to reduce the cost of participation for its clearing members, since (as will be shown) if the target is exceeded, the cost will fall, and if the target is not met, the cost can be painful if not penal.

143 European Association of CCP Clearing Houses, *An effective recovery and resolution regime for CCPs* (December 2014)
144 Cf CRR, arts 315-316
145 See sections **14.15–14.19**
146 EMIR, art 42(3)
147 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties, art 30
148 EMIR, art 49; EMIR RTS 153, Chapter XII

A second point to note is that the concept is relevant only for CCPs which clear derivatives, repos, securities loans and 'long settlement transactions'.[149]

Hypothetical capital is an amount calculated as if it were a capital amount for a financial institution, using the tradition approach of [exposure] * [risk weighting] * [capital ratio].[150] The exposures in question are the exposure of the CCP to each clearing member, less initial margin and default fund contribution, summed across all clearing members. The risk weighting is fixed at 20% and the capital ratio at 8%.[151]

The CRR then comes into play.[152] If the CCP's pre-funded financial resources (its capital, in other words) exceed the hypothetical capital, the risk-weighting imposed on the clearing member is lower than if the CCP needs to add in default fund contributions to exceed the soft 'hypothetical capital' target; and if the CCP cannot meet the target even with the whole of the default fund (minus two average-size contributions) the risk weighting which clearing members must use escalates markedly.

Relationship between 'capital', the default fund and other loss protection

7.33 The starting point is that the function of equity capital is to absorb losses which are sustained by the entity carrying out the loss-making business. The purpose of equity capital investment is thus to expose the owners of the business to risk associated with failure of that business, as well as its rewards. A default fund is for some purposes a species of 'capital' – in the sense that it is a liability of the CCP which is loss-absorbing and therefore protective of senior creditors. Indeed, the computations of a CCP's 'hypothetical capital' looked at above envisage the default fund being treated as capital.

Nevertheless, and perhaps surprisingly, the term 'capital' is a trap for the unwary and a source of confusion when applied to CCPs. With CCPs, it is important when using the term to distinguish between *equity capital*, which is ventured by the owners, and *available financial resources*, which represent not only the investment of owners but also the contributions made by members to the default fund of the CCP. This is different from the situation which applies to other enterprises, such as banks or trading companies: banks and ordinary trading companies have equity capital, and they also have non-equity capital in the form of subordinated or long-term debt. Banks have especially elaborate ranking rules to determine who stands in what position in the line to receive a payment upon insolvency, but that does not alter the fundamental distinction between CCPs and everyone else: the situation is different with CCPs. To describe clearing members as providers of 'capital' may risk the implication that, like owner-venturers, contributors to the default fund are volunteers seeking a return on an investment; a better analogy is with the non-retail depositors of a bank, who may experience bail-in. To avoid that trap, this text uses the term 'equity capital' to mean a liability to an owner-venturer only, and unless the context otherwise

149 CRR, art 301
150 Cf **section 12.4**
151 EMIR, art 50a(1) and (2)
152 See **section 12.11**

demands it, the term 'capital' does not include financial resources contributed by members to a default fund.

To show up the distinction, a typically constituted default fund allows a contributor to withdraw its contribution by quitting membership of the CCP, which is not usually a feature of eligible regulatory capital instruments. (Admittedly the continuing participants would be expected to make good the deficit occasioned by departure of a contributor; but that model of replenishment is based on the notion that participation in the CCP is desirable. If there were many departures, as would be the case where the future of the CCP is in doubt, the willingness of an ever-diminishing pool of participants to contribute an ever-greater share of the default fund must also be in doubt, and the demise of the CCP would follow.)

And in no sense do the contributors to the default fund share in the benefits of capital investors. They have influence on policy, through the risk committee, but there is no statutory guarantee that advice from the risk committee as to the balance between own-funds capital, default funding, margin, and other types of financial backing such as insurance would be heeded by the board. The board of a CCP answers to the CCP's shareholders, not the wider constituency of capital providers. Other factors which the board of a CCP might find influential can legitimately include the profitability of the CCP under different models of risk-sharing.

7.34 The relationship between capital, default funding, and the profit model adopted by CCPs is complex, and regulators have preferred not to be over-prescriptive in relation to business structure. The inescapable fact is that CCPs are run as for-profit ventures notwithstanding that the costs of failure are borne by participants rather than shareholders.[153] This factor is not a paradox: it is perfectly in order for a CCP to be run to generate profit while maintaining a prudent buffer, called 'skin in the game' (SITG), which stands between the participants and the first losses suffered by the CCP. This buffer ought to be represented by the reserves of the CCP.

There is, however, no obligation in EMIR for a CCP to build and retain reserves beyond the minimum set out in Articles 16 and 43. CCPs are expected to allocate financial resources to the default waterfall, as discussed at **sections 17.38 and 14.32**. The absence of any competitors for clearing products which are subject to mandatory clearing might also introduce distortions in solving this equation: EMIR does not introduce safeguards beyond those already existing under the general law of competition.

7.35 Academic research shows that misalignment of the amount of SITG relative to other resources can have side-effects. First, low SITG tends to improve the return on equity for shareholders but also to depress the level of clearing (assuming there to be no clearing mandate, or there to be effective competition for clearing, in respect of the cleared product). Secondly, initial margin levels rise if SITG rises. These findings show that CCPs' owners value, and get rewarded for, the stake they commit in the form of SITG. What is more, it seems that for-profit CCPs have less SITG than mutually-owned CCPs.[154]

153 See **section 9.28**

154 Murphy, D, 'I've Got You Under My Skin: Large Central Counterparty Financial Resources and the Incentives they Create' (March 2017), *Journal of Financial Market Infrastructures*, vol 5 p 57; Huang, W, Central Counterparty Capitalization and Misaligned Incentives (February 2019), BIS Working Paper No 767

It can, therefore, be suggested that the EMIR/CRR approach to capital is simplistic and wrong. An interesting and potentially informative comparison may be made with the regulation of other institutions with low-probability high-impact risk profiles. Catastrophe insurers take on risks which have these characteristics, and European regulators have devised a regulatory capital regime, commonly called the Solvency II Directive,[155] which is being applied to those businesses. In addition to a 'minimum capital requirement', which may be regarded as analogous to the basic requirement of EMIR for CCPs to have capital of at least €7.5 million, insurance companies are required to have a solvency capital requirement designed to maintain their default probability below a certain level, namely that it would have 99.5% probability of meeting its obligations over the next 12 months, or to put it differently, would only fail to cover a one-in-200-year maximum loss.[156] (Comparison is thus invited with the confidence interval for margin standards for CCPs, described in **section 7.36**.) Furthermore, insurers may mitigate their risks, and to varying degrees their capital requirements, through a variety of instruments such as reinsurance or capital market products such as catastrophe-linked notes.[157]

Counterparty risk management

7.36 EMIR has a selection of rules on the subject of counterparty risk management. These may be summarised as follows:

(1) *Margin*. CCPs must collect margin sufficient to meet two tests. They must 'cover potential exposures that the CCP estimates will occur until the liquidation of the relevant positions' and they must 'cover losses that result from at least 99% of the exposures movements over an appropriate time horizon'. Margining must take place daily.[158] Although badly expressed, the requirement appears to mean that CCPs have to collect margin to cover losses up to a one-tailed 99% confidence threshold in ordinary, but not stressed, market conditions. This is consistent with, but not as detailed as, the PFMI. Further detail on margining is given in EMIR RTS 153; in particular, the confidence interval is increased to 99.5% for OTC derivatives transactions.[159] Stress- and back-testing of the CCP's models are to be carried out.[160]

The margin must consist of highly liquid collateral with minimal credit and market risk. CCPs must apply haircuts reflecting the potential decline in value of the collateral before it is liquidated.[161] In theory, bank guarantees could have been accepted from participants which are non-financial counterparties, until 14 March 2016.[162]

155 Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance

156 Solvency II, art 101(3)

157 Cf Klein, R and Wang, S, 'Catastrophe Risk Financing in the United States and the European Union: A Comparative Analysis of Alternative Regulatory Approaches' (September 2009) *Journal of Risk and Insurance* Vol 76, pp 607–637

158 EMIR, art 41(1)

159 EMIR RTS 153, art 24

160 EMIR, art 49; EMIR RTS 153, arts 47–61

161 EMIR, art 46(1); EMIR RTS 153, arts 37–42

162 EMIR, art 46(3)

CCPs are permitted to re-use margin posted under a security interest, without restriction except that they must publicly disclose the fact.[163] The exercise of a right of use would have to be reconciled with the duties (a) to invest only in cash or highly liquid financial instruments with minimal market and credit risk,[164] and (b) to place financial instruments provided as margin in 'highly secure arrangements.' Those highly secure arrangements mean deposit or custody at a central bank or a commercial bank on which the CCP has carried out a credit check, and in the case of cash, at least 95% of cash deposited overnight with commercial banks must be covered by collateral.[165]

(2) *Liquidity*. CCPs are required to have access to adequate liquidity to perform their functions. There is a 25% limit on the dependency of the CCP for liquidity on any single clearing member and its affiliates – although the PFMI do not specify a limit at all, the 25% level seems very generous.[166]

Perhaps surprisingly, in view of the importance of liquidity during default management, the focus of EMIR RTS 153 is on day-to-day liquidity requirements. While the liquidity risk management framework which the CCP must establish has to take account of stress tests and deal with matters like liquidity shortfalls and stress events, there is no specific reference to clearing member default.

Additional rules pertaining to counterparty risk and to clients reflect the attention paid to 'tiering' in the PFMI.[167] In the first place, EMIR imposes requirements for CCPs to facilitate segregation of client collateral.[168] EMIR also requires CCPs and clearing members to provide a segregated clearing service, but it allows them to offer an 'omnibus account' option for net margining and cheaper clearing,[169] as an alternative to 'individual client segregation'. Secondly, EMIR requires clearing members who clear client transactions to have sufficient financial resources and operational capacity for this service, and to inform the CCP on request about their criteria for providing access services.[170]

(3) *Default procedures*. CCPs are required to have default procedures; they must take prompt action to contain losses and liquidity pressures resulting from defaults, and ensure that close-out action does not disrupt operations or expose the non-defaulting clearing members to unexpected or uncontrollable losses.[171] EMIR seems to envisage that it may be prudent to keep positions open indefinitely, provided that losses and liquidity are kept under control. CCPs are expected to ensure that their default arrangements are legally enforceable;[172] this contrasts with the United Kingdom approach, which takes nothing for granted where insolvency is concerned, and provides for statutory supremacy of a recognised clearing house's default procedures over the general law of insolvency.[173] It may be

163 EMIR, art 39(8)
164 EMIR, art 47(1)
165 EMIR, art 47(3); EMIR RTS 153, arts 44–45
166 EMIR, art 44; EMIR RTS 153, arts 32–34
167 PFMI Principle 19
168 EMIR, art 39
169 EMIR, art 39(5); cf **section 17.32**
170 EMIR, art 37(3)
171 EMIR, art 48(1) and (2)
172 EMIR, art 48(4)
173 See **section 13.19**

commented here that this is a drawback of European legislation taking the form of a Regulation: this part of EMIR is directed at the CCP, which is powerless to deliver the desired result, whereas a directive would impose obligations on Member States to bring it about.

Client positions are to be made portable on the default of a clearing member.[174] Where a client requests that its positions and assets are transferred, and another (transferee) clearing member agrees, the CCP must trigger its transfer (porting) arrangements. Clients' segregated collateral cannot be used to cover anything other than the positions held for their account, and any surplus which is not transferred must be returned to the client (in a 'leapfrog' payment) or the clearing member for the account of the client.[175] The segregation rules set out in Article 39 underpin these provisions. Whether segregation and portability of client positions is invariably the right solution is, however, disputed:[176] full portability eliminates the option of net margining and thereby ties up liquidity; it may not be achievable fully or in all circumstances; and to suggest that portability is available may lure investors into a false sense of security.[177]

Article 45 sets out a priority waterfall which CCPs must follow in covering default-related losses from their resources. The order is: defaulter's margin; defaulter's default fund contribution; the CCP's dedicated own resources; other pre-funded financial resources provided under Article 43 and/or non-defaulters' default fund contributions. The amount of dedicated own resources is set to be equal to the amount of capital raised in accordance with EMIR RTS 152, multiplied by 25%. No express provision is made for the order of recourse to unfunded backing such as insurance, guarantees or their equivalent. No rules are specified in EMIR for the sharing of losses among default fund contributors or for passing round the hat to replenish the default fund after it has been utilised.[178]

Internal organisation

7.37 As regards the way in which a CCP should manage its internal affairs, and in particular operational risks, the precedent followed by EMIR is more like the Markets in Financial Instruments Directive (MiFID)[179] than the CRD. Article 16 of MiFID sets out, for investment firms, requirements for staff to comply with the directive, for avoidance of conflicts of interest, for business continuity, for outsourcing, for high-quality IT systems, for record-keeping, and for safeguarding of clients' assets. Each of these is reflected in EMIR.[180]

174 EMIR, art 48(5) and (6)
175 EMIR, art 48(7)
176 Cf Institute of International Finance, *IIF response to CPSS-IOSCO consultative report on principles for financial market infrastructures* (July 2011), www.bis.org/publ/cpss94/cacomments/ioif.pdf, p 7
177 See further **sections 17.54–17.64**
178 For further discussion, see **section 14.18**
179 Directive 2014/65 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments, etc
180 Respectively, arts 26(2); 33; 26(3) and 34; 35; 26(6); 29; and 39

Particular mention might be made of the outsourcing rules. These follow the pattern set by the MiFID Implementing Regulation,[181] though with a number of omissions, and perhaps importantly, some additions. The additions are that the outsourcing arrangement must not impair the CCP's systems and controls for risk management,[182] and that the supplier must comply with data protection legislation.[183] This degree of detail is higher than that applicable to other types of market infrastructure, but in view of the risks, it is perhaps more noteworthy that other infrastructures are subject to more limited regulation in this regard, than that CCPs have to comply with detailed outsourcing requirements.

Competition

7.38 Participants' access to CCPs is covered by Article 37 of EMIR. As expected, the requirement is for membership criteria to be non-discriminatory, transparent and objective,[184] while also demanding that the criteria ensure that clearing members have sufficient financial resources and operational capacity to meet their obligations. CCPs are required to measure their participants against the criteria at least annually. CCPs are allowed to make participation in default auctions[185] a membership criterion; but any obligation imposed must be applied in such a way as to restrict participation to limited categories of would-be participants.

As if to indicate that the Code of Conduct[186] is superseded, EMIR also sets out a statutory framework addressing each of the topics which are addressed by the Code. EMIR, of course, has broader reach than the Code, because it is not limited to cash equities clearing. Transparency of pricing is now given a legislative foundation in Article 38 of EMIR. Accounting separation, however, and the associated subject of unbundling, is only tackled perfunctorily.[187] The more detailed provisions of the Code may therefore continue to govern the behaviour of equities CCPs, as well as CSDs, notwithstanding the implementation of EMIR.

Interoperability is the third subject covered by the Code, and this merits an entire Title to itself in EMIR.[188] But the interoperability rules apply only to CCPs in relation to 'transferable securities and money-market instruments.'[189] The interoperability provisions of EMIR are summarised in **section 15.7(2)**.

Regulation of CCPs – besides EMIR

7.39 Although EMIR is the primary legislative instrument affecting CCPs, it is not the only one. Mention might be made of the following:

181 Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 implementing [MiFID] as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive, arts 30-32
182 EMIR, art 35(1)(e)
183 EMIR, art 35(1)(j)
184 Cf **section 11.12**
185 See **section 17.49**
186 See **sections 7.9** and **11.20**
187 EMIR, art 38(1)
188 Title V
189 EMIR, art 1(3)

(1) MiFID contains provisions on access to CCPs, limiting rules which discriminate against foreign clearing members.[190]

(2) The Markets in Financial Instruments Regulation (MiFIR) obliges the operator of a regulated market to ensure that transactions in derivatives are cleared by a CCP.[191]

(3) MiFIR also contains provisions on access, obliging CCPs to accept financial instruments regardless of the venue on which the transaction was executed, obliging venues to provide trade feeds to CCPs, and obliging benchmark owners to provide access to price and data feeds to CCPs.[192] MiFIR also amended EMIR to impose a similar non-discrimination rule in respect of OTC derivatives contracts.[193]

(4) The CSDR obliges CCPs, CSDs and trading venues to establish procedures to suspend a participant who is consistently and systematically guilty of settlement fails. The CCP has primary responsibility for operating the buy-in process required when there is a delivery failure in respect of a cleared transaction.[194]

(5) The SFD has, since it was modified in 2009,[195] expressly contemplated that a designated system includes a CCP:

> '"system" shall mean a formal arrangement … with common rules and standardised arrangements for the clearing, whether or not through a central counterparty, or execution of transfer orders between the participants … '[196]

and EMIR requires a CCP to be designated under the SFD.[197] Consequently, a CCP will need to comply with the handful of obligations as to the content of the 'system's' rules, the law which governs the rules, and the eligibility criteria for participation.[198] The above provisions, with the exception of the MiFIR rule on trade feeds, are preserved as part of the law of the United Kingdom after Brexit.

(6) The ECB has issued a set of four standards for central banks which wish to use interest rate swaps as part of their foreign reserve management operations. Such products are typically cleared (even though central banks are exempt from the clearing obligation in EMIR). The four standards are intended to achieve exemptions for central banks from certain conditions which would ordinarily apply to CCP participants, such as providing initial margin or default fund contributions, and to grant privileged status on other matters such as segregation, use of central bank facilities, and information.[199]

190 MiFID, arts 37, 38, 55; see **section 11.24**
191 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments, etc, art 29
192 MiFIR, arts 35–38
193 EMIR, art 7(1), as amended by MiFIR, art 53(2)
194 Article 7
195 By Directive 2009/44/EC of the European Parliament and of the Council of 6 May 2009 amending the SFD, etc
196 SFD, art 2(a)
197 EMIR, art 17(4)
198 See **sections 7.20** and **8.7**
199 European Central Bank, Standards for the use of central counterparties in Eurosystem foreign reserve management operations (September 2015)

(7) The Code of Conduct has not been formally disapplied, and may continue to govern equities CCPs as regards transparency, unbundling, and interoperability.

(8) The ECB-CESR Recommendations[200] on CCPs, like the PFMI, go further than EMIR in some respects. The 15 Recommendations are similar in content to the PFMI but more focused on CCPs. The ECB-CESR Recommendations can be taken to be superseded by the PFMI but may continue to influence regulatory thinking. A critique by the Dutch regulators[201] of the European Commission's original proposal for the legislation which is now EMIR suggested that EMIR should additionally address the use of commercial settlement agents by CCPs, set out common access criteria to CCPs, and provide for a central technical risk management validation entity.

THE CSDR AND CSDS

7.40 The Regulation on Central Securities Depositories (CSDR)[202] introduces a regulatory regime, including business restrictions, on entities carrying out the activities of a CSD. At the outset there is a question how a 'CSD' should be defined. The legislative proposal identifies a CSD as a person who carries out the third, and one other of the three 'core services' listed in Section A of the Annex to the CSDR, which are '1. Initial recording of securities in a book-entry system ("notary service"); 2. Providing and maintaining securities accounts at the top tier level ("central maintenance service"); 3. Operating a securities settlement system ("settlement service").' As to this, some initial comments are in order:

(1) It is unclear what these core services are; in particular, how the 'notary service' differs from the 'central maintenance service'. The three core services are also open to criticism as inadequate to describe the main characteristics of a CSD.[203]

(2) The scope of the terms 'securities settlement system' is unexpectedly broad. This is defined by reference to the SFD;[204] 'securities' are all instruments referred to in Section C of Annex 1 to MiFID, which includes derivatives and fund units as well as what are thought of as securities in ordinary speech.[205]

7.41 CSDs are not permitted to carry on activities other than providing the core services, the services set out in Section B of the Annex,[206] and, where permitted by their regulator, banking-type ancillary services set out in Section

200 CESR and ECB, *Recommendations for securities settlement systems and recommendations for central counterparties in the European Union* (May 2009), www.ecb.eu/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf

201 Autoriteit Financiële Markten and De Nederlandsche Bank, *Evaluation of the effects of the MiFID and Code of Conduct on the European securities clearing landscape* (January 2010), Position paper, www.dnb.nl/en/binaries/DNB%20AFM%20Position%20paper%20sec%20clearing%20Jan%202010_tcm47-235574.pdf

202 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories, etc

203 See **section 2.17**

204 CSDR, art 2(1)(10)

205 CSDR, art 2(1)(8)

206 CSDR, art 18(1)

C of the Annex. The Section B services are those that 'contribute to enhancing the safety, efficiency and transparency of the securities markets' and a non-exhaustive list is given which includes arranging securities lending, collateral management, matching, corporate actions processing, allocation of ISINs, order routing, and regulatory reporting.

'Banking-type ancillary services' means providing cash accounts, accepting deposits, providing credit, securities lending, and pre-financing of corporate actions and securities lending. Banking services can either be done by the entity which operates the settlement system itself, or by a credit institution which is a separate entity designated by the CSD. In either case, in order to carry out banking services the entity providing the services must be authorised as a credit institution under the CRD.[207] Difficult questions arise as to whether a CSD with a banking licence can compete unfairly with agent banks.[208]

Where a banking authorisation is granted, a detailed and potentially onerous set of rules, which supplement those in the CRD, regulate the CSD's (or designated bank's) management of credit and liquidity risk.[209]

7.42 The regulatory framework for EU CSDs follows much the same path as that laid down in EMIR for CCPs. The CSD's regulator is that of its Member State of incorporation;[210] the CSD is allowed to passport its activities into other Member States;[211] and third-country CSDs may provide services in the EU if approved by ESMA.[212] More detailed operational requirements are laid down in CSDR RTS 392.[213] The regulatory requirements imposed on CSDs follow the PFMI closely: see **Table 7.1**.

Ownership, governance and capital

7.43 Unlike a CCP, the question of capitalisation of a CSD is less problematic and raises fewer difficulties about ownership and governance. The CSDR requires that capital (together with retained earnings and reserves) should be proportional to its risks, and be sufficient to cover an orderly winding-down of the business.[214] If a CSD is providing banking-type ancillary services, it will also need to comply with the CRR, by virtue of its status as a credit institution.

7.44 CSDR RTS 390[215] sets out detailed capital requirements for CSDs. These are divided into four classes: capital for operational and investment risks,

207 CSDR, arts 54(3)(a), 54(4)(a)

208 Cf Fair & Clear, *Contribution to the Communication on Clearing and Settlement in the European Union – the way forward* (September 2004), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/2004-consultation/fairandclear_en.pdf, p 12; see also **section 11.19**

209 CSDR, art 59

210 CSDR, art 16(1)

211 CSDR, art 23

212 CSDR, art 25

213 Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories

214 CSDR, art 47

215 Commission Delegated Regulation (EU) 2017/390 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on certain prudential requirements for central securities depositories and designated credit institutions offering banking-type ancillary services

which broadly follows the plan of the CRR, and capital for business risk and to cover a wind-down of activities, each of which is based on the projected or observed expense-rate of the CSD. The European Banking Authority, when proposing the regulatory technical standards, explained that custody risk is covered by the operational risk charge.[216] It is not clear why a CSD should need to cover both 'business risk' and 'wind-down' with an expenses-based charge – this looks like double-counting the same problem.

If the CSD engages in 'banking-type ancillary services' additional capital requirements apply. These are harsher than the CRR standard for banks and they cannot be avoided by designating another entity to provide the services on the CSD's behalf. Noteworthy features of the supplementary capital regime include:

- a charge for intraday extension of credit;
- a tougher-than-banking regime regarding collateral received;
- rules relating to collateral provided in connection with interoperability;
- restrictions on the type of credit facility that may be provided; and
- tougher-than-banking rules on liquidity management, including rules on allocation of shortfalls in liquidity in the event of participant default.

It can be said that the liquidity rules for CSDs should not slavishly follow those for commercial banks because the problem being managed is different. Commercial banks need to worry about runs, whereas the issues for CSDs are fails and achieving a timely settlement.

7.45 The CSDR imposes requirements on the composition of the board, including the need for independent members.[217] There must also be a User Committee, which has only an advisory role.[218] By contrast with CCPs, there are no requirements about owners or controllers of CSDs, though it should be noted that (a) CSDs are permitted to own or have a participation in any legal person other than one whose activities are limited to the provision of the services in Section A or Section B of the Annex only if it does not significantly increase their risk profile;[219] and (b) a CSD which has a banking licence will be subject to the change of control regime of the CRD.[220]

Like EMIR, the CSDR regulates outsourcing by CSDs,[221] but EMIR's specific articles relating to conflicts of interest and business continuity are not replicated in the CSDR. However, these matters are addressed in CSDR RTS 392.

Again, following EMIR, there are provisions designed to underpin competition policy in the post-trade arena. These include requirements for transparent, objective, risk-based and non-discriminatory access criteria for participants;[222] for price transparency and unbundling of pricing of different services;[223] for

216 European Banking Authority, *Final draft Regulatory Technical Standards on certain prudential requirements for central securities depositories under CSDR* (December 2015), EBA/RTS/2015/10, p 7
217 CSDR, art 27
218 CSDR, art 28
219 CSDR, art 18(3)
220 CRD, arts 22ff
221 CSDR, art 30
222 CSDR, art 33
223 CSDR, art 34

inter-CCP interoperability;[224] and for vertical interoperability with CCPs and trading venues.[225]

Core business

7.46 As regards the core business of a CSD, there are rules requiring a CSD to protect the integrity of the issue.[226] The CSD is required to carry out reconciliation intra-day to ensure that the number of securities making up the issue is equal to the sum of securities recorded to the credit of participants' accounts. Securities overdrafts are forbidden. On this topic, the European Commission noted in its impact assessment that:

> 'During the critical winding up of Bear Stearns on 14 March 2008, an excess of 28% of shares in the company compared to the total actually issued was encountered. This obliged the Securities Investment Protection Corporation (SIPC) to reimburse all the investors at the nominal value of the securities.
>
> The causes of this excess are not clear. It may have been either: the result of naked short selling positions; multiple re-use of securities; or a fault of the US system of ownership that provides for a "beneficial ownership" right and a "securities entitlement" at every level in the holding chain. Some confusion is often reported in this context.
>
> Fortunately, Bear Stearns was rescued through a takeover by JP Morgan which bailed out the excess of securities.'[227]

The action to be taken by a CSD to correct a failing under this rule is not specified in the Regulation, but CSDR RTS 392 states that the CSD must suspend the securities issue for settlement until the problem has been rectified, and must take all necessary measures to remedy the undue creation or deletion of securities.[228]

7.47 There are also rules regarding the protection of participants' securities – that is, addressing custody risk.[229] Although CSDs are carved out of MiFID,[230] these rules can be compared with those in the MiFID Implementing Directive:[231] the obligations to keep records which 'segregate in the accounts with the CSD the securities of a participant from the securities of any other participant, and if applicable, from the CSD's own assets,' and not to use securities of a participant for any purpose without the participant's express consent, are very similar to the obligations on investment firms holding their clients' financial instruments.

224 CSDR, arts 48, 50–52
225 CSDR, art 53
226 CSDR, art 37
227 European Commission, *Impact assessment accompanying the document proposal for a Regulation of the European Parliament and of the Council on improving securities settlement in the European Union and on Central Securities Depositories* (March 2012), SWD(2012) 22 final, http://ec.europa.eu/internal_market/financial-markets/docs/SWD_2012_22_en.pdf, p 69
228 CSDR RTS 392, art 65
229 CSDR, art 38
230 MiFID, Annex 1, Section B, para (1), as amended by CSDR, art 71(3)
231 Commission Delegated Directive (EU) 2017/593 of 7 April 2016 supplementing [MiFID] with regard to safeguarding of financial instruments and funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees, commissions or any monetary or non-monetary benefits, arts 2–8

(The European Central Bank considers that CSDs ought to adhere to at least the standards for custody imposed on banks.[232])

However, a CSD would be expected to have an absolute duty to ensure that each participant's record of entitlement as recorded on the CSD's books equates to an actual entitlement to the securities so recorded. Such an obligation is not there; instead there is the rather odd provision that requires CSDs to disclose the level of protection and costs associated with different levels of segregation it provides. This implies that in some circumstances a CSD could render something less than one hundred per cent protection; that is a surprising proposition which deserves some analysis.

(1) An entitlement recorded on the books of the CSD itself ought, where the CSD is 'maintaining securities accounts at the top tier level,' to constitute the root of title, that is an *absolute* entitlement in favour of the participant. The only qualification to that absolute entitlement should arise (where the participant is acting as intermediary) from arrangements agreed between the participant and its own account holders.

(2) Participants may offer their clients the choice of collective ownership through an omnibus account.[233] An omnibus account does not imply that 'different levels of segregation' could apply at the CSD level: *participants* may offer different levels of segregation, in that they might offer their clients a choice between an individually segregated account at the CSD – akin to the individual account in beneficial owner markets,[234] with the difference that the account name seen on the CSD's books would be that of the participant, rather than the investor – or a tenancy in common in an omnibus account. But, when they provide the root of title, CSDs ought, in principle, not to be capable of providing such things.

(3) The confusion in the CSDR almost certainly stems from the dual role of CSDs contemplated through interoperability. As explained in **section 15.45**, interoperability of CSDs will involve one CSD becoming a participant – an account holder – in another CSD. Once that is accepted, it is evident that the participant-CSD (the 'investor CSD' in the jargon) is functionally in no different a position from any other intermediary such as a stockbroker or agent bank. These intermediaries are precisely those persons who may offer different levels of segregation and who are subject to the safeguarding rules for client assets under the MiFID implementing Directive. There is no reason why CSDs, when acting as intermediaries in this way, should not offer a range of segregation options. But the CSDR ought to distinguish more clearly between the obligations of CSDs when they are 'investor CSDs' – segregation options allowed – and the obligations of CSDs acting as 'issuer CSDs' – for whom the absolute duty to confer complete, unconditional entitlement should apply.

7.48 Although there is a close correspondence between the regulatory regimes applicable to CCPs and CSDs, the nature of the businesses is different, and the focus of regulatory attention should be different. For a CCP, the central question is the competence of management's approach to counterparty risk, and the systemic implications of failure. For a CSD, the central question is arguably

232 Russo, D, et al, *Prudential and Oversight Requirements for Securities Settlement* (December 2007), ECB Occasional Paper No 76, www.ecb.eu/pub/pdf/scpops/ecbocp76.pdf, p 10

233 See **section 6.15**

234 See **section 7.50(1)**

graver, even though it is different. Nothing less than the ownership of property is at stake. The origin of mismatch (reconciliation failure) and breach of the sanctity of title will be an operational failure, whether caused by poor systems or fraud or communications failure or a power outage. Notwithstanding the criticism given above about the diluted nature of a CSD's responsibilities for quality of title, the detailed regulation of CSDs set out in CSDR RTS 392 places strong emphasis on operational risk management. No fewer than 15 articles (not including the 13 on record-keeping and reconciliation) are devoted to the subject, setting out standards on threats from participants, utilities and other infrastructures, as well as on information technology and business continuity, and adopting rules for assessing, monitoring, auditing and managing operational risk which are generally recognised and applied across the financial sector.

7.49 CSDs are expected to become designated under the SFD. The CSDR goes slightly further than the SFD, requiring disclosure of the CSD's settlement finality rules, and to take all reasonable steps to ensure that finality is achieved either in real time or intra-day, and in any case no later than the end of the business day. Cash proceeds of sale are to be available for use no later than the end of the business day.[235]

7.50 The following additional legal issues may also be mentioned.

(1) The CSDR does not make any special provision for 'beneficial owner' markets. In 'beneficial owner' markets, such as those in Finland and Norway, each investor holds an individual account at the CSD which is operated on her or his behalf by an 'account operator'.[236] There may be a risk in such markets that the ownership rights of an indirect holder of the securities are not clear.

(2) A CSD will bear some responsibility for settlement discipline. Article 7 of the CSDR requires CSDs to monitor fails and report on them to the regulator; to have mechanisms, including penalties, to facilitate timely settlement; to suspend persistent offenders; and to assist CCPs and trading venues when it is their responsibility to arrange buy-ins in respect of failed deliveries.[237] Some CSDs, such as Clearstream Banking Frankfurt, provide automated securities lending coverage to reduce the rate of fails.[238]

(3) Article 49 of the CSDR is intended to facilitate full cross-border competition between CSDs by granting to issuers of securities a statutory right to choose the CSD into which to issue their securities for central maintenance. As discussed in **section 6.24,** fulfilment of this promise is likely to be challenging.

(4) Article 40 of the CSDR obliges CSDs to settle the cash payments of securities settlements through accounts at a central bank, unless this is not 'practical and available'. Further discussion of the merits of central bank money is given in **sections 5.16** and **18.5**. Where the CSD has concluded that commercial bank money is to be used, it could provide the cash accounts itself, if it has the requisite authorisation to provide ancillary banking services, or it may designate another authorised credit institution.

235 CSDR, art 39

236 Cf European Central Securities Depositories Association, *Account segregation practices at European CSDs* (October 2015)

237 CSDR, art 7

238 Bank for International Settlements, *Payment, clearing and settlement systems in the CPSS countries* (November 2012), Vol 2, Germany, para 4.3.1.4

Regulators may insist that more than one such designated authorised credit institution is offered, if the concentration of risk is not adequately mitigated.[239]

Banking business

7.51 Perhaps the most challenging innovation of the CSDR for infrastructures was the restriction of scope of banking activity available to operators of a CSD. Thus it may be appropriate to consider the 'banking' models available to CSDs.

First, it might be observed that it is not essential for CSDs to engage in typical banking activity. There is no need for them to take deposits or make loans. Their primary function is to provide and operate securities accounts, and to make transfers between those accounts. Custody accounts can be provided by non-banks. Banking, in its various traditional forms, is a risky activity, and the natural expectation of regulators will be that CSDs should be kept apart from those risks. Legal requirements for CSDs to be organised as banks[240] flow not from the idea that CSDs could behave like commercial banks, but from the twin needs of regulators to bring CSDs under their jurisdiction and for the regulatory standards for custody, as applied to banks, to be applied to CSDs.

By contrast, it will be said by CSDs that cash handling and extension of credit is actually essential for their business. Here it is necessary to distinguish the core business of the CSD – which does not need to include these activities – from the modern roles assumed by a CSD. A modern CSD will wish to provide services to its issuer and participant user-groups where cash and credit are very important. Examples include: securities lending for fails coverage; providing 'investor CSD' services; managing corporate actions; and arranging for DvP at the moment of issue of securities.

Here the restrictions imposed by the CSDR will become important.[241] In summary, these oblige a CSD providing banking services not to conduct any other activities than those of the 'banking-type ancillary services' listed in Section C of the Annex to CSDR which the regulator permits; to be subject to a capital surcharge; to report to its regulator on liquidity risk; to have a recovery plan to ensure continuity of operations, including in situations where credit or liquidity risk events crystallise; and to comply with supplementary prudential obligations. The prudential obligations demand that the CSD takes collateral to manage credit risk and discourages overnight borrowing, and complies with detailed liquidity risk-management standards, which include holding cash at the central bank and having reliable means of obtaining cash in extreme but plausible market conditions. Furthermore, the regulators responsible for oversight of the banking activities and the CSD's core activities have to conduct an at least annual review and report to each other.

An option for a CSD wishing to avoid these burdens is to 'designate' one or more banks to take care of the banking activities. The designated bank will be subject to the standards just outlined, so this is not so much an opt-out from the regulatory regime as a means of arranging legal vehicles in a structurally convenient manner.

239 CSDR, art 54(6)
240 Cf **section 9.7**
241 CSDR, arts 54, 59, 60

A final comment may be made on the situation of settlement banks which provide cash settlement under Model 2 DvP.[242] Under this model, the cash leg of a DvP settlement is not settled in real time across the books of the central bank, and so would not obviously appear to satisfy the requirement of CSDR Article 40. What happens typically is that the CSD makes real-time adjustments to the 'cash memorandum accounts' of participating settlement banks, so that the buyer's bank's memorandum account is debited and the seller's bank's memorandum account is credited at the same moment as the relevant securities accounts are debited and credited. The settlement banks then reckon up by transfers across the books of the central bank at some later time, typically after a DNS netting process[243] has occurred. On the face of it, the process, which involves an elite of banks who have satisfied criteria set by the CSD, looks like a case of 'designation' of a group of banks for the purposes of providing banking-type ancillary services to the CSD.

Soft law

7.52 As explained above, the CSDR implements the fundamental recommendations of the PFMI, leaving little scope for soft law in relation to this type of infrastructure. Mention may, nevertheless, be made of the four Recommendations for Securities Settlement Systems[244] which were not adopted as part of the PFMI, but which remain in force.[245] These are, in outline:

- that trade confirmation should occur as soon as possible after execution, and no later than trade date. This recommendation has not been adopted in European legislation, though in practice the obligations to report transactions in financial instruments no later than T+1 under MiFIR achieves a similar end;[246]
- that settlement cycles should be no longer than T+3. This recommendation has been overreached, as under the CSDR regulated markets, MTFs and OTFs have moved over to a T+2 cycle;[247]
- that use of CCPs should be evaluated. Use of CCPs has not been mandated in European legislation except for derivative products.
- that securities lending should be encouraged for expediting settlement of securities transactions. This recommendation is addressed through the provisions of the CSDR on settlement fails,[248] which do not specifically prescribe securities lending as the remedy, but which together with the powers given to CSDs to facilitate securities lending will achieve what is recommended.

The ECB also has a supplementary layer of standards applicable to securities settlement systems which are used for the settlement of Eurosystem credit

242 See **section 18.3**
243 See **section 2.30**
244 CPSS and Technical Committee of IOSCO, *Recommendations for securities settlement systems*, www.bis.org/publ/cpss46.pdf (November 2001)
245 PFMI, Annex C
246 MiFIR, arts 24ff
247 CSDR, art 5(2)
248 CSDR, art 7

operations. These are set out in an oversight document[249] which (notwithstanding a bland name which implies that it is not a rulebook) contains requirements for (i) legal soundness, (ii) settlement in central bank money, (iii) custody risk, (iv) finality and (v) operating hours. As with the Eurosystem's supplementary standards for CCPs used in reserve management operations, the theme of these extra standards is that central banks expect to be given privileges.

CROSS-BORDER REGULATION

7.53 Infrastructures are internationally active. This is particularly true of CCPs clearing derivatives products which have no natural domicile[250] but, within the European Union with its strong pro-competition agenda and a policy of eliminating national boundaries within the single market area, it is also true of CSDs and payment systems, each of which are encouraged to look beyond their country of origin for fresh markets and to challenge incumbency.

Operating abroad is not easy. First, there may be super-equivalent laws in place which challenge the ability of an incomer to provide services on the same basis that it is able to provide them at home. Secondly, there is a question over what might constitute 'operating abroad': even though the service provider never purported to 'do' anything within a specified territory, the authorities in that place may think otherwise – the typical case being the fact that a customer (or, in relation to incoming infrastructures, a would-be participant) is domiciled in that place is enough to bring the incomer 'on-shore'. This difficult question of where activities are located or services provided is very hard indeed in the financial marketplace, where services are dematerialised. Thirdly, the complexities are exacerbated by long-arm regulation, whereby participants in the market are regulated by their own home state regulators regardless of where they conduct their business: in the post-trade context a lively example being the obligation under EMIR to clear certain OTC derivatives transactions at an EU-approved CCP regardless of the location of branches involved.

These challenges mean that it is necessary for infrastructures and their participants to understand what regulation will apply and where the geographical boundaries to that regulation might lie.

General considerations

7.54 As a preliminary remark, it may be worth mentioning that the position of CCPs is likely to differ from that of other types of post-trade infrastructure. The fact is that – notwithstanding efforts to enable issuer-CSDs to act as such outside their home countries – CSDs are geographically aligned with the issuers of shares. Payment systems are aligned with the currencies in which they settle cash. The SIPS Regulation contains no mutual recognition machinery. Within the euro area, the SEPA structures – in particular, the SEPA Regulation[251] – deliver borderless infrastructure services without the need for mutual recognition. So

249 European Central Bank, *Framework for the assessment of securities settlement systems and links to determine their eligibility for use in Eurosystem credit operations* (September 2013)

250 See **section 10.3**

251 Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro etc

international issues are rarer for payment and securities settlement systems than they are for CCPs, in particular CCPs which clear transactions originating from OTC business or trading venues which have no geographical anchor like those of CSDs or payment systems. In consequence, there is more detail in the system of regulation and policy regarding CCPs, and while pronouncements concerning international activity of CSDs may be made, these are principally of theoretical interest while CSDs remain servants of a series of domestic issuance markets.

Accordingly, the bulk of the discussion which follows is concerned with CCPs. CCPs have grown in importance as regards financial stability, since the introduction of mandatory clearing of OTC derivatives has driven up the cleared volumes and concentration of risk into the hands of CCPs – precisely in the area where business is international and has few natural geographical anchors. All regulators are concerned about the stability of CCPs yet few, apart from those in the country of the CCP's headquarters, can claim to have self-evident priority in the scramble for regulatory control. Still, the interests of many regulators may be legitimate, and it is unsurprising to see the emergence of more elaborate multi-country supervisory structures such as the colleges established under EMIR[252] and the CCP Supervisory Committee of ESMA.[253]

The base position is that a person who wishes to conduct a regulated financial activity in another country will need to check their eligibility to do so, and assuming that the person qualifies, seek a licence to conduct that activity and then comply with all local rules and laws governing that activity. This is the natural order of things: regulators wish to supervise what is going on in their country, according to their local rules. The added benefit is that there is a level playing field for all who wish to operate in the host state, with insiders and outsiders treated alike.

In an international trading environment, the 'host state regulation' model has been challenged. A competing philosophy is that home state regulation is sufficient and avoids duplication of supervision and – so far from keeping a playing-field level – host state oversight introduces a barrier to entry since additional rules must be complied with. Forbearance shown to foreign entities by a host country can include the following:

- Wholesale 'deference' to the home country's regulatory arrangements. This structure envisages that the home country's law, rules, and supervisory oversight are sufficiently robust for it to be needless for the host country to superimpose its own arrangements. However, unilateral unconditional deference is rarely observed.
- Unilateral partial exemption from local regulatory requirements, much in the way that UK branches of certain non-UK and non-EU banks have been treated as having no need to comply with UK capital requirements, since the home state capital rules are regarded as sufficient.
- 'Mutual recognition', whereby the host state disapplies its own rules in whole or in part, on the understanding that the favour will be returned. Passporting, under an EU regulation, as for CCPs, CSDs and trade

252 EMIR, arts 18, 25c

253 EMIR, arts 24a–24e; Regulation (EU) 2019/2099 of the European Parliament and of the Council of 23 October 2019 amending Regulation (EU) No 648/2012 as regards the procedures and authorities involved for the authorisation of CCPs and requirements for the recognition of third-country CCPs ('EMIR 2.2'), Recital (7)

repositories established in a Member State, constitutes a form of mutual recognition. Mutual recognition thus requires two elements, for it to be sufficiently fair to be acceptable to each self-denying host state: reciprocity, and approximate equivalence of the two regulatory regimes.

- A specific trade agreement might be reached in accordance with World Trade Organization rules: see **section 7.67**.

7.55 Both EMIR and the CSDR contain mutual recognition provisions. A CCP established in a third country may provide clearing services to clearing members or trading venues established in the European Union if recognised by ESMA.[254] The first step in achieving recognition is that there must be an 'implementing act' by the European Commission, 'determining that the legal and supervisory arrangements of a third country ensure that CCPs authorised in that third country comply with legally binding requirements which are equivalent' to those laid down in EMIR. But also: 'that the legal framework of that third country provides for an effective equivalent system for the recognition of CCPs authorised under third-country legal regimes'.[255] The CSDR has very similar provisions.[256]

In practice what happens is that ESMA conducts a legal and regulatory comparison between a third country's system and that of the European Union, and reports on the differences to the European Commission. Absolute identity between legal and regulatory regimes is not likely to be found anywhere, so some degree of give-and-take is needed; the key issue is reciprocity, which delayed the European Commission's implementing act in relation to the United States (see **Case Study 7.1**).

Case Study 7.1 Equivalence of the United States' regulation of CCPs

CCPs established in third countries were obliged by Article 89 of EMIR to apply for recognition by 15 March 2013. ESMA published its technical advice on equivalence in relation to the United States on 1 September 2013.[257] By 13 November 2015, the European Commission had issued implementing acts in relation to Australia, Canada, Hong Kong, Japan, Mexico, Singapore, South Africa, South Korea and Switzerland[258] – but not the United States. The implementing act for the United States took until 15 March 2016. What was the reason for the delay?

Several speeches and other public statements implied that the US standard for CCP margining fell below that set out in EMIR. RTS 153 specifies a two-day liquidation period for calculating initial margin on exchange-traded derivatives,[259] whereas US rules allowed only a one-day period.[260]

254 EMIR, art 25(1)
255 EMIR, art 25(6)
256 CSDR, art 25(4) and (9)
257 ESMA, *Technical advice on third country regulatory equivalence under EMIR – US* (September 2013), ESMA/2013/1157
258 Cf European Commission webpage http://ec.europa.eu/finance/financial-markets/derivatives/index_en.htm#maincontentSec4 under 'CCP Equivalence'
259 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing EMIR with regard to regulatory technical standards on requirements for central counterparties, art 25
260 ESMA Technical advice, p113ff

In fact, US margin rules were different, rather than laxer: the US rules disallow netting of margin on customer positions whereas the EU allows this for omnibus accounts.[261] What the row was really about was not this difference – which just needed some give-and-take to adjust the two regulatory regimes – but 'mutual' recognition.

The US regime does not naturally allow foreign (*sc*. EU) CCPs to operate in the United States without a US regulatory licence and full compliance with all rules applicable to designated clearing organizations. What was needed was a 'substituted compliance' ruling which would deem non-US CCPs to comply with EU rules *instead of*, rather than in addition to, US rules. By March 2015 they'd got there.[262]

7.56 It might be wondered where the obstacles to mutual recognition lie, and what the unexpected pitfalls may be. In the first place, one needs to be on the lookout for legal rules, which may apply to infrastructures or their participants, which can constrain operations outside a purely domestic environment. Examples are:

- *Rules in the infrastructure's home country*. These may limit participation in the infrastructure to certain classes of person, such as locally incorporated persons, or persons with a banking licence. The regulation may apply to the infrastructure (membership criteria must disqualify the wrong type of participant) or to the would-be participant (regulatory offence is committed by participation). Where the participant is located wholly overseas, it may come as a surprise to the participant to discover that it is deemed to be doing banking business in Ruritania simply because it wishes to clear transactions at a Ruritanian CCP.
- *Rules in the participant's home country*. These may limit participation in foreign infrastructures, by requiring an infrastructure to have a specified local status. Again, the regulation may apply to the infrastructure or the participant. The most significant challenge for third-country CCPs under EMIR is the notion that having a European participant constitutes providing a clearing service within the European Union. The consequence is that CCPs with no intention of establishing branches, or establishing relationships with trading venues in Europe, were brought within the ambit of EMIR's rules on recognition of third-country CCPs. As to CSDs, the approach of the CSDR is similar, but applies only in relation to the root-of-title function of CSDs rather than the settlement system function.[263] So third-country CCPs are unlikely to be taken by surprise by the CSDR because they have European participants, and it will not be surprising to them if they wish to establish root-of-title client relationships with European issuers that the CSDR will apply.

These primary rules tend to bring participants or infrastructures on-shore in perhaps unexpected ways. But there are many other laws, rules and practices which can influence cross-border behaviour where market participants have a

261 Cf Massad, T, Speech to ECON (6 May 2015), www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-20

262 Commodity Futures Trading Commission and European Commission, *Common approach for transatlantic CCPs* (February 2016), joint statement http://ec.europa.eu/finance/financial-markets/docs/derivatives/20160210-eu-cftc-joint-statement_en.pdf

263 CSDR, art 25(2)

choice about how they structure their arrangements. As noted in **section 10.3**, many modern clearable products are not 'domiciled' in any particular country and their 'location' may be artificial. In these cases – say, where two traders wish to enter into a derivatives transaction – they have some control over the legal and regulatory regimes which will govern their relationship. Here one might note that clearing legislation has an extra-territorial catchment, largely owing to this problem of uncertain domicile, so that it may be insufficient to escape the effects of, say, Article 4 of EMIR, by structuring a transaction by using an affiliate or a foreign branch.

Since the United Kingdom's decision to leave the European Union the problems have become more visible and, possibly, more intractable. The remainder of this chapter thus consists of a dissection of the international recognition question in that context.

Reciprocity

7.57 Reciprocity is more difficult than it seems. It implies equality of bargaining power: allowing a bank from a micro-state to participate in the infrastructures of the European Union, the United States, or the United Kingdom poses no threat to those host bodies. But allowing all American banks to operate in the micro-state might pose an existential threat to the native banking industry there. The result is that the larger economies will typically impose restrictions on reciprocity: there will be conditions attached to the access in one direction, which may or may not be matched or offset by other conditions for access in the other.

In adopting an implementing act under Article 25(6) of EMIR (for CCPs) or Article 25(9) of the CSDR (for CSDs) – the provisions which constitute the gateway for non-EU infrastructures to access the European Union – the European Commission will look for reciprocity in access arrangements. (The situation is different for trade repositories under Article 75 of EMIR, where reciprocity is not required.) The language, which is basically the same in both EMIR and the CSDR, is slightly curious: EMIR, for instance, requires that 'the legal framework of that third country provides for an effective equivalent system for the recognition of CCPs authorised under third-country legal regimes'.[264] ESMA has interpreted the second reference to a 'third country' regimes as meaning non-local and, in particular, European regimes, contrary to normal usage of 'third country' to denote 'non-EU'. Thus, a non-EU country desiring to establish its equivalence must have an open structure which enables foreign CCPs (or, as the case may be, CSDs) to operate in its jurisdiction. The degree of openness required is, as with so much in this difficult area, principally a question for negotiation in which political considerations will rise to the surface. Despite technical advice which pointed out a number of challenges faced by foreign CCPs in accessing the United States,[265] an implementing act was adopted by the European Commission in 2016.[266]

264 EMIR, art 25(6)(c)

265 European Securities and Markets Authority, *Technical advice on third country regulatory equivalence under EMIR – US* (September 2013), ESMA/2013/1157

266 Commission Implementing Decision (EU) 2016/377 of 15 March 2016 on the equivalence of the regulatory framework of the United States of America for central counterparties that are authorised and supervised by the Commodity Futures Trading Commission to the requirements of Regulation (EU) No 648/2012; see also **Case Study 7.1**

Perhaps the most visible example of equivalence and reciprocity in practice is that of 'passporting' within the European Union. Since the relevant regulations or directives ensure only minimal divergence between the law and practice of regulation between one Member State and another, there is no need to worry about 'equivalence' and thus an infrastructure wishing to ply its trade in another Member State needs only (if it is a CSD) to apply for a 'passport' to its home state regulator, and if it is a CCP it does not even have to do that.[267] The host state regulator has minimal supervisory powers over its guest, exercisable through the college of supervisors.[268] A passport (or in the case of EMIR, the Regulation itself) confers the right to operate in the host state, and precludes any local objection.

Where the exact coincidence of regulation cannot be guaranteed – in other words, once the frontier of the European Union is reached – then the passporting approach will not work, and some more elaborate system of recognition is needed. It will be convenient first to look at the European concept of equivalence, its adoption in the United Kingdom following Brexit, and then to consider the American approach to the same topic and the options available for 'substituted compliance'.

Equivalence

7.58 Equivalence is even more difficult, partly because it is a soggy concept. The idea is simple enough: the host territory will allow access to foreign businesses provided that the system of regulation to which the business is subject is approximately the same as that which applies in the host state. But how approximate? What matters? Ultimately this is a political decision, rather than a regulatory one, as the experience with equivalence under EMIR shows.

ESMA's criteria for determining equivalence in respect of clearing are described in the equivalence assessments carried out for the European Commission in respect of third countries in which a CCP which wishes to do business in the European Union is headquartered. The exercise of assessing equivalence in such cases is odd, since the CCP in question may have no desire to set itself up in Europe or to carry on any activities there, in any ordinary sense of those expressions. The need for equivalence arises because of the assertion by EU regulators of jurisdiction over third-country CCPs in which EU-domiciled entities wish to participate. Accepting EU entities as members brings the third-country CCP onshore. Given the international nature of CCPs' activities, particularly as regards clearing of OTC derivatives, it is unsurprising that this is so; but perhaps a comparison with the position of an investment firm should be made. A threat from a third country investment firm's activities is likely to materialise mainly when the firm approaches customers in the host state or (which is probably the same thing) establishes a branch in the host state; the risk considerations will be different if the firm does not do these things but acts only as a wholesale counterparty to foreign (EU) entities. An assessment of equivalence might thus have different drivers where infrastructures, as opposed to firms, are concerned.

What ESMA itself says, in relation to CCPs and Trade Repositories, is as follows:

267 CSDR, art 23; EMIR, arts 14(2), 15(2).
268 EMIR, art 18

> 'ESMA has followed an objective-based approach, where the capability of the regime in the third country to meet the objectives of the EU Regulation is assessed from a holistic perspective. Annexes III to VIII contain a line-by-line analysis of the differences and similarities between the requirements of the third country and those provided for in EMIR. The advice to the Commission [is] based on that line-by-line factual assessment but takes an objective-based approach to determining whether there is equivalence between the requirements of the third country and those provided for in EMIR. In particular, the … conclusions … have been drawn by taking into account the fundamental objectives that an equivalence assessment under EMIR should look at (i.e. the promotion of financial stability, the protection of EU entities and investors and the prevention of regulatory arbitrage in respect of CCPs).'[269]

Once the country ('equivalence') assessment has been done, it is for the European Commission to declare that the third country's regime is equivalent. Then the way is open for a CCP in that third country to apply to ESMA for the status of 'recognised' CCP, which will confer on the CCP the right to provide clearing services within the Union.[270] In applying these rather loose criteria, ESMA had by the end of 2019 recognised 35 CCPs from 14 countries considered to be 'equivalent', and de-recognised one.[271] Recognition implies deference: EU laws and rules about clearing do not apply, and EU supervisors do not get involved with the supervision of recognised CCPs. That principle is now limited to 'Tier 1 CCPs', which are possibly those of least significance in terms of likelihood of EU firms' volume of clearing business.

Before moving on to 'Tier 2 CCPs', it may be noted that equivalence is not a static thing. Law and regulatory practice evolve, and this may happen on either side of the equation. A system which is equivalent may cease to be equivalent with the passage of time and new laws; and so EMIR requires the question of equivalence to be monitored.[272] Equivalence status has been withdrawn, in relation to regulated markets under MiFIR, in a case which seems to have more to with international political pressure than an objective assessment of incompatibility; it cannot be assumed by a third country that the decision-making process on equivalence in relation to infrastructures is going to be based on legal criteria.[273]

Case Study 7.2 Withdrawal of Switzerland's equivalence

MiFID includes an equivalence structure in relation to regulated markets. EU investment firms can trade in shares admitted to trading on an EU regulated market only on a limited range of venues, including a regulated market or an equivalent third-country market.[274] The criteria

269 European Securities and Markets Authority, *Technical advice on third country regulatory equivalence under EMIR – US* (September 2013), ESMA/2013/1157, para 14

270 EMIR, art 25(1)

271 European Securities and Markets Authority, *List of third-country central counterparties recognised to offer services and activities in the Union* (December 2019), www.esma.europa.eu/sites/default/files/library/third-country_ccps_recognised_under_emir.pdf

272 EMIR, art 25(6b)

273 See **Case Study 7.2**

274 MiFIR, art 23(1)

for determining equivalence[275] relate to the regimes established by the Market Abuse Regulation,[276] MiFID, MiFIR and the Transparency Directive[277]. Switzerland was the beneficiary of a time-limited equivalence determination in 2017.[278]

Yet equivalence was not renewed at the end of the term. Not because Switzerland's rules on market abuse, trading, conduct of business or transparency were any different, but because there was an international trade dispute about agriculture, workers' rights and air transport.

Article 23 of MiFIR prohibits EU investment firms from trading in EU-listed shares which are traded on non-equivalent non-EU venues. Withdrawal of Switzerland's recognition could have devastated the liquidity of SIX, Switzerland's major stock exchange, so the outcome was that Switzerland prohibited the EU listing of Swiss company shares; that brought Swiss shares outside the scope of Article 23, enabling EU firms to trade in them again (albeit only in Switzerland and under more restrictive conditions as regards client orders).

Commentators have remarked that the decision should be seen as a shot across the bows of the United Kingdom in relation to Brexit negotiations. It cannot be assumed that equivalence decisions relating to other forms of market infrastructure would somehow be immune to the political pressures which led to derecognition of Swiss exchanges.

Recognition of foreign CCPs

7.59 As to the degree of host state supervision applicable to recognised CCPs, the decision by the United Kingdom to leave the European Union led to the adoption of an amendment to EMIR (EMIR 2.2)[279] which creates a two-tier supervisory structure. Provided that the CCP is not considered by ESMA to be 'systemically important', the ordinary pre-2020 process for recognition will continue to apply.[280] In other cases, confusingly labelled 'Tier 2' CCPs, recognition will be granted only if the CCP:

(a) complies with Article 16 (capital) and Titles IV and V (organisational, conduct-of-business, risk management and interoperability rules) of EMIR.[281] Two observations might be made on this count. First, EU central banks which issue currencies in which the cleared instruments

275 MiFID, art 25(4)
276 Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on market abuse etc
277 Directive 2004/109/EC of the European Parliament and of the Council of 15 December 2004 on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market etc
278 Commission Implementing Decision (EU) 2017/2441 of 21 December 2017 on the equivalence of the legal and supervisory framework applicable to stock exchanges in Switzerland in accordance with Directive 2014/65/EU
279 Regulation (EU) 2019/2099 of the European Parliament and of the Council of 23 October 2019 amending Regulation (EU) No 648/2012 as regards the procedures and authorities involved for the authorisation of CCPs and requirements for the recognition of third-country CCPs
280 EMIR, art 25(1)(e)
281 EMIR, art 25(2b)

are denominated must be consulted; they may impose conditions,[282] and their concerns may even lead to blocking of the recognition process.[283] Secondly, there is a possibility of 'substituted compliance' in certain circumstances. These matters are explored further below;

(b) submits to European supervision. This means supervision by ESMA,[284] provision of information, records and so forth to ESMA and the relevant central banks,[285] allowing investigations and inspections,[286] and being subject to fines and other disciplinary measures.[287] In various ways the relevant central banks can be involved in these processes, and the practical balance of power as between ESMA and the ECB, in particular, not being capable of definition in EMIR, will be worked out over time.

One might conclude that 'recognition' of Tier 2 CCPs is not a case of deference to another regulatory system. It is the traditional model of host-state supervision overlaid onto whatever applies in the home state of the applicant CCP. While that conclusion is broadly correct, a degree of deference – without removing the overlay of European supervision – is achievable through the 'comparable compliance' regime set out in Article 25a of EMIR.

Article 25(2c) of EMIR enables the European Commission to issue 'as a last resort' an implementing act to require a CCP to obtain an Article 14 authorisation in order to provide clearing services in the European Union, following an assessment by ESMA (with input from EU central banks) that the 'CCP or some of its clearing services are of such substantial systemic importance that that CCP should not be recognised'. No detail is given as to how ESMA is to reach such a conclusion. Given that a Tier 2 'recognised' CCP will already be obliged to comply with the bulk of EMIR, the shift to being 'authorised' is probably not to be interpreted as to do with the detail of supervision of CCPs. Only if a CCP is 'established' in the European Union is the Article 14 authorisation route available, so the effect of an act under Article 25(2c) is to require the CCP to reorganise itself so as to set up a new legal entity directly and primarily supervised by an EU regulator – in other words, for it to cease to be a foreign CCP.

7.60 Further description and comment may thus be appropriate on the issues which emerge from the new approach to Tier 2 CCPs: what amounts to 'systemic importance'; the role of central banks in the supervision of third-country CCPs; and the possibility of 'comparable compliance'.

'Systemic importance' is determined according to 'the nature, size and complexity of the CCP's business in the Union', the impact of its possible failure, who its clearing members are, the availability of alternative CCPs for instruments denominated in EU currencies, and the CCP's interdependencies.[288] It might be queried whether all these criteria relate to systemic, as opposed to political, importance, and perhaps the key take-away is that a large CCP engaged in clearing of products to which the clearing obligation applies is likely to be regarded as of 'systemic importance' regardless of the technical exercise implied by the formal test. Further detail is set out in a European Commission delegated

282 EMIR, art 25(2b)(b)
283 EMIR, art 25(2b)(e) and (2c)
284 EMIR, art 25b
285 EMIR, art 25(2b)(b) and (c), art 25f
286 EMIR, arts 25g and 25h
287 EMIR, arts 25j–25q
288 EMIR, art 25(2a)

regulation.[289] The starting point is a set of quantitative 'indicators of exposure', looking at open interest or notional outstanding, margin and default fund, and payment obligations.[290] Only if at least one of these indicators applies, ESMA may conclude that the CCP is in Tier 2. Then ESMA will look at numerous other factors, grouped under the five criteria set out in Article 25(2a) of EMIR; although in each case the factors are divided into two sections, the second of which only applies if one of the quantitative indicators applies, in practice the exercise is futile if none of the quantitative indicators applies, so all factors will be relevant once ESMA has reached a conclusion on the indicators of exposure. In practical terms, the determination of systemic importance will be made as part of the review of the CCP's application for recognition,[291] thus making the application process doubly complex for all concerned. The 'indicators' approach has been criticised by American commentators, who suggest that a more straightforward assessment could be done using quantitative analysis alone. CFTC Commissioner Dawn Stump has said that the indicators 'are subjective, qualitative and confer overly broad discretion on ESMA'.[292]

Conditions which may be imposed by the relevant central banks include the opening of a cash account with the central bank, and following directions. Directions can be given where a three-tier test is satisfied: there has to be an 'exceptional situation'; the purpose is to address temporary systemic liquidity risk affecting monetary policy or payment systems; and the directions relate to 'liquidity risk control, margin requirements, collateral, settlement arrangements or interoperability arrangements'. The origins of this may be traced to the troubles in the eurozone in 2011–12, when LCH Limited hiked the haircut on Italian government bonds to reflect the volatility associated with this form of collateral. The attractiveness, or otherwise, of collateral can affect monetary policy – which, in the eurozone, obstinately clings to the fiction of substitutability between bonds issued by all eurozone governments – and the ability of a supervisory body to forbid any action which challenges the policy, even indirectly, seems to be crucial. Thus, a third-country CCP which clears instruments denominated in euro must submit to the loss of control over its margining policy in situations where a change might worsen a downward spiral of government securities. Taken together with the blocking process set out in Article 25(2c) of EMIR, the final decision on which rests with the European Commission, it is clear that the access of third-country CCPs to the EU marketplace has become highly politicised.

'Comparable compliance', which is provided for in Article 25a of EMIR, is the ability to rely on compliance with home state rules to demonstrate compliance with the relevant articles of EMIR. A third-country CCP can invite ESMA to rule that it is deemed to satisfy EMIR. Whether the home state regime does so will be tested by ESMA against 'minimum elements' set out in European Commission

289 Commission Delegated Regulation (EU) 2020/1303 of 14 July 2020 supplementing [EMIR] with regard to the criteria that ESMA should take into account to determine whether a central counterparty established in a third-country is systemically important or likely to become systemically important for the financial stability of the Union or of one or more of its Member States

290 Delegated Regulation, art 6

291 EMIR, art 25(2a), final paragraph

292 Stump, D, *From Pittsburg with Love – Dramatic Reforms, Ten Years Later* (September 2019), Speech, www.cftc.gov/PressRoom/SpeechesTestimony/opastump4

delegated legislation.[293] The minimum elements appear to require mapping the content of the third country's regime against some 19 (out of a possible 32) detailed provisions of EMIR, together with the supplementary material in the corresponding parts of EMIR RTS 152 and EMIR RTS 153.

7.61 The equivalence status of the United Kingdom which, until the end of the Brexit implementation period, has identical law and regulatory practice to that of Member States of the European Union, may be mentioned briefly. Minor adjustments to the laws of the United Kingdom come into effect on 'IP completion day', namely 31 December 2020,[294] including to the version of EMIR applicable in the United Kingdom.[295] It does not follow that the United Kingdom will then be 'equivalent', as regards CCPs deemed to be doing business in Member States because clearing members are established in the European Union. Yet 'the market for central clearing of OTC derivatives is highly concentrated, in particular the market for central clearing of euro-denominated OTC interest rate derivatives, of which more than 90% are cleared in one CCP established in the United Kingdom. In 2017, 97% of euro-denominated OTC interest rate derivatives were cleared in that CCP'.[296] By virtue of a Commission Decision[297] the United Kingdom was deemed to be equivalent for the purposes of EMIR until one year after the withdrawal of the United Kingdom from the European Union, in the event of no withdrawal agreement being in force. However, a withdrawal agreement did come into force on 1 February 2020, with the result that United Kingdom CCPs retain their status as authorised CCPs under EMIR until the end of the transitional period. After that, the position is rather uncertain, as the following commentary from LME Group explains:

> 'The EU and the UK will also aim to conclude a trade agreement during the implementation period. Whilst this agreement may include terms governing the reciprocal cross-border provision and receipt of financial services, this cannot be assured. LME Group will therefore build on the positive engagement it has had with the relevant European regulatory authorities to understand what steps need to be taken in order to retain the assurances that it had been granted previously in case of a no-deal Brexit.'[298]

In other words: ESMA had granted the United Kingdom's CCPs 'recognised' status under EMIR if there was a no-deal Brexit, but that did not happen. If a trade agreement is reached, and it addresses the position of CCPs, it is hoped that 'recognised' status will be re-granted; however, if that does not happen, then the fallback is to apply formally for recognition under Article 25 of EMIR on the somewhat shaky footing of the United Kingdom's possible equivalence.

293 Commission Delegated Regulation (EU) 2020/1303 of 14 July 2020 supplementing [EMIR] with regard to the minimum elements to be assessed by ESMA when assessing third-country CCPs' requests for comparable compliance and the modalities and conditions of that assessment

294 European Union (Withdrawal Agreement) Act 2020, s 39, Sch 5, para 1(1)

295 See **Table 0.1**

296 Commission Implementing Decision (EU) 2019/2211 of 19 December 2019 amending Implementing Decision (EU) 2018/2031 determining, for a limited period of time, that the regulatory framework applicable to central counterparties in the United Kingdom of Great Britain and Northern Ireland is equivalent, in accordance with Regulation (EU) No 648/2012 (the Amending Decision), Recital (3)

297 Commission Implementing Decision (EU) 2018/2031 of 19 December 2018 determining, for a limited period of time, that the regulatory framework applicable to central counterparties in the United Kingdom of Great Britain and Northern Ireland is equivalent, in accordance with Regulation (EU) No 648/2012, as amended by the Amending Decision

298 LME webpage (February 2020), www.lme.com/en-GB/About/Market-Regulation/Brexit

Foreign CCPs in the United Kingdom

7.62 In adopting EMIR as part of the post-Brexit legal framework, a modified version of Article 25 of EMIR will take effect in the United Kingdom. This allows a non-UK CCP to apply for recognition by the Bank of England if it comes from a country which the Treasury has specified in regulations has requirements equivalent to Title IV of EMIR (as adopted in the United Kingdom). The following observations relating to the United Kingdom equivalence and recognition regime may be made:

(1) Following the removal of the process from sections 285, 288 and 292 of FSMA which previously enabled overseas clearing houses to obtain 'recognised clearing house' status – in effect, authorisation – under FSMA, coupled with the exit of the United Kingdom from the European Union, a mechanism is needed to replace the machinery applicable in the European Union which allows third-country CCPs to become recognised by ESMA and operate in Member States. Failing that, third-country CCPs' status in the United Kingdom would have been uncertain.

(2) A non-UK CCP (in the language of the UK instruments 'on-shoring' EU legislation, such entities are confusingly called 'third country' CCPs, a phrase which encompasses CCPs established in EU Member States) will need to obtain recognition if it is to provide clearing services to clearing members or trading venues established in the United Kingdom.[299] This clear statement addresses an issue which would otherwise crop up under the Regulated Activities Order (RAO),[300] namely whether the provision of services to clearing members would involve the carrying on of regulated business within the United Kingdom.[301]

(3) How the Treasury will approach the question whether the regime of a 'third country' is equivalent had not been spelled out by the summer of 2020.[302] It may be assumed that the question is as politically charged in the United Kingdom as it is in the European Union. It should not, however, be assumed that the United Kingdom will adopt a similar process for testing equivalence as that experienced in the European Union.

(4) A temporary recognition regime, under Part 6 of the Central Counterparties (Amendment, etc, and Transitional Provision)(EU Exit) Regulations 2018[303] allows non-UK CCPs to continue to have UK members for three years after the expiry of the implementation period following the United Kingdom's exit from the European Union. This avoids, for the three-year transitional period at least, the political rigmarole of equivalence assessments by the Treasury. The Bank of England publishes a list of those CCPs (on 1 February 2020, there were 48) which benefit from the regime.

(5) In adopting and onshoring EMIR 2.2[304] after Brexit, the United Kingdom adopts the basic structure of EMIR: foreign CCPs are labelled Tier 1 or Tier 2, depending on their systemic importance; Tier 2 CCPs must comply with Article 16 and Titles IV and V of EMIR and be supervised by the

299 Onshored EMIR, art 25(1)
300 Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/544
301 See further **section 8.16**
302 Cf the position with regard to TRs and CSDs, at **sections 7.65** and **7.66** respectively
303 SI 2018/1184
304 Over the Counter Derivatives, Central Counterparties and Trade Repositories (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2020, SI 2020/646

Bank of England; there is a comparable compliance regime; and the onshore version of Article 25(2c) enables the Treasury to make 'location regulations' in cases of such systemic importance that the foreign CCP should not be recognised, the effect of which will require the CCP to become authorised. As in the European Union, the route to authorisation appears to require the CCP to reorganise so as to be incorporated (or re-formed as an unincorporated association) in the United Kingdom, since section 288 of FSMA allows authorisation only where the CCP is 'established in the United Kingdom'.

Foreign CCPs in the United States

7.63 In the United States, the baseline for treatment of a foreign CCP which clears derivatives products is that it should become registered with the Commodity Futures Trading Commission (CFTC) as a 'derivatives clearing organization' (DCO). In other words, the formal structure does not envisage any deference or mutual recognition.[305] Nonetheless, there are other possibilities:

(1) A foreign CCP may request exemption from the registration obligation if the CCP is subject to 'comparable, comprehensive supervision and regulation'.[306] This model is useful, but has limited impact in the United States, since only persons who are direct members of the CCP may benefit if the cleared transaction constitutes a 'swap' as defined in US law. Client clearing of swaps for US clients is not workable under the exemption route.

(2) Client clearing is possible if the transaction is a 'future' since futures commission merchants (FCMs) are allowed to clear customer futures positions via a client account with a foreign clearing member. In this situation neither the foreign clearing member nor the CCP are considered to be subject to the CFTC's jurisdiction.[307]

(3) A foreign CCP which is a registered DCO may be able to rely on substituted compliance, thus being excepted from CFTC requirements to the relevant extent. As far as EU-based DCOs are concerned, this option has been made available.[308] It is not clear whether it will be extended to the United Kingdom following Brexit – if the path taken with the European Union determines the pattern, there will be a reciprocity arrangement following a negotiation about equivalence.[309]

Two further options have been proposed by the CFTC:

(1) A foreign CCP which does not pose substantial risk to the US financial system may be allowed to clear transactions entered into by US persons if the clearing member is a US registered FCM. Quantitative tests based on the proportion of margin posted by US FCMs will determine whether there is substantial risk to the US financial system. Under this regime,

305 Yadav, Y and Turing, D,The Extraterritorial Regulation of Clearinghouse (March 2016), *Journal of Financial Regulation*, vol 2, pp 21–55

306 Commodity Exchange Act, §5b

307 CFTC Regulations, Part 30

308 Commodity Futures Trading Commission, *Comparability Determination for the European Union: Dually-Registered Derivatives Clearing Organizations and Central Counterparties* (March 2016), 81 FR 15260

309 See **Case Study 7.1**

compliance with CFTC rules will largely be avoided by the CCP. The proposal seems to be analogous to the Tier 1 CCP approach under EMIR, except that the tests for tiering are evidently different. The difficulty noted by commentators with this model is that FCMs are typically entities with low capital which may be unable to satisfy the stringent membership requirements of non-US CCPs.[310]

(2) Exempt DCOs may be allowed to clear transactions entered into by US persons if the clearing member is not an FCM. This route effectively exempts a non-FCM clearing member from the parts of the Commodity Exchange Act which would otherwise prohibit clearing access being provided to a US customer by any person who is not an FCM.

Agent banks

7.64 The preceding discussion illustrates that the problem of international access is not simply one for infrastructures. The status of the agent bank or clearing member may equally be an obstacle even if the infrastructure can lawfully ply its trade in another market. The following comments may be made:

(1) While CCPs may be content, under their membership rules, to accept any persons with banking or investment business licences, the question of regulatory status is different. In the European Union, a foreign clearing member seeking to join a CCP has a somewhat uncertain status, owing to the absence of 'clearing services' from the list of 'passportable' activities set out in MiFID. It is difficult to characterise clearing as 'reception and transmission of orders' or as 'execution of orders'; in a principal-to-principal environment it may amount to 'dealing on own account', but this is to stretch the language. It should not be assumed that the ability to conduct the activities of a clearing member will be covered by an EU passport; the position of non-EU clearing members seeking access will be even more difficult.

(2) A further option for foreign agent banks could be to rely on equivalence under Article 46 of MiFIR. This permits a third-country firm 'to provide investment services or perform investment activities … to eligible counterparties and to professional clients … established throughout the Union' in cases where the European Commission has adopted an equivalence decision concerning the prudential and business conduct requirements of the firm's home state. Whether this can avail a third-country clearing member not only depends on the difficulty of characterising clearing as an investment service or activity, but also on the clumsy wording of the article, which implies that an investment activity is provided 'to' someone when it is likely to be for the firm's own account.

(3) In the United Kingdom things are not much easier since the RAO is also unclear as to what activities are implicated in clearing. It seems likely that a clearing member would at least be involved in arranging deals in investments under Article 25(2) of the RAO, and possibly certain other regulated activities. But the question for a foreign clearing member is whether the clearing member is carrying on such business in the United

310 Cf. Patel, N, 'Swaps Clearing Ten Years After Dodd-Frank: The Good, the Bad and the Maybe' in Binder, J-H, and Saguato, P, eds, *Financial Market Infrastructure: Law and Regulation* (expected December 2020), Oxford University Press

Kingdom; there is no single test for that question. For 'arranging deals' under Article 25 the general presumption is that it is irrelevant that the firm has no presence in the United Kingdom, and an exemption such as that provided for under Article 72 of the RAO (the 'overseas persons exclusion') may be needed. (The overseas persons exclusion is not easily complied with, though it may be simpler for a business confined to clearing services.) A foreign clearing member may – even if permitted remote access by a CCP – need to obtain authorisation from the appropriate UK regulator in order to clear at a UK CCP. The United Kingdom will on-shore Article 46 of MiFIR[311] but without resolving the issues identified in relation to its effect in the European Union.

(4) The challenge of insolvency laws complicates the picture for agent banks. European and UK CCPs expect the positions and margin of failed clearing members to be transferable to a replacement clearing member. The complexity of this is not to be underestimated.[312] If the insolvency laws of the agent bank's home state do not facilitate transfer, it may be that the agent bank is disqualified from membership. Likewise, the ostensible risk to clients if they deal with an agent bank for which the insolvency treatment of margin differs from the local model may be cited as a ground for restricting the access of agent banks to clients in a particular jurisdiction.

Trade repositories

7.65 Trade Repositories (TRs), whose existence is contemplated by Title VI of EMIR and by Chapter III of the Securities Financing Transactions Regulation (SFTR),[313] may be even more difficult than CCPs in a post-Brexit environment. Neither EMIR nor the SFTR envisages the possibility of a TR established in a third country carrying out services for those persons subject to reporting obligations under those Regulations.[314] For derivatives transactions, the reporting obligation is placed on counterparties and CCPs, but there are two parties to a transaction, so the EU reporting obligation will apply to EU persons and the UK obligation to UK persons, potentially in respect of the same transaction. This implies that a cross-channel transaction is reportable to two different TRs. For securities financing transactions, cross-channel transactions are even more complex, owing to the broader scope of the SFTR:[315] the EU reporting obligation applies to EU entities, including all branches, and to third-country entities' transactions done from EU branches; the UK reporting obligation is the mirror image of that.[316] In consequence, not only do cross-channel transactions need to be reported to two TRs (one for each party), as with EMIR, but a party may have to report the transaction to two TRs (one for its branch location, and one for its head office), without excusing the other party from its own reporting

311 Markets in Financial Instruments (Amendment) (EU Exit) Regulations 2018, SI 2018/1403, reg 33

312 See **sections 13.23, 17.54ff**

313 Regulation (EU) No 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of reuse etc

314 EMIR, art 55(2); SFTR, art 5(2)

315 SFTR, art 2(1)

316 Transparency of Securities Financing Transactions and of Reuse (Amendment) (EU Exit) Regulations 2019, SI 2019/542, reg 5(1)

obligation. (Operationally, the SFTR allows one party to delegate its reporting to the other, which may help slightly.[317])

The DTCC, which operated its trade repository service for the European Union out of London before Brexit, explained its approach to this as follows:

> 'Prior to Brexit, DTCC's Global Trade Repository (GTR) service for the European Union will remain via DTCC Derivatives Repository Plc (DDRL), its London based entity. On Brexit date, GTR will offer EU/European Market Infrastructure Regulation (EMIR) compliant reporting via its European Securities Markets Authority (ESMA) authorised Dublin based entity, DTCC Data Repository (Ireland) Plc (DDRIE). DDRL will then, subject to authorization by the UK Financial Conduct Authority (FCA), become an FCA authorised Trade Repository offering FCA/EMIR compliant reporting for the UK.'[318]

The Equivalence Determinations Regulations 2019 (EDRs 2019)[319] create a simplified equivalence regime in respect of certain EEA-based infrastructures, including TRs. The EDRs 2019 allow the Treasury to issue an equivalence direction in respect of Articles 75 and 76a of EMIR in relation to TRs, and do not oblige the Treasury to have regard to any particular matters, apart from sanctions or high money laundering risk.[320] EEA-based TRs may be able to achieve recognition relatively easily by virtue of a process set out in the separate Equivalence Determinations Regulations 2020 (EDRs 2020).[321]

Foreign CSDs

7.66 The question whether a foreign CSD needs to obtain recognition as such in the European Union or the United Kingdom is determined by whether it provides core services (as listed in Section A of the Annex to the CSDR) 'within the territory' of the Union or the Kingdom.[322] Localising these services may be something of an intellectual challenge, since they relate to books and accounts and the operation of a settlement system; it seems unlikely that a regulator would agree that a CSD which keeps its IT systems outside the jurisdiction but provides the 'notary' or 'central maintenance' service to local issuers is not providing any service within that regulator's territory. That possibility seems rather remote, though, and the conclusion may be drawn that – unlike a CCP – a third-country CSD does not require recognition in a country simply because it has participants established there.

A short point may arise as to whether a third-country CSD would need to obtain recognised status under Article 25 of the CSDR in order to provide the services of an investor CSD to clients in an EU jurisdiction or, after Brexit, the United Kingdom. Recognition is needed if the CSD provides core services, which would only be applicable to an investor CSD if it is operating a securities settlement system. Unless the CSD is a participant in Target2-Securities, or has

317 SFTR, art 4(2)
318 DTCC, *Preparing for Brexit* (accessed August 2020), www.dtcc.com/brexit
319 Equivalence Determinations for Financial Services and Miscellaneous Provisions (Amendment etc) (EU Exit) Regulations 2019, SI 2019/541, as amended (in particular by SI 2019/628)
320 EDRs, reg 2(1A)
321 Equivalence Determinations for Financial Services (Amendment etc) (EU Exit) Regulations 2020, SI 2020/1055 reg 4, Sch 3, para 4
322 CSDR, art 25

an interoperability arrangement with the applicable issuer CSDs, this is unlikely. Nevertheless, the legislation of the target market is likely to characterise investor CSD services as constituting safekeeping and administration of financial instruments, which is a MiFID ancillary service and a regulated activity in the United Kingdom, so authorisation of some sort is likely to be needed. The equivalence question is thus likely to arise under MiFIR rather than the CSDR.

Still, the EDRs 2019[323] repeat the simplified equivalence regime observed in respect of TRs. The EDRs 2019 allow the Treasury to issue an equivalence direction in respect of Article 25 of the CSDR, and (as with TRs) do not oblige the Treasury to have regard to any particular matters, apart from sanctions or high money laundering risk.[324] Thus EEA-based CSDs may be able to achieve recognition relatively easily by virtue of the EDRs 2020.[325]

Trade agreement

7.67 Unlike international trade agreements relating to goods, which are concerned with border controls and tariffs, agreements concerning services focus on regulatory restrictions. Members of the World Trade Organization (WTO) entering into free trade agreements will need to comply with the WTO's General Agreement on Trade in Services (GATS).[326] This lists, under the rubric of banking and other financial services (excluding insurance), 'settlement and clearing services for financial assets, including securities, derivative products, and other negotiable instruments'. However, nothing more specific is said about post-trade services.

The general principles which will apply can be briefly listed:

(1) Members of the WTO must accord to foreign providers of listed financial services no less favourable treatment than it accords to providers from any other country.[327]

(2) Licensing and similar requirements should be based on transparent and objective criteria, be not more burdensome than necessary to ensure the quality of the service, and not involve a procedure which is itself a restriction.[328]

(3) Members are not to apply restrictions on international transfers and payments.[329]

(4) There is a 'prudential carve-out', under which a Member 'shall not be prevented from taking measures for prudential reasons, including for the protection of investors, depositors, policy holders or persons to whom a fiduciary duty is owed'.[330] One might be forgiven for thinking that the 'prudential' carve-out has the potential to take away almost all the

323 Equivalence Determinations for Financial Services and Miscellaneous Provisions (Amendment etc) (EU Exit) Regulations 2019, SI 2019/541, as amended (in particular by SI 2019/628)
324 EDRs, reg 2(1A)
325 Equivalence Determinations for Financial Services (Amendment etc) (EU Exit) Regulations 2020, SI 2020/1055, reg 4, Sch 3, para 3
326 World Trade Organization, *Uruguay Round agreements* (April 1994), www.wto.org/english/docs_e/legal_e/legal_e.htm#services, Annex 1B
327 GATS, Article II
328 GATS, Article VI, para 4
329 GATS, Article IX
330 GATS, Financial Services Annex, para 2(a)

> advantage that including financial services within the general scope of the GATS might have conferred. Members 'may' recognise prudential measures of another country.[331]

To bring this into perspective: it is not at all clear how measures such as the 'recognition' regimes applicable in the European Union or (after Brexit) the United Kingdom, or the rules in the SEPA Regulation[332] or the Payment Services Regulations,[333] are supposed to fit with these principles.

331 GATS, Financial Services Annex, para 3(a)

332 Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro etc

333 Payment Services Regulations 2017, SI 2017/752

8 Regulation of infrastructures in the United Kingdom

CONTEXT OF REGULATION UNDER ENGLISH LAW

8.1 English law follows the general pattern noted in **Chapter 7** for the regulation of infrastructures: the Principles for Financial Market Infrastructures (PFMI)[1] and the principal EU Regulations form the modern mainstem of UK regulation. Yet these ideas have been grafted onto the United Kingdom's pre-existing regulatory root-stock which predated the PFMI and any EU interest in post-trade infrastructure. This historical background explains why infrastructures are likely to be outside the scope of 'ordinary' financial services regulation as applied to banks and investment firms. In the United Kingdom, CCPs and CSDs are typically organised as 'recognised bodies' which accords them an exemption from the general corpus of financial services regulation.[2] The implications of 'exemption' are discussed in **section 8.16**. Here it may merely be noted that, as recognised but not authorised persons, CCPs and CSDs are subject to a much narrower scope of regulation than banks or investment firms – for example there is next to nothing corresponding to the 'Conduct of Business' (or customer-facing) Sourcebook issued by the Financial Conduct Authority (FCA) – and that the degree of detail surrounding such issues as are covered by regulation is considerably lower, as for example in relation to prudential standards.

Payment systems may not need to be structured as banks in order to carry on their activities. So, for example, CHAPS operates as a system without itself taking deposits from its participants, rather relying on their accounts at the Bank of England,[3] and as it carries on no regulated activities prescribed in the Regulated Activities Order,[4] CHAPS does not need any authorisation under the Financial Services and Markets Act 2000 (FSMA). Neither CLS Bank nor EBA Clearing had FSMA authorisation in 2016, presumably because neither of them accepts deposits in the United Kingdom.

The regulatory system in the United Kingdom was reorganised in 2013, with the consequence that the role of the Bank of England as infrastructure regulator became more prominent. Having previously had responsibility for designation of

1 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf; see **section 7.11**

2 Financial Services and Markets Act 2000, s 285(2)

3 Cf CHAPS access requirements (2016), www.chapsco.co.uk/access/access-chaps/access-options

4 Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/ 544

settlement systems under the Settlement Finality Directive (SFD)[5] and oversight of payment systems, the Financial Services Act 2012 gave the Bank supervisory authority over recognised clearing houses (a term which then encompassed both CCPs and CSDs).[6]

In consequence of the financial market infrastructure falling outside the mainstream of regulation, the approach of the regulators has been somewhat different from that in the case of authorised firms. The structure of the FCA's Handbook, which has five general blocks of rules dealing with general principles and authorisation conditions, prudential standards, business conduct standards, regulatory processes, and redress, is not carried across into the English practice of infrastructure regulation. The PFMI are arranged in eight blocks, dealing with organisation, credit and liquidity risk, settlement, CSDs and exchange-of-value systems, default management, business and operational risk management, access, efficiency, and transparency. The Bank of England's approach is to leave the PFMI, the United Kingdom and EU legislation (primarily EMIR[7] and the CSDR[8]) to do the legislative work, and not to add significant amounts of rules. This approach differs from that of the Financial Services Authority, the Bank's predecessor, which had a very substantial rulebook for recognised investment exchanges and recognised clearing houses; the Bank has adopted only a handful of legacy FSA rules.[9]

PAYMENT SYSTEMS

8.2 In a critical assessment of the English approach to regulation of payment systems, it might first be noted that much of the literature strikes a faintly apologetic note. Maybe this is because there is no EU-level statutory regulation of payment systems except in relation to a small number of systemically important eurozone payment systems.[10] Bank of England publications once saw the need to defend the idea that any oversight of payment systems was needed.[11] In a more febrile financial climate the desirability of effective regulation of payment systems is perhaps self-evident, and the introduction by the Banking Act 2009 of formal statutory powers of oversight of payment systems followed the financial crisis of 2007–2008. Latterly, and perhaps less understandably, there has been an overlay of 'utility' style regulation of payment systems, which demands its own analysis.

5 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

6 Financial Services and Markets Act 2000, s 285A, inserted by Financial Services Act 2012, s 29

7 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

8 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories, etc

9 See further **sections 8.22** and **8.24**

10 See **section 7.14**

11 Bank of England, *Oversight of Payment Systems* (November 2000), www.bankofengland.co.uk/publications/psor/ops.pdf; Haldane, A, and Latter, E, 'The Role of Central Banks in Payment Systems Oversight' (Spring 2005) *Bank of England Quarterly Bulletin*, vol 45

Part 5 of the Banking Act 2009

8.3 Part 5 of the Banking Act 2009 (Part 5) created a statutory regime in the United Kingdom for the oversight of 'inter-bank payment systems', meaning 'arrangements designed to facilitate or control the transfer of money'.[12] For these purposes, 'financial institutions' mean only banks and building societies, but the inclusion of other types of person as participants does not rule the system out of scope. Since changes made under the Digital Economy Act 2017,[13] the requirement for the system to be an 'inter-bank' system has been dropped,

A payment system becomes subject to supervision under Part 5 if the Treasury specifies the system as a 'recognised system'.[14] The Treasury may do so if satisfied that deficiencies in the design of the system, or disruption of its operation, would be likely to threaten the stability of, or confidence in, the UK financial system, or to have serious consequences for business or other interests throughout the United Kingdom.[15] The Treasury may also specify a service provider to the system in a recognition order,[16] with the result that the service provider is regulated in much the same way as the system operator itself. The Treasury must consult with the Bank of England, the Payment Systems Regulator (as to which, see **section 8.11**) and, if the operator of the system is an authorised person, the Prudential Regulation Authority; it must notify the operator and consider any representations made.[17] According to the Bank of England's website, the following systems had been recognised: Bacs, CLS, CREST, LCH Ltd, Faster Payments Service, ICE Clear Europe, Visa Europe and LINK.[18]

Once a system is 'recognised', it (including any specified service provider) becomes subject to rules and guidance made by the Bank of England, which are referred to in Part 5 as 'principles' and 'codes of practice' respectively.[19] The Bank of England is also able to require the operator of a recognised system to establish rules for operation of the system or change them, and to notify the Bank and obtain pre-approval of proposed rule changes;[20] the Bank has statutory power to give directions to the operator to take or refrain from taking specified action;[21] the Bank can set operational standards;[22] and it can appoint an inspector.[23] If directions do not work, or in other cases of 'compliance failure',[24] the Bank can apply for an injunction.[25] The Bank did not propose to issue a code

12 Banking Act 2009, s 182
13 Section 113 and Sch 9
14 Banking Act 2009, s 184
15 Banking Act 2009, s 185
16 Banking Act 2009, s 206A
17 Banking Act 2009, s 186
18 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual Report* (March 2016)
19 Banking Act 2009, s 188
20 Banking Act 2009, s 190
21 Banking Act 2009, s 191(2)(a)
22 Banking Act 2009, s 191(2)(b)
23 Banking Act 2009, s 193
24 Banking Act 2009, s 196
25 Banking Act 2009, s 202A

of practice when it created its principles;[26] however, it did set out its supervisory approach in respect of service providers in a short document.[27]

Part 5 includes a statutory framework for supervision which is similar to that applicable to financial firms authorised under FSMA.

8.4 In December 2012, the Bank of England abandoned its own set of 14 Principles and adopted the Principles for Financial Market Infrastructures (PFMI) for the purposes of the Banking Act.[28] There are two supplementary things which the Bank has adopted. First, there is a statement of policy regarding financial penalties, following the requirement in section 198 of the Banking Act for transparency on penal policy;[29] secondly, in a short commentary on the adoption of the PFMI the Bank says that 'operators of recognised payment systems will be expected to take appropriate action in respect of matters described in the Principles in a way that is appropriate to their system's particular characteristics and the risks they pose to the UK financial systems or to business or other interests'.[30]

8.5 The Bank of England's 2019 Annual Report on supervision of financial market infrastructures notes that VocaLink is a technology service provider for payment systems and ATM switching platforms,[31] and the Bank's website says that VocaLink has been 'specified as a service provider in the recognition orders of Bacs, Faster Payments Services and LINK'.[32]

8.6 Most infrastructures in the United Kingdom are 'recognised bodies' regulated under the Financial Services and Markets Act 2000 (FSMA). However, payment systems are an exception, falling outside the scope of FSMA. The reasons are likely to be bound up with the general remit of FSMA. Infrastructures – other than payment systems – carry on activities which are similar to those of banks and brokers, such as custody, facilitating securities trades, and handling of cash, each of which is a 'regulated activity' requiring a licence, or exemption from the licence requirement. As will be seen,[33] recognised bodies are granted a statutory exemption under FSMA.

Payment systems will, likewise, need to consider whether they are conducting any regulated activity under the Regulated Activities Order[34] if they receive participants' money. This might constitute deposit-taking and therefore require a banking permission, or some exemption, under FSMA. Or, oddly, it might not: Article 6(1)(a)(ii) of the Regulated Activities Order deems sums paid by persons who are banks or insurers not to constitute 'deposits', so it may be that a payment system never needs such a permission. On the other hand the

26 Bank of England, *Financial market infrastructure supervision* (June 2020), www.bankofengland.co.uk/ financial-stability/financial-market-infrastructure-supervision

27 Bank of England, *The Bank of England's supervision of service providers to recognised payment systems* (February 2018)

28 Bank of England, *The Bank of England's approach to the supervision of financial market infrastructures* (April 2013), p 6)

29 Bank of England, *Financial penalties imposed by the Bank under the Financial Services and Markets Act 2000 or under Part 5 of the Banking Act 2009,* Policy Statement (April 2013)

30 Bank of England, *Recognised Payment Systems Standards* (October 2015)

31 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual report* (February 2019), Table A

32 Bank of England, *Financial market infrastructure supervision* (June 2020), www.bankofengland.co.uk/financial-stability/financial-market-infrastructure-supervision

33 See **sections 8.14ff**

34 Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001/544

processing of payment instructions – including even the discharge of payment orders and replacing them with other payment orders, which is what happens at an ACH[35] – would not appear to be a regulated activity under the Regulated Activities Order and could thus be carried out without any authorisation under FSMA. So, payment systems typically do not need to become 'recognised bodies' to avoid full banking-style regulation under FSMA. Likewise payment transactions which are 'carried out within a payment or securities settlement system between settlement agents, central counterparties, clearing houses and/or central banks and other participants of the system, and payment service providers' are excluded from the scope of the Payment Services Directive,[36] and thus a person providing services as a payment system ought not to require authorisation or registration as a payment institution.

A payment system which finds it does not need a banking permission under FSMA may, however, be at a disadvantage. Access criteria to other payment systems may be denied, not least because the Settlement Finality Directive requires that participation in designated settlement systems be restricted to credit institutions and other types of regulated and public entity.[37] Although that might suggest that payment systems seeking to operate outside the United Kingdom might wish to take steps to become regulated as banks, none of Bacs or VocaLink (between them operating the UK's primary ACH), CLS Bank (a US bank operating a settlement system in the United Kingdom) or EBA Clearing (the operator of a Pan-European ACH) are authorised in the United Kingdom.

Payment systems can in theory obtain some of the advantages enjoyed by recognised bodies without becoming authorised. Similar protection from the consequences of participant default to that available under Part 7 of the Companies Act 1989 is available without a recognition order. There are various routes to this: one is to become designated for the purposes of the SFD, considered below;[38] another, which has fallen into desuetude, is via section 301 of FSMA, discussed in **section 13.28**.

Designation under the Settlement Finality Regulations 1999

8.7 Payment systems may also be regulated by reason of having been designated under the Settlement Finality Regulations 1999 (SFRs).[39] Assuming a system is eligible for designation,[40] the SFRs impose various 'requirements' for designation of a system which must be observed if the system is to obtain and retain its designated status.[41] These are set out in the Schedule to the SFRs; insofar as they do not replicate the requirements of the SFD as to eligibility of systems for designation and revocability of transfer orders, they cover the following topics:

(1) The system must have adequate arrangements and resources for the effective monitoring and enforcement of compliance with its rules.[42]

35 See **section 2.30**
36 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, etc, art 3(h)
37 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems, art 2
38 See also **sections 13.29ff**
39 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, 1999/2979
40 See **section 13.30**
41 SFRs, regs 4(1)(c) and 7(1)(a)
42 SFRs, Sch, para 2

(2) The system operator must have financial resources sufficient for the proper performance of its functions as a system operator.[43]

(3) The system operator must be able and willing to co-operate, by the sharing of information and otherwise, with the Financial Conduct Authority, the Bank of England, the Prudential Regulation Authority, and any relevant insolvency office-holder or other person having responsibility for the default of a participant.[44]

(4) The rules of the system must require each participant to provide, within fourteen days of a request being made, details of the other designated systems in which the participant participates, including information about the main rules of those systems.[45]

(5) The system must have default arrangements which are appropriate for that system in all the circumstances.[46]

Recognition vs designation

8.8 It will at once be noted that these requirements do not at all coincide with the PFMI, adopted by the Bank of England under section 188 of the Banking Act 2009 as its own regulatory principles for 'recognised' payment systems. In fact, they are closer to the recognition requirements for the old 'recognised clearing houses', discussed below, from which they appear to be derived.

It may be asked whether a recognised payment system will invariably be designated, and vice versa. The Part 5 recognition regime has broader reach than the SFD: payment systems in which payment institutions participate are not eligible for SFD designation and are thereby ineligible for the insolvency protections which a designated system can enjoy.[47] There is also no numerical lower limit on the number of participants in a Part 5 recognised payment system, whereas a designated system must have at least three (unless an exception is made on the grounds of systemic risk).[48] By providing that persons who are not 'financial institutions' can participate in a Part 5 recognised payment system, section 182(2) of the Banking Act 2009 envisages that a Part 5 recognised payment system might not be eligible for designation. So, in theory, the two classes of system might be wholly distinct. In practice, this is not the case: in 2015, of the designated payment systems notified to ESMA,[49] only the Cheque Clearing System and Credit Clearing System was not 'recognised', and there were no 'recognised' systems referred to in the Bank of England's Annual Report that were not also 'designated' under the SFD, as illustrated in **Table 8.1**.[50] Evidently, for payment systems properly so called,[51] there is close correspondence. Historically, 'payment systems' embedded in three 'recognised clearing houses' (two CCPs and one CSD) were 'recognised', but this appears

43 SFRs Sch para 3
44 SFRs Sch para 4
45 SFRs Sch para 5(2) and (3)
46 SFRs Sch para 6
47 See **section 13.31**
48 Settlement Finality Directive, art 2(a)
49 European Securities and Markets Authority, *SFD Notification – Designated Payment and Securities Settlement Systems* (November 2015)
50 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual report* (March 2015)
51 See **section 1.17**

to have been a device to bring them under the regulatory control of the Bank of England, which acquired supervisory jurisdiction in 2013 in a more direct fashion,[52] since when they have dropped off the list of recognised payment systems.

Table 8.1 Regulation of UK payment systems (2020)

Legislative authority	**'Recognised' under Banking Act 2009**	**'Designated' under Settlement Finality Regulations 1999**	**'Designated' under Financial Services (Banking Reform) Act 2013**
Nomenclature	'Recognised' = regulated for financial stability purposes	'Designated' = protected against insolvency challenges	'Designated' = regulated for competition purposes
Regulator	Bank of England	Bank of England	Payment Systems Regulator
Regulated systems			
Bacs	✔	✔	✔
CHAPS		✔	✔
Cheque & Credit/ Image Clearing System		✔	✔
CLS	✔	✔	
CREST/EUI	✔	✔	
Faster Payments	✔	✔	✔
ICE Clear Europe	✔	✔	
LCH Ltd	✔	✔	✔
LINK	✔		
LME Clear		✔	
Mastercard			✔
Northern Ireland Cheque Clearing			✔
SIX x-clear		✔	
Visa Europe	✔		✔

8.9 The United Kingdom's large value transfer system, CHAPS, was once a 'recognised' payment system but is so no longer, and according to the Bank of England, since 13 November 2017 it has been 'supervised on a non-statutory basis'. The Bank says that the supervisory standard applied to CHAPS is the same as for recognised payment systems.[53] The de-recognition of CHAPS was explained by the Bank thus:

52 Financial Services and Markets Act 2000, s 285A

53 Bank of England, *Real-Time Gross Settlement (RTGS) system and CHAPS Annual Report* (July 2020), p 5

> 'Whilst the Bank has provided the RTGS infrastructure since 1996, the CHAPS 'scheme' was previously managed and operated by CHAPS Clearing Company Ltd…. In the Blueprint for a new RTGS service published in May 2017, the Bank … concluded that, to underpin financial stability and respond to the growing range and diversity of threats to payment systems, CHAPS should move to the global norm for high-value payment systems of a 'direct delivery' model. This is where the central bank is both infrastructure provider and payment system operator… [The] Bank is better placed to mitigate risks and this would benefit both the central system and the [direct participants]. This conclusion was informed and endorsed by the Financial Policy Committee (FPC) and met a recommendation made by the International Monetary Fund (IMF). On 13 November 2017, the Bank became the operator of CHAPS, setting the rules and technical standards for the CHAPS system and acting as end-to-end risk manager…. As a result of the Bank becoming the CHAPS payment system operator, CHAPS was de-recognised under the Banking Act 2009.'[54]

The non-statutory regulation of CHAPS appears thus to be a device to escape the paradox of the Bank giving directions to itself, and to internalise the arrangements for oversight, which is described as independent and supported by annual published reports.

Payment Services Regulations

8.10 The Payment Services Regulations 2017 (PSRs)[55] complement the supervisory arrangements under the Banking Act 2009 with rules relating to access to payment systems which are not designated systems under the SFRs. Regulations 102–105 of the PSRs reflect Article 35 of the Payment Services Directive,[56] prohibiting restrictive rules on access to affected payment systems.[57] For these purposes, a 'payment system' is any 'funds transfer system with formal and standardised arrangements and common rules for the processing, clearing and settlement of payment transactions'.

Designated systems are outside the scope of this prohibition, presumably because the criteria for designation, deriving from the SFD, impose severe limitations on who can participate in a designated system.[58] It is, however, possible for a non-designated payment system to impose access criteria which are necessary to safeguard against settlement risk or to protect the financial stability of the system.[59]

The PSRs do not establish yet another registration system for payment systems, only an additional set of regulations with which payment systems must comply. The Payment Services Regulator[60] is the responsible regulator,[61] as befits the

54 Bank of England, *Real-Time Gross Settlement (RTGS) system and CHAPS Annual Report* (August 2019), p 6
55 SI 2017/752
56 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market etc
57 See **section 11.16**
58 See **section 13.30**
59 PSRs, reg 103(1)(b)
60 See **section 8.11**
61 PSRs, reg 124

competition flavour of the regulations.[62] So, if it is not considered significant enough to deserve designation under the SFRs or to be recognised under section 185 of the Banking Act 2009, a funds transfer system could still be caught by the PSRs' access rules, which would apply regardless of whether the system were sufficiently dominant to attract attention from the Competition and Markets Authority under the general competition law. The payment system may also be regulated as a utility, as will next be discussed.

Utility Regulation: Part 5 of FSBRA

8.11 The Financial Services (Banking Reform) Act 2013 (FSBRA) created a new regulator, the Payment Systems Regulator, to 'exercise functions in relation to payment systems'. It might be thought, having read the preceding sections, that payment systems were already sufficiently regulated, or at least that the existing regulator had sufficient powers so that any regulatory gap could be covered through recourse to them, rather than additional primary legislation. Part 5 of FSBRA has 72 new sections, plus a 16-paragraph Schedule which sets out the constitution of the new regulator, while Part 5 of the Banking Act 2009 (for comparison, 32 sections, summarised above) continues to have effect, in parallel with the new FSBRA regime.

Historically, the setting of policy for payments infrastructure was in the hands of the banks, as might be expected where the main concerns related to technical questions about connecting banks for the purposes of payments processing. Following a report on profits in the banking sector issued in 2001, which found that payment systems were costly, slow and reluctant to innovate, various attempts were made to reform the governance of payments infrastructure.[63] For a while the governance arrangements for payments policy were opened to other stakeholders, in the form of the short-lived Payments Council (which was still dominated by banks). In 2010, a decision by the Payments Council to phase out the interbank clearing system for cheques was deplored by the House of Commons;[64] that decision, which was considered to have been taken in disregard of the wishes of retail users of payment services, was fatal for self-regulation of policy questions relating to the design and use of 'payment systems'. Accordingly, the UK Government decided to set up a 'utility-style' regulator, separate from the established financial services regulators, with three objectives: to promote competition, to promote innovation and to ensure that payment systems are developed and operated in the interests of service users.[65] This is the Payment Systems Regulator, established under FSBRA.

8.12 The Payment Systems Regulator has powers to give directions and guidance in furtherance of its three objectives,[66] and it may require payment systems to change its rules.[67] It can require a payment system to grant access

62 PSRs, regs 98–124

63 See, for example, Office of Fair Trading, *First annual progress report of the Payments Systems Task Force*, OFT 789 (May 2005); Office of Fair Trading, *Final report of the Payment Systems Task Force*, OFT 901 (February 2007)

64 House of Commons Treasury Select Committee, *The future of cheques*, 18th report (July 2011) www.publications.parliament.uk/pa/cm201012/cmselect/cmtreasy/1147/114702.htm; HM Treasury, *Setting the strategy for UK payments*, Consultation Paper (July 2012)

65 FSBRA, ss 50–52

66 FSBRA, ss 54 and 96

67 FSBRA, s 55

to enable a person to become a 'payment service provider' in relation to the system.[68] (For these purposes, a payment service provider is not a payment service provider as defined in the PSRs,[69] but a person who provides services to persons who are not participants for the purposes of enabling the transfer of funds using the system:[70] it may be noted that the phrase encompasses persons who are not themselves direct participants in the system. To confuse things further, the definition of 'participant' used in FSBRA[71] differs from that used in the SFRs (in particular, under FSBRA, all payment service providers are regarded as 'participants'). Under regulation 104 of the PSRs, the Payment Systems Regulator has an additional power to give directions about access to the system. The regulator can demand the variation of agreements between the operator of the system and a payment service provider or between a direct participant and another payment service provider, or concerning fees for participation or use of services.[72] The regulator can also require the disposal of an interest in a payment system.[73] Other useful and interesting roles enjoyed by the regulator include the duty to keep markets under review, [74] to receive complaints[75] and to publish reports.[76]

8.13 While the regulatory jurisdiction of the Payment Systems Regulator is limited by FSBRA, that is not the case in relation to the Bank of England under Part 5 of the Banking Act. It is implicit that the Bank's oversight relates to financial stability, but this is not stated anywhere in the legislation. Thus, the question may be asked as to whether there is any overlap between the regimes. Several comparative points may be made:

(1) The systems under the two regulators' jurisdictions are similar, but not identical. FSBRA defines a 'payment system' as a system for the purpose of enabling persons to make transfers of funds, and includes a system which is designed to facilitate the transfer of funds using another payment system.[77] Various systems are carved out, such as systems operated by recognised clearing houses, recognised CSDs and physical cash transfers.[78] A 'system designed to facilitate the transfer of funds using another payment system' is presumably intended to capture card schemes, which the United Kingdom government was keen to bring within scope.[79] By including payment schemes alongside payment systems,[80] the actual scope of the FSBRA definition appears to go wider than settlement arrangements. The Banking Act definition of 'payment system' does not include this additional phrase: the definition is 'arrangements designed to facilitate or control the transfer of money'.[81] It might be noted, in conclusion, that: (a) the Banking Act regime only applies to wholesale market arrangements;

68 FSBRA, s 56
69 Regulation 2(1)
70 FSBRA, s 42(5)
71 FSBRA, s 42(2)
72 FSBRA, s 57
73 FSBRA, s 58
74 FSBRA, s 64
75 FSBRA, s 68
76 FSBRA, s 97
77 FSBRA, s 41(1)
78 FSBRA, s 41(2)
79 HM Treasury, *Designation of payment systems: Response to the consultation* (March 2015)
80 Cf **section 1.15**
81 Banking Act 2009, s 182(1)

(b) the Banking Act regime does not include a definition of 'participant' but can be assumed not to encompass the whole gamut of persons seeking access who might qualify as payment service providers under the FSBRA regime; and (c) both definitions are very vague, using terms like 'system' and 'arrangements' which can probably allow any target to come within scope of either. The payment systems which have been in scope for the various regulatory regimes are summarised in **Table 8.1**.

(2) The selection of payment systems to fall under the FSBRA regime is, as for the Banking Act regime, done by the Treasury. The process of selection is, confusingly enough, called 'designation', like the term used for the SFRs regime,[82] and the criteria for selection under the FSBRA and Banking Act regimes are almost identical. The primary question is whether deficiencies in the system's design, or disruption of its operation, would have serious consequences (in the case of FSBRA, consequences for the users, and in the case of the Banking Act, consequences for 'business or other interests throughout the United Kingdom'). In the case of the Banking Act regime, it is also possible to recognise a system if design deficiency or operational disruption would threaten the stability of, or confidence in, the United Kingdom's financial system (whatever that is – it is not defined).[83] In both pieces of legislation there are secondary criteria to be taken into consideration: scale, nature of transactions, whether there are alternative systems, and the relationship with other systems. These criteria are the same for both regimes, except that under the Banking Act regime the Treasury must additionally have regard to whether the system is used by the Bank of England in its role as monetary authority.[84] One might expect there to be close correspondence between the two lists of systems; there is not.

(3) The enforcement powers of the Bank and the Payment Systems Regulator are similar, but not identical. They can each conduct and commission investigations, exact fines, and obtain an injunction to compel compliance.[85] The Bank (but not the Payment Systems Regulator) can also close down the system and it can disbar individuals from management roles.[86]

(4) Coordination between regulators with parallel jurisdiction is required by section 98 of FSBRA, which obliges the Payment Systems Regulator, the Bank of England, the Financial Conduct Authority and the Prudential Regulation Authority to consult each other and obtain information and advice from every other regulator where appropriate in exercising its functions in relation to matters of common regulatory interest. Where the 'regulatory interest' will be common is outlined, but no order of precedence is given.

(5) The Bank has set out 'four criteria for assessing change in the payments landscape from a financial stability perspective', in order to 'provide clarity on its views'. These are that:

82 See **Table 8.1**
83 FSBRA, s 44(1); Banking Act 2009, s 185(1)
84 FSBRA, s 44(2); Banking Act 2009, s 185(2)
85 Banking Act 2009, ss 193, 195, 198, 202A; FSBRA, ss 73, 75, 82; PSRs, regs 98, 105
86 Banking Act 2009, ss 199, 200

'• any changes do not lead to an unacceptable increase in settlement risk;
• changes should maintain or enhance the robustness and resilience of UK payment systems;
• payment systems are able to facilitate the continuity of payment services in resolution; and
• the Bank's ability to effectively supervise systemically important payment systems is maintained'.[87]

A final word may be added on the subject of overlap of regulatory jurisdiction. It will have been observed that the functions of the Payment Systems Regulator are those of a competition regulator, and indeed the Payment Systems Regulator has taken over what were once powers of the Competition and Markets Authority (CMA) under the PSRs. The creation of the new regulator in respect of payment systems has not, however, ousted the jurisdiction of the CMA under the general law. FSBRA states that the two authorities are to exercise concurrent jurisdiction, though the one must consult the other before exercising the concurrent functions.[88] The need for a second regulator cannot easily be explained by the fact that payment systems are somewhat obscure and special expertise may be needed: as explored in **Chapter 11**, the need for sector expertise has not deterred competition authorities from acting where abuses are suspected among financial markets infrastructures, including those for making payments. The explanation is in evolution. The policy leading to a separate payment systems regulator grew out of the 'abolition of cheques' enquiry,[89] and the conclusion that it would be appropriate to establish 'a new public body to set strategy across the UK payments industry (the Payments Strategy Board) … overseen by the new Financial Conduct Authority'.[90] Between that conclusion and its implementation in FSBRA, the 'Strategy Board' had mutated into the 'Systems Regulator' and acquired competition objectives, but by then it was too late to go back on the idea of a new public body. Payment systems just have to cope with a proliferation of regulators.

RECOGNISED BODIES

8.14 Part XVIII of FSMA (Part XVIII) provides the statutory basis for the licensing of investment exchanges and clearing houses in the United Kingdom. The concept with which Part XVIII commences[91] is the idea that 'recognised' persons – investment exchanges, central counterparties, central securities depositories and clearing houses – obtain an exemption from the 'general prohibition', that is the provision of FSMA[92] which prohibits the carrying on of a regulated activity without authorisation. CCPs and CSDs may thus sidestep around the general regulatory regime.

Historically, CCPs and CSDs were classified as 'recognised clearing houses', and some recognised investment exchanges had a CCP-like service; the regulatory regime did not match the functions of post-trade infrastructures very well. Now,

87 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual report* (March 2015), p 20
88 FSBRA, ss 59–63
89 See **section 8.11**
90 HM Treasury, *Setting the strategy for UK payments*, Consultation Paper (July 2012)
91 Section 285
92 Section 19

there are four classes of recognised body: recognised investment exchanges, recognised central counterparty, recognised CSD and (still) 'recognised clearing house'; the latter is a confusing class which includes recognised CCPs and possibly some other unspecified persons.[93] All are subject to the statutory rules of Part XVIII, discussed in **section 8.15**. However, in the case of recognised central counterparties and recognised central securities depositories, the bulk of the regulatory rulebook is now to be found in EU-derived legislation: EMIR, the CSDR, and their respective regulatory technical standards, which are discussed in **Chapter 7**. The previous requirements of the United Kingdom secondary regulation – the Financial Services Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001[94] (RRRs) – have been repealed insofar as they travelled over the same ground as EMIR and the CSDR, along with the regulatory rulebook of the erstwhile Financial Services Authority which applied to 'recognised clearing houses'.

The Bank has set out its supervisory policy as applied to all types of infrastructure under its eye in a general paper.[95] This cannot be regarded as a substitute for a rulebook, because it is short, high-level and applies to a wide variety of infrastructure types. Nevertheless, it is useful because it provides insight into the Bank's supervisory priorities, which appear to be governance and decision-making within infrastructures, the role of infrastructures in promoting good risk management in the markets which they serve, resilience of CCPs to withstand losses, recovery and resolution, and transparency.

8.15 Much of Part XVIII is taken up with the process of obtaining recognition, the circumstances and process for revocation of recognition, ownership and control of investment exchanges (but not, curiously, other types of recognised body), and discipline. Before the Financial Services Act 2012, the collection of statutory provisions relating to the oversight of recognised bodies might have been thought rather sparse and can be summarised as in the list which follows.

(1) The qualifying conditions for becoming a recognised body are set out in regulations made by the Treasury;[96] those regulations are the RRRs.

(2) The regulator (the Bank of England) may not make a recognition order if a 'regulatory provision' of the applicant imposes an excessive requirement on the persons affected by it.[97] Furthermore, a recognised body proposing to make a 'regulatory provision' must notify the regulator,[98] and the regulator may direct that the proposed provision must not be made if it appears to the regulator that the proposed provision will impose an excessive requirement on persons affected by it.[99] Various sections provide supplementary procedural and related detail.

(3) Recognised bodies must also give notice of changes to their rules, guidance and (in the case of CCPs) criteria for participation to the Bank:[100] these notices can, however, follow the making of the change, unlike the case of 'regulatory provisions' which must be pre-notified. Given the breath of the

93 See **section 8.17**
94 SI 2001/995
95 Bank of England, *The Bank of England's approach to the supervision of financial market infrastructures* (April 2013)
96 FSMA, s 286
97 Section 290A
98 Section 300B; see further **section 8.23**
99 Section 300A
100 Section 293(5), (7)

meaning of 'regulatory provisions', the need for these extra notices seems superfluous.

(4) The Bank is empowered to make rules requiring recognised bodies to give it notice of events and information.[101] The Bank can also make incidental, supplemental etc rules under section 137T of FSMA.[102] Recognised clearing houses can ask for waivers.[103] The Bank has no wider rule-making powers: in particular, the extensive rule-making abilities which the Financial Conduct Authority has do not apply to the Bank.[104] The limits imposed on the Bank's rule-making are significant: the Bank's predecessor as regulator, the now superseded Financial Services Authority (FSA), noted, in its consultation on the regulation of recognised bodies when FSMA was introduced, that 'the FSA will have no power to make rules applying to recognised bodies (apart from notification rules). It will only be able to give guidance on the interpretation it proposes to follow in respect of each [recognition] requirement, and the factors which it is likely to consider in its assessment of a recognised body's compliance with a requirement. … Guidance cannot bind recognised bodies and they will be free to meet the recognition requirements in other ways than that implied by the FSA's guidance'.[105] Since taking over regulatory responsibility from the FSA, the Bank has withdrawn almost all the FSA's guidance, but has reaffirmed the method of supervision through obtaining information.[106] The Bank was potentially given more comprehensive rule-making powers through amendments to FSMA brought in by the Financial Services Act 2012.[107] However, the powers need to be placed in the RRRs, which have not been amended to achieve that end.

(5) The Bank can carry out an on-site inspection of a UK branch of a non-UK CSD recognised under the UK version of the CSDR.[108]

(6) The Bank has the power to direct a recognised body to take specified steps if it appears that the recognised body has failed, or is likely to fail, to satisfy the recognition requirements set out in the RRRs, has failed to comply with any other obligation imposed by or under FSMA, or has failed to comply with a provision of EU legislation specified by the Treasury.[109] Further, the Bank can direct a recognised CCP to take (or refrain from taking) specified action, on financial stability grounds, giving reasons.[110] A direction is enforceable by injunction.

(7) As regards CSDs, a special disciplinary power has been introduced under the authority granted by Article 61(2) of the CSDR. This is section 312FA of FSMA, which enables the Bank to censure, fine, or make a prohibition order against 'a member of the management body or other person who

101 Sections 293(1), (2) and 293A
102 FSMA, Sch 17A, para 10
103 Section 294
104 FSMA, Sch 17A, para 10 does not enable the Bank under FSMA ss 137A–137S save in very limited respects
105 Financial Services Authority, *CP39: RIE and RCH Sourcebook* (January 2000), www.fsa.gov.uk/pubs/cp/cp39.pdf
106 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual report* (March 2016)
107 FSMA, s 286(4F)
108 FSMA s 295A
109 FSMA s 296
110 FSMA s 296A

effectively controls the business of the recognised CSD', in a case where a contravention of a relevant regulatory requirement occurred through the consent, connivance or neglect of the manager or controller. It might be thought odd that managers and controllers of CSDs, but not of CCPs, are exposed to these sanctions. Other powers are given to the Bank to direct controllers of both CCPs and CSDs under section 192C of FSMA, considered in **section 8.22**.

(8) There are sections dealing with complaints[111] and enabling the Upper Tribunal to take jurisdiction in relation to 'disciplinary proceedings' of a 'clearing house' (that is, so far as relevant, proceedings under the rules of a CCP in relation to market abuse).[112]

(9) A recognised body, its officers and staff are not to be liable in damages for anything done or omitted in the discharge of the recognised body's 'regulatory functions' unless it is shown that the act or omission was in bad faith.[113]

(10) There are eight sections[114] on disciplinary powers, formerly available only in respect of authorised persons but not 'recognised' (exempt) bodies, but since the reforms of 2012 extended to 'recognised' bodies. These include the ability to issue public censure,[115] to levy a fine,[116] to gather information and carry out formal investigations,[117] to issue a direction to a UK-incorporated parent undertaking,[118] to intervene in insolvency proceedings,[119] to obtain information from auditors,[120] and the power to apply for an injunction or a restitution order.[121] The Bank is also subject to obligations of professional secrecy.[122]

Exemption

8.16 As indicated in **section 8.6**, a provider of market infrastructure will need to consider whether it needs a licence to conduct its activities under FSMA. For CCPs and CSDs, the likelihood is that their activities will include some which are 'regulated activities' under the Regulated Activities Order, so that authorisation or exemption under FSMA becomes a necessity. Historically, there was a free choice for CCPs and CSDs as to whether to obtain a licence or to rely on the exemption stemming from recognition, though 'recognition' was preferred as it brought with it protection from insolvency challenges through Part 7 of the Companies Act 1989. With the enactment of EMIR and the CSDR, however, the choice is curtailed. The only competent authority for authorisation of CCPs and CSDs in the United Kingdom is the Bank of England, and the only regime under which the Bank can exercise authorisation powers is the

111 FSMA s 299
112 FSMA s 300
113 FSMA s 291
114 FSMA ss 312E–312K
115 FSMA, s 312E
116 FSMA, s 312F
117 FSMA, Sch 17A, paras 11–13
118 FSMA, ss 192B–192E, and Sch 17A, para 17
119 FSMA, Sch 17A, para 24
120 FSMA, Sch 17A, paras 18ff
121 FSMA, Sch 17A, para 26
122 FSMA, Sch 17A, para 23

'recognition' regime under Part XVIII of FSMA.[123] (Where a CSD wishes to carry out banking-type ancillary services, the Prudential Regulation Authority has co-authorisation powers limited to the banking-type activities.[124])

Being exempt, a recognised CCP or recognised CSD will be freed from the shackles of the Capital Requirements Directive and the conduct of business requirements of MiFID,[125] though they are subject to the regulatory regime described below. However, it appears that both CCPs and CSDs can now be both recognised in respect of their clearing or settlement/depository businesses and authorised through ordinary FSMA permissions in respect of other activities. In the case of CSDs this is explicitly recognised through the Central Securities Depositories Regulations 2014,[126] and in the case of CCPs numerous provisions in the Banking Act 2009 dealing with the emergency reorganisation of a CCP envisage that a CCP may be 'PRA-authorised' as well as recognised.[127]

The 'clearing house' after 2016

8.17 With the implementation of EMIR and the CSDR, FSMA was modified to accommodate the concepts of 'recognised central counterparty' and 'recognised CSD'. One might imagine that the there was no room for any other type of recognised body apart from recognised investment exchanges, yet FSMA continues to legislate for 'recognised clearing houses' which are neither recognised CCPs nor recognised CSDs, and in some detail. The continuation of the historical concept of recognised clearing house may merit some consideration.

Section 285(1)(b) of FSMA says:

> '"recognised clearing house" means —
>
> (i) a central counterparty in relation to which a recognition order is in force (in this Part referred to as a "recognised central counterparty"), or
>
> (ii) a clearing house which provides clearing services in the United Kingdom without doing so as a central counterparty, and in relation to which a recognition order is in force;'

The UK Treasury received feedback in a consultation during 2015 that a wholesale abolition of the 'recognised clearing house' concept might be inappropriate. In particular, it was noted that Model B clearing firms[128] might qualify for recognition, and that the nature of services provided in the market may change, making repeal inappropriate.[129]

One might, therefore, imagine that the 'recognised clearing house' (RCH) under limb (ii) of the definition (so excluding recognised CCPs) is an empty category.

123 Financial Services and Markets Act 2000 (Over-the-Counter Derivatives, Central Counterparties and Trade Repositories) Regulations 2013, SI 2013/504, reg 6; Central Securities Depositories Regulations 2014, SI 2014/2879, reg 2

124 Central Securities Depositories Regulations 2014, reg 2(4)

125 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

126 SI 2014/ 2879, reg 2

127 Such as ss 7(5), 8(3), 24(1), 45(7)

128 See **section 19.27**

129 HM Treasury, *Recognised clearing houses: response to the call for evidence* (November 2015)

Notwithstanding this, the Bank of England appears to have classified Euroclear UK and Ireland (EUI), which operates CREST, and is a CSD, as a 'recognised clearing house'.[130] The Bank says that 'securities settlement systems may be regulated under FSMA as RCHs'.[131] Given that EUI is a CSD, and was recognised by the European Securities and Markets Authority (ESMA) as a third-country CSD under the CSDR,[132] EUI's apparent classification as an RCH is surprising, and deserves some analysis. As EUI is not a central counterparty, the Bank must believe that it fits within limb (ii); thus EUI must be providing clearing services, without doing so as a central counterparty. The definitions in FSMA[133] are not particularly helpful, since 'clearing' and 'clearing services' are defined only in relation to central counterparties, which is not our case. ('Clearing' for a CCP is 'the process of establishing positions, including the calculation of net obligations and ensuring that financial instruments, cash, or both, are available to secure the exposures arising from those positions'.) The RCH classification appears to be out of line with modern thinking – 'clearing', as explained in this book and the FSMA definition, is not what EUI does, and there is a more appropriate regulatory category, the 'recognised CSD', which fits EUI perfectly. However, on the basis of FSMA alone, one could not say that to treat EUI as an RCH is definitively wrong; it may be defended on the basis that 'clearing' once meant things other than what CCPs do, and that older meaning was imported into section 285(1)(b) of FSMA alongside the re-enactment of section 285's predecessor provision in the Financial Services Act 1986. Until the CSDR came along, treating EUI as an RCH was perfectly reasonable.

On the other hand, it is difficult to be confident that regulation as an RCH under FSMA alone can be used as an alternative to regulation under the CSDR. Before the United Kingdom left the European Union, Article 18(2) of the CSDR stated: 'Securities settlement systems may be operated only by authorised CSDs.' The on-shored post-Brexit version[134] reads: 'Securities settlements systems [*sic*] governed by the law applicable within the United Kingdom or any part of the United Kingdom may be operated only by authorised CSDs, the Bank of England (or other public bodies charged with or intervening in the management of public debt in the United Kingdom) acting as a CSD and third-country CSDs that are recognised in accordance with Article 25.' None of that appears to exempt EUI, as settlement system provider, from regulation as a recognised CSD; although the Bank indicated in 2013 that it expected to move settlement systems across to the CSDR regime,[135] its more recent published information makes no mention of the recognised CSD regime. It may be questioned whether (and if so why) it is appropriate to regulate EUI under the RCH regime instead of, or in addition to, the 'recognised CSD' regime; Euroclear itself embraces the CSDR for its other CSDs.[136] Finally, the Bank of England's publications all say that EUI

130 Bank of England, Financial market infrastructure supervision (June 2020), www.bankofengland.co.uk/financial-stability/financial-market-infrastructure-supervision

131 Bank of England, The Bank of England's supervision of financial market infrastructures — Annual report (February 2019), Annex 1

132 ESMA, ESMA to recognise the UK Central Securities Depository in the event of a no-deal Brexit (March 2019), Press Release ESMA 71-99-1119

133 FSMA, s 313(1)

134 Central Securities Depositories (Amendment) (EU Exit) Regulations 2018, SI 2018/1320, reg 11(7)

135 Bank of England, *The Bank of England's approach to supervision of financial market infrastructures* (April 2013), section 2.1

136 Euroclear, *CSD Regulation – REDIRECT* www.euroclear.com/about/en/regulatorylandscape/CSDRandCPMIIOSCO.html (accessed August 2020)

is an Operator subject to the Uncertificated Securities Regulations 1991,[137] under which the only available category for EUI is 'a recognised CSD within the meaning of section 285(1(e)' of FSMA. The official statements of the UK regulatory position of EUI might be thought both muddled and unsatisfactory. The interpretation of FSMA and associated legislation, already difficult because of successive layers of statutory amendment and EU regulations, is not made easier by this. We now have:

- 'recognised central counterparties', to which Part XVIII of FSMA, Part 7 of the Companies Act 1989 and Part 1 of the Banking Act 2009 (in modified form) all apply. Recognised CCPs are a subset of 'recognised clearing houses', so legislative provisions using this phrase will apply to CCPs unless there is a specific carve-out. Recognised CCPs are required to be designated for the purposes of the SFD,[138] so the Settlement Finality Regulations (SFRs)[139] will also apply.
- 'recognised central securities depositories', to which Part XVIII of FSMA and Part 7 of the Companies Act 1989 apply. Recognised CSDs are not 'recognised clearing houses', contrary to the position before the CSDR. Unless a CSD is configured as a bank, the Banking Act 2009 will not apply. Recognised CSDs must also be designated under the SFD,[140] so the SFRs will apply.
- 'recognised clearing houses' which are not CCPs, but provide 'clearing services', to which Part XVIII of FSMA and Part 7 of the Companies Act 1989 apply. Unless a non-CCP recognised clearing house is a bank or investment firm, the Banking Act 2009 will not apply, and the SFRs will be relevant only if the clearing house is a payment system, since all securities settlement systems can be operated only by authorised CSDs.[141]

For an entrant to the infrastructure market these options are bewildering. For payment systems seeking protection the SFRs regime is available without the need for recognition, and the 'listed money market institution' regime under section 301 of FSMA[142] is theoretically available; other classes of institution may have fewer choices and may wish to have the protections given by Part 7 which come with recognised status.

Non-UK CCPs and CSDs after Brexit

8.18 Before the United Kingdom left the European Union, CCPs and CSDs based in other EEA Member States could operate in the United Kingdom by virtue of their home state authorisation, without any further ado. The same freedom was granted to a non-EU CCP or CSD which had obtained 'recognition' from ESMA. With the United Kingdom's departure from the European Union, these rights have been abolished; all non-UK CCPs and CSDs now need to obtain UK regulatory status.

137 SI 2001/3755
138 EMIR, art 17(4)
139 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979
140 CSDR, art 39(1)
141 CSDR, art 18(2)
142 See **section 13.28**

The options may include the possibility of becoming a 'recognised overseas clearing house' (discussed in **section 8.19**) but the main pathway will be via the on-shored versions of EMIR and the CSDR. Article 25 of on-shored EMIR[143] creates a recognition regime outside FSMA, which enables the Bank of England to recognise a non-UK CCP so that it can provide clearing services to clearing members or trading venues in the United Kingdom if the Treasury has made an equivalence order in respect of its home country. (The position is complicated by the adoption of EMIR 2.2, the implications of which are discussed in **section 7.62.**) Likewise, with the benefit of a Treasury equivalence ruling, a non-UK CSD may obtain recognition from the Bank (and authorisation from the Prudential Regulation Authority in respect of banking-type ancillary services) under the on-shored version of Article 25 of the CSDR.[144]

Other recognised bodies

8.19 Other residual categories of institution persisting under Part XVIII of FSMA may be mentioned briefly:

(1) *Overseas clearing houses*. Persons not incorporated in the United Kingdom are allowed to apply to become recognised clearing houses (but not recognised CCPs).[145] The full burden of Part III of the Schedule to the RRRs, plus (unless the person does not enter into market contracts[146]) Part IV of the Schedule which requires the person to have default rules with detailed specific content, will apply to any recognised overseas clearing house. Although section 292 of FSMA permits the disapplication of the RRRs in respect of overseas bodies, and section 185 of the Companies Act 1989 permit modification of Part 7 for overseas bodies, these powers have not been used. (By contrast, under the pre-FSMA regime, overseas clearing houses were exempt from the equivalent of Part IV of the Schedule, only being obliged to have adequate default procedures.[147]) Whereas formerly the regulation of an overseas clearing house will have been the province of its home state regulator – still the position in respect of recognised CCPs and recognised CSDs – nowadays an overseas person seeking recognition in the residual category of recognised clearing house will obtain no special relief from United Kingdom legislative requirements.

(2) *Self-clearing exchanges*. In days gone by some exchanges operated a CCP function within the same legal vehicle and under the same regulatory cover as their recognition as an investment exchange. The RRRs still envisage that a recognised investment exchange might itself provide clearing services.[148] EMIR demands that all persons who interpose themselves between counterparties to contracts traded on financial markets and wish to provide clearing services must become authorised under EMIR,[149] so a recognised investment exchange wishing to act as CCP must first

143 As amended by the Central Counterparties (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2018, SI 2018/1184, reg 8
144 As amended by the Central Securities Depositories (Amendment) (EU Exit) Regulations 2018, SI 2018/1320, reg 13
145 FSMA, s 292A(2)
146 RRRs, reg 8
147 Companies Act 1989, Sch 21, para 15, as originally enacted
148 RRRs, Sch, para 7C
149 EMIR, arts 2(1), 14(1)

become authorised under EMIR and then seek to extend its activities into the exchange space under Article 15 of EMIR. In this way, the theoretical possibility for a single entity to be both CCP and regulated market still exists, but one might wonder if a regulator would today be comfortable with both businesses being carried on within the same legal entity.

Recognition Requirements Regulations

8.20 The function of the RRRs is now largely historical, closely associated with the old concept of 'recognised clearing houses'. Clearing houses were exempt from the regulatory requirements of the Financial Services Act 1986 (the predecessor to FSMA, which imposed a requirement for authorisation upon persons carrying on investment business in the United Kingdom). Under section 39 of the 1986 Act, it was necessary for a clearing house desiring recognised status to show that it would provide clearing arrangements for a recognised investment exchange.[150] Recognised investment exchanges had to satisfy a list of recognition requirements,[151] which are largely reproduced (albeit in modernised, expanded form, and supplemented as a result of the implementation of MiFID) in Part 1 of the Schedule to the RRRs. By contrast, a clearing house did not have to satisfy the recognition requirements listed in the 1986 Act; it simply had to show that:

(1) it had financial resources sufficient for the proper performance of its functions (see now paragraph 16 of the Schedule to the RRRs);

(2) it had adequate arrangements and resources for the effective monitoring and enforcement of compliance with its rules (see now paragraph 22);

(3) it was able to provide clearing services which would enable a recognised investment exchange to make arrangements with it that satisfied the recognition requirements – note in particular that these included 'the exchange must either have its own arrangements for ensuring the performance of transactions effected on the exchange or ensure their performance by means of services provided under clearing arrangements made by it with a recognised clearing house'.[152] By the time of re-enactment of the eligibility criteria in the RRRs, clearing of OTC products had already begun, and the precondition of providing clearing services to a recognised investment exchange was not retained in the RRRs; and

(4) it was able and willing to promote and maintain high standards of integrity and fair dealing in the carrying on of investment business and to co-operate, by the sharing of information and otherwise, with the Secretary of State and any other authority, body or person having responsibility for the supervision or regulation of investment business or other financial services (see now paragraph 20).

Further, when the Companies Act 1989 came into force, a recognised clearing house was required to have default rules[153] (see now paragraphs 24–28A). In 2001, the RRRs introduced the following additional recognition requirements for clearing houses:

150 Financial Services Act 1986, s 39(2), (4)
151 Financial Services Act 1986, Sch 4
152 Financial Services Act 1986, Sch 4, para 2(4)
153 Companies Act 1989, s 156 and Sch 21, paras 8–14

(1) to be a fit and proper person (paragraph 17);

(2) to ensure that its systems and controls are adequate (paragraph 18);

(3) to ensure that its facilities afford proper protection to investors, including access criteria designed to protect orderly functioning of its facilities, the timely discharge of rights and liabilities to parties to transactions, record-keeping, avoidance of market abuse and financial crime, and satisfactory arrangements for safeguarding and administration of users' assets, where relevant (paragraph 19);

(4) to have rule-making and review procedures (paragraph 21); and

(5) to have complaints arrangements (paragraph 23).

Finally, the implementation of MiFID introduced a requirement for transparent and non-discriminatory participation criteria (paragraph 21A), and the attention given to the risk that CCPs themselves might fail led to a requirement relating to recovery planning (paragraph 23A).

These rules remain in place only for 'recognised clearing houses' which are not recognised CCPs.

8.21 With the introduction of EMIR and the CSDR, there are new Parts 5–7 to the Schedule to the RRRs, and the old requirements for recognised clearing houses have become irrelevant for recognised CCPs and recognised CSDs. What is left can be briefly summarised. CCPs must comply with EMIR and CSDs must comply with the CSDR.[154] EMIR has been retained as part of UK legislation, with modifications following Brexit, which are summarised in **Table 0.1**.

The remainder of the RRRs can be summarised as follows:

- Both CCPs and CSDs must grant access on a non-discriminatory basis.[155]
- Both CCPs and CSDs must have whistle-blowing procedures concerning infringements of the CSDR.[156]
- CCPs must have loss-allocation rules for problems stemming from things other than member default, and recovery plans.[157]
- CCPs must adopt appropriate measures to reduce the extent to which their facilities can be used for a purpose connected with market abuse or financial crime.[158]
- CCPs no longer need to have default rules covering all the detail demanded before EMIR. There remain two obligations and one option.[159] The obligations are: first, for the default rules to ensure that, following a liquidation and return of collateral, the amount of any other net sum payable (or the fact that there is none) is certified for the purposes of section 163 of the Companies Act 1989; and secondly, that the default rules allocate losses remaining following a member default and exhaustion of resources named in Article 45 of EMIR which threaten the CCP's solvency. The optional matter relates to rules purporting to transfer positions or assets of a defaulter which go beyond the requirements of Articles 48(5) and (6) of EMIR. In this case the rules must 'include a summary of how a

154 Paragraphs 29, 37
155 Paragraphs 31, 38
156 Paragraphs 31A, 39
157 Paragraphs 29A, 29B
158 Paragraph 30
159 Paragraphs 33–36

transfer will work' and be 'fair', but most significantly it is necessary that the transfer be subject to the consents of the person for whose account the asset or position is held and of the transferee clearing member.

- CSDs which provide investment services and activities not listed in sections A and B of the Annex to the CSDR must comply with MiFIR, its subordinate legislation, and FCA or PRA rules which implement MiFID.[160]

Regulatory rules applicable to recognised clearing houses

8.22 The Bank of England has made rules which apply to 'recognised clearing houses', which will thus apply to recognised CCPs (but not recognised CSDs).[161]

These cover, first, the appointment and resignation of key individuals, viz. chairman, chief executive, directors, persons responsible for conduct of any regulated activity for which there is an exemption, and persons responsible for any function relating to the obligations of the recognised body under FSMA. The Bank is to be given 30 days' notice of a proposal to appoint any such person and immediate notice of resignation.[162]

The Bank has also used its rule-making powers to clarify the notification obligation regarding 'regulatory provisions' in CCPs' rule-books[163] and to set out the position on fees for expert reports.[164]

Given the sparseness of the Bank's rule-making powers, there are two significant policy documents which complement the rules; although not constituting formal 'rules' it would appear that the Bank would have grounds for enforcement action if there were wilful non-adherence to the Bank's policy.

The first set of policies relates to the Bank's power to issue directions to a parent undertaking of a CCP.[165] The power arises by virtue of paragraph 17(1) of Schedule 17A of FSMA, which enables the Bank to exercise powers under section 192C of FSMA as if a recognised body were an authorised person. Section 192C, as modified for application to recognised bodies, empowers the Bank to direct a qualifying parent undertaking of a recognised clearing house or recognised CSD if the Bank considers it desirable for the purposes of the effective regulation of the recognised clearing house or CSD. A 'qualifying parent undertaking' is one which is incorporated or has a place of business in the United Kingdom, is not itself authorised or a recognised body, and is a financial institution of a kind prescribed by the Treasury.[166] All financial institutions are so prescribed for these purposes;[167] 'financial institution', rather unhelpfully, is not defined, as explained by the Treasury:

160 Paragraph 40
161 Bank of England, *Recognised Clearing Houses Rules Instrument 2013 – Bank FMI 2013/1* (April 2013)
162 Rule RCH 1
163 See **section 8.23**
164 Rules RCH2 and RCH3
165 Bank of England, *The giving of directions to qualifying parent undertakings of UK recognised clearing houses* (April 2013)
166 FSMA, s 192B
167 Financial Services and Markets Act 2000 (Prescribed Financial Institutions) Order 2013, SI 2013/165, art 2(1)

> '"Financial institution" is a generally understood term which is used, again without definition, in other legislation (including the Banking Act 2009). The term includes an entity which itself provides financial services or which operates financial market infrastructure or whose business involves the ownership of, or management of, such entities.'[168]

In other words, it is sufficient that the parent undertaking has an ownership stake in the recognised body. The Bank's guidance sets out a long list of possible scenarios where the Bank may consider issuing a direction. Notable among them are:

- insufficient capital
- substandard intragroup transactions
- barriers to resolution
- poor systems and controls
- unsuitable directors at parent level.

Regulatory functions of recognised bodies

8.23 Various sections of FSMA refer to 'regulatory' functions or rules of recognised bodies. Section 290A prevents the appropriate regulator making a recognition order in respect of the residual category of recognised clearing house if a 'regulatory provision' imposes an excessive requirement on the persons affected by it; section 291 gives immunity from liability in damages to a recognised body and its personnel for things done in the discharge of its 'regulatory functions'; and sections 300A–300E require pre-notification to, and potential disallowance by, the appropriate regulator of excessive 'regulatory provision' in a recognised body's rulebook. The immunity applies to all types of recognised body. The section concerning 'excessive regulatory provisions' in rules is, however, in practice limited to recognised investment exchanges and recognised clearing houses. This is because of section 300A(1), which can only apply to exchanges, 'clearing houses' and those providing 'clearing services'. Historically, 'clearing' encompassed the provision of CSD services, but recognised CSDs should now no longer be covered by the concept of 'recognised clearing house', as discussed in **section 8.17**.

In light of the emphasis given to regulatory provisions and regulatory functions of recognised bodies by FSMA, one question which arises in this context is which functions and rules of a recognised body would be 'regulatory' in nature. Section 300E, which relates to disapplication by the regulator of 'excessive requirements', states that a regulatory provision means 'any rule, guidance, arrangements, policy or practice'. The Bank of England has used its limited rule-making powers to clarify the 'regulatory provisions' in respect of which the duty to pre-notify under section 300B will apply.[169] The relevant provisions are those which increase disclosure, reporting or corporate governance requirements, limit access, or expand the circumstances where persons are liable to penalties, sanctions or damages; but pre-notification is not required if the provision is being made in consequence of a statutory requirement, or if it specifies or amends standard terms of a cleared derivative, or if it is made in response to an emergency

168 Explanatory Memorandum to SI 2013/165
169 Bank of England, *Bank FMI 2013/1* (April 2013), rule RCH2

and has a three-month lifespan, or it actually does not impose a requirement. The Bank's explanation of its supervisory policy for infrastructures[170] draws attention to rules of infrastructures which impose standards and discipline on participants. These – the Bank mentions rules relating to resilience and risk management – are not expressly characterised as 'regulatory' provisions and appear not to be regarded as such.

That is very helpful, but it remains open to question whether this narrow interpretation of regulatory provisions would be relevant to the other cases where FSMA refers to 'regulatory' functions. Some discussion may thus be appropriate. It is worth remembering that Part XVIII is primarily about regulation of investment exchanges: clearing houses (CSDs as well as CCPs) historically received less attention from legislators than exchanges. That investment exchanges have regulatory functions has been extensively written about;[171] typically exchanges are concerned with matters such as oversight of listing, corporate disclosure and transparency, market abuse, and their participants' business conduct.[172] These roles reflect the RRRs applicable to recognised investment exchanges, which aim to ensure that business is conducted on an exchange in an orderly manner and so as to afford proper protection to investors.[173] The regulatory functions just described are unlikely to apply to CCPs which are operated independently of investment exchanges. A recognised clearing house which is not a recognised CCP or a recognised CSD is also required to 'ensure that its facilities are such as to afford proper protection to investors'[174] and to be 'able and willing to promote and maintain high standards of integrity and fair dealing in the carrying on of regulated activities by persons in the course of using the facilities provided'.[175] The functions thereby required of clearing houses would appear to be regulatory in nature, so it may be concluded that the reference to 'regulatory functions' in relation to immunity in damages is likely to be to these, rather than other activities, of the clearing house. The courts are likely to be sparing in their grant of immunity, so it is fair to conclude that a narrower (and for CCPs, very much narrower) view of 'regulatory functions' will be taken in that context than in relation to the duties of recognised bodies to submit their rules for vetting by the regulator.

Repealed rules

8.24 An unfortunate habit of regulators in the United Kingdom is to have regard to previous regulatory rulebooks even though the rules they wish to rely on have been formally withdrawn. While it would be hard for a regulator to invoke a withdrawn rule in order to take regulatory action, regulatory thinking can still be informed by past practice. It may therefore be appropriate to mention briefly the content of the rather extensive set of rules and guidance in place for 'recognised clearing houses' (a concept then embracing CSDs as well as CCPs)

170 Bank of England, *The Bank of England's approach to the supervision of financial market infrastructures* (April 2013), section 3.2

171 For a comprehensive review, see Lee, R, *Running the World's Markets: The Governance of Financial Infrastructure* (Princeton University Press, 2011), ISBN 978-0-691-13353-9

172 Cf Lee, pp 86, 115

173 RRRs, Sch, para 4

174 RRRs, Sch, para 19(1)

175 RRRs, Sch, para 20(1)

under the Bank of England's predecessor, the FSA.[176] Like the Bank, the FSA had only 'notification' rule-making powers, but was more effusive in its issuance of guidance. Mention may be made of the following topics than thought fit for notification and guidance:

(1) *Organisation and personnel*. The FSA required notification of appointments and resignations of 'key individuals', including particulars of the role to which an appointment is made, and notification of composition of standing committees.

(2) *Litigation*. Recognised clearing houses were obliged to disclose to the FSA civil or criminal legal proceedings instituted against them if they might significantly affect the recognised body's financial resources or adversely affect the reputation and standing of the body, or if they related to its 'regulatory functions'. For these purposes 'regulatory function' was defined as 'any function of a recognised body so far as relating to, or to matters arising out of, the obligations to which the body is subject under or by virtue of [FSMA]',[177] which is so broad as to encompass everything other than ancillary businesses which the operator of the clearing house may be engaged in incidentally.

(3) *Outsourcing*. The FSA required a copy of any invitation to tender, a copy of any outsourcing agreement, and to be informed of the reasons for a proposed delegation of an 'exempt activity' or a 'regulatory function'. Additionally, the FSA was to be notified where the recognised body is an *in*sourcer (supplier) for another UK recognised body.

(4) *Suspension of services*. The FSA required to be notified of: suspension of clearing services or of arrangements for safeguarding other persons' assets, and the reasons for the action taken; force majeure events; and occasions of inability to discharge any 'regulatory function'.

(5) *Membership*. The FSA was to be notified if a recognised body admitted to its membership a person who did not hold a FSMA permission to carry on a regulated activity, or who was foreign, and in the event of disciplinary action taken against a member.

(6) *Risk management*. The FSA issued extra-statutory guidance for CCPs on counterparty credit risk management.[178] This covered many issues studied in more detail in **Chapter 17**, explaining the FSA's focus on risk management governance, initial margin models, variation margin calculation, default fund, stress testing, wrong way and concentration risk, collateral, and validation and back-testing.

OPERATORS UNDER THE UNCERTIFICATED SECURITIES REGULATIONS

8.25 The operator of a CSD is an 'Operator' appointed in respect of regulations made under the Companies Acts. This is because the Operator's core function is to operate a computerised system under which title to securities

176 Financial Services Authority, Handbook of Rules and Guidance, *Recognised Investment Exchanges and Recognised Clearing Houses Sourcebook* (June 2001)

177 Financial Services Authority, Handbook of Rules and Guidance, *Glossary*

178 Financial Services Authority, *FSA Reviews of Counterparty Credit Risk Management by CCPs* (January 2012), www.fsa.gov.uk/static/pubs/guidance/fg12-03.pdf

can be transferred without a written instrument. From a legal viewpoint, the CSD has been seen less as part of the financial markets infrastructure than as a centralised system under which public companies can streamline the method of keeping their registers of members. Hence, under section 785 of the Companies Act 2006, regulations may be made 'for enabling title to securities to be evidenced and transferred without a written instrument';[179] and 'the regulations may make provision … for the regulation of … procedures [for recording and transferring title to securities] and the persons responsible for or involved in their operation'.[180]

The Regulations in question are the Uncertificated Securities Regulations 2001 (USRs).[181] After the United Kingdom's departure from the European Union, an 'Operator' is a person who operates, or proposes to operate, a 'relevant system' and is a recognised CSD or a (UK-recognised) third-country CSD.[182] A 'relevant system' is 'a computer-based system, and procedures, which enable title to units of a security to be evidenced and transferred without a written instrument.[183] A separate approval process is no longer required for a person to achieve Operator status, but additional regulatory requirements apply under Schedule 1 of the USRs.

8.26 The regulatory regime of the USRs contains the following elements. The Bank of England may issue directions to the Operator,[184] obtain injunctions to enforce the Operator's rules[185] and require the Operator to provide specified information, including in particular notification of rule changes.[186] The Bank may call for a report from a skilled person and appoint an investigator.[187] Elements of this structure are familiar: they closely resemble Part XVIII of FSMA.

It might be asked why a duplicate regime is necessary, given that an Operator must already be a CSD subject to Part XVIII. Operators are responsible for the root of title to United Kingdom-issued securities, and the detailed content of the USRs goes beyond the CSDR. The USRs continue to govern two matters, then: the regulation of Operators, and the technical requirements for a secure electronic system for transfer of title to securities. It is a confusing historical anomaly that two regulatory regimes, which have not been merged, remain applicable to a recognised CSD. The USRs would only be irrelevant if a CSD does not operate a 'relevant system'; but it is hard to imagine a CSD which qualifies as such but does not do that.

8.27 The following comments may be made as to the substance of the USRs:

(1) *Delivery versus payment*. Paragraph 13 of Schedule 1 to the USRs provides that 'a relevant system must be able to establish, where there is a transfer of uncertificated units of a security to a system-member for value, that a settlement bank has agreed to make payment in respect of the transfer, whether alone or taken together with another transfer for value'. This is all very well, as far as it goes. But it may be noted that the USRs

179 CA 2006 s 785(1)
180 CA 2006 s 785(2)
181 SI 2001/3755
182 USRs, reg 3, definition of 'Operator'
183 USRs, reg 2(1)
184 USRs, reg 8
185 USRs, reg 9
186 USRs, reg 10
187 USRs, regs 11A and 11B

do not provide for simultaneity between the transfer and the assumption by the settlement bank of its payment obligation; they do not provide for settlement of the cash leg in central bank money, even at the end of the day; and the mere 'agreement' of a settlement bank to make payment may not actually constitute a payment.[188] By contrast, the CSDR states that all transactions should be settled on a DvP basis;[189] the continuing need for paragraph 13 is questionable in that context.

(2) *Maximising settlement success*. Paragraph 19(2)(b) of the RRRs requires a 'recognised clearing house' to ensure that its 'clearing services involve satisfactory arrangements for securing the timely discharge (whether by performance, compromise or otherwise) of the rights and liabilities of parties to transactions in respect of which it provides such services'. In other words, paragraph 19 demanded an effort by recognised clearing houses to achieve settlement. Paragraph 19 should no longer apply to recognised CSDs, and there is no requirement in the RRRs or the USRs for a CSD actually to strive to maximise settlements. In fact, the situation is rather worse, owing to the effect of regulation 27(2) of the USRs. Regulation 27(2) obliges a United Kingdom CSD Operator to refuse to register a transfer of title 'if he has actual notice that the transfer is – (a) prohibited by an order of a court in the United Kingdom; (b) prohibited or avoided by or under an enactment; (c) a transfer to a deceased person'. One consequence was that insolvency events affecting participants have been treated by EUI as grounds for discontinuing settlements.[190]

(3) *Liability*. It was noted above that recognised bodies enjoy a certain degree of statutory immunity from liability in damages. Operators can put on a further layer of bullet-proof clothing. Regulation 23 of the USRs provides that the obligations imposed by the USRs '(a) shall not give rise to any form of duty or liability on the Operator, except such as is expressly provided for in these Regulations or as arises from fraud or other wilful default, or negligence … ; and (c) shall not give rise to any form of duty or liability enforceable by civil proceedings for breach of statutory duty'. However, as mentioned above, an Operator is liable for compensation for losses caused by forged dematerialised instructions.

(4) *Authentication of instructions.* Paragraphs 20 to 22 of Schedule 1 to the USRs require that a relevant system only respond to properly authenticated dematerialised instructions for transfers and corporate actions.

188 Cf **section 5.2**
189 CSDR, art 39(7)
190 See further **sections 18.20–18.21**

9 Legal form and governance of infrastructures

LEGAL FORM OF INFRASTRUCTURES

9.1 Whether an infrastructure is required to opt for a particular legal form and, if so, what that form might be, are questions with a perplexing variety of answers. It depends partly on the way that the law views those operations and thus the characteristic regulated activities of the entity carrying them out. As the law struggles to distinguish clearing from settlement, and as European policy struggles to wean infrastructures from dependency on the state and to promote competition, it is not surprising that different countries have different solutions to the problem.

Yet a grounding in the legal requirements for form is crucial in order to determine the governance requirements to which an infrastructure will be subject. For example, if an infrastructure needs to be a bank, that fact may require the infrastructure to take a different corporate form and will almost everywhere subject the infrastructure to special rules as to its ownership, management and organisation. Furthermore, the legal requirements for form determine other aspects of the infrastructure's strategy and development: the ability to merge, to outsource, to capitalise, to expand into new activities will all be affected by the choice of form.

CSDS AND CCPS INCORPORATED IN THE UNITED KINGDOM

9.2 The law of the United Kingdom does not specify a legal status for CCPs or CSDs. The rules are set out in the Financial Services and Markets Act 2000 (FSMA). As to CCPs: 'any body corporate or unincorporated association which is established in the United Kingdom may, where it intends to provide clearing services as a central counterparty, apply to the Bank of England in accordance with Article 17 of the EMIR regulation[1] for an order granting authorisation for the purposes of that article and declaring it to be a recognised central counterparty'.[2] Likewise for CSDs: '[w]here a legal person which is established in the United Kingdom intends – (a) to operate a securities settlement system referred to in [the

1 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

2 FSMA, s 288(1)

CSDR[3]] … it may apply to the Bank of England in accordance with Article 17 of the CSD regulation … for an order granting authorisation for the purposes of Article 16 of that regulation and declaring it to be a recognised CSD'.[4] Nor does the law of the United Kingdom specify a particular kind of corporate entity for a bank or any other type of financial institution, except that a person accepting deposits must be a body corporate or a partnership.[5] This would imply total freedom of choice: the normal form of joint-stock company (a registered company with liability limited by shares, either private or public) is typically favoured by UK financial institutions. The registered company is also the form of company chosen by most UK infrastructures – for example, LCH Limited and Euroclear UK & Ireland Limited are both private companies limited by shares.[6] However, a free choice is in practice illusory. While the choice of *corporate* form may be unrestricted in the United Kingdom, the regulatory regime which applies – and thus, the question whether the infrastructure is characterised as a bank, an investment firm, or something else – is more constrained.

9.3 Setting aside for a moment the position of clearing and settlement systems which existed before the requirements for authorisation under EMIR and the CSDR came into effect, the requirements for legal form of new systems arise because of the impact of those regulations. Although neither EMIR nor the CSDR constrains the legal form of a CCP or CSD, both regulations oblige a member state to specify the competent authority which will authorise and supervise such an entity. In both cases, the competent authority of the United Kingdom is the Bank of England,[7] although in relation to a CSD providing banking-type ancillary services the competent authority is the PRA. The Bank of England has only one mechanism under English law whereby it can authorise a CCP or CSD, which is by making a 'recognition order' under section 290 of FSMA. As explained in **section 8.16**, section 285(3) of FSMA confers an 'exemption' from the 'general prohibition' for 'recognised bodies'. The general prohibition[8] states that no person may carry on a regulated activity unless he is authorised or exempt, and section 23 of FSMA makes it an offence to contravene the general prohibition. If you are a 'recognised body', then, you will not need to obtain one or more 'permissions' – the licence which enables banks and investment firms to carry on regulated activities.

9.4 Although there is a relatively large freedom of choice for infrastructures as to their corporate form in the United Kingdom, there are some limitations in FSMA. Only a 'body corporate or unincorporated association' may apply for a recognition order as a recognised CCP.[9] Only a 'legal person' may apply for a recognition order as a recognised CSD.[10] Since there is no way to comply with EMIR or the CSDR, other than via a recognition order, the rules in FSMA

3 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc
4 FSMA, s 288A
5 FSMA, Sch 6, para 1
6 LCH: registered number 4743602; EUI: registered number 2878738
7 Financial Services and Markets Act 2000 (Over the Counter Derivatives, Central Counterparties and Trade Repositories) Regulations 2013, SI 2013/504, reg 6; Central Securities Depositories Regulations 2014, SI 2014/2879, reg 2
8 FSMA, s 19
9 FSMA, s 288
10 FSMA, s 288A

effectively preclude certain kinds of entity (such as limited liability partnerships) from becoming infrastructures.

The inclusion of unincorporated associations as eligible applicants perhaps needs a comment. The text in FSMA dates from the Financial Services Act 1986, which permitted any body corporate or unincorporated association to apply to be a 'recognised clearing house'. As explained in **section 8.14**, the concept of a recognised clearing house covered a wide front, and policy in 1986 favoured self-regulation. 'Unincorporated associations' may, in theory, be able to become recognised CCPs, but it would be an odd choice of structure in the modern marketplace, and the Bank of England may question whether it is an appropriate form for a CCP to take. When recognised CSDs were added into the categories of recognised body in 2015, the term 'legal person' was adopted instead of re-using the 1986 formula.

9.5 In relation to CCPs and CSDs which pre-dated EMIR and the CSDR, there was no obligation to obtain a recognition order, so there was a freer choice between 'recognition' and 'permission'. A sometimes-sterile debate existed for a while as to whether it was possible to have both statuses within the same legal entity; and insofar as the two were mutually exclusive a comparison of the merits was sometimes appropriate. These considerations are rendered largely irrelevant with the introduction of EMIR and the CSDR.

One legal consequence of being 'recognised' rather than holding the standard FSMA permissions enjoyed by banks is, however, still relevant. This relates to system interoperability. In order to participate in another system which is designated under the Settlement Finality Directive,[11] it will generally be necessary to be a credit institution, an investment firm or a government body. Not having this status will impair the ability to interoperate with a peer CCP or CSD, to settle payments directly (or in the case of a CCP, to settle securities delivery obligations directly at a CSD) without hiring an agent bank.

PAYMENT SYSTEMS IN THE UNITED KINGDOM

9.6 There are no legal requirements for the form of payment systems in the United Kingdom.

TO BE A BANK, OR NOT TO BE A BANK: THE POSITION IN CONTINENTAL EUROPE

9.7 Across the EU, regulatory authorities approach the unusual position of infrastructures in a variety of ways. As noted above, EMIR and the CSDR are neutral as to legal form and the regulatory category into which CCPs and CSDs should fit. However, member states may have their own arrangements. The Committee of European Securities Regulators (CESR), a predecessor of ESMA, studied the question whether CSDs and CCPs were required to have a particular regulatory form as part of its assessment of barriers to interoperability

11 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems, art 2

in 2009.[12] CESR noted that some member states require all CCPs operating in their territory to hold a banking licence; notably, these states include France[13] and Germany.[14] Likewise, CSDs may have to have a banking licence, notably in Germany;[15] CESR's report also observed in relation to Germany that acting as a CSD will constitute custody business (which may therefore require a banking licence), and that other services provided by the CSD such as the grant of credit may equally require a banking licence. So, in most member states, there is either special legislation applicable to CSDs and CCPs, or a special set of regulatory rules which are peculiar to the infrastructure business. For similar reasons, interbank payment systems may need banking licences. However, in 2020, only two CCPs in the European Union held one (Eurex Clearing AG and LCH SA)[16] and in France neither payment systems nor securities settlement systems are subject to a threshold licence requirement.[17]

Belgium may be worthy of special note. CSDs are licensed under the Royal Decree No 62 of 10 November 1967 on the promotion of the circulation of securities. As well as the National Bank of Belgium (which provides the CSD for Belgian government bonds) and Euroclear Belgium (equities), Euroclear Bank has been licensed as a CSD, in relation to its activities as ICSD for Eurobonds.

OVERSIGHT OF GOVERNANCE

9.8 It almost goes without saying that the regulator of an infrastructure should set the rules for governance of infrastructures, and to have oversight of the infrastructure's compliance with the mandated approach to governance. Unfortunately, there are at least two complications: first, infrastructures tend to be members of groups; secondly, they can have multi-country presence.

Where there is a group of companies, one of which is an infrastructure, there may be a tension between the traditional approach to consolidated supervision and the presence of the infrastructure in the group. Consolidated supervision under the Capital Requirements Directive[18] starts from the presence of a credit institution or investment firm within a group. A CCP or a payment system may be a bank, in which case consolidated supervision may apply; but if it is not a bank, it may not. A CCP or a CSD may be in the same group (silo) as a trading venue; if that venue is an MTF it will have an investment firm licence,

12 Committee of European Securities Regulators, *Preliminary Technical Advice by CESR in response to the Mandate from the European Commission on Access & Interoperability Arrangements* (February 2009), CESR document 08-870, www.esma.europa.eu/system/files/1-08_870.pdf

13 Article L. 440-1 of the Code Monétaire et Financier states: 'Les chambres de compensation … doivent avoir la qualité d'établissement de crédit'

14 Section 1(1) of the Gesetz über das Kreditwesen (Kreditwesengesetz) states 'Kreditinstitute sind Unternehmen, die Bankgeschäfte gewerbsmäßig oder in einem Umfang betreiben … . Bankgeschäfte sind … die Tätigkeit als zentrale Gegenpartei … .'

15 Section 1(3) of the Gesetz über die Verwahrung und Anschaffung von Wertpapieren (Depotgesetz) states 'Wertpapiersammelbanken sind Kreditinstitute'

16 CCP12, The ECB Considers Plans to Provide Central Banking Access to European-Based CCPs (March 2020), https://ccp12.org/the-ecb-considers-plans-to-provide-central-banking-access-to-european-based-ccps/

17 Cf Code Monétaire et Financier, art L 330-1

18 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, etc, arts 111ff

but a regulated market may not need to have that status. So different groups containing infrastructures are likely to be differently regulated.

The solution for multi-country presence is for the home country authority of the infrastructure to establish a college or other grouping of interested regulators.[19] Dr Elias Kazarian has pointed out[20] various deficiencies with multi-regulator arrangements: in particular, that their objectives of supervision may differ, and that problems developing outside the home country may be disregarded by both home and host state regulators. Indeed, this is the situation which obtained when Bank of Credit and Commerce International SA failed in 1991, leading to a specific directive on consolidated supervision.[21]

The following comments may be made:

(1) The CSDR follows the approach of the Capital Requirements Directive and MiFID[22] as regards cross-border activity within the European Union. The home state regulator must notify the regulators of countries in which the CSD intends to provide services under the CSD Regulation passport. The host state regulators may demand reports and carry out inspections of branches. If the activities of the CSD reach a level of 'substantial importance' in the host state, the two regulators may set up a college of supervisors.[23]

(2) EMIR establishes a CCP Supervisory Committee[24] for the purposes of ensuring coordination of CCP regulatory policy around the European Union. EMIR also requires the establishment of an elaborate college of regulators.[25] A college comprises, in addition to the home state regulator and the chair of the CCP Supervisory Committee, regulators supervising clearing members, regulators supervising trading venues cleared by the CCP, the regulators of interoperating CCPs and linked CSDs, ESCB members and the central banks. Evidently, this may be a large gathering. In broad terms, the function of a College is to assist the home state supervisor,[26] whereas the CCP Supervisory Committee is responsible for wider-ranging stock-taking of general supervisory policy and may initiate regulatory steps to be taken by ESMA.

9.9 There are no legislative rules for consolidated or cross-border supervision of payment systems.

Location requirement for CCPs

9.10 Until 2014, the European Central Bank (ECB) had a location requirement for CCPs. The European Court of Justice then ruled that the ECB

19 EMIR, art 18; CSDR arts 23(3), 24(4)
20 Kazarian, E, *Integration of the Securities Market Infrastructure in the European Union: Policy and Regulatory Issues* (October 2006), IMF Working Paper WP/06/241, p 21
21 Council Directive 92/30/EEC of 6 April 1992 on the supervision of credit institutions on a consolidated basis
22 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc
23 CSDR, arts 23, 24
24 CSDR, art 24a
25 EMIR, art 18(2)
26 EMIR, art 18(1)

had no competence to impose such a requirement.[27] The ECB purported to impose its requirement by virtue of Article 127(2) of the EU Treaty,[28] which sets as an objective the promotion of smooth operation of payment systems, and Article 22 of the Statute on the European System of Central Banks and the ECB,[29] which allows the ECB to adopt regulations to ensure efficient and sound clearing and payment systems. But the ECB's competence was held to be limited to 'payment systems' only. The troublesome word 'clearing' has to be interpreted in that context, meaning that the ECB has no power to regulate in respect of all types of clearing system, such as those relating to transactions in securities. The ECB sought to change that with a request to the European legislative authorities to amend Article 22, but that was unsuccessful.[30] While that is the end of the matter as far as European law is concerned, it may be of interest to understand why the ECB had purported to interfere in the freedom of establishment of CCPs. In a previous policy statement, the ECB said:

> 'The logical geographical scope of a market infrastructure is in practice the currency area … . Indeed, payment, clearing and settlement systems may trigger liquidity problems, which can only be addressed by competent local authorities, in particular central banks. … Now that the need for securities clearing is growing rapidly in the euro area, it would appear that a coherent domestic infrastructure for the euro will have to develop. Such an infrastructure should logically be located in the euro area, as is the case with core infrastructures in other monetary areas. This would be preferable from a regulatory perspective and would help the Eurosystem, as the "central bank" of the euro, to ensure the smooth functioning of payment systems, efficient monetary policy implementation and financial stability. Existing agreements among central banks give a prominent role to "domestic" authorities, as do the international agreements among central banks and possibly with securities regulators. The existence of such agreements would make it easier to achieve effective oversight of central counterparties established in the euro area. Furthermore, the location of central counterparties in the euro area would facilitate the provision, when deemed necessary and appropriate, of central bank money in euro.'[31]

The thinking is also set out in the ECB's oversight policy framework for payment systems:

> 'A financial market infrastructure can affect the stability of the financial system largely through its design characteristics, but also through its location. Relevant aspects in this context include the settlement asset the infrastructure uses, the legal regime under which it operates, its governance and the roles of overseers and other stakeholders in crisis situations.'[32]

These arguments are weakly expressed. The real reason the ECB wants CCPs and other infrastructures located in the eurozone is so that it can have unfettered

27 *United Kingdom v European Central Bank* [2015] 3 CMLR 220

28 Treaty on the Functioning of the European Union, as recast and renumbered (October 2012), OJ 2012/C326/01

29 Protocol No 4 to the EU Treaty

30 European Central Bank, letters from Mario Draghi to Helena Dalli (July 2017) and George Ciamba (March 2019), ST 10850/17 and ST 7817/19

31 ECB, *The Eurosystem's Policy Line with regard to Consolidation in Central Counterparty Clearing* (September 2001), http://www.ecb.eu/pub/pdf/other/centralcounterpartyclearingen.pdf, p 2

32 ECB, Eurosystem oversight policy framework (September 2015), section 6

control. Control might be desirable in the case of CCPs which might have an impact on the stability of the financial system which uses the euro – and some (but by no means all) CCPs could have that impact: for example, if the CCP clears euro-denominated derivative instruments, or is so heavily dependent on euro-denominated collateral that its treasury or default operations might move the market. As things stand, following the revisions of EMIR in 2019–2020, the ECB is denied a role in the supervision of CCPs, whether they are based within the European Union or outside it. The new supervisory structure for non-EU CCPs gives a limited supervisory role to ESMA, but nothing as extensive as that asked for by the ECB has been included in the legislation.[33]

Since the case was decided, the ECB and the Bank of England entered into an arrangement for the exchange of information and to allow (but not guarantee) access to the repo facility in existence between the two central banks for the provision of emergency liquidity in respect of CCPs in the United Kingdom and the euro area.[34]

PRINCIPLES OF GOVERNANCE

9.11 How an infrastructure is managed is a question of public importance as well as matter of vital interest to the owners, directors, employees and users of the infrastructure. There is, accordingly, a good deal of literature, mainly at supra-national level, on the subject of governance of clearing and settlement systems. These precepts can, however, be criticised for lack of specificity and rigour: it is therefore worth starting from first principles, to determine what the governance arrangements of infrastructures should look like.

> 'The traditional definition of corporate governance refers to relations between a company's senior management, its board of directors, its shareholders and other stakeholders, such as employees and their representatives. It also determines the structure used to define a company's objectives, as well as the means of achieving them and of monitoring the results obtained. Due to the nature of their activities and interdependencies within the financial system, the bankruptcy of a financial institution, particularly a bank, can cause a domino effect, leading to the bankruptcy of other financial institutions. This can lead to an immediate contraction of credit and the start of an economic crisis due to lack of financing, as the recent financial crisis demonstrated. This systemic risk led governments to shore up the financial sector with public funding. As a result, taxpayers are inevitably stakeholders in the running of financial institutions, with the goal of financial stability and long-term economic growth.'[35]

33 See **section 7.59** and Turing, D, 'Clearing away after Brexit?' SSRN ID 3685103 http://ssrn.com/abstract=3685103

34 European Central Bank and Bank of England, *European Central Bank and Bank of England announce measures to enhance financial stability in relation to centrally cleared markets in the EU* (March 2015), News Release, www.bankofengland.co.uk/publications/Pages/news/2015/044.aspx; European Central Bank, letter to Mr Markus Ferber MEP (June 2019), www.ecb.europa.eu/pub/pdf/other/ecb.mepletter190614_ferber~e2b1a82784.en.pdf

35 European Commission, *Corporate governance in financial institutions and remuneration policies* (June 2010), Green Paper COM(2010) 284 final, http://ec.europa.eu/internal_market/company/docs/modern/com2010_284_en.pdf

The objective of corporate governance is thus to balance the interests of the relevant stakeholders. This task falls to the board of directors of the infrastructure: the owners cannot do it, neither can the regulator, nor the users, as in all cases their involvement is too remote to have immediate effect on the tactical decision-making of the organisation or to be able to address the practical details of implementing a strategy on which they may have been consulted or exercised some power of approval. It is curious, then, that so little emphasis is given in the existing regulatory standards to these key concepts of balancing of interests, and the effectiveness of the board. Even the European Commission's Green Paper on corporate governance in financial institutions, from which the above passage was quoted, devotes as much space to questions on shareholder involvement, regulators and auditors as to the key issues of directors, risk and conflicts of interest.

9.12 The ideal governance structure should, it is suggested, have in place each of the following four building blocks in order to ensure high quality decision-making in a corporate environment:

- setting of corporate objectives and measuring their attainment
- selection, training, appraisal and removal/retirement of board members and senior managers
- internal controls and reporting lines, and the flow of relevant, timely and high-quality information to senior management and the board
- checks and balances in decision-making and ensuring due account is taken of stakeholder concerns.

Until recently, these matters have received little official attention in the post-trade space, and thinking is still in development. This may be in part because historically clearing and settlement infrastructures were seen as adjuncts to exchanges and markets; the leading study on governance of infrastructures amalgamates debate on governance of clearing and settlement systems with that on governance of exchanges,[36] assessing governance arrangements in the context of core principles for securities regulation issued by the International Organization of Securities Commissions.[37] While those principles are the right starting point for assessment of governance of exchanges, being focused on orderliness of markets, investor protection and systemic risk avoidance in that context, they are less useful in relation to post-trade infrastructures, upon the soundness of which peoples' money and property rights, and the protection of the financial system, all depend. In short, for post-trade the stakeholders are different and the stakes are higher.

9.13 Questions may arise, typically outside the European context, as to whether it is appropriate for the state to retain a role in the ownership or management of infrastructures. In Europe and the United States, the pattern of recent years has seen all forms of infrastructure move out of state control and into private, typically listed-company, hands. Private ownership raises this question particularly in the context of responsibility for support in times of crisis, an issue which is principally relevant to CCPs and considered extensively in **Chapter 14**. Bucking this trend is the decision by the Bank of England to move

36 Lee, R, *Running the World's Markets: The Governance of Financial Infrastructure* (Princeton University Press, 2011), ISBN 978-0-691-13353-9

37 International Organization of Securities Commissions, *Objectives and principles of securities regulation* (June 2010)

the UK CHAPS payment system under its control.[38] A thoughtful contribution to the debate has been made by staffers of the International Monetary Fund in the context of CSDs,[39] although many of the considerations touching on governance would be relevant to other infrastructure types.

The special position of CCPs

9.14 Unlike CSDs and payment systems, it is unavoidable that CCPs take on a burden of credit risk, acting as the focal centre for the whole market. The systemic consequences of risk concentration into a CCP are formidable. The counterparty risk management role of CCPs adds a further dimension to the question how CCPs should be run, and accordingly the governance of CCPs has attracted more comment in the literature than that of other infrastructure types.

The usual model for governance of a private enterprise is for the shareholders to choose a board of directors, who set policy direction, appoint and oversee management personnel, and regulate the operating model of the company they own. Nothing in the way infrastructures, or in particular CCPs, are to be governed, is in conflict with that basic model. But criticisms can be made of the basic model, and policy makers may be minded to modify it in the detail.

Shareholders may, or may not, be the same constituency as participants or users. There is no policy statement at international level which demands that CCPs (or other infrastructures) be constituted as user-owned 'mutuals'. Conflicts of interest may arise between the shareholders' principal commercial interest, viz. to maximise value and dividends, and that of users, which is to have their contracts and margin safely restored, including in situations of participant default. If participants, rather than shareholders, pay for defaults, a conflict exists.

Systemic risk is a difficult problem to hand over to any usual interest-group representing shareholders or even participants.

> 'Seeing the containment of systemic risk as a public good changes one's perspective on clearinghouse governance. Because no private party can enjoy the full benefit of eliminating systemic risk, no private party has an incentive to fully internalize the cost of doing so. As a result, no private party can simply be entrusted with the means of doing so because it is more likely to use those means to some other ends …'[40]

Empirical study shows that the conflict issues which may arise are not merely theoretical. For example, Dr Wenquien Huang shows that user-owned CCPs have higher amounts of capital and better-capitalised CCPs have higher collateral requirements.[41] Furthermore, Dr Huang and Dr Elöd Takáts find that a higher amount of skin-in-the-game is associated with a lower degree of model risk, but

38 Bank of England, *Real-Time Gross Settlement (RTGS) system and CHAPS Annual Report* (August 2019)

39 Wendt, F, Katz, P, and Zanza, A, *How to organize central securities depositories in developing markets: Key considerations* (February 2019), IMF How-To Note No 19/01

40 Griffith, S, *Governing Systemic Risk: Towards a Governance Structure for Derivatives Clearinghouses* (2012), 61 *Emory Law Journal* 1153–1240

41 Huang, W, *Central counterparty capitalization and misaligned incentives* (February 2019), BIS Working Paper No 767

there is no correlation between other types of shareholder-provided capital and model risk.[42]

Various solutions to these difficulties can be proposed, but all are open to criticism.

(1) Participant involvement in governance is often favoured. Although there may be no rule requiring ownership of CCPs to be vested in the participants, participants can be given a voice – even a controlling voice – in risk management. European law stops short of giving participants a controlling voice,[43] but even full participant control is open to criticism. Participants will expect their influence to be proportionate to the size of their value-at-stake, thus favouring the large-volume participants. Larger participants may have incentives which are at variance with the objectives of the wider community or the management of systemic risk. The following examples may serve as illustrations:[44]

- Larger dealers may be inclined to influence the products which the CCP believes it can safely clear. This might be done with a view to minimising the risk they assume on default of other participants, or for other reasons, but a narrow focus on a few products may not be in the wider policy interest which may be to maximise the range of cleared products.
- Larger dealers might influence the margin levels or membership criteria or other aspects of risk management. These may appear to be systemically prudent – quite the antithesis to a 'race to the bottom' feared by some regulators – but can raise the bar to an unacceptable height for new applicants for membership.[45]
- Large-volume dealers may favour one particular CCP. For clearing of OTC products, and in the absence of interoperability, counterparties of the large dealers will be left with no choice but to clear at the CCP chosen by the larger dealers.

The number of large-volume participants is small, and their influence is large. While the Dodd-Frank legislation was being debated in Congress, Representative Stephen Lynch said:

> 'Sections 726 and 765 of the bill … require the CFTC and the SEC to conduct rulemakings to eliminate the conflicts of interest arising from the control of clearing and trading facilities by entities such as swap dealers and major swap participants. This problem arises because, right now, 95 per cent of all the clearinghouses in this country are owned by just five banks. So, while we are relying on the clearinghouses to reduce systemic risk, we have the banks now owning the clearinghouses.'[46]

(2) Voting caps on the controlling influence of particular constituencies have been adopted in the United States, to curb the power of dealers. But voting caps merely reallocate the votes between the participants and the shareholders. The public-interest voice is still excluded.

42 Huang, W, and Takáts, E, *Model risk at central counterparties: Is skin-in-the-game a game changer?* (May 2020), BIS Working Paper No 866
43 See **section 7.28**
44 See Griffith, 'Governing Systemic Risk' above
45 See examples cited by Griffith, 'Governing Systemic Risk', p 1200
46 Representative Stephen Lynch (June 2010), 156 Cong Rec H5217

(3) Independent directors may be required, to represent the wider interest. Professor Sean Griffith criticises this solution, on the grounds that it is a 'corporate' solution – in other words, originally designed to protect the interests of shareholders in the face of dominant management, which is not the problem in question here – and also that it is empirically doubtful that having independent directors actually makes a difference.[47] Professor Griffith prefers a solution modelled on continental European public company two-tier boards, with a management board overseen by a public-interest supervisory board with systemic-risk objectives hard-wired into their constitutional obligations.

(4) European law favours detailed regulatory rules on the management of conflicts of interest. These are examined in **section 9.22(2)**. However, the objection which applies to voting caps also applies here, as the detailed implementation of conflict of interest management pays limited attention to the systemic risk issues and the wider public interest.

General corporate governance: International standards

9.15 In 2015 the Organisation for Economic Co-operation and Development (OECD) published a revised version of its Principles of Corporate Governance.[48] These principles are grouped under six headings, namely: ensuring the basis for an effective corporate governance framework; the rights and equitable treatment of shareholders and key ownership functions; institutional investors, stock markets, and other intermediaries; the role of stakeholders in corporate governance; disclosure and transparency; and the responsibilities of the board. The OECD Principles provide a useful reference point for assessing the way in which market infrastructures should be run. Similarly, the UK Corporate Governance Code[49] provides another useful source of best practice recommendations focusing on the composition and role of the board.

More specific precepts are set forth in the Principles for Financial Market Infrastructures (PFMI) issued by what is now the Bank for International Settlements' Committee on Payments and Market Infrastructures.[50] These have, to a large degree, been reflected in EMIR, the CSDR and the SIPS Regulation.[51] But there is no European-level regulatory statute for the majority of payment systems, and soft-law models for payment system oversight will need to catch up with the PFMI.[52]

9.16 European law enacts the general rules on governance for all types of infrastructure except payment systems which are not deemed systemically important. For systemically important payment systems, the SIPS Regulation follows the PFMI carefully. EMIR and the CSDR both depart from the PFMI

47 See Griffith, 'Governing Systemic Risk', pp 1222–1225

48 Organisation for Economic Co-operation and Development, *G20/OECD Principles of Corporate Governance* (November 2015),

49 Financial Reporting Council, *The UK Corporate Governance Code* (July 2018)

50 CPSS and IOSCO, *Principles for financial market infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf

51 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28); see **section 7.15**

52 See further **section 9.18**

text, but oblige the infrastructure to have governance arrangements which address the following:

- a focus on risk
- composition of the board
- risk (CCPs) and user (CSDs) committees
- management of conflicts of interest
- remuneration of management personnel
- transparency
- audit.[53]

EMIR states that a CCP is to have 'an organisational structure that ensures continuity and orderly functioning in the performance of its services and activities'.[54] EMIR also expressly requires separation of the reporting line for risk management from other operations,[55] and its rules on governance refer to the importance of IT systems;[56] these obligations do not expressly apply to CSDs as governance requirements. More detailed assessment of various aspects of the governance obligations under EMIR and the CSDR is given below.

Governance of infrastructures in the United Kingdom

9.17 Very limited additional governance arrangements are required of infrastructures under the laws of the United Kingdom.

As to CCPs and CSDs, the legal requirements are now set by EMIR and the CSDR, so that the previous legislation in the Recognition Requirements Regulations,[57] and the rules and guidance of the former Financial Services Authority,[58] regarding governance – which had, it should be said, no great detail – no longer apply.

The position of payment systems is complicated. A payment system which is to be designated for the purposes of the Settlement Finality Directive[59], and would therefore apparently be 'systemically important', must only comply with the designation criteria set out in the Schedule to the Settlement Finality Regulations,[60] which say nothing about governance. A 'recognised' interbank payment system must comply with the PFMI. [61]

The Bank of England's published approach to supervision of financial market infrastructures emphasises that the responsibility of infrastructures goes beyond 'the management of micro prudential risks to the institution itself' and should

53 EMIR, arts 26–28, 33; CSDR, arts 26–28
54 EMIR, art 26(3)
55 EMIR, art 26(4)
56 EMIR, art 26(6)
57 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001, SI 2001 No 995, Schedule, paras 17, 21 in particular
58 FSA, Handbook of Rules and Guidance, *Recognised Investment Exchanges and Recognised Clearing Houses Sourcebook* (June 2001), REC 3.6
59 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems
60 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979
61 See **section 8.4**

consider systemic risks.[62] 'For supervised FMIs which form part of wider groups, the Bank will want assurance that other group priorities are not directly or indirectly imposed on supervised institutions at the expense of the FMI's responsibility for managing risk, and, in particular, systemic risk.'

In relation to CCPs, the Bank expresses concern that in times of stress CCPs will be inclined to increase margin requirements, 'draining liquidity from market participants just when it is most scarce'. CCPs are expected to act less pro-cyclically, though the balance between placing the participants under liquidity pressure and placing the CCP in danger in the event of a default is a balance between two species of systemic risk and not easy to resolve. The Bank itself, as supervisor, eschews involvement in the debate, and it appears that the CCP's self-protective instinct tends to win out.[63]

Principles for FMIs

9.18 The PFMI include much of the general material expected from the OECD Principles. However, instead of a focus on shareholder protection, the focus is on safety and users. Specifically, the PFMI state:

> '**Principle 2: Governance**
>
> An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.
>
> *Key considerations*
>
> 1. An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations….
>
> 7. The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders …'

In formulating objectives, the infrastructure will need to undertake the complex balancing process between the concerns of management, owners and other interested parties. It is not surprising, given the diversity of existing practices and governance models within the clearing and settlement industry, that regulators (and, *a fortiori*, supra-national bodies) are shy of spelling out how infrastructures should balance these concerns. But public interest factors should, apparently, outweigh private factors (reduction of cost, increase of profit, marketability of ownership stakes, protection of franchise). Where the infrastructure is run on a for-profit basis – a topic considered further in **section 9.29** – this balance will be difficult to achieve.

9.19 The content of an infrastructure's governance arrangements is described as follows:

62 Bank of England, The Bank of England's approach to the supervision of financial market infrastructures (April 2013), para 3.1

63 See Turing, 'Clearing away after Brexit', Figure 1

> 'Governance arrangements, which define the structure under which the board and management operate, should be clearly and thoroughly documented. These arrangements should include certain key components such as the (a) role and composition of the board and any board committees, (b) senior management structure, (c) reporting lines between management and the board, (d) ownership structure, (e) internal governance policy, (f) design of risk management and internal controls, (g) procedures for the appointment of board members and senior management, and (h) processes for ensuring performance accountability. Governance arrangements should provide clear and direct lines of responsibility and accountability, particularly between management and the board, and ensure sufficient independence for key functions such as risk management, internal control, and audit. These arrangements should be disclosed to owners, the authorities, participants, and, at a more general level, the public.'[64]

9.20 EMIR broadly reflects these principles, imposing requirements for organisational structure, board composition, reporting lines, risk management, controls and criteria for senior management. EMIR also provides a degree of independence for the risk management function and requires transparency of governance arrangements and rules.[65] By and large, the CSDR covers similar ground.[66]

It may be convenient to examine several of these issues in turn.

BOARD AND COMMITTEES

9.21 The board of directors is where the strategic direction of the company is to be determined; it is also the body which determines the structure and controls applicable to the day-to-day management of the business. The board may delegate its powers to individual managers or to committees, but it is the board which decides whether and how this should be done. Moreover, the board will effectively control the timing and business agenda of shareholders' meetings, and the communications with users and the wider community. In short, the board is at the centre of the governance web. If the balance between the different interest groups is to be successfully achieved, with the optimum outcome in terms of risk management, delivery of service, profitability (where a profit-based strategy is being pursued) and efficiency in terms of value for money, the board must be composed of persons who are able to see and weigh these different objectives, articulate their decisions on that balance clearly, set day-to-day management goals and impose controls to ensure that the objectives are satisfied, and at the same time handle crises and resist inappropriate external pressures.

9.22 The following points regarding boards may be mentioned:

(1) *Composition of the board*. Under EMIR, the competent authority can remove a board member whose conduct 'is likely to be prejudicial to the

64 PFMI, para 3.2.3
65 EMIR, arts 26–28
66 CSDR, arts 26–28

sound and prudent management of the CCP'.[67] But detailed rules on board composition have not typically featured in regulators' requirements about governance of infrastructures. The Bank of England recommends user representation in governance and fully independent directors and suggests that a mutual ownership structure would align interests. Evidently that is not a strong recommendation, given that UK infrastructures are not mutually owned.[68] In a similar vein, for corporates of all descriptions, the European Commission recommends that '[t]he presence of independent representatives on the board, capable of challenging the decisions of management, is widely considered as a means of protecting the interests of shareholders and other stakeholders'.[69] EMIR now requires not less than one-third (and no fewer than two) of the directors of a CCP to be 'independent',[70] as does the CSDR in respect of a CSD.[71] This is clearly desirable, but there are difficult questions about who is independent, and the extent to which users and other stakeholders should be represented (and indeed whether they would count as 'independent' directors if they are). A long list of factors relating to independence such as that set out in the European Commission's Recommendation on non-executive directors will be valuable guidance, but is unlikely to be conclusive.[72] Dr Ruben Lee[73] cites, in relation to exchanges, a rule of the United States' Securities Exchange Act[74] for ensuring 'fair representation' on the board of an exchange, which requires that at least one director is to be a representative of issuers and investors. Dr Werner Langen MEP urged that key market participants should not have a controlling influence on the governance and risk management of CCPs.[75]

In practice, infrastructures may assert that they already observe these rules. CCPs, CSDs and the ICSDs include outsiders among their board members, typically drawing on the user community to provide senior-level expertise from within the industry. Yet even this practice could be criticised. The Commission's Recommendation specifies that independent directors ideally should not 'have, or have had within the last year, a significant business relationship with the company or an associated company, either directly or as a partner, shareholder, director or senior employee of a body having such a relationship',[76] a notion which is reflected in the PFMI.[77] This could appear to disapprove, if not prohibit,

67 EMIR, article 31(1); see also Financial Services and Markets Act 2000 (Over the Counter Derivatives, Central Counterparties and Trade Repositories) Regulations 2013, SI 2013/504, reg 15A

68 Bank of England, *The Bank of England's approach to the supervision of financial market infrastructures* (April 2013), para 3.1

69 Commission Recommendation 2005/162/EC of 15 February 2005 on the role of non-executive or supervisory directors of listed companies and on the committees of the (supervisory) board (February 2005), Recital 7

70 Article 27(2)

71 Article 27(2)

72 Recommendation 2005/162, Annex II

73 Lee, *Running the World's Markets*, p 247

74 Securities Exchange Act 1934, PL 73-291, 48 Stat 881, s 6(b)(3)

75 Langen, W, *Report on derivatives markets: future policy actions* (June 2010), European Parliament Committee on Economic and Monetary Affairs document A7-0187/2010, http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A7-2010-0187+0+DOC+PDF+V0//EN&language=EN, para 26

76 Recommendation 2005/162, Annex II, para 1(e)

77 PFMI, para 3.2.9

the practice of appointing senior industry specialists who are still serving as senior managers of users or suppliers of the infrastructure concerned. Dr Lee illustrates the point by listing the directors of Euroclear SA/NV holding office in 2006:[78] an overwhelming majority were employed by financial institutions which, as well as being users, were also suppliers and/or competitors. A second criticism is that holding a non-executive directorship of an infrastructure can be seen as a position of prestige for long service to the industry, more in the nature of a lifetime-achievement award than a specialist role requiring substantial commitment of time and thought which may not be compatible with a full-time demanding job for another financial institution. Further, the usefulness of non-executives for the governance of infrastructures may be limited: Dr Lee[79] gives numerous reasons why independent directors may not be effective, including management influence over the nomination process, lack of commitment by the independent directors, deference to management, lack of clarity of the organisation's objectives, the primary loyalty of a person to their employer, and the inherent difficulty in balancing the conflicting interests of stakeholders.

(2) *Conflicts of interest*. The Companies Act 2006 imposes a general duty to avoid conflicts of interest, but conflict situations can be disclosed to the other directors and the conflict waived by a board resolution.[80] The (now withdrawn) guidance notes on Core Principle X for systemically important payment systems had this to say:

> 'Because directors are usually nominated by participants, they may have conflicts of interest in overseeing or governing a payment system that arise because (1) they represent organisations that compete with other owners and/or (2) the interests of the company operating the payment system may not coincide with those of the director's employer. It is possible that this problem cannot be fully avoided, but it can be addressed by adopting clear and transparent policies in this area.'[81]

Although the Core Principles have been superseded by the PFMI, the guidance is likely to be of continuing validity where an infrastructure is governed exclusively by participants' nominees.

User representatives may encounter significant risk of conflicts in carrying out their role on the board or committee of an infrastructure. Examples could be decision-making about declaring a competitor to be in default; obtaining information about other participants' volume of business or other confidential information; or where the infrastructure receives, or is about to issue a tender for, services which the representative's organisation might supply. To manage these cases, it might be better for the representative concerned to resign, or to absent herself from the relevant part of the meeting and to ensure that information is suitably filtered before it reaches her. Sharing of participants' data among selected participants who

78 Lee, *Running the World's Markets*, pp 228–9

79 Lee, R, *The Governance of Financial Market Infrastructure* (January 2010), Oxford Finance Group , Vol 1, pp xvii–xviii

80 Companies Act 2006, ss 175, 180(4)

81 CPSS, *Core Principles for Systemically Important Payment Systems* (January 2001), www.bis.org/publ/cpss43.pdf?noframes=1, para 7.10.14

have privileged access due to their board position is dangerous from the viewpoint of competition law.[82]

It has also been suggested that CCPs might be directed by powerful clearing members to limit the range of cleared products, so as to preserve the uncleared businesses of those firms or their affiliates.[83] Whether or not the economic incentives would actually work that way, concerns such as this indicate that a good balance between interests is needed on the board.

EMIR has a whole article of primary legislation devoted to conflicts of interest.[84] This stipulates that CCPs must have written conflicts arrangements which identify, manage and disclose conflicts, where they arise between the CCP (including its managers, employees and controllers) and the clearing members and/or clients. Misuse of information is one expressed concern.

Another source of conflict is the risks inherent in the vertical silo structure,[85] which may distort the formation of suitable 'objectives' because of the desire to protect a franchise in an adjacent economic space (for example, to protect the revenue of an exchange, by operating a wholly-owned CCP in a particular manner which would not necessarily be explicable if the CCP were fully independent). The question of conflicts was explored by the ECB in a paper which reached three conclusions.[86] These were, in the first place, that to contain the potentially detrimental effects of conflicts arising in CSDs and CCPs offering banking services, decisions concerning risk management should be taken independently of other management decisions. This finding would explain the contemporaneous recommendation of the Committee on Payment and Settlement Systems (CPSS)[87] that CCPs should have independent reporting lines for risk management, now enshrined in Article 28 of EMIR. The other two conclusions of the ECB on conflicts were that mechanisms were needed to resolve conflicts between the different entities in a vertically or horizontally integrated group comprising more than one clearing or settlement system; and that where multiple markets are served, the interests of foreign customers and shareholders should be taken into account.

EMIR RTS 153 adds into the governance mix the need for a CCP to have processes for accountability to stakeholders, and for CCPs which are part of a group to take into account implications of the group, including whether it has the necessary level of independence to meet tis regulatory

82 See **section 4.13**; and European Commission, *Commission approves the Volbroker.com electronic brokerage joint venture between six major banks* (July 2000), Press Release IP/00/896, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/00/896&format=HTML&aged=1&language=EN&guiLanguage=en

83 Pirrong, C, *The Economics of Central Clearing: Theory and Practice* (May 2011), ISDA Discussion Paper No 1, www2.isda.org/attachment/MzE0NA==/ISDAdiscussion_CCP_Pirrong.pdf, p 29

84 EMIR, art 33

85 See **section 11.23**

86 Russo, D, et al, *Governance of Securities Clearing and Settlement Systems* (October 2004), European Central Bank occasional paper No. 21, www.ecb.int/pub/pdf/scpops/ecbocp21.pdf

87 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Recommendations for Central Counterparties* (November 2004), www.bis.org/publ/cpss64.pdf, para 4.13.4

obligations as a distinct legal person.[88] Specifically, the CCP must consider whether its independence could be compromised by the group structure or by any board member also being a member of the board of other entities of the same group.

The CSDR addresses conflicts through CSDR RTS 392.[89] Similar considerations to those arising with regard to CCPs are mentioned, though there is less focus on risk, and potential personal conflicts of management are itemised (including the plurality problem in relation to board memberships).

One further comment can be made about conflicts of interest. Sometimes the conflict rules under MiFID[90] are mentioned in the context of corporate governance,[91] but these are about conflicts which adversely affect clients, rather than the misalignment of different 'objectives' of infrastructure management and are of limited relevance. The ECB/CESR Recommendations for CCPs mentioned the risk of misuse of sensitive information on participants' positions:[92] this *is* an example of a MiFID-style conflict, but the concern of the authorities seems to be misplaced. A CCP is likely to have non-clearing relationships with its participants, for example for the purposes of treasury management (deposit placement, repo-based liquidity facilities, etc); it would be odd if the CCP were not permitted to have an overall view of its total clearing- and non-clearing-based exposures and to take risk decisions accordingly. CCPs should act with integrity, but to elevate the remote possibility of improper use of information into a principle of corporate governance while ignoring far more serious issues is an error of emphasis.

(3) *Board members' skills*. The criteria for fitness and propriety of directors are very weak under EU legislation: directors of credit institutions, investment firms and payment institutions must be of 'sufficiently good repute' and have 'adequate expertise' (EMIR)[93] or have an 'appropriate mix of skills, experience and knowledge of the entity and of the market' (CSDR).[94] These rules reflect the thinness of the requirements of the Capital Requirements Directive[95] and other financial sector legislation on directors' skills. The Financial Conduct Authority has gone much further in the United Kingdom, having an entire sourcebook devoted to the fitness and propriety of directors of authorised firms[96] – but as infrastructures are

88 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2013 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties, art 3

89 Commission Delegated Regulation (EU) No 392/2017 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories, art 50

90 Article 23 of MiFID requires investment firms to identify conflicts of interest and art 16(3) requires them to take steps to prevent conflicts adversely affecting clients' interests

91 European Commission, *Corporate Governance Green Paper* COM(2010) 284 final, para 3.1

92 ECB and Committee of European Securities Regulators, *Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union* (May 2009), www.ecb.eu/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf, Recommendation 13, para C.5

93 MiFID, art 27(2)

94 MiFID, art 27(4)

95 Capital Requirements Directive, art 91

96 Financial Conduct Authority, Handbook of Rules and Guidance, *The Fit and Proper Test for Approved Persons* (March 2016)

generally not authorised, United Kingdom infrastructures do not have to abide by it.

The Group of 30 observed that directors of infrastructures need to have additional qualities above those of typical trading companies:

> 'Many strategic decisions require evaluation and weighing of difficult trade-offs, such as … maintaining a proper balance between the pursuit of potential cost savings and acceptable constraints of safety and risk management. For most such decisions, each of the different stakeholder groups will have different preferences, further complicating matters. Moreover, the requirement to oversee the commercial, operational, and risk management practices of the organization demands a thorough understanding of the mechanics of the business. In aggregate, these challenges go beyond those typically faced by the boards of similarly sized commercial organizations and underscore the strategic importance of clearing and settlement infrastructure …'[97]

(4) *Duties of the board.* The PFMI list the directors' duties as follows:

> '(a) establishing clear strategic aims for the entity; (b) ensuring effective monitoring of senior management (including selecting its senior managers, setting their objectives, evaluating their performance, and, where appropriate, removing them); (c) establishing appropriate compensation policies (which should be consistent with best practices and based on long-term achievements, in particular, the safety and efficiency of the FMI); (d) establishing and overseeing the risk-management function and material risk decisions; (e) overseeing internal control functions (including ensuring independence and adequate resources); (f) ensuring compliance with all supervisory and oversight requirements; (g) ensuring consideration of financial stability and other relevant public interests; and (h) providing accountability to the owners, participants, and other relevant stakeholders.'[98]

In contrast, the starting point in the United Kingdom is the Companies Act 2006, which has codified the duties of directors of companies. Section 172 sets out one of the primary duties, which is to 'act in the way, he considers, in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole' and here at once is exposed a primary problem for independent directors of infrastructures. Their job is focused around the 'benefit of the members' – that is (to eliminate a piece of potential confusion, given that participants in infrastructures are often referred to as 'members') the benefit of the *shareholders*. Certainly, the director is required to 'have regard (amongst other matters) to – (a) the likely consequences of any decision in the long term, (b) the interests of the company's employees, (c) the need to foster the company's business relationships with suppliers, customers and others …'[99] but these are just factors to consider in assessing the benefit of the shareholders.

The Companies Act is a general statute and not focused on the financial sector, let alone systemically crucial parts of that sector, so it is not a surprise that the directors are supposed to treat the shareholders as

97 Group of Thirty, *Global Clearing and Settlement: A Plan of Action* (January 2003), p 119
98 PFMI, para 3.2.8
99 Companies Act 2006, s 172(1)

their constituents – but the statutory duty puts non-executive directors of infrastructures in a quandary. If all else is equal, the interests of the shareholders win out, not the public interest of the financial system. The UK Corporate Governance Code[100] is full of useful guidance on induction, skills, information, performance evaluation, re-election and more which will assist any company in appointing a high-quality board. But the Code, being again a general measure, cannot assist on this specific problem.

(5) *Committees.* EMIR requires CCPs to have a risk committee,[101] and the CSDR requires CSDs to have a user committee.[102] It would also be common for an infrastructure to have some or possibly all of the following committees, to allow full debate at policy-forming level, of the relevant issues: a nominating committee, to refresh and ensure balance at board level; a remuneration committee, to determine the salary and other emoluments of management; a rules committee; and an audit committee. In the case of CSDs, CSDR RTS 392 requires the establishment of a risk committee, an audit committee and a remuneration committee.[103]

Committees can also be used as a device for introducing outside interest into governance. Committees may be 'committees of the board' – in other words, committees which exercise the power of the board through formal delegation – or 'management' or 'advisory' committees whose status is more nebulous. Typically, a company is constitutionally empowered to establish committees which include non-directors in their constitution, which allows for the possibility of outsiders to join in the governance. In some organisations, the drive for inclusiveness can lead to a proliferation of committees and chairmanships without in practice enhancing the decision-making processes.

9.23 An informative case study is given by Dr Lee of a CCP with an ill-constructed board.[104] The problems reportedly included: insufficient time devoted by the chairman; the board being too large; the high rate of turnover of directors; the directors having seen their role as user representatives rather than to push through tough decisions; vested interests, particularly those of larger shareholders represented at board level; and confusion between the roles of the board of the parent company and the boards of the main operating subsidiaries. The problems manifested themselves as an expensive, unsuccessful IT project, and culminated in the resignations of senior management and a reorganisation of the shareholding structure.

MANAGEMENT, INTERNAL CONTROLS AND AUDIT

9.24 While it is clear that the centre of power within a corporate organisation is the board, it is also clear that a governing body comprised largely of non-executive members will be highly dependent for due execution of their decisions on effective and responsible managers who are acting in line with the policy of the board, not just in what they do but also in what they do not do. The processes for keeping a grip on management assume that the board controls management,

100 Financial Reporting Council, *The UK Corporate Governance Code* (September 2014)
101 EMIR, art 28
102 EMIR, art 28
103 CSDR RTS 392, art 48
104 Lee, *Running the World's Markets*, p 231ff

and not the other way around. Some infrastructures may operate on the practical footing that management is the permanent secretariat answering to a government which is subject to political change from time to time – that approach may lead to insufficient self-criticism of the effectiveness of management.

Both EMIR and the CSDR set out rules that are in broad alignment with each other and with the general precepts applicable to other financial institutions. So, CCPs and CSDs must have clear organisational structures, internal control mechanisms, remuneration policies and internal audit functions.[105]

There is a great deal of literature on design and implementation of systems and controls for financial institutions, sometimes falling under the heading of management of operational risk.[106] Any attempt to summarise this is bound to select some issues at the expense of others of equal importance. Nevertheless, at minimum a clearing or settlement infrastructure should have the following in place: clear, written, available organisation charts showing reporting lines; clear, written, available job descriptions explaining the role of each person in the organisation; monitoring of automated processes, including reconciliation with participants; double-checks by a second person on non-automated processes; external audit of systems and controls as well as accounts; and a structure for review of its controls and reporting on control breaches and exceptions.

One means of ensuring management do not become autocratic is the mechanism of audit. This is an ex-post control, and therefore of limited preventive value in relation to crises or unpredicted events. However, the principle of control through audit is acknowledged at European level. European company law has, in the Statutory Audit Amending Directive, identified a certain type of organisation known as the 'public-interest entity', which includes listed companies and banks.[107] It is open to Member States to designate other types of entity as public-interest entities; as Recital (23) to the directive notes, 'public-interest entities have a higher visibility and are economically more important'. It is therefore appropriate for unlisted post-trade infrastructures which are not already configured as banks to be subject to the same strictures as public-interest entities under EMIR and the CSDR. But auditors have much more to offer than the mere vetting of accounts. They can, in particular, probe the effectiveness of control and management systems, and that role is given to the internal audit function in the case of CCPs[108] and CSDs.[109]

OWNERSHIP AND CONTROL

9.25 Control may be exercised over the board, and, indirectly, over management, by the shareholders or owners of the company which operates the infrastructure. Engagement of shareholders in governance is challenging, as the European Commission has noted.[110] But in the case of infrastructures to expect

105 EMIR, art 26; CSDR, art 26; EMIR RTS 153, arts 4, 7, 8, 11; CSDR RTS 392, arts 48, 49, 51

106 See Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel Publishing, March 2009), section 6.11

107 Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, etc, art 2(13)

108 EMIR RTS 153, art 11(1)(a)

109 CSDR RTS 392, art 51(1)(a)

110 European Commission, Corporate Governance Green Paper COM(2010) 284 final, para 3.5

shareholders to control the company's operations in the wider public interest may be wishful thinking.

EMIR regulates the ownership of CCPs in a similar fashion to the regulation of banks' controllers under the Capital Requirements Directive.[111] Shareholders with 10% of the capital or voting rights have to be considered 'suitable' by the regulator, and changes of control have to be notified and approved.[112] Where 'close links' exist between the CCP and another person – this phrase would encompass vertical ownership arrangements – the regulator must be satisfied that the links 'do not prevent the effective exercise of the supervisory function'.[113] There is no rule preventing a CCP from owning a subsidiary (indeed EMIR expressly envisions it[114]), but a regulator could apparently oblige a CCP to divest under Article 47, which limits the ways in which a CCP can invest.

The CSDR has provisions on ownership of CSDs[115] comparable to EMIR's, although less detailed. The CSDR is, instead, much more concerned about subsidiaries, and Article 18 allows a CSD to have 'participations' (in the ownership sense) only in other CSDs or entities which will not expose the CSD to undue risk. The relevant considerations are set out in CSDR RTS 392[116]; it may be noteworthy that they specifically require the regulator to take into account whether the non-CSD entity 'provides services that are complementary to the core services offered by the CSD, … such as (i) a CCP …; or (ii) a trading venue …'

The change-of-control obligations have been implemented in the United Kingdom through Part 6 of the Financial Services and Markets Act 2000 (Over the Counter Derivatives, Central Counterparties and Trade Repositories) Regulations 2013,[117] and regulations 5F–5K of the more concisely named Central Securities Depositories Regulations 2014.[118] It might be noted that the Financial Services and Markets Act 2000 already had extensive provisions on the change of control of recognised investment exchanges[119] – the fact that these sections did not apply to 'clearing houses' (then meaning CCPs and CSDs) is informative about the priorities and concerns of legislative and regulatory policy before the financial crisis of 2008.

It might be observed that the change-of-control rules do not help an infrastructure which wishes to have an ownership base which reflects the volume of business of each user. That would imply a constantly changing proportion of control; Dr Lee's research in 2010 suggested that such structures have not been adopted in practice.[120]

The Bank of England has power under section 192C of FSMA to give directions to a qualifying parent undertaking of a recognised CCP or recognised CSD, as further discussed in **section 8.22**.

111 EMIR, art 30
112 EMIR, art 31
113 EMIR, art 30(3)
114 EMIR, art 47(6)
115 CSDR, art 27(6)–(8)
116 Article 39
117 SI 2013/504
118 SI 2014 No 2879
119 Sections 301A–301M
120 Lee, *Running the World's Markets*, p 223

9.26 Evidently, as noted in **section 11.23**, the legislation is not intended to discourage infrastructures from aggregating into vertical groups, and indeed this is the observed pattern. In contrast to the previous century, when the general pattern was that CCPs were affiliated to exchanges owned by their members and CSDs were owned and/or operated by central banks, now the post-trade securities and derivatives infrastructures have become demutualised and consolidated into specialist infrastructure groups.[121]

The 2020 pattern of ownership of European CSDs and CCPs is shown in **Table 9.1**. It is apparent that 'user control' is a rarity. Further, CSDs and CCPs overwhelmingly belong to groups of companies which contain other infrastructures; in fact, CSDs tend to be in groups including stock exchanges, and CCPs which clear cash equities transactions follow the same pattern. Derivatives-clearing CCPs are all affiliated to some sort of exchange or trading platform, even though a number of them clear OTC derivatives transactions which do not originate in organised marketplaces. It may also be noted that some CCPs (but not a significant number of CSDs) are controlled by, or have substantial participation as shareholders from, non-EU infrastructure groups. Consolidation into larger groups headquartered in Hong Kong, the United States, the United Kingdom and Switzerland has characterised group structure formation since the financial crisis of 2008.

Table 9.1 Ownership of CSDs and CCPs[122]

	Total number[1]	**Listed parent**[2]	**Bank and/ or user owners**[3]	**State ownership stake**[4]	**CSD/CCP affiliation**[5]	**Exchange affiliation**
CCPs	16	12	3	2	12	15
CSDs	22	7	14	5	8	12

Notes:
[1] ESMA's listings were used despite some anomalies. These include inclusion of UK CCPs, but not the UK CSD, and the omission of numerous other CSDs known to exist in EU Member States; [2] Projected acquisition of EuroCCP (by CBOE) assumed to be completed; [3] Projected acquisition of BME (by SIX) assumed to be completed; [4] Including central bank stake; [5] For CCPs, number affiliated to CSDs; for CSDs, number affiliated to CCPs

Whether it is desirable that infrastructures cluster into groups may be assessed under various headings.

- *Profit model*. This issue is considered in **section 9.29**.
- *Cross-contamination and risk*. By contrast with banks and insurers in Europe, there is no system of consolidated prudential supervision of infrastructure groups. Instead, each entity is regulated as if it were a stand-alone entity. Whether contamination (in the sense of a financial or operational problem infecting other infrastructures within a multi-function group) is a risk depends on whether one infrastructure is allowed

121 See Cox, R, and Steigerwald, R, Incomplete Demutualization and Financial Market Infrastructure: Central Counterparty Ownership and Governance After the Crisis of 2008–09' (2016), 4 *Journal of Financial Market Infrastructures*25

122 Sources: ESMA, *List of Central Counterparties authorised to offer services and activities in the Union* (April 2020); ESMA CSD Register (April 2020); corporate websites of infrastructures reviewed June 2020

to provide financial support to an affiliate; whether operational platforms are shared; how capital is raised within the group and downstreamed; and how capital requirements are calculated. The last of these matters is considered in **sections 7.29** and **7.43**; the others are barely touched on by regulation.

- *Pricing and user services*. No doubt efficiencies happen as a result of consolidation. The questions which arise are largely ones concerning competition law and policy and considered in **section 9.30** and **Chapter 11**.

9.27 User ownership, or user governance, may at first to be an attractive proposition, but it is not without its difficulties. It was already observed that there is potential for conflicts of interest at board level and that boards composed of user representatives may be unable to act firmly and decisively. Other concerns include; lack of homogeneity among the controllers, making consensus hard to achieve; and the risk that organisations run as 'cooperatives' tend to be conservative rather than innovative. A free market in the shares of the organisation will tend to keep management up to the mark.

The motivations of the different types of owner are likely to be self-evident: the user-owners are likely to be protective of their franchise and wary of innovation; the independent owners and, possibly, the exchanges, may be tempted to maximise short-term profitability at the expense of longer-term risk-focused considerations. There is, of course, no hard evidence for any such motivations – a study by the CPSS was unable to draw any conclusions as to a possible correlation between user-ownership and reduced risk[123] – and to quote Dr Lee:

> 'There is no evidence that any one of the main governance models a market infrastructure institution may adopt best delivers investor protection. There is no evidence that any one of the main governance models a market infrastructure institution, and particularly a CCP, may adopt best reduces systemic risk.'[124]

'Current regulatory thinking,' said Mr Benoît Coeuré of the ECB in 2015, is 'that social benefits, such as innovation and incentives for sound risk management, will arise from CCPs remaining for-profit entities'.[125] This statement does not appear to have been explained or justified in more fully-reasoned publications of the ECB or other international bodies. Professor Craig Pirrong argues, in relation to CCPs, that there ought to be 'alignment of ownership and control rights on the one hand, and the incidence of risk on the other. That is, those who bear the counterparty risks assumed by a CCP should have the power to make decisions that affect the riskiness of the CCP'.[126] The risk in a CCP is borne primarily by the contributors to the default fund; unless the ownership and control is also vested in its participants, there would appear to be no such alignment. Professor Griffith makes similar points in his analysis.[127]

It should be observed, though, that all these commentaries pre-date the regulatory policy that now prevails in relation to CCPs which are in financial difficulty: as discussed in **section 14.32**, it is the participants, not the shareholders, who

123 CPSS, *Market structure developments in the clearing industry: implications for financial stability* (September 2010), http://www.bis.org/publ/cpss92.pdf

124 Lee, Oxford Finance Group Report, p xxiii

125 Coueré, B, *The international regulatory agenda on CCP links* (November 2015), speech, www.ecb.europa.eu/press/key/date/2015/html/sp151102.en.html

126 Pirrong, ISDA Discussion Paper, p 26

127 See Griffith, 'Governing Systemic Risk'

are expected to shoulder the costs of keeping the CCP afloat when the cause of the difficulty is a participant default. The new policy reinforces the points which Professors Pirrong and Griffith make.[128] Sir Paul Tucker, when Deputy Governor of the Bank of England, summed it up in a speech in 2013:

> 'There is a risk that central counterparties (CCPs) will come to be seen as too important to fail as a matter of policy. That makes it incredibly important that CCPs are robust, effectively managed, effectively supervised, and have first rate recovery plans. And, beyond that, they absolutely must be subject to a credible resolution regime. I worry that CCPs are 'for profit', or are typically part of 'for profit' groups. If a CCP fails and it turns out that its risk management was slack, this point is bound to come up in the public response. Policymakers should think about that now in the context of the governance structure they want for CCPs embedded in vertically integrated groups.'[129]

Ultimately all of this discussion is about one thing, which is absent from the international regulatory guidance, if not the research literature:[130] What is the proper balance between the interests of the shareholders, the users, and the financial system? Without that compass to steer by, the owners and governors of financial market infrastructures must guess.

It seems wrong that whether an infrastructure focuses on financial stability or profit should be a matter of free choice, driven by the ownership structure adopted. It may therefore be appropriate to look at the question whether a post-trade infrastructure should indeed be configured as a for-profit entity.

9.28 Who should own the post-trade infrastructure, and whether an infrastructure should operate on a for-profit basis, are thus questions which have generated intense debate. There are several factors at work.

(1) *Public-interest utility status*. 'Clearing and settlement is seen as a utility function and there is a concern that exchanges – particularly for-profit exchanges – could keep clearing and settlement prices high, cross-subsidise trading fees or control access to the process chain so as to prevent entry by competitors. This view is supported by the joint statement of principles issued by trade organisations in the UK, France, Sweden and Italy in February 2005.'[131] The first part of this statement sets out a principle of general philosophy supported by many market users – that infrastructures provide a common good, and should not seek to make a profit.

(2) *User power*. One has to interpret the commentaries with care, because public-interest 'utility' arguments may be used to support continuation of 'mutual' ownership structures where control is firmly vested in the users of the infrastructure. User power may be inimical to optimal management of risk;[132] other disadvantages of 'mutual' structures include the brake on decision-making needed to achieve consensus among diverse interest groups, and that 'management may be able to pursue its own interests by dividing and ruling among the various user interests'.[133]

128 See further **sections 17.38** and **14.32**

129 Tucker, P, *Solving too big to fail: Where do things stand on resolution* (October 2013), speech, www.bankofengland.co.uk/publications/Pages/speeches/2013/685.aspx

130 See the findings of Dr Wenquian Huang referred to in **section 9.14**

131 Bourse Consult, *The Future of Clearing and Settlement in Europe* (December 2005), City Research Series No 7, p 28 and Appendix D

132 Langen Report, para 26

133 Lee, Oxford Finance Group Report, p xv

(3) *Profit motivation*. If an organisation is run for profit, its decision-making is more likely to be 'agile, flexible, streamlined and swift', 'provide a good incentive for management to perform well', and 'respond to the demands of all market participants, independent of whether they are members of the institution or not'.[134]

(4) *Capital requirements*. CCPs and CSDs are to be required by regulatory rules to maintain a certain amount of capital. If the capital requirement is high relative to the organisation's ability to generate a return on investment, there is likely to be little reason to choose a for-profit model. The capital requirements of EMIR and the CSDR are, however, too limited to constitute any real constraint on choice.[135]

For profit or not for profit

9.29 There are broadly three models for ownership of clearing and settlement infrastructures. The first, which is for the infrastructure to be owned by the state or the central bank, is largely historical, and the mainstream model for ownership of infrastructures in Europe is for them to be in private hands. The other two choices are: (a) for the organisation to be a not-for-profit concern, typically owned by its participants, and charging fees on the principle that any surplus after meeting operating expenses will be rebated to participants (rather than paid out as dividends); and (b) a for-profit undertaking of which its owners and its participants are likely to belong to different constituencies (though there may be some overlap). Important among the second group are the infrastructure groups, where the clearing or settlement undertaking is owned by an exchange.

The majority of post-trade infrastructures are for-profit entities; few, if any, are cooperatives. Dr Lee has summarised the rationale behind the apparent consensus that for-profit is the right model, notwithstanding the concerns articulated by Professors Pirrong and Griffith (see **Case Study 9.1**).[136]

Case Study 9.1 For-profit: why infrastructures are not mutuals

Benefits of a for-profit model

- Clear objective, which facilitates rapid decision-making
- Market in shares keeps management up to the mark
- Easy access to capital
- Customers (users) are not left behind, because they create the profits
- Shares can be used for incentivisation to bring in volume

Disadvantages of a cooperative model

- Difficult to innovate
- Risk of dysfunctional board
- Members' short-term concerns inhibit developments in stakeholders' long-term interests
- Rebates do not engender cost savings

134 Lee, Oxford Finance Group Report, pp xiii–xiv
135 See **sections 7.35**, **7.43–7.45**
136 Lee, *Running the World's Markets*, pp 294-296

Nevertheless – absent any specific law to the contrary – it is a requirement of company law that a company be run in the interests of its shareholders, and the shareholders of a for-profit company who can quickly sell if their investment is not performing as well as other investments are likely to encourage their board to take a short-term view. This line of reasoning suggests that, if it is appropriate for an infrastructure to build up and retain significant reserves to manage the risk of a low-probability but high-impact event, it will struggle to do so if it is structured as a for-profit entity. However, the same can be argued in relation to an infrastructure organised as a non-profit entity: if the net surplus over operating costs is always rebated to participants, there is never an opportunity to build reserves.

It should not be thought that regulators are unaware of the problem. The Bank of England says that it 'will place a particular focus on the quality of governance at United Kingdom CCPs to ensure, inter alia, that commercial objectives are not inappropriately prioritised over systemic risk management'.[137] And more broadly:

> 'If FMIs are operated only in the private interests of their managers, owners, or even their members, they may under-invest in the mitigation of risks to the wider system. The Bank's role as supervisor is to ensure that the infrastructures are managed in a manner that is consistent with the public interest including reducing systemic risk.'[138]

Vertical groups

9.30 Finally, in this context, it is appropriate to mention 'vertical silos'. Exchanges, which faced competition from crossing networks (the forerunners of OTFs) and alternative trading platforms (MTFs) before competition became a reality in the post-trade space, may have been keen to retain ownership of infrastructures – vertical silos – for operational and financial reasons. Operationally, there may be straight-through processing benefits of vertical silos where a one-stop-shop provides comprehensive trade-through-to-settlement service; with the adoption of standardisation agendas across Europe, and since trading markets are no longer organised on national lines in Europe, the operational argument in favour of vertical organisation would appear to have weakened significantly. As to finance, it can be suggested that ownership of a post-trade infrastructure provides a source of easy profit, as such infrastructures can exploit their quasi-monopolistic position to set prices at whatever level they choose, and pass the benefits to the exchange and enable it to lower its own prices and compete more easily. However, in monopolistic or foreclosed market-places, a person with a monopoly will be constrained so that it is not lawful to charge fees which enable other businesses in competitive markets to be cross-subsidised.[139] Other anti-competitive practices might include denial of access

137 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual report* (March 2015), para 3.1.4

138 Bank of England, *The Bank of England's approach to the supervision of financial market infrastructures* (April 2013), p 1; cf. also the work of Dr Huang referred to in **section 9.14**

139 See **sections 11.18ff**

and bundling of services.[140] Some commentators have argued that vertical silos should be broken up.[141] Accordingly, the European Code of Conduct for Clearing and Settlement provides for accounting separation between trading venues, CCPs and CSDs (albeit that disclosure of the separate accounts is to regulators, not users, competitors or the general public).[142] Furthermore, the introduction of competition, at least as regards clearing services, should drive down cost.[143] On the other hand, operators of vertical silos have argued that cost is independent of structure and indeed of whether there is a for-profit or a non-profit model.[144]

USERS AND OTHER STAKEHOLDERS

9.31 A running theme throughout the discussion of board and owner control of clearing and settlement systems is the notion that the participants, end-users, and beneficiaries of the financial system at large all have an interest in the effective, balanced governance of those systems. The Group of 30 included among its 20 recommendations: 'Ensure equitable and effective attention to stakeholder interests', stating 'efficient and safe operation of clearing and settlement infrastructure providers is central to the effective operation of securities markets. Consequently, a variety of stakeholders have a significant and legitimate interest in the operation of these institutions.'[145] A number of observations may be made:

(1) *Laws and regulations.* EMIR mandates user involvement to a limited degree: a CCP is obliged to have a risk committee, which must be composed of representatives of clearing members and clients, and independent members of the board. But the risk committee's role is advisory only, and EMIR states expressly that the advice of the risk committee is not required for the daily operations of the CCP.[146] The CSDR requires the establishment of an independent advisory user committee.[147] Furthermore, regulatory powers 'typically' include the power to review 'the operational plan, internal control arrangements, system rules and risk management programme of the system operator' as well as other oversight of its board, management, shareholders, operations and fees.[148] Whether the power to inspect and oversee needs to be backed up by a power to intervene or other supervisory powers can be debated, but regulators almost invariably have the ultimate sanction of de-licensing a delinquent, so a range of disciplinary remedies may be unnecessary.

(2) *Rule making*. Involving users and others in the rule-making process is also important. EMIR RTS 153 obliges a CCP to have 'a process for

140 Russo, D, et al, *Governance of Securities Clearing and Settlement Systems* (October 2004), European Central Bank occasional paper No. 21, www.ecb.int/pub/pdf/scpops/ecbocp21.pdf, p 24

141 Cf Bourse Consult report, p 28

142 FESE, EACH and ECSDA, *European Code of Conduct for Clearing and Settlement* (November 2006), http://ec.europa.eu/internal_market/financial-markets/docs/code/code_en.pdf, paras 42–43; see **section 11.20**

143 See **section 11.30**

144 Deutsche Börse Group, *The European Post-Trade Market – An Introduction* (February 2005)

145 Group of Thirty Report, p 121

146 EMIR, art 28

147 EMIR, art 28

148 Russo et al, p 16

proposing and implementing changes to its rules and procedures and prior to implementing any material changes to consult with all affected clearing members.[149] CSDs and systemically important payment systems do not have an equivalent duty, though CSDs' user committees may demand that CSDs consult on rule changes. A CCP must also bear in mind that introducing anything which could be an 'excessive' regulatory provision may fall foul of sections 300A–300E of the Financial Services and Markets Act 2000, which enables the regulator to veto such a provision.[150]

(3) *Transparency for end-users.* Transparency is important as it provides a natural means of ensuring optimum practice, allowing end-users and even a wider community to become comfortable with the way things are done. EMIR requires that CCPs make their governance arrangements, rules and membership criteria publicly available without charge.[151] The CSDR makes CSDs publish their governance arrangements and rules.[152] In fact, many European CCPs and CSDs complied with these principles already. The SIPS Regulation states that 'relevant' rules and procedures must be publicly disclosed by systemically important payment systems.[153] Some clearing and settlement systems do not publish their rulebooks on their websites – and payment systems are the worst offenders on transparency, interpreting their compliance obligation as being fulfilled if they provide their rules to their participants. (CHAPS was assessed only as 'broadly observed' in relation to disclosure by the IMF in 2011,[154] but since its transfer to the Bank of England in 2017, CHAPS rules have been made publicly available via the Bank's website.)

(4) *The wider interest*. One stakeholder, formerly overlooked in a discussion of governance of infrastructures, is the taxpayer. Clearing and settlement systems are systemically important institutions, whose risk profile is unusual: risk events are rare, but potentially devastating in their impact. A CSD which fails would wipe out the property entitlements of ordinary citizens to the tune of many trillions of euros: Euroclear reported that in 2019 its entities turned over €8 trillion of worth.[155] A payment system which failed would cause unimaginable disaster: in 2008 – the year of the financial crisis – the value passing through United Kingdom payment systems was around £200 trillion, about 140 times the annual gross domestic product.[156] And a CCP acts as credit insurer to the participants it serves (and reinsurer to the end-users of the markets), so that a failure of a CCP would imply failure of the margining system used by its participants. LCH Limited's last quarterly CPMI disclosure for 2019 showed initial margin taken from participants – a reasonable measure of the risk it assumes – to be over £141 trillion.[157] The dire consequences of such an event explain the difficulty of finding a way of handling the demise of a

149 EMIR RTS 153, art 5(2)
150 See **section 8.23**
151 EMIR, art 26(7)
152 EMIR, art 26(4)
153 SIPS Regulation, art 20(1)
154 IMF, *United Kingdom: Observance by CHAPS of CPSS Core Principles for Systemically Important Payments Systems Detailed Assessment of Observance* (July 2011), IMF Country Report No 11/237, p 29
155 Euroclear, *Key metrics*, www.euroclear.com/about/en/business/Keymetrics.html
156 Bank of England website, payment systems oversight page (September 2010)
157 LCH Limited, *Q4 2019 Data: April 2020 Disclosure* (April 2020), www.lch.com/resources/rules-and-regulations/ccp-disclosures

CCP without implicating the taxpayers in the country whose economy would not withstand the shock without intervention.[158]

9.32 Perhaps this last is the sobering point about all facets of clearing and settlement system governance. Whatever the decisions taken about boards, ownership, or user involvement nobody has yet devised a model which adequately reflects the risk profile of an infrastructure. There is no right way to arrange the fees or dividend profile of an infrastructure if its mismanagement can jeopardise an economy.

158 See further **Chapter 14**

10 The clearing imperative

BACKGROUND

10.1 In September 2009, the G20 met in Pittsburgh, and resolved that 'all standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements'.[1] Since then, a huge effort has been made in the European Union and elsewhere to introduce clearing obligations for OTC derivatives, culminating in the EU Regulation on OTC derivative transactions, central counterparties and trade repositories (more familiarly known as EMIR, an acronym reflecting an earlier name – 'European market infrastructure Regulation' – for the proposed legislation).[2] Since then, also, a huge amount of literature has been spawned on the subject of clearing.

It is the purpose of this chapter to consider critically the policy decision to force the OTC derivatives market into clearing, and to describe the clearing obligation as implemented under EMIR.

MERITS OF CLEARING OTC DERIVATIVES

10.2 Central counterparties have been clearing derivative products for a very long time.[3] Central counterparties were perceived to have performed resiliently during the 2008 financial crisis. And for a variety of reasons, policymakers concluded that greater take-up of clearing would have limited the severity of the crisis, if not avoiding it altogether. The following advantages of clearing have been claimed:

(1) *Reduction of counterparty risk*. Using a CCP reduces counterparty risk because it allows for multilateral netting, because CCPs select only high-quality participants, because CCPs insist on taking collateral, and because CCPs have a default fund – effectively a credit insurance fund – against participant default.[4] Although there is evidence that multilateral netting of credit default swaps reduces gross notional exposures by 90 per

1 G20 Leaders Statement: *The Pittsburgh Summit* (September 2009), www.g20.utoronto.ca/2009/2009communique0925.html, para 13

2 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

3 Kroszner, R, 'Central Counterparty Clearing: History, Innovation and Regulation' in *The Role of Central Counterparties* (European Central Bank/Federal Reserve Bank of Chicago, July 2007), www.ecb.eu/pub/pdf/other/rolecentralcounterparties200707en.pdf, pp 30–35

4 Coueré, B, *Risks in CCPs* (January 2014), speech, www.ecb.europa.eu/press/key/date/2014/html/sp140123_1.en.html

cent,[5] Professor Darrell Duffie and Dr Haoxiang Zhu have questioned the central premise that introducing clearing will in fact have this result, at least across multiple asset classes.[6] CCPs' membership criteria for OTC derivatives clearing are also a source of controversy, and this subject is also considered below. Margining and default backing are less contentious: whether collateral is delivered to cover post-default replacement costs in the uncleared derivatives markets has been dependent on the identity of the transaction counterparty.[7] CCPs do not grant favours and take initial margin from all participants indiscriminately. Default backing is not available in the derivatives markets except where provided by infrastructures such as CCPs, because the Investor Compensation Schemes Directive[8] does not apply to losses on OTC derivative instruments. It must also be borne in mind that clearing does not *eliminate* counterparty risk: despite all the precautions taken by CCPs, the essence of clearing is the substitution of the CCP for the participant's original counterparty, so that the participant assumes risk on the CCP; furthermore, CCPs have the effect that the general body of a defaulter's creditors bears a greater share of credit losses.[9] CCPs are not risk-free creatures.

(2) *Interconnectedness reduced*. The financial crisis was blamed in some quarters on the 'interconnectedness' of financial institutions, which allowed a problem developing in Lehman Brothers to spread outwards across the market. CCPs reduce, or rather contain, such 'interconnectedness', by translating exposures of financial institutions into exposures to a CCP, where they can be better and more consistently managed. Reduction of 'interconnectedness' is thus cited as one of the advantages of clearing: 'The framers of the Dodd-Frank Act observe that … clearing removes the type of interconnectedness between financial institutions that contributed to the financial crisis resulting from the failure and bankruptcy of firms such as Bear Stearns, Lehman Brothers, and AIG.'[10] 'To lower risk further, standard OTC derivatives should be brought to clearing houses. … With their use, transactions with counterparties can be moved off the books of financial institutions that may have become "too big to fail" and "too interconnected to fail."'[11] Professor Craig Pirrong disputes the correctness of these assertions,

5 Cecchetti, S, Gyntelberg, J, and Hollanders, M, 'Central counterparties for over-the-counter derivatives' (September 2009) Bank for International Settlements Quarterly Review, www.bis.org/publ/qtrpdf/r_qt0909f.pdf, pp 45–58

6 Duffie, D, and Zhu, H, *Does a Central Clearing Counterparty Reduce Counterparty Risk?* (May 2009) Rock Center for Corporate Governance Working Paper No 46, http://ssrn.com/abstract=1348343

7 Cf Singh, M, 'Under-collateralisation and rehypothecation in the OTC derivatives markets' (July 2010) Banque de France Financial Stability Review, www.banque-france.fr/fileadmin/user_upload/banque_de_france/publications/Revue_de_la_stabilite_financiere/etude13_rsf_1007.pdf, No 14 (English version) pp 113–119

8 Directive 97/9/EC of the European Parliament and of the Council of 3 March 1997 on investor-compensation schemes

9 Pirrong, C, 'A Bill of Goods: CCPs and Systemic Risk' (2014) 2 *Journal of Financial Market Infrastructure* 55–85; see **section 2.6**

10 Commodity Futures Trading Commission, 'Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities Regarding the Mitigation of Conflicts of Interest' (October 2010), Proposed rulemaking under Dodd-Frank Act, 75 Federal Register 63732, www.federalregister.gov/articles/2010/10/18/2010-26220/requirements-for-derivatives-clearing-organizations-designated-contract-markets-and-swap-execution#p-79, p 63736

11 Gensler, G, Chairman of the Commodity Futures Trading Commission, *OTC Derivatives Reform* (March 2010), Speech, www.cftc.gov/PressRoom/SpeechesTestimony/opagensler-32

on the incontrovertible ground that a CCP is an interconnection between financial firms: 'creation of CCPs changes the topology of the network of interconnections among firms, but it does not eliminate these connections'.[12] Other academic research indicates that CCPs may themselves be 'too interconnected to fail' and could act as conduits for contagion.[13]

(3) *Risk mutualisation*. Because a CCP has a default fund, exceptional costs of default (that is, those not satisfied by the defaulter's own margin and default fund contributions) are borne by the defaulter's co-participants. The advantage of this structure over the uncleared marketplace is the spreading of risk: a CCP distributes the costs of a CCP participant's failure fairly among the survivors.[14] A closed-out OTC master agreement may leave the non-defaulting party with a large receivable item due from the defaulter, for which there is little prospect of payment in full and no prospect whatsoever of timely payment. The non-defaulting party may be destabilised by this result and will have no mutual support scheme to fall back on. CCPs are designed to be loss-absorbers.[15]

(4) *Orderly default management*. In the OTC markets, users of the International Swaps and Derivatives Association (ISDA) master agreements will have the ability to close out their derivatives transactions with a defaulting counterparty, which will involve a process of ascribing a value to the terminated transactions and calculating a net sum due to or from the counterparty. Some versions of the ISDA documentation rely on a process of seeking quotations from other dealers in order to complete the valuation process. In times of reduced liquidity, such as that which prevailed in the immediate aftermath of the collapse of Lehman Brothers, obtaining reliable quotations may be impeded or even impossible. CCPs are expected to have more robust default-handling procedures. 'The main problematic feature of bilateral markets is that the uncoordinated efforts of market participants to replace the positions lost due to a default can be destabilising. In contrast, cleared markets can engage in a coordinated response that places less stress on the pricing mechanism.'[16]

(5) *Systemic risk reduction*. 'Owing to a lack of information about where risks related to OTC derivatives arise and are distributed throughout the financial system, the large size of OTC derivatives markets and their close linkages with cash markets, OTC derivatives markets seem to have acted as

12 Pirrong, C, *The Inefficiency of Clearing Mandates* (July 2010), Cato Institute Policy Analysis No 665, www.cato.org/pubs/pas/PA665.pdf, pp 24, 28; see also Pirrong, 'A Bill of Goods'; Arregui, N, et al, *Addressing Interconnectedness: Concepts and Prudential Tools* (September 2013), IMF Working Paper WP/13/199; Wendt, F, *Central Counterparties: Addressing their Too Important to Fail Nature* (January 2015), IMF Working Paper WP/15/21

13 Turing, D, *Untying Interconnectedness: Topology, Stability and the Post-Crisis Reforms* (April 2020), SSRN 3565870; Markose, S, et al, 'A Systemic Risk Assessment of OTC Derivatives Reforms and Skin-in-the-Game for CCPs' (April 2017), Banque de France Financial Stability Review No 21; Borovkova, S, and El Mouttalibi, HL, *Systemic Risk and Centralized Clearing of OTC Derivatives: A Network Approach* (December 2013), SSRN 2334251. www.federalreserve.gov/newsevents/speech/yellen20130104a.htm

14 Hills, B, Rule, D, and Parkinson, S, 'Central Counterparty Clearing Houses and Financial Stability' (June 1999) Bank of England Financial Stability Review, p 122

15 Bliss, R, and Papathanassiou, C, *Derivatives Clearing, Central Counterparties and Novation: The Economic Implications* (March 2006), www.ecb.int/events/pdf/conferences/ccp/BlissPapathanassiou_final.pdf

16 Pirrong, *The Inefficiency of Clearing Mandates*, p 4

a contagion channel during the financial market turbulence.'[17] The policy responses to this observation are that OTC derivatives transactions should be traded on organised platforms, cleared through CCPs, and be subject to centralised reporting at trade repositories. 'The primary advantage of a CCP is its ability to reduce systemic risk through multilateral netting of exposures, the enforcement of robust risk management standards, and mutualisation of losses resulting from clearing member failures.'[18]

(6) *Increased transparency*. Transparency is a complex subject. The starting-point for the transparency debate in the context of clearing is that opacity is blamed as one reason for the severity of the 2008 financial crisis.[19] When dealers have inadequate information about each other's exposures they adopt self-protective, but collectively dangerous, behaviour, such as exercising discretionary powers to call for additional collateral.

> 'Introducing CCPs would improve transparency by allowing for easy collection of high-frequency market-wide information on market activity, transaction prices and counterparty exposures for market participants who rely on them. The centralisation of information in a CCP makes it possible to provide market participants, policymakers and researchers with the information to better gauge developments in various markets on the position of individual market participants.'[20]

A related, but perhaps more convincing argument is that a CCP reduces disruption due to informational asymmetries following a default. 'CCPs also solve a potentially disruptive information problem. When a major player in bilaterally-cleared derivatives markets fails, it is not immediately apparent to the remaining market participants: who is absorbing the losses, how big the losses are, and whether the failed firm's counterparties are themselves threatened by the failure. This uncertainty is mitigated when there is a single counterparty with an effective (and perceived to be fair) means of allocating losses across the whole market. … [The CCP's] perceived neutrality and ability to disperse losses widely may be expected to do much to mitigate the information concerns that can infect bilaterally cleared markets in times of market stress.'[21] On the other hand, it would be wrong to ascribe too much benefit to the all-seeing nature of the CCP. First, it is not self-evident that a CCP, whose job is to manage counterparty risk, will regard itself as obliged to carry out this possibly valuable, but ancillary, function of gathering market-wide information – indeed EMIR acknowledges that the CCP will need to involve a trade repository in the

17 European Central Bank, *OTC derivatives and post-trading infrastructures* (September 2009), www.ecb.eu/pub/pdf/other/overthecounterderivatives200909en.pdf, p 7

18 Kiff, J, et al, 'Making Over-the-Counter Derivatives Safer: The Role of Central Counterparties' (April 2010) IMF Global Financial Stability Report, www.imf.org/external/pubs/ft/gfsr/2010/01/index.htm, ch III

19 See **section 4.22**

20 Cecchetti et al, BIS QR article, p 51

21 Bliss and Papathanassiou, p 4; see also Gibson, R, and Murawski, C, *The Price of Protection: Derivatives, Default Risk and Margining* (January 2007), www.fdic.gov/bank/analytical/cfr/2007/apr/murawski_priceofprotection.pdf, p 49

process.[22] Secondly, the CCP may actually be a victim of information asymmetry.[23]

(7) *Liquidity improvement*. It has been argued that multilateral netting potentially increases liquidity in the OTC derivatives markets.[24] This is because reduction of counterparty risk frees up capital, capacity and credit lines to enable greater volumes of trading to be done for the same balance sheet impact. A further point on liquidity concerns the management of defaults. Clearing forces traders to allocate liquid assets, in the form of eligible margin, against their trading activity. This reduces traders' ability to engage in maturity transformation and improves the quality and speed of default management.[25] Furthermore, the CCP's default management mechanism, backed by the available funds contributed through margin and default funding, ensures a degree of liquidity in the post-default marketplace, improves confidence, and should mitigate the tendency of market participants to disengage due to fear of further failures.[26] On the other hand, large-scale margin calls from futures CCPs were considered to have drained liquidity from the system during the 1987 stock market crash.[27]

(8) *Cost reduction*. Transaction costs should be reduced and operational efficiency and liquidity improved by virtue of the concentration effect of multilateral netting. The more participants a CCP attracts, the greater the benefit, and in this way the cost of managing risk (in terms of cost of collateral, and over a longer time horizon, in terms of reduced losses attributable to counterparty defaults) also comes down. This has been demonstrated quantitatively using economic modelling by staffers at the Bank of England.[28] Margin offsets may be achievable if the CCP can identify a risk reduction where a participant takes a long position in the cash markets which temporarily offsets a short position in a related derivative product, and the CCP clears both positions: thus there may be a mitigant to the negative impact on costs of the overall reduction of netting foreseen by Professor Duffie and Dr Zhu. Furthermore, the regulatory capital requirement will be lower in respect of an exposure to a CCP than for an exposure to another non-CCP financial institution.[29]

(9) *Optimal position management*. Exiting from an OTC position is easier if it is cleared. To tear up an OTC transaction so that both market and counterparty risk are eliminated requires a party to enter into an equal and opposite trade with its original counterparty, which may not be achievable

22 EMIR, art 9

23 Pirrong, C, *The Economics of Clearing in Derivatives Markets: Netting, Asymmetric Information, and the Sharing of Default Risks Through a Central Counterparty* (January 2009), Working Paper, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1340660, pp 34–41; see also **section 10.8(1)**

24 Bliss and Papathanassiou, p 3; Schröder, M, et al, *Assessment of the cumulative impact of various regulatory initiatives on the European Banking Sector* (August 2011), Study for the European Parliament, IP/A/ECON/ST/2010-21, para 2.2.3

25 Squire, R, 'Clearinghouses as Liquidity Partitioning'(2014) 99 *Cornell Law Review* 857–923

26 Valiante, D, *Shaping Reforms and Business Models for the OTC Derivatives Market – Quo vadis?* (April 2010), ECMI Research Report No 5

27 Bernanke, B, 'Clearing and Settlement during the Crash' (1990) 3 *Review of Financial Studies* 133–151

28 Jackson, J, and Manning, M, *Comparing the pre-settlement risk implications of alternative clearing arrangements* (April 2007), Bank of England Working Paper No 321

29 See **section 12.11(1)**

at a reasonable price. An opposite trade with a different counterparty eliminates the market risk only, unless it is put into a portfolio compression service.[30] An alternative is for the trades in the product to be cleared, in which case the CCP substitutes for the original counterparties to both trades and the exposure is completely erased.

(10) *Improved collateral practices*. OTC counterparties depend on their own 'risk engine' and operational efficiency. Each firm will have slightly different approaches to risk assessment, otherwise disputes over valuation and collateral calls would never arise. Disputes cause delay in collateral postings and exacerbate exposures. In the bilateral world, daily marking-to-market and daily posting of collateral may be the ideal but may not be the practice. Where securities collateral is involved, there will also be delays between calling the collateral and its arrival. Collateral calls vary with the credit of the counterparty; and firms may rely on credit ratings to set collateral levels. Some counterparties may be exempted by their trading partners from posting collateral at all, sometimes based on business reasons unrelated to credit. Rating practices came under fire during the financial crisis. And credit ratings may change, triggering collateral calls, and deepening liquidity problems for the down-rated firm. CCPs' margin practices avoid all these difficulties. [31]

> '[T]he fact that each exposure may be covered by collateral requirements, which in turn reflect the creditworthiness of the counterparties, creates a danger that changes in counterparty credit rating can produce disruptive procyclical effects e.g. threatened downgrades of AIG's credit rating in September 2008 would have required it to post significant collateral to cover its exposure as a counterparty in CDS contracts, resulting in severe cash flow strains within AIG.'[32]

THE CHALLENGE OF GEOGRAPHY

10.3 An OTC derivative transaction does not have a domicile. Unlike other species of financial instrument, an OTC derivative can arguably be linked to the country of its governing law, of the governing law of an applicable master agreement, the law applicable to an underlying asset or currency, the home state of one or other of the parties to the transaction, the location of the branches from which the parties entered into or booked the transaction, or – to bring the problem full-circle – the place where the transaction is to be cleared. OTC derivatives are frequently international in flavour, with parties located in different jurisdictions, transacting through branches, and often dealing in transactions which are 'foreign' in nature because of their underlying subject-matter, currency of settlement, governing law, or for other reasons. The nature of the OTC market thus makes it artificial to ascribe a 'location' to these transactions. The absence of a clear, internationally agreed rule about 'location' of OTC derivatives leads to a number of complications, which have ramifications for the parties involved in the clearing of such transactions.

30 See **section 4.15**

31 Cf Pirrong, *The Inefficiency of Clearing Mandates*, p 17

32 Financial Services Authority, *The Turner Review – a regulatory response to the global banking crisis* (March 2009), www.fsa.gov.uk/pubs/other/turner_review.pdf, p 82

(1) Which regulatory authority has jurisdiction to police whether the transaction is cleared? Following the G20 agenda, it may be obligatory under the laws of one or another country for certain transactions to be cleared. So, the question arises whether the laws apply because of characteristics of the transactions, or because of the domicile of one or both of the parties, or for other reasons. In the European Union, the clearing obligation may apply because one or other party is European or because the transaction has 'direct, substantial and foreseeable effect within the Union'.[33] EMIR leaves it to the Member States to set penalties for infringement of the European clearing obligation; even within Europe, geographical enforcement responsibility is not clearly demarcated.[34] Other regulatory or legal authorities may adopt clearing rules which overlap with the purported jurisdiction of the European Member States' competent authorities. There is a real risk of conflicting requirements.

(2) Where is the activity of 'clearing' taking place? The simplistic answer to this question is 'at the CCP', but a moment's reflection will show how that is an inadequate response. First, the location(s) of the clearing members may be as important, particularly where a client is seeking to satisfy its own clearing obligation, or where 'indirect clearing' is concerned. Secondly, an authority attempting to assert regulatory jurisdiction over providers of clearing services may consider that the activity of 'clearing' is taking place wherever a clearing member is located: the mere existence of the foreign member using the CCP can deem the CCP to be conducting a regulated activity within the clearing member's jurisdiction. Thirdly, the clearing of transactions with a foreign element may draw the attention of foreign regulators to the activities of a CCP: for example that they are governed by a foreign system of law, relate to a product which is located in a foreign jurisdiction, relate to a security issued under a foreign system of law, or have some impact on the economy of a foreign jurisdiction. The implication of the geography problem for CCPs is that they may be found to be carrying on business in a wide variety of locations, simply because they clear OTC derivatives.

(3) If the parties to a transaction choose to clear the transaction at a 'foreign' CCP, will any obligation to clear be satisfied? If a clearing obligation applies, the competent authority will require the obligation to be fulfilled by clearing directly or indirectly through an approved CCP. Again, there is only limited harmony on the recognition of non-local CCPs, and further complications can arise for parties selecting a CCP for OTC derivatives clearing where a competent CCP is not recognised by a regulator with jurisdiction over one of the parties.[35] Parties to transactions will also need to consider, when making a selection of a CCP, the costs and benefits of the various clearing options on offer.

These questions typically do not arise in the case of exchange-traded derivatives transactions (futures and options), where a geographical glue connects the trading venue, the governing law of the transactions, the branches of the parties, and the location of the CCP. In the case of cash equities transactions traded on MTFs in Europe, where the venue may itself be dematerialised, the same geographical questions could arise as for OTC derivatives. However, the questions tend to be

33 See **section 10.12**
34 EMIR, art 12
35 Cf **sections 7.25, 7.56**

of lesser importance in the case of cash equities, because regulatory clearing obligations tend not to arise, and EMIR has an elaborate college structure[36] which solves the problem of regulatory jurisdiction over clearing activity (at least within the European Union).

10.4 Where the transaction has no self-evident domicile there may be a range of structuring choices for the traders who wish to put the transaction into place. Avoiding the clearing obligation by using a foreign branch may not be successful, owing to the long geographical reach of the obligation. Likewise, using an affiliate may not help, since (i) transactions by affiliates count towards the thresholds making a person an 'FC+' or 'NFC+', that is a counterparty with sufficient OTC derivatives business to be within the ambit of mandatory clearing;[37] and (ii) if a back-to-back intragroup transaction results, that may still be subject to mandatory clearing, and then the arrangement with the affiliate may have to meet further tests relating to 'indirect clearing'.[38]

Allowing that some choice still remains, a number of factors will influence the choice. These include margining arrangements, regulatory capital consequences of the trade (including the vexed question of achieving relief under Article 305 of the Capital Requirements Regulation[39]), default fund obligations, whether an affiliate can be properly regarded as a client, and simple cost differentials when using an intermediary or a foreign CCP.[40] The choices also implicate the question whether additional regulatory standards will apply to the infrastructures involved, which is explored in **section 7.56**.

CLEARED AND UNCLEARED OTC TRANSACTIONS COMPARED

10.5 It may also be mentioned that, by comparison with uncleared OTC derivative transactions (sometimes confusingly called 'bilaterally cleared' transactions), a number of additional differences emerge, some of which might also support arguments in favour of clearing:

(1) *Initial margin*.[41] Annual margin surveys conducted by ISDA[42] historically indicated that, when it is left to the market to decide, (a) the practice of taking collateral from a counterparty in the uncleared OTC markets is not universal, and (b) there is even more variability in taking 'independent amounts' of collateral – that is collateral which is intended, broadly, to fulfil the same function as initial margin in relation to cleared transactions.[43] By contrast, CCPs have invariably taken initial margin.

36 EMIR, arts 17–19; see also **section 7.25**
37 EMIR, arts 4, 10(1)(b); see **section 10.11**
38 See **section 10.20**
39 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms etc; see **section 19.39**
40 See further Yadav, Y, and Turing, D, 'The Extraterritorial Regulation of Clearinghouses' (2016) 2 *Journal of Financial Regulation* 21–55
41 See **sections 17.27ff**
42 Available from www2.isda.org/functional-areas/research/surveys/margin-surveys
43 ISDA, Managed Funds Association, and Securities Industry and Financial Markets Association, *Independent Amounts* (March 2010), White Paper, www2.isda.org/attachment/MTY3MA==/Independent-Amount-WhitePaper-Final.pdf

Now, the distinctions have reduced. By virtue of article 11(3) of EMIR, financial counterparties and 'NFC+s'[44] are obliged to have initial and variation margin exchange arrangements for OTC derivatives which are not cleared at a CCP. EMIR RTS 2251[45] spells out the acceptable types of arrangement, which mimic the practices of CCPs. As with CCPs, the margin calculations stipulated by the EMIR RTS 2251 are done by reference to the product, not the credit-worthiness of the counterparty, which may be a departure from previous OTC derivatives practice with regard to 'independent amounts'.

Nevertheless, there are still differences in margin practice between the cleared and uncleared worlds. Different types of transaction are treated differently under EMIR RTS 2251. Transactions caught by EMIR RTS 2251 are allowed some flexibility not available where the rules are dictated by a CCP. Also, a cleared 'client' trade will require two amounts of initial margin: margin to support the 'client account' leg of the trade, and margin to support the 'house account' leg of the trade.[46]

The UK adoption of EMIR RTS 2251 for the post-Brexit era does not in substance differ materially from the EU approach.[47]

(2) *Variation margin*.[48] Demands by CCPs for variation margin may differ in amount, be more restrictive in terms of acceptability of collateral, and be made more frequently than in a purely bilateral (uncleared) relationship. In particular, a CCP may treat variation margin as a 'daily settlement' of sums owed, which must be paid up in cash. Variation margin requirements may impose liquidity burdens on CCP participants and their clients.

(3) *Client position transfer*.[49] CCPs should have – indeed EMIR imposes an obligation for them to have[50] – machinery to enable the client of a failed clearing member to transfer its portfolio of transactions and margin deposits to a replacement clearing member. Such arrangements will provide a form of counterparty-risk protection unavailable in uncleared OTC markets.

(4) *Regulatory capital.* Although credit exposures to CCPs are no longer zero-weighted for regulatory capital purposes, the cost in terms of capital required to support sums receivable under cleared transactions remains significantly lower than the amount required for the same transaction exposure on an uncleared transaction. Other prudential measures affecting clearing are typically, though not always, adjusted to the advantage of (or to remove disadvantages from) the clearing member.[51]

(5) *Insolvency protection*. Various defences are available against attack on close-out and default management processes which would otherwise be available to insolvency officers, as discussed in **sections 13.16ff**. The defences available to non-infrastructure counterparties tend to be more limited, since special statutory protection is given to CCPs, notably under the Settlement Finality

44 See **section 10.11**
45 Commission Delegated Regulation (EU) 2016/2251 of 4 October 2016 supplementing [EMIR] with regard to regulatory technical standards for risk-mitigation techniques for OTC derivative contracts not cleared by a central counterparty
46 See **section 2.15**
47 Prudential Regulation Authority, Technical Standards (European Market Infrastructure) (EU Exit) (No 3) Instrument 2019
48 See **section 17.25**
49 See **sections 17.54ff**
50 EMIR, art 48
51 See **section 12.11**

Directive.[52] Such protection enables a UK CCP to proceed robustly to close out, set off, receive and apply collateral, and allocate losses to a defaulter's account, without fear of challenge. In the uncleared OTC marketplace the default management mechanisms of close-out, set-off and application of collateral have been tried and tested over many years, but even standard market documentation is not immune from examination by the courts, and the uncertainties[53] surrounding the immunity granted under the Financial Collateral Directive[54] may limit the range of protection and the action which can be taken in relation to uncleared transactions.

(6) *Matching and trade capture*. In order to bring OTC transactions into clearing, it is necessary to have some system which identifies clearable transactions entered into by market counterparties, checks for absence of discrepancies, and then notifies the transactions to the CCP for registration.[55] In the uncleared marketplace, such systems may be used but are not mandated.

(7) *Collateral velocity*. Dr Manmohan Singh has explained that, like money, securities collateral is recyclable through rehypothecation, and therefore has a 'velocity', in the sense that money recycled through the financial system is said to have velocity.[56] Collateral supporting an uncleared OTC transaction may be transferred outright[57] or subject to rights of rehypothecation, and can therefore be re-used by the transferee. Collateral transferred to a CCP is less likely to be re-used: CCPs do no or little own-account trading and may have sufficient market power (high credit standing) to avoid posting any collateral themselves. CCPs may, but are not encouraged to, enter into repo transactions with the collateral they receive.[58] Accordingly, securities collateral posted to support cleared transactions is likely to have lower velocity.

DERIVATIVES AND CASH MARKET TRANSACTIONS COMPARED

10.6 There are also differences between an OTC derivative transaction and an OTC cash market transaction, which may mean that the subject of OTC derivatives clearing needs to be approached with caution.[59] The following may be mentioned:

52 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

53 See **section 13.41**

54 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements

55 See **section 4.2**

56 Singh, M, *Velocity of Pledged Collateral: Analysis and Implications* (November 2011), IMF Working Paper WP/11/256, www.imf.org/external/pubs/ft/wp/2011/wp11256.pdf

57 See **section 6.10(2)**

58 EMIR arts 39(8), 47; Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf, Principle 16

59 See Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Guidance on the application of the 2004 CPSS-IOSCO Recommendations for Central Counterparties to OTC derivatives CCPs* (May 2010), Consultative Report, www.bis.org/publ/cpss89.pdf

(1) *Lifespan of contracts*. Derivative trades tend to have a longer duration to maturity than cash market trades. The tenor of derivatives trades creates a number of risk features which CCPs may struggle to manage.[60] 'Derivative clearing facilities need special risk management systems because these contracts have long lifespans as compared with cash and securities.'[61] Futures markets, which share the problem of long-term contracts with OTC derivatives markets, developed CCPs long before equities exchanges, however. The transfer of counterparty risk to the CCP provided strength and enhanced liquidity for the futures markets; but OTC derivatives are different from futures in that there is no reasonably well-assured source of liquidity for a CCP to trade out of a position following a default.

(2) *Default management obligations*. Close-out of an uncleared transaction can be achieved by 'termination and liquidation': that is, the non-defaulting party exercises a contractual right to terminate the transaction, thereby bringing to an end the obligations of both parties under the transaction; the replacement cost (or loss) to the non-defaulting party is evaluated, for example by seeking quotes from market participants, and this amount is due from the defaulting party (or, if negative, due to the defaulting party) as a cash debt. That mechanism is, however, of limited use to a CCP. The CCP *must* replace the transactions it had with the defaulter, whether or not it carries out a process of termination and liquidation: otherwise the CCP would be operating an unmatched book, and taking unhedged market risk on the equivalent transaction it has with its non-defaulting participant which was the original counterparty to transaction with the defaulter. The imperative to replace requires the CCP to have a portfolio disposal mechanism which can be operated following a default. The details are considered in **Chapter 17**, but the likelihood is that surviving participants will be required to take over some share of the defaulter's portfolio. This process may encounter difficulties.[62] Traders participating in a CCP may thus face a range of contingent hazards associated with the CCP default management process, which may have very different outcomes from close-out of master agreements, particularly in times of market turmoil.

(3) *Pricing sources*. Cash market or futures transactions emanating from organised markets have available and transparent pricing sources. These sources underpin the risk modelling of the CCP, enabling it to decide with reasonable confidence the likely behaviour of prices following a default, and thereby to set the level of initial margin needed for a given portfolio. 'While listed markets generally provide prices based on a centralised order book, OTC derivatives markets are quote-driven and therefore require separate services that aggregate quoted prices from multiple market participants (eg major dealers) and calculate composite consensus prices.'[63] The Committee on Payment and Settlement Systems has pointed out that a CCP clearing OTC products is likely to be especially dependent on information sources and service providers,[64] for example in order to ensure that its determination of prices is sound. There may be disputes

60 Bliss, R, and Steigerwald, R, *Derivatives clearing and settlement: A comparison of central counterparties and alternative structures* (December 2006) Federal Reserve Bank of Chicago Economic Perspectives, p 22

61 Kiff et al, 'Making Over-the-Counter Derivatives Safer' fn 3, p 4

62 See **sections 17.43ff**

63 CPSS OTC derivatives Consultative Report, para 3(d)

64 CPSS OTC derivatives Consultative Report, Recommendation 8 and paras 3(d), (e), (h)

about the valuation of transactions: for example the pricing of credit default swaps in 2007–2008.[65] In the absence of an organised market there is thus a question for the CCP as to how the value of a portfolio – the cost of operating the default management mechanism just discussed – can be reliably determined. OTC markets may be vulnerable to illiquidity or extreme volatility following a default.

DISADVANTAGES OF MANDATORY CLEARING

10.7 Unfortunately for the policy makers, there are abundant reasons why clearing is not a panacea. Perhaps the most obvious is that a CCP does not take away counterparty risk, but it concentrates it. The fear of 'interconnectedness' is being replaced by a fear of excessive concentration.[66] Consequently, if belatedly, regulators and policymakers have given attention to the need to have safety standards for CCPs, and even to open a debate on the unthinkable, namely what to do if the risk management of a CCP fails and the CCP itself has inadequate financial resources.[67]

10.8 In addition to concentration risk, the following matters might argue against a policy of requiring all OTC transactions to be cleared:

(1) *Moral hazard*. 'Risk sharing through a clearinghouse makes the balance sheets of the clearinghouse members public goods, and encourages excessive risk taking. That is, the clearing mechanism is vulnerable to moral hazard.'[68] Clearing has the effect of mutualising losses among the CCP's participants; it also takes away wealth from the general body of creditors of a defaulter owing to the *British Eagle* effect.[69] Further, the risk associated with a cleared transaction does not depend on the credit-worthiness of the original counterparty, because these risks are absorbed by the CCP and the counterparty's GCM. In other words, moral hazard is the flip side of the liquidity enhancement noted by some champions of clearing. And moreover, the risk is worsened according to the judgment reached by the CCP on margin levels: if the risk is 'under-margined', that makes the transaction type in question economically attractive, but deepens the risk of losses on default. Professor Pirrong argues that the quality of the information available to the CCP is crucial to the setting of suitable margin levels, but that dealers will (because they are dealers) have far better information and can evaluate and price risks more effectively than any CCP.[70] Professor Yesha Yadav describes these effects as a 'subsidy value' that clearing brings to a transaction, and queries the incentives that such a subsidy might create for market participants.[71]

65 Cf Culp, C, 'OTC-Cleared Derivatives: Benefits, Costs, and Implications of the "Dodd-Frank Wall Street Reform and Consumer Protection Act"' (2010) 2 *Journal of Applied Finance* 1–27 www.rmcsinc.com/articles/OTCCleared.pdf

66 Cf Arregui, N, et al, *Addressing Interconnectedness: Concepts and Prudential Tools* (September 2013), IMF Working Paper WP/13/199; Wendt, F, *Central Counterparties: Addressing their Too Important to Fail Nature* (January 2015), IMF Working Paper WP/15/21

67 See **Chapter 14**

68 Pirrong, *The Inefficiency of Clearing Mandates*, pp 3, 12ff

69 See **section 2.6**; also Pirrong, 'A Bill of Goods', pp 29–32

70 Pirrong, *The Inefficiency of Clearing Mandates*, p 16

71 Yadav, Y, 'The Problematic Case of Clearinghouses in Complex Markets'(2012), 101 *Georgetown Law Journal* 387–444

(2) *Crisis exacerbation*. Clearing can deepen crises in various ways:

(a) Contagion. Clearing obliges CCP participants to take on risk in the form of default fund obligations and default management commitments, both of which expose the participants to a risk of contagion – the risk that the insolvency of one market participant causes the demise of another – which is absent in uncleared markets. Policies designed to enable CCPs to ride out crises which implicate their own viability[72] may deepen the risk.

(b) Increased risk for participants. CCPs react to spikes in prices by making intra-day margin calls.[73] 'The very mechanism that is commonly asserted as the way that clearing reduces systemic risk – rigid and frequent collateralization in cash – can be the mechanism that creates systemic risk.'[74] If the objective of mandatory clearing is to reduce demands on financial firms in times of stress, the combination of reduced netting and compulsory margin calls may not achieve it.

(c) Procyclicality. It is not just initial margin calls which increase stress on the market. Variation margin also increases demand for liquidity at moments of stress. Calls on default funds, to help a CCP manage losses when a clearing member fails, reduce assets for survivors. GCMs may participate in several CCPs, coming under simultaneous calls from various sources.[75]

In summary, to quote Professor Pirrong: 'CCPs load risk onto large financial institutions precisely during crises that are already stressing them.'[76]

(3) *Wrong way risk*. CCPs are particularly vulnerable to wrong-way risk[77] – which occurs when the risk to which one is exposed on a default *increases* alongside increases in the probability of default. Wrong-way risk is observed when a credit insurer (which is one way of looking at the activities of a CCP) experiences a high rate of claims: the viability of the insurer is called into question precisely because there are many claims, namely at exactly the moment when the insurer's viability is most needed. An example of this observation is the near-default of AIG in 2008.[78] The same problem besets CCPs:

> 'A big financial shock that is sufficient to cause movements in derivatives prices big enough to breach margin levels, and/or which damages a CCP member's balance sheet (or multiple members' balance sheets) severely enough to force it (them) into default is likely to be associated with severe financial difficulties at other CCP member firms. … Thus, in crisis periods, dependencies between the value of the backers of CCPs – the member firms (often banks) – and the exposures that CCPs are effectively writing protection against are highly likely to be of the wrong way variety. This means that CCPs offer dubious protection

72 See **section 14.18**
73 CPSS *Principles for Financial Market Infrastructures* (April 2012), Principle 6, key consideration 4
74 Pirrong, *The Inefficiency of Clearing Mandates*, p 28
75 See Pirrong 'A Bill of Goods'
76 See Pirrong 'A Bill of Goods'
77 See **section 17.17(5)**
78 See Kiff et al, box 3.3, p 9

> against systemic risk. … Even if a CCP does not fail during a crisis, the wrong way risk problem means that the financial institutions that backstop it will have to make payouts at precisely the times that they are under strain.'[79]

Professor Pirrong also observes[80] that a CCP increasing margins may spill over into behaviours by other market participants, affecting pricing, collateral, and giving rise to 'fire sale effects'. All this underscores the wrong way risk issue.

(4) *No solution to systemic risk.* Professor Mark Roe argues cogently that the systemic benefits of clearing are oversold.[81] CCPs are designed to mitigate the consequences of failure of a single market participant, not a collection of market participants responding to the same market event; indeed the CCP itself may be vulnerable to the market event in question. Worse, by concentrating the risk (note – the risk is not eliminated, merely transferred to the CCP and the clearing members who support it through the default fund and other forms of mutualisation) into a group of already-affected market participants, it might even exacerbate the systemic problem which exists. It is not proven that the clearing members are a better sink for any given systemic risk problem than the market as a whole. Empirical study of network topology after the introduction of mandatory clearing suggests that there has been no reduction in the density of interconnections among the global systemically important institutions which make up the layer of clearing members, and a new layer of extremely densely interconnected institutions, viz. CCPs, has been created.[82] This is not self-evidently a more stable systemic structure. The point is being acknowledged by regulators – in particular the Bank of England's 2016 annual report illustrates diagrammatically the interlinkages between banks and various CCPs.[83]

(5) *Systemic oligopoly*. The criteria for becoming a participant in an OTC derivatives CCP are onerous. 'Broad access to central clearing from all trading and qualified clearing firms is essential to realize its systemic benefits and the goals of global regulators. Limited access to central clearing compromises liquidity, distorts prices, concentrates risk and reduces competition and customer choice. Systemic risk is most effectively diffused among a large number of non-correlated market participants employing central clearing in their risk management framework – not among just a handful of global dealer banks. Artificial barriers to clearing house membership intended principally to maintain the status quo must be avoided.'[84] One example of a barrier to entry previously complained of[85] was the erstwhile requirement of LCH Limited that a candidate for participation on its SwapClear platform have a portfolio of swaps of a

79 Pirrong, C, *Wrongway Peachfuzz Returns to Wall Street?* (January 2011) Streetwise Professor blog, http://streetwiseprofessor.com/?p=4683

80 See Pirrong 'A Bill of Goods'

81 Roe, M, *Clearinghouse Overconfidence* (2013) 101 *California Law Review* 1641–1703

82 Fiedor, P., et al., *Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market* (September 2017), ESRB Working Paper No.54

83 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual report* (March 2016), p 7

84 Swaps and Derivatives Market Association, *The 10 Principles of the SDMA* (2010)

85 Litan, R, *The Derivatives Dealers' Club and Derivatives Markets Reform: A Guide for Policy Makers, Citizens and Other Interested Parties* (April 2010)

size of $1 trillion. Whether this barrier was 'artificial' might, however, be disputed: presumably LCH has in mind that its default management auctions will be successful only if the participants in the auction have adequate capacity to absorb the (potentially damaging) portfolio of a defaulter, and requiring a minimum size of business is a valid criterion to check for that. The rule has been redrafted to focus more directly on the applicant's ability to perform in an auction.[86]

The implication of CCPs having size or similar criteria, which may be excessively conservative,[87] is that participation will be restricted to a small group of systemically significant market participants. This conclusion worries policy-makers.[88] Industry observers note that the problem is exacerbated by trends towards consolidation and homogenisation, as some participants withdraw from the market under pressure of costs, regulation and inability to scale up, leaving only the largest global banks in play.[89] Commentators are also concerned that 'the largest global dealers may have significant influence over the access rules at some CCPs as they dominate their risk committees. Given their exposure to risks from the CCP, these dealers are justified in seeking strong risk management practices. But it is difficult to differentiate risk management motives from other motives in the configuration of access controls'.[90] It might also be observed that there is concentration risk in confining the default auction process to a small group of market participants: the defaulter's book has to be absorbed among the survivors, and this might endanger the survivors themselves.

(6) *Indirect access*. Limiting participation to a small group of large players forces smaller players to clear 'indirectly', that is by becoming clients of GCMs. Several unwelcome consequences follow: indirect clearers typically take some degree of credit risk on their GCM, owing to the uncertainties of 'portability' of client transactions on a GCM default,[91] and the GCM may be a weaker credit than the indirect clearer wishes to tolerate; the indirect clearer may be subject to its GCM's discretion (as opposed to the CCP's) on the amount of margin needed, which may be burdensome owing to lack of price transparency in OTC markets; GCMs may be competitors of indirect clearers, and having to depend on your competitors for services is awkward; and no fewer than eight technical issues associated with provision of indirect access were identified by the group of dealers and buy-side firms entering into formal commitments with the United States regulators in 2011.[92] (These, in summary, relate to documentation, onboarding, collateral, netting, uncleared trades, operational differences between CCPs, switching, and transparency.)

86 LCH Limited, *Procedures* (March 2020), s 1.3.3

87 Cf Valiante, ECMI Research Report No 5, pp 24–25

88 Bank for International Settlements Committee on the Global Financial System, *The macrofinancial implications of alternative configurations for access to central counterparties on OTC derivatives markets* (November 2011), CGFS Paper No 46; Coeuré, B, *Four years after Pittsburgh – what has OTC derivatives reform achieved so far* (September 2013), speech, www.ecb.europa.eu/press/key/date/2013/html/sp130911.en.html

89 Cf Lukken, W, *The Health of the Clearing Ecosystem* (December 2015), speech, https://fia.org/articles/walt-lukken-health-clearing-ecosystem

90 CGFS Paper No 46, fn 8, p 10

91 See **sections 17.58ff**

92 Alliance Bernstein et al, Commitment Letter to William C Dudley, President of the Federal Reserve Bank of New York (March 2011), www.newyorkfed.org/newsevents/news/markets/2011/an110405.html, Annex A, p 15

(7) *Narrow-range CCPs and netting*. CCPs which offer a clearing service for OTC products are unlikely to provide the service across a multitude of asset classes. CCPs clearing futures markets have traditionally offered clearing services for off-market (OTC) transactions which are similar enough to the exchange-traded contracts to be risk-managed alongside them; but where there is no futures exchange, the CCP will have to evaluate the risk profile (with all that implies as to pricing risk) for each cleared product. Accordingly, the pattern is for CCPs to choose a narrow range of products. A pair of OTC market dealers who, before mandatory clearing was introduced, had a multi-product bilateral master netting agreement covering all products, will have to divide up their derivatives transactions between various CCPs, according to the products accepted by them for clearing. Trades registered with different CCPs are not netted, and will therefore require separate margining and capital allocations. Furthermore, if more than one CCP is introduced for a particular asset class, the amount of netting achievable is reduced still further.[93] Netting sets will be split up yet more as clients of GCMs opt in to 'portable' client clearing solutions which require individual accounts.[94] As if all this were not bad enough, EMIR does not require OTC derivatives CCPs to interoperate,[95] so OTC derivatives trading firms may need to participate in several CCPs in order to be sure of the ability to clear transactions done with the broadest range of counterparties.

(8) *Cost of collateral*. While the need to collateralise derivatives transactions may be apparent to policy makers, it is less self-evident across the market. A corporate user of derivatives products may be a stronger credit than the financial institution on which it depends as counterparty. The obligation to clear will demand that the corporate user post collateral to its GCM unless the GCM is willing to bear the costs and risks associated with forgoing collection of (or, to express it differently, lending) the collateral which the GCM must itself post to the CCP. In some cases the GCM may be obliged by CCP rules not to lend collateral.[96] Collateral may be in short supply – Professor Pirrong cites figures of $75 billion of extra collateral required to support mandatory clearing of credit default swaps and $570 billion for interest rate swaps[97], and the dampening effect of mandatory clearing on collateral 'velocity' has already been noted – and thus collateral is likely to be expensive for the user, which may influence the user not to enter into the transaction in the first place, leaving itself unhedged.[98] The potential for macroeconomic effects of compulsory clearing and the associated margining practices was the subject of a warning from the European Systemic Risk Board when it commented on EMIR.[99]

93 Duffie and Zhu, Rock Center Working Paper No 46

94 See **section 17.58**

95 EMIR, art 1(3)

96 Cf CPSS *Principles for Financial Market Infrastructures* (April 2012), para 3.19.4

97 Pirrong, *The Inefficiency of Clearing Mandates*, p 21

98 European Association of Corporate Treasurers, *Comments in response to Consultation document: Possible initiatives to enhance the resilience of OTC derivatives markets* (July 2009), https://circabc.europa.eu/d/d/workspace/SpacesStore/31201fef-3476-44a9-96b9-a20538722dbd/eact_en.pdf

99 European Systemic Risk Board, *Macro-prudential comments by the ESRB on margin and haircut requirements in EMIR* (December 2011), http://register.consilium.europa.eu/pdf/en/11/st18/st18604.en11.pdf

(9) *Product selection*. In order to clear a product, the CCP must be confident that it can risk-manage it. That implies that the CCP has confidence in the post-default depth of the market, which in turn demands a certain degree of fungibility of the cleared product with what is ordinarily traded in the market-place; or, in other words, cleared products will tend to be standardised. Users may prefer bespoke products to hedge risks which are peculiar to their businesses. Bespoke products are less likely to be accepted for clearing. Uncleared products are subject to financial disincentives,[100] which may again discourage the user from hedging.

(10) *Monopoly*. 'With respect to competitive evolution, scale and scope economies will tend to result in the survival of a small number of large CCPs. CCPs have strong natural monopoly characteristics. It is therefore likely that CCPs will raise anti-trust concerns.'[101] To amplify: mandating clearing for OTC derivative products demands that CCPs offer clearing services for OTC derivative products. Where only one CCP offers clearing for a particular product, all market participants are obliged to use that CCP. Incumbents have an overwhelming advantage over newcomers owing to the cost of switching. The failure to mandate interoperability between OTC derivatives CCPs exacerbates this problem.

(11) *Economics of utilities*. It seems unlikely that the G20 had in mind that they were creating a new species of utility. Utilities – providers of essential resources – are characterised by a triangle of tension between the owners, the customers, and the state. Typically the state limits the costs paid by the customers but provides a backstop in case the supplier fails, and there is a debate on what is fair and reasonable for customers to pay, for owners to receive, and for governments to risk. In compulsory clearing these features are absent: the state washes its hands of liability for end-of-waterfall risk,[102] the amount of risk to be borne by the owners is set at a vanishingly small amount by statute,[103] and there is no price regulation or cap on risk borne by the clearing members.

10.9 Having digested the points made on all sides of the debate, the following conclusions might be drawn. First, compulsory clearing is likely to cause more attention to be paid to the risk management systems of CCPs generally, and derivatives CCPs in particular. CCPs may come under political and regulatory pressure to clear more asset classes, with the consequence that affected CCPs adopt highly conservative risk-management measures; which, in turn, may drive products back into the uncleared market-place – if needs be to jurisdictions where the activity is more freely tolerated – or lead treasurers to conclude that the costs of hedging exceed the benefits, leaving corporates in the 'real economy' exposed to risks which could have been managed. Secondly, a squeeze on eligible collateral may occur, with similar results. Thirdly, the absence of interoperability between OTC-derivatives CCPs may lead over a period of time (potentially a very long time) to consolidation between CCPs clearing similar products, with the emergence of product monopolies. Finally, the absence of agreed standards for resolution of failed CCPs, coupled with the disastrous impact which an uncontrolled CCP insolvency would have on the

100 EMIR, art 11

101 Pirrong, C, *The Economics of Central Clearing: Theory and Practice* (May 2011), ISDA Discussion Paper No 1

102 See **section 14.6** and **Chapter 14** generally

103 See **sections 7.29–7.35**

wider economy, makes it difficult to avoid the conclusion that such monopolies would be too important to fail.

EMIR – THE CLEARING OBLIGATION

10.10 The Regulation on OTC derivative transactions, central counterparties and trade repositories (EMIR) imposes an obligation to clear OTC derivative transactions from the moment when both (a) there is a CCP duly authorised and capable of clearing the transaction and (b) the transaction is of a class declared subject to the clearing obligation. (At the time EMIR came into force, neither of these conditions applied, since no CCPs able to clear OTC derivatives in the European Union had the requisite form of authorisation required by EMIR, and no declarations had been made in relation to the classes of asset to be cleared.) In this section the extent and implications of the clearing obligation are examined.

The obligation is set out in article 4 of EMIR, which provides that '(1) Counterparties shall clear all OTC derivative contracts pertaining to a class of OTC derivatives that has been declared subject to the clearing obligation. … (3) The OTC derivative contracts that are subject to the clearing obligation pursuant to paragraph 1 shall be cleared in a CCP authorised under Article 14 or recognised under Article 25 to clear that class of OTC derivatives'. 'Authorised' CCPs are those which are incorporated in, and licensed by the competent authority of, a Member State; 'recognised' CCPs are third country CCPs which have been recognised by ESMA.

To whom the obligation applies

10.11 In the European Union, an obligation to clear will arise under EMIR where:

- the parties are 'financial counterparties' (FCs) or 'non-financial counterparties' (NFCs) that pass a volume threshold set out in regulatory technical standards issued under Article 10(4)(b)[104] (hence referred to as FC+s or NFC+s)
- one party is a FC+ or NFC+ and the other is a third-country entity 'that would be subject to the clearing obligation if it were established in the Union' (3CEs)
- both parties are 3CEs and the contract has a 'direct, substantial and foreseeable effect' within the European Union, or imposing the clearing obligation is necessary or appropriate to prevent evasion of the provisions of EMIR.[105]

Financial counterparties are credit institutions, investment firms, insurers, reinsurers, funds, pension funds, AIFs and CSDs.[106] Non-financial counterparties are everybody else, apart from CCPs themselves[107] and out-of-scope persons listed in articles 1(4) and (5), which exclude governmental and international

104 EMIR, arts 4a(1) and 10(1) respectively
105 EMIR, art 4(1)
106 EMIR, art 2(8)
107 EMIR, art 2(9)

bodies from the clearing obligation.[108] The clearing threshold is set out in article 11 of EMIR RTS 149:[109] it is EUR 1 billion gross notional value for credit and equity derivatives, and EUR 3 billion gross notional value for interest rate, foreign exchange, commodity and other derivatives. Except for UCITS and AIFs, contracts entered into by all entities in the group must be included in the calculation; NFC+s can exclude transactions which are hedges or treasury financing.[110] What happens when business wavers around the threshold is addressed as follows. If the rolling 30-day average position rises, so that the threshold is exceeded, the counterparty must clear all relevant contracts within four months of becoming subject to the clearing obligation.[111] If the rolling 30-day average position falls below the EMIR RTS 149 threshold, it is no longer subject to the clearing obligation.[112] It is important for a party to a transaction to know if the counterparty is over the threshold, since this may affect its own obligation to clear. The natural expectation is that the counterparty should represent, in entering into an uncleared trade, that it is below the threshold. This may be difficult for non-financial groups which do not have internal mechanisms for aggregating such information across legal entities and geographies.

To determine whether the counterparty meets the threshold in EMIR RTS 149 is not simple, since the volume of business is not a static data point. The problem case is where the counterparty is below the threshold when the transaction is agreed, but later on the counterparty's relevant volume increases, for example through merger or organic growth. Article 4(1)(b) of EMIR does not bring an old transaction within the scope of clearing unless it is 'novated'; the effect of many bilateral netting agreements may be to bring about a novation when a new transaction becomes subject to the master agreement, with the effect that a back book of transactions may then have to be cleared if the volume threshold is now passed.

The first types of transaction to be mandatorily clearable were set out in EMIR RTS 2205,[113] EMIR RTS 592[114] and EMIR RTS 1178.[115]

The EU approach to all this has been adopted by the United Kingdom for the post-Brexit world, with the UK versions following the EU legislation closely.[116]

10.12 The clearing obligation is made more complicated by geography. Derivatives transactions are not localised, so that one counterparty may be located in one place and the other in another. The difficulty is compounded if the clearing obligation is different in the two places. European authorities will attempt to ensure clearing happens even if the more obviously relevant local authorities do not.

108 See section 10.13(2)

109 Commission Delegated Regulation (EU) No 149/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on indirect clearing arrangements, the clearing obligation, the public register, access to a trading venue, non-financial counterparties, and risk mitigation techniques for OTC derivatives contracts not cleared by a CCP

110 EMIR, arts 4a(3), 10(3)

111 EMIR, arts 4a(1)(b), 10(1)(b)

112 EMIR, arts 4a(2), 10(2)

113 Commission Delegated Regulation (EU) 2015/2205 of 6 August 2015 supplementing [EMIR] with regard to regulatory technical standards on the clearing obligation

114 Commission Delegated Regulation (EU) 2016/592 of 1 March 2016 supplementing [EMIR] with regard to regulatory technical standards on the clearing obligation

115 Commission Delegated Regulation (EU) 2016/1178 of 10 June 2016 supplementing [EMIR] with regard to regulatory technical standards on the clearing obligation

116 See Table 0.1

After the United Kingdom's departure from the European Union, the United Kingdom's version of article 4 of EMIR retains long-arm clearing jurisdiction over transactions between non-UK parties, if the contract has a direct, substantial and foreseeable effect within the United Kingdom, according to criteria determined by the Financial Conduct Authority.[117]

Thus, if *both* parties are third-country entities, the clearing obligation can still apply if 'the contract has a direct, substantial and foreseeable effect' within the European Union or, as the case may be, the United Kingdom, or 'where such obligation is necessary or appropriate to prevent the evasion of any provisions of this Regulation'.[118] The tests are set out in Articles 2 and 3 of EMIR RTS 285.[119] There are two classes of direct, substantial and foreseeable effect:

- where one entity's obligations are guaranteed by a FC established within the European Union, or as the case may be, the United Kingdom;
- where both entities act through EU (or, as the case may be, UK) branches and would be FCs (as opposed to NFC+s) if they were established in the EU.

Anti-evasion transactions are defined as having as their primary purpose 'to defeat the object, spirit and purpose' of any provision of EMIR, including where part of an artificial arrangement. The practical purport of the latter test will be demonstrated only in enforcement action, since a party which is attempting to evade EMIR is hardly going to comply with the clearing obligation.

The result of provisions like these is that parties to OTC derivatives transactions may have to look beyond their own borders, since a foreign clearing obligation may apply. Whether it is practical for the authorities in the jurisdiction aiming to enforce clearing to do so, where the party is outside their control, is open to question.

10.13 There are three noteworthy exemptions from the EMIR clearing obligation:

(1) *Intra-group transactions*. Intra-group transactions are exempt, provided that they meet the definition of intra-group transaction, and provided that the competent authorities of both parties agree.[120] If one party is in the EEA, only its regulator needs to approve it. The UK version of EMIR mirrors the provision, with the FCA needing to approve intra-group transactions involving UK parties; cross-channel transactions thus need the approval of two regulators. The definition[121] of 'intra-group transaction' is an example of tortuous drafting at its most unpleasant, because it differs according to whether the problem is considered from the viewpoint of a financial or a non-financial counterparty – thus raising the possibility that a trade to which both you and I are parties might be an intra-group transaction for me (and therefore exempt from clearing) but not for you (and therefore

117 Over the Counter Derivatives, Central Counterparties and Trade Repositories (Amendment, etc., and Transitional Provision) (EU Exit) Regulations 2019, SI 2019/335, reg 14; Financial Conduct Authority, Technical Standards (European Market Infrastructure Regulation) (EU Exit) (No 2) Instrument 2019, FCA 2019/2

118 EMIR, art 4(1)(a)(v)

119 Commission Delegated Regulation (EU) No 285/2014 of 13 February 2014 supplementing EMIR with regard to regulatory technical standards on direct, substantial and foreseeable effect of contracts within the Union and to prevent the evasion of rules and obligations

120 EMIR, art 4(2)

121 EMIR, art 3

not actually exempt after all). Broadly, though, both parties have to be included in the same accounting consolidation, share centralised risk evaluation, and (as regards any third-country entity) the third country has been recognised as having equivalent requirements to those in EMIR.[122]

(2) *Exempted entities.* Certain public sector bodies are exempted from EMIR altogether or the clearing obligation in particular. These are listed in EMIR article 1(4) and (5). The EU version does not list the Bank of England, and the UK version does not list the members of the ESCB, though both lists include the central banks of Japan, the United States, Australia, Canada, Hong Kong, Mexico, Singapore and Switzerland. What the mismatch will mean in practice is unclear.

(3) *Indirect clearing*. Article 4(3) states that, in order to satisfy the clearing requirement, 'a counterparty shall become a clearing member, a client, or shall establish indirect clearing arrangements with a clearing member …' This provision means that it is not necessary for every party to a clearable OTC derivative transaction to be a clearing member of a CCP. A clearing member is an undertaking which participates in a CCP; a client is an undertaking with a contractual relationship with a clearing member which enables it to clear its transactions with that CCP.[123] Indirect clearing – that is, where the party to the transaction is not a clearing member or a client – involves additional steps.[124] An alternative mechanism, which avoids the complexity of 'indirect clearing', is for the counterparty to clear directly, but to hire another participant in the CCP to enable it to take care of the CCP-facing responsibilities of direct membership.[125]

Which transactions must be cleared

10.14 EMIR is concerned with the mandatory clearing of OTC derivative contracts.[126] These are defined[127] as derivative contracts whose execution does not take place on a regulated market, or a third country market considered equivalent to a regulated market. 'Derivative contracts' are those listed in points (4) to (10) of the list of financial instruments in the list of financial instruments in MiFID,[128] namely:

'(4) Options, futures, swaps, forward rate agreements and any other derivative contracts relating to securities, currencies, interest rates or yields, emission allowances or other derivatives instruments, financial indices or financial measures which may be settled physically or in cash;

(5) Options, futures, swaps, forwards and any other derivative contracts relating to commodities that must be settled in cash or may be settled in cash at the option of one of the parties other than by reason of a default or other termination event;

122 EMIR, art 13(2)
123 EMIR, arts 2(14), (15)
124 See **section 10.20**
125 'The Secret Regulator' *How to fix the leverage ratio (by a prudential regulator)* (August 2015), Risk Magazine
126 EMIR, art 1(1)
127 EMIR, art 2(7)
128 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc, Annex 1, Section C

(6) Options, futures, swaps, and any other derivative contract relating to commodities that can be physically settled provided that they are traded on a regulated market, a MTF, or an OTF, except for wholesale energy products traded on an OTF that must be physically settled;

(7) Options, futures, swaps, forwards and any other derivative contracts relating to commodities, that can be physically settled not otherwise mentioned in point 6 of this Section and not being for commercial purposes, which have the characteristics of other derivative financial instruments;

(8) Derivative instruments for the transfer of credit risk;

(9) Financial contracts for differences;

(10) Options, futures, swaps, forward rate agreements and any other derivative contracts relating to climatic variables, freight rates, or inflation rates or other official economic statistics that must be settled in cash or may be settled in cash at the option of one of the parties other than by reason of default or other termination event, as well as any other derivative contracts relating to assets, rights, obligations, indices and measures not otherwise mentioned in this Section, which have the characteristics of other derivative financial instruments, having regard to whether, inter alia, they are traded on a regulated market, OTF, or an MTF.'

10.15 It does not follow that because a derivative contract is included in the MiFID list that a transaction of this type must inevitably be cleared if entered into by a person subject to the clearing obligation: there is a further assessment to make, of the eligibility of the contract for clearing. Only those contracts which are of a class 'declared subject to the clearing obligation' after completion of the process described in **section 10.16** must be cleared.[129] The relevant classes are described in regulatory technical standards: interest-rate swaps are the subject of EMIR RTS 2205 and EMIR RTS 1178, and credit default swaps of EMIR RTS 592.

Another trap for the unwary is the legal definition of an 'OTC' transaction. Transactions done on futures markets outside the European Union are not automatically regarded as executed on a venue and therefore falling outside the scope of OTC clearing. In fact the opposite is true: all transactions except those done on EU regulated markets will be 'OTC' unless, in the case of a third-country market, there has been an 'equivalence' ruling by the European Commission under Article 2a. EMIR. With the exit of the United Kingdom from the European Union, an equivalence ruling will be needed to ensure that the clearing obligation does not apply to transactions done on a UK derivatives exchange. Likewise, the UK Treasury will need to make regulations recognising EU derivatives exchanges as equivalent to avoid the characterisation of transactions executed on them as 'OTC'.[130]

10.16 In **section 17.16** it is noted that a critical question for risk managers at CCPs is the choice of products for clearing. There is, then, potential for conflict between a general policy to force-feed CCPs with all manner of OTC derivatives, and the prudence of CCPs which will wish to pick their diet more

129 EMIR, art 4(1)
130 MiFIR, art 36

delicately. The choice is between a 'top-down' approach, whereby the market is told by legislators and regulators what must or should be cleared, with the implication that user-governance will encourage CCPs towards greater appetite, and a 'bottom-up' approach, which allows CCPs to choose which products are suitable for clearing, subject to veto by regulators. EMIR allows for both approaches in Europe. A rather weak set of guidelines was issued by the International Organization of Securities Commissions (IOSCO) to regulators in order to help them avoid the grosser errors in applying either approach to the implementation of mandatory clearing.[131]

In the European Union, ESMA will (a) start with the list of contracts already approved by national regulators for clearing by the CCPs under their local regulatory regimes and the contracts cleared by recognised third-country CCPs, and use this to determine which classes of OTC derivatives should be subject to clearing (bottom-up);[132] and (b) carry out a public consultation, and determine which classes of contract should be so subject but which no CCP is yet authorised to clear (top-down).[133] In carrying out the top-down exercise, ESMA must take three criteria into consideration, namely standardisation, volume and liquidity, and availability of pricing data. These criteria are recited in the IOSCO guidelines, but a consideration of IOSCO's other guidance implies that many other factors ought properly to be considered when determining the appropriateness of a product for clearing.[134]

MiFIR and the trading obligation

10.17 As mentioned in **section 3.10**, the G20 introduced a 'trading obligation' as well as a clearing obligation in respect of OTC derivatives as part of the Pittsburgh agenda of 2008. The European Union adopted this part of the agenda under the Markets in Financial Instruments Regulation (MiFIR),[135] which decrees that certain classes of standardised derivatives transactions should be executed on a regulated market, MTF, OTF. or equivalent third-country venue.[136] The obligation applies to FCs and NFC+s. A few observations may be in order:

- MiFIR has not caught up with the change to EMIR made in 2019 to limit the scope of the clearing obligation as regards FCs, so that only FC+s are subject to that obligation. In consequence, some smaller FCs are still obliged to execute derivatives which are subject to the trading obligation on a suitable venue, but not to clear them. ESMA noted in July 2019 that the question whether the extent of the two obligations should be identical was due to be reported on by the European Commission, and pending the conclusions urged competent authorities to exercise discretion when using their powers of enforcement.[137]

131 Technical Committee of the International Organization of Securities Commissions, *Requirements for Mandatory Clearing* (February 2012), OR05/12, www.iosco.org/library/pubdocs/pdf/IOSCOPD374.pdf

132 EMIR, art 5(2)

133 EMIR, art 5(3)

134 See **section 17.17**

135 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

136 MiFIR, art 28

137 ESMA, *MiFIR implementation considerations regarding the trading obligation following the entry into force of EMIR Refit* (July 2019), Public Statement ESMA 70-156-1436

- Another challenge is that many transactions which are subject to the clearing obligation will not necessarily pass the tests set out in MiFIR for the trading obligation. So, as well as those obliged to trade on a venue but not to clear, there will be those obliged to clear but not to use a venue. Incomplete overlap is not perceived by market bodies to be a problem,[138] but the situation can be confusing.
- If ESMA (or, in the United Kingdom after Brexit, the Financial Conduct Authority) has ordained that a transaction type shall be executed only on an organised venue, this would have the merit of simplifying the routing of transactions for clearing, since the venue will have matching functionality and will ordinarily be obliged to feed transactions to CCPs. On the other hand, the law encourages the development of vertical silos and, given the multiplicity of venues and the competition between CCPs for clearing of standardised products, raises the question whether there is a need for interoperability between derivatives CCPs.[139]
- No regulated markets appear on ESMA's public register for the trading obligation for derivatives as it stood in early 2020.[140] The structure of MTFs and OTFs is probably more suitable for transactions for which liquidity is not a constant stream of orders but more lumpy and driven by requests for quotes. Derivatives subject to the trading obligation should, therefore, not be confused with 'futures' or 'exchange-traded derivatives'.
- MiFIR requires the operator of a regulated market to ensure that all transactions executed on the market are cleared by a CCP.[141] In the case of exchange-traded derivatives, there are no exemptions from the clearing obligation and no top-down designation of what is to be cleared and what not. In practice, futures exchanges in Europe have historically been cleared markets, so this does not introduce a major change. However, not all regulated markets' products will be clearable, since transactions which are not in 'derivatives' are outside the scope of both EMIR's and MiFIR's clearing obligations.

Article 6a

10.18 In 2019, EMIR was amended to introduce a package of new measures which soften the clearing obligation: reducing the scope of transactions required to be put into clearing, exempting low-volume financial institutions from the clearing obligation, and inserting a new article allowing for the clearing obligation to be suspended in certain circumstances. Accordingly, Article 6a provides that ESMA may request a suspension of the clearing obligation for a specific class of OTC derivative or for a specific type of counterparty, if (a) the derivatives are 'no longer suitable for clearing' under the criteria of Article 5(4) of EMIR, or (b) the CCP clearing the derivatives is closing its service and there is no replacement, or (c) 'the suspension of the clearing obligation … is necessary to avoid or address a serious threat to financial stability or to the orderly functioning of financial markets in the Union and that suspension is proportionate to those aims'. The decision whether or not to suspend lies with the European Commission.

138 See International Swaps and Derivatives Association, Inc., *ISDA MiFID DP Submission* (July 2014), www.isda.org/a/jIiDE/isda-mifid-dp-submission.pdf
139 See **sections 11.23ff** and **15.41ff** respectively
140 ESMA, Public Register for the Trading Obligation for derivatives under MiFIR (February 2020)
141 MiFIR, art 29

In the United Kingdom, following Brexit, Article 6a has been adopted, with the roles of ESMA and the Commission taken by the Bank of England with the consent of the Treasury, and the reference to 'the Union' being replaced by a reference to the United Kingdom.[142]

The geographical scope of the suspension is difficult to assess. As far as EU counterparties and non-EU counterparties caught by the EMIR clearing obligation are concerned, the power of the European Commission to suspend the legal duty to clear will be straightforward in that no violation of European law will follow. Where either the CCP or a derivatives counterparty is outside the European Union, however, coordination is necessary, since the clearing obligation is not solely a matter for the Commission, the Bank of England, or any other authority, but primarily a question for the regulatory or legislative authority in the counterparty's country. It would be unfortunate if a transaction, ordinarily subject to the clearing obligation, were entered into between a German bank and a British bank, when both banks have membership of an EU CCP but only the EMIR clearing obligation is suspended; or in the mirror-image situation where the CCP is in the United Kingdom and only the UK clearing obligation is suspended. Switching portfolios between CCPs is not easy.

One ground for suspension is a financial stability one. In a crisis, the European suspension power looks a little clunky to be easy to operate quickly. The procedure is that a competent authority (responsible either for a clearing member or the CCP) can request ESMA to submit a request for suspension to the Commission. Reasons and evidence must be supplied. ESMA has 48 hours to comply or reject the request. The Commission has to act 'without undue delay', but there is no deadline. In the case of a CCP which has reached the end of its waterfall, and needs to be relieved from the continuing inflow of new transactions which it cannot manage, this three-step procedure could be unfortunately cumbersome.

Finally it may be noted that the suspension of the clearing obligation is intended to be temporary only, for a period of three months renewable up to a maximum of one year's suspension in total.[143] How this fits with Recital (13) of the Regulation which introduced article 6a[144] is unclear: this refers (unlike article 6a itself or indeed the remainder of EMIR) to 'abolition' of the clearing obligation, in the following terms: 'ESMA should, while keeping in mind the G20 objectives, ensure that, where the abolition of the clearing obligation is appropriate, that abolition is instigated during the suspension of the clearing obligation.' What seems to have happened, rather quietly, is a loss of appetite for mandatory clearing.

Client and indirect clearing

10.19 The need for counterparties to clear their transactions implies a need for those counterparties which are ineligible to become clearing members, or

142 Over the Counter Derivatives, Central Counterparties and Trade Repositories (Amendment, etc., and Transitional Provision) (EU Exit) (No.2) Regulations 2019, SI 2019/1416, reg 28

143 EMIR, art 6a(8)

144 Regulation (EU) 2019/834 of the European Parliament and of the Council of 20 May 2019 amending [EMIR] as regards the clearing obligation, the suspension of the clearing obligation, the reporting requirements, the risk-mitigation techniques for OTC derivative contracts no cleared by a central counterparty, the registration and supervision of trade repositories and the requirements for trade repositories

unwilling to undertake the burdens of clearing membership, to clear as clients of GCMs.

Various models of access for clients are possible, though in Europe the 'back-to-back' model under which GCMs deal as principal seems to be prevalent.[145] Other possibilities, where the client has some sort of relationship with the CCP, either because the CCP guarantees the GCM's performance to the client, or because the arrangement is structured as an agency whereby the CCP is in a contractual relationship as principal with the client and the GCM guarantees the performance of the client, are possible.[146] Where the back-to-back principal-only model is used, the structure for client clearing[147] and the issues arising on GCM default[148] become complex. This does not mean that the back-to-back model is flawed, since self-clearing end-users may be less suitable to participate in default management and they may introduce unusual risk into the system.[149]

Another concern which has arisen since the introduction of mandatory clearing of OTC derivatives is the concentration of GCM services into the hands of a small number of providers.[150] The European Union has attempted to address this as, essentially, a competition issue, by bringing the competition concept of 'fair, reasonable, non-discriminatory and transparent' commercial terms into EMIR.[151]

10.20 A further possibility to enable an end-user to clear is for it to use an 'indirect clearing' structure. This model envisages that the counterparty is neither a clearing member nor a client of a clearing member, but a client of a client. Structures like that may be needed where the GCM leverages its network of affiliates to source business from customers: while the customer deals with one affiliate, a different one is the CCP participant, thus creating an extra link in the clearing chain. Regulatory rules which restrict foreign financial firms becoming GCMs, or which restrict local firms doing business with foreign customers, will tend to increase chain length in this way.

Article 4(3) of EMIR permits a counterparty to satisfy the clearing obligation by establishing indirect clearing arrangements with a clearing member. Indirect clearing arrangements must not increase counterparty risk, and the assets and positions of the counterparty must benefit from segregation, portability and default-handling protections with equivalent effect to those laid down in the Regulation as regards clearing members and clients. The requisite details are spelt out in EMIR RTS 149.[152] The privilege of offering indirect clearing is granted only to clients who are themselves credit institutions or investment firms (or the non-EEA equivalent). The terms of indirect clearing are to be agreed between the client and the indirect client; the clearing member must be consulted; and the

145 See **sections 2.12**ff

146 See Alvarez, N, and McPartland, J, *The concentration of cleared derivatives: Can access to direct CCP clearing for end-users address the challenge?* (August 2019), Chicago Fed Working Paper WP 2019-06

147 See **section 2.15**

148 See **section 17.58ff**

149 See Alvarez and McPartland paper; Braithwaite, J., and Murphy, D., *Take on me: OTC derivatives client clearing in the European Union* (June 2020), LSE Legal Studies Working Paper No 07/2020, SSRN ID 3632962

150 Analysed by Alvarez and McPartland

151 Article 4(3a)

152 Commission Delegated Regulation (EU) No 149/2013 of 19 December 2012 supplementing EMIR with regard to regulatory technical standards on indirect clearing arrangements, etc

client may not limit its liability to the clearing member in relation to the indirect client's obligations to the clearing member. The real challenge, however, is for the clearing member, which must in effect adopt practices similar to those of a CCP. The clearing member must keep records enabling the client to segregate its house positions from the positions of the indirect clients, and if requested, keep separate segregated accounts for each of the indirect clients individually. The clearing member must 'establish robust procedures to manage the default of a client' which must 'include a credible mechanism for transferring the positions and assets to an alternative client or clearing member', and 'ensure that its procedures allow for … the clearing member to pay all monies due to the indirect clients following the default of the client'.[153]

The fashion for indirect clearing has extended beyond the OTC derivatives which are mandatorily clearable under EMIR. MiFIR indicates that indirect clearing is a concept applicable to exchange-traded derivatives, 'provided that those arrangements do not increase counterparty risk and ensure that the assets and positions of the counterparty benefit from protection equivalent to that referred to in Articles 39 and 48 of [EMIR]'.[154] (Articles 39 and 48 of EMIR require segregation and default management, including in particular transfer and leapfrog arrangements.[155]) MiFIR RTS 2154[156] sets out details for indirect clearing of exchange-traded derivatives which may be compared with those in EMIR RTS 149. Comparison is not simplified by the different drafting approaches of the two sets of standards, but the content of both measures is similar. The principal differences are that MiFIR is more prescriptive, especially as regards default management, and includes a section on very long chains (indirect indirect client clearing); EMIR has a provision forbidding 'business practices of the CCP which act as a barrier', which has not been carried across to MiFIR.

Achieving the standards set out in EMIR RTS149 and MiFIR RTS 2154 with regard to segregation, transfer and leapfrog may be difficult in practice, in light of the legal complexity of establishing them, and rendering them insolvency-proof, at the level of clearing members and clients.[157] As discussed in **sections 17.54ff**, close-out and transfer of client positions following clearing member default is not easy. It becomes even harder if the counterparty using a clearing service does so as an indirect client, so that the default is that of a client well-removed from a CCP which may be unaffected by the default and is probably in no position to control it. Furthermore, a clearing member cannot dictate the system of insolvency law applicable its clients – all it can do is say that its procedures are 'credible' only in relation to certain types of client. Even where the insolvency issues can be overcome, the operational difficulties of providing segregated accounts will be expensive to overcome, so that firms may struggle to prove a business case for providing the new type of service.

153 EMIR RTS149, art 4(2), (4), (5)
154 MiFIR, art 30(1)
155 See **section 7.36(3)**
156 Commission Delegated Regulation (EU) 2017/2154 of 22 September 2017 supplementing [MiFIR] with regard to regulatory standards on indirect clearing arrangements
157 See feedback received by ESMA while consulting on implementation of indirect clearing under MiFIR, ESMA, *Consultation Paper MiFID II/MiFIR* (December 2014), ESMA/2014/1570

Uncleared transactions

10.21 Even where the clearing obligation does not apply, EMIR imposes risk-management obligations on parties to OTC derivative transactions. It is perhaps worth noting that clearing remains an option for such parties, assuming that an eligible CCP is willing to clear the transaction. Failing that, a number of obligations will apply to both financial and non-financial counterparties (but not to the out-of-scope governmental entities) unless an intra-group exemption from risk management is available: the obligations include, for financial counterparties, marking-to-market, collateralisation and capital adequacy; and for all party types, having procedures for confirmations, portfolio reconciliation, portfolio compression, dispute management, and valuation, and generally being able to manage operational aspects of counterparty risk.[158]

158 EMIR, art 11; EMIR RTS 149, arts 12–17

11 Competition

THE ROLE OF COMPETITION IN CLEARING AND SETTLEMENT

11.1 Competition plays a fundamental part in directing European policy with regard to clearing and settlement. At the heart of it is a tension between the principle that competition between service providers drives down cost, encourages innovation, and improves customer service, and the simple fact that infrastructures are single, centralised organisations designed and built to serve the whole market. How can competition policy apply in a marketplace where there is, and ought to be, only one provider? There are some unhappy tensions:

- Central securities depositories, central counterparties, and central banks' payment systems provide, as their names suggest, quasi-monopolistic facilities, whose efficacy depends on serving the whole marketplace (or, to use competition terminology, a 'network effect'). With a network effect the value of the service is increased according to the number of people that use it.[1] So, for example, the more participants in a CCP, the greater the netting benefit and, on the whole, the greater the other advantages of using that CCP. Network effects may also include the tendency of an incumbent to add more products to its range and the consequential benefits for its participants (such as, to consider CCPs again, the potential for cross-margining) thus strengthening the effect.[2] Infrastructure participation may be subject to a 'tipping' effect – a point beyond which there are already so many participants in that it is pointless to join a competitor and impossible for a challenger to try and compete with the incumbent.
- 'Fragmentation … results in inefficiencies and higher costs, especially for cross-border transactions,' notes the European Central Bank.[3]
- Post-trade infrastructure has historically existed to serve the trading community, and in particular CCPs used to be owned or controlled by the trading infrastructure (trading platforms) whose transactions they clear. Coupled with the observation that securities exchanges have historically served a predominantly local (national) investor base, who invest in locally-issued securities for which the root of title is held at the local CSD, there is a powerful gravitational force encouraging the vertical integration of post-trade infrastructures with the trading platforms they serve.

1 See Lee, R, *Running the World's Markets: The Governance of Financial Infrastructure* (Princeton University Press, 2011), ISBN 978-0-691-13353-9, pp 15–18

2 Hasenpusch, T, 'Network Economics with Application to Clearing Services and their Impact on the Organisation of the European Clearing Industry', in Engelen, P-J, and Lannoo, K, (eds), *Facing New Regulatory Frameworks in Securities Trading in Europe* (Intersentia, 2010), ISBN 978-90-5095-973-5

3 European Central Bank, *Eurosystem oversight policy framework* (September 2015)

These considerations are less likely to occur in the general economy, but where they (or analogous forces) come into play, there can be conflict with the objectives of competition policy. Europe, unlike other parts of the world, has taken the view that competition law not only should apply but will, almost whatever the cost, be made to apply. In part this is dogma; in part this is the legacy of forming a union from dozens of states with different languages, cultures and national infrastructures.

The historical diversity is, in fact, the problem. In each country there is a distinct legal and fiscal system, which allowed different technical standards and structures to develop, as shown by the Giovannini reports.[4] This means that Europe has a very high number of providers of central clearing and settlement services, each of which can levy whatever charges it prefers, innovate (or not) at whatever rate it prefers, and impose whatever conditions it prefers, without the threat of its business being sucked away by a competitor. Given that background, it is encouraging that there has been no significant restriction of services to local participants and that cross-border consolidation has, to a degree, been attempted. The European Commission's Directorate General for Competition (DG Comp) – the European competition authority – has, however, been keeping a close eye on the industry, and has intervened periodically.

The intervention of competition doctrine does not imply that the industry is inherently evil. The theory of competition begins with an analysis of the 'market' in which competitors should be free to act, and notions of what constitutes the 'market' evolve over time. With regard to clearing and settlement, the idea that there was any market at all would have been challenged as ridiculous as recently as 1970. CCPs' activities were confined to, and often regarded as part of, derivatives exchanges; securities settlement functions were carried out by the issuers of the securities, or their agents, rather than a central depository; and settlement of payment obligations was carried out by banks. Insofar as post-trade activities were acknowledged to exist at all, they would have been regarded as inextricably bound up with trading itself. But markets grow and evolve, and what was yesterday a single service can today be seen as a combination of services (or, to use competition phraseology, adjacent markets); and if restrictions apply, for historical reasons, to deny or discourage alternatives to some of the services, the incumbent provider may find itself under challenge for abuse of a dominant position.

Europe's clearing and settlement infrastructure is not so perfect that traditional free-market solutions have no place. Cost has, for a long time, been considered high.[5] Infrastructures are combined in ways which do not conduce to efficiency, innovation and service; in some cases, there have been restrictions on access. Competition policy has, evidently, a right to be heard. DG Comp set this out fully in an issues paper[6] submitted for public consultation in 2006. Reporting on its findings, the EU Commissioner Neelie Kroes said:[7]

4 See **section 1.26**

5 See **section 1.29**

6 European Commission services, *Competition in EU securities trading and post-trading* (May 2006), Issues Paper, http://ec.europa.eu/competition/sectors/financial_services/securities_trading.pdf

7 Kroes, N, *Competition aspects of EU securities trading and post trading* (July 2006), remarks at ECON meeting, http://ec.europa.eu/competition/sectors/financial_services/speech11072006.pdf

> 'At the trading level, we certainly want to see more competition amongst exchanges, but also between exchanges and alternative trading platforms. Such competition relies on access to clearing and settlement. Whether within or outside a vertical silo structure, it is all too easy for exchanges to block such access today. Competition also relies on rules that are the same for all. It is not logical that the incumbent exchange can impose rules on its members which limit their effective choice of trading platform. If such rules are required, this must be a matter for regulators, not for the incumbent to decide. …
>
> Clearing is not only a precondition of effective competition in trading; it should also be looked at as a market in its own right. …
>
> In the area of settlement, I think no-one argues that competition policy alone could solve the many inefficiencies that exist in cross-border operations. This is why the primary focus must remain the removal of the so-called "Giovannini barriers" so as to allow cross border competition on both price of the services and innovation in service provision.'

Since Mrs Kroes's speech, there have been several important developments. The first Markets in Financial Instruments Directive (MiFID)[8] exposed national stock exchanges in the EEA to competition from multilateral trading facilities and other types of trading platform. Then the financial crisis of 2008 spawned a set of EU legislation, summarised in **Chapter 7**, which, among other things, imposed uniform European regulatory standards on CCPs and required Member States to facilitate issuance of securities into foreign CSDs. Finally, the European Central Bank established a single platform for securities settlements in the form of Target2-Securities.[9] These developments have all had a significant effect on the competition agenda in relation to clearing and settlement infrastructures.

11.2 At the outset of any assessment of competition law and policy, it is necessary to identify the relevant 'market'. This question has proved to be more difficult than one might imagine. For the historical reasons hinted at above, the very integration of post-trade arrangements with trading can lead to the 'market' being perceived as the whole trade-and-post-trade services arena. On the other hand, it is probably safer to treat trading and clearing as separate, as per the practice of the United Kingdom competition authorities.[10] This text follows the trend so as to look separately at each post-trade function.

THE TREATY

11.3 In the European Union, competition law starts from the basic provisions of the EU Treaty.[11] The position in the United Kingdom after leaving the European Union, while having some similarities, is described in **section 11.35**.

Article 101 prohibits agreements between undertakings which have as their object or effect the prevention, restriction or distortion of competition within the

8 Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments etc

9 See **section 2.23**

10 Cf Office of Fair Trading, *Anticipated acquisition by ABN Amro Clearing Bank NV,* etc, (November 2013), ME/6135/13, para 37

11 Treaty on the Functioning of the European Union, as recast and renumbered (May 2008), OJ C115 vol 51, p 47

internal market, unless the arrangement contributes to improving the production or distribution of goods or to promoting technical or economic progress, and (a) it does not impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives and (b) it does not afford the undertakings the possibility of eliminating competition in respect of a substantial part of the products in question. Operators of infrastructures may fall foul of this rule by attempting to integrate provision of a combination of centralised trading, clearing or settlement activities formerly carried on by different undertakings.

Also, article 102 of the Treaty prohibits abuse by undertakings of a dominant position within the internal market. This article in particular is likely to apply to centralised providers of clearing and settlement infrastructure. Again, operators of infrastructures may be open to challenge under this rule, by imposing pricing, access or other conditions which appear to be abusive, given their centralised (and thus apparently dominant) status.

11.4 Accordingly, various practices observed among providers of infrastructure services may be questioned:

(1) *Monopolies.* Because of the prevalence of idiosyncratic national technical standards, laws and taxation systems, there have typically been single central providers of clearing and settlement services. Although the Treaty does not prohibit monopolies or having a dominant position in a particular market, a person who is in a dominant position will be at risk of challenge under article 102.

(2) *Conditions of access.* Very few cases can be found where a monopolistic provider of clearing or settlement services has improperly imposed excessive conditions on access to its services. But a few such cases can, unfortunately, be found. And, for reasons of operational convenience, rooted in different technical standards, laws and regulations, national market practices still constrain users to favour incumbent local providers of clearing and settlement facilities even though there may be no formal requirement to do so.

(3) *Adjacent markets.* While there are some regulatory limitations, infrastructures are not typically required by their constitutions to confine their activities to clearing, settlement, or the provision of payment systems. Infrastructures commonly trade in data and wish to provide additional services, going beyond clearing and settlement, to their participants. Crossing into neighbouring territory might be criticised, however; for example, where there is confusion between roles of CSDs (or ICSDs) and custodians, and other arrangements whereby services now perceived to belong in different 'markets' are bundled together.

(4) *Vertical linkages.* The existence of 'vertical silos' in some countries, combining trading, clearing and settlement functions into a single corporate group or even a single corporate entity, has been criticised as potentially foreclosing competition in the post-trade sector.

(5) *Horizontal consolidation.* Cross-border consolidation between CCPs, CSDs and payment systems has been a feature of the evolving post-trade environment in Europe. But consolidation might exacerbate any monopolistic tendency which a single-country infrastructure already enjoyed.

(6) *Development of standards.* Cooperation among providers of clearing and settlement services in order to make markets more efficient may be at risk

of challenge under article 101. The European Commission has guidelines on the creation of standards, which may be difficult to comply with.[12]

These issues will be examined in subsequent sections of this chapter. It may also be noted that DG Comp is active in policing other parts of the post-trade space than those occupied by infrastructures. In particular, there have been anti-trust investigations into how information is shared[13] and access to standard-setting by banks.[14]

MONOPOLIES

11.5 It is axiomatic that monopolies are anti-competitive, but it may be counter-intuitive for the non-specialist that monopolies are not outlawed by the Treaty. It is also, perhaps, counter-intuitive that clearing and settlement infrastructures do not have to be structured as monopolies:

> 'It has long been assumed that the various levels of the trading infrastructure enjoyed some kind of "natural monopoly." In recent years, however, there has been evidence to challenge this view. Experience has shown that virtually all instances of competition between trading venues have led in practice to decreased trading spreads and therefore more efficient markets. In any case, even if the market were eventually to tend towards monopoly provision, there would still be significant scope for competition amongst legacy national providers during a possibly lengthy transitional phase, and with providers from third countries, due to the potentially low marginal costs of entry. The notion of "natural monopoly" fails to capture this reality.'[15]

Yet the infrastructures were established monopolies, or near-monopolies, even if that was not a 'natural' state of things. Numerous commentators have noted that nationally-developed clearing and settlement systems created a patchwork of mutually incompatible infrastructures each enjoying a local monopoly.[16] While everyone – everyone except the incumbents, that is – agreed that this was bad, there has been no consensus as to whether consolidation or competition was the solution. Vertical and horizontal consolidation are considered in **sections 11.23–11.28** and **11.29–11.33** respectively. DG Comp is clear that competition is the right answer.

So, the question then is: how can a clearing or settlement system *not* operate as a monopoly?

12 European Commission, *Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements* (January 2011), Communication 2011/C11/01, OJ(C)11/1

13 See **section 4.13**

14 See **section 11.34**

15 European Commission services, *Competition in EU Securities trading and post-trading* (May 2006), Issues Paper, http://ec.europa.eu/competition/sectors/financial_services/securities_trading.pdf, paras 11–12

16 See, for example, Niels, G, Barnes, F, and van Dijk, R, 'Unclear and Unsettled: the Debate on Competition in the Clearing and Settlement of Securities *Trades*' (December 2003) ECLR 634; Tapking, J, and Yang, J, *Horizontal and Vertical Integration in Securities Trading and Settlement* (August 2004), European Central Bank Working Paper No 387; van Cayseele, P, and Wuyts, C, *Cost Efficiency in the European Securities Settlement and Safekeeping Industry* (April 2005), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=808824; Baur, D, *Integration and Competition in Securities Trading, Clearing and Settlement* (March 2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=891223

Competition among CCPs

11.6 Starting with CCPs: it has been obvious, since the first version of MiFID, that there is a role for new CCPs. CCPs without any vertical link to an existing stock exchange have sprung up and offered their services for a variety of markets. No doubt this phenomenon was triggered by the creation of new trading platforms which compete with the stock exchanges as the primary trading venues for European equities. But this is not the full story. Encouraged by DG Comp and the European Code of Conduct,[17] various CCPs have aimed to clear for users of stock exchanges notwithstanding the existence of an established incumbent. The ability of entrant CCPs to operate in parallel to an incumbent is not unknown, even in a corporate structure where an exchange and a CCP are members of the same group: SIX x-clear co-cleared for the London Stock Exchange with LCH Ltd from December 2008; the London Stock Exchange Group acquired the LCH.Clearnet group in 2013; and in 2015, the London Stock Exchange opened up clearing to EuroCCP. The existence of cases like this, even if they are rare, demonstrates that monopolistic behaviour by CCPs is not inevitable.

Co-clearing does, however, require a link between the CCPs which are inter-operating: the reasons for this, and the complexities which interoperability throws out, are explored in **Chapter 15**. Here it may be noted that:

- Competition among CCPs raises fears of a 'race to the bottom', which means a competition to reduce costs through easier-to-meet risk-protection standards.[18]
- It is not self-evident that competition reduces costs: in the absence of standardisation and interoperability, it might mean that market participants need to invest in connectivity several times over. The optimal number of CCPs to provide resilience in crises is also open to debate.[19]
- Market participants nevertheless argue that 'the commercial benefits of the user choice model are multiple and manifest,'[20] citing reductions in clearing fees, and several benefits from consolidation of flow into a single CCP chosen by the user rather than (the plethora of) CCPs chosen by venues.

Competition between CSDs?

11.7 The story is more complex for CSDs than for CCPs. The role of a CSD is intertwined with assuring the integrity of the 'root of title' to securities. It may be possible for more than one CSD to exist in a single country (Clearstream Banking AG Frankfurt, formerly called the *Deutsche Kassenverein*, is the product of a merger of several regional CSDs), but for more than one CSD to hold the key to title of a single issue of securities is highly unusual. Yet, again, there are examples of this. Perhaps the most obvious is that of Eurobonds, which

17 See **section 11.20**

18 See **section 15.20**

19 Renault, F, 'Concentration risk and the optimal number of central counterparties for a single asset' (July 2010) Banque de France Financial Stability Review, www.banque-france.fr/fileadmin/user_upload/banque_de_france/publications/Revue_de_la_stabilite_financiere/etude20_rsf_1007.pdf, No 14 (English version) pp 169–176

20 Barnes, R, *Counterparty clearing house user choice: an evolving European landscape*, (March 2010) Oxera Agenda

can be settled centrally at either of the ICSDs Euroclear Bank and Clearstream International SA Luxembourg. This is achieved by the ICSDs appointing a common depository – that is, by splitting off the 'depository' role of the CSD from the 'settlement system' role.[21] It can be argued that pushing the function of acting as common depository into a third party's hands merely displaces the monopoly problem to a different level, but there is hot competition, at least in relation to Eurobonds, among depository banks for the role of common depository. Evidently, one solution to breaking a monopoly at the level of CSDs would be to replicate the ICSD approach. This is what underlies the provisions of the CSDR which allows issuers to choose a CSD established in any Member State.[22]

An alternative might be to replicate the interoperability model for CCPs – that is, mutual membership.[23] That has been a guiding principle underlying Target2-Securities. As with links between CCPs, however, links between CSDs also introduce risk and cost, and again a cost-benefit study of the various models of full consolidation, ICSD-style competition, and links between competitors, would be needed to prove which is most effective.

Competition between payment systems?

11.8 Payment systems have, at least so far, been immune from challenge. To take on the European Central Bank (ECB) by alleging that it operates a monopoly in the form of its TARGET-2 settlement system might seem presumptuous. But it is also instructive to compare the characteristics of TARGET-2, which operates in connection with a network of interoperating national central banks, with other infrastructures. The national central banks (NCBs) have, in relation to payments, roles similar to that of CSDs in relation to securities settlement: they hold the root of title to money (central bank money), and historically they had settlement systems which transferred balances between the accounts of their participants. TARGET did not change any of that, but since the migration to TARGET-2, NCBs have been required to use the ECB's central settlement platform as the technical system which determines what is paid and when and by whom.[24] In this can be seen the precursor of the structure constituting Target2-Securities, and the comments made below in relation to that arrangement could be applied here.

However, it can also be argued that the TARGET-2 system is not monopolistic. In the first place, there is competition from other payment systems. The components of a payment system may include one or more ACHs as well as the bank – typically the central bank – across whose books the ultimate settlement of inter-bank payment obligations will occur.[25] ACHs may be in competition for the clearing business of banks in different countries, particularly following the introduction of a single currency in the eurozone. Secondly, TARGET-2 is not

21 Cf **section 2.26**

22 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc, art 49

23 See **section 15.51**

24 European Central Bank, *Information Guide for TARGET2 Users* (October 2009), www.ecb.int/paym/t2/shared/pdf/infoguide_V3_1_0.pdf

25 See **section 2.30**

really a system;[26] it is the platform on which interbank obligations can be settled when the banks' home central banks are situated in different countries. Certainly, the ECB is the only platform provider; but then in single-country currencies, the national central bank is the only place where ultimately there is certainty that payment obligations can be settled without recourse to physical cash or taking risk on a commercial bank. The logic is the same as that with a CSD: the central bank is the root of title to money, so the 'monopoly' is finally inherent in the service provided by a central bank. The ECB is not far different in this regard where the euro is concerned. Thirdly, settlement of payment obligations does not always require involvement of a settlement system. Correspondent banking allows payments to be settled without recourse to a formal multi-party system. All that is required is for a bank to open an account with a correspondent which can settle on the bank's behalf. Correspondent banking involves the assumption of credit risk on other banks – the absence of 'root of title' inherent in central bank money – but may be cheap and effective; in cross-currency payments it is also the norm. Use of correspondent banks can be seen as analogous, in the mirror world of securities settlement, as using agent or custodian banks: in securities, you take custody risk if you use an agent; in payments, you take credit risk if you use a correspondent.

So, nothing requires banks to use TARGET-2 to settle their payments. But the central banks which control the gateways to TARGET-2 provide an essential and unique service, in addition to the gold standard of central bank money which cannot, unlike commercial bank money, become valueless due to bank insolvency. That unique service is the provision of liquidity as part of the Eurosystem's monetary operations: the ultimate outlet through which banks obtain their funding and, in a crisis, can draw funds from the 'lender of last resort'. The position of central banks is monopolistic in this sense: every government wants the banks which are under its supervisory oversight, and therefore the constituency of banks which it would have to bail out in the event of a banking crisis, to be firmly under the control of the central bank in its own territory. The monopolistic features of central banking are thus unavoidable, and in a multi-state Europe an oligarchy of central banks constituting the Eurosystem is a settled feature. And no challenge from competition authorities is going to succeed or, probably, even be contemplated, owing to the critical role played by the NCBs in the day-to-day running of the economy and in crisis management.

Essential facilities

11.9 If operating a monopoly or near-monopoly is not illegal, it can, nonetheless, be a problem. As will be apparent from article 102 of the Treaty, abuse of a dominant position is outlawed: some of the consequences of that include commercially-driven access rights and criticism of the vertical silo model, both of which are discussed below. More subtly, an occupant of a dominant position has implicit duties if it can be shown to be providing an 'essential facility'. It is of no consequence if I have just invented a new device, and therefore have the pleasure of being the monopoly supplier of the device. I will only court trouble with the competition authorities if I abuse my position; and this is only likely if my device becomes so successful that everybody must have one. Sooner or later, my device may become essential for normal civilised

26 See **section 2.37**

existence, like railways in the nineteenth century or telephones in the twentieth. Clearing and settlement systems are obvious candidates to be treated as essential facilities.[27]

The doctrine of 'essential facilities' was developed in American anti-trust law and imported into Europe. The principle is as follows. 'Under this doctrine, a single firm, or group of firms, controlling an input at an upstream level of production that is essential for competitors on a downstream market may be obliged to deal with third parties where a refusal to do so would eliminate competition on the relevant downstream market.'[28]

The doctrine is relevant to vertical silos and other situations where a clearing or settlement infrastructure is exploiting its dominant position to obtain an advantage in a 'downstream' market where a multiplicity of parties may operate and compete. The leading case is *Oscar Bronner v Mediaprint*[29] (see **Case Study 11.1**). This case has nothing to do with clearing and settlement but establishes important principles about abuse of a dominant position. A provider of (say) settlement infrastructure would have to be careful in providing services in an adjacent competitive marketplace, such as (for instance) a clearing system, in case a competing CCP were to argue that settlement is indispensable and that failure to provide access wipes out the competitor CCP's ability to compete in providing clearing services to brokers and investors.

Case Study 11.1 ***Oscar Bronner v Mediaprint***

Oscar Bronner wanted to use a domestic daily-newspaper distribution service developed and used exclusively by Mediaprint. Ultimately, Oscar Bronner lost, because there were other channels available to enable it to distribute its products, notwithstanding that Mediaprint's service occupied a dominant position. The European Court of Justice held that, in order to establish abuse of a dominant position, refusal of the service must be shown to be both (i) likely to eliminate all competition in the market on the part of the person requesting the service and (ii) incapable of being objectively justified; and the service must be shown to be indispensable to carrying on the person's business, inasmuch as there is no actual or potential substitute for that service.

Advocate-General Jacobs's opinion, which was followed by the court, stated:

> 'The US essential facilities doctrine has developed to require a company with monopoly power to contract with a competitor where five conditions are met. First, an essential facility is controlled by a monopolist. A facility will be regarded as essential when access to it is indispensable in order to compete on the market with the company that controls it. The following have for example been held to be essential facilities: railroad bridges serving the town of St Louis; a local telecommunications network; a local electricity network. Secondly, a competitor is unable practically

27 Cf Lee, *Running the World's Markets*, pp 13–15

28 O'Donoghue, R, and Padilla, AJ, *The Law and Economics of Article 82 EC* (Hart Publishing, March 2006), p 408

29 *Oscar Bronner GmbH & Co KG v Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co KG and others* Case C-7/1997, [1998] ECR I-07791

> or reasonably to duplicate the essential facility. It is not sufficient that duplication would be difficult or expensive, but absolute impossibility is not required. Thirdly, the use of the facility is denied to a competitor. That condition would appear to include the refusal to contract on reasonable terms. Fourthly, it is feasible for the facility to be provided. Fifthly, there is no legitimate business reason for refusing access to the facility. A company in a dominant position which controls an essential facility can justify the refusal to enter a contract for legitimate technical or commercial reasons. It may also be possible to justify a refusal to contract on grounds of efficiency.'
>
> The case shows that if a service *is* shown to be indispensable, access to that service may have to be made available, even to a competitor.
>
> Deconstructing the facts further, an *Oscar Bronner* challenge depends on an organisation carrying on two activities, one of which is in competition with the challenger – Mediaprint competed with Oscar Bronner in producing newspapers – and the other where the organisation being challenged is in a dominant position – Mediaprint was the sole doorstep distributor. Oscar Bronner failed because they could not show that the distribution service was indispensable or that failure to provide it would wipe out Oscar Bronner's ability to compete in providing daily news to readers.

The upshot of the *Oscar Bronner* principle is that a market infrastructure may be compelled to deal with persons it would not ordinarily wish to deal with, notwithstanding the general principle of law that one is free to choose one's contractual counterparties. This has implications for the admission of applicants to membership of infrastructures and payment schemes, which are explored in **section 11.10**.

In its Notice on the application of competition rules to cross-border credit transfers,[30] the European Commission helpfully and simply defined an essential facility as 'a facility or infrastructure without access to which competitors cannot provide services to their customers'' The Notice, discussed at **section 11.14**, applies the essential facilities doctrine to access criteria applied by payments infrastructures, stating: 'A cross-border credit transfer system will be an essential facility when participation in it is necessary for banks to compete on the relevant market. In other words, lack of access to the system amounts to a significant barrier to entry for a new competitor. This would be the case if a new competitor could not feasibly gain access to another system or create its own system in order to compete on the relevant market.' Access criteria constitute one potential area in which infrastructures may be tempted to misuse their market power, and so this is the next subject for discussion.

ACCESS TO INFRASTRUCTURES

11.10 Rights of access to financial market infrastructure have given rise to two main items of case-law at the European level. The case of SWIFT[31] provides

30 Notice on the application of the EC competition rules to cross-border credit transfers (September 1995) *Official Journal of the European Communities*, C251, pp 3–10, para 25

31 Case No IV/36.120 – *La Poste/SWIFT + GUF*, Notice 97/C335/03 (November 1997), OJ C335, p 3

an example of what can happen in the post-trade space where an organisation is providing an essential facility. SWIFT is the network and messaging service provider for the financial industry.[32] In 1997 action was taken by the European Commission because SWIFT had refused La Poste, the French post office, access to its network. The Commission argued that SWIFT was an essential facility, because it had a monopolistic dominant position, being the only international network to transmit payment messages providing connections to banks anywhere in the world. It was claimed that SWIFT had abused its dominant position by imposing unjustified admission criteria. The case was ultimately settled after SWIFT had given a formal undertaking to grant full access to all entities fulfilling criteria set by the European Monetary Institute (the forerunner of the European Central Bank) for admission to domestic payment systems.

More troublesome was the case of Clearstream.[33] Clearstream Banking AG Frankfurt provides the settlement system (CSD) for German equities in 'registered' form, for which the relevant system was called CASCADE-RS. Euroclear applied to Clearstream, for access to CASCADE-RS. (Euroclear happens to be the major, if not the only, competitor of Clearstream's parent company, Clearstream International, as ICSD, though this was not formally relevant to the case, as neither Clearstream nor Euroclear was carrying out ICSD activities in relation to access to CASCADE-RS.) Euroclear was acting more as an agent bank; Clearstream as CSD for German equities. Although Clearstream admitted various applicants to participate in CASCADE-RS, Euroclear's application was for a period of two years deferred, questioned and obstructed by Clearstream, although eventually allowed, but on price terms which were 20% above the rate charged to national CSDs. Clearstream's behaviour was found to be a violation of article 102[34] of the Treaty. However, in light of this being the 'first decision in a complex sector', that the infringement had come to an end, and that 'cross-border clearing and settlement in the EU is an evolving sector … different institutions are presently debating issues related to the functions of service providers' imposing a fine did not appear appropriate.

Denying access to Euroclear for such a long period without justification was clearly wrong. Applying different pricing to different clients may not be wrong, but the decision on this point shows how care needs to be applied in relation to a service constituting an essential facility. The problem, though, was that Clearstream appears to have been motivated by its parent company's rivalry with Euroclear – differently stated, the problem was that the Clearstream group was operating in adjacent markets, namely being an ICSD and also a CSD.

11.11 From these cases it can readily be concluded that infrastructure providers cannot exclude competitors, either by designing restrictive admission criteria or by dragging their feet when an unwanted applicant knocks on the door. That conclusion demands a critical reaction: why, then, have CCPs and CSDs not insisted on links so they can clear and settle in new markets? The answers are not that competition law has failed, but that there are legal and practical obstacles to establishing interoperability links, as discussed in **Chapter 15**. In a report commissioned by DG Comp, some reasons were given:

32 See **sections 4.19–4.20**

33 Case COMP/38.096 – *Clearstream (Clearing and Settlement)*, Commission Decision C (2004) 1958 final; for a summary see *Official Journal of the European Union*, C165, p 7 (July 2009)

34 Article 82 as the Treaty was then numbered

'1. In some cases, there exists a legal requirement to use a certain clearing and/or settlement infrastructure.

2. In other cases, the trading or clearing membership rules are prescriptive in terms of which clearing or settlement service provider is to be used and only one service provider is prescribed.

3. In some other cases, the trading or clearing membership rules are prescriptive in terms of which clearing and settlement service providers can be used, but offer some choice. Thus, in this case members have theoretically the flexibility of using clearing and settlement service providers of their choice. But, in practice they do not because, at the present time, only one such service provider exists in the country.

4. In a few cases, the trading and clearing membership rules are not prescriptive, and membership is simply conditional on having proper clearing and settlement arrangements in place.'[35]

Competition requires the door to be opened, but it cannot deal with all the practical problems of getting over the threshold.

'Ex post' regulation might, therefore, be considered to be less useful in the post-trade sector than other areas of the economy. Europe has reacted with a raft of 'ex ante' legislation to improve the accessibility of infrastructures to each other. The legislation is discussed, and its effectiveness explored, at **sections 11.24–11.25**.

Acceptable membership criteria

11.12 What competition law has managed to achieve is a reasonably clear set of rules on what are, and what are not, acceptable membership criteria for market infrastructures to adopt. Article 102(c) states that abuse of a dominant position may, in particular, consist in 'applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage'. In principle, it is likely to be an abuse of a dominant position to have membership or access criteria which are not transparent, non-discriminatory, and justifiable.

(1) In the first place, the provider of a clearing or settlement infrastructure or payment scheme is likely to be in a dominant position. If not, there is no compulsion from competition law. It may even be the case that a duty to deal with applicants in accordance with article 102 only applies to 'essential facilities'.[36]

(2) But it will be prima facie abusive to discriminate between applicants for membership if their applications are equivalent. This implies that applicants should be treated equally.

(3) Having said that, it may be possible to justify different treatment on a variety of grounds. The most obvious is risk: where an infrastructure is exposed to the credit quality or operational capabilities of its members it should be entitled to reject an application from a weak applicant whose

35 London Economics, *Securities trading, clearing, central counterparties and settlement in EU25 – an overview of current arrangements* (June 2005)

36 O'Donoghue and Padilla, pp 466–67

participation may jeopardise the integrity or viability of the system and its other members. More difficult is the question of 'free riders': those who seek to join late, having avoided the expense and risk of setting up the infrastructure in the first place, but demand access on terms equal to those who made a full up-front contribution. Here it appears that differential pricing may legitimately be applied during a start-up period.

(4) If membership criteria are kept confidential it seems unlikely that their objectivity would be easy to establish.

These principles are apparent from the European Commission's Notice on the application of the EC competition rules to cross-border credit transfers, which is discussed further in **section 11.14**.

11.13 Rules on membership criteria are to be found in all the relevant legislation:

- For CCPs, EMIR[37] states that admission criteria are to be set upon the advice of the risk committee, and must be 'non-discriminatory, transparent and objective so as to ensure fair and open access to the CCP and shall ensure that clearing members have sufficient financial resources and operational capacity to meet the obligations arising from participation in a CCP'.[38] Further, 'criteria that restrict access shall be permitted only to the extent that their objective is to control the risk for the CCP'.
- For CSDs, the CSDR requires, for access to the settlement system operated by the CSD, 'publicly disclosed criteria for participation which allow fair and open access for all legal persons that intend to become participants. Such criteria shall be transparent, objective and non-discriminatory so as to ensure fair and open access to the CSD with due regard to risks to financial stability and the orderliness of markets'.[39]
- An operator of a systemically important payment system (SIPS) supervised by the ECB must 'establish and publicly disclose non-discriminatory access and participation criteria to the SIPS's services for direct, and, where relevant, indirect participants … The access and participation criteria … shall be justified in terms of the safety and efficiency of the SIPS and the markets it serves, and be tailored to and commensurate with the SIPS's specific risks. In compliance with the principle of proportionality, a SIPS operator shall set requirements that restrict access to the minimum possible extent.'[40]

There are also rules applicable to agent banks acting as providers of clearing services, which are considered in **section 11.15**.

One might make the following observations at this point. First, the general principles of competition policy and the Principles for Financial Market Infrastructures[41] are followed, so one might question the need to repeat them in

37 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

38 EMIR, art 37(1)

39 CSDR, art 33(1)

40 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems, art 16

41 Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for financial markets infrastructures* (April 2012), Principle 18; see **section 7.11**

the sector-specific legislation. But there is no need to show that an infrastructure is 'dominant' for the specific legislation to apply; and close examination shows that there are embellishments of the general principles in each case. Secondly, the rules for CSDs' participation criteria apply to participation in the settlement system, not to provision of securities accounts by a CSD, where legal traditions and the availability of intermediated holdings differ across the European Union.[42] Thirdly, requirement for public disclosure as well as 'transparency' applies to CSDs; the reason for this, and for the carve-out of non-legal persons (such as, presumably, unincorporated partnerships) from the benefit of the rules, is not apparent. Finally, it should be observed that most payment systems are not SIPS[43], but that does not imply that non-SIPS are exempted from the general rules. Indeed, there are particular rules for payment systems, which it is appropriate to consider next.

Payment systems

11.14 In the European Commission's Notice relating to credit transfers,[44] membership criteria for payment systems is discussed and ruled on at some length. The Notice applies to cross-border credit transfer systems, defined as 'system[s] through which payment instructions and the funds described therein may be transmitted for the purpose of effecting credit transfers'. This would encompass many payment 'schemes' as the term is used in this book, as well as payment systems properly so called; but the broader point is that what the Commission says ought to be of general application to any market infrastructure. The Notice lays down the following:

(1) Where a system constitutes an essential facility it must be open for further membership (as distinct from ownership) provided that candidates meet appropriate criteria.

(2) A system which is an essential facility may apply membership criteria provided that these are objectively justified.

(3) Membership criteria for direct and indirect members may differ in relation to differences in the nature of their responsibilities.

(4) Membership criteria should be written, accessible, and non-discriminatory. They may cover financial standing, technical or management capacities, and creditworthiness.

(5) The payment of an entry fee may be required, but must not be set so high that it becomes a barrier to entry, and must not exceed a fair share of the real cost of past investments in the system.

(6) Membership criteria may not make membership conditional on acceptance of other, unrelated, services.

(7) Wherever possible, low-volume participants should be admitted to membership, for example through indirect participation; if this option is not available, a requirement for minimum volume must be objectively justified.

42 Cf European Central Securities Depositories Association, *Account segregation practices at European CSDs* (October 2015)

43 See **section 7.14**

44 Notice on the application of the EC competition rules to cross-border credit transfers (September 1995), OJ C251, pp 3–10, paras 23–29

(8) Rejection of an application or exclusion should be accompanied by a written justification of the reasons and should be subject to an independent review procedure.

Clearing members

11.15 One might imagine that agent banks compete energetically amongst each other for client business, and that there is unlikely to be any need for special rules about 'membership criteria' in their case. (Other issues of competition policy may affect agent banks when they deal *with* each other, since questions of collusion can arise; these have become manifest in relation to standard-setting, which is considered at **section 11.34**.) It may therefore be surprising to discover that the ability of agent banks to provide services to clients chosen by them, on terms chosen by them, is not free from regulation. The regulation applies to the provision of clearing services by clearing members, and by clients where indirect clearing is involved, under EMIR. Perhaps the intrusion of competition concepts can be analogized to the treatment of operators of multilateral trading facilities by investment firms under article 18(3) of MiFID, on the assumption that firms providing such services are within the innermost circle and, in a broad sense, have become assimilated with the multilateral infrastructure of clearing.

The details are as follows. Article 4(3a) of EMIR obliges clearing members and clients to provide clearing services under 'fair, reasonable, non-discriminatory and transparent commercial conditions' with effect from 18 June 2021. A Commission delegated act is to add more detail on what can be considered fair, reasonable, non-discriminatory and transparent, looking at pricing, rationale, cost and benefit, and risk controls. The European Securities and Markets Authority (ESMA) has provided technical advice for the European Commission,[45] which suggested that the service provider should standardize and publish its onboarding process, and its risk assessment methodology; it should adhere to market standard documentation and be able to justify departures from that standard; it should not normally be able to terminate the agreement on less than six months' notice; and it must specify its technology requirements and agree the criteria for acceptance of transactions for clearing.

As to market standard documentation, it might be observed that this would commonly imply the templates available from ISDA and the Futures Industry Association. Both sets of documentation were created for clearing members; that provenance suggests that the documents already focus on the needs of clearing members, as opposed to their clients, and that anything more onerous for the service user would prima facie be unreasonable, It might also be observed that the market standard documentation is not at all easy to understand, so a clearing service user may have to engage specialist legal help in order to discern the effect of the standard terms, let alone any departures from the norm.

ESMA attempted to analyse the reasons why the availability of clearing services may be limited, observing that the costs were high and incentives low. ESMA also observed that various provisions of EMIR and MiFID already obliged clearing members and clients to disclose price tariffs and terms and conditions, and for commercial terms to be reasonable. Whether introducing further restrictions on

45 European Securities and Markets Authority, Technical advice on FRANDT commercial terms for clearing services (Article 4(3a)) (June 2020) ESMA70-151-3012

how such services may be provided can make up for the cost and incentive barriers remains to be seen.

11.16 The right of access to payments infrastructure has also been covered in article 35 of the Payment Services Directive (PSD) ,[46] which requires Member States to ensure that the rules of access to payment systems are 'objective, non-discriminatory and proportionate, and that those rules do not inhibit access more than is necessary to safeguard against specific risks such as settlement risk, operational risk and business risk and to protect the financial and operational stability of the payment system'. In particular, payment systems are not permitted to have: exclusivity rules which preclude their participants from participating in other systems; rules which discriminate between 'authorised' payment service providers such as payment institutions and banks, on the one hand, and 'registered' payment service providers[47] on the other; or restrictions on the basis of institutional status. As with other legislation on access criteria, these rules codify general principles of competition law; again a closer look at the scope of application of article 35 gives some clue as to an extension of scope.

It is noteworthy that for article 35 to apply there is no requirement for the payment scheme in question to be 'dominant'. In fact, it appears that its purpose is to capture precisely those payment systems which are *not* dominant. While a 'payment system' means a funds transfer system with formal and standardised arrangements and common rules for the processing, clearing and/or settlement of payment transactions, the scope of article 35 is cut right back by an exclusionary provision in article 35(2), which excludes payment systems designated under the Settlement Finality Directive (SFD).[48] That will confine article 35's ambit to minor payment systems which are not posing systemic risk, since any payment system which admits only credit institutions and faces some threat from the risk of insolvency of its members will have wanted to avail itself of the protections given by SFD designation. (Article 35(2) also excludes intra-group payment systems. A further exemption targeted at three-party card schemes was removed from the PSD when it was recast in 2015.[49])

Notably, article 35 also obliges *participants* in designated systems to open up their services to customers: if a participant in a designated payment system allows any authorised or registered payment service provider to pass transfer orders through the system, it must 'give the same opportunity in an objective, proportionate and non-discriminatory manner' to other payment service providers.

11.17 The discussion above has focused on access by would-be participants to the centralised system operated as an infrastructure. There is, additionally, another class of persons who may seek access: infrastructures themselves. Requests for access may be 'vertical' or 'horizontal' – requests of the first sort being typified by a CCP or other infrastructure seeking linkage to a trading venue, a CSD, or a payment system; requests of the second sort being where CCPs or CSDs wish to compete, but in order to do so must interoperate and therefore

46 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, etc

47 Cf PSD, art 14

48 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

49 See Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market etc, art 28(2)(c)

obtain the ability to participate in one another. Vertical access requests have been the subject of detailed legislation at European Union level and are considered in **section 11.24**. Before examining the topic, however, it is appropriate to look at the influences on vertical arrangements for cooperation.

ADJACENT MARKETS

11.18 In a 2015 paper, Celent observed that CSDs were 'moving into e-services such as e-governance, national number identification database, KYC services, legal entity identifiers, etc', that ICSDs are offering cross-border collateral management, and that CCPs may offer trade reporting and portfolio compression.[50]

One difficult area for providers of clearing and settlement infrastructures concerns activities they wish to pursue in such-like neighbouring areas of endeavour. At least part of the complication stems from changing perceptions of what it is that constitutes the central activity of an infrastructure – is it record-keeping, safekeeping of assets, transferring title, netting obligations, management of risk, or achieving standardisation? Which of these is a 'market' in which there is cut-and-thrust competition, and which is a monopolistic endeavour or essential facility? What was safely monopolistic yesterday may be challenged by a new business model and become a contested market tomorrow; fees may be at risk and litigation may be threatened.

11.19 A case-study in overlapping market territories is that of the ICSDs. The following introductory points may be helpful by way of orientation:

- The term 'ICSD' is a misnomer. ICSDs are not depositories, they are settlement systems for Eurobonds.[51] They are 'central', but there are two of them, in competition.
- ICSDs are operated by banking entities which provide credit facilities for their participants in order to facilitate settlement.
- ICSDs also provide securities accounts for their participants, to which the securities are credited or from which they are debited when transactions settle.
- There is no fundamental legal reason why the securities credited to the accounts provided by ICSDs have to be restricted to Eurobonds.
- Some of these features make ICSDs sound very similar to custodian banks.

But ICSDs are special. They have special legislation[52] which enables their participants to have a higher degree of legal certainty about the ownership of assets credited to an account provided for them. The reason for this is that the ICSDs are, notwithstanding that they are competitors, providing the central settlement infrastructure for Eurobonds – there is nowhere else to go to get a better title to a Eurobond.

50 Celent, *Challenging Times for the Post-Trade Industry* (October 2015)
51 See **section 2.26**
52 Belgian Royal Decree no 62 of 10 November 1967 facilitating the circulation of securities; Grand-Ducal Decree of Luxembourg dated 17 February 1971 on the Circulation of Securities

The tension between the infrastructure role of ICSDs and their ability to act like custodians has caused some friction.[53] The main concern of the custodians was that the ICSDs could exploit their special position in the marketplace for custodial services. The risk would manifest itself in bundled packages of services offered by the ICSDs for an integrated price. One bank said: 'While the Euroclear Group claims to be operating as a CSD in relation to the securities settlement services it provides, it in fact provides services similar to those of an intermediary rather than a CSD. The implementation of its [single settlement engine] will lead to the exclusion of the other intermediaries from the system by internalising of the settlement of transactions where it owns the relevant CSD in the books of Euroclear Bank.'[54] Euroclear would thus, it was feared, use its common brand to offer 'internalised settlement' on the books of the ICSD operator (Euroclear Bank), bypassing the CSDs it owned, presumably without attracting complaint from those CSDs.[55]

A handful of custodian banks marshalled under a banner nattily tagged 'Fair and Clear', and invited the European Commission, in various responses to its consultations on the post-trade space, to consider legislative or regulatory measures to treat CSDs as utilities and impose restrictions on bundling of services. The Commission's Second Communication on Clearing and Settlement[56] broadly agreed, proposing that CCPs and 'Securities Settlement Systems' keep segregated accounts of, and provide for the unbundling of, services they offer in their intermediary capacity. In particular, the Second Communication mentioned the provision of 'banking' services – lending of cash and securities specifically to facilitate settlement, which is within the capabilities of both ICSDs although out of reach for most CSDs. Now the CSDR makes special regulatory arrangements for CSDs which wish to provide banking services.[57]

The Code of Conduct

11.20 The European Commission's original plan to create a clearing and settlement directive evolved into a Code of Conduct,[58] which dealt with the subject in the following way:

> '*Unbundling of prices.* Unbundling means that: (a) the Organisations will allow any customer to purchase an unbundled service without compelling that customer to purchase also another unbundled service, and (b) each unbundled service will be available at a price applicable to this service. Unbundling does not preclude Organisations offering special prices for the purchase of several unbundled services together, with each service available at a separate price. And any such special prices shall meet the Price Transparency elements of the Code …

53 See, for example, European Financial Services Round Table, *Securities clearing and settlement in Europe* (December 2003); Citigroup, *Creating a Safe and Level Playing Field* (July 2003), White Paper

54 Citigroup, *Creating a Safe and Level Playing Field,* p 22

55 Cf **section 2.22**

56 European Commission, *Clearing and Settlement in the European Union – The way forward* (April 2004), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0312:FIN:EN:PDF

57 See **section 7.41**

58 See further **section 7.9**

> *Accounting separation.* Any group that includes one or more trading venue, CCP or CSD shall disclose to the National Regulators the annual non-consolidated accounts separately upon request from the National Regulator. Organisations which offer trading, clearing and/or settlement services in a single corporate structure shall disclose to the National Regulators the costs and revenues of these services separately upon request from the National Regulator. Each Organisation shall disclose to the National Regulators its costs and revenues for each unbundled service … in order to make transparent potential cross-subsidies.'[59]

It may be thought that this falls short of what was being asked for, in particular as regards 'banking services' and public transparency of cross-subsidisation. Cross-subsidy is a very troublesome area, because of the difficulty of allocating the cost of shared functions and services between businesses. But, on the other hand, the concessions actually made in the Code represented a big change for organisations which had until then been able to maintain complete privacy over their internal affairs.[60]

11.21 However, it can be argued that it is also open to custodian banks to 'internalise' settlement. What this means, in effect, is that the internaliser effectuates a settlement between a buyer client and a seller client by book transfer on its own books (also described as an 'on-us settlement'[61]). On-us settlement is routine in relation to settlement of payment obligations but is rarer in securities settlements. This is because in securities settlement there is no equivalent to 'commercial bank money'. Settlement of a payment always requires acceptance of a commercial bank's obligation to pay unless settlement is across the books of a central bank. But settlement of a securities transaction requires a transfer of title, something which is out of the control of a commercial bank. For this reason, it is not correct, as some eminent commentators have suggested,[62] that settlement is inseparable from custody. Rather, custody provides access to settlement. 'Internalised' settlement is only imaginary for a custodian who does not provide custody accounts to both buyer and seller.

One fear that the custodian banks in the Fair and Clear grouping had was that, as ICSD, Euroclear Bank might be able to assert such a dominant position in custody services that it could internalise settlement to a significant degree. But the linkage to Euroclear Bank's ownership of CSDs was only indirectly advantageous: the single settlement engine it was developing would assist all custodians, not just Euroclear Bank. Moreover, many settlement instructions for securities transfers originate from trading platforms or CCPs and are straight-through-processed to the CSD, so the custodian may not have the opportunity to intervene and demand internalised settlement. Some facts may emerge from behind the rhetoric when data on internalised settlement, required to be provided to ESMA by all institutions that 'execute transfer orders other than through a securities settlement system' by article 9 of the CSDR, become available. ICSDs

59 FESE, EACH and ECSDA, *European Code of Conduct for Clearing and Settlement* (November 2006), http://ec.europa.eu/internal_market/financial-markets/docs/code/code_en.pdf, paras 40–43

60 Lannoo, K, and Valiante, D, Integrating Europe's Back Office – 10 years of turning in circles, in Engelen, P-J, and Lannoo, K, (eds), *Facing New Regulatory Frameworks in Securities Trading in Europe* (Intersentia 2010), ISBN 978-90-5095-973-5, p 173

61 Cf **sections 2.22** and **19.34**

62 See Friess, B, and Greenaway, S, *Competition in EU Trading and Post-Trading Service Markets* (Spring 2006), *Competition Policy International*, vol 2, p 166

and CSDs acting as 'investor CSD'[63] – in other words, acting in a marketplace alongside custodians and competing for similar business – will apparently be exempt from article 9, as their internalised settlements will be carried out across a securities settlement system, notwithstanding the existence of an intermediary between that system and the register recording root of title to the securities.

Whatever the validity of the arguments concerning 'internalised settlement', there are certainly ways in which all infrastructures in the clearing and settlement space may seek to encroach on competitive activities of service providers which do not operate infrastructures.

- *CSDs* could seek to provide services to issuers of securities such as transfer of information, enhanced corporate action management, voting administration, and other services more commonly associated with custody. They may also venture into 'banking' (provision of cash liquidity) as described in **sections 7.41** and **7.51**.
- *CCPs* could seek to provide trading information, including valuable transaction pricing data, and collateral administration and management services more commonly associated with data repositories and banks.
- *Payment systems* could seek to provide liquidity and to establish or control payment schemes.

Another area in which infrastructures may seek to extend their activities is by encroaching on each other's natural space. The most obvious example of this activity is the 'vertical silo', under which an exchange, a CCP and a CSD are grouped together, which is the next subject for consideration.

In addition to concerns about cross-subsidisation, it was suggested that, by using the same IT platform to service both the Euroclear-owned CSDs and Euroclear Bank, Euroclear Bank would be given some unfair access advantages; any such benefits would presumably now have disappeared with the replacement of CSDs' bespoke settlement platforms by Target2-Securities. The debate would nonetheless appear to have had some effect, as the Euroclear group reorganised into a flatter structure in 2004-5, partly in order to address concerns about cross-subsidisation and the apparently special status of Euroclear Bank vis-à-vis other CSD users.[64]

Unbundling of services and prices

11.22 The Code of Conduct is rarely mentioned, now that access between infrastructures is dealt with rather thoroughly in primary EU legislation.[65] The Code of Conduct does not, however, seem to have been formally withdrawn, and its provisions relating to price transparency would still appear to apply.

Each of the CSDR, EMIR and the SIPS Regulation contains a provision on price transparency,[66] but only the CSDR specifically requires unbundling. This requires a CSD to 'account separately for costs and revenues of the core services

63 For explanation of terms, see **section 15.45**
64 Cf Lee, Running the World's Markets, p 220
65 See **section 7.9**
66 Articles 34, 38 and 20 respectively

provided', to 'account for the cost and revenue of the ancillary services provided as a whole', and to 'disclose that information to the competent authority',[67]

The MiFID Implementing Regulation precludes bundling of market data with other services by an Approved Publication Arrangement or a Consolidated Tape Provider,[68] which will apply to any infrastructure (typically an exchange, rather than a post-trade infrastructure) with such status; vertical groups may therefore be constrained by this measure.

VERTICAL SILO ARRANGEMENTS

11.23 It has been traditional, at least in the United States, for futures exchanges to own a 'captive' CCP.[69] This connection is likely to be attributable not just to the revenues which flow to the owners from providing clearing services, but due to economies of scope: greater operational efficiency can be achieved by straight-through processing, which is bound to be easier if the post-trade services are provided by the same organisation. (Economies of scope can be defined as efficiencies associated with providing additional types of products or services.) Similarly, stock exchanges have close operational links with securities settlement systems, and can be found in common ownership with them.

A 'vertical silo', which comprises an exchange, a CCP, and a CSD, in common ownership and typically under control of a single management structure, would appear to be vulnerable to challenge under both articles 101 and 102 of the Treaty. Article 101 prohibits price-fixing agreements, which could expose to challenge an arrangement between different legal entities providing unified bundled pricing, or under which the pricing of one part of the chain is determined by agreement with the provider of an infrastructure in another part of the chain. However, a successful article 101 challenge requires proof that the practices complained of 'affect trade between Member States'; vertical silos have historically existed as single-country arrangements and may therefore be safe from attack, at least from the European Commission. Given that trading in securities (and thus the demand for post-trading services) is fully internationalised, it can however be argued that trade in securities between member states is indeed affected, and so the risk of challenge to vertical silos at European level should not be ruled out, even if the silo is confined to a single country in its operations. As to article 102, there may be a risk of challenge on the grounds that one or other of the infrastructures in the chain is abusing a dominant position, particularly if there is a request from a competitor to access another part of the value-chain. In practice, a challenge can only be made by a CCP: there are likely to be many platforms competing for trading activity; as guardians of the root of title (if not as settlement systems), CSDs occupy an uncontestable space in the value chain and are therefore immune from competition; but, as explained below, CCPs are hired by trading platforms, and are dependent on cooperation from the exchange in order to offer an alternative to the incumbent CCP. So, only a clearing service

67 Articles 34(6) and (7)

68 Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing [MiFID] as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive, art 88

69 Kroszner, R, 'Can the Financial Markets Privately Regulate Risk? The Development of Derivatives Clearing Houses and Recent Over-the-Counter Innovations' (August 1999), *Journal of Money, Credit, and Banking*, vol 31, p 569

can be foreclosed by a vertical silo – but such foreclosure could constitute abuse of a dominant position.

The examples of vertical consolidation cited above were built in an era when, for most investment products, there was a single trading venue which needed to be connected to a single CSD, or a single CCP, or both. That assumption may no longer be valid in Europe. Following the implementation of the first version of MiFID in 2007, it has not been open to member states of the European Union to insist that all transactions in equities be traded exclusively on a single regulated market, and it has been possible for an investment firm to establish a 'multilateral trading facility' offering an alternative execution venue for trading in equities. One consequence of MiFID has thus been to introduce competition between trading venues. Each venue needs to be able to offer its participants access to clearing and settlement facilities, thus challenging the exclusivity of vertical consolidation models. MiFID makes provision in this regard; but it is wrong to imagine that the only difficulties in establishing clearing or settlement arrangements arise because venues or their participants are refused access to CCPs or CSDs. The new iteration of MiFID,[70] together with MiFIR[71] and the CSDR, cover rights of vertical access more comprehensively.

The EU legislation on infrastructures does not proscribe vertical ownership structures, but there are relevant provisions, discussed in **sections 11.24** and **11.25**.[72] These provisions do not inhibit vertical structures, and rather appear to encourage such structures to persist.

Legal rules on vertical access between infrastructures

11.24 Article 37 of MiFID allows investment firms rights of access to regulated markets, CCPs, and clearing and settlement systems of their choice (subject to satisfying the admission criteria), and requires regulated markets to allow their participants to designate a settlement system of their choice. Articles 38 and 55 allow multilateral trading facilities (MTFs) and regulated markets respectively to use foreign CCPs and clearing and settlement systems.

Article 35 of MiFIR obliges CCPs to accept financial instruments for clearing on a non-discriminatory and transparent basis, regardless of the trading venue from which they emanate. Only three grounds for refusal are allowed: excessive volume of transactions to be cleared, operational risk and complexity, and 'undue risk'; the 'undue risk' category has been explained in MiFIR RTS 581 to mean broadly that the CCP does not yet clear the product, or the CCP's economic viability would be threatened, or there are legal risks, or the CCP's and venue's rulebooks are irremediably incompatible.[73] If the CCP accepts the request, the competent authorities are the bodies to grant the access requested, and they may not do so if one of two objections applies: the first (applicable to derivatives transactions only) is that interoperability would be required; the other is that

70 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

71 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

72 See further **section 9.25**

73 Commission Delegated Regulation (EU) 2017/581 supplementing [MiFIR] with regard to regulatory technical standards on clearing access in respect of trading venues and central counterparties, art 4

access would threaten the smooth and orderly functioning of the markets, in particular due to liquidity fragmentation or adverse effect on systemic risk.[74]

The reference to liquidity fragmentation is curious and deserves analysis. The existence of more than one trading venue for a product necessarily implies a degree of liquidity fragmentation. Trading-market liquidity fragmentation is a particular concern of regulators, including competition authorities: the United Kingdom's Office of Fair Trading specifically investigated the risk of traders switching venues when they examined the EuroCCP-EMCF merger.[75] How the involvement of post-trade infrastructure or multiple post-trade infrastructures would exacerbate the problem is not easy, at first glance, to see; one might expect interoperating CCPs, each of which clears all relevant venues, to compensate for fragmentation. One might also imagine that a new vertical silo could make things worse, but that is not the case being addressed by article 35: the scenario in question is where the unhappy venue wishes to clear at an existing CCP, which presumably is an accepted clearing centre for the product and may even be in a vertical relationship already. Certainly, the challenger *venue* threatens to fragment liquidity, but this will be the result wherever the products are cleared. The answer may be that European policy continues to look at the trading-and-post-trade system as a single whole: it is practically impossible to separate the value chain into its constituent parts. In conclusion, article 35 seems to give the regulator of a silo plausible grounds to deny *clearing* access (and thereby see off an upstart venue's challenge) on the grounds of *trading* fragmentation, even if one might have thought these were 'adjacent markets'. If that is the right way to look at article 35 it should be seen as strengthening the incumbent position of vertical silos.

MiFIR RTS 581 also sets out further detail on access arrangements, covering content of the clearing agreement, fees which may be charged by either infrastructure to the other, economic equivalence for margin purposes of transactions on different venues, netting and portfolio margining.[76]

Article 36 of MiFIR is the converse of article 35: it obliges trading venues to provide feeds to any CCP which wishes to clear transactions in financial instruments which are executed on the venue. This reflects a historical reality of who, in practice, seeks access from whom: in the past, it has not been the CCP or its participants who have chosen the venues to clear, but the venue which has chosen where its trades may be cleared; the selection process may have been one in which the investment firms affected may have had little influence, or where the majority of firms affected provide services for a domestic investor base only and for whom international issues such as access to foreign venues are little more than a distraction. A venue can deny an access request only on the grounds of operational risk and complexity or 'undue risk'. MiFIR RTS 581 interprets 'undue risk' more narrowly than for article 35 requests, so only a threat to economic viability and incompatibility of rules are acceptable as excuses under this heading.[77] Again, once the venue has accepted the request, the competent authority actually grants it, unless one of the same two statutory objections as in the case of a venue's request for access to a CCP under article 35 applies.

74 MiFIR, art 35(4)
75 Office of Fair Trading, *Anticipated acquisition by ABN Amro Clearing Bank N.V., etc* (November 2013), ME/6135/13, para 38
76 MiFIR RTS 581, arts 9–14
77 MiFIR RTS 581, art 7

Articles 7 and 8 of EMIR oblige, respectively, CCPs to accept OTC derivative contracts regardless of the trading venue, and trading venues to provide trade feeds to CCPs, in each case on a non-discriminatory and transparent basis. (Although an OTC derivative cannot emanate from a regulated market, it will still count as 'OTC' for the purposes of EMIR if executed on a multilateral trading facility or an organised trading facility.)

Article 53 of the CSDR completes the picture. CCPs and trading venues must provide data-feeds to CSDs, and CSDs must provide access to its settlement system to CCPs and trading venues. In this case only one statutory ground for refusal of access is specified, viz. that access would affect the smooth and orderly functioning of the financial markets or cause systemic risk. It is specifically stated in this instance that loss of market share is not an acceptable reason.[78] Despite the apparent simplicity of the primary legislation, CSDR RTS 392 ensures that regulators can police the behaviour of a CSD receiving access requests: applications for authorisation have to describe the procedures for dealing with requests, and ongoing information obligations mean that CSDs have to inform their regulators of cases where access has been denied.[79] CSDR RTS 392 also obliges legal, financial and operational risks to be taken into account by a CSD receiving a request for access from a CCP, a venue or another CSD.[80]

11.25 The following comments may be made on the picture which emerges concerning infrastructures' rights of access up and down the vertical chain:

- Vertical silos are given special protections. Specific statutory privileges are embedded in MiFIR, apart from the question over liquidity fragmentation discussed above. These privileges apply where a trading venue and a CCP have 'close links',[81] meaning various forms of control but including a voting ownership share of 20% or more. One privilege is given to silos which include small-volume derivatives trading platforms: the platform can opt out for a time-limited period from article 36, so that it is not obliged to give its feeds to other CCPs, and its closely-linked CCP can refuse to clear any transactions originating from any venue.[82] (A vertical silo involving a CCP linked exclusively to a low-volume venue implies very challenging default management for the CCP, but that is a systemic risk point rather than a competition one.) The second privilege is given to silos which include newly established CCPs which clear transactions in securities and money-market instruments. The CCP can apply to its regulator for exemption for a transitional period from the obligation to accept transactions from venues not of its choice, and its closely-linked venue can refuse to give a transaction feed to other CCPs.[83] These privileges may not help to entrench the position of the long-established European vertical silos, but they indicate that legal policy in Europe is far from considering vertical silos to be inappropriate or exceptional.
- Old-fashioned legal rules which once restricted access on grounds of status must go by the board. For example, membership criteria which restrict

78 Article 53(3)
79 Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories, arts 37, 41(m)
80 CSDR RTS 392, art 89
81 Defined in MiFID, art 4(1)(35)
82 Articles 36(5) and 35(1)
83 Articles 35(5) and 36(1)

CSD accounts to 'financial institutions' or persons with a nationality or residence qualification might once have been used to exclude CCPs; such restrictions would now appear to be improper.

- Interoperability is acknowledged to be a difficult issue: there are two parties to a trade. As mentioned above, a request for access to a CCP made by a derivatives trading venue can be refused if the CCP would have to establish an interoperable link. For securities transactions, the right, given by article 37(2) of MiFID, for members of regulated markets to 'designate' the settlement system at which they want their trades to be settled is made subject to an interoperability condition, viz the existence of links and arrangements between the settlement system designated and any other system which are necessary to ensure efficient and economic settlement of the transaction. Yet the interoperability problem does not seem to have been expressly considered in relation to trading venues' and CCPs' requests for access to CSDs, although any such CSD may have to open an account with another CSD in order to comply with the request. It may be that the very vague risk criteria associated with handling access requests[84] would provide grounds for refusal, but the problem is complex since it potentially involves serial requests for access.
- Horizontal requests for access – requests to interoperate – are only partly dealt with in the legislation. CSDs are expected to interoperate subject to articles 50–52 of the CSDR.[85] As regards CCPs (other than derivatives CCPs), if the criteria set out in articles 52 and 53 of EMIR are met, the only grounds on which access can be rejected is 'in order to control any risk arising' from the interoperation; but as **section 15.21** shows, this is essentially a blank cheque for rejection. The decision on CCP interoperability lies with the competent authorities of the CCPs.[86]

Reasons for persistence of vertical silos

11.26 Vertical consolidation persists. In Italy, the national stock exchange Borsa Italiana, the CCP CC&G, and the CSD Monte Titoli are all in common ownership, along with the London Stock Exchange and various other organisations active in post-trade services. In Germany, Clearstream Banking AG Frankfurt provides the CSD function, and Eurex Clearing AG the CCP function, and these are linked in a vertical arrangement with Deutsche Börse AG.[87] In Hungary, KELER operates the CCP as well as the CSD (albeit in different legal entities, having separated them in 2008[88]). The persistence of these arrangements needs to be examined.

The legislation on requests for vertical access now tries to meet all possibilities; challenges to incumbency are foreseen. Participants in new venues need somewhere to clear and settle; CCPs will do their job more effectively if they clear all venues on which their products are traded; and CSDs may wish to

84 CSDR RTS 392, art 89
85 See **section 15.7(3)**
86 EMIR, arts 51(3), 54(2)
87 European Central Bank, *Payment and Securities Settlement Systems in the European Union* (the Blue Book) (August 2007), www.ecb.int/pub/pdf/other/ecbbluebookea200708en.pdf
88 See www.keler.hu/keler/keler_angol.head.page?nodeid=137

encroach on the adjacent market for intermediary services, so as to serve a wider variety of investments than those where they control the root of title.

Perhaps it is still worth remembering some commercial *realpolitik*. Stock exchanges still attract high volumes of trading and serve a local customer base, who need local, cheap and efficient systems which are already in place. Disruption of the model, even with the wholehearted support of competition policy and the zeal of the single market, is tough. The stock exchanges still choose their clearers. Title to the investors' investments will always remain the exclusive provenance of the 'issuer' CSD. These factors favour vertical silos.

Persistence of silos is closely connected to the bargaining power of exchanges. Traders always need to settle their trades, and for so long as there was only one exchange and one CSD able to take the settlement business, there was no choice if the exchange decided to appoint a CCP. Introduction of choice between trading venues did not significantly alter the bargaining power. In the past it was the case that trading platforms hired CCPs, not the other way round: the trade was the starting-point, from which all post-trade services flowed; without trading, there is no clearing, and trading could survive quite happily without clearing. So, CCPs had to participate in auctions to be accepted by exchanges, and might be expected to pay fees to the exchanges they serve.[89] (Nowadays the balance of bargaining may be different, at least as regards derivatives clearers, since the income generated by derivatives CCPs creates the profitability of groups branded as trading venues.[90]) Nevertheless, a CCP challenging an incumbent CCP serving a regulated market or other trading venue needs to establish interoperability arrangements with the incumbent – no mean feat, as explained in **Chapter 15** – and, on top of that, establish a reliable trade-data flow from the trading platform. Vertical silos will find all sorts of technical and economic obstacles which make it easier to avoid these burdens. It is difficult to avoid DG Comp's conclusion that 'under current arrangements CCPs in vertical silos would not be subject to competition either for, or in, their home market. Consequently, competition appears to be foreclosed in this case'.[91]

Professor Craig Pirrong has also noted a number of economic factors at work in the vertical clustering of trading and post-trade infrastructures. He observes, *inter alia*, that vertical integration is more efficient than separate ownership of trading, clearing and settlement infrastructures; that clearing and settlement exhibit strong economies of scope; and that exchanges may see no danger in allowing other, competitor, venues to use their clearing facilities because their exchange business may not be vulnerable where the market for trading is already highly competitive.[92] Similar observations have been made by Celent, who point to economies of scope in closely-related businesses where systems, people, processes and expertise can be shared, as well as economies of scale (large volumes are channelled, thereby avoiding effort to source business), leading to

89 Friess, B, and Greenaway, S, 'Competition in EU Trading and Post-Trading Service Markets' (Spring 2006), *Competition Policy International* Vol 2, pp 157–185

90 The Economist, 'Don't clear the clearers' (April 2016)

91 European Commission services, *Competition in EU securities trading and post-trading* (May 2006), Issues Paper, http://ec.europa.eu/competition/sectors/financial_services/securities_trading.pdf

92 Pirrong, C, *The Industrial Organization of Execution, Clearing and Settlement in Financial Markets* (October 2007), Working paper

a 'big is easier' result, with faster and better expensive technology, product and service deployment.[93]

11.27 There are further considerations, relating to the income of infrastructures and costs for their users.

It may be observed that a CSD's income is at risk of being adversely affected by the introduction of a CCP. As noted in **section 2.5**, clearing has the effect that the number of trades requiring settlement is reduced, and if a CSD charges so many cents per side or per security for settlement, its revenue will fall when a CCP is introduced to the marketplace. Controlling the CCP so that the loss of settlement revenue can be recouped from CCP fees would be a logical, if anti-competitive, response. However, there is evidence to suggest that CSDs' revenue is no worse in cleared compared with uncleared markets.[94] The reason is likely to be that the involvement of a CCP only achieves netting of trade flows as between the CCP and its participants; the actual investors still needed to have movement on their accounts, and these movements are unaffected by the interposition of the CCP and its clearing members. What one can safely conclude from this evidence is that CSDs have not historically been threatened by the possibility of introducing a CCP or, indeed, by the spectre of internalised settlement.

Costs for users would not be expected to be lower, then, if the post-trade infrastructure is arranged as a vertical silo, by comparison with independently organised post-trade arrangements. There appears to be evidence to support this view,[95] notwithstanding the comments of Deutsche Börse Group,[96] who have criticised cost-analysis which ignores 'indirect costs' such as bid-ask spreads and other premiums attributable to trading methodologies. Nevertheless, Deutsche Börse did not directly answer the question whether the clearing function should be opened to competition in Germany. When a possible merger between Deutsche Börse and NYSE was being discussed, the CCP service provided by Eurex was going to become 'vertical but open', apparently meaning that other trading venues and CSDs would be given access. The ability to test this in practice went away when the merger was prohibited by DG Comp.[97]

11.28 In addition to these powerful commercial and economic reasons for maintaining the status quo in markets served by vertical silos, the regulatory influences should not be ignored. Regulation of clearing and settlement systems has historically been organised according to the home country principle.[98] A regulator responsible not only for the orderly conduct of markets in its jurisdiction but also for the end-to-end protection of investors will wish to have oversight of the whole value chain. This fragmented system of supervision does not sit comfortably with the competition-policy ideal of a single European market in which foreign entities ply their services without hindrance in target markets. Until EMIR and the CSDR, widely differing requirements and standards

93 Celent, *Challenging Times for the Post-Trade Industry* (October 2015)

94 Friess and Greenaway 'Competition in EU Trading and Post-Trading Service Markets'

95 Baur, D, *Integration and Competition in Securities Trading, Clearing and Settlement* (March 2009), http://ssrn.com/abstract=891223

96 Deutsche Börse AG, *Observations on the Commission's Issues Paper 'Competition in EU Securities Trading and Post-Trading'* (June 2006)

97 European Commission, *Mergers: Commission blocks proposed merger between Deutsche Börse and NYSE Euronext* (February 2012), Press Release IP/12/94, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/12/94

98 Kazarian, E, *Integration of the Securities Market Infrastructure in the European Union: Policy and Regulatory Issues* (October 2006), IMF Working Paper WP/06/241

have been applied in the supervision of post-trade services across Europe, with publicly known deficiencies.[99] Vertical silos provide for regulatory convenience, and a powerful argument can be made that safety in infrastructures requires tight, risk-free regulation which would not be achievable under Europe's patchwork approach to cross-border cooperation among regulators.

One final observation may be made. Competition theory is not universally applauded, but vertical silos have been criticised by the financial services industry's trade associations. Vertical silos have been accused of allowing distortion of competition through abuse of a dominant position in one part of the value chain, restricting access, bundling and cross-subsidy, and opacity in pricing. But perhaps the most serious objection is that silos prevent horizontal consolidation of clearing and settlement.[100] This must therefore be the next subject for discussion.

HORIZONTAL CONSOLIDATION

11.29 Horizontal consolidation raises many of the same objections from competition theorists as vertical consolidation. If a single-country monopoly provider of clearing or settlement infrastructure has a dominant position, how much worse would the effects of any abusive behaviour be if that infrastructure served several countries or even the whole of Europe? Nevertheless, there was in the past a chorus of voices urging those responsible for the government of Europe to bring about a single CCP and a single CSD for Europe.[101]

Arguments in favour of consolidation have included improved collateral management for participants, reduction in the number of trades to be settled, reduced unit cost, reduced operational cost and risk, and the danger of competition starting a 'race to the bottom'.[102] From a practical viewpoint, CCPs should be easier to integrate than CSDs. The following comments illustrate the issues:

> 'In particular, an uncontrolled proliferation of clearing infrastructures could create inefficiencies. For instance, the existence of a fragmented infrastructure would oblige banks and investment firms to participate in more than one central counterparty clearing house, and therefore to maintain several interfaces and to cope with different standards, market practices and clearing rules. Service providers may also face inefficiencies in terms of multiple investments used to maintain, enhance and develop central counterparty technology.'

99 Kazarian *Integration of the Securities Market Infrastructure in the European Union*.

100 AFEI et al, *Post-trading in Europe: calls for consolidation* (February 2006)

101 European Securities Forum, *EuroCCP – ESF's Blueprint for a Single Pan-European Central Counterparty* (December 2000); European Central Bank,' Consolidation in central counterparty clearing in the euro area' (August 2001), Monthly bulletin, p 69; European Financial Services Round Table, *Securities clearing and settlement in Europe* (December 2003); Bourse Consult, *The Future of Clearing and Settlement in Europe* (December 2005), Corporation of London City Research Series No.7; French Association of Investment Firms et al, *Post-trading in Europe: Calls for Consolidation* (February 2006); European Parliament, *Clearing and Settlement in the EU* (August 2009), IP/A/ECON/ST/2008-31 PE 416.242

102 See **section 15.20**

> Competition between central counterparties entails the risk that these service providers may try to improve competitiveness by applying more lenient risk management standards.'[103]

Horizontal consolidation of CCPs should in theory reduce costs for users because of greater netting. One role of the CCP is to reduce a large number of trades to a small number of transactions which proceed all the way to settlement. The creation of the consolidated CCP Clearnet SA out of the national CCPs in France and the Netherlands would not be a good model to demonstrate the netting effect of consolidation, because the parent CCPs were clearing transactions in completely different securities, which cannot be netted against each other for the purposes of settlement. But, with the opening up of trading engineered through MiFID, and the possibility to trade highly-liquid stocks in many marketplaces using different CCPs, efficiency gains through consolidation subsequently became a real possibility.

Celent observed, in 2015, that horizontal integration can bring several benefits: cost reduction through economies of scale and scope; opportunities for cross-margining; and improved netting and efficiency for members of CCPs.[104]

Reading these remarks, one would assume that the logical outcome would be to foster the development of a single CCP for Europe, and perhaps to seek to challenge the monopolies of CSDs in their respective home countries. However, as discussed in **section 11.26**, the market for CCP services may be more readily contestable, and the outcome is the reverse: there is active competition among CCPs, and a single, monolithic (if not monopolistic) organisation is providing settlement services at CSD level. These phenomena require further examination.

CCPs

11.30 In relation to CCPs, various factors are at work, in addition to contestability of the marketplace, which have helped to shape this outcome.

(1) In the first place, full mergers are extremely difficult to do, which places a formidable obstacle in the way of consolidation. In practice cross-border regulatory requirements inhibit horizontal consolidation of CCPs. Consider the example of LCH: during the 1980s, the London Clearing House built an effective model acting as CCP for a number of futures markets in London, enabling members to share efficiency gains inherent in a single set of processes and partially-offsetting margining arrangements. These markets enjoyed a common regulatory and legal system as well as a significantly overlapping membership, which encouraged that integrated structure. But when LCH came into common ownership with Clearnet, its equivalent in France, the legal and regulatory obstacles effectively precluded a full merger at an international level. This might be contrasted with the international acceptability of Clearnet's own service offering, as CCP to the Belgian, Dutch and Portuguese equities exchanges operated by

103 European Central Bank, 'Consolidation in central counterparty clearing in the euro area', pp 73, 77

104 Celent, *Challenging Times for the Post-Trade Industry* (October 2015)

Euronext, as well as the French exchange. More examples can be given of other CCPs successfully accessing several national markets since MiFID.

Drs Heiko Schmiedel and Andreas Schönenberger[105] studied consolidation among market infrastructures in the eurozone between 1999 and 2005. They found that the number of CCPs had decreased from 14 to 8, but that 'most of the mergers and consolidation initiatives at the European level have been purely legal mergers, ie the systems are still operating separate technical platforms'. Concentration of ownership does not lead to efficiency improvements unless operational integration follows, and legal and regulatory obstacles impede that process. Tax issues and vested interests of users and owners have also been blamed.

(2) Secondly, the client of a CCP is not its users but the trading platform which hires it. The incentives for a platform to allow consolidation may not be there: there would be loss of fees or loss of control; the regulator of the exchange may object; there will be technical difficulties in connecting the market to a foreign CCP and enabling data to flow. These problems are the same obstacles which obstruct the breaking up of vertical silos.

(3) Thirdly, competition among CCPs reduces cost. Where new CCPs have been competing actively for trade-flow since the implementation of MiFID, there is some evidence of cost reduction. The London Stock Exchange stated in 2008 that since the announcement of competitive clearing for its marketplace in May 2006, CCP clearing fees had declined by about 60% on average and up to about 75% for the largest customers.[106] A report commissioned by the European Commission stated in 2009 that the average CCP cost per transaction incurred by market participants in 2008 was 'significantly lower' than that in 2006.[107] And in a paper for the Dutch central bank it was reported that the clearing fee had fallen from EUR 0.65 to EUR 0.05 at LCH SA, and from EUR 0.28 to EUR 0.05 at EMCF, over the four or so years beginning January 2007.[108] It does not seem to have been necessary to have interoperability to reduce fees.

Although mergers between CCPs may be difficult to achieve, EuroCCP and EMCF were permitted to merge in 2013 (see **Case Study 11.2**). One legal factor is the need for a CCP operating in France to be constituted as a bank.[109] For EuroCCP, EMCF and their stakeholders, this issue did not arise, since the merged entity is incorporated in the Netherlands. Neither CCP was excessively dependent on the patronage of a single powerful trading venue. And the cost issues were overcome by the very fact of the merger. Where the circumstances are right, a merger is evidently feasible.

However, the circumstances will not always be as favourable as they were for EuroCCP and EMCF. The decision whether to require competition or to facilitate or even force consolidation remains contentious. The fact that the

105 Schmiedel, H, and Schönenberger, A, 'Integration, regulation, and policy of securities market infrastructures in the euro area' (October 2006), *Journal of Financial Regulation and Compliance* Vol 14, No 4, p 328

106 London Stock Exchange, *Netting – Consultation Document* (January 2008)

107 Oxera, *Monitoring prices, costs and volumes of trading and post-trading services* (July 2009), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/2009_07_ec_report_oxera_en.pdf

108 Zhu, S, 'Is there a 'race to the bottom' in central counterparties competition?' (December 2011), *DNB Occasional Studies* Vol 9 No 6

109 See **section 9.7**

London Stock Exchange and Deutsche Börse Groups each owned a prominent CCP was regarded in early 2016 by some commentators as a reason to block their merger.[110] The present arrangement is to let the competing CCPs fight for market share or market segments. Some will fail. Others may emerge as dominant pan-European players. But it is wrong to imagine that this is a perfect marketplace in which only economic forces are at work.

Case study 11.2 Merger of EuroCCP and EMCF

In 2013 the United Kingdom's competition authority, the Office of Fair Trading (OFT), approved the cross-border merger of two CCPs which both cleared cash equities and similar securities products.[111]

The reasons behind the merger were reported to have included EuroCCP's 'at-cost model' for pricing, causing it to acquire market share from EMCF, 'although it has not been profitable', and the erosion of market share from EMCF leading that CCP to make a loss.[112] On the upside, the amalgamation of a CCP serving 10 platforms and the OTC marketplace with a second CCP serving seven platforms, with limited overlap, reduced the dependency of the CCP(s) on particular venues and reduced costs. Cost reductions for participants cited by the merging parties included greater settlement netting, reduced collateral and default fund obligations, and reduced connectivity costs.

The following observations may be made on the OFT's findings:

- Switching costs for clearing members were low. The market for clearing is fluid and it is easy for clearing members to change CCPs.
- Competitive forces work even in the absence of interoperability among CCPs: pricing is determined by trading platforms. Part of the overall cost of trading is the post-trade component, and platforms, anxious to retain their own market share, restrain CCPs.
- Platforms can and do exercise their ability to terminate clearing relationships: both NYSE Liffe and the London Metal Exchange withdrew clearing from LCH Limited and set up their own CCPs.
- Pricing is volume-related, so the CCP with the biggest share can offer the best deal, as well as the consequential benefits of netting, reduced settlement cost, reduced margin and default fund obligations, etc.

The OFT approved the merger despite the fact that there would be a concentration in the market for clearing services. There was still enough competition and differentiation of ownership and scope to make it unlikely that CCPs would coordinate.

110 The Economist, 'Don't clear the clearers' (April 2016)

111 Office of Fair Trading, *Anticipated acquisition by ABN Amro Clearing Bank N.V.,* etc, (November 2013), ME/6135/13

112 Financial Times, *EMCF and EuroCCP merger is approved* (December 2013)

CSDs

11.31 In relation to CSDs, the forces at work are rather different. In the first place, there is the fundamental legal problem of root of title: only a CSD is legally capable of providing the equivalent quality of title to securities that a central bank provides in relation to cash, and it is hard for a CSD in jurisdiction X to act credibly as the root of title to shares of a company incorporated in jurisdiction Y. In close second, there is the concern of central banks over the integrity of systems for settlement of securities transactions taking place in connection with their monetary and liquidity operations.[113] Safety fears tend to encourage regulators to preserve the status quo – that is, a locally-controllable national settlement system – notwithstanding that this might be inimical to the broader European agenda of a single market for investment services. The regulatory patchwork, rather than the impact of competition policy, may therefore inhibit consolidation. The technical obstacles are also formidable, which make the task of building a business case for operational consolidation challenging: the Giovannini barriers are the main difficulties, in particular differences between one market and another in settlement periods, corporate actions, issuance practices and tax rules.

Schmiedel and Schönenberger also noted that the number of CSDs had decreased from 23 to 18 in the eurozone between 1999 and 2005. That decrease indicates that consolidation is possible, but the statistic conceals some of the detail. Most of the consolidations had taken place within single countries – ie, where the legal problem does not arise – and across borders, consolidation of ownership had happened without necessarily implying consolidation of operational arrangements. In other words, the pattern observed for CCPs had repeated itself, albeit to a lesser degree.

The difficulties just cited are obstacles to competition between CSDs as much as obstacles to international consolidation of CSDs. To cure them, it would appear that a legal right to allow a foreign CSD to act as root of title for an issuer of securities, regulatory consolidation, and technical equivalence are all required.

11.32 As to the legal right, this is now in article 49 of the CSDR.

The regulatory patchwork should also be tackled by virtue of the harmonised regime of the CSDR, though national regulators will retain discretion and different practices will still exist.

The solution to the problem of technical equivalence has taken the form of the Target2-Securities (T2S) platform developed by the European Central Bank (ECB). Although this has been described as a monopoly,[114] it is probably more accurately described as an exercise in standardisation, though this may depend on the observer's opinion about the primary function of a CSD – viz, as a settlement system for transferring title or as a recording system for guaranteeing title. All CSDs participating in T2S retain their 'root of title' function, but are required to outsource the provision of settlement (between-accounts transfer functionality) to the T2S platform – just as the national central banks outsource the equivalent functionality in relation to euro transfers to the TARGET 2 platform. As to whether this constitutes a monopoly, the ECB has said this:

113 Kazarian paper
114 Lannoo and Valiante, Integrating Europe's Back Office – 10 years of turning in circles, p 161

> 'The underlying assumption is that by merging CSDs' settlement platforms into a single one, we will create a monopoly and therefore eliminate competition. … In reality, even if there are many CSDs in Europe today, competition between them is very limited. The multiplicity of actors is a necessary condition for competition. But it is not a sufficient condition. CSDs in the euro area are, to a large extent, small local monopolies. By merging their settlement function in to a single system, the marked will benefit from economies of scale, without any meaningful reduction of competition. In fact, competition in the settlement business does exist, not between CSDs, but between settlement in central bank money and settlement in commercial bank money.'[115]

What, then, is the competition problem with T2S? In order to answer this, it is necessary to examine the legal obstacle in the way of competition between CSDs. The principal legal problem is that CSDs have one entrenched advantage over any challenger: they alone can offer the 'root of title' – the ultimate book-entry record which establishes ownership of securities in the eye of the issuer.[116] Assuming that the CSDR will actually allow the issuer of securities to use a foreign CSD, and that such a practice catches on, then it would become practically possible for CSDs to compete for root-of-title services and for a real market to develop.

But even if the CSDR does not achieve this objective, CSDs participating in T2S must offer accounts to each other,[117] and hence must overcome any reluctance to interoperability. In **Chapter 15**, the question whether interoperability between CSDs achieves true equivalence is examined; but the theory, for the purposes of T2S, is that a user could participate indirectly in T2S via a single chosen CSD as point of entry, with that CSD providing settlement services for many jurisdictions and the whole range of eligible securities, albeit that the chosen CSD would be providing root of title only for securities for which it is the national, or issuer-selected, CSD. Stripped of the ability to compete on quality of their settlement systems, CSDs will have businesses much closer to those of agent banks and will compete with each other on the quality of their ancillary services. But it would be impossible for any participating CSD to fail, as no person (other than a replacement national CSD) could provide the root of title function. National interests, particularly where title and ownership questions are concerned, are likely to ensure the long-term persistence of local providers of the root-of-title function much in the same way that national central banks have survived the introduction of the Eurosystem.

Investors have not historically 'selected' CSDs, and certainly not on the basis of competing efficiency between settlement engines. In this regard T2S is competitively neutral. Nevertheless, the establishment of T2S leaves open the question whether T2S operates a monopolistic service to which CSDs have, without much choice, to subscribe, owing to network effects and aggressive pricing.[118]

115 Godeffroy, J-M, *Ten frequently asked questions about TARGET2-Securities*, Speech to the British Bankers Association, www.ecb.int/paym/t2s/defining/outgoing/html/10faq.en.html (September 2006)

116 See **section 2.18**

117 Article 15(1)(d), *Guideline of the European Central Bank of 21 April 2010 on TARGET2-Securities* (April 2010), ECB 2010/2, OJ L118, p 65

118 Lannoo and Valiante, Integrating Europe's Back Office – 10 years of turning in circles', pp 161, 163

Fully free competition among CSDs is unlikely to thrive just yet. Nonetheless, DG Comp is no more likely to take on the ECB in relation to securities settlement than it is in relation to cash transfers, so the question whether the ECB is in a dominant position or providing an essential facility, and even if it is whether it is abusing its position, is set to remain a question for academic enquiry only.

Payment systems

11.33 Payment systems and ACHs are subject to quite different pressures by comparison to CSDs and CCPs. In the first place, systems serving a non-euro national currency may not have any significant pressure to consolidate. In the euro area, such systems did not exist before the creation of the euro, with the exception of EBA Clearing, which grew out of the Ecu Banking Association. So, consolidation is not on the agenda among payment systems.

DEVELOPMENT OF STANDARDS

11.34 A further example of horizontal arrangements arises when market participants come together to agree standardised protocols for clearing and settlement. Such an exercise can cause difficulty if there is a suggestion that the purpose of the standard-setting is to foreclose the market to participants. For example, standards could be created in such a way as to exclude legitimate contestants. There is also a philosophical battle between the creation of standards, which ought in principle to be pro-competitive, as it facilitates switching between service providers, and the entrenched nature of standards, which precludes the development of alternative and innovative technologies. To try to cut a way through this maze, chapter 7 of the European Commission's Horizontal Guidelines has 71 paragraphs of guidance on standard-setting.[119]

The Horizontal Guidelines may be summarised, insofar as relevant, as follows:

(1) Standard setting can give rise to restrictive effects on competition by potentially restricting price competition and limiting or controlling production, markets, innovation or technical development. Once one standard has been set, competing technologies or approaches are potentially excluded from the market.[120]

(2) Restrictive effects on competition can arise because the process for selection of technologies or approaches is controlled by one or more types of stakeholder and biased towards certain types of participant.[121]

(3) Freedom to develop alternatives is a positive indicator that restrictive effects are not present.[122] So is the provision of access to any intellectual property rights in the standards developed on terms which are fair, reasonable and non-discriminatory.[123]

119 European Commission, *Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements* (January 2011), Communication 2011/C11/01, OJ(C)11/1; see also **section 4.33**
120 Horizontal Guidelines, paras 259, 260
121 Horizontal Guidelines, para 261
122 Horizontal Guidelines, para 269
123 Horizontal Guidelines, para 282

(4) All actors should be guaranteed the ability to participate in the process leading to the selection of a standard.[124] This requires a transparent process allowing stakeholders to keep informed of upcoming work.[125]

The following observations might be made in this context. Agent banks and market infrastructures occupy a different space from providers of IT and other support services: they must have financial services licences. It is therefore likely that standard-setting is done among the licensed community, who may have different needs and responsibilities from the providers of other services. Inevitably there is overlap between the providers of core clearing and settlement services and those who wish to provide other post-trade support services of the descriptions reviewed in **Chapter 4**. Standard-setting in this overlap area can be fraught with difficulty.[126]

UNITED KINGDOM COMPETITION LAW

11.35 Under the general law of the United Kingdom, the Competition Act 1998 applies the principles set out in the EU Treaty, but in the geographical space of the United Kingdom alone. The 1998 Act applies equally to the activities of infrastructures, insofar as a relevant market can be identified. Section 2 prohibits agreements between undertakings or concerted practices which may restrict or distort competition. Section 18 prohibits abuse of a dominant position in a market. This is not the place to examine the 1998 Act or the agencies which apply it. Instead, mention may be made of a few sector-specific matters which adapt the general law of competition in England to the special case of financial market infrastructures.

(1) In the Financial Services Act 2012, a 'competition objective' was added to the goals of the Financial Conduct Authority (FCA), whose role was established by virtue of that Act.[127] Some competition functions were given to the Prudential Regulation Authority under the Financial Services (Banking Reform) Act 2013.[128] Where the FCA acts as competition regulator, it does so concurrently with the Competition and Markets Authority (CMA) as part of the UK Competition Network and in accordance with a memorandum of understanding.[129] However, none of this is relevant to post-trade financial market infrastructures, because the FCA's responsibility as regards infrastructure is limited to oversight of trading venues. The Bank of England is the regulator responsible for oversight of CCPs, CSDs and payment systems, and the Bank does not have competition-related responsibilities.

(2) Payment systems regulated by the Payment Systems Regulator are subject to regulatory oversight which includes a competition objective.[130] As

124 Horizontal Guidelines, para 278

125 Horizontal Guidelines, para 279

126 Cf European Commission, *Antitrust: Commission opens investigation in e-payment market* (September 2011), Press Release IP/11/1076, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1076&format=HTML&aged=0&language=EN&guiLanguage=en

127 Financial Services and Markets Act 2000, s 1E, inserted by Financial Services Act 2012, s 6

128 Section 130

129 Competition and Markets Authority and Financial Conduct Authority, Memorandum of understanding between the Competition Markets Authority and the Financial Conduct Authority – concurrent competition powers (December 2015)

130 Financial Services (Banking Reform) Act 2013, s 50

observed in **section 8.11**, the Payment Systems Regulator is an economic or competition regulator rather than a financial services regulator; so the Payment Systems Regulator is also part of the UK Competition Network. The Payment Systems Regulator's approach is set out in a statement of guidance.[131]

(3) Before the Financial Services Act 2012 came into force, a peculiar competition regime[132] disapplied section 18 of the Competition Act 1998 in relation to '(a) practices of a recognised body; (b) the adoption or enforcement of such a body's regulatory provisions; (c) any conduct which is engaged in by such a body or by a person who is subject to the rules of such a body to the extent to which it is encouraged or required by the regulatory provisions of the body'. However, the United Kingdom Treasury considered that the regime was unnecessary in light of section 290A of the Financial Services and Markets Act 2000.[133] Section 290A allows the Bank of England to deny recognised status – in effect to withhold its regulatory licence – if an applicant for recognition has a regulatory provision[134] which imposes an 'excessive requirement', meaning an obligation or burden which is not required by law and either is not justified as pursuing a reasonable regulatory objective or is disproportionate to the end to be achieved.[135] However, section 290A does not apply to recognised CCPs or recognised CSDs, and with the desuetude of the 'recognised clearing house' which is not a recognised CCP, the continuing utility of section 290A is questionable.

11.36 Mention may also be made of the United Kingdom's special competition regime for payment systems. Section 56 of the Financial Services (Banking Reform) Act 2013 (FSBRA) gives various powers to the Payment Systems Regulator, one of which is to require the operator of a regulated payment system to enable a person to become a 'payment service provider' – essentially a direct or indirect participant – in relation to the system.[136] The Regulator has also made various Directions which pertain to access to payment systems:

- Operators of the payment systems Bacs, Faster Payments and cheque and credit must have access requirements which are proportionate, objective and non-discriminatory, and must disclose publicly their access requirements.[137]
- Operators of payment systems regulated under regulation 103 of the Payment Services Regulations (PSRs),[138] 'must notify changes to their access requirements to the Regulator'.[139]
- Sponsor banks must publish information on the indirect access services they offer.[140] In this context, certain banks – Barclays, ClearBank, HSBC,

131 Payment Systems Regulator, Enforcement of the Competition Act 1998 (August 2015), PSR PS15/2.1
132 Financial Services and Markets Act 2000, Part 18, Chapters 2 and 3 (now repealed)
133 HM Treasury, *Financial Services Bill Explanatory Notes* (January 2012), www.publications.parliament.uk/pa/bills/cbill/2010-2012/0278/en/2012278en.pdf, para 368
134 See **section 8.23**
135 FSMA, s 300A
136 See further **section 8.11**
137 Payment Systems Regulator, *General Direction 2: Access (FSBRA)*
138 Payment Services Regulations 2017, SI 2017/752
139 Payment Systems Regulator, *General Direction 3: Access (PSRs 2017)*
140 Payment Systems Regulator, *Specific Direction 1: Access (Sponsor banks) (2020)*

Lloyds and RBS – have subscribed to a code of conduct relating to provision of indirect access services.[141]

11.37 Although, once it leaves the European Union, the United Kingdom falls outside the remit of DG Comp, the competition-driven rules specified in various instruments of EU law will continue to apply in the United Kingdom. The access rules in MiFID (transposed into the Recognition Requirements Regulations (RRRs)),[142] the PSD (in the PSRs),[143] MiFIR, EMIR and the CSDR all continue, in effect without substantive amendment. However, in some cases, their geographical scope is restricted, since only named classes of beneficiaries can take advantage of the provision. So, on the one hand, the rules requiring infrastructures to allow access to participants on fair and transparent terms (RRRs, PSRs, EMIR Art 37, CSDR Art 33) apply regardless of the country of origin of the participant. But, in contrast, rules giving access privileges to trading venues (MiFIR art 35, EMIR art 7) only apply in favour of UK venues, and rules giving access privileges to CCPs and CSDs (MiFIR art 36, EMIR art 8, CSDR art 53) only apply in favour of UK or recognised non-UK ('third country') CCPs and CSDs.

11.38 The following more general comments may be made on the post-Brexit competition environment within the United Kingdom. The activism relating to competition in the post-trade space in Europe has emanated from the European Commission and its object of erasing borders in a single financial market. That imperative has disappeared as far as the United Kingdom is concerned. Nevertheless, some UK infrastructures are internationally active, and that means that EU competition policy will continue to impinge on their non-domestic activities.

Within the United Kingdom itself, the shape of competition policy will become apparent over time, but the following factors may be relevant. The United Kingdom has a large number of CCPs. For systemic reasons it may be undesirable to encourage even more CCPs to establish in the United Kingdom and to compete with the incumbents. Whether overseas ('third country') CCPs are encouraged may be determined more by mutual recognition policy, which is likely to be influenced less by competition objectives than other political factors, as explored in **section 7.62**. As for CSDs, the United Kingdom has retained the provisions of the CSDR relating to access, but the effectiveness of the EU access regime in the United Kingdom will once again be limited by the mutual recognition arrangements discussed in **section 7.66**. At first blush, UK competition policy appears to be asserted more energetically in relation to payment systems, especially following the creation of the Payment Systems Regulator. However, what lies beneath the headline is that the concern relates not to competition between payment systems, but between payment *methods* and ensuring that customers and businesses have as much choice as possible between ways of payment.[144]

141 Pay.UK, *Code of Conduct for Indirect Access Providers* (November 2018)

142 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges, Clearing Houses and Central Securities Depositories Regulations 2001, SI 2001/ 995, Sch, paras 7B, 7D, 21A, 31

143 Regulation 103

144 See **sections 8.11ff**

12 Prudential regulation of agent banks

PRINCIPLES OF PRUDENTIAL REGULATION

12.1 The prudential regulation of financial institutions is built on five main foundations. Three are the 'pillars' of the Basel II international framework for capital adequacy of banks.[1] The other two are limits on exposures and management of liquidity risk. The five foundations differ markedly in the amount of detail, day-to-day relevance and attention paid to them by regulators. They should also not be regarded as the only issues relevant to the management of risk in financial institutions. This chapter looks briefly at the components of each of the five foundations, insofar as likely to be considered relevant to the field of clearing and settlement, before assessing their impact on the different activities of agent banks. (Prudential regulation of infrastructures is discussed in **Chapters 7** and **8**.)

It may be helpful at the outset to review briefly the objectives and tools of prudential supervision. Ideally, prudential regulation is concerned with the financial management of a regulated firm: ensuring that its clients do not suffer loss because the firm becomes subject to an insolvency procedure. Financial institutions deserve (and are subjected to) greater oversight intended to reduce the risk of insolvency because of the devastating effects which a financial sector insolvency can have for the livelihoods and solvency of a firm's clients, and for the wider economy. Many things may cause insolvency: imprudent investment or business decisions, a change in the business environment which invalidates a successful business model, and inadequate internal controls are all examples. In the broadest sense, prudential supervision is about sound business management in a financial institution.

Stated thus, the objective is too broad to be pursued effectively; regulators need more manageable goals. These might be summarised as qualitative goals directed towards the prudent management of business risks as encountered in the financial sector, and quantitative goals directed at the balance sheet and investment decisions of the firm. The qualitative goals may include specific standards relating to operational risks, implementation of systems and controls, and other matters. At an international level, the supervisory assessment of these matters is dealt with in Pillar 2 of the Basel II framework, though operational risk is now accorded quantitative treatment, discussed further below. The quantitative goals are to ensure that the firm has adequate capital to underpin

1 Bank for International Settlements Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards – A Revised Framework* (comprehensive unrevised edition, June 2006), www.bis.org/publ/bcbs128.pdf

its activities, adequate access to liquidity, and that its investments are not imprudently concentrated.

Regulatory capital as the main prudential supervisory tool

12.2 The role of regulatory capital in this process should not be overstated. Since the publication in 1988 of the first Capital Accord of the Basel Committee on Banking Supervision (BCBS),[2] it has been tempting to think of capital adequacy as the only measure for prudential regulation. No doubt capital has a vital role to play: by ensuring that there are investors who will rank behind depositors and other creditors, capital is designed to allow a solvent bank to burn through a certain proportion of its assets and still leave enough behind for those senior claimants. But what it cannot do is turn a liability into an asset. Students of prudential regulation find it confusing that the science of capital adequacy assesses the 'adequacy' of a *liability* of a bank (its capital), and in doing so it requires assets to be risk-weighted, in other words to treat some assets as *bad* – they expect it would work the other way round, by treating assets as good, and liabilities as bad. Let it be said that the students are not wrong. Assets are good. But the teachers are not wrong either: poor quality assets may not be reliable to be converted into hard cash to pay off the senior claimants and should be discounted. Capital adequacy is an attempt to provide a counterpoint to going-concern accounting: in a sense, it tries to forecast the financial shape of a failed bank.

Capital adequacy is a good defence, then, against some assets becoming devalued; or, indeed, against other losses which manifest themselves in a timescale which enables them to be made good through other more profitable activities or through recapitalisation. Capital does not seek to address the fundamental mismatch in all banking businesses: the danger following from taking in short-term deposits and lending money on long-term loans – that is, liquidity risk. No amount of capital can guarantee a bank against a liquidity crisis.[3] Banks also face other risks: operational risk, reputational risk, systemic risk, political risk and so forth. Having vast amounts of capital cannot protect a bank against all of these without the bank becoming uncompetitive and finding it impossible to provide a reasonable return to its investors – the providers of the capital.

12.3 Capital, then, cannot be the exclusive answer to prudential supervision of financial institutions. Nevertheless, the most detailed rules agreed at an international level now address capital adequacy. Together with the rules relating to large exposures, capital adequacy rules make up Pillar 1 of the Basel II framework. Quantitative standards relating to leverage and liquidity were added through the Basel III framework.[4] That leaves Pillars 2 and 3. Under Pillar 2, bank regulators are expected to develop supervisory regimes which assess the

2 Bank for International Settlements Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards* (July 1988), www.bis.org/publ/bcbsc111.pdf

3 Cf Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel, March 2009), ISBN 978-1-84766-303-0, p 179

4 Bank for International Settlements Basel Committee on Banking Supervision, *Basel III: International framework for liquidity risk measurement, standards and monitoring* (December 2010), http://www.bis.org/publ/bcbs188.pdf; *Basel III: A global regulatory framework for more resilient banks and banking systems* (June 2011) www.bis.org/publ/bcbs189.pdf; for a summary table, see www.bis.org/bcbs/basel3/b3summarytable.pdf

generality of a bank's approach to risk management, and take appropriate action – very often, to increase the capital requirement for the bank. Pillar 3 deploys the self-discipline of the market: banks are required to make public disclosure of certain risk-related issues, in the expectation that customers, investors, and competition from peer group members will all inexorably work to impose higher standards. The requirements of Pillars 1 and 2, and the rules relating to liquidity and leverage, as applied to agent banks, are examined in more detail below. In Europe, the recommendations of the Basel frameworks have been transcribed into the Capital Requirements Regulation (CRR),[5] which applies to both credit institutions and investment firms.

PRUDENTIAL REQUIREMENTS OF THE BASEL FRAMEWORKS

Capital adequacy

12.4 Capital adequacy is a huge topic. Necessarily, therefore, this introductory discussion is selective.

(1) *Risk weighting of loan assets.* Banks make money by taking deposits and extending credit to their clients. Loans are assets which may prove worthless at the moment they are needed to repay depositors. The centrepiece of the capital adequacy calculation is the principle that each loan should be weighted according to its riskiness – that is, according to the likelihood of the borrower failing to repay – and that the bank should have an amount of capital to support the risk-weighted amount of each loan. The basic requirement is thus for banks to evaluate the probability of default by each borrower, and to compute a risk-weighting for all credit extended to that borrower. Two methodologies are available for determining risk weightings: if a bank has sufficient statistical information it may be allowed to use its own data to calculate a probability of default, which is plugged into a mathematical formula devised by the Basel Committee (these banks will be using the internal-ratings-based approach, and are called 'IRB banks');[6] or failing that the bank can rely on credit rating agency ratings, and look up the associated risk weighting in a table also devised by the Basel Committee (these banks are using the 'standardised' approach).[7]

(2) *Credit for clearing and settlement.* It will immediately be seen that, as many clearing and settlement services involve the extension of credit, there is likely to be a capital adequacy impact of such services. However, many settlement-related credit extensions are intra-day only, and capital requirements apply only to end-of-day positions, because banks are required to follow accounting standards in ascertaining the size of exposures.[8] Overdrafts which run overnight, as a result of failed settlements or for other reasons such as the lending of margin, will have to be taken into account for capital adequacy purposes.

5 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms etc
6 CRR, art 169ff
7 CRR, art 114ff
8 CRR, art 24

(3) *Committed credit lines.* Commitments to make loans also require the support of capital. The thinking here is that, once drawn, a lending facility becomes an asset which requires to be risk weighted. Not all facilities will be drawn, though, and a conversion factor is applied to reflect the probability that the facility may or may not be utilised. So, the outcome is similar to actual lending: entering into a commitment to lend will attract a capital requirement which varies according to the creditworthiness (probability of default) of the client. Again, in the clearing and settlement world, many credit facilities will be able to avoid adverse capital treatment, because the facility is unconditionally cancellable at any time without notice. Such facilities have a conversion factor of zero.[9]

(4) *Collateral.* Lending exposures may be covered, and the size of the risk-weighted assets to which they give rise reduced, by collateral. Clearing and settlement services typically rely on financial collateral in the form of cash or securities, which in almost all cases will be eligible under regulatory capital rules to mitigate the capital requirement associated with an unsecured loan. The Basel II framework provides a variety of approaches to banks, depending on their degree of sophistication. Typically, agent banks will use the 'comprehensive' method, which enables them to reduce the value of the credit outstanding by the value of the collateral; the collateral value will be adjusted to reflect its volatility. Various conditions must also be met if collateral is being relied on for reduction of capital requirements: these focus on the absence of correlation between the borrower's credit quality and the collateral value, the legal reliability of the collateral arrangements, and the bank's policies and operational processes related to calling, valuing, and liquidating the collateral.[10]

Trading book business

12.5 Some credit exposure will arise indirectly: not as a result of a conscious advance of money on the client's behalf, but as a consequence of the business being cleared or settled for the client's account. The Basel II framework requires a different approach to capital calculation where the agent bank is engaged in 'trading book' business. Examples of trading book business include transactions in derivatives and equities. These transactions require separate assessments of the market risk (called 'position risk') and credit risk (called 'counterparty credit risk', to distinguish it from non-trading credit) implications of the trades, with capital requirements arising from each assessment. The following comments may be made with regard to trading book activity:

(1) Securities position risk is unlikely to arise in relation to clearing and settlement services.

- Offsetting positions (even if involving different counterparties) will allow the market risk component to be netted to zero.[11] So a GCM, which acts as buyer to its selling client and seller to a CCP, should be able to avoid a position risk requirement arising from its clearing service.

9 CRR, art 111 (standardised), art 166 (IRB)
10 CRR, art 195ff
11 CRR, art 327ff

- Settlement services which leave an agent bank with a short securities position will be regarded as securities loans, which are considered at paragraph (4) below.

(2) Counterparty credit risk will potentially arise from cleared and unsettled transactions. Clearing members will be exposed to the risk of failure by their client or by the CCP, and so have to consider the counterparty credit risk capital requirements of two exposures in relation to each cleared transaction.

- The value of equities which are owned on a long-term basis will be in the 'banking book' rather than the trading book; but even when they are in the trading book, a bank which handles equities as settlement agent only should not be regarded as having taken a position in them. For a GCM, equities transactions will not attract a counterparty credit risk requirement unless they involve settlements which are overdue. The Basel II framework sets out what counts as overdue; an increasing scale of capital charges applies to transactions that are upwards of 5, 16, 31, or 46 days past the due settlement date.[12]
- Derivatives transactions which are in-the-money entail current exposure and a degree of 'expected exposure' because the transaction may go, or move further, into the money. Banks may calculate the capital requirement using one of three methods; typically, though, they will use an internal model. Netting under a master agreement can be used to mitigate the exposures and thus reduce the capital requirements arising.[13]

(3) Settlement fails and 'free deliveries' (where the delivery is made without simultaneous inward transfer of cash) will attract a counterparty credit risk capital requirement for the client which is exposed to the risk following from the fail or mismatch in DvP.[14] But the agent bank is not exposed to these risks, and should not bear the costs.

(4) Margin lending transactions include transactions where an agent bank lends securities from its own investment portfolio to its client to cover what would otherwise be a failed settlement.[15] Counterparty credit risk is present in such transactions since the borrower of securities (the client) may fail, leaving the agent bank with a loss if the value of collateral received from the client is insufficient to cover the replacement cost for the securities.

12.6 Finally, operational risk is subject to a capital requirement under the CRR. Once again, a variety of approaches is available to banks. If a bank is using the standardised approach, it will have to calculate its average gross income for each of eight business lines; for each business line there is a corresponding percentage which reflects the official view of the degree of operational risk associated with that line. The capital required is the gross income multiplied by the percentage. The percentages are 12, 15 or 18; payment and settlement is in the 18% bracket, and agency services, including custody, are in the 15% bracket. Banks may instead calculate their operational risk requirement based on

12 CRR, art 378
13 CRR, art 295ff
14 CRR, arts 378–379
15 CRR, art 272

a model if they have the regulator's permission to use an 'advanced measurement approach'.[16]

Adequate liquidity

12.7 The Basel III amendments to the Basel II framework introduced two new prudential requirements into the structure of financial institution supervision. These are the liquidity coverage requirement (LCR) and the net stable funding requirement (NSFR).

LCR measures the predicted net outflow of cash over a 30-day period in stressed market conditions.[17] The Basel III framework ascribes weightings to certain kinds of asset and liability to determine what will lead to an outflow of cash. Having ascertained that amount of outflow, the bank must ensure that it sets aside sufficient liquid assets meeting various narrowly defined quality criteria to cover the predicted net outflow. Certain deposits are assumed to be more likely to be withdrawn than others. The Basel Committee suggested that non-retail deposits placed by 'customers with specific operational relationships' are weighted at 25% (that is, it is assumed that 25% of such deposits will be withdrawn during the stress period).[18] The 'operational relationships' referred to include clearing and custody:

> 'A clearing relationship, in this context, refers to a service arrangement that enables customers to transfer funds (or securities) indirectly through direct participants in domestic settlement systems to final recipients. Such services are limited to the following activities: transmission, reconciliation and confirmation of payment orders; daylight overdraft, overnight financing and maintenance of post-settlement balances; and determination of intra-day and final settlement positions …
>
> A custody relationship, in this context, refers to the provision of safekeeping, reporting, processing of assets and/or the facilitation of the operational and administrative elements of related activities on behalf of customers in the process of their transacting and retaining financial assets … . Such services are limited to the settlement of securities transactions, the transfer of contractual payments, the processing of collateral, the execution of foreign currency transactions, the holding of related cash balances and the provision of ancillary cash management services. Also included are the receipt of dividends and other income, client subscriptions and redemptions, scheduled distributions of client funds and the payment of fees, taxes and other expenses.'[19]

In the CRR, the language differs somewhat from the Basel III framework, to give the 25% weighting to 'deposits … maintained … in order to obtain clearing, custody or cash management services from the institution … Clearing, custody or cash management services … only covers such services to the extent that they are rendered in the context of an established relationship on which the depositor has substantial dependency'.[20]

16 CRR, art 312ff
17 CRR, Part Six, Titles I, II
18 Basel III framework, BCBS 188, para 72
19 Basel III framework, BCBS 188, paras 75–76
20 CRR, art 422(3) and (4)

Furthermore, committed liquidity facilities will be assumed to be fully drawn; uncommitted facilities are left to national regulators to evaluate, but 'may nevertheless have the potential to cause significant liquidity drains in times of stress. For this standard, each supervisor and bank should consider which of these "other contingent funding obligations" may materialise under the assumed stress events'.[21]

The concept of stable funding lies behind the NSFR. This is that some bases on which banks fund their credit activities are less likely to be withdrawn in moments of stress than others. So, for example, retail deposits are relatively stable, compared with commercial deposits and funding derived from the issue of short-term debt instruments such as commercial paper. Banks will need to demonstrate that long-term assets are funded through relatively stable liabilities.[22] To achieve this, each asset and each liability is weighted according to a table mandated by the CRR. Non-retail deposits are given a 50% stability weighting (as contrasted with capital instruments, which achieve 100%);[23] on the assets side, loans to non-financial corporates have a required stable funding weighting of 50%, whereas loans to corporates are weighted at 100%.[24]

Large exposures, leverage and Pillar 2

12.8 Banks should not become over-dependent on a single borrower, or collection of borrowers related in some way. The CRR accordingly sets limits, referable to the amount of capital of the bank, on the amount of credit which can be granted to any one person (or group of connected persons). As far as credit granted to clients not affiliated to the bank is concerned, the limit is 25% of the bank's eligible capital.[25]

The other tool, introduced by the Basel III rules, to limit the amount of lending done by banks is the leverage ratio. This simple calculation involves only a comparison of the amount of tier 1 capital invested in the bank and the gross (that is, un-weighted for risk) amount of its loans and commitments.[26] Leverage ratio has caused controversy in relation to cleared business, owing to the existence of chains of back-to-back transactions which engender only limited risk. The following observations can be made:

- Unlike the regulatory capital charge for market risk, there is no offsetting of back-to-back positions.
- Initial margin would not, under the CRR, mitigate leverage ratio, as collateralised exposures do not benefit from relief (unlike for regulatory capital charges). However, proposals have been put forward to moderate this treatment.

These peculiarities are said to discourage persons from providing clearing services.[27] To alleviate some of the concerns, modifications to the leverage ratio

21 Basel III framework, BCBS 188, para 102
22 CRR, Part Six, Title III
23 Basel III framework, BCBS 188, para 128 and Table 1
24 Basel III framework, BCBS 188, para 133 and Table 2
25 CRR, art 395
26 CRR, art 429
27 Bank for International Settlements Basel Committee on Banking Supervision, *Revisions to the Basel III leverage ratio framework* (April 2016), Consultation Document, para II.1.2

rules were made by the BCBS in June 2019.[28] The new arrangements allow banks to take collateral received into account in computing leverage ratio in respect of clients' derivative transactions which they clear. This brings the Basel framework into line with an existing European modification relating to variation margin, which may be received as a payment in settlement or as a posting of collateral.[29] Where it is paid in settlement, reduced leverage results, whereas if it is posted as collateral, the collateral would, in principle, be ignored, with the exposure counting towards leverage ratio limits, but for a special derogation.[30] The new Basel approach ensures that there is no essential difference between the two approaches to variation margin. It also has the effect that back-to-back transactions are effectively neutralised in terms of leverage ratio: where the transaction is out-of-the-money for the client, the clearing member will have an exposure to the client but only until variation margin is paid; if it is in-the-money for the client, the clearing member is exposed to the CCP, but only until variation margin is paid. The disincentive to clearing ought thus to have been addressed.

Pillar 2 of the Basel II framework is intended to pick up all other risks which Pillar 1 ignores or treats with insufficient gravity. At its most basic, Pillar 2 gives a bank regulator power to impose supplementary capital requirements where the regulator's review process identifies additional risk.[31] Long lists of the types of risk to be assessed are available.[32] Little in these lists implicates clearing and settlement services directly. Pillar 2 may, of course, be a ground on which a regulator could investigate and impose capital requirements on account of intra-day credit extensions; but the difficulty of measuring intra-day credit exposure reliably perhaps makes this unlikely.

CASH AND SECURITIES SETTLEMENT SERVICES

12.9 For an agent bank providing access to payment and securities settlement systems, the application of the rules outlined above poses few problems. Capital rules relating to securities lending and operational risk have been mentioned already. It may then be sufficient to mention the following additional matters:

(1) *Deposits placed with major financial institutions*. In some cases, providing a settlement service requires an agent bank to deposit funds with a payment system. Funds in the home currency on deposit with a central bank attract a risk-weighting of zero for a bank using the standardised approach.[33] Deposits placed with an agent bank, or a bank operating a payment system on its own books, will not have this benefit and sums deposited would be treated as other cash exposures to a bank. Furthermore, the regulations introduced by the Basel III framework have increased the risk-weighting applicable to IRB banks which have credit exposures to large regulated financial sector entities.[34] Consequently, it will be desirable to minimise

28 BCBS, *Leverage ratio treatment of client cleared derivatives* (June 2019)
29 See **section 17.25**
30 CRR, art 429a(3)
31 Cf Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, etc, art 97ff
32 Cf Turing and Cramb, *Managing Risk in Financial Firms* pp 94–97
33 CRR, art 114
34 CRR, art 153(2)

the amount of any funds left overnight with a payment system operator which is treated as a large regulated financial entity.

(2) *Liquidity facilities ('I pay before you pay me')*. Clients may need their agent bank to transfer funds to or through a payment system before the moment in time when the client can make funds available to the agent bank. If the refund is to be made on the following day, the agent bank will have made a loan or overdraft available; and accordingly an arrangement which commits the bank to an obligation to do so will be a risk-weighted asset, count towards any large exposure which the bank has to the client, count in the bank's computation of leverage ratio, and require the bank to set aside liquid assets to meet its liquidity coverage requirement. If the terms of the facility are that it is unconditionally cancellable at any time without notice, the mere existence of the facility would not attract these consequences, but utilisation by the client even on an overnight basis would do so.

(3) *Commitments ('I match before you pay me')*. Some settlement services require an agent bank to enter into a commitment to the payment or securities settlement system one or more business days before the settlement date; under the commitment the agent bank will be obliged to make a payment on the settlement date regardless of whether its client has by that stage paid the agent bank. Once the bank has entered the settlement instructions into the system it is, to all intents and purposes, committed to make the payment. (In theory, the commitment will usually be irrevocable only when a matched instruction is put into the system by the transaction counterparty. However, the agent bank has no control over this, and the risk is that a matching instruction is already in the system when the agent bank puts in its own instruction. Also, there may be a possibility of a bilaterally agreed cancellation of matched instructions, but again this is outside the agent bank's control. So, in prudent risk-management practice, the moment at which instructions are submitted, or in some cases such as platform-traded equities transactions, automatically generated, should be regarded as the moment of commitment.) A commitment of this type cannot properly be regarded as a commitment which is unconditionally cancellable and is therefore likely to attract the treatment discussed above.

(4) *Self-collateralisation*. Agent banks which make available liquidity without requiring pre-funding from their clients may rely on the transaction countervalue as security: in a DvP system, the purchased securities which the agent bank has paid for may be collateral for the purchase price,[35] and in a PvP system such as CLS, the received currency may be collateral for the paid-away currency. Securities and cash will ordinarily qualify as eligible collateral, but the agent bank will need to ensure that the other requirements of the collateral rules (including the need for legal review on the effectiveness of the arrangements) have been complied with. Collateral will be useful to reduce the size of a risk-weighted asset but will ordinarily not assist with the mitigation of other prudential regulatory burdens discussed above.

35 Cf **section 6.11(3)**

CLEARING

12.10 The activities of a clearing member are varied and give rise to a corresponding range of prudential regulatory issues. First, it should be recognised that a clearing member faces both its client and the CCP as principal. This duality of exposure obliges the clearing member to repeat the analysis of its prudential position, looking in both directions, for each item of cleared business. Secondly, the analysis facing the CCP is likely to differ from that facing the client, owing to the special treatment of credit exposures to CCPs. Before looking at specific issues relating to clearing services, then, it is appropriate to describe the prudential treatment of exposures to CCPs.

Historically, exposures to CCPs were valued at zero, provided that the CCP ensured full collateralisation with all participants on a daily basis.[36] Latterly that treatment has been considered to be too liberal, and a methodology for risk-weighting credit exposures to CCPs has been developed in respect of derivatives and securities financing transactions.[37]

12.11 Exposures to CCPs are divided into two categories:

(1) *Trade-related exposures*. A portfolio of transactions with a CCP ought to be fully margined by the CCP. Consequently a clearing member will, on any given day, expect to have a net exposure to the CCP, representing the aggregated net mark-to-market value of the transactions and margin entitlement due from the CCP (insofar as margin deposited takes the form of cash or title-transfer securities collateral). The net exposure is calculated in the same way as the clearing member would calculate exposure under a portfolio of uncleared transactions[38] with one difference: the penal treatment of netting sets containing more than 5,000 transactions does not apply.[39] The clearing member will be allowed to apply a risk-weighting of 2% to this net exposure if the CCP is a EMIR-authorised CCP.[40] If the clearing member has posted securities collateral under a charge or in any other way which is 'bankruptcy remote from the CCP', the risk weighting applied to the collateral is zero.[41] (The latter treatment ought to be self-evident, as there is no credit exposure to the CCP for such collateral.) But if the GCM has agreed a limited-recourse provision with its client, so that the GCM is not responsible to the client for losses suffered in the event that the CCP defaults, the client transactions can be zero-weighted.[42]

(2) *Default fund exposures*. Curiously, given the close linkage between margin policy and default fund sizing,[43] a different, risk-sensitive approach is mandated for the calculation of default fund exposures. It may be noted that the approach differs from the usual method of computing a risk-weighting for credit exposure; rather the approach calculates an amount of capital required to support the default fund contribution. The riskiness

36 Cf Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions, Annex III, Part 2, para 6
37 CRR, art 301
38 CRR, art 306(3); see **section 12.12(4)**
39 CRR, art 285(3)(b)
40 CRR, art 306(1)
41 CRR, art 306(2)
42 CRR, art 306(1)(c)
43 See **section 17.34**

of a default fund contribution is assessed by comparing the financial resources of the CCP (its actual capital, plus the amount of its default fund left over assuming two average participants have failed so that their default fund contributions have been used up) with the 'hypothetical capital requirement' of the CCP.[44] (The BCBS says that the hypothetical capital requirement is not intended to 'quantify the riskiness of a CCP'. While this statement is obviously untrue, it is, presumably, an indication that the hypothetical capital requirement is not a measure of the actual capital which ought to be held by CCPs.[45])

The purpose of this comparison is to select one of three formulae for computation of the clearing member's default-fund-related capital requirement:

- if the CCP's hypothetical capital requirement is fully funded by its actual capital, without needing the default fund at all, a lenient formula applies;
- if the CCP's financial resources (actual capital and available default fund) are insufficient to cover the hypothetical capital requirement, a penal formula applies;
- and if the CCP needs some, but not all, of the available default fund to supplement its actual capital in order to cover the hypothetical capital requirement, a variable formula which reflects reducing risk to participants as the dependency on the default fund reduces, applies.

The regulatory capital which a clearing member needs to have in respect of its default fund contribution is its proportionate share (that is, in proportion to the clearing member's contribution to the total default fund) of the amount yielded by the formula.[46]

12.12 Further issues relevant to clearing members, which may deserve comment in relation to their exposure to CCPs, include the following:

(1) *Default fund top-up obligations*. As well as attracting a capital requirement, a clearing member may have an obligation to contribute further sums to the default fund in the event of a loss event which obliges the CCP to pass round the hat for replenishment of the fund. Such a commitment may have the appearance of an underwriting facility, which would ordinarily attract a capital requirement. The CRR exempts from a capital requirement any unfunded obligation to contribute to the default fund of a 'qualifying' CCP (meaning a CCP authorised or recognised under EMIR[47]), but requires capital support for unfunded contributions to non-qualifying CCPs.[48] Quite how the latter situation might arise, when all CCPs worldwide must obtain recognition under EMIR if they accept EU members, is unclear.

(2) *Equities CCPs*. The 2% risk weighting does not apply to equities exposures. Accordingly, as regards counterparty risk capital requirements, clearing members will be obliged to calculate their exposures to CCPs as if they were exposures to ordinary banks or corporates, as the case may

44 See **section 7.32**
45 Basel Committee on Banking Supervision, *Capitalisation of bank exposures to central counterparties* (November 2011), para 23
46 CRR, art 308
47 CRR, art 4(1)(88)
48 CRR, art 309

be. The position as regards default fund contributions to equities CCPs appears to be the same, as the CRR does not make any specific provision for this case.

(3) *Variation margin*. The correct treatment of variation margin is less obvious than might be desirable. OTC derivatives specialists may regard variation margin as a posting of collateral; an alternative analysis is that variation margin is a daily settlement of gains or losses which have accrued since the last exchange of variation margin. When the 'collateral' analysis applies, exposures of clearing members to CCPs would need to include all cash variation margin posted on open contracts as well as any net gains (for which variation margin has not yet been paid to the clearing member) and initial margin.

(4) *Netting*. One consequence of the application to clearing members of the ordinary rules for calculating the size of trading exposures to a CCP is that the ordinary rules about netting will apply. Exposures under portfolios of financial derivatives, repos or futures can be aggregated and the accrued but unrealised gains on in-the-money trades offset by accrued but unrealised losses on out-of-the-money trades only if there is a contractual netting agreement complying with various strictures, including that it is supported by a reasoned legal opinion.[49] For clearing members to avail themselves of a regulatory capital treatment based on their net portfolio (rather than the gross unrealised profit on in-the-money trades), it will be necessary for the CCP's rules or membership agreement to contain a legally robust close-out netting clause. In response to GCMs' concerns over capital requirements, such clauses are being introduced into the rules of many CCPs, notwithstanding that resolution arrangements for failing CCPs may develop in a way that makes it hard to see how such clauses might ever be implemented.[50]

(5) *Large exposures*. Clearing members may have large exposures to CCPs because of the size of their cleared portfolios (likely leaving the clearing member with a net deposit of margin at the CCP) and their default fund contributions. The ordinary rules for limiting large exposures are disapplied in relation to trade exposures and default fund contributions to a CCP.[51]

(6) *Transfer (portability) of client trade portfolios*. The concept of portability of a client's portfolio of transactions to a new clearing member in the event of failure of the client's first clearing member is designed to protect the client from the consequences of default of the clearing member, and will not affect the clearing member's credit exposure to the CCP, or indeed its obligations.[52] Portability may, however, help the client, which might itself be an agent bank; and the client may therefore consider itself substantially shielded from credit exposure to the clearing member, and thus regard the credit obligation as that of the CCP. The CRR allows the client to treat its CCP-related transactions for capital purposes as if it were a clearing member exposed to the CCP, provided that two conditions are fulfilled: (a) the client's clearing member must give 'individual client segregation', and (b) the legal and contractual arrangements must facilitate transfer of the

49 CRR, art 296(2)(b)
50 Cf **sections 14.6ff**
51 CRR, art 400(1)(j)
52 See further **sections 17.54ff**

client's positions and margin to another clearing member on the original clearing member's default. A legal opinion is required to the effect that the client would 'bear no losses' if the clearing member defaults, under the laws of a large number of potentially relevant jurisdictions.[53]

(7) *Post-default.* A non-defaulting clearing member may experience a sudden rise in its LCR following the default of another clearing member. This is attributable to hikes in the margin requirements of CCPs, utilisation of the default fund, and variation margin gains haircutting, each of which will require the non-defaulting member to add further liquid assets to its reserve.[54]

(8) *Leverage ratio.* The impact of the leverage ratio has already been considered at **section 12.8**.

12.13 Three further comments might also be made, in that clearing members must consider their credit exposure to their clients as well as their position vis-à-vis the CCP. First, the portfolio of transactions which the clearing member has with the client may represent a credit exposure to the client, if the client's transactions are out-of-the-money for the client and the clearing member has not obtained collateral to cover them. Clearing members will usually wish to comply with the requirements for netting to minimise the amount of effective exposure relevant to computation of regulatory capital requirements. Secondly, collateral posted by the client may serve to mitigate any net credit exposure, assuming it is cash or securities. Securities collateral, and cash collateral constituting a deposit should pose no problems, but if the clearing member is subject to the obligation to segregate client money there may be a question as to whether cash is available to the clearing member in the event of the client's default (rather than vice versa).[55] Thirdly, a clearing member will wish to consider the implications of making available a liquidity facility to its client to enable the client to comply with margin calls. The prudential treatment will be as for that of a liquidity facility provided in relation to settlement services.

53 CRR, art 305; see **section 19.39**

54 See Turing, D, and Singh, M, *The Morning After – The impact on collateral supply after a major default* (October 2018), IMF Working Paper No 18/228

55 Cf **section 5.17**

Part III
Risk and operations

13 Insolvency

INSOLVENCY AT THE HEART OF RISK MANAGEMENT

13.1 Trading is about striking bargains; clearing and settlement is about ensuring that the parties' obligations are duly performed. Ensuring traders stick to their bargains can be achieved through regulatory standards, such as disciplinary action taken by exchanges and regulators, or through ordinary judicial processes dependent on there being a legally binding and enforceable contract between them. These processes will be effective to deal with everyday problems such as reconciliation errors or negligent failure to comply; they may even be up to the challenge of fraudulent and dishonest behaviour. However, in insolvency these processes will fail. In the first place, there are insufficient assets to pay creditors and perform non-monetary obligations, which means that even if satisfaction could be obtained in the form of a court judgment or regulatory or arbitral award, there is only a limited prospect that the insolvent party will ever pay or perform. Secondly, legal proceedings against insolvent entities are often curtailed by law, and the law of insolvency gives special rights to an insolvent company to defend itself and even to attack its potential challengers. Thirdly, insolvency brings with it whole-business failure, the ejection of management, the cancellation of contracts, and a reversal of the ordinary precepts of doing business.

In the financial sector, the problems are worse, because of the disruptive effects on citizens and businesses when their money or assets become trapped in closed banks or investment firms. Since the financial crisis of 2008, authorities began to recognise that special insolvency processes were needed to deal with banks and investment firms: they might need special abilities to recover from their problems, and special insolvency processes to deal with a failed financial firm in a way which minimises difficulties for depositors and the wider economy. Accordingly, this chapter addresses not simply 'insolvency' procedures but the issues arising from application of recovery and resolution regimes.

Risk management in the post-trade space is not solely focused on operational efficiency: clearing and settlement must face up to the prospect that market participants will fail and become subject to recovery and resolution processes or insolvency proceedings. This chapter first considers the basic types of procedure to which financial institutions may become subject, and the risks which they pose to the integrity of clearing and settlement processes. Owing to these risks, special defences are available to protect the processes of clearing and settlement against those risks, which are examined in detail. Finally, the chapter considers issues deriving from insolvency procedures initiated in other jurisdictions.

NATURE OF INSOLVENCY PROCEEDINGS

13.2 The English law of insolvency is extremely confusing. By 2012 it had become possible for a company incorporated as a bank in England to be subject to no fewer than eleven different types of formal insolvency procedure: creditors' voluntary liquidation, members' voluntary liquidation, compulsory liquidation (also known as winding-up by the court), bank insolvency, special administration (bank insolvency), administration, bank administration, special administration (bank administration), receivership, administrative receivership, and company voluntary arrangement. A creditors' scheme of arrangement under section 895 of the Companies Act 2006 may also be added to the list, as could the special resolution regimes under the Banking Act 2009 (which are invoked in relation to failed banks but are not technically 'insolvency' procedures). Other financial institutions have different arrays of procedures available. To go through each possibility would be tedious: a thematic approach is called for.

Insolvency proceedings can broadly be divided into two classes, namely rehabilitation procedures and winding-up procedures. English law, in its confused approach to insolvency policy, has muddled the distinction, so that 'administration', which for non-financial companies has been the second most common form of insolvency procedure in the United Kingdom,[1] can be used for either or both of these purposes. Caution and some further investigation is usually needed in order to gain a full understanding of the type of insolvency in which a failed financial institution finds itself.

Indeed, caution should apply in considering whether *any* form of insolvency proceeding – whether or not administration – is actually likely in the case of a financial sector firm. It should be accepted that if a firm has retail depositors it will be subject to recovery arrangements. If recovery attempts fail, or the firm is too far gone for these to be workable, it will be 'resolved', and resolution may involve both traditional (or modified) forms of insolvency proceedings, together with exercise of the special powers given to authorities for resolution under Part 1 of the Banking Act 2009. In view of this chronology, the discussion begins with recovery and resolution.

Recovery and resolution

13.3 For banks, the best means of achieving rehabilitation is to avoid a formal insolvency procedure altogether. This concept was recognised by the United Kingdom authorities when the painful throes of Northern Rock (which sought emergency liquidity from the Bank of England, suffered the first run on a British bank for 150 years, and was nationalised after months of negotiation intended to keep the bank in the private sector) revealed the need for a more modern toolkit to deal with failing banks.[2] By virtue of the Banking Act 2009, there are now additional tools, called the 'Special Resolution Regime', available to the United Kingdom authorities which are designed to enable early

1 The Insolvency Service, *Insolvency Statistics,* www.gov.uk/government/collections/insolvency-service-official-statistics

2 HM Treasury, *Financial stability and depositor protection: further consultation* (July 2008), http://webarchive.nationalarchives.gov.uk/20100407010852/ www.hm-treasury.gov.uk/d/consult_depositorprotection010708.pdf, paras 1.12ff

intervention, before the implementation of formal insolvency proceedings.[3] The tools are also available in the case of a failing investment firm,[4] and in certain circumstances other companies in the same group as a bank.[5] A modified regime also applies in the case of a failing CCP, which is discussed in **section 14.40**. The following discussion, which refers to banks, should be read as applying equally to investment firms. Similar regimes apply across the European Union, with the European norm being set out in the Bank Recovery and Resolution Directive (BRRD).[6]

Before the activation of any recovery, resolution or insolvency regime, it should be mentioned that systemically important banks will be expected to put in place 'living wills', or more properly, recovery and resolution plans. In outline, the requirements are to have a plan to re-establish solvency, for example through conversion of debt to equity, in times of crisis, and to pre-prepare the bank for implementation of a resolution plan, which might involve a combination of formal insolvency procedures or measures such as a local variant of the special resolution regime.[7] To this end, systemically important financial institutions are thus expected to be able to separate their businesses into components which can be disposed of independently, minimising disruption to clients and other outsiders who may be dependent on the continuation of certain services.[8] Further discussion of the content of such plans, as regards services for clearing and settlement, is in **section 13.8**.

Bail-in

13.4 Under sections 12A and 48B of the Banking Act 2009, the Bank of England can cancel a liability owed by a bank or modify it. The essential effect of this power is to 'bail in' the liabilities of the failing bank, by forcing its creditors to accept less in payment than they would otherwise be entitled to. Bail-in has the result of improving the bank's solvency, but also operates to a degree like a formal insolvency procedure which reduces unsecured creditors' entitlements. A limited list of liabilities is exempted from bail-in;[9] as far as clearing and settlement are concerned, the exemptions include only:

- secured liabilities (which will assist CCPs and payment systems which require participants to post collateral)
- liabilities with remaining maturity of less than seven days arising from participation in designated settlement systems and owed to the system or its participants (which will assist payment systems generally, and CCPs, in relation to any outstanding margin obligations).

3 See HM Treasury, *Financial stability and depositor protection: special resolution regime* (July 2008)
4 Banking Act 2009, s 89A
5 Banking Act 2009, ss 81AA–83
6 Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms, etc
7 Financial Stability Board, *Policy Measures to Address Systemically Important Financial Institutions* (November 2011), www.financialstabilityboard.org/publications/r_111104bb.pdf
8 Financial Stability Board, *Reducing the moral hazard posed by systemically important financial institutions* (October 2010), www.financialstabilityboard.org/publications/r_101111a.pdf, para 20
9 Banking Act 2009, s 48B(8)

As the list is short, it may appear that infrastructures would suffer bail-in insofar as the infrastructure is owed money by the failing bank. However, as far as CCPs are concerned, this is rarely the case during ordinary business operations, since a participant that fails to meet a margin call or settlement payment will rapidly be put into default. As far as payment systems are concerned, the seven-day exemption ought to cover most payment obligations arising in the course of settlement. But securities delivery obligations appear to be liabilities amenable to bail-in but do not benefit from an exemption.

A further bail-in exemption ought to be mentioned, viz the protection given to netting arrangements. Where obligations which may be bailed in are subject to a netting agreement, the netting is allowed to take place before the bail-in operates, so that only the net sum is bailed in.[10] This additional protection will be of benefit to CCPs and ACHs which operate netting on a principal-to-principal basis.

From the viewpoint of a failing firm's customers, the consequences of bail-in may be much more severe. Exemptions which may be relevant include 'liabilities representing protected deposits', 'liabilities that the bank has by virtue of holding client assets' and 'liabilities with an original maturity of less than 7 days owed by the bank to a credit institution or investment firm'.[11] There are no specific protections for liabilities connected with clearing, payment or settlement systems other than the 'participation in designated systems' exemption referred to above. For a non-participant, it is likely to be of little avail, since the exemption applies only if the liability is owed 'to' a participant, whereas bail-in will apply to liabilities owed *by* the participant. As to whether a client can claim to be an indirect participant, see **section 16.7**.

Resolution powers

13.5 If bail-in and other recovery planning does not rescue the failing bank, it may have to be put into 'resolution'. The Treasury or, as the case may be, the Bank of England, may make an order for the sale of all or part of the bank's business to a private sector purchaser,[12] transfer of all or part of the bank's business to a 'bridge bank' owned by the Bank of England,[13] transfer to an asset management vehicle,[14] or temporary nationalisation.[15]

To deal with the residue of the business of a failed bank, a special variant of administration, called 'bank administration', and a special variant of winding-up, called 'bank insolvency', were created.[16] The primary duty of a bank administrator is to support a commercial purchaser or bridge bank, and then to apply the objectives of 'normal' administration;[17] the thinking is that some contracts or essential facilities might not be capable of being transferred on day one to the rescuing entities, and the continuation of these contracts and facilities must be mandated in order to permit the rescuers to carry out their plans.

10 Banking Act 2009 (Restriction of Special Bail-in Provision, etc.) Order 2014, SI 2014/3350
11 Banking Act 2009, s 48B(8)
12 Banking Act 2009, s 11
13 Banking Act 2009, s 12
14 Banking Act 2009, s 12ZA
15 Banking Act 2009, s 13
16 Banking Act 2009, Parts 3 and 2 respectively
17 Banking Act 2009, s 137

While the resolution effort is in train, there are several restrictions which will curtail the actions of third parties. These include:

- Disapplication of 'default event provisions' in consequence of the exercise of a 'crisis prevention' or 'crisis management' measure in relation to the bank.[18]
- Short-term moratoria which suspend the bank's payment and delivery obligations, and the enforcement of security interests and the exercise of termination rights against the bank.[19]

The moratorium rules are subject to a special carve-out in favour of 'excluded persons', being operators of systems designated under the Settlement Finality Directive (SFD),[20] CCPs regulated under EMIR,[21] and central banks.[22]

Furthermore, in the case of a property transfer, the residual bank and group companies must provide services which are needed to enable the transferred business to operate.[23]

The insolvency of the Dunfermline Building Society showed how in practice these powers might be exercised: part of the business was transferred to the Nationwide Building Society (a private sector buyer), part transferred to a bridge bank, and part left behind in a rump of the old building society which was placed into a hastily created building society administration regime.[24] The assets of the bridge bank were auctioned and, after repayment of funding, fees and tax, the proceeds of sale were transferred to the Dunfermline Resolution Fund,[25] for eventual payment back to Dunfermline for the benefit of its creditors and other interested parties.[26]

In EU jurisdictions, the availability of the bank resolution toolkit has allowed a range of solutions to the problem of a failing bank. These include old-style bail-outs, bail-ins, and Dunfermline-style lift-outs into bridge banks.[27]

The Special Resolution Regime, like administration, includes certain legal rules which deviate from the freedom of contract ordinarily applicable to a

18 Banking Act 2009, s 48Z
19 Banking Act 2009, ss 70A–70C
20 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems
21 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories
22 Banking Act 2009, S 70D
23 Banking Act 2009, s 63
24 Bank of England, Dunfermline Building Society Property Transfer Instrument 2009, www.bankofengland.co.uk/financialstability/role/risk_reduction/srr/resolutions/DunfermlineCombinedTransferInstrument.pdf; Building Society Special Administration (Scotland) Rules 2009, SI 2009/806, which came into force 53 minutes after it was made
25 Bank of England, *Report under Section 80(1) of the Banking Act 2009 on the Dunfermline Building Society (DBS) Bridge Bank* (July 2010), www.bankofengland.co.uk/financialstability/role/risk_reduction/srr/resolutions/DBSreport.pdf
26 Dunfermline Building Society Compensation Scheme, Resolution Fund and Third Party Compensation Scheme Order 2009, SI 2009/1800
27 World Bank, Bank resolution and bail-in in the EU: selected case studies pre- and post-BRRD (December 2016), http://documents.worldbank.org/curated/en/731351485375133455/Bank-resolution-and-bail-in-in-the-EU-selected-case-studies-pre-and-post-BRRD ; Honohan, P, *Management and Resolution of Banking Crises: Lessons from Recent European Experience* (January 2017), Peterson Institute for International Economics Policy Brief PB17-1 www.piie.com/system/files/documents/pb17-1.pdf

solvent company. These rules include restrictions on termination of contracts,[28] alteration of trusts,[29] and the constitutionally alarming power to 'amend the law for the purpose of enabling the powers under this Part to be used effectively'.[30] These rules facilitate the dismantling of a failed bank and the transfer of part, rather than the whole, of its business to a successor entity; the risk that entails for clearing and settlement is that parts which ought to be transferred together become detached – for example, collateral becoming detached from its secured obligation, or countervailing claims intended to be set off being left with different entities. The majority of the risks associated with partial dismemberment have been addressed under the Banking Act 2009 (Restriction of Partial Property Transfers) Order 2009,[31] which protects set-off and netting, security arrangements, and, importantly in this context, the special protections granted by the SFD and Part 7 of the Companies Act 1989, discussed later in this chapter.

13.6 Where a firm is an 'investment bank', that is an institution incorporated or formed in the United Kingdom with permission to deal in or safeguard investments, and which holds client assets (a term which includes money),[32] it is possible for a 'special administration' regime to apply under the Investment Bank Special Administration Regulations 2011 (IBSARs).[33] In special administration the administrators' priorities are further varied, with the primary objective being to ensure the return of client assets as soon as is reasonably practicable, and to ensure timely engagement with market infrastructure bodies and certain authorities.[34] Special administration can also be applied to an investment bank which takes deposits, hence the creation of the sub-species 'special administration (bank administration)' and 'special administration (bank insolvency)'.[35] These powers were put to use when MF Global failed.[36]

Of specific interest in special administration is the obligation of persons providing particular services to the failed investment bank to continue to do so.[37] The most important for clearing and settlement purposes is the provision of access to a 'relevant system' (as defined in the Uncertificated Securities Regulations 2001[38] – that is to say, CREST) by a sponsoring system participant. The other services are the supply of computer hardware or software, financial data, communications infrastructure, data processing and data networks.

Risks in resolution

13.7 Resolution action taken by regulatory or other competent authorities may pose similar risks to full-blown insolvency proceedings. The list of issues is shorter, however; though it should be observed that a financial firm which is

28 Banking Act 2009, s 48Z
29 Banking Act 2009, s 34(7)
30 Banking Act 2009, s 75
31 SI 2009/322
32 Banking Act 2009, s 232
33 SI 2011/245
34 IBSARs, reg 10
35 IBSARs, Sch 1 and 2
36 KPMG, *MF Global UK special administration* (October 2011 onwards), webpage, www.kpmg.com/UK/en/IssuesAndInsights/ArticlesPublications/Pages/mfglobaluk.aspx
37 IBSARs, reg 14
38 See **section 8.25**

being resolved is likely to find itself split into several parts, often including a residue of the old firm which is itself subject to a formal insolvency procedure.

(1) *Bail-in*. The effect of bail-in of liabilities owed by the failing firm will be similar to that of liquidation: the creditor in question will receive less than it is owed. The creditor will wish to have taken precautions like those which creditors ordinarily do to manage credit risk, such as receiving collateral or other security such as a guarantee. On the whole, such arrangements are proof against bail-in.[39] Although set-offs are only weakly protected, the principle of 'no creditor worse off' (than in a winding-up)[40] ought to assist.

(2) *Decoupling*. The most alarming long-term issue after bail-in is the consequence of a partial property transfer. The splitting up of a financial institution into 'good' and 'bad' banks, or a transfer of various segments of the failing firm's business to different acquirers can lead to the separation of risks from their hedges. So, naturally offsetting claims might be split apart, or claims left isolated from their credit support. These dangers are mitigated by safeguards set out in the so-called Safeguards Order.[41] However, the decoupling of a failed firm's business from its infrastructure memberships is not so easily addressed.

(3) *Stay*. A short-term stay is likely to apply as described in **section 13.5**. Termination rights might more generally be suspended or rendered ineffective if the failing firm is subject to a 'crisis management measure' or a 'crisis prevention measure'.[42] Likewise, the ability to terminate a service contract – such as a contract for the provision of access to a payment system – may be suspended indefinitely if the only available ground for termination is the existence of the crisis measure. Similar issues arise as with stays in formal insolvency proceedings.[43]

Resolution and recovery plans

13.8 Having reviewed the available powers for recovery and resolution, the question arises how clearing, payment and settlement services should be catered for in an agent bank's recovery and resolution plan (RRP). Payment services in particular are regarded as having a crucial role in relation to systemic risk management. The following observations might be made:

(1) The Financial Stability Board (FSB) says that: 'An effective resolution regime (interacting with applicable schemes and arrangements for the protection of depositors, insurance policy holders and retail investors) should: (i) ensure continuity of systemically important financial services, and payment, clearing and settlement functions.'[44] The FSB also says: 'All financial institutions should be resolvable in an orderly manner and without taxpayers' solvency support under the applicable resolution regimes in the jurisdictions in which they operate … Where a [systemically important

39 See **section 13.4**
40 Banking Act 2009, s 60B
41 Banking Act 2009 (Restriction of Partial Property Transfers) Order 2009, SI 2009/322
42 Banking Act 2009, s 48Z
43 See **sections 13.12(1),(3)**
44 Financial Stability Board, *Key Attributes of Effective Resolution Regimes for Financial Institutions* (October 2011), www.financialstabilityboard.org/publications/r_111104cc.pdf, p 3

financial institution] has multiple significant legal entities, it should … ensure that significant global payment and settlement services are legally separable and continued operability is ensured.'[45] It is therefore apparent that payment, settlement and clearing services have to be treated in a special way: continuity and separability are the objectives.

(2) To some degree, the means of achieving continuity are the same as those for achieving separability. The Basel Committee on Banking Supervision recommends that: 'National authorities should have appropriate tools to deal with all types of financial institutions in difficulties. … Such frameworks should … promote the continuity of systemically important functions. Examples … are … to create bridge financial institutions, transfer assets, liabilities, and business operations to other institutions, and resolve claims.'[46] However, continuity cannot be guaranteed simply by virtue of the existence of a power to carry out an emergency transfer of business from the failed institution. Of course, transfer of liabilities requires a particular legal power, but such a power is not sufficient. Continuity of contractual relationships assumes that the counterparty has no right to terminate the contract and can be compelled to continue to perform, even if the failed bank is in breach. 'Firms should be required to ensure that key Service Level Agreements can be maintained in crisis situations and in resolution, and that the underlying contracts include provisions that prevent termination triggered by recovery or resolution events and facilitate transfer of the contract to a bridge institution or a third party acquirer.'[47] The FSB draws attention to the risk that the failed bank may lose its membership of financial market infrastructures; that its cleared financial contracts might not be transferable to a bridge bank or third-party purchaser; and that its indirect participant clients will need to switch to a replacement service provider. [48] With reference to the transferability of payment operations, the FSB recommends that there should be:

'(i) a centralised repository for all their [financial market infrastructure] membership agreements;

(ii) standardised documentation for payment services, covering issues including notice periods, termination provisions and continuing obligations, to facilitate orderly exit;

(iii) a draft Transitional Services Agreement as part of RRPs that, if needed, will allow the firm to continue to provide uninterrupted payment services (including access to [financial market infrastructures]) on behalf of the new purchaser, by using existing staff and infrastructure; and

(iv) a "purchaser's pack" that includes key information on the payment operations and credit exposures, and lists of key staff, to facilitate transfers of payment operations to a surviving entity, bridge institution or purchaser.'[49]

45 Financial Stability Board, *Reducing the moral hazard*, paras 17, 20

46 Bank for International Settlements, Basel Committee on Banking Supervision Cross-border Bank Resolution Group, *Report and Recommendations of the Cross-border Bank Resolution Group* (March 2010), www.bis.org/publ/bcbs169.pdf, Recommendation 1

47 Financial Stability Board, *Key Attributes*, para 11.7

48 Financial Stability Board, *Key Attributes*, paras 4.7, 4.8, 4.10

49 Financial Stability Board, *Key Attributes* r, para 4.9

(3) Further, where a failed bank has been broken up and its functions shared among various successor entities, the new entities must be obliged to perform obligations to each other. So, to achieve the continuity objective, additional legal rules, such as those in section 48Z of the Banking Act 2009 preventing the operation of termination clauses and requiring failed entities and their affiliates to provide services to bridge banks and other transferees, will be needed to buttress the use of transfer powers. By modifying rights which were privately agreed to, the existence of continuity powers raises questions as to the need for safeguards for counterparties.

(4) Separability may not be so simple, either. Payment and settlement services may be provided by a bank through a network of subsidiaries, foreign branches, and agents. Although efforts persist directed towards resolution of failed banks as global, multi-entity creatures, in practice that goal is difficult to achieve. The idea of putting a 'payment service' into a box ready-packed like a Christmas parcel for transfer to a bridge bank is aspirational in the case of a bank providing a network-based service.

(5) Separation should not unduly prejudice the rights of participants. For example, infrastructures may rely on rights of set-off against a failed participant, or there may be collateral arrangements: in either case it is undesirable for the things being set off to be separated, or for the collateral not to remain linked to the secured obligation. To this end, resolution procedures for banks entail safeguards, the minimum standards for which are set out in a Commission Delegated Regulation.[50] This specifically states that set-off rights and netting arrangements in favour of CCPs and systems designated under the SFD are to be protected.[51]

(6) There is a tension between the need to ensure continuity of payment, settlement and clearing services and the protection of payment, settlement and clearing systems. One policy objective is to ensure continuity, the other is to close off the risk introduced by a failed participant. The BRRD exempts designated settlement systems from the suspension of payment obligations, security enforcement and exercise of termination rights where a participant is being resolved.[52] The Financial Stability Board (FSB) has noted that:

> 'a key objective of effective resolution is to maintain the continuity of a firm's critical functions. This requires a firm in resolution to maintain the continued access to clearing, payment, settlement, custody and other services by [financial market infrastructures]'.

The FSB issued formal guidance on continuity of access to infrastructures,[53] though if the rulebooks of infrastructures are a reliable guide to practice, little is being done by them (in contrast to their participants) to handle the eventuality of a firm being formally resolved; see further **section 18.21**.

50 Commission Delegated Regulation (EU) 2017/867 of 7 February 2017 on classes of arrangements to be protected in a partial property transfer under Article 76 of BRRD

51 Commission Delegated Regulation, arts 3 and 4.

52 BRRD, arts 69(4), 70(2) and 71(3)

53 FSB, *Guidance on Continuity of Access to Financial Market Infrastructures (FMIs) for a Firm in Resolution* (July 2017); *FSB Continuity of Access to FMIs for Firms in Resolution* (August 2020)

Table 13.1 Difficulties in resolution: participation in payment, clearing and settlement systems[54]

Issue	Payments	Clearing	Settlement
Failed firm is a direct participant	Membership will cease	Default rules will come into operation	Accounts will be frozen
Failed firm accesses infrastructure indirectly	Service provider may terminate service contract Network access may be withdrawn	GCM may close out position Matching system participation may be terminated	Cash settlement bank may terminate credit Custodian may terminate services
Obstacles to continuity	Transfer of sort codes to bridge bank or purchaser	Transferability of client positions	Termination of transactions
Assuring continuity: access to infrastructure	Banking Act 2009, s 191: Bank of England can direct system to take specified action (or prohibit action)	EMIR, art 48: Duty of CCPs to implement client portability procedures	IBSARs, reg 14: Obligation to continue to provide access to CREST (but not other systems)
Assuring continuity: use of network	Banking Act 2009, ss 191 and 206A: Bank of England can direct service provider to take specified action (or prohibit action)		IBSARs, reg 14: Obligation to continue to provide network for access to CREST (but not other systems)

Administration

13.9 Rehabilitation regimes are designed to give a breathing-space to a company in financial difficulties so that it can re-establish itself. The central feature of a rehabilitation regime is that a moratorium, or stay, comes into effect immediately so that no creditor can initiate legal proceedings or petition to wind up the company. Enforcement of security is typically forbidden and the exercise of other contractual rights may be stayed. Furthermore, the process may be accompanied by the appointment of insolvency officers with special powers.

Administration is the main rehabilitation regime in English insolvency law, though its relevance in a legal environment which now includes the Banking Act powers for recovery of banks outside a formal insolvency procedure may be significantly diminished. The law is set out in Schedule B1 of the Insolvency Act 1986 and Part 3 of the Insolvency (England and Wales) Rules 2016.[55] The administration must be conducted with the objective of (a) rescuing the company as a going concern; or, failing that, (b) achieving a better result for the company's creditors 'as a whole' than if the company were wound up. As a last resort the

54 Based on Financial Services Authority, *Recovery and Resolution Plans* (August 2011), CP 11/16, Annex 7

55 SI 2016/1024

administration may be conducted with the objective of realising property in order to make a distribution to secured or preferential creditors.[56] Meanwhile, there is a moratorium on legal proceedings and security enforcement,[57] though this does not prevent the exercise of contractual rights[58] or the enforcement of a security financial collateral arrangement.[59] Administrators have extensive powers to manage the company[60] as well as to liquidate[61] and distribute its property,[62] to challenge past transactions, to investigate the company's affairs, and to insist on the continuation of supply of essential services.[63] These make administration a very flexible and useful regime for dealing with an insolvent financial firm. The slide from objective (a) to objective (b) may in practice be imperceptible, but the administrator may, with permission of the court, make distributions to unsecured non-preferential creditors; and he must then signal his intention to make a distribution by issuing a notice under Rule 2.95 of the Insolvency Rules 1986.

There is a paradox here – a failing financial institution will lose its credibility overnight if it fails to meet margin calls or to perform any other type of financial obligation. For a financial firm to seek a moratorium is a way for the firm to write its own death-warrant. Yet administration, with the moratorium, was, before the Banking Act procedures became available, the insolvency procedure of choice for financial institutions in the United Kingdom: well-known examples include Lehman Brothers[64] and Baring Brothers.[65] The explanation is that, for the incoming insolvency practitioner, the moratorium is vitally needed to salvage whatever valuable businesses remain within the insolvent company, through an immediate sale to a third party (which is what happened in both the cited cases).

Yet administration in this form has been open to criticism. The experience of clients of Lehman Brothers, who had legitimate expectations that the client money and client asset segregation rules (now made by the Financial Conduct Authority[66]) would operate so as to keep their money and non-cash assets outside the scope of the administration, was unfortunately that both cash and securities became trapped in the insolvency process for many months. Furthermore, the administration led Euroclear UK & Ireland to freeze (and ultimately compel cancellation) of settlement instructions for securities transfers pursuant to OTC trades in the CREST system.[67] These and other concerns caused the Treasury to implement through the IBSARs an enhancement of the administration regime as applied to 'investment banks', with new powers facilitating the distribution of client assets.

56 Insolvency Act 1986, Sch B1, para 3(1)
57 Sch B1, para 43
58 *Re Olympia and York (Canary Wharf) Ltd* [1993] BCLC 453
59 Financial Collateral Arrangements (No.2) Regulations 2003, SI 2003/3226, reg 8(1)
60 Insolvency Act 1986, Sch B1, para 60, and Sch 1
61 Insolvency Act 1986, Sch 1, para 1
62 Insolvency Act 1986, Sch B1, para 65
63 Insolvency Act 1986, s 233–241
64 PricewaterhouseCoopers, *Companies in Administration* (July 2010)
65 Bank of England, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings* (HMSO, July 1995), ISBN 0-10-270195-4
66 See now **sections 5.7ff** (client money) and **6.18ff** (client assets)
67 PricewaterhouseCoopers, *Lehman Brothers International (Europe) (in administration) – Unsettled OTC trades* – Update (October 2008)

Winding-up

13.10 The purpose of winding-up is to enable the assets of an insolvent company to be liquidated, and a distribution made to the creditors. The legal regime is designed to protect the estate and empower the liquidator to maximise its value. Accordingly, the powers given to a liquidator are in many cases identical to those given to an administrator: powers to carry on the business of the company,[68] to liquidate[69] and distribute its property,[70] to challenge past transactions, to investigate the company's affairs, and to insist on the continuation of supply of essential services.[71] The main distinctions from an administration are: there is no stay on enforcement of security; dispositions of the company's property after the presentation of a winding-up petition are void unless the sanction of the court is obtained;[72] and the liquidator has much simpler duties than an administrator, in that he is not required to strive to save anything.

The 'bank insolvency' regime under the Banking Act 2009[73] provides for a modified form of winding-up of the rump of a bank which has been dealt with under the Special Resolution Regime. The liquidator of the insolvent rump's principal objective is to work with the Financial Services Compensation Scheme (FSCS) to ensure that each depositor eligible for compensation has his account transferred to another financial institution or receives a compensation payment from the FSCS.[74] If the bank is in 'special administration (bank insolvency)', the insolvency officer is confusingly called an 'administrator' and his FSCS-related objective prevails over the other objectives of special administration.[75]

INSOLVENCY RISKS

13.11 Why should insolvency be so fearsome? Operational failure such as computer-system meltdown can have a devastating impact on investors' rights and may therefore be regarded as a potent source of problems needing proactive management. But operational risks have a single, but overwhelming, difference from insolvency risks: a company which experiences an operational failure, but which is solvent, can repair the damage. Repair may be costly and time-consuming, but in the meantime anyone who has suffered loss can, through the usual mechanisms of legal redress, obtain compensation for that loss. Operational risks can thus, with a degree of safety, be assumed to be ones which the perpetrator will be called upon to rectify – they do not (absent specific regulatory requirements) require third parties to take ownership of the prevention and management of operational risk events.

Insolvency risk events, by contrast, require management by counterparties. There is no prospect of the insolvent firm giving redress for the consequences of its failure. Moreover, insolvency officers are given peculiar powers which significantly alter the balance of power in favour of the insolvent firm once

68 Insolvency Act 1986, Sch 4, para 5
69 Insolvency Act 1986, Sch 4, para 6
70 Insolvency Act 1986, Sch 4, para 1
71 Insolvency Act 1986, ss 233–241
72 Insolvency Act 1986, s 127
73 Banking Act 2009, Part 2
74 Banking Act 2009, s 99
75 IBSARs, Sch 1, para 4

formal insolvency proceedings begin. Similar logic applies to the case where a failing financial firm is put into resolution measures which stop short of formal insolvency proceedings.

Where a financial firm fails, and it is not bailed out by its government, the likelihood is that some form of resolution will be attempted. The first step in risk management must therefore be to understand the shape of resolution. As the examples of Dunfermline in the United Kingdom, Banco Espírito Santo in Portugal, and Andelskassen in Denmark show in different ways, 'resolution' is a concept applied to a bank's business, not to a legal entity. There is every chance that resolution will lead to a division of assets among several post-resolution entities and a formal insolvency process is likely to follow for the legal vehicle in which the old bank was once housed. Counterparties and infrastructures may not end up dealing with the continuing business, even though this may be the most desirable outcome. Formal insolvency proceedings cannot be disregarded because resolution aims to avoid their unpleasant effects.

Nevertheless, out of the many different risk issues that are theoretically possible in an insolvency process, it is more convenient to focus on those which may arise in the post-trade sector in insolvency. These may be summarised under four headings: prevention of self-defence; disposal restrictions; unwinds; and uncertain proprietary claims.

Self-defence may be constrained

13.12 Good credit risk management envisages that when things go wrong, the solvent party in a relationship will be able to terminate that relationship, set off what is owed by the insolvent counterparty against anything owed by the solvent party and realise collateral to provide a fund to repay any residual amounts owing. Each of these possibilities is potentially at risk in insolvency proceedings:

(1) *Pull the plug risk*. As a matter of general principle, there is no objection to contract termination in either liquidation or administration under English law.[76] However, there are some exceptions. Other systems of insolvency law have a concept of improper contract termination or *rupture abusive*. (For example, under French banking law, a credit agreement with no fixed termination date cannot be terminated immediately without risk of liability for the bank.[77]) In the case of an investment bank in special administration, the IBSARs prohibit the termination of a 'supply' – which means supply of various IT services and equipment, financial data, and access to CREST – but allow the ongoing cost of the supply (but not outstanding charges) to be an expense of the special administration.[78] In relation to operators of 'recognised inter-bank payment systems' and their service providers, the Bank of England has an express statutory power to direct the operator not terminate a participant's access to the system.[79] If the insolvent firm is a bank which has become subject to the special

76 *Re Olympia and York (Canary Wharf) Ltd* [1993] BCLC 453
77 Loi No 84-46 of 24 January 1984 relative à l'activité et au contrôle des établissements de crédit, art 60
78 Regulation 14
79 Banking Act 2009, ss 191(2), 206A

resolution regime, the contract which the service provider had with the client may be transferred by means of a property transfer instrument to a completely different person, and any contract term which purports to allow the service provider to terminate the contract on the grounds of change of party may be rendered ineffective.[80]

(2) *Set-off blocked*. In some legal systems, the exercise of set-off rights is considered to be detrimental to the general body of creditors, and generally prohibited once insolvency proceedings have been initiated.[81] Under English law, by contrast, set-off of bilateral mutual debts is mandatory in liquidation[82] and in administration if the administrator has given notice that he intends to make a distribution to creditors.[83] Unfortunately, complex lists of exceptions may be found in the general English law principle as well. The main cases where set-off is disallowed in an English insolvency are as follows:

- Triangular or multilateral set-off rights are not mutual and will not be allowed after the mandatory insolvency set-off regime has come into effect.
- Where one party's claim is held for the benefit of another, for example there is a trust or agency relationship or a security interest is involved, again there will be a mutuality defect.
- Claims which arise or are transferred after the cut-off times specified in the Insolvency Rules 2016[84] will be rendered ineligible for set-off.
- Claims which are not provable (such as counter-indemnity rights)[85] or not expressed in monetary terms (such as an obligation to deliver up property held)[86] cannot be set off.

(3) *Stay of enforcement*. If the insolvent party is subject to an administration application or has entered administration (or, if it is a 'small company',[87] has become subject to a moratorium under Schedule A1 to the Insolvency Act 1986), taking any step to enforce security will be barred unless the consent of the administrator (where appointed) or leave of the court has been obtained.[88] This rule clearly prohibits a collateral-taker from enforcing a security interest; it might apparently prohibit a custodian retaining possession under a lien, by analogy with the outcome in *Bristol Airport v Powdrill*,[89] where an airport authority's action in detaining an aircraft for non-payment of fees was held unlawful in administration. It is very difficult to predict whether leave of the court will be obtained. Risk-free enforcement of collateral arrangements which constitute 'security'[90] thus requires specific statutory protection. But the administration stay does not prohibit the exercise of set-off rights against cash balances or

80 Banking Act 2009, s 48Z
81 Wood, P, *Principles of International Insolvency* (2nd ed, Sweet & Maxwell, May 2007), ISBN 978-184-703-2102, para 4-002
82 Insolvency (England and Wales) Rules 2016, r 14.25
83 Insolvency (England and Wales) Rules 2016, r 14.24
84 Insolvency (England and Wales) Rules 2016, rr 14.24(6) and 14.25(6)
85 *Re Fenton* [1931] 1 Ch 85
86 *Eberle's Hotels v E Jonas & Bros* (1887) 18 QBD 459
87 Defined in Companies Act 2006, s 382(3)
88 Insolvency Act 1986, Sch B1, paras 43(1), 44(5); Insolvency Act 1986, Sch A1, para 12(1)(g)
89 [1990] Ch 744, CA
90 Defined in Insolvency Act 1986, s 248

implementation of the enforcement mechanism of title transfer collateral arrangements; and in liquidation, there is no stay on enforcement of security.

Disposal restrictions

13.13 Most systems of insolvency law aim to preserve the assets of the insolvent person for a fair and orderly distribution among creditors. This principle will therefore work against the ordinary processes for settlement of transactions, which envisage the removal of cash or securities from the insolvent estate, and the continuing collection of margin where a transaction cannot be terminated.

(1) *Zero hour and void disposition risk*. In some legal systems, an insolvency proceeding is deemed to have begun at the beginning of the day on which the judgment or order for the insolvency is issued. In others, such as English law, an artificial 'commencement of winding-up' is deemed to occur upon the presentation of the winding-up petition.[91] In either case, disposals (in the Insolvency Act, 'dispositions') of property are forbidden after the cut-off. It is widely, but incorrectly, thought that the SFD required Member States to repeal zero hour laws; while some have done so, the Directive merely required that 'insolvency proceedings shall not have retroactive effects on the rights and obligations of a participant arising from, or in connection with, its participation in a system from earlier than the moment of opening of such proceedings'.[92] Under English law, subject to the Settlement Finality Regulations,[93] any dispositions of a company's property after the commencement of winding-up are void, unless the sanction of the court is obtained, by virtue of section 127 of the Insolvency Act 1986. The void dispositions rule has many complex consequences for clearing and settlement, and is a more potent risk than the other, perhaps better-known, challenges available under the insolvency legislation. Under older judicial authority, *In re Gray's Inn Construction Co Ltd,*[94] it was considered that any transfer after commencement into or out of a cash account, whether or not in credit at the time, is void unless sanctioned. However, current authority from the Court of Appeal indicates that movements out of an account (whether or not overdrawn) ought not to expose the bank (as opposed to the payee) to a challenge under section 127.[95] Zero-hour and void dispositions rules are most likely to cause problems for post-trade activities where cash or securities are to be delivered automatically under pre-instructed mechanisms.

(2) *Deprivation clauses*. Although this might seem a try-on, and self-evidently open to attack, a clause in a contract which provides that the property of an insolvent person is automatically transferred into the ownership of a solvent person upon bankruptcy is void.[96] In practice the principle is less straightforward. Some things like security, set-off, and forfeiture of

91 Insolvency Act 1986, s 129
92 SFD, art 7
93 SI No 1999/2979, reg 16
94 [1980] 1 WLR 711, CA
95 *Hollicourt (Contracts) Ltd v Bank of Ireland* [2001] Ch 555, CA
96 *Re Jeavons, ex p Mackay* (1872–3) LR 8 Ch App 643

leases, would apparently violate the principle if expressed in those bald terms, so a more nuanced formulation is needed, and significant English case-law has been devoted to delineation of the boundary between what is acceptable and what is not.[97] The question whether something is an invalid deprivation comes up typically in relation to transfers (porting) of cleared client positions.[98]

(3) *Authority cancelled*. Some (but not all) types of insolvency procedure terminate, automatically by operation of law alone, and without notice, agency relationships. This is the effect of a winding-up in England, but not an administration.[99] Many clearing and settlement arrangements rely on the agency of others, such as direct participants in payment systems, GCMs in CCPs, and agent banks in securities settlement systems, which may be affected by this effect of insolvency proceedings. The unfortunate consequences of terminated agency include the deemed unlawfulness of continuing to process the insolvent client's instructions, even though these are irretrievably buried in a straight-through-processing technical environment – to act notwithstanding cancellation of agency can in theory expose the agent to 'gross risk', as described in **section 19.15**.

Unwind risk – British Eagle

13.14 Of particular importance in the world of clearing and settlement is the ability of a person carrying out a central role on behalf of numerous market participants (such as an ACH, a CCP or a GCM) to carry out multilateral netting, that is to maximise efficiency of settlements by establishing a clearing arrangement. Clearing recognises that each participant has both bought and sold and allows each participant to net down its delivery obligations and receipt entitlements notwithstanding that the counterparties to the buy and sell trades were different. Unfortunately, clearing arrangements are disallowed under general principles of insolvency law, as confirmed by the House of Lords in *British Eagle International Air Lines v Compagnie Nationale Air France*.[100] The reason is that the surviving participants in the clearing scheme receive a better outcome than they would if they had dealt bilaterally with the failed participant: and that is a result which is detrimental to the general body of creditors. The conclusion which might be drawn from this is that clearing systems will cease to function if one of their participants fails. Indeed, that conclusion would be justified if the rules of the system are not structured well and there are no statutory protections available. However, under English law it is common to address British Eagle risk by providing that all participants in a clearing system deal with the central clearing system provider as principal, so that the clearing system provider is always in a bilateral relationship with each participant. This device converts multilateral netting into bilateral netting, which is not only permitted but actually mandatory under English insolvency law.[101] Common, but not invariable: some settlement systems would not describe themselves as

97 *Money Markets International Stockbrokers Ltd v London Stock Exchange Ltd* [2002] 1 WLR 1150; *Belmont Park Investments PTY Limited v BNY Corporate Trustee Services Limited and Lehman Brothers Special Financing Inc* [2011] UKSC 38

98 See **sections 17.54ff**

99 *Pacific and General Insurance Co Ltd v Hazell* [1997] BCC 400, CA

100 [1975] 1 WLR 758; see **Case Study 2.1**

101 *National Westminster Bank v Halesowen Presswork and Assemblies* [1972] AC 785, HL

operating multilateral clearing arrangements, but their processing techniques, such as 'circles processing', rely on embedded multilateral netting.[102] Care in systems design, and where appropriate, statutory protection from British Eagle challenge, may be needed.

Uncertain proprietary claims

13.15 The problem of assets believed to be in the continuing ownership of a solvent claimant, but nonetheless becoming trapped in the insolvency, is a difficult but frequently encountered one. A string of scandals (notably the Madoff case) and insolvencies showed that assets entrusted to a third party might not be easily retrieved if the custodian were to fail. The origins of the problem can be analysed as follows:

- *Rehypothecation questions*. Where collateral has been transferred to an insolvent firm, using a security interest rather than a title-transfer technique, it may be unclear to the client or insolvency officer whether the assets comprising the collateral which are held by the insolvent firm belong to the firm or to the collateral providers. The Lehman Brothers insolvency demonstrated how complex the question of segregation can become, when clients empower their broker to rehypothecate their segregated holdings. In some cases it seems that clients did not know that their securities had been re-used, so believed that they retained proprietary rights, or did not understand that the exercise of a right of re-use amounts to a loss of ownership. Regulation has attempted to improve the transparency between firm and client on the subject of re-use of securities,[103] thus limiting the risk to cases where records have not been properly kept, or there has been fraud,
- *Confused accounts*. Inadequate record-keeping can be another source of difficulty. There are many examples, including failure to rectify shortfalls and mis-booking of client assets. Without careful labelling, an account recording assets in custody may look no different from a record noting securities out on repo and 'owed to' (but not owned by) a client. All these troubles can be, and routinely are, rectified when the custodian is solvent; reconciliation problems can be resolved without fuss by buying in any missing securities. Again, regulation has tried to limit the risk by obliging firms to make available records on client assets to 'competent authorities, appointed insolvency practitioners and those responsible for the resolution of failed institutions'.[104]

Despite these efforts, when a custodian, broker or agent bank has failed, there may be residual problems to sort out. Insolvency officers are likely to need to take time to work out who owns what, and their expenses of doing so have to be paid by someone – in the United Kingdom, under the IBSARs, the bill is paid by

102 See **section 16.16**

103 Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing [MiFID] as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive, arts 48, 63

104 Commission Delegated Directive (EU) 2017/593 of 7 April 2016 supplementing [MiFID] with regard to safeguarding of financial instruments and funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees commissions or any monetary or non-monetary benefits, art 2(5)

the asset-owners not the insolvent estate.[105] The risk, therefore, is that legitimate claimants to assets in their ownership but the failed firm's possession might not be returned for a long time, and even then the amount returned may be depleted either through loss-sharing where a shortfall has been found[106] or the incidence of costs (which will arise even where there is no shortfall).

DEFENCES – PART 7

13.16 The fear of adverse action by insolvency officers or resolution authorities may destabilise clearing and settlement arrangements. The powers described above may, in theory, be available to disrupt the traditional tools of counterparty risk management, in particular the taking and application of collateral, the exercise of set-off rights, multilateral netting arrangements, and the termination of services. Consequently, the law may allow for a protective shield against insolvency challenge to be deployed by a market infrastructure.

Part 7 of the Companies Act 1989 is the prototype for protective legislation in the United Kingdom, designed to neutralise the principal threats caused by an insolvency procedure as it may affect market infrastructures.

13.17 The original objective of Part 7 was to protect default actions taken by 'recognised investment exchanges' and 'recognised clearing houses'. The focus was perhaps old-fashioned: thinking of *trading* infrastructures as the centre of risk management, rather than *post-trade* bodies. The situation has changed, but Part 7 is still primarily concerned with the protection of all types of recognised body. Recognised investment exchanges may be involved in both the market risk and post-trade risk factors in this equation, because in some cases they may take care of post-trade processing. Recognised clearing houses are important because the most significant sub-species is the recognised CCP. And last, but by no means least, Part 7 protection is available to recognised CSDs.

It may be noted that infrastructures may be 'recognised' even if incorporated or formed in another jurisdiction. 'Recognised' in the context of Part 7 has a broader meaning than 'recognised' under EMIR and the CSDR.[107] Here we are concerned with whether the body is 'recognised' under section 285 of the Financial Services and Markets Act 2000 (FSMA). 'Recognised' will encompass UK-based CCPs and CSDs recognised by the Bank of England, any foreign CCPs and CSDs recognised by the Bank of England under the on-shored versions of EMIR and the CSDR, and 'a clearing house which provides clearing services in the United Kingdom without doing so as a central counterparty, and in relation to which a recognition order is in force'.[108] The last category is something of a legislative fossil and can be disregarded for practical purposes.[109] Furthermore, Part 7 can be applied by regulations to overseas exchanges and 'clearing houses' which have not obtained recognised status at all,[110] but it would appear that no regulations have yet been made for this purpose.

105 Regulation 15, Table 1, para 99
106 IBSARs, reg 12(2)
107 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories
108 Companies Act 1989, s 285(1)(b)(ii)
109 This category is discussed in **section 8.17**
110 Companies Act 1989, s 170

As far as foreign CCPs are concerned, section 170A(2) of the Companies Act 1989 limits the application of Part 7 to transactions cleared by a UK clearing member or a UK client. As far as foreign CSDs are concerned, section 170C limits its application to transactions settled by a UK member 'insofar as it applies to transactions settled through a [UK] recognised CSD' – though, as will be seen, the scope of protection as regards such transactions is in already very limited.

That is the position as regards infrastructures; next the participants and their clients should be considered. When the importance of clearing through a CCP became more widely appreciated, following the Lehman-related financial crisis and the enactment of EMIR, Part 7 was overhauled, principally to improve the protective shield given in relation to default actions designed to protect clients of clearing members, and in some cases the customers of those clients. So, in addition to the original range of market contracts, principally comprising contracts between the infrastructure's participants and the infrastructure itself, Part 7 now has protections relating to the 'clearing member house contract' (between the CCP and its participant, in respect of proprietary business), the 'clearing member client contract' (between the CCP and its participant in respect of client business), and the 'client trade' (back-to-back with a clearing member client contract, and having at least two of the following as parties: a clearing member, a client, and an indirect client).[111] The extension of Part 7 beyond the inner world of the CCP and its immediate participants is explored in **section 13.25**.

What is protected

13.18 Part 7 is not a blanket protection in favour of the infrastructure operator. To understand the scope, the introduction to Part 7, set out in section 154 of the Companies Act 1989, might seem the obvious place to begin. This says:

> 'This Part has effect for the purposes of safeguarding the operation of certain financial markets by provisions with respect to – (a) the insolvency, winding up or default of a person party to transactions in the market (sections 155 to 172), (b) the effectiveness or enforcement of certain charges given to secure obligations in connection with such transactions (sections 173 to 176), and (c) rights and remedies in relation to certain property provided as cover for margin in relation to such transactions or as default fund contribution, or subject to such a charge (sections 177 to 181)',

but it is somewhat out of date. The legislation originally protected only 'market contracts', 'default rules' and 'market charges', and actions taken by recognised bodies in relation to those things. The scheme of Part 7 is now to protect a wider range of market contracts, default rules, settlement of clearing members' market contracts, transfer of clients' market contracts and collateral, 'leapfrog' transfers to a client,[112] and market charges. So, a better starting point would be to determine whether one is looking at one of these protected things.

Then there are some limitations: Part 7 nullifies the 'law of insolvency', rather than having a substantive legal effect; and it applies only where insolvency

111 Companies Act 1989, s 155(1), (1A)
112 See **section 13.23**

proceedings are in effect with regard to certain persons, namely 'defaulters', recognised bodies, and parties to market contracts where one party to the contract is a defaulter.[113]

These concepts can be assessed as follows.

(1) *Market contracts*. These are defined in section 155 of the Companies Act 1989. There are ten categories and a number of carve-outs. Several apply to recognised investment exchanges and recognised clearing houses which are not CCPs; those are not considered further here. That leaves four categories of market contract related to CCPs, and one related to CSDs:

- The four categories of market contract relevant to CCPs are '(a) clearing member house contracts; (b) clearing member client contracts; (c) client trades …; and (d) contracts entered into by the recognised central counterparty with a recognised investment exchange, or with a recognised CSD or a recognised clearing house for the purpose of providing central counterparty clearing services to that recognised body'.[114] Clearing member 'house' and 'client' contracts are transactions registered to the clearing member's house and client accounts at the CCP respectively, and 'client trades' are transactions between the clearing member and its client which 'correspond' to clearing member client contracts.[115] It can be seen that the protection is intended to be given to the registered transactions and their back-to-back equivalents, but not to all aspects of the relationships between the CCP, the clearing members and their clients. 'Client trades' are carved out from the protected category if the transaction has not been transferred (ported) within a given time period.[116] The relationship between clearing members and their clients is discussed in **section 13.25**. Also, clearing members' involvements with the CCP which go beyond the registered transactions – for example the provision of custody or treasury services – will fall outside the scope of Part 7.
- With regard to CSDs, a contract is protected if it is between the CSD and a member of the CSD, a recognised investment exchange, a recognised clearing house, or another CSD, and is 'for the purpose of providing authorised central securities depository services to that member or body'.[117] The services in question are core and ancillary services as defined by the CSDR.[118] So the default protection given is to the CSD itself, in respect of any counterparty relationships it has with participants, such as securities lending arrangements or extensions of credit. The key point is that in regular settlement activity, the CSD is not a counterparty to the transactions being settled, and the protections will not apply. They are designed to protect the CSD, not the process of settlement or the participants in the settlement process.

113 Companies Act 1989, s 158(2)
114 Companies Act 1989, s 155(2B)
115 Companies Act 1989, s 155(1)
116 Companies Act 1989, s 155(2C), (2D)
117 Companies Act 1989, s 155(3ZA)
118 Companies Act 1989, s 155(3A)

(2) *Settlement of market contracts*. The historical conflation of CCPs with settlement systems led the original draftsman of Part 7 to treat 'settlement' of market contracts as the main objective of clearing. In relation to CCPs, which usually do not engage in 'settlement' in the strict sense used in this book, the term needs interpretation. When default management is in progress, the role of the CCP is to close out the defaulter's open positions, determine a net sum which is payable one way or the other as between the CCP and the defaulter, and so far as possible allow the non-defaulting participants to carry on business as normal. So 'settlement' should be interpreted in that context, and includes close-out, netting, and steps to recover any net loss sustained by the CCP. However, it is possible that the meaning of 'settle' in this context has been narrowed as a by-product of revisions to Part 7 made in 2013, as discussed in **section 17.62(2)**.

(3) *Transfer of client contracts.* Transfers of 'clearing member client contracts' and, where a clearing member client contract is transferred, of 'client trades' is protected. 'Transfer' has a special, and somewhat enigmatic, meaning, given in section 189A of the Companies Act 1989. Further discussion on this topic is given in **section 17.62(2)**.

(4) *Market charges.* A market charge is a charge in favour of a recognised clearing house for the purpose of securing debts or liabilities arising in connection with ensuring the performance of market contracts.[119] Further discussion, including the special protection of 'margin' provided to recognised clearing houses, is given in **section 13.21**.

(5) *Qualifying collateral arrangements.* These relate to margin provided on a title transfer basis to a recognised central counterparty in respect of a client account, or to a clearing member or client in respect of a client trade.[120] The apparent purport of the protections is to protect the transfer of the collateral when it accompanies a transfer of market contracts to a replacement clearing member or (in the context of indirect clearing) to a replacement client. Again, there is further discussion in **section 13.21**.

(6) *Qualifying property transfers*. These are defined in section 155A(4). Broadly these are (a) transfers direct from the CCP to a client, following a clearing member default, in line with article 48(7) of EMIR ('leapfrog' transfers), (b) transfers to a replacement clearing member of residual value after close-out of a clearing member's client contract(s), in line with articles 48(5) and (6) of EMIR, and (c) the context of 'indirect clearing',[121] transfers which constitute porting to a replacement client or payment to the indirect client of residual value after close-out of client trades. Accompanying such transfers may be residual collateral balances owed in respect of title transfer collateral (i.e. 'qualifying collateral arrangements').[122]

Legal effect of Part 7

13.19 The scheme of Part 7 is to protect the default action taken by infrastructures from attack by insolvency officers who have taken control of the

119 Companies Act 1989, s 173
120 Companies Act 1989, s 155A(1) and (2)
121 See **section 13.25**
122 Companies Act 1989, s 155A(2)

defaulter. This objective is achieved by section 158(1) of the Companies Act 1989, which states:

> 'The general law of insolvency has effect in relation to –
>
> (a) market contracts,
>
> (b) action taken under the rules of a recognised body other than a recognised central counterparty, with respect to market contracts,
>
> (c) action taken under the rules of a recognised central counterparty to transfer clearing member client contract, or settle clearing member client contracts or clearing member house contracts, in accordance with the default rules of the recognised central counterparty,
>
> (d) where clearing member client contracts transferred in accordance with the default rules of a recognised central counterparty were entered into by the clearing member or client as a principal, action taken to transfer client trades, or groups of client trades, corresponding to those clearing member client contracts,
>
> (e) action taken to transfer qualifying collateral arrangements in conjunction with a transfer of clearing member client contracts as mentioned in paragraph (c) or a transfer of client trades as mentioned in paragraph (d), and
>
> (f) qualifying property transfers,
>
> subject to the provisions of sections 159 to 165.'

The language used is curious, but if read with the emphasis on *subject to the provisions of sections 159 to 165* its sense becomes clear: the general law of insolvency must give way to what is set out in those sections. Accordingly, once the recognised body initiates default action, section 159 of the Companies Act 1989 provides a general and almost comprehensive immunity from insolvency attack. Section 159 says:

> 'None of the following shall be regarded as to any extent invalid at law on the ground of inconsistency with the law relating to the distribution of the assets of a person on bankruptcy, winding up or sequestration or in the administration of a company or other body or in the administration of an insolvent estate –
>
> (a) a market contract,
>
> (b) the default rules of a recognised body,
>
> (c) the rules of a recognised body other than a recognised central counterparty, as to the settlement of market contracts not dealt with under its default rules,
>
> (d) the rules of a recognised central counterparty on which the recognised central counterparty relies to give effect to the transfer of a clearing member client contract, or the settlement of a clearing member client contract or clearing member house contracts, in accordance with its default rules,
>
> (e) a transfer of a clearing member client contract, or the settlement of a clearing member client contract or a clearing member house contract, in accordance with the default rules of a recognised central counterparty,

(f) where a clearing member client contract transferred in accordance with the default rules of a recognised central counterparty was entered into by the clearing member or client as principal, a transfer of a client trade or group of client trades corresponding to that clearing member client contract,

(g) a transfer of a qualifying collateral arrangement in conjunction with the transfer of clearing member client contract[123] as mentioned in paragraph (e) or of a client trade as mentioned in paragraph (f), or

(h) a qualifying property transfer.'

Default rules are accorded a quasi-legislative status, and thus the default rules cannot be changed without prior notification to the regulator.[124] But that does not give total impunity to the infrastructure to enable it to do anything which comes into its head. For example, if a default rule purported to interfere with property rights in a manner not expressly sanctioned by section 159, it is hard to see how labelling it as a 'default rule' would help. In every case, therefore, where an insolvency challenge is being considered, it is necessary to come back to sections 158 and 159 to see whether the challenge is within the scope of Part 7.

In case the general principle set out in section 159 is not clear enough, various statutory provisions of the Insolvency Act[125] are specifically disapplied by sections 164 and 165 in relation to certain default-related actions and market charges.

Default rules

13.20 Recognised bodies must comply with the Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001 (RRRs).[126] The Schedule to the RRRs historically required that all types of recognised body have 'default rules' which enable action to be taken in respect of unsettled market contracts to which a member is party, in the event that the member is or appears to be unable to meet its obligations. For recognised investment exchanges (and, after the conversion of CCPs and CSDs to recognised-CCP and recognised-CSD status, any other recognised clearing houses) this requirement remains. However, in the case of recognised central counterparties and recognised CSDs the requirement no longer applies. (It should, however, be noted that these types of recognised body began life as recognised clearing houses before EMIR and the CSDR and will historically have complied with the default rules requirement. Some content of their default rules may therefore no longer be mandated by the RRRs; the implications of this are considered briefly in **section 13.26**. It might also be noted that the headings to Parts III and IV of the Schedule to the RRRs, which still refer quite generally to 'clearing houses', may be misleading: these Parts apply only to clearing houses which are not CCPs.[127])

123 *sic*
124 Companies Act 1989, s 157
125 Sections 43, 127, 284; Sch B1 paras 41(2), 43(2) and (3), 70–72
126 SI No 2001/995
127 RRRs, reg 5

As to recognised CCPs, EMIR itself sets out certain requirements for content of default procedures,[128] which explains why the RRRs were cut back in relation to default rules. The additional obligations imposed by the RRRs are that EMIR-authorised CCPs must have the following in their default rules:[129]

- Rules relating to transfers of positions and assets which go beyond the requirements of EMIR must say how the transfer will work, be fair and time-limited, and require the consent of the clearing member and any other person for whose account the position or asset being transferred is held.
- There must be rules for the allocation of losses which remain after exhaustion of the assets specified in article 45 of EMIR.
- There must be a provision for the certification of a net sum payable in respect of each account closed out. This is to tie in with section 163 of the Companies Act 1989, This provision, which appears to be minor, is actually rather important. Section 162 of the Companies Act 1989 obliges a recognised body to report to the appropriate regulator on the 'completion' of its default proceedings. This is a check on the action taken by the recognised body in respect of its privileged status as administrator of part of the insolvency process of a defaulter which is outside the general oversight applicable to insolvency officers. Completion of the default process is marked by the certification to the regulator of the net sum or sums (if any) due in respect of the defaulter. The fact that the outcome of default management is intended to be reduction of all the complexity to one net sum per account indicates the objective of Part 7, which is to sanctify netting and the steps which lead to it.

As to recognised CSDs, the CSDR is (not surprisingly) less detailed on default management. Article 41 says that a CSD must have 'effective and clearly defined rules and procedures to manage the default of one or more of its participants ensuring that the CSD can take timely action to contain losses and liquidity pressures and continue to meet its obligations'. The RRRs do not, in the case of CSDs, impose any additional default-related obligations. Whether this is a satisfactory state of affairs is considered further in **section 18.21**.

Margin and market charges

13.21 Additional protections are given in respect of margin, where it is provided under a 'market charge'. In similar fashion to the protection given to market contracts, market charges are rendered immune from insolvency challenge by sections 174 and 175 of the Companies Act 1989: 'The general law of insolvency has effect in relation to market charges and action taken in enforcing them subject to the provisions of section 175.' Section 175 lists specific disapplications of the Insolvency Act 1986.

In respect of 'margin', as distinct from market charges, section 177 of the Companies Act 1989 provides a degree of protection to a recognised clearing house against unknown third-party interests in the property provided as margin. As regards property provided as margin or a default fund contribution, prior equitable interests (including rights and remedies arising from breach of fiduciary

128 EMIR, art 48
129 RRRs, Sch, paras 32–36

duty) of which the CCP has no notice do not bind the CCP.[130] Market charges which are floating charges also take priority over subsequent fixed charges and vendors' liens, and property delivered under market contracts, subject to market charges or contributed to a default fund cannot be attached in execution of judgments.[131] The following supplementary points of interpretation may arise in relation to margin and market charges:

(1) 'Margin' is not helpfully defined: section 190(3) of the Companies Act 1989 says merely that margin and cover for margin have the same meaning. It may be argued that historically 'margin' meant the difference between one price and another, and 'cover' meant the collateral posted to bridge that difference.

(2) It is not clear why the draftsman deals with margin and market charges as if they were separate concepts. Presumably 'margin' is wider, in that title transfer collateral which is not in the ownership of the defaulter, is included in that concept, and charged property in which the defaulter retains an interest could be open to different challenges, requiring additional specific protections to be provided in section 175.

(3) In relation to 'qualifying collateral arrangements', the drafting is unhappy in one respect. By defining 'qualifying collateral arrangements' as 'contracts and contractual obligations for, or arising out of the provision of property as margin', it appears that the plan was to address title transfer collateral arrangements: the definition of 'property' to which one is referred is that in section 436 of the Insolvency Act 1986, which includes 'money, goods, things in action' and so forth. Unfortunately, in relation to margin posted to CCPs, the definition goes on to say that the margin is to have been 'recorded in the accounts of the recognised central counterparty as an asset held for the account of a client …'[132] But on the books of the CCP title transfer margin will show as a liability. It is to be hoped that judges understand title transfer collateral at the CCP as an 'asset' when seen from the perspective of the clearing member and its clients.

(4) There are some vestigial provisions in subordinate legislation dealing with market charges,[133] which can be ignored: namely provisions relating to the TALISMAN settlement system, which was withdrawn in 1997, and provisions referring to settlement of gilts in the Central Gilts Office, a function transferred to CREST in 2000. For the same reasons, references in Part 7 relating to 'short-term certificates' on the London Stock Exchange would no longer appear to be relevant.

13.22 As regards the protection given to margin and market charges, it may be observed that certain provisions of insolvency law are not disapplied. Where the CCP accepts margin under a floating charge, the usual priority order for distribution of the proceeds of realisation of the margin will apply. (It is open to the Secretary of State to make regulations to cause a floating charge to rank ahead of other charges, but not claims such as those of preferential creditors which rank ahead of floating charge holders by operation of law.[134]) Given the need for a CCP's participants and their clients to withdraw or substitute

130 Companies Act 1989, s 177
131 Companies Act 1989, ss 178–180
132 Companies Act 1989, s 155A(2)(a)
133 Financial Markets and Insolvency Regulations 1991, regs 10, 12–15
134 Companies Act 1989, s 178

collateral, it seems likely that charges taken by CCPs over margin assets would be characterised as floating charges.

There are three main consequences of a charge being a floating charge. First, the charge is vulnerable to challenge under section 245 of the Insolvency Act 1986. The principal risk with section 245 is to security granted for earlier credit, which may be a small risk in relation to margin provided to CCPs. Secondly, the holder of a floating charge is at risk of being over-reached by an administrator, who has the power to sell the property in place of the charge-holder.[135] Thirdly, and much more substantially, the holder of a floating charge ranks behind the expenses of the insolvency procedure and preferential creditors in relation to the proceeds of realisation. Expenses are not to be disregarded, since the costs of running the failed firm's business will rank as expenses. But worse than this, the depositors of a failed firm which is a bank will count as preferential creditors,[136] which could render a floating charge for all practical purposes quite worthless. However, these difficulties, while not removed by Part 7, may be solved if the floating charge constitutes a financial collateral arrangement.[137]

Porting and leapfrog

13.23 Transfers of property belonging to an insolvent person are difficult; the issues are discussed further in **sections 17.54–17.64**. One would assume that the property in question should be dealt with according to the rules for distributing the insolvent person's remaining wealth among his creditors. So rules, such as those set out in article 48(5) to (7) of EMIR, requiring CCPs to carry out actions which contradict that principle, need to be protected by statute, since EMIR itself is not a measure which modifies the insolvency regimes of Member States.[138]

Section 158 of the Companies Act 1989 thus aims to take the following types of asset transfer outside the general scheme of distribution upon insolvency:

- transfers of registered client contracts, together with title transfer collateral, to a replacement clearing member willing to provide services to the client ('porting'), and
- transfers of surplus margin and value remaining after close-out of a client's account at the CCP, directly to the client, or to the clearing member for the account of the client ('leapfrog').

It will be observed that both porting and leapfrog are designed to protect clients from the – possibly unexpected – consequence that a CCP deals with its members on a principal-to-principal basis, namely that the value in a 'client' account at the CCP and any associated title transfer collateral will be owed to the clearing member, not to the client, despite the fact that the clearing member had no economic interest in these things.

Section 158 also takes things a stage further, recognising in part the extension of porting and leapfrog concepts into 'indirect clearing'. The protections in this case relate to the default not of the clearing member but of its client, who in turn

135 Insolvency Act 1986, Sch B1, para 70
136 Insolvency Act 1986, s 175(1A), (1B) and Sch 6, paras 15AA–15C
137 See **sections 13.37ff**
138 See **section 7.36(3)**

is providing access services to customers ('indirect clients'). Thus, in certain cases of client default, 'client trades' and associated collateral can be transferred to a replacement client or clearing member taking the place of a failed client, as can any surplus close-out value, and surplus value can be paid directly to an indirect client by a clearing member.[139]

Supplementary protection may be given to transfer (porting) arrangements of CCPs which go beyond the requirements of articles 48(5) and (6) of EMIR. Where a UK CCP has such rules, additional regulatory requirements apply.[140] CCPs incorporated elsewhere do not have to comply with these requirements but, if they do not, Part 7 does not extend to the additional porting rules.[141] However, if the CCP opts to comply, it can apply to the Bank of England under section 170B of the Companies Act 1989 to have the Part 7 protection extended.

Scope – defaulters

13.24 Part 7 is a defence against insolvency laws which might impede the specific types of action listed in section 158(1) – action relating to market contracts, transfers of contracts or collateral and leapfrog transfers. The question then arises as to whose insolvency matters. The historical structure of Part 7 protected almost any action taken by recognised bodies in relation to 'defaulters'. Nowadays protection is confined to a more narrowly defined range of actions set out in section 158(1), which do not refer to 'defaulters' at all. However, the concept of the 'defaulter' still defines the scope of Part 7. The matter is addressed, albeit somewhat obscurely, in section 158(2), which begins with the words 'So far as [sections 159 to 165] relate to insolvency proceedings in respect of a person other than a defaulter, they apply in relation to' insolvency proceedings relating to four other classes of person. Evidently Part 7 is intended to apply in the first place only where the insolvency proceedings are happening to a defaulter, that is, in the main, a member of the CCP: section 188(2) says that references to a 'defaulter' are to a person in respect of whom action has been taken under the CCP's default rules. While it may be formally possible for the rules of a CCP to permit action against a person who is not a member, this would be unusual, and in the context of clearing on a principal-to-principal model, perhaps very unusual.

The non-member cases covered by section 158(2) are: (a) recognised investment exchanges and their members and 'designated' non-members; (b) recognised clearing houses and their members; (c) recognised CSDs, and their members; and (d) – a complex and potentially confusing case – 'proceedings in respect of a party to a market contract other than a client trade which are begun after a recognised body has taken action under its default rules in relation to a person party to the contract as principal'.

As to recognised clearing houses, one might consider the position of a failed CCP, where the clearing member may need to take evasive action. Provided that the proposed action takes place under the rules of the CCP, it will be protected

139 Companies Act 1989, s 158(1)(d)–(f), read together with s 155A(4)(aa) and (c)
140 Recognition Requirements Regulations, Sch, para 34; see **section 8.21**
141 Companies Act 1989, s 170A(5)

by section 158(1)(b). So, if the CCP has a close-out netting rule,[142] members' action should be covered.

As to insolvency proceedings affecting persons in category (d) – parties to market contracts – some dissection is perhaps needed. This appears to apply to default action taken by recognised investment exchanges rather than CCPs. It envisages that the recognised body is already taking default action against one party to the market contract – that party will be a defaulter, so presumably the other party to the contract is being referred to. Some exchanges, such as the London Metal Exchange, have had rules which enable them to regulate contracts entered into by members with non-members, and it appears to be the intention of this provision to grant the protection of Part 7 to insolvency proceedings affecting such non-members. It is not concerned with indirect clearing, as explained in **section 13.25**.

Certain other sections in Part 7 make reference to 'defaulters'. However, 'defaulters' are only mentioned in the following contexts:

- the duty of a recognised body to certify a 'net sum' on completion of its action against a defaulter, and to report this to various stakeholders;[143] and
- protection of 'relevant office-holders' (insolvency practitioners) in relation to actions taken by them, or by third parties, in respect of a defaulter's assets.[144]

Thus, the remaining specific references to 'defaulters' seem to have mainly to do with administrative questions concerning the activities of the recognised body and the insolvency practitioner, and not the substantive protections granted by Part 7.

Part 7 and indirect clearing

13.25 A vital question is the extent to which Part 7 protection extends down the chain: will it cover the action taken by a clearing member in the event of default by its client? Section 158(2) does confer the protection of Part 7 to insolvency proceedings in respect of any party to a market contract, but then limits this to market contracts *other than a client trade*. Client trades, it will be recalled, are contracts which correspond to a clearing member client contract, and are between two (or more) of the clearing member, the client, and the indirect client. So, the general protection is not available for transactions between the clearing member and the client or between the client and the indirect client. In relation to 'indirect clearing'[145] – where the failed firm is a client – there is no protection at all against challenges made by the insolvency officer of a failed client, unless the client is treated under the default rules of the CCP as being a 'defaulter', and the CCP is 'taking action' under its default rules in respect of the client, the whole of Part 7 is inapplicable..

Some comment is needed in relation to the limited protection for transfers, which appear to contradict what has just been stated. As explained in **section 17.57**, a transfer of a portfolio from a failed clearing member may involve the removal

142 See **section 12.12(4)**
143 Companies Act 1989, ss 162, 163; see **section 13.20**
144 Companies Act 1989, ss 160, 161, 164, 184
145 See further **section 19.40**

from the insolvent estate of an asset represented by the clearing member's claim on the CCP, or a different asset, represented by its claim on its client. Both of these contractual linkages need to be transferred to a replacement clearing member if the transfer is to succeed. Part 7 protects the transfer of the 'client trade' between the clearing member and the client, provided that the corresponding clearing member client contract is also transferred.[146] This is helpful for the case of clearing member default, but that is not the case under consideration. There is no protection of transfers to a replacement client, since the protection applies only if there is also a transfer of a clearing member client contract, which is needless in a case where the clearing member is still in business. Further, the protection given to market contracts (and thus given against void disposition challenges, including to deliveries of margin) is excluded if the client trades are not transferred within a given time-window,[147] which, as there is no protection of such transfers, appears to be difficult. But even so, where the risk emanates from the insolvency proceedings applicable to a client who is not a defaulter, section 158(2)(b) makes the discussion pointless. The provisions relating to transfer of client trades are designed to assist the CCP in handling the default of clearing members.

In order to breathe some life into what, then, appears to be nugatory protection of transfers in the context of indirect clearing, one might imagine that a CCP could empower itself to take 'default action' against an insolvent client, thereby rendering the client a 'defaulter' within section 188(2). Provided that the action to transfer client trades is something done 'in accordance with the default rules' then it would be covered by section 158(1)(d) and protected by Part 7, even if the actor enjoying protection is the clearing member. Similar suggestions can be made concerning other provisions in Part 7, which appear to give protections to clearing members involved in indirect clearing, only to be taken away by reason of the scoping rule in section 158(2). But this possibility may be fanciful. It is not at all obvious why a CCP would wish to be concerned about the effectiveness of porting in the event of a client insolvency, if the clearing member is still solvent and performing. The thrust of Part 7 is the protection of the infrastructure, not its users.

The extent of the protection in the various scenarios considered in this and the preceding paragraph is compared in **Table 13.2**.

Review of Part 7

13.26 Unfortunately, since Part 7 was amended in 2009 and 2013, the comprehensiveness of the protections given has been cast into doubt. To recap: the scheme of Part 7 is that insolvency law gives way to sections 159–165 of the Companies Act 1989, in relation to various things such as market contracts. So, to be sure that an action contemplated by a CCP or other person is shielded from challenge, that action must be protected by something in sections 159–165. The principal protection is given in section 159; the sections which follow deal with procedure (ss 160–162) and recoverability of net amounts from defaulters (s 163), and only sections 164 and 165 address specific provisions of the Insolvency Act, by way of supplement to the general statements in section 159. In other words, one must look to section 159 (and failing that, ss 164 and 165) to find a shield.

146 Companies Act 1989, ss 158(1)(d) and 159(1)(f), and s 155(2C)
147 Companies Act 1989, s 155(2D)

Table 13.2 Protection of default actions under Part 7

Actor:	CCP	Clearing Member	Clearing Member
Defaulter:	Clearing Member	Client (indirect clearing)	CCP
Actions at risk	*Protections available*	*Protections available*	*Protections available*
New positions opened at time of default	Market contracts protected: s 159(1)(a)	Market contracts protected if client is a defaulter: s 159(1)(a), subject to proviso re transfer	Market contracts protected: s 159(1)(a)
Collateral posted at time of default	Not a void disposition: s 164(3), s 175(4)	Not a void disposition if client is a defaulter: s164(3)	Not a void disposition: s164(3)
Close-out and netting of open positions	Settlement action protected: s159(1)(e)	No protection under Part 7 unless covered by default rules	No protection under Part 7
Enforcement of security interest	No stay on enforcing market charge: s175(1)	No protection under Part 7	Unlikely that CCP has given security
Transfer portfolio: (1) CCP-CM leg	Qualifying property transfer and qualifying collateral arrangement protected: s 159(1)(e) and (g)	Not relevant	Not relevant
(2) CM-Client leg	Qualifying property transfer and qualifying collateral arrangement protected: s 159(1)(f) and (g)	No protection likely, and none at all without transfer of corresponding clearing member client contract	Not relevant
(3) Client-Indirect client leg	Not relevant	No protection likely, and none at all without transfer of corresponding clearing member client contract	Not relevant
Leapfrog transfer	Qualifying property transfer protected: s 159(1)(h)	Qualifying property transfer protected if client is a defaulter: s 158(1)(f)	Not relevant
Overall comment	Comprehensive protection	CCP must take action against client for Part 7 to apply: s 158(2)(b)	Part 7 generally protects ‘default rules’ and action taken under them

In its original form, section 159(1) protected market contracts, default rules and other rules relating to settlement of market contracts were all protected from attacks on their validity on the ground of inconsistency with insolvency law. Section 159(2) protected various actions taken by CCPs from attack by insolvency officers, in particular (a) settlement of market contracts not dealt with under default rules, and (b) any action taken under the default rules.

Section 159(1) still underpins the validity of market contracts and default rules (though not other rules, any longer, in respect of CCPs), and now it also validates 'settlement' of clearing member client contracts and clearing member house contracts, transfers of clearing member client contracts and corresponding client trades, and leapfrog transfers. More problematic, though, is the new form of section 159(2). The protection of settlement action outside the default rules has gone; worse, so has the blanket protection of action taken under default rules. Only transfers of clearing member client contracts, corresponding client trades and leapfrog transfers are mentioned.

This change makes it necessary to examine the extent of protection remaining by virtue of the fact that default rules are deemed to be valid. The original Part 7 text validated 'any action taken under the default rules of [a recognised] clearing house',[148] but now this protection has been removed for recognised CCPs (but not other types of recognised body). So a CCP may no longer rely on section 159 to justify action taken under its default rules. It does not follow from the deemed validity of the rules themselves that all action under default rules is automatically valid: rules may give discretions, and English law is clear that discretionary action by public or quasi-public bodies is subject to the constraints of administrative law, infused with concepts of proportionality and reasonableness.[149] Further, the scope of protection to actions based on default rules will be constrained by what can legitimately be regarded as 'default rules'. It does not follow that because a CCP labelled a particular rule a 'default rule', and the Bank of England approved the rule under section 157 of the Companies Act 1989, that it is automatically granted validity. The only self-evidently valid 'default rules' are those contemplated by the RRRs, and as has been seen[150] the class of rules envisaged there is now very limited. To be exact: rules which do not deal with loss-allocation or certification of the net sum following close-out may not be protected by Part 7.

It must be concluded that the protection given to a CCP's actions, as well as to the rules themselves, has been cut back from the position enjoyed by CCPs before EMIR, and one might wish to understand why.

One answer to this curious development lies, presumably, in the Settlement Finality regime. A CCP must become designated under the Settlement Finality Regulations (SFRs)[151]. As discussed below, the SFRs provide comprehensive protection for CCPs which follow closely the model of Part 7 as originally enacted.

What is left in Part 7 is the following:

148 Section 159(2)(b) before amendment
149 *R v Panel on Take-overs and Mergers, ex p Datafin plc* [1987] QB 815, CA
150 In **section 13.20**
151 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979; see **sections 13.33ff**

- For recognised bodies other than CCPs, full protection of action taken under default rules, as well as protection of market charges, margin and default fund contributions.
- For CCPs, protection of close-out netting and collateral security, transfers of clearing member client contracts and client trades (plus associated title transfer collateral), leapfrog transfers, market charges, margin and default fund contributions.

Table 13.3 Protection against insolvency challenges

Legislation	Infrastructure	Beneficiary of protection	Protected actions	Effectiveness of protection
Part 7, Companies Act 1989	CCP	CCP	• Close-out and netting • Transfer and leapfrog of client positions • Enforcement of market charge	Good
		Clearing member	• Close-out and netting against failed CCP	No protection if client is insolvent, unless CCP treats client as a 'defaulter'
	CSD	CSD	• Management of own exposures • Enforcement of market charge	Good, but of limited value to participants
Settlement Finality Regulations	• Payment system • Securities settlement system • CCP	• Operator of system • Participants in system	• Settlement of transfer orders • Action taken under default arrangements • Realisation of collateral	Good, except as regards porting by CCPs and Herstatt risk in settlement
Financial Collateral Regulations	All	All	• Enforcement of security financial collateral arrangement • Close-out netting	No defence to 'preference' or 'undervalue' challenge (Insolvency Act 1986, ss 238–239) No protection against recovery and resolution measures

It might be noted that the SFRs do not purport to protect transfers; hence the need to retain these protections in Part 7 for CCPs. Similar reasons can be advanced to explain the continuation of protection for CCPs in relation to third party interests in margin and default fund contributions (sections 177–181). It is more difficult to explain why the protections in sections 174–175 were not thought to be covered by the SFRs' provisions relating to collateral security.

When the protections afforded to CCPs by Part 7 are tested against the range of challenges potentially available to insolvency officers, the broad conclusion is still that the shield is good, if not perfect. Where the failed firm is a clearing member, the protections are reasonably comprehensive. The CCP may wish to close out transactions, apply margin, transfer client positions and margin, and make a direct 'leapfrog' transfer to a client of the failed firm. All these things are protected. Furthermore, the CCP is given a specific shield against a challenge based on late registration of contracts or late delivery of collateral, both of which might be vulnerable to attack as 'void dispositions' under section 127 of the Insolvency Act 1986 or zero-hour rules.

13.27 Several things do not fall within the scope of Part 7's protections. The following is a non-exhaustive list:

(1) *Payments*. Payment systems such as ACHs are not 'recognised clearing houses' under the FSMA. Protection for these entities must be sought elsewhere, typically through the settlement finality legislation considered below. Payments made to or by a recognised clearing house can, however, receive protection under Part 7. Furthermore, there is the possibility of protection under section 301 of FSMA, or section 172 of the Companies Act 1989, though these options appear to be in desuetude.[152]

(2) *OTC and platform-based trading*. After the collapse of Lehman Brothers, it became a matter of contention that transactions carried out outside organised market-places and not cleared through a CCP had no orderly mechanism for their close-out or settlement.[153] While a settlement system might (as in the case of CREST) be operated by a recognised body, its rules do not apply to the pre-settlement phase of transaction's life-cycle. Netting agreements to achieve certainty of outcome in the event of a counterparty's default in the off-exchange cash equities trading world were once uncommon, though an optional close-out protocol is now in place.[154] Trading platforms which are neither recognised investment exchanges nor cleared through a CCP (which may include some MTFs and OTFs) may have the same problem. Even if a netting agreement is used, some of the attacks against which Part 7 would provide a defence may be viable.

(3) *Special Resolution Regimes*. The special resolution regime for banks under the Banking Act 2009 is designed to come into play as an alternative to an all-embracing insolvency proceeding. Part 7 contains no protection against the powers given to the authorities under the special resolution regimes. The special resolution regimes are limited in that a transfer under a 'partial property transfer order' may not have the effect of modifying or rendering unenforceable a market contract, the default rules of a

152 See **section 13.28**

153 Investment Management Association, *Problems Revealed by the Lehman Collapse* (December 2008), www.investmentuk.org/assets/files/press/2008/20081205-01.pdf

154 Association for Financial Markets in Europe, *OTC Cash Equity Trades – Default Protocol* (September 2010), www.afme.eu/WorkArea//DownloadAsset.aspx?id=239

recognised body, or other rules of a recognised body as to the settlement of market contracts;[155] but partial property transfers are not the only possible threat to the integrity of clearing and settlement posed by the regimes. But otherwise, there is no protection in Part 7 against bail-in or the other restrictions on action which arise when a bank or investment firm is subject to the special resolution regime of Part 1 of the Banking Act 2009 or a foreign equivalent. Protection, in respect of resolution and recovery regimes, needs to be sought within the legislation applicable to the regime itself. In brief: settlement systems designated under the SFRs are protected against bail-in[156] and the stays on payment and delivery obligations, collateral enforcement and close-out;[157] as far as foreign regimes are concerned, there is a mechanism for recognition in sections 89H and 89I of the Banking Act 2009, but bounded as it would be if the foreign resolution action were being carried out under the laws of the United Kingdom.

(4) *Foreign insolvency attack*. The protections granted by Part 7 do not cater for foreign insolvency officers' powers very thoroughly. Part 7 does contain a useful provision, section 183 of the Companies Act 1989, which prevents a United Kingdom court from recognising or giving effect to an 'act [which] would be prohibited in the case of … a relevant office-holder by provisions made by or under this Part'.[158] The draftsman seems not to have imagined that foreign insolvency officers might have powers going wider than those of an English insolvency office-holder. This wording thus invites the question whether foreign insolvency officers seeking to assert powers which are not explicitly disapplied by Part 7 can be blocked, a question considered further at **section 13.47(5)**.

Section 301 – Listed Contracts

13.28 Under section 301 of FSMA, Part 7 may be extended by regulations to apply to 'relevant contracts', that is to say 'contracts of a prescribed description in relation to which the settlement arrangements are provided by a person for the time being included in a list maintained by the Bank of England'.[159] There are currently no such regulations or list in force, but the section (in its previous incarnation as section 171 of the Companies Act 1989) had a brief burst of glory in the 1990s, described below. Section 172 of the Companies Act 1989, which allows extension of Part 7 to 'contracts of a specified description in relation to which settlement arrangements are provided by the Bank of England', has not been used.

Section 171/section 301 was used to provide a protective regime for a CCP established for the purposes of managing counterparty risk arising in relation to foreign exchange contracts. The CCP was called Exchange Clearing House Limited (ECHO). Under the Financial Markets and Insolvency (Money Market) Regulations 1995,[160] 'money market contracts', being contracts for

155 Banking Act 2009 (Restriction of Partial Property Transfers) Order 2009, SI 2009/322, art 7
156 Banking Act 2009, s 48B(8)(e)
157 Banking Act 2009, s 70D(1)
158 Companies Act 1989, s 183(2)
159 FSMA, s 301(2)
160 SI No 1995/2049 (revoked under the Financial Services and Markets Act 2000 (Consequential Amendments and Repeals) Order 2001, SI 2001/3649)

the acquisition or disposal of currency of the United Kingdom or of any other country or territory or the Ecu,[161] became relevant contracts for the purposes of section 171. The regulations provided for listed persons to be regulated by the Bank of England, under a regime which broadly followed the RRRs then in existence for recognised clearing houses. Protection was given to action taken under default rules of a listed person, and 'money market charges' were also protected from attack in the same way as market charges under Part 7.

ECHO was removed from the list on 13 May 1999 at its own request, having been acquired by CLS Services Limited and wound down its operations.[162] The closure of a system intended to reduce pre-settlement counterparty risk as a result of introducing a new system designed to reduce settlement risk is of questionable logic, but may be explained as a result of regulatory policy having been directed for many years at settlement risk in particular in the FX market;[163] ECHO may, in that context, be seen as a netting mechanism designed to reduce exposure size rather than (as with other CCPs) a device for management of pre-settlement risk. Nowadays CCPs offer a central counterparty service for FX contracts, and the utility of the unused section 301 regime is not obvious.

DEFENCES – SETTLEMENT FINALITY

13.29 The principal European law-based source of insolvency protection, is, by contrast to Part 7, designed to protect payment and securities settlement systems rather than CCPs and recognised investment exchanges. This is the Settlement Finality Directive (SFD)[164] and in the United Kingdom it rivals Part 7 in its eccentricity of application. The differences between the settlement finality regime in the United Kingdom and that in the European Union are not mostly attributable to Brexit, so the subject is considered in general terms first before examining the peculiarities of the United Kingdom's adoption.

This is because the 'principal objectives' of the SFD, as originally stated, were:

> 'to reduce legal risks associated with participation in payment systems … in particular as regards the legal validity of netting agreements and the enforceability of collateral security; to ensure that in the Internal Market payments may be made free of impediments … by taking into account collateral constituted for monetary policy purposes, to contribute to developing the necessary legal framework in which the future European Central Bank may develop its monetary policy.'[165]

During its legislative passage, the draft SFD was expanded so as to cover participation in securities settlement systems as well as payment systems, and after it was transposed into member state law, the seekers of status of 'designated system' have included not only payment and settlement systems but also CCPs. The reason for this curious expansion of scope is that the SFD is the main

161 See the Financial Markets and Insolvency (Ecu Contracts) Regulations 1998, SI 1998/27

162 Financial Services Authority, Press Release FSA/PN/046/1999 (May 1999)

163 See Bank for International Payments Committee on Payment and Settlement Systems, *Settlement Risk in Foreign Exchange Transactions* (the Allsopp Report) (March 1996), www.bis.org/publ/cpss17.pdf

164 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

165 European Commission, *Proposal for a European Parliament and Council Directive on Settlement Finality and Collateral Security* (May 1996)

provider at European level of protection for infrastructures against insolvency risk. The expansion was recognised in modifications made to the SFD in 2009, which explicitly recognise that CCPs may be system operators,[166] and again in the requirement of EMIR that authorised CCPs be notified as systems under the SFD.[167]

Given that background, it may be appropriate both to examine the substance of the SFD's protection and its transposition, but also to examine whether indeed the SFD is capable of providing adequate protection to the unexpectedly wide range of infrastructures claiming to be 'systems'.

To whom and to what the SFD applies

13.30 The starting-point in an assessment of the SFD is that it applies to 'designated systems', their participants, and collateral security provided in connection with participation in a system or the operations of central banks and the ECB.[168] Central to the SFD, therefore, is the question who is a designated system; the scattered definitions in article 2 of the SFD set out the parameters.

- A system must have at least three (or, if warranted on systemic risk grounds, two) participants, not counting the system operator itself.
- The system must have common rules and standardised arrangements for clearing or execution of 'transfer orders' between participants.
- The system must be governed by the law of a Member State in which at least one participant's head office is located.
- If warranted on systemic risk grounds, securities settlement systems may to a limited extent execute orders relating to other financial instruments.

However, this is not quite it: a system only qualifies for designation if it is for clearing or execution of transfer orders between participants: clearing and settlement of things other than 'transfer orders', and membership of persons who do not qualify as 'participants', would be fatal to the system's eligibility for designation, and thus to obtaining insolvency protections. Transfer orders are defined in article 2(i) as:

> 'Any instruction by a participant to place at the disposal of a recipient an amount of money by means of a book entry on the accounts of a credit institution, a central bank, a central counterparty or a settlement agent, or any instruction which results in the assumption or discharge of a payment obligation as defined by the rules of the system, or an instruction by a participant to transfer the title to, or interest in, a security or securities by means of a book entry on a register, or otherwise.'

As to 'participants', these are limited to credit institutions, investment firms, public authorities and publicly guaranteed undertakings, undertakings corresponding to credit institutions and investment firms, CCPs, settlement agents, clearing houses and system operators.[169] (In the European Union, non-EEA undertakings and, in the United Kingdom after Brexit, non-UK undertakings are included in

166 Directive 2009/44/EC of the European Parliament and of the Council of 6 May 2009 amending Directive 98/26/EC on settlement finality, etc
167 EMIR, art 17(4)
168 SFD, art 1
169 SFD, art 2(f)

the 'corresponding to …' category.) Indirect participants (any of the foregoing, which has a contractual relationship with a participant in a system which allows the indirect participant to pass transfer orders through the system)[170] may be considered participants if justified on the grounds of systemic risk.[171] So, designation would not be open to a system which admitted non-financial firms, payment institutions or insurers into its membership.

However, the position of CREST (and of CSDs in non-UK beneficial owner markets[172]) remains confusing: these securities settlement systems provide accounts for ordinary investors who do not fall into the approved categories of participant. Presumably a distinction is to be drawn between the account operators, who do need regulatory licences in order to carry out movements on the accounts and thus to participate in the *settlement* system, and the account holders, who do not need licences in order to participate in the *depository*. Were it otherwise, CREST and beneficial owner market CSDs could not obtain SFD designation.

13.31 Member States (and in the United Kingdom, the Bank of England, unless the applicant is a recognised investment exchange) are responsible for designation of systems. Once designated, the insolvency protections described below will apply to the system and its participants:

- Transfer orders and netting will be enforceable and binding on third parties, even in the event of insolvency proceedings against a participant, subject to provisos concerning transfer orders not entered into the system before the moment of opening of the insolvency proceedings.[173]
- Funds or securities on a participant's account can be used to settle obligations of the participant on the day of opening of insolvency proceedings.[174]
- Transfer orders cannot be revoked by a participant or a third party after the moment defined by the rules of the system.[175]
- Insolvency proceedings may not have retroactive effects on the rights and obligations of participants before the moment of opening of insolvency proceedings.[176]
- The rights of a participant (a term which includes the system operator) to collateral security are not to be affected by insolvency proceedings.[177]

13.32 Some comments may usefully be made at this point:

(1) These protections are not comprehensive, even for payment and securities settlement systems, against the entire possible range of insolvency attacks. That said, the principal risks confronted by a settlement system in the insolvency of a participant (voidness of settlement instructions or of transfers of securities or cash, *British Eagle* risk, and a stay on enforcement of collateral) are largely addressed by the SFD.

170 SFD, art 2(g)
171 SFD, art 2(f)
172 See **section 7.50(1)**
173 SFD, art 3
174 SFD, art 4
175 SFD, art 5
176 SFD, art 7
177 SFD, art 9(1)

(2) The SFD appears to provide protection against recovery and resolution measures;[178] its protections apply to 'insolvency proceedings', meaning 'collective measures … to wind up … or to reorganise … where such measure involves the suspending of, or imposing limitations on, transfers or payments'. Recovery or resolution may involve suspension of or limitations on payments and may thus fit this definition. The Winding-up Directive,[179] which (unlike the SFD) actually defines winding-up proceedings and reorganisation measures was amended by the BRRD[180] so that BRRD procedures are deemed to be 'reorganisation measures'. Furthermore, an amendment made by the BRRD to the Financial Collateral Directive (FCD),[181] which (like the SFD) uses the concepts of winding-up proceedings and reorganisation measures, has expressly included BRRD resolution tools within the definition of 'reorganisation measures'. This approach would indicate that the SFD needed no amendment to bring BRRD procedures within its scope. (However, it should be observed that the implementation of BRRD in the United Kingdom diverges from this interpretation.[182])

(2) Where transfer orders result from securities trades which have a T+2 or longer settlement cycle, the ability to use funds or securities on an account for one day is of limited value.

(3) The prohibition against 'revocation' of transfer orders is a false friend. Finality, in the sense of no risk of being asked to give back what I think I have received, may be jeopardised by a number of issues: revocation is one, but there are also conditionality, reversal under the rules of the system, and insolvency challenge.[183]

(4) Settlement finality does not guarantee that settlement will occur. The distinction between *finality* of settlement and *certainty* of settlement cannot be sufficiently emphasised. Finality occurs when there is no danger of reversal of the settlement; certainty is that the trade will, come what may, actually settle so that my securities are replaced with your cash (or vice versa). Delivery-versus-payment (DvP) techniques[184] are designed to eliminate settlement risk: that is, to ensure you are never left having parted with your securities without having received your cash (or vice versa). But reliable DvP does not guarantee that the transaction will settle. As the Lehman insolvency revealed – with 142,000 failed trades globally relating to Lehman Brothers International (Europe)[185] – an unsettled transaction can leave trading parties in almost as perilous a position as if DvP does not work.[186] The SFD prevents unwinding of settlements

178 See **section 13.3**

179 Directive 2001/24/EC of the European Parliament and of the Council of 4 April 2001 on the reorganisation and winding up of credit institutions

180 Article 117

181 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements, art 2, as modified by BRRD, art 117

182 See **section 13.33**

183 See Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel, March 2009), ISBN 978-1-84766-3030-0, pp 221–223

184 See **section 18.3**

185 PricewaterhouseCoopers, *Lehman Brothers International (Europe) (in administration) ('LBIE'), Unsettled Trades – Market Update* (November 2008), www.pwc.co.uk/pdf/LBIE_Failed_trades_Update_7_Nov_2008.pdf

186 Investment Management Association, *Problems Revealed by the Lehman Collapse* (December 2008), www.investmentuk.org/assets/files/press/2008/20081205-01.pdf

which do occur. But they do not force operators of settlement systems to ensure that settlements will take place, even if both trading parties are able to settle, let alone when one is insolvent. The SFD is therefore of no help in assuring certainty of settlement. Certainty of settlement, or rather settlement discipline, is addressed under the CSDR and discussed further in **section 19.16**.

(5) The SFD provides no protection in respect of anything other than 'transfer orders' and 'collateral security' (which secures obligations arising in connection with a 'system', which is defined by reference to transfer orders, and obligations owed to central banks). Since transfer orders are only payment instructions and 'securities' transfer instructions, the handling of other types of obligation is not capable of being protected.[187]

(6) The SFD does not help a participant in relation to the insolvency of its client, unless the client has been accorded the status of 'indirect participant'.[188]

(7) The judgment of the European Court of Justice in *Private Equity Insurance Group SIA v Swedbank AS*[189] (discussed more fully at **section 13.39)** raises a question concerning article 3(1) of the SFD. This article protects the execution of transfer orders (settlements) which take place on the day when insolvency proceedings were opened, if carried out on that day. The question is whether a transfer order which is processed on a subsequent day can legally be treated as final, even if the rules of the system say it is and there is no other objection under local insolvency law. The relevance of the *Swedbank* case, which concerned article 8(2) of the Financial Collateral Directive (FCD) and not the SFD, is that the two articles are in extremely similar terms. The ECJ appears to have ruled, in relation to the FCD article, that the wording prohibits Member State laws from giving the protections of the FCD to financial collateral provided after the same-day cut-off. If the same interpretation should apply to the SFD – which, given the similarity of wording, would appear to be likely – then processing of transfer orders after the cut-off could not enjoy the protection of the SFD. That would have profound ramifications not just for settlement of payments and securities transfers which have longer settlement cycles than T+0, but for the protection of CCPs. To be clear, the learned justices of the ECJ did not say this expressly in their judgment, so the interpretation may be over-pessimistic; the SFD may have a different policy basis from the FCD and give rise to a different interpretation of similar words; and in any event it is not forbidden to Member States to make their insolvency laws work in the way they wish (such matters being outside Treaty competence and thereby off-limits for the ECJ). But if protection under the SFD is not available, other sources of protection must be sought.

(8) The European Post Trade Forum (EPTF) mentioned various deficiencies in the scheme of the SFD which may deserve mention.[190] The EPTF observed that the SFD leaves it open to individual systems to define the moment of entry of transfer orders into the system, and the moment of

187 See **section 13.35(1)**

188 See **sections 2.45** and **16.7**

189 6201CJ0156, Case C-156/15, ECLI identifier ECLI:EU:C :2016 :851.

190 European Post Trade Forum, *EPTF Report* (May 2017), https://ec.europa.eu/info/sites/info/files/170515-eptf-report_en.pdf, EPTF Barrier 10

irrevocability, which means that identical settlement instructions can have different legal consequences in different systems. The SFD does not recognise that irrevocability is hard to look at as a unilateral concept, since settlement instructions are normally matched (that is to say the transferor and transferee *both* need to input instructions before the transfer will be processed). But the most important criticism made by the EPTF was that the SFD does not protect DvP: by focusing on unidirectional transfer orders, rather than exchange-of-value arrangements, it allows the payment and securities-transfer legs of a securities settlement to become separated and to have different finality rules applied. That must be wrong, and it may be dangerous.

UK implementation of the SFD

13.33 By contrast with the five protections contemplated by the SFD itself, the transposition into United Kingdom law is much more extensive. The Settlement Finality Regulations (SFRs)[191] follow the same logical structure as Part 7. As with the SFD, the starting point is the designated system; a designated system is required to have default arrangements as a condition for becoming designated;[192] the general law of insolvency has effect in relation to transfer orders and collateral security, subject to a list of overrides;[193] and the overrides specify that none of the following shall be regarded as invalid on grounds of inconsistency with insolvency law: a transfer order, the default arrangements of a designated system, the rules of a designated system as to the settlement of transfer orders not dealt with under the default arrangements, or contracts for realising collateral security.[194]

The coverage of the SFRs is more extensive than the SFD. As to transfer orders, the SFRs apply, in addition to settlement instructions, to a transaction creating obligations to transfer securities or cash as well as instructions intended to bring about the discharge of such obligations.[195] Furthermore, the institutional coverage of the SFRs has been extended to cover payment institutions participating in payment and securities settlement systems.[196]

As with Part 7, some enumerated provisions of insolvency law are specifically disapplied as regards transfer orders and collateral security, in some cases subject to provisos. There is a general proviso, that the whole range of protections is disapplied in relation to a transfer order entered into a designated system after an insolvency order has been made, unless the transfer order is carried out on the same date as the insolvency event, and the system operator did not have notice of the event at the time of settlement.[197] The issue alluded to in **section 13.32(7)**, as to whether the law forbids the protection of settlements taking place later than the day of opening of insolvency proceedings, needs re-

191 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999 No 2979
192 SFRs, Schedule, para 6
193 SFRs, reg 13(1)
194 SFRs, reg 14(1)
195 See Turing, D, 'Implementation of the Settlement Finality Directive in England' in Vereecken, M, and Nijenhuis, A, eds, *Settlement Finality in the European Union* (Kluwer, April 2003), ISBN 90 130 048 73, pp 120–121
196 FSMA, s 379A; Payment Systems and Services and Electronic Money (Miscellaneous Amendments) Regulations 2017, SI 2017/1173
197 SFRs, reg 20

evaluation as a matter of the laws of the United Kingdom. Regulation 20 of the SFRs follows the SFD, but it merely limits the operation 'of this Part' – that is to say, the specific protections of the SFRs – to cases where settlement occurs before the deadline. Furthermore, there is regulation 14(3), which seemingly countermands regulation 20, since it says 'Nothing in the following provisions of this Part [phrasing which would encompass regulation 20] shall be construed as affecting the generality of the above provisions.' The 'above provisions' are regulations 14(1) and (2), which provide blanket immunity from the operation of insolvency laws which would affect the 'rules of a designated system as to the settlement of transfer orders'. Reconciling regulations 14 and 20 is not easy, but the conclusion may be reached that danger from a broad interpretation of the *Swedbank* case is minimal.

Finally, it may be observed that the United Kingdom has concluded that resolution and recovery measures implemented under Part 1 of the Banking Act are partially out of scope of the protections under the SFRs. Regulation 2(2A) of the SFRs provides that references to insolvency proceedings do *not* include crisis prevention measures or crisis management measures taken in relation to an undertaking, unless 'express provision is made in to the rules of the system in which the undertaking is a participant' that such measures are to be treated as insolvency proceedings.[198] This reflects an odd transposition of the BRRD which disregarded the requirement of BRRD for recovery and resolution measures to come within the scope of SFD protection.

International context after Brexit

13.34 After the departure of the United Kingdom from the European Union, the question arises how protection might be available in relation to cross-border participation in designated systems. To begin with, UK systems (unless they are governed by the laws of a Member State) are unlikely to qualify for designation in the European Union. So, there is no argument that the SFD will give protection to the operator of, or participants in, a UK system, in the event of failure of an EU-based participant. Protection needs to be sought under the laws of the United Kingdom.

In this context – insolvency challenges of foreign origin – regulation 25(2) of the SFRs follows the clumsy formula of section 183 of the Companies Act 1989, precluding acts which 'would be prohibited … by this Part' in the case of an insolvency office-holder appointed in the United Kingdom. However, as regards attacks which are not known to domestic law, regulation 14(1) expressly states that the protected arrangements (transfer orders, default arrangements, rules, etc) cannot be regarded as invalid on the ground of inconsistency with the law relating to insolvency proceedings of a country or territory outside the United Kingdom.

In the reverse direction, it may be observed that an EU system is eligible for designation by the Bank of England notwithstanding that its governing law is not of the United Kingdom. If such a system obtains UK designation, then there will be protection under the SFRs as well as under the domestic law of the Member State applicable to the system. In cases where UK designation has not

198 Financial Markets and Insolvency (Amendment and Transitional Provision)(EU Exit) Regulations 2019, SI 2019/341, reg 5(3)

been sought, insolvency challenges potentially available under the laws of the United Kingdom could be a threat – for example, that post-insolvency transfers are void dispositions under section 127 of the Insolvency Act 1986 – so that specific local protection would appear to become desirable when, before Brexit, it was not necessary.

Evaluation of settlement finality protection for CCPs

13.35 The list of specific disapplications of provisions of the Insolvency Act 1986 is longer in the case of the SFRs than in the case of Part 7. That implies that the protection may be better. There is, however, some difficulty in the application of the SFRs, and indeed the SFD, to CCPs. From a European perspective it should be borne in mind that there is no other protective legislation, like Part 7, of pan-European scope. CCPs across Europe are still expected to rely on the SFD to provide a shield against insolvency attack.[199]

In this regard, one might make the following comments:

(1) A CCP which clears physically settled commodity transactions may need to make a case to be eligible for designation. To be eligible, a CCP must clear or execute 'transfer orders',[200] which can be either payment orders or securities transfer instructions.[201] For the purposes of the SFD, 'securities' has a very wide definition, embracing all financial instruments in Section C of Annex I to MiFID.[202] This expressly includes 'futures' and cash-settled derivative products. Equities CCPs and CCPs which clear only cash-settled derivative products should thus be eligible for designation. Physically settled commodity transactions which are not traded on regulated markets or MTFs are not automatically in the MiFID list, but if they are 'not for commercial purposes' and have the characteristics of other derivative instruments they are included. So, on the whole, CCPs which clear commodity transactions should be eligible. In any event, it is not fatal that the system executes orders relating to 'other' financial instruments, such as out-of-scope commodity transactions, but designation is allowed only if the system (i) executes securities transfer orders; (ii) executes orders relating to the other financial instruments 'to a limited extent'; and (iii) then only if designation is warranted on grounds of systemic risk.[203]

(2) The general proviso, alluded to in **section 13.33**, is problematic. The insolvency protection conferred on transfer orders does not apply in relation to transfer orders entered into the designated system after the opening of insolvency proceedings, unless 'the transfer order is carried out on the same business day of the designated system that the [insolvency] event occurs'.[204] The application of the concept of 'carrying out' transfer orders to a CCP is, to express it mildly, uncertain. With a settlement system proper one can see exactly what is being got at: settlement, in the sense of transferring cash or securities from the transferor's account

199 See also EPTF Report, EPTF Barrier 8
200 SFD, art 2(a), first indent
201 SFD, art 2(i)
202 SFD, art 2(h)
203 SFD, art 2(a), penultimate paragraph
204 SFRs, reg 20(2); SFD, art 3(1)

to the transferee. But a CCP does not do this. The CCP manages *pre-settlement* counterparty risk. Certainly, the CCP wishes to receive cash or securities at the settlement date for each cleared transaction, and insofar as the date of default is the settlement day then this protection will be useful. But if the transaction is not mature yet on the date of the insolvency event, and the CCP is taking close-out action by entering into neutralising transactions for the account of its defaulting participant, it is hard to characterise its action as 'carrying out a transfer order'. Furthermore, the default management process may take much longer than one day.

(3) Insolvency rules may forbid the termination of contracts or the creation of new obligations (ie, booking transactions opposite in sense to existing open positions) for the account of the defaulter. It is not clear that the SFD or SFRs protect these actions against attack. These actions might involve the cancellation of transfer orders or the creation of new ones, neither of which is contemplated by the SFD or SFRs. However, insofar as the insolvency attack is based on void disposition rules, the SFRs are probably sound enough. CCPs in countries which have not taken the blanket approach of regulation 12 of the SFRs, so that action taken under the default arrangements of a designated system is not immune from insolvency attacks of any nature, may have more trouble.

(4) A transfer of client positions which requires consent of a third party, or any interference in rights in rem, will require more explicit statutory treatment than is afforded by the SFD or SFRs.

(5) Insolvency or reorganisation of the CCP itself is within the scope of the SFRs' protections, as a CCP is a 'participant' in its own system. Furthermore, it is not necessary that contractual provisions dealing with the failure of the CCP be contained within 'default rules', since the protections given in regulation 14 of the SFRs apply to 'the rules of a designated system as to the settlement of transfer orders not dealt with under its default arrangements'. However, it is necessary that the provisions being relied on be within the CCP's rules, as contrasted with other bilateral contractual arrangements such as a master agreement supporting treasury (non-clearing) activities of the CCP's operations.

13.36 Perhaps the key point on both these protections – SFD/SFRs and Part 7 – is that they are of use principally to the infrastructure operator. Although each participant in a designated system is protected against the worst consequences of a default of another participant, neither statutory scheme for protection addresses satisfactorily the relationship between a participant and its clients. It was noted above that a member state can decide that an indirect participant may be considered a 'participant' in a designated system where this is justified on grounds of systemic risk. The European Central Bank's 'blue book' does not suggest that the 'indirect participant' option has been taken up by leading ACHs,[205] and a European Commission report on the SFD said that only nine Member States had considered 'indirect participants or other undertakings' as participants in designated systems.[206] It may therefore be concluded that designation of indirect participants is not a feasible route for protection of

205 European Central Bank, *Payment and Securities Settlement Systems in the European Union* (August 2007), www.ecb.int/pub/pdf/other/ecbbluebookea200708en.pdf

206 European Commission, *Evaluation report on the Settlement Finality Directive 98/26/EC (EU25)* (March 2006), COM (2005) 657 final/2, http://ec.europa.eu/internal_market/financial-markets/docs/settlement/evaluation_report_en.pdf, p 6

clearing and settlement service providers such as agent banks. These banks must look elsewhere for protection.

FINANCIAL COLLATERAL ARRANGEMENTS

13.37 The main protective legislation on which service providers may seek to rely derives from the Financial Collateral Directive (FCD),[207] implemented in the United Kingdom as the Financial Collateral Arrangements (No 2) Regulations 2003 (FCRs).[208] This important legislation simplified the legal rules for taking and enforcing collateral comprising cash or financial instruments, provided that at least one of the parties was a financial institution. The benefits of having a 'financial collateral arrangement' are that the arrangement is enforceable notwithstanding the opening of insolvency proceedings. The financial collateral arrangement can therefore be a powerful tool for protecting a firm.

What is a financial collateral arrangement?

13.38 The FCD envisages two types of financial collateral arrangement – the 'title transfer' collateral arrangement and the 'security' financial collateral arrangement. The differences between these, and the factors which influence collateral takers to choose one over the other,[209] are not peculiar to the world of clearing and settlement. Essentially a title transfer arrangement involves an outright transfer of ownership of collateral, coupled with a promise to convey back equivalent collateral when the debts owed by the collateral provider have been discharged. In the meantime, if the debtor defaults, the obligation to convey back is converted to a monetary obligation and set off against the debt. A security arrangement is the more traditional form of pledge, charge or mortgage, where the collateral provider retains an ownership right in the collateral. Because the FCD is primarily about abolishing formalities, it does not stipulate more than the following requirements for constituting financial collateral arrangements:

(1) Title transfer arrangements require the collateral provider to 'transfer full ownership of, or full entitlement to' the collateral, and the purpose must be to secure 'relevant financial obligations'[210] (defined as the obligations secured by a financial collateral arrangement and which give a right to cash settlement and/or delivery of financial instruments).[211]

(2) Security arrangements require the collateral provider to 'provide' the collateral by way of security, where the full or qualified ownership of, or full entitlement to, the collateral remains with the collateral provider. Collateral is 'provided' when it has been delivered, transferred, held, registered or otherwise designated so as to be in the possession or under the control of the collateral taker or of a person acting on the collateral

207 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements

208 SI 2003/3226

209 See Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel, March 2009), ISBN 978-1-84766-3030-0, pp 204ff

210 FCD, art 2(1)(b)

211 FCD, art 2(1)(f)

taker's behalf.[212] The concepts of 'possession' and 'control' have given a certain amount of trouble in English law, as discussed below.

(3) In both cases, the financial collateral arrangement must be evidenced in writing or a legally equivalent manner.

(4) The parties to the arrangement must be eligible. The FCD gives a list:[213] public authorities, central banks, credit institutions, investment firms, 'financial institutions' as defined in the Capital Requirements Regulation,[214] insurance undertakings, UCITS and their management companies, CCPs, settlement agents and clearing houses as defined in the SFD and including similar organisations in relation to the futures markets, and bond trustees or agents. Any arrangement between such persons is deemed to qualify. Arrangements between one such person and an ineligible corporate or partnership also qualify.[215] Member States can exclude the latter type of arrangements from scope,[216] but according to a report of the European Commission (pre-dating the accessions of Bulgaria, Croatia and Romania) only in Austria has this been done (though limitations on such arrangements were also reported to exist in the Czech Republic, France, Germany, Slovenia and Sweden).[217] Indeed, some Member States such as the United Kingdom have gone further and consider a financial collateral arrangement to qualify as long as each party is a non-natural person.[218]

(5) The collateral must be eligible: that is, it must consist of financial instruments (which are broadly defined)[219] or cash (meaning money credited to an account or similar claims for repayment of money;[220] in the United Kingdom this definition has been widened to include sums payable under a financial collateral arrangement or a close-out netting provision[221]).

The advantages of having a financial collateral arrangement are most apparent when the collateral provider is subject to insolvency proceedings or reorganisation measures (including BRRD resolution). The main protections given by the FCD are that on the occurrence of an enforcement event, the collateral taker will be able, notwithstanding any such proceedings, to realise any financial collateral provided under a security financial collateral arrangement, by sale or appropriation, or (in the case of cash) set-off, and any formalities delaying or impeding such actions are abolished;[222] and title transfer financial collateral arrangements and close-out netting provisions, which are at the heart of title transfer collateral enforcement, must take effect in accordance with their

212 FCD, art 2(2)
213 FCD, art 1(2)
214 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms etc, art 4(1)(26)
215 FCD, art 1(2)(e)
216 FCD, art 1(3)
217 European Commission, *Evaluation report on the Financial Collateral Arrangements Directive* (December 2006), Report from the Commission to the Council and the European Parliament, COM (2006) 833 final, http://ec.europa.eu/internal_market/financial-markets/docs/collateral/fcd_report_en.pdf
218 Financial Collateral Arrangements (No 2) Regulations 2003, SI 2003/3226, reg 3, definitions of 'security financial collateral arrangement' and 'title transfer financial collateral arrangement'
219 FCD, art 2(1)(e)
220 FCD, art 2(1)(g)
221 Financial Collateral Arrangements (No 2) Regulations, reg 3
222 FCD, art 4

terms, again notwithstanding any insolvency proceedings or reorganisation measures.[223]

The Swedbank case

13.39 Article 8(2) of the FCD addresses void disposition and zero hour rules, by abolishing rules which would invalidate collateral provided (or collateral arrangements created) on the day of opening of the proceedings or before them.[224] This, along with other facets of the financial collateral protective regime, came in for judicial scrutiny and comment in the case of *Private Equity Insurance Group SIA v Swedbank AS*.[225] The facts of the case related to the debit, after the commencement of insolvency proceedings, by a bank of sums credited to an ordinary bank account, in accordance with the banking agreement, in respect of a 'maintenance commission' owed to the bank. It seems that the credits (deposits) were made after the commencement of proceedings. The following observations of the court may be of interest.

(1) The scope of the FCD cannot be regarded as confined to monies deposited in accounts used in payment and securities settlement systems in accordance with the SFD.

(2) The requirement of the FCD relating to the provision of financial collateral is designed to ensure that the collateral taker is actually in a position to dispose of the collateral when an enforcement event occurs. It follows that if collateral consists of money in a bank account, the collateral taker may be regarded as having 'possession or control' only if the collateral taker is prevented from disposing of the money.

(3) In principle, financial collateral is out of scope of the FCD if it was provided after the commencement of insolvency proceedings; the sole exception is article 8(2), which addresses collateral provided on the day of commencement of proceedings and the collateral taker proves that he was not aware, nor should have been aware, of the commencement.

The upshot is that the protection granted by the FCD cannot extend to collateral arriving in the collateral account after the day of commencement, and collateral arriving on the day of commencement is only available as such if the collateral taker was not aware of the insolvency proceedings. This result is challenging for agent banks because they may rely on cash or securities coming into an account on the day of commencement, even though they have the relevant knowledge on this day. The problem arises because settlement processing is automated: cash and securities will be debited from the accounts relating to an insolvent client regardless of the agent bank's volition, unless the settlement system freezes the accounts and cancels unexecuted transfer orders. Operators of settlement systems may not impose a freeze because of the protections they themselves have for commencement-day processing under the SFD. (The desirability of freezes is discussed in **section 18.21**.) If the agent bank relies on (say) incoming cash to satisfy a payment obligation arising on a different transaction, and that second transaction is also automatically processed, the result may be that the agent bank is treated as having relied on post-commencement collateral in

223 FCD, arts 6, 7
224 FCD, art 8
225 6201CJ0156, Case C-156/15, ECLI identifier ECLI:EU:C:2016 :851

breach of article 8(2), so that the insolvent estate benefits from a cash windfall paid by the agent bank in respect of a settlement which ought properly to have been failed.[226] Furthermore, as explained by the EPTF, it is not clear whether the collateral taker's 'guilty knowledge' is to be assessed at the moment when the transfer of collateral is put in motion, or when it arrives in the collateral account.[227]

Financial Collateral Arrangements (No 2) Regulations 2003

13.40 The legislation implementing the FCD in the United Kingdom is the Financial Collateral Arrangements (No 2) Regulations 2003[228] (FCRs). Part 3 of the FCRs consists of a list of specific disapplications of provisions of insolvency law, although unlike the SFRs or Part 7 the confusing phrase 'the general law of insolvency shall have effect, subject to … ' is not used. In fact, quite the reverse: regulation 13 states that collateral arrangements 'shall be legally enforceable and binding on third parties', subject to only one proviso. This is that, when the financial collateral arrangement or relevant financial obligation came into existence, and when the collateral was provided, the collateral taker was not aware, nor should have been aware, of the commencement of winding-up proceedings or reorganisation measures.

The FCRs have the very useful effect that the moratorium preventing immediate enforcement of a charge in administration is disapplied, and that enables a collateral taker to seize and sell charged collateral without delay, and to fight with an administrator afterwards. However, if a bank goes into a crisis management regime, so that the Bank of England exercises powers under Part 1 of the Banking Act 2009, it is open to the bank to restrict the enforcement of a financial collateral arrangement, a close-out netting provision or a set-off arrangement.[229]

In relation to insolvency challenges of foreign origin, the FCRs use the familiar but unwelcome formula of section 183 of the Companies Act 1989, and preclude[230] acts which 'would be prohibited … by this Part' in the case of an insolvency office-holder appointed in the United Kingdom, and the FCRs are open to the same criticism as section 183 and Regulation 25(2) of the SFRs.

Finally, it may be mentioned that until the *Swedbank* case is distinguished or overruled in the United Kingdom, the effect of regulation 13 of the FCRs would appear to be the same as in the European Union, namely that the protections of the FCRs cease to apply if the collateral is provided after the end of the day of commencement of insolvency proceedings. For these purposes, 'commencement' means the making of the relevant order, not (as in section 129 of the Insolvency Act 1986) the presentation of a winding-up application. Agent banks, in particular, may need to rely on the Financial Markets and Insolvency Regulations 1996,[231] rather than the FCRs, for their protection.

226 Cf, discussion at **section 19.25**
227 EPTF Report, EPTF Barrier 8
228 SI 2003/3226
229 FCRs, reg 18A
230 FCRs, reg 15A(2)
231 SI 1996/ 1469; see **section 6.12**

13.41 Unfortunately, it is the case that various aspects of financial collateral arrangements have given rise to significant legal uncertainty, and various issues should therefore be discussed.

(1) *Fluctuating collateral balances.* In the context of clearing and settlement, collateral balances will only rarely be fixed: the available source of collateral is the cash or securities credited to the account to or from which settlements will be made. Traders do not wish to have their stock-in-trade locked away as collateral. What English lawyers would recognise as floating charges is the norm for collateral arrangements. Unfortunately, various Member States do not recognise floating charges over fluctuating collateral balances as being effective for the collateral to have been 'provided' to the collateral-taker for the purposes of article 2(2) of the FCD. If a collateral provider is incorporated in such a state it may not be possible to construct a financial collateral arrangement without locking the collateral away.

(2) *Meaning of 'possession' and 'control'.* English lawyers are content with the concept of the floating charge, but struggle with the gloss given in article 2(2) that the effect of 'providing' the collateral must be that the collateral-taker has possession or control of the collateral. Academic and jurisprudential debate on the meaning of these words has been extensive. In English jurisprudence, the direction of this debate has been conservative, and along traditional English law lines, notwithstanding that the FCD is a European instrument. The issues are discussed at **section 13.42**.

(3) *Identifying the relevant account.* In a cross-border context, knowing which system of law applies is vitally important in order to ensure that the correct steps have been taken to ensure the effectiveness of the security interest which is being taken. The FCD helps in this endeavour by specifying that the applicable law, in relation to certain questions pertaining to property rights in securities recorded in accounts, is the law of the country where the 'relevant account' is maintained.[232] The 'relevant account' is the account in which the book entries are made by which the book entry securities collateral is provided to the collateral taker.[233] If the collateral taker's name (or some symbolic equivalent) appears on more than one set of books, there is a danger of there being more than one 'relevant account'.[234]

Possession and control in English law

13.42 To obtain a security interest which qualifies as a 'financial collateral arrangement', and therefore benefits from the protections of the FCD, one must have possession or control of the securities. As Professor Hugh Beale et al say,[235] the meaning of the phrase 'possession or control' is not for member state law to determine, and it should be given an 'autonomous' meaning under European law. Unfortunately, this sound advice has not been followed, fog and mystery have developed around what ought to be fairly simple, and the twin

232 FCD, art 9
233 FCD, art 1(1)(h)
234 See EPTF Report, EPTF Barrier 8, para 1.2.2
235 Beale, H, et al, *The Law of Personal Property Security* (OUP, March 2007), ISBN 978-0199283293, s 10.25ff

ideas of 'possession or control' have become conflated into a single concept.[236] The following comments may thus be in order.

(1) Dr Joanna Benjamin has explained that interests in securities are 'incapable of possession at common law', because the common law distinguished choses in possession from choses in action.[237] Professor Beale and his co-authors go further, stating that 'in English law possession has no meaning in relation to intangible property'. No criticism need be made of these comments; but they have limited relevance to the FCD, which is not an exposition of the common law of England.

(2) 'Possession' is an ordinary word and, in a European context involving account-held securities, should mean nothing more than having the securities credited to one's account. The amended text of the FCRs seems to affirm this, stating:

> 'For the purposes of these Regulations "possession" of financial collateral in the form of cash or financial instruments includes the case where financial collateral has been credited to an account in the name of the collateral-taker … provided that any rights the collateral-provider may have in relation to that financial collateral are limited to the right to substitute financial collateral of the same or greater value or to withdraw excess financial collateral.'[238]

The proviso is presumably there to deal with recital (10) of the FCD, which requires some form of *dis*possession of the collateral provider if there is to be a privileged financial collateral arrangement. But the proviso is unhelpful and confusing, because it implies that some degree of control is needed in order to establish the fact of possession.

(3) Unfortunately the comments of Professor Beale et al were interpreted in *Gray v G-T-P Group Ltd*[239] in a manner which implies that no financial collateral arrangement can exist in English law unless the collateral taker has a fixed charge, because 'possession' is out of the question, and 'control' requires a fixed charge. The law was examined more thoroughly, and less harshly, in *Re Lehman Brothers International (Europe) (in administration)*[240] and that case now appears to state the position more accurately under English law. The following conclusions may be drawn from the *Lehman Brothers* analysis:

- 'Dispossession', as contemplated by recital (10) of the FCD, is the dominant concept, leading to a conjunctive construction of 'in the possession or under the control of the collateral taker' in article 2(2). Having 'possession' alone (at least in the sense of tiered holdings of book-entry securities) is insufficient.
- The collateral taker must have a legally valid right to prevent withdrawal of the collateral in order to establish the requisite degree of control.

236 See Law Commission, *Company Security Interests* (August 2005), Law Com No 296, Cm 6654, para 5.59
237 Benjamin, J, *Interests in Securities* (OUP, December 2000), ISBN 0-19-826992-7, section 2.25
238 FCRs, reg 3(2)
239 [2010] All ER (D) 80
240 [2012] EWHC 2997 (Ch)

- The only exceptions allowed to the principle of no withdrawals are (a) the ability to substitute collateral, and (b) the ability to withdraw 'excess' collateral. As Briggs J pointed out in his judgment:

  > 'The breadth of that exception should not be underestimated. … a right to withdraw excess collateral gives the provider the ability to reduce the collateral as a whole, by the withdrawal of any items which he chooses, to whatever low (or sometimes non-existent) level as may be required from time to time by the state of account between him and the collateral taker. If one asks what possession or control is left to the collateral taker …, it is only a right to have maintained a collateral pool, at whatever level is, from time to time, required under the agreement or arrangement pursuant to which the security is given.'

  This is not a description of a fixed charge, but in England there is no possibility of a valid security financial collateral arrangement which relies on possession (in the sense set out in paragraph (2) above) alone.

13.43 In summary: 'financial collateral arrangements' are well protected, not just in favour or infrastructures but also of their participants, for cash and securities collateral. The principal difficulty is for participants, which do not benefit additionally from Part 7's protection of margin and market charges, or from the SFRs' protection of collateral security, since they have to wrestle with the complexities of the possession/control question. Once that is overcome, the risk of successful challenge is low.

CROSS-BORDER INSOLVENCY

13.44 Business in the financial sector is not confined to country boundaries; unfortunately, there is no single code of bankruptcy law in the European Union, each Member State being socially and culturally attached to its own historical system. These systems are highly diverse.[241] The danger, then, is that the rights which a provider of clearing and settlement services may wish to exercise could be affected by the application of a foreign system of insolvency law which has quite different effects from those under the local legal system. This section, accordingly, sets out some basic precepts of international insolvencies, before considering some more detailed issues.

13.45 The basic precepts are as follows.

(1) Companies are normally subject to 'home state' insolvency law. When a company is insolvent, the presumption is that the corporate law – that is, the *lex societatis* – will determine its death as well as its formation. Assets and creditors in foreign states may be dealt with according to the insolvency law of the company's country, not the place where the asset or the creditor is located.

(2) Some courts assert insolvency jurisdiction over foreign companies. Some countries, notably the United Kingdom, have traditionally arrogated to themselves the right to put foreign companies into local insolvency

241 Wood, P, *Principles of International Insolvency* (Sweet and Maxwell, May 2007), ISBN 978-184-703-2102, para 1-037

proceedings. English court jurisdiction may be founded on the existence of assets or creditors, even if there is no branch, within its territory.[242] In the United Kingdom, this principle applies generally, whereas while the United Kingdom was an EU Member State the jurisdiction of UK courts was cut back by various EU instruments.

(3) For banks, investment firms, insurers and 'non-financial' companies headquartered in the European Union, European law allocates jurisdiction. This is because the Winding-up Directive (WUD) for credit institutions (which now encompasses, with a handful of exceptions,[243] investment firms)[244] restricts the opening of winding up proceedings and reorganisation measures to the home member state; and under the Solvency II Directive[245] and the EU Insolvency Regulation (EUIR)[246] similar restrictions apply. Solvency II applies to insurers in a similar manner to WUD. The EUIR applies to all corporate entities which are not insurance undertakings, credit institutions, investment firms covered by the WUD, or collective investment schemes.[247] It also has three important curiosities: its home-state scheme is slightly modified in that it uses the concept of the place where the 'centre of main interests' is located, which might differ from the place of incorporation;[248] it allows for secondary or territorial proceedings in countries where the company has an 'establishment' (essentially, a branch);[249] and it does not apply to Denmark.[250]

(4) The WUD model is largely inapplicable in the United Kingdom following Brexit, and the United Kingdom has its own approach to cross-border insolvency.

The result is, unfortunately, complex and made more complicated by the revision of cross-border principles in the financial sector which comes out of Brexit. It may be convenient to deal with the EU situation first, and then with the United Kingdom.

13.46 The following principles apply in the European Union:

(1) *Some proceedings are out of scope.* The scope of the EUIR in terms of the insolvency proceedings covered is specified by a list set out in Annex A to the EUIR; in the WUD the scope is defined conceptually. This can leave questions as to whether procedures such as regulatory interventions (which might have almost identical effects to a judicially administered proceeding) are covered.

(2) *The basic precepts can have unexpected results.* Infrastructures are not addressed uniformly under the WUD or the EUIR. Infrastructures which

242 *Paramount Airways (No 2)* [1992] BCC 416

243 For which see Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms, etc, art 4(1)(2), points (b) and (c)

244 Directive 2001/24/EC of the European Parliament and of the Council of 4 April 2001 on the reorganisation and winding up of credit institutions

245 Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

246 Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings

247 EUIR, art 1(2)

248 EUIR, art 3(1)

249 EUIR, art 3(2)

250 EUIR, recital 88

are not banks or investment firms will fall within the EUIR. In countries where they are, they will be dealt with under the WUD.

(3) *The principle of universality is modified.* Even where the relatively simple home-state-only regime applies, as with credit institutions for example, there is a set of exceptions which apply other legal systems to avoid unexpected outcomes. These are, insofar as important to clearing and settlement, as follows. Their effect is to add another layer of protection against the unwelcome consequences of substantive insolvency laws.

- Property rights (rights 'in rem') in respect of assets situated in another member state are not affected by insolvency proceedings.[251]
- Set-off rights permitted under the law governing the *debt owed to the insolvent person* are not affected by insolvency proceedings.[252]
- The rights and obligations of EUIR entities which are parties to payment and settlement systems and financial markets are governed solely by the law of the member state applicable to the system or market.[253] For credit institutions and insurers, the exception is narrower: it is restricted to regulated markets only, rather than the post-trade space, although for credit institutions the phrase used is 'transactions carried out in the context of a regulated market', which might be capable of a wider meaning.[254]
- Challenges to transactions based on rules such as preferences or fraud on creditors (rules relating to the voidness, voidability or unenforceability of legal acts detrimental to all the creditors) are not subject to home state insolvency law where the act is subject to the law of another member state whose law does not allow a challenge in the relevant case.[255]
- Repo and netting agreements are, in the case of credit institutions and investment firms, to be governed solely by the law (*sc.* insolvency law) of the legal system which governs the agreement.[256]

13.47 As far as the United Kingdom is concerned, after the end of the Brexit transitional period:

(1) *WUD does not apply to UK firms.* The applicable law is set out in the Credit Institutions (Reorganisation and Winding up) Regulations 2004 (CIRs).[257] As far as UK credit institutions and investment firms are concerned, the insolvency law of the United Kingdom applies with the exceptions relating to set-off, regulated markets, netting and repos, in respect of which the choice-of-law provisions of the WUD continue to apply. Absent from this list are the WUD principles excluding home state insolvency laws effects on overseas rights in re (article 21) and proprietary rights recorded in overseas registers (*lex rei sitae*, article 24); thus, in theory, a UK administration moratorium would have cross-border effect, and section 127 of the Insolvency Act 1986 could render void a securities

251 EUIR, art 8; WUD, art 21
252 EUIR, art 9; WUD, art 23
253 EUIR, art 12
254 WUD, art 27
255 EUIR, art 16; WUD, art 30
256 WUD, arts 25, 26
257 SI 2004/1045, as amended by the Credit Institutions and Insurance Undertakings Reorganisation and Winding up (Amendment) (EU Exit) Regulations 2019, SI 2019/38

transfer across the books of a foreign CSD even though the local law gives the transfer finality.

(2) *WUD does not apply to EEA firms.* As far as EEA institutions are concerned, the provisions of the CIRs which formerly gave effect to 'EEA insolvency measures' in the United Kingdom are repealed. The effect is that EEA institutions can now become subject to UK insolvency proceedings – for example, by being wound up as 'unregistered companies' under section 221 of the Insolvency Act 1986.

(3) *For non-banks, the UNCITRAL Model Law applies.* The United Kingdom has signed up to the UNCITRAL Model Law on Cross-border Insolvency.[258] The Cross-border Insolvency Regulations 2006[259] provide a framework for deference to foreign courts and proceedings in cases of insolvency, but with a long list of carve-outs. The carve-outs disapply the Model Law in respect of credit institutions and insurers, but not investment firms. Accordingly, as regards investment firms and infrastructures which are not banks, foreign insolvency proceedings will be recognised and foreign insolvency practitioners ('foreign representatives') will be granted relief in the courts of England and Scotland. An application for recognition may be made to the United Kingdom court, and upon recognition (or, in an emergency, before a decision on recognition) a stay is imposed, the assets of the debtor cannot be transferred, and various powers granted to United Kingdom office-holders are made available to the foreign representative.[260] The following observations relating to the Cross-Border Insolvency Regulations may be made:

- Article 1(2) of Schedule 1 to the Regulations restricts the cases in which recognition orders can be made. Significantly, the Regulations do not apply to credit institutions or insurers.[261] Other types of financial institution, in particular investment firms, collective investment undertakings, and market infrastructures which are not constituted as credit institutions, can be made subject to recognition orders.
- Article 20(3) provides that the stay which comes into effect on recognition does not affect any right to take steps to enforce security over the debtor's property, any right exercisable under Part 7, the protective provisions of the SFRs or the FCRs, or a right of set-off, if the right would have been exercisable in the event of a winding-up order under the Insolvency Act 1986.
- The Regulations do not import foreign law into Britain. Apart from the automatic (but limited) stay and the prohibition on transfer of assets, the effect of the Regulations is principally to allow a foreign representative, having applied to the court, to exercise typical Insolvency Act powers.

(4) *Section 426 of the Insolvency Act 1986 may apply*. Where requested by a court in one of a limited list of Commonwealth and other countries

258 United Nations Commission on International Trade Law, *UNCITRAL Model Law on Cross-Border Insolvency with Guide to Enactment* (May 1997), www.uncitral.org/pdf/english/texts/insolven/insolvency-e.pdf

259 SI 2006/1030

260 Cross-Border Insolvency Regulations, Sch 1, arts 19–23

261 Paragraphs (g)–(l)

with historical links to the United Kingdom,[262] the courts of the United Kingdom will be obliged to assist the requesting court. This can mean that an administration can take effect in the United Kingdom where it would not otherwise be an available procedure;[263] and unlike the Cross-Border Insolvency Regulations, foreign law can apply directly in the United Kingdom, subject to limitations imposed by the court.[264]

(5) *The effect of overseas insolvency laws is largely blocked where protective legislation applies.* It was noted in **section 13.27(4)** that section 183 of the Companies Act 1989 blocks the ability of a court to recognise or give effect to an order of a foreign court or an act of an insolvency officer insofar as the making of the order, or the doing of the act, would be prohibited in the case of a court in the United Kingdom or a relevant United Kingdom insolvency office-holder by provisions made under Part 7. Similar provisions are found in the SFRs and FCRs. As previously observed, if the United Kingdom office-holder does not have a power which a foreign insolvency officer seeks to exercise, the protective legislation (Part 7 and the SFRs) may not 'prohibit' the officer carrying out that act. Furthermore, nothing in the blocking legislation can prevent action being taken in another country by an overseas insolvency officer, provided he can find some means of enforcing a judgment outside the United Kingdom.

13.48 Finally, it may be observed that groups of companies present an intractable cross-border problem. While much debate has taken place about insolvent groups of companies,[265] there is no easy solution to the problem. Briefly stated, for a variety of reasons, one policy objective is to recognise that a group is typically run as a single business enterprise; the legal entities are interconnected, as a result and it follows that the failure of the business should be centrally resolved for the greater good of all creditors universally. However, that policy objective is in fundamental conflict with another, namely that the entire rationale for separate legal personality is to wall off the assets of one entity from the liabilities of another; failure to respect the integrity of each corporate entity would erase the ability of corporations to raise funds on the security of their own assets. Inevitably an insolvency proceeding affecting one legal entity will have consequences for others in the same group, either because they are mutually dependent for services (such as treasury or technology) or because the inability of one entity to honour its obligations threatens group members which are themselves creditors or their potential trading partners who fear the consequences of interconnectedness and common management. Added to all that is the potential for conflict between the policy of insolvency law in the country of one insolvent legal entity with that in the country of another. Regulators' responses since the financial crisis have been to encourage separability of legal entities[266] or even businesses within those entities, to enable swifter resolution

262 Anguilla, Australia, the Bahamas, Bermuda, Botswana, Brunei, Canada, Cayman Islands, Falkland Islands, Gibraltar, Hong Kong, Ireland, Malaysia, Montserrat, New Zealand, St Helena, South Africa, Turks and Caicos Islands, Tuvalu, and the Virgin Islands: Cooperation of Insolvency Courts (Designation of Relevant Countries and Territories) Orders 1986, 1996 and 1998, SI 1986/2123, SI 1996/253 and SI 1998/2766

263 *Re Dallhold Estates (UK) Pty Ltd* [1992] BCC 394

264 *Hughes v Hannover Ruckversicherungs-Aktiengesellschaft* [1997] 1 BCLC 497, CA

265 Cf Bank for International Settlements Basel Committee on Banking Supervision, *Report and Recommendations of the Cross-border Bank Resolution Group*, www.bis.org/publ/bcbs169.pdf (March 2010); Fonteyne, W, et al, *Crisis Management and Resolution for a European Banking System* (March 2010), IMF Working Paper WP/10/70, pp 36–48

266 Cf ss 18, 22 Banking Act 2009; see **section 13.8**

of a problem within a systemically important financial institution. The EUIR attempts to encourage cooperation between insolvency practitioners and courts in group insolvencies.[267] Financial institution groups are intended to be resolved on a 'single point of entry' model, whereby debts of the parent entity are bailed-in and the ensuing recapitalisation cascades down through the group.[268] Policy utterances such as these may be helpful to guide judges attempting to resolve conflicts, but do not constitute legislation or a basis on which insolvency officers can disregard their duties.

267 EUIR, recital (49)

268 Financial Stability Board, Recovery and Resolution Planning for Systemically Important Financial Institutions: Guidance on Developing Effective Resolution Strategies (July 2013)

14 Failure and rehabilitation of infrastructures

INTRODUCTION

14.1 Infrastructures might fail. The likelihood of this may be low, but the consequences could be dire. Before the financial crisis of 2007–2008, nobody worried too much about the dangers, since infrastructures could be rescued if the improbable happened. In fact, nobody had worried too much because policy had not yet adjusted to the idea that many important infrastructures had ceased to be in public ownership in the preceding decades. But the policy of rescue, and the role of CCPs in the financial system, changed fundamentally as a result of the crisis. First, the use of CCPs was mandated, as discussed in **Chapter 10**. And secondly, the undesirability of taxpayer support for banks became entrenched as a creed forbidding the bail-out of any financial institution, thus applying to infrastructures as well as their users.

The years since the crisis have thus seen a renewed focus on, in particular, CCP failure and the possible routes to avoid CCP bail outs. CCPs are special because they manage counterparty risk, and that makes the issues which a 'no bail-out' policy throws up far more challenging with CCPs than with settlement infrastructures. Following the G20 agenda developed after the 2008 crisis in the financial sector, it is now mandated throughout the developed world to use CCPs.[1] CCPs concentrate difficult-to-manage risks into a very small number of mutually dependent financial firms.[2] 'Of course, increased reliance on clearinghouses to address problems in other parts of the system increases further the need to ensure the safety of clearinghouses themselves. As Mark Twain's character Pudd'nhead Wilson once opined: 'If you put all your eggs in one basket, you better watch that basket.'[3] It may be concluded that the failure of a CCP would have, in the modern world, unthinkably dangerous consequences. Recovery and resolution measures for CCPs are thus more than a nice-to-have: they have become the vital underpinning of the financial system.

The debate on CCPs has spawned a vast literature, fed by the growing recognition that forcing large volumes of products which are difficult to risk-manage into CCPs raises the chances of failure of a CCP. In their turn, settlement infrastructures have been examined for their resilience against the need for

1 See G20 Leaders Statement: The Pittsburgh Summit (September 2009), www.g20.utoronto.ca/2009/2009communique0925.html

2 See **section 10.8(5)**

3 Bernanke, B, *Clearinghouses, Financial Stability, and Financial Reform* (April 2011), Speech, www.federalreserve.gov/newsevents/speech/Bernanke20110404a.htm

bail-out. So, there have been new policy pronouncements on 'recovery and resolution' modalities for all kinds of post-trade infrastructures. These should not distract from CCPs as posing the central problem of infrastructure failure; caution must therefore be exercised when looking at the policy statements, since they were almost certainly written with CCPs at the forefront of thinking; and the emphasis in this chapter is unashamedly on CCPs.

CAUSES OF INFRASTRUCTURE FAILURE

14.2 When starting out on this difficult subject, it is appropriate to consider briefly the possible causes of failure of an entity operating a clearing or settlement infrastructure. The threshold question will be whether the entity takes counterparty or credit risk on its participants. If so, that is likely to be the most potent source of risk.

As the risk profiles of different types of clearing and settlement infrastructures are different, so the mechanisms for resolving problems which arise in those different types of infrastructure will vary accordingly. Two classes of infrastructure can be specified: those where the infrastructure is exposed to counterparty or credit risk in respect of its participants on a routine basis, and those where such exposures are exceptional. In the first class will be CCPs and some payment systems. In the second will be some payment systems and CSDs, though CSDs providing banking-type ancillary services as permitted by the CSDR[4] may fall into the first. In the second class, a problem threatening the solvency of the CSD is unlikely to originate with the participants in the CSD – it is more likely to stem from an operational failure which is wholly internal to the infrastructure. Regardless of whether an infrastructure is exposed to its participants for credit or liquidity, the entity which operates the system will run 'ordinary' operational risks which might take one of the following forms: loss of treasury assets; operating systems failure; third-party supplier failure; intellectual property challenge; and fraud. No operator can regard itself as wholly immune from these types of risk, and the regulatory capital requirements in place in Europe for CCPs and CSDs provide a demonstration that the policy is for shareholders to shoulder these risks rather than have them borne by participants.

The risk of operational failure giving rise to a crisis for a CCP has led to a distinction being made between 'default losses' and 'non-default losses', possibly involving different solutions.[5]

GENERAL PRINCIPLES FOR RECOVERY AND RESOLUTION

14.3 As with banks and other types of financial institution, there will be a preference for an infrastructure to 'recover' rather than to be 'resolved', regardless of whether resolution takes the form of an insolvency procedure. To begin, one should attempt to distinguish 'recovery' from 'resolution'.

4 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories, etc, Title IV

5 Cf. Financial Stability Board, *Financial resources to support CCP resolution and the treatment of CCP equity in resolution* (November 2018), www.fsb.org/wp-content/uploads/P151118-2.pdf

Recovery is rehabilitation. Steps will be taken to enable an ailing infrastructure to avoid failure: it is a sick patient, and it may need unpalatable medicine, but after treatment it should be restored to health. Someone, however, will have to pay, because healthcare for financial institutions is never free. Recovery is distinguishable from insolvency proceedings, and the implementation of recovery measures would not ordinarily constitute an event of default.

The Committee on Payments and Market Infrastructures (CPMI) issued a helpful document in 2014 entitled 'Recovery of financial market infrastructures' (the CPMI Recovery Paper)[6] covering infrastructures in difficulty which, as its name suggests, is devoted to pre-default self-help. The obvious starting point is that infrastructures need to create their own recovery plans: to do so they need to assess for themselves what risks they face and how they would seek to manage a crisis. A number of specific tools are suggested, which are analysed below.

However, it is also true that some ailments are incurable, and sometimes medicine does not work. This is where 'resolution' might come in. Resolution might, in the last resort, include insolvency proceedings, but a wider range of remedies is implied in the term 'resolution'. Resolution might involve procedures which lift out a viable or systemically important operation from a failed vehicle, allowing that part to survive while the vehicle itself is wound up. The process of transfer of assets has been a paradigm of many traditional insolvency procedures, but the term 'resolution' implies something swifter, typically over a weekend, so that customers and counterparties wake up at the start of a new week to find they are doing business with a successor organisation which looks and feels like the old one but without the problems. Resolution will also be pre-structured and mediated by regulatory authorities before a formal default, as contrasted with the court-supervised processes whereby insolvency administrators or receivers dispose of businesses after an event of default.

If 'recovery' by the recommended or other means is not an option, the infrastructure will fail; the question then arises as to how the failure might be 'resolved' in a way that minimises market impact and does not involve a bail-out. The CPMI Recovery Paper does not tackle 'resolution', which is left to a paper from the Financial Stability Board (the FSB Resolution Guidelines),[7] but that applies only to CCPs.

In 2016, the European Commission proposed a draft Regulation[8] on CCP recovery and resolution, the provisions of which are considered in **section 14.36**.

There is a statutory 'special resolution' regime for CCPs in the United Kingdom[9] and another regime applicable across Europe for any infrastructure constituted as a bank or investment firm and to which the Bank Recovery and Resolution Directive (BRRD)[10] applies. For non-CCP infrastructures in the United

6 Bank for International Settlements Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, *Recovery of Financial Market Infrastructures* (October 2014), www.bis.org/cpmi/publ/d121.htm

7 Financial Stability Board, Guidance on Central Counterparty Resolution and Resolution Planning (July 2017), www.fsb.org/wp-content/uploads/P050717-1.pdf

8 European Commission, *Proposal for a Regulation of the European Parliament and of the council on a framework for the recovery and resolution of central counterparties etc* (November 2016), COM(2016) 856 final

9 See **sections 14.40ff**

10 Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms, etc; see **sections 13.3ff**

Kingdom, whether organised as banks or investment firms, a separate set of resolution tools is prescribed.[11] However, it may be useful to recall at this point that in the European Union an infrastructure which assumes counterparty credit or liquidity risk will often be organised as a bank. Where no counterparty risk is involved, the option of 'lift-out' – the excision of a viable operation from a wrecked corporate vehicle – as a resolution mechanism may be suitable. Otherwise, the authorities are likely to need to have recourse to traditional insolvency proceedings.

14.4 From the BRRD one might pull out the following precepts for the recovery and resolution of financial institutions generally:

(1) Financial institutions should have recovery plans to restore their financial position following a significant deterioration in solvency.[12]

(2) The institution's resolution authority should draw up a contingency plan (a resolution plan) in case the recovery plan does not work.[13]

(3) The regulator should be able to give directions to the institution and, if necessary, to order it to change senior managers.[14]

(4) If 'resolution' is necessary, the outcome should be that shareholders bear first loss and creditors are no worse off than if a formal insolvency proceeding had been initiated.[15]

(5) Various 'tools', including bail-in of liabilities and transfer of parts of the business of the failed institution to other banks, or a temporary ('bridge') institution owned by the central authorities pending disposal, should be available to the resolution authority to preserve the business and provide continuity of service without recourse to formal insolvency procedures.[16]

(6) Institutions should have a minimum amount of liabilities which can be bailed-in.[17]

(7) While resolution is being implemented, there should be a short stay on creditor actions such as contract termination, security enforcement, and default triggers based on non-payment.[18]

Not all these ideas translate readily to the world of infrastructures, as will be seen below. In particular: bail-in is rarely a feasible option, since infrastructures would not ordinarily be expected to incur sizeable external debt obligations; capital may be low relative to the significance of the infrastructure's activities thereby reducing the impact of the 'shareholders bear first loss' concept; splitting apart 'good' and 'bad' assets, which, while a fine plan for banks, is rather meaningless for a single-function infrastructure; and if participants, not shareholders, bear losses, the principle of 'no creditor worse off' can be hard to achieve at best, if not completely meaningless.

14.5 The first edition of this book suggested that all systemically important infrastructures should be subject to the following precepts:

11 See **sections 14.37ff**
12 BRRD, art 5
13 BRRD, art 10
14 BRRD, art 27
15 BRRD, art 34
16 BRRD, arts 31, 37
17 BRRD, art 45
18 BRRD, arts 69–71

- There should be formal regulatory oversight of the risk-taking of infrastructures, with realistic rules about coverage of those risks through collateral or other mitigants.
- The policy for ensuring survival of infrastructures should not depend exclusively on the ability of participants to pour in financial resources without limit at times of crisis.
- The powers of competent authorities to intervene and remedy the problems of ailing banks should be made available to deal with infrastructures, regardless of their form.
- Redundancy should be encouraged, so that there is always an alternative infrastructure with the same basic function available in case of failure of another infrastructure.
- Participants in infrastructures should have contingency plans to ensure they are equipped and ready to handle an infrastructure failure.

Since publication of the first edition, a further principle has emerged, namely that there should be ex ante certainty as to what a CCP will do in the event that its margin and default fund prove insufficient to handle a crisis – predictability powerfully reduces systemic risk. It is also clear that the round statement made in 2012 that powers appropriate for ailing banks should be available to deal with infrastructures was too broad and needs refinement. Unfortunately, many of the other precepts set out above have yet to find their way into official recommendations.

Objectives of resolution

14.6 The Financial Stability Board (FSB) has set out the following objectives of resolution of a financial market infrastructure (FMI) as follows:[19]

> 'An effective resolution regime for FMIs should pursue financial stability and allow for the continuity of critical FMI functions without exposing taxpayers to loss, either by restoring the ability of the FMI to perform those functions as a going concern or ensuring the performance of those functions by another entity or arrangement coupled with the orderly wind-down of the FMI in resolution. It should, as applicable, aim to:
>
> (i) achieve continuity and timely completion of critical payment, clearing, settlement and recording functions;
>
> (ii) facilitate the timely settlement of obligations of the FMI;
>
> (iii) maintain continuous access of participants to securities or cash accounts provided by the FMI and securities or cash collateral posted to and held by the FMI that is owed to such participants;
>
> (iv) avoid any disruption in the operation of links between the FMI in resolution and other FMIs that would have a material negative effect on financial stability or the functioning of markets; and
>
> (v) safeguard, preserve and enable continuous processing of, and access to, data stored in a [trade repository].'

19 Financial Stability Board, *Key Attributes of Effective Resolution Regimes for Financial Institutions* (October 2014), www.fsb.org/wp-content/uploads/r_141015.pdf, Annex I, para 1.1

These ostensibly wise objectives are marred by one ill-defined concept, which is what constitutes a 'critical function'. Critical functions might include things like retail customers having uninterrupted access to deposit-protected cash accounts, and access to payment systems, while non-critical functions might be the writing of new business loans and giving investment advice. For multi-faceted businesses like banking, the distinction makes sense. But when the concept of criticality is applied to infrastructures, including CCPs, it is much harder to fathom. Payment systems provide only one service: settlement of payments. CCPs provide only one service: clearing. CSDs can provide services beyond their two core services of providing a root-of-title register of ownership and settlement of securities transfers, namely 'banking-type ancillary services' as envisaged by the CSDR so, in their case, it may be possible to distinguish between the critical and non-critical. But attempts to divide up the service of a single-product CCP into separate quasi-'functions' (like margin calculation, default management, netting and so forth) which might somehow be provided independently is to misunderstand that the process of clearing is, in fact, a service combining all these, so that without any of them you do not have clearing at all. The fundamental business of an infrastructure is basically the provision of a single function. (Certainly, a CCP may clear different product lines, these lines may be separable, and some of them may not be deemed to be critical, but each line involves the same 'function', namely clearing.)

So, we must look away from banking to discern the meaning of 'critical function' in relation to infrastructures. Where a settlement system (such as a payment system) is substitutable, so that users can rapidly switch to another, it may not be 'critical'. Where use of an infrastructure is entirely voluntary, as was the case for clearing of OTC derivatives before the 2008 crisis, it would presumably not be 'critical', since a switch to a non-clearing (bilaterally risk-managed) alternative would have been possible. The concept of 'criticality' thus seems to mean that users have no choice but to rely on the infrastructure for completion of transactions. Another possibility is that 'critical' means that interruption of operations would cause unacceptable disruption to the financial system. These things are not stated anywhere – the term is presumed either to be self-evident or to defy definition. But the concept is crucial, since when it comes to the objectives of resolution of CCPs, those CCPs which clear derivatives subject to a clearing mandate are providing a service which is unlikely to be substitutable and also inescapable; but from the perspective of disruption, not so clearly important to everyday financial business, given that the world worked well before clearing of OTC derivatives was possible. Nevertheless, it would seem, any service for clearing derivatives for which a clearing mandate is in place is 'critical', and it follows that a resolution objective is continuity of clearing.

Resolution is a second round of recovery

14.7 In relation to CCPs, the FSB Resolution Guidelines spell out in more detail what is intended in resolution:

> 'CCP resolution should have as its objective the pursuit of financial stability and ensure the continuity of critical CCP functions in all jurisdictions where those functions are critical and without exposing taxpayers to risk of loss.'
>
> 'The objectives of CCP resolution can be achieved either by:
>
> (i) maintaining or restoring the continuity of the CCP's critical functions; or

(ii) ensuring continued performance of those functions by another entity or arrangement (including a bridge entity established by the resolution authority) coupled with the orderly wind-down of the residual CCP in resolution.'[20]

It is difficult to read these statements in any sense other than that clearing must continue, come what may. How easily that can be achieved is discussed extensively in **sections 14.27 ff**. As a general remark, however, it can be observed that if clearing is the sole function of a CCP, so that it is not possible to separate out some theoretical 'non-critical' function to be abandoned, then the CCP, or the whole of its operations, are to be preserved – and that process is what is usually described as 'recovery' rather than 'resolution'.

Recovery and resolution have thus become blurred, which makes the debate surrounding resolution possibilities even more obscure.[21] The tools available for 'resolution' are likely to be the same as those available for 'recovery'. Certainly, a resolution authority might have legal powers which go further than those available to the CCP under its rulebook, but further examination will show that such powers as have been suggested are likely to be ineffectual at least insofar as CCPs are concerned. While it is true that 'recovery' is an attempt by the CCP itself to maintain its clearing function, and 'resolution' is an attempt by a resolution authority rather than the CCP's management, the toolkit seems to be the same and it is not easy to see, from a legal perspective, why the outcome would be different following public intervention than a purely private effort.

Resolution in principle

14.8 If an infrastructure is in such difficulty that it cannot benefit from 'recovery' measures, then it will need to go into an insolvency procedure if it cannot be 'resolved'. Resolution is ordinarily a polite word for a terminal process which may include an insolvency proceeding affecting part or all of the businesses operated by the infrastructure, and rescue of the salvageable parts. Notwithstanding the confusion in official circles about the meaning of 'resolution' in relation to infrastructures, there is still validity in considering the range of options when 'recovery' measures have been exhausted.

Before considering the alternative remedies implied in genuine 'resolution', it may be worth asking whether, as a matter of principle, it is necessarily disastrous if an infrastructure should go into a terminal insolvency process. Notwithstanding that the consequences of failure may be bad, those consequences would be limited if the failed infrastructure is not of systemic importance. Limiting the systemic importance of an infrastructure would be as valuable as a toolkit to resolve failing infrastructures. Redundancy among CCPs clearing particular products and fostering of decentralised approaches (uncleared – also called 'bilaterally cleared' – transactions) as an alternative to clearing, could facilitate switching of business away from a failing CCP. Redundancy also implies interoperability, which in turn implies that a solution be found to the complexities of establishing interoperability among CCPs.[22] Similar arguments can be made in respect of CSDs and payment systems.

20 FSB Resolution Guidelines, para 1.1

21 See Singh, M, and Turing, D, *Central Counterparties Resolution – An Unresolved Problem* (March 2018), IMF Working Paper WP/18/65

22 See **Chapter 15**

For cases of hopeless insolvency, there are not many options. Realistically, there are two. The first is to attempt to transfer salvageable operations out of the insolvent operating vehicle into a clean fresh company. The other – where a business transfer cannot be achieved or is inappropriate because the infrastructure's systems have been shown by the failure to be flawed – is to close down. For closure, the options would appear to be either to close out the relationships between the infrastructure and its participants, and deal with the residual problems in a manner similar to a conventional financial-sector insolvency, or to close the infrastructure to new business (switching such new business to an alternative infrastructure) and run off the remaining exposures. In essence, inability to transfer anything means that the old infrastructure will close down operations completely and eventually the old vehicle will be liquidated.

Initiating recovery or resolution

14.9 The International Swaps and Derivatives Association (ISDA) has argued, in relation to CCPs, that the first step when an infrastructure is in difficulty should be to assess whether recovery, resolution or wholesale closure is the right way forward.[23] It is suggested here that the same principle is valid for all types of infrastructure. Understanding the cause of the failure is the key to deciding whether to rescue the infrastructure or to close it down.

The CPMI Recovery Paper indicates that the trigger for recovery (and, a fortiori, resolution) processes is a threat to the viability and financial strength of the infrastructure, so that the continued provision of critical infrastructure services is not assured.[24] Resolution is needed if the recovery plan fails, or has not been implemented in a timely manner, or if the regulator believes recovery measures will not be sufficient to return the infrastructure to viability or would compromise financial stability.[25] To this one might add, specifically for infrastructures which take credit or liquidity risk on their participants: if the ordinary default procedures of the infrastructure have been applied but not completely eliminated the threat. It is thus appropriate to consider what procedures are extraordinary, even if they are written into the defaults chapter of the relevant rulebook: if participants are expected to make extra payments, or suffer write-downs on losses on their assets other than pre-funded default fund contributions, those are extraordinary circumstances which constitute a recovery mode. They imply that the infrastructure's ordinary methodology for dealing with default was inadequate, and that a searching investigation should be made to understand the reasons for the inadequacy. Implementation of recovery should never be taken lightly or become 'ordinary'. It is a symptom of failure. Conversely, an infrastructure ought not to be branded as 'failing' unless its default waterfall is exhausted.

The CPMI emphasises that early and high-quality information about warning signs is crucial to a successful recovery.[26] The infrastructure's management should not be devising its response on the go but should be implementing a previously determined plan.

23 International Swaps and Derivatives Association, *Principles for CCP Recovery* (November 2014)
24 CPMI Recovery Paper, para 1.1.1
25 CPMI Recovery Paper, para 2.2.3
26 CPMI Recovery Paper, para 2.4.8

Who should make the decision about implementing a recovery plan is a difficult question. The factors actuating the various possible candidates may not be directed towards optimal decision-making. The infrastructure itself may wish to take the decision, but the failure itself implies (although it does not prove) inadequacy of risk management by the managers. The participants are legitimate stakeholders, particularly where they may be expected to foot the bill for recovery and may prefer to cut their losses. However, participants may have exit rights even if others wish to continue; viability of an infrastructure with a reduced number of participants is not assured. Leaving the decision in participants' hands is not always the obvious or right approach. The competent regulatory authorities are perhaps the natural choice and, typically, recovery measures will be triggered by them albeit implemented by the infrastructure itself. Resolution, on the other hand, is an official set of remedies akin to insolvency procedures, and available only to the competent authorities. The most an infrastructure, its owners and its participants can do is to request the authorities to intervene.

Guidance on recovery

14.10 Having considered the preliminaries, it may be convenient to turn to the content of official guidance on recovery and resolution of infrastructures. Recovery options were explored in the CPMI Recovery Paper, though its principal focus is on the process of designing a recovery plan and the roles of the different stakeholders. This inevitably means that its review of the various recovery tools, and their relevance to different infrastructure types, is at a high level. Nevertheless, the following specific tools are listed:

- Recapitalisation
- Obtaining liquidity from third-party institutions
- Obtaining liquidity from participants
- Cash calls (on participants, primarily for CCPs)
- Variation margin gains haircutting ('VMGH', for CCPs)
- 'Use of initial margin' (Initial margin haircutting, for CCPs)
- Forced allocation of contracts (for CCPs)
- Contract termination (tear-up, for CCPs)
- Insurance.

The following observations may be made about this list. First, many of the tools are only suitable for CCPs, and the merits of these are examined further in **sections 14.16–14.27**. Secondly, the use of insurance is only contemplated in relation to non-default losses; this seems to be a needless restriction, and it may be observed that CCPs may also take credit insurance as part of their default-loss management strategy.[27] Thirdly, it may be observed that the list is different from that for banks.

Infrastructures are not like commercial banks. Ways of keeping banks and other financial institutions out of formal insolvency proceedings, and all the disadvantages they have for depositors and financial markets, have been developed since the financial crisis of 2007–2008. These include the ability to

27 Intercontinental Exchange, Inc., *Central Clearing* (October 2019), White Paper, www.theice.com/publicdocs/Central_Clearing_Reducing_Systemic_Risk.pdf, p 9

restore a bank's balance-sheet by forced write-down of liabilities (bail-in) and a range of measures which can be applied by competent authorities to extricate the systemically important business from a failing bank, thereby isolating that business from the cause of failure. The recovery measures could, perhaps, be applied to infrastructures to ensure that a failing infrastructure does not become the cause of a systemic crisis or a burden on taxpayers. But infrastructures (even if they are formally structured as banks) do not have the risk profile of commercial banks, nor do they cause the same problems as insolvent banks when they fail. Infrastructures do not have retail depositors who need to have continuing ability to access and manage their money. Infrastructures are not permitted to invest users' funds in assets which are liable to become 'toxic'.[28] These differences may imply that the toolkit devised for failing banks may not be suitable for infrastructures.

It may, therefore, be asked if this is the reason why conversion of debt instruments to equity and bail-in of other liabilities, tools useful in relation to banks, are not in the CPMI's suggested recovery toolkit. The omission of debt conversion is odd, since infrastructure groups do issue debt instruments, even if their operating subsidiaries do not. The failure to mention bail-in can, in part, be explained in relation to CCPs, as the subject is treated under the rubric of margin haircutting and tear-up, and CCPs do not take on other liabilities of any significance. However, it would be useful to understand whether it is thought undesirable for a CSD engaged in banking-type ancillary services to bail in cash deposits.

14.11 The approach which an infrastructure's management should adopt in developing a recovery plan is not so different between banks and infrastructures. The CPMI considers that infrastructures should: identify their critical services and the stress scenarios which might prevent those services being provided as a going concern; write recovery plans describing tools which would be implemented balancing the interests of stakeholders, in particular so that those who would bear losses or provide liquidity can control their exposure; put the toolkit in place ex ante; and have tools to replenish expended financial resources.[29]

Commentators point out the need to balance the interests of the various stakeholders. In relation to the default waterfall of CCPs, the difficult question of the burden of risk to be borne by participants, their clients, and the shareholders is discussed at **sections 17.33ff** and **14.33ff**. The remedies for recovery are unpleasant medicine; each of them raises difficult issues, elaborated below, and conflicts of interest will arise. The official guidance is of very limited help to an infrastructure trying to reconcile the competing concerns. The incentives which actuate those designing the plan need to be borne in mind.

Accounting and regulatory considerations may provide incentives, as pointed out by ISDA in relation to failure of CCPs.[30] In particular, asking participants to bear losses or to assume risk on other participants may change the identity of the economic counterparty who is, in substance, responsible for performance of the obligation being cleared or settled. This type of re-characterisation may

28 Cf Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, art 47; CSDR, art 46

29 CPMI Recovery Paper. section 2

30 International Swaps and Derivatives Association, CCP Default Management, Recovery and Continuity: A Proposed Recovery Framework (January 2015)

also have consequences for clients, who may characterise their agent bank as an 'agent in substance' for accounting purposes (even though legally the agent bank acts as principal), so again they may be exposed in substance to unexpected persons. The consequences could include that regulatory capital weightings change, netting sets are broken up, and offsetting of assets against liabilities for balance-sheet presentation may be disallowed.

Business continuity

14.12 If the trigger for recovery is not a problem with a defaulting participant, but an operational failure, a recovery plan may not need to be more sophisticated than the organisation's existing plans for business continuity. Operational risks may be hard to manage but they are present in all business and financial organisations, and the toolkit for management is well-understood.[31] The principles are no different: 'The purpose of a recovery plan is to provide the information and procedures necessary to allow an FMI to effect recovery such that it can continue to provide its critical services when its viability as a going concern is threatened.'[32] The difference is only that the threat to the critical services arises from a source, or to an extent, which threatens the going-concern viability of the infrastructure operator.

Both EMIR[33] and the CSDR impose obligations for infrastructures to have business continuity plans. Article 34 of EMIR obliges a CCP to have business continuity and disaster recovery plans aimed at the preservation of its functions, the timely recovery of operations and the fulfilment of its obligations. Additional details, including timing for restoration of service, testing and monitoring and communication are set out in EMIR RTS 153.[34] An important addition to the general requirement in article 34 of EMIR is that a CCP must have a dedicated crisis management function and carry out a post-mortem review of its handling of any crisis.[35] The CSDR follows a similar line.[36]

As to payment systems, the ECB's thoughts are set out in a paper on business continuity dating from 2006,[37] which also follow a similar line to the rules for CSDs.

Guidance on resolution

14.13 A possible starting-point is the FSB's 2014 paper entitled 'Key Attributes of Effective Resolution Regimes for Financial Institutions' (the

31 Cf Turing, D, and Cramb, E, *Managing Risk in Financial Firms,* Tottel Publishing (2nd edn, 2009), ch 6

32 CPMI Recovery Paper, para 2.3.1

33 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

34 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties, arts 17–23

35 EMIR RTS 153, art 22

36 CSDR, art 45(3)–(5); Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories, arts 76–80

37 European Central Bank, *Business Continuity Oversight Expectations for Systemically Important Payment Systems (SIPS)* (June 2006) www.ecb.europa.eu/pub/pdf/other/businesscontinuitysips2006en.pdf

Key Attributes Paper),[38] of which Annex 1 is devoted to the resolution of infrastructures and their participants. The FSB has also issued more extensive guidelines specifically focused on resolution of CCPs (the FSB Resolution Guidelines).[39] The following provisions may be worthy of note:

- The objectives of resolution are described as continuity of critical functions. The inherent contradiction in that is signalled by the description of circumstances which indicate that resolution should be initiated: 'Entry into resolution should be possible when an FMI is, or is likely to be, no longer viable or no longer able to meet applicable legal or regulatory requirements on a continuing basis, and has no reasonable prospect of returning to viability within a reasonable timeframe through other actions that could be taken by the FMI.'[40] If the CCP cannot provide its services on a 'continuing basis', how is it feasible to provide 'continuity of critical functions'?
- Resolution authorities are encouraged to have powers to enforce the rules of, and contracts entered into by, an infrastructure, to write down its equity, to bail in unsecured debt, to perform VMGH, to tear up contracts, and to transfer 'critical functions' to another entity.[41] The tools are described in detail in the FSB Resolution Guidelines.[42] The merits of certain tools in this toolkit are reviewed in **sections 14.16–14.27**.
- Settlement finality should be assured in resolution; there should be a stay on exercise of set-offs and contract termination against the infrastructure; and any moratorium on payments made by the infrastructure should be limited insofar as they are being made in the course of its core functions.[43]
- The 'no creditor worse off' (NCWO) safeguard should be applied.[44] This is discussed in **section 14.35**.
- Financing the resolution process is given some attention;[45] the FSB has even issued a paper devoted to the topic.[46] The guidance gingerly approaches the troublesome question of how a CCP which has approached the end of its 'waterfall' of default backing might access further funds in order to restore the desired 'continuity of critical functions'. Additional thinking is contributed by the CPMI in a paper on the resilience of CCPs.[47]

14.14 It is by no means universally agreed that maintaining a CCP's functionality at all costs is necessary.

38 Financial Stability Board, *Key Attributes of Effective Resolution Regimes for Financial Institutions* (October 2014), www.fsb.org/wp-content/uploads/r_141015.pdf

39 Financial Stability Board, *Guidance on Central Counterparty Resolution and Resolution Planning* (July 2017), www.fsb.org/wp-content/uploads/P050717-1.pdf

40 Key Attributes paper, Annex 1, para 4.3; the FSB Resolution Guidelines, para 3, are phrased in identical terms

41 Key Attributes paper, Annex 1, paras 4.9, 4.13–4.16

42 FSB Resolution Guidelines, para 2

43 Key Attributes paper, Annex 1, paras 4.5, 5.1, 4.17

44 Key Attributes paper, Annex 1, para 6.1; FSB Resolution Guidelines, para 5

45 Key Attributes paper, Annex 1, para 7

46 Financial Stability Board, Financial resources to support CCP resolution and the treatment of CCP equity in resolution (November 2018), www.fsb.org/wp-content/uploads/P151118-2.pdf

47 Bank for International Settlements Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, Resilience of central counterparties (CCPs): Further guidance on the PFMI, www.bis.org/cpmi/publ/d163.pdf

> 'The failure of a CCP due to a default event can only be imagined on the heels of a significant market disruption. In such an environment, it is highly likely the market will have lost confidence in the CCP and as such, it is difficult to see how a recovery would necessarily be in the public interest.'[48]

This sentiment is echoed in academic and other commentary.[49] The usual explanation from official sources for the worldwide policy that CCPs must be restored, come what may, is no more than that clearing is essential for financial stability. This was not always so, even if it is true today. It may be that the introduction of compulsory clearing of derivatives has created a bind for policy-makers and regulators, requiring the continuation of clearing in order to give effect to the mandate, while preserving immunity for the taxpayer; the objection from industry is that there is liability without control. The subject is explored further in relation to the question of who is liable at the end of the CCP's 'waterfall' below.

Loss allocation

14.15 A central issue in relation to recovery and resolution options is how losses are to be borne. Infrastructures are not required to have the same level of risk-related capital as banks. Settlement systems ought not to be exposed to credit or counterparty risk in the same way as banks. But CCPs and CSDs which offer banking-type ancillary services are and, accordingly, some form of loss-absorption is required if the institution's capital is not going to be equal to the task. (Of course – a point sometimes forgotten – it is never forbidden for an infrastructure to increase its level of capital to provide a loss-absorption cushion. But capital is expensive, or at least it needs to be serviced so that investors remain happy, and the opposite side of a large capital base is a need for increased income, in other words higher transaction fees.)

Thus, EMIR requires a CCP to maintain 'sufficient pre-funded available financial resources' to cover losses which overshoot the margin and default fund.[50] CSDR RTS 390 has a different approach to credit losses suffered by CSDs which provide banking-type ancillary services: if the losses exceed the collateral intended to cover them, the CSD has to have a policy specifying how such losses, and any sums borrowed from liquidity providers.[51] The implication may be that CSDs are expected to have a loss-mutualisation arrangement similar to the 'assessment' arrangements of many CCPs which kick in at the end of the statutory waterfall.

However, it is not a foregone conclusion that losses should be borne by participants rather than shareholders. The answer to this question may, in part,

48 Blackrock, Resiliency, Recovery, and Resolution – Revisiting the 3 R's for Central Clearing Counterparties (October 2016), White Paper www.blackrock.com/corporate/literature/whitepaper/viewpoint-ccps-resiliency-recovery-resolution-october-2016.pdf

49 Cerezetti, F, et al, 'Who pays? Who gains? Central counterparty resource provision in a post-Pittsburgh world' (March 2019), *Journal of Financial Market Infrastructures* vol 7, p 1; Singh, M, and Turing, D, Central counterparty resolution: an unresolved problem (March 2018), IMF Working Paper WP/18/65

50 Article 43(1)

51 Commission Delegated Regulation (EU) 2017/390 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on certain prudential requirements for central securities depositories and designated credit institutions offering banking-type ancillary services, art 25(2)(a)

depend on whether the losses arise from a participant default or other causes. This question is explored further in **section 14.29**.

As regards default losses, a paper in the Bank of England's Financial Stability series suggests several principles for loss-allocation rules for CCPs, which may be summarised here:[52]

- Loss-allocation rules should be comprehensive, transparent, and capable of being implemented quickly.
- Tear-up of contracts[53] should be a last resort and its use confined to the affected clearing service.
- Loss-allocation rules should be sensitive to the incentives they provide, for example with regard to participation in default auctions or resignation of membership.
- Loss-allocation rules should avoid moral hazard, that is they should not encourage a CCP's management to weaken risk management: shareholders should not remain unaffected.
- Steps taken should not weaken risk management of ongoing open positions, for example by utilising initial margin without replacing it.

The paper goes on to illustrate the loss-allocation mechanics of various CCPs as they stood in 2013. What stands out from the analysis is the difference of approach between an equities-only CCP (EuroCCP) and the handful of derivatives CCPs. EuroCCP did not cap the assessment liability of members, but allowed them to resign, whereas the derivatives CCPs all had caps. EuroCCP did not apply variation margin gains haircutting, whereas the derivatives CCPs did. EuroCCP did not have the ability to tear up contracts, whereas the derivatives CCPs did. One might conclude that, even having narrowed the focus from infrastructures generally to CCPs, it would be unwise to regulate on the assumption that there is a single optimum model for recovery for all CCPs.

THE RECOVERY AND RESOLUTION TOOLKIT

Recapitalisation

14.16 For all infrastructure types, regardless of their function or the cause of failure, a recapitalisation plan may be a way out of difficulty. An injection of cash will provide both assets and liquidity. The CPMI Recovery Paper suggests that the sources of funding will be participants and providers of equity capital. However, the main focus of the CPMI paper is the consequences of participant default, and the CPMI accordingly urges a balanced approach to the choice of post-default recovery tools. There is little discussion of the timing or complexities of raising fresh capital or passing the hat around participants.

The majority of the suggestions in the CPMI Recovery Paper are for failure scenarios originating from participant default. Recapitalisation is, however, an option which can be used in any situation – if it can be achieved in a realistic timeframe. Where there is no significant overlap between the interests of the

52 Elliott, D., Central counterparty loss allocation rules (April 2013), Bank of England Financial Stability Paper No 20

53 See **section 14.22**

users of the infrastructure and its shareholders, the timeframe is less likely to be realistic. The CPMI Recovery Paper does not indicate a preference for recapitalisation over other recovery solutions, although this might be thought appropriate in light of the apparent economic incentive for non-user shareholders to abandon a failing investment.[54] Levels of capital will have to be restored after a loss which has eaten into reserves, so any form of loss-taking by the infrastructure should lead to a recapitalisation in due course.[55]

The European Association of CCP Clearing Houses (EACH), the trade association representing the interests of European CCPs, says that 'forced recapitalisation by shareholders is inconsistent with the principle of "no creditor worse off" than in insolvency and would lead to shareholders paying to save the CCP participants' positions'.[56] That statement is remarkable, and cannot bear scrutiny. First, the 'no creditor worse off' principle is not 'no creditor better off'. Indeed, the principles for resolution set out in the BRRD acknowledge that *shareholders* are expected to be worse off. And yes, shareholders are expected to share the pain with participants: it is the shareholders who draw the profits from the organisation and, as venture capitalists, ought to bear the cost of that venture's failure. EACH's position on recapitalisation is flawed.

Practical and legal issues may be encountered with recapitalisation. A call on shareholders who have limited liability and have fully-paid-up shares will take time, and a liquidity crisis may not allow for the processes inherent in a rights issue. Instead, one would wish to have a scheme in place whereby shareholders are obliged to respond immediately to a cash call. This, unfortunately, is less straightforward under English law, and possibly under other legal systems, than might be desirable. Section 3 of the Companies Act 2006 says that if there is no limit on the liability of members, the company is an unlimited company. (In the Companies Acts, which are general legislation applicable to both infrastructure entities and ordinary trading companies, the word 'member' denotes 'shareholder' and implies nothing about the possible additional status of the shareholder as participant in the infrastructure.) Unlimited liability is not a status which shareholders of infrastructures would typically expect to assume, as the consequences would be to render them liable for the company's debts. An unlimited obligation to subscribe for additional shares is not far off unlimited liability: so one would need to be careful in providing for a future capital call not to convert the company's status inadvertently to that of unlimited liability. Consider also section 25 of the Companies Act 2006, which states that 'a member of a company is not bound by an alteration to its articles after the date on which he became a member, if and so far as the alteration – (a) requires him to take or subscribe for more shares than the number held by him at the date on which the alteration is made, or (b) in any way increases his liability as at that date to contribute to the company's share capital or otherwise to pay money to the company'. Persons who had been shareholders before an infrastructure inserts a recapitalisation obligation into its articles will not be obliged to fund the recapitalisation. Certainly, any new investors would be bound, but unless the infrastructure has a mutual-ownership model their help will be limited and, in any case, the incidence of liability will be unfair. Furthermore, a contractual provision sitting outside the company's articles which obliges shareholders to

54 See further **section 9.29**

55 See CPMI Recovery Paper, para 4.6.4

56 European Association of CCP Clearing Houses, *An effective recovery and resolution regime for CCPs* (December 2014)

recapitalise may destroy the limited liability status of the company.[57] None of these legal obstacles precludes a voluntary recapitalisation, but their effect is to weaken a recapitalisation plan and to force infrastructures designing their recovery programme to look at other measures which might restore solvency or provide liquidity.

Bail-in

14.17 The CPMI Recovery Paper makes no mention of bail-in or conversion of debt obligations to equity.

The idea of a CCP issuing bail-in-able debt has been criticised by EACH. EACH notes that CCPs are not banks and lists numerous valid distinctions. CCPs do not have significant liabilities except in relation to their members: they do not typically raise capital in the public capital markets through bond issues and they do not take deposits (ignoring for the moment the cash they receive as margin and default fund contributions). So, it is clear that bail-in is not a remedy which would work for a failing CCP.

This need not be so. Some infrastructure groups raise capital through debt instruments, albeit not an operating-subsidiary level. Nowadays, however, it is not considered usual for financial institution groups to cut loose an operating subsidiary which has got into difficulty, if the failure of the subsidiary could have systemically important consequences. Bail-in of publicly issued debt might have an important impact on the solvency of the infrastructure group – but, crucially, it might not make any difference to the cash position of the group, and a failing CCP is likely to need additional cash to plug any default losses not covered by its default waterfall.

As there are unlikely to be substantial external (non-member) creditors to take the pain when a CCP is in difficulty, the question arises as to who should do so. EACH says that allocating losses away from participants decreases participants' incentives to manage their own risk (but since clearing itself decreases participants' risk-management incentives,[58] this is a point which cannot be taken too seriously). 'It is critical that the recovery and resolution framework does not diminish but rather increase the market discipline that central risk management creates.'[59] More convincingly, EACH questions whether it is desirable to spread catastrophic losses into the hands of a non-participant investor sector.[60]

In conclusion, bail-in is not likely to be an option for any infrastructure entity, except insofar as margin haircutting might be considered a form of bail-in.

Cash calls and liquidity provision

14.18 Where the investors do not have a commercial interest in the future of the infrastructure, the very fact of its failure may be expected to discourage investors from contributing to a recapitalisation. So, in practice as well as in regulatory

57 *Russell v Northern Bank Development Group Ltd* [1992] 1 WLR 588, HL
58 Cf **section 10.8(1)**
59 European Association of CCP Clearing Houses, An effective recovery and resolution regime for CCPs (December 2014)
60 European Association of CCP Clearing Houses, An effective recovery and resolution regime for CCPs – Additional subjects to be considered (June 2015)

theory, the more likely source of supplementary funding for an infrastructure in difficulty will be its participants. The expectation is that CCPs, in particular, may ask clearing members to contribute additional sums to its default fund. In the United States, the power of a CCP to tap its members for further financial resources to cover defaults was called a power of 'assessment'.[61] EMIR states (i) that a CCP 'may' require non-defaulting members to provide additional funds in the event of a default of another clearing member, but also (ii) that the clearing members shall have limited exposures toward the CCP, so uncapped 'assessment liability' would seem to be forbidden in Europe, at least as far as the CCP's rules are concerned.[62] On the other hand, the proposed European Regulation on CCP resolution would give the resolution authority power to levy limited calls on participants.[63] The CPMI also says that assessment liability could be secured on a member's initial margin deposits,[64] which means that if the liability falls due, the initial margin would be utilised and would need to be replaced. (Initial margin 'haircutting' is discussed at **section 14.21** below.) An open-ended (sometimes called 'down to the last drop') obligation to replenish the default fund, even if it were granted favourable regulatory capital treatment,[65] would not be attractive to clearing members, who expect CCPs to be more robust than their participants in all market conditions. One prominent bank has criticised unfunded assessment obligations as unreliable in an emergency:[66] if the obligors are reluctant to pay to shore up a wobbling infrastructure, it does not solve the CCP's immediate liquidity needs if it has to issue legal proceedings for payment.

14.19 Inviting participants or third-party banks to provide liquidity may be less controversial than asking for further capitalisation or default funding. Theoretically, at least, the provision of liquidity ought to be a loan, in other words repayable by the affected infrastructure. As with other organisations seeking credit in times of difficulty, the risk of non-repayment will have risen in accordance with the severity of the problem, and collateral is likely to be demanded by lenders. If the infrastructure's difficulty is to meet its obligations in the immediate term while collateral assets are liquidated or the book of a defaulter is closed out, a liquidity loan may be of assistance and may be available. The needs of an exchange-of-value payment system like CLS may be similar, and liquidity providers may be called upon to lend currencies so that CLS Bank can honour its short-term pay-out obligations while liquidating other currencies paid in by a defaulting participant.[67] CCPs which expect liquidity to be provided by central banks as 'lender of last resort' may be disappointed. Such arrangements are likely to be a backstop to provide liquidity for solvent CCPs, so that central banks may demand that a CCP implements steps to replenish its default backing or capital in any event.[68]

61 See further **sections 17.36 and 17.37**
62 EMIR, art 43(3)
63 Final compromise text (see section 14.21), art 31
64 CPMI Recovery Paper, para 4.2.11
65 See also section 12.12(1)
66 JP Morgan Chase & Co, *What is the Resolution Plan for CCPs?* (September 2014)
67 Cf CLS Bank International Rules (April 2015), Rule 8
68 See further **section 17.65**

Variation margin gains haircutting

14.20 The term 'margin haircutting' refers to a power of a CCP to reduce its liability to pay gains to clearing members. Variation margin, it will be recalled,[69] constitutes a payment of losses accrued (typically over the last business day only) on a cleared contract. Thus variation margin is paid by the participant whose position moved out-of-the-money to the CCP, and the CCP will pay an equivalent amount of variation margin to the participant on the other side of the bargain whose position has moved into-the-money. When a VMGH rule is invoked, the CCP's obligation to pay out variation margin gains is reduced or eliminated, whereas the obligation of holders of contracts moving out-of-the-money remains intact. Cash will flow into the CCP but not out of it. Losers will fund the CCP at the expense of gainers. The gainers may, or may not, have their 'lost gains' rolled up with payment deferred to a subsequent date; and, in the event of the CCP's ultimate insolvency, the 'lost gains' may be subordinated to other claims against the CCP. What is clear is that non-payment of 'lost gains' will not constitute a form of payment default by the CCP, because it is sanctioned by the rules. Where the 'lost gains' are deferred rather than wholly forgone, VMGH is a form of forced liquidity provision by clearing members. The CPMI Recovery Paper says this:

> 'Tools involving haircutting of gains are powerful tools. They are potentially comprehensive, in that any loss or shortfall resulting from a participant default cannot exceed the associated amount owed to non-defaulting participants. They are reliable, in that, insofar as an FMI's payouts are only made after all pay-ins are received, there is no performance risk, because they do not require new pay-ins from participants. For the same reason, they are timely, in that they can be executed immediately because they do not depend on, or require time for, additional pay-ins from participants.'[70]

VMGH helps a CCP during the period that its book is not matched as a result of the default[71] – it is a convenient device for the CCP to hold and manage the unbalanced book while a permanent solution (transfer, tear-up, auction etc) is being arranged. But in theory, VMGH might allow a CCP to stay afloat indefinitely.[72] All changes in market price are taken care of: losers pay; winners are haircut back to the extent of available funds. The CCP can (according to this theory) ignore the fact that the defaulter's positions have not been fully closed out and that it is running an unmatched book, because its liability on outgoings is limited to what in fact comes in. This theory makes VMGH attractive to regulators and owners of CCPs, because it allows for a more relaxed approach to default management. Further, the non-defaulting participants in the CCP will be incentivised to close out for themselves any positions they have which are not receiving full payments of variation margin: this incentive will also encourage them to participate properly in the CCP's auction to close out the defaulter's book.[73]

69 See **section 17.24**
70 CPMI Recovery Paper, para 4.2.15
71 See **sections 17.43ff**
72 Gibson, M, *Recovery and Resolution of Central Counterparties* (December 2013), Reserve Bank of Australia Quarterly Bulletin, pp 39-48
73 International Swaps and Derivatives Association, *ISDA letter on IM haircutting* (April 2015), www2.isda.org/attachment/NzU1NQ==/IM%20Haircutting%20Letter%20-%20April%2017%202015.pdf

Academic research indicates that VMGH can sustain a CCP and the losses which are experienced by the participants deprived of their gains are tolerable, if there is one round of VMGH for a limited period.[74] It may be the least unpalatable tool in the box. But the academic work dates from 2012 and thus predates the clearing mandates; most significantly it does not count the impact on clients of clearing members, who will suffer VMGH as the withholding of gains is passed down the chain. (Client clearing was said to dominate the market for clearing of interest rate swaps in Europe in 2016,[75] at a time when the clearing mandates were only partly implemented.)

Evidently, the case for VMGH is not straightforward, and is open to objections. First: the objections inherent in the theory. VMGH can be analogised to a bicycle-ride: the CCP will stay upright as long as it keeps moving, but if it stops it will fall over. The conditions for keeping moving are at least the following. (1) All transactions booked to the defaulter's account must be cash-settled. If the CCP is obliged to pay for a delivery of a commodity, a security or any other asset at the maturity of the transaction, a payment obligation will arise which is not covered by VMGH receivables and cannot be haircut. (Examples would be the payment obligations that arise on delivery of a sold commodity or security, or on the unwind leg of a repo.) (2) The VMGH rule must operate as a 'pay only to the extent actually paid' rule, to ensure that outgoings are never lower than receipts, and the rule must be legally enforceable. (3) All non-defaulting participants must be obliged not to declare a default *by the CCP itself* as a result of non-payment of their variation margin gains. (4) The cleared product must have a long enough tenor to make a bicycle-ride a sensible proposition – so for short-term instruments like cash equities transactions it is not feasible.

Secondly, there are systemic objections to VMGH. As with recapitalisation, VMGH recycles the crisis around the clearing member sub-sector. Clearing members will not receive variation margin payments, and that may affect their own liquidity position. It is not self-evident that the reduction of liability of the CCP is more appropriate than supporting the liquidity of banks in a financial crisis. The banks who must pay and can never receive may end up knocking on the central bank's discount window themselves. It may be better to allow the CCP to fail gracefully than prolong a liquidity crisis. Another systemic objection is the risk of losing the asset constituted by the unpaid gain. VMGH rules may say that a debt claim will accrue to the unpaid gainer, which (at the CCP's option) may be paid off as and when the CCP completes its default management process. But this is hard to reconcile with theoretical principle (3): A CCP is insolvent if it has no realistic prospect of being able to pay all its debts when they fall due, even if the due date is in the future. (The effect would apparently be to enable the CCP to be wound up at once.[76]) Indeed, if variation margin is not paid as 'collateral' but in 'settlement',[77] the characterisation of VMGH as a forced loan may be impossible to sustain – since a payment of nil to a gainer in accordance with the CCP's rules ought to be a full and final settlement. So

74 Heath, A, Kelly, G and Manning, M, *Central Counterparty Loss Allocation and Transmission of Financial Stress* (March 2015), Reserve Bank of Australia Research Discussion Paper RDP 2015-02; Turing, D, and Singh, M, *The Morning After – the impact on collateral supply after a major default* (October 2018), IMF Working Paper 18/228

75 Fiedor, P, Lapschies, S and Országhová, L, The Centrally Cleared Interest Rate Derivatives Market: How are Clients Changing the Risk Perspective? (December 2018), *Journal of Financial Market Infrastructures*, vol 7, p 1

76 *In the matter of Cheyne Finance PLC (in receivership)* [2007] EWHC 2402 (Ch)

77 As to the distinction, see **section 17.25**

unpaid gainers may have to write off what they are owed. That is a pro-cyclical consequence, unwanted in a time of crisis. The CPMI Recovery Paper hints at the possibility that unpaid gainers may be compensated by being given some form of deferred or subordinated debt instrument or equity in lieu of their claim;[78] but the economic, regulatory and systemic implications of that are complex, not discussed in the paper, and not self-evidently beneficial.

There are further objections to VMGH as a panacea for a CCP's problems.[79] The CPMI itself notes that VMGH may be unsuitable since it may allocate losses to those not best placed to cope, for example in markets where different types of institution participate on one side or another (ie they take 'directional positions') or where positions are held for retail investors.[80] Hedging strategies will be ruined by VMGH. The liquidity pressure which is felt by non-recipients of gained value could lead to them liquidating other assets, depressing their price and weakening the CCP's ability to realise margin posted by the defaulter. The accounting treatment of VMGH rules is unclear.

Allowing a CCP which is relying on VMGH to continue in business indefinitely while an unresolved default continues to fester is a CCP which ought not to be allowed to continue in business: not only was its risk management model bad but it has not fulfilled its raison d'être, which is to protect the market against counterparty risk. VMGH might be justifiable for a few days in a crisis but beyond that it is unsupportable. With all these dangers, in cases where the CCP is unfairly continuing its activities, the competent authorities ought to have powers to require the CCP to stop the bicycle. There is no basis for the ride to continue if, ultimately, those whose claims are being surrendered or deferred will receive no return.

All in all, VMGH is a useful tool for buying time. But if the CCP cannot be restored to full operational functionality with the time that is being bought, a more radical solution is needed. If VMGH is the best tool in the box, so that none of the other resolution techniques stand any better chance of success, that radical solution will either be the provision of more cash or that the CCP should be closed – subjects considered in **section 14.45**.

Initial margin haircutting

14.21 Initial margin haircutting (IMH) is what it implies: a reduction in the entitlement of a clearing member to receive back the initial margin posted to the CCP. IMH does not solve a cash-flow problem but improves solvency. It is objectionable on many grounds.[81]

(1) Initial margin is provided in the form of cash, securities, and other collateral assets. Securities collateral may be provided under a security interest rather than a title transfer arrangement. If IMH applies only to cash and title-transfer collateral the incidence of pain is unfairly shared. If IMH applies equally to security interest collateral, the beneficial interest of the collateral provider is violated, and the reason for choosing the

78 CPMI Recovery Paper, para 3.4.7

79 See, J.P Morgan Chase & Co, *A Balancing Act – Aligning Incentives Through Financial Resources for Effective CCP Resilience, Recovery and Resolution* (May 2017), White Paper, www.jpmorganchase.com/corporate/news/insights/soconnor-a-balancing-act.htm.

80 CPMI Recovery Paper, para 4.2.23

81 See the CPMI Recovery Paper, para 4.2.26, and ISDA letter on IM haircutting

security interest structure – to keep the asset bankruptcy-remote vis-à-vis the CCP – is violated along with it.

(2) Initial margin is provided by clients as well as clearing members. If IMH applies only to clearing members, the incidence of pain is unfair, but if it applies across the board it pushes the CCP's problem out into the user sector – including, potentially, retail customers as well as buy-side organisations such as pension funds and retail funds – which is unlikely to be justifiable on policy grounds.

(3) The Human Rights Act 1998 provides statutory protection against expropriation. To be proof against challenge under the 1998 Act, IMH would need to be structured as a collateral arrangement, effectively burdening the initial margin provider with a guarantee of the CCP's solvency to the extent of the haircut.

(4) For IMH to work as a recovery mechanism, a CCP which has made use of its power to haircut initial margin will find that the initial margin balances on members' accounts are in shortfall, and will need to make a margin call immediately. IMH is therefore a form of assessment and could be criticised as such.

(5) There is no relationship between the amount of initial margin held by the CCP and the risk which it is, in the haircutting scenario, intended to cover. Indeed, the amount of available initial margin may be far too small to help, not to mention that using it exposes the CCP to uncollateralised credit risk on the non-defaulting clearing members (themselves coping with the market turmoil which will follow a default which blew away the CCP's risk management model, and therefore at maximum vulnerability) until such time as it is restored by them.

(6) Utilisation of initial margin is pro-cyclical for various of the reasons given above, and therefore objectionable on economic stability grounds.

(7) It can be argued that the risk of haircutting will introduce perverse incentives into clearing members' behaviour: for example, that they will favour bankruptcy-remote collateral or ring-fenced collateral, or a structure which favours a large default fund and lower initial margin levels.[82] Either of these outcomes could be adverse for the CCP and its ability to manage defaults swiftly and with minimum impact on non-defaulters.

(8) Initial margin which can be seized by a CCP in financial difficulties is not bankruptcy-remote in the ordinary sense of the phrase. Bankruptcy-exposed assets ought to carry a regulatory capital charge. (The regulatory capital test of 'bankruptcy remoteness' of collateral posted to a CCP[83] is out-of-date, since it only contemplates full insolvency proceedings rather than recovery/resolution procedures.) In the case of bank recovery through bail-in, there is a 'no creditor worse off' protection, which ensures that creditors cannot be treated worse than they would be in full insolvency.

Initial margin haircutting is to be distinguished from exercise of a right of use by the CCP in respect of collateral which has been provided under a security interest. As with title-transfer collateral, collateral subject to a right of use is available (subject to any agreed restrictions on the right of use) to the CCP in

82 ISDA letter on IM haircutting

83 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms, etc, art 300(1)

times of difficulty, in particular to raise cash through repo market transactions. This kind of activity is not open to the objections mentioned above.

Forced allocation of contracts and tear-up

14.22 Haircutting of margin deals with problems of liquidity and solvency, which may arise from the CCP's delay or difficulty in re-establishing a matched book following participant default. Forced allocation and tear-up are mechanisms for re-balancing the book, so that the CCP has a 'buyer' (or equivalent) for every 'seller' (or equivalent). Assuming that the ordinary close-out process[84] has failed, the CCP may need to impose a means of re-balancing. In the OTC derivatives market, unwanted swap transactions can be 'torn up' by the parties, who agree to terminate the relevant transactions at a close-out price which reflects the then future value or loss on the terminated trades. Whereas an auction involves a voluntary assumption of the defaulter's book by the survivors, albeit at a price, tear-up leaves the survivors with no choice on these matters, which are determined by the CCP in accordance with its rules.

Alternatively, a forced allocation of the defaulter's book involves a transfer of the defaulter's positions to other participants; the economic effect will be similar to a tear-up, since those allocated the defaulter's positions will now have offsetting positions registered to their accounts. The CPMI indicates that the allocation method might select participants who hold opposite positions from the defaulter (potentially requiring them to re-establish hedges at prevailing prices) or those who have made fewer successful bids in the auction.[85] Another allocation method is pro-rata distribution among participants holding opposite positions.

For a CCP all this is theoretically possible, but it has some practical challenges. The first is to identify the surviving participants who will be deemed to have the opposite positions in the market to the defaulter. A further question is how the losses inherent in the management of a defaulter's book using these tools should be shared. While it is tempting to suppose that the costs of the torn-up or reallocated positions should be borne by the participants in whose accounts they end up, it is not necessary that this should be the outcome, and indeed the function of margin, the default fund, and the CCP's own resources is to cover such losses.[86] The industry considers that the purpose of tear-up or allocation is to re-establish the CCP's matched book, so that pricing and compensation should be objectively fair and unrelated to the loss position of the CCP; it should not be confused with the other mechanisms available to the CCP for loss sharing.[87]

A much tougher question than these is the price at which the torn up (or allocated, if the idea that the loss ought not wholly to be borne by the recipients) contracts are closed out or transferred. The possibilities include the 'prevailing market price', no price at all, or an artificial price which is designed to reduce the CCP's losses. None of these is self-evidently clean and straightforward. First, there is no 'prevailing market price' in the circumstances of a major default where it

84 See **sections 17.44**
85 CPMI Recovery Paper, paras 4.5.6–4.5.11
86 See CPMI Recovery Paper, para 4.5.6
87 International Swaps and Derivatives Association, *CCP Default Management, Recovery and Continuity: A Proposed Recovery* Framework (January 2015); see also FIA Global, *CCP Risk Position Paper* (April 2015)

has not been possible to establish the close-out price through ordinary default management mechanisms such as an auction. The second option, sometimes called 'invoicing back' or 'declearing', imagines that the contract was never entered into, so it is just erased from the book. That is likely to be thought unfair and may be challenged. The final option, giving the discretion to the CCP, is also at risk of challenge, since the CCP's expertise in valuation is likely to be lower than that of traders who participated in the (failed) default management exercise. CCPs' rulebooks envisage the third method and do not specify a valuation methodology.[88]

The choices implicit in the partial tear-up and allocation solutions are difficult, and another option, fairer but more drastic, is to tear up all the registered contracts of the type which were not closed out during the voluntary auction process. Complete tear-up involves a close-out and value determination of all registered positions in the affected contract type. Each surviving member who owes a net close-out payment will be obliged to pay the CCP; the members who are owed net close-out payments may receive something, but this will depend on the extent to which the CCP has made effective recoveries from the defaulter and the non-defaulting obligors and whether the CCP's rules permit it to include initial margin in the netting calculations. The point is that the members' recourse to the CCP is limited in respect of the closed-out transactions, as with a bail-in; everyone ends up in a different economic position from that which was desired. Full tear-up is thus a liquidation in miniature. Once the process is complete, theoretically the CCP could start again, registering new contracts of the type which it has just disposed of. Whether members would want this, and whether they could escape mandatory clearing obligations in the absence of a competitor CCP able to clear the relevant product, are difficult and unanswered questions. However, a rule allowing for complete tear-up may not be exactly what it seems. Keeping this option in its tool-box is supposed to give the CCP the benefits of a nuclear deterrent. 'Ensuring the continuing operation and restoring the viability of a failed CCP is less disruptive and costly, and therefore preferable, to its liquidation or full contract tear-up.'[89] Desiring to avoid the nuclear outcome, participants will be incentivised to participate straightforwardly in the ordinary default management process.

The problem with all the tear-up options is that they all involve something which is incompatible with the notion of mandatory and continued clearing, which are the objectives of resolution. To tear up contracts is to remove them from clearing, which is contrary to both these precepts.

Property transfer (lift-out)

14.23 Assuming that the technical platform on which the infrastructure operates is not fatally compromised, the business of the infrastructure could be assumed within a reasonably short timescale by a substitute service provider, who could take over the entire undertaking and operations without the liabilities of the predecessor entity. The Principles for Financial Market Infrastructures state:

88 See Turing, D, 'Central Counterparties: Magic Relighting Candles*?*' (September 2019), *Journal of Financial Market Infrastructures*, vol 8, p 27

89 International Swaps and Derivatives Association, *Principles for CCP Recovery* (November 2014)

> 'An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.' [90]

This approach might be termed a 'lift-out' of the failed infrastructure, and would be achieved through the means of a 'property transfer' instrument where the infrastructure has moved beyond the point where it can manage the lift-out unaided. The capital adequacy rules made under EMIR and the CSDR are built around this principle.[91]

14.24 Lift-out is a desirable solution for all infrastructure types but may be difficult to achieve. Unlike the case of an insolvent bank, it is unlikely that a crisis in an infrastructure which takes on counterparty risk can be managed so as to peak during or immediately before a weekend, during which the authorities have time (even though a weekend is not a generous amount of time) to arrange the least disruptive outcome. CCPs and payment systems which are in crisis will be in crisis because of abnormal things happening during the working week; at least, suddenness is likely for infrastructures, whereas a problem in a failing bank or investment firm is likely to have a longer gestation. Another difference from the 'recovery' options mooted for banks in the post-Lehman era, which is a recapitalisation based on trigger events and the conversion of certain classes of debt into equity, is equally improbable. Furthermore, if crises break suddenly, the occurrence of the trigger event would rapidly be overtaken by complete and catastrophic breakdown before the actions designed to be implemented following the trigger event could actually take place. Lift-out is therefore a leisurely option, designed to deal with slowly developing management failure and where orderly transfer is possible.

14.25 The following aspects of a lift-out would need to be considered in any circumstance, regardless of whether an insolvency procedure has been implemented.

(1) The operations, accounts, systems, and assets of the failed infrastructure must be detachable and transferable to the substitute service provider. The difficulties which will be encountered include the application of termination rights of contract counterparties, including providers of IT and communications equipment. Where a failed bank or 'investment bank' is concerned, termination rights may be curtailed by operation of law. There are non-legal difficulties too, such as the ability of the substitute service provider to retain staff able to operate the systems of the failed infrastructure and to interpret its records. Transfer restrictions may also apply, and may impair the transfer of vital contracts such as the provision of liquidity facilities.

(2) Risks and their mitigants must not be separated. The common worries in this area are that payables and receivables, which were intended to be

90 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf, Principle 15, key consideration 2

91 See **sections 7.29 and 7.44**

set off, are left in different legal vehicles; or that the same fate occurs to collateral and the obligation it was intended to secure. Commentators worry about the impact of breaking up 'netting sets' of transactions.[92] Transferring the assets (including the benefit of contractual provisions and debt obligations) to the substitute service provider, and leaving the liabilities behind, is unlikely to be a realistic solution.

(3) Liabilities may need to be transferred without the consent of the persons to whom they are due. The law does not ordinarily allow for non-consensual transfer of a liability,[93] although there are various statutory ways to navigate around this rule.[94] While it might be pragmatic for many creditors to accept the prospective promise given by a transferee, in the circumstances of an infrastructure failure where the creditors are also likely to be the users of, providers of capital to, and in other ways connected with the failed entity and the replacement entity, this outcome cannot in all circumstances be relied on. An example of a challenge in this area is the ability to transfer the failed infrastructure's membership of other infrastructures (such as a CCP's participation in payment and securities settlement systems), which comprises both rights and obligations.

(4) The transferee entity will need to have appropriate regulatory status, including in the United Kingdom compliance with the full range of requirements discussed in **Chapter 8**. These matters cannot realistically be put in place overnight, which may limit the transferees to those, if any, who are competitors of the transferor. Where the infrastructure has multinational reach, the regulators of other jurisdictions will have powers which may also be relevant. A legal solution may help.[95]

(5) Separation of a viable business from a non-viable business will require careful segregation. All the assets and records and associated operational services belonging to a business which is to be lifted out must be separable from the rest. So, in an infrastructure which has taken collateral, including cash deposits, title-transfer securities, charged securities, bank guarantees, default fund contributions and such like, all such things which are to be lifted out must be segregated in separate accounts *on the books of the persons who actually hold the cash, securities, etc* so that they are clearly identifiable and easily transferred. Where commingling has been allowed, separation requires disentanglement, and that is unlikely to be easy and may be unachievable in a crisis.

In relation to CCPs, EACH observes that lift-out

> 'is likely to be easier between CCPs with overlapping membership and products. Such CCPs may be similarly affected by the severe conditions which caused the CCP failure. Even if this were not the case, it may be difficult for a CCP to prepare to accept the transfer of open interest from what is likely to be a broken market…. Transfer of business from one CCP to another may raise the following challenges:
>
> - Complexity in transferring positions and collateral
> - Amending clearing member's agreement

92 Duffie, Stanford Working Paper No 3256; FIA Global, *CCP Risk Position Paper* (April 2015)
93 *Tolhurst v Associated Portland Cement Mfrs (1900) Ltd* [1902] 2 KB 660, CA
94 Cf Banking Act 2009 s 34; Financial Services and Markets Act 2000, s 112
95 Cf **section 14.42**

- The receiving CCP obtaining all the necessary information for performing adequate risk management (eg calculate margins)
- Maintaining connectivity with the regulated market/CSD
- Potential conflicts of law if the receiving CCP is located in a different jurisdiction.'[96]

For these reasons, a lift-out may not be successful in an emergency unless there is special protective legislation in place. Without such protection, the complexity of the issues listed above, and other practical difficulties which would become apparent only on the day, would effectively foreclose the ability to use this option for anything other than a pre-planned switchover.

14.26 Some specific comments may be appropriate in relation to the suitability of lift-out (either to a private sector purchaser, or to a bridge institution) in the resolution of a CCP.

- As mentioned repeatedly, CCPs are not banks, and have only a single 'function' which cannot simply be spun away from the non-existent other business areas operated by the CCP. A lift-out is not going to be worth the effort if it means transferring the entirety of the CCP's assets and liabilities into a new vehicle, which will inherit the problems of an unmatched book and an unquantified thirst for resources. The question with lift-out is whether there is any meaningful separation to be done. The answer is only likely to be yes, if the CCP carries on more than one clearing service – for example, if it clears exchange-traded as well as OTC derivatives, or cash equities as well as futures. Then a lift-out of the service which is not struggling under the unmanaged default might be a feasible proposition.[97]
- Users, including clients of clearing members, are unlikely to see any advantage in 'continuity' of clearing, either in a clean new vehicle or in a competitor of the old CCP, if the risk model which is used in the new CCP is substantially the same as that in the old one. The problem here is that the core of all CCP risk models is mandated by law, and only minor tweaks are left to the discretion of the individual CCP. Thus, margin levels, default fund coverage principles, and the amount of skin-in-the-game – the three main lines of defence which were, ex hypothesi, tested to failure in the old CCP – are, except in the fine detail, indistinguishable between CCPs in the modern market. The new CCP will be running a failed model unless something truly radical in terms of risk management can be devised during a market crisis.
- Sometimes it is suggested that non-default losses play out in a different way to major defaults. In such cases, where the default waterfall has not been utilised, the CCP may face a financial or operational challenge which brings it to the brink of insolvency. CCPs are weakly capitalised and it may therefore be wise to abandon the corporate vehicle, with its non-default liabilities, and transfer the positions, margin, default waterfall and systems across to a competitor or a bridge CCP. This logic is sound – provided that the 'non-default losses' can be segregated in this way. Whether that is possible is explored in **section 14.29**.

96 European Association of CCP Clearing Houses, *An effective recovery and resolution regime for CCPs* (December 2014)

97 Cf. Braithwaite, J. and Murphy, D, 'Improving Resolvability: Partial Property Transfers and Central Counterparties' (October 2019), *Capital Markets Law Journal* vol 14, p 431

Overview of recovery and resolution toolkit

14.27 In order to summarise the recovery and resolution tools on offer – see **Table 14.1**. It may be noted that recapitalisation or cash calls are the simplest and most likely to succeed. If that is not going to work, things are going to be much tougher, and the only realistic option is a limited period of VMGH while, one may hope, either the market stabilises so that a re-run of the default management process might allow for restoration of a matched book within the available resources, or a further funding round may be attempted to plug the missing gap. If all that does not work, the possibility of closing the CCP may have to be contemplated. To proceed in that way is not easy either, as explained in **section 14.45**.

Table 14.1 Summary of recovery and resolution tools[98]

Tool proposed for CCP resolution	Observation
Cash call	Cash calls can be made on shareholders as well as on clearing members. There may be limits to what shareholders are willing to contribute in a practically workable timeframe; and clearing members will usually have a cap on their contribution liability.
Bridge CCP	Where the risk model of the CCP has proved wanting (ex hypothesi in a case of resolution caused by default losses) the bridge CCP would inherit all the 'bad' as well as the 'good' – there is no realistic means of separating them.
Sale of business to competitor CCP	This option would allow a different CCP with a robust risk model to take on the positions of the non-defaulting members, avoiding the conceptual difficulty facing a bridge CCP. But the following practical issues would still need to be addressed: • balancing the book (replacing the defaulter's side on the transferred contracts) • readjusting the margin and default fund contributions needed, and the membership eligibility criteria under the transferee CCP's rules • 'sale' being a misnomer, quantifying and sourcing the cash or cash-equivalent sum needed by the transferee CCP to take over a net loss-making book. Unless the taxpayer steps in, it is not clear who will pay for this.
Position and loss allocation; Write-down (tear-up) of contracts	Each of these options will reduce the losses of the CCP by obliging non-defaulting members to neutralise or cancel their cleared positions. Such an outcome would allow the CCP to survive, but with the following consequence when either of these tools is used: the function of the CCP, namely, to ensure counterparty performance, is disregarded. That would appear to contradict the stated policy that clearing of the contracts (guarantee of counterparty performance) is a critical function.
VMGH	Repeated rounds of VMGH or time-unlimited VMGH are open to objections similar to those relating to position allocation and tear-up. Furthermore, uncontrolled VMGH creates moral hazard.
IMH	Considered wholly unfair, especially to clients who have no role in the default management process.

98 First published with minor differences in Singh, M and Turing, D, *Central Counterparties Resolution – An Unresolved Problem* (March 2018), IMF Working Paper WP/18/65

SPECIFIC ISSUES

14.28 It may now be convenient to explore some more detailed issues which arise in connection with the recovery and resolution of CCPs: non-default losses, responsibility for financial loss in and beyond the loss waterfall, the remaining options when the waterfall is exhausted, and the 'no creditor worse off' principle.

Non-default losses

14.29 Criticism can be made that discussion of risk for CCPs focuses on default losses and thereby crowds out analysis of, and preparation for, losses originating in other ways. However, the problems may not be wholly distinct. In considering non-default losses, it is important to distinguish the providers of computer or other non-financial facilities from providers of financial services. Infrastructures may be critically dependent on other financial firms for the delivery of their own services. Probably the infrastructures most at risk from financial service provider failure are CCPs, because CCPs rely on banks and other types of firm as counterparties to their very sizeable treasury operations, as cash-management bankers for the huge cashflows that move across the CCP daily in the form of margins, and as custodians. A thoughtful study by the Financial Stability Board illustrates graphically how significant are the interdependencies between CCPs, their clearing members, and other infrastructures.[99]

Certainly, article 47(3) of EMIR obliges CCPs to deposit non-cash margin and default fund contributions with 'operators of securities settlement systems' – in other words, they must hold these assets directly in CSDs wherever feasible, but CCPs may use 'other highly secure arrangements with authorised financial institutions.' Likewise, article 47(4) limits the ability of a CCP to place ordinary deposits back into the banking sector, by stating that the arrangements should be 'highly secure' if not done 'through the use of standing deposit facilities of central banks'. 'Highly secure' means that the deposit must be collateralised with highly liquid financial instruments,[100] as specified in Annex II of EMIR RTS 153.[101] (Unfortunately there are errors in EMIR RTS 153 which make the tracing of these obligations obscure: there are two articles numbered 45 and a cross-reference in the first article 45(2) is to a non-existent provision, which is probably to be read as referring to article 43 and Annex II without para 1(c) thereof.) Evidently CCPs run very high exposures to commercial banks.[102]

On the failure of a financial service provider, margin and default fund contributions, essential to the risk management arrangements of the infrastructure, may be lost. Ordinary 'business continuity' planning is inadequate to cater for this kind of contingency. The effects will be very similar to those of participant default, and it may be stressful for participants to refresh their margin and default fund contributions in the market conditions following default of a major service provider. This problem, however, is the tip of the iceberg.

99 Financial Stability Board, *Analysis of Central Clearing Interdependencies* (August 2018), www.fsb.org/wp-content/uploads/P090818.pdf

100 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing EMIR with regard to regulatory technical standards on requirements for central counterparties, art 45

101 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties

102 See further **section 17.10**

The banks and other financial firms who provide financial services to CCPs (and other infrastructures) are the major users of infrastructures. Infrastructures which must be concerned with problems stemming from participant default need to study the consequences of financial service provider default, because the counterparties involved are identical. Furthermore, a financial service provider default is likely to involve a participant default, as the same entity or group of entities is implicated in more than one capacity. Yet, recovery and resolution planning, as envisaged by the CPMI and the FSB, has a tendency to put service-provider failure into a separate pigeonhole to participant default. This is imprudent. But the result is that recourse to default funds, assessment obligations, loss-sharing and other solvency-restoration measures discussed in detail in this chapter are unlikely to be available to deal with the financial losses which result from financial service-provider failure. Such failures could be as threatening to the survival of the CCP or other infrastructure as an under-collateralised participant default.

Ms Froukelien Wendt, in a detailed paper for the IMF,[103] sets out suggested remedies for the weakness of risk management in this area. Her recommendations include (i) that CCPs which are heavily dependent on commercial banks should have additional capital and (ii) that improved access to a range of central bank services would reduce dependency on commercial banks. Other considerations which are relevant are those which pertain to the structuring of default waterfalls, and the question of which constituency is expected to foot the bill for recovery.

14.30 The law of the United Kingdom has been modified to recognise the threat to CCPs which can come from sources other than defaulting participants. Paragraph 29A of the Schedule to the Recognition Requirements Regulations (RRRs)[104] obliges a recognised central counterparty to have loss-allocation arrangements for losses arising otherwise than as a result of clearing member default and threaten the CCP's solvency. The purpose of the allocation is continuity of the services and activities specified in the CCP's recognition order. It is optional whether the arrangements be in 'rules', though the inference most readers would draw is that the losses may have to be borne by the participants. In its 2015 Annual Report, the Bank of England noted that it did not expect United Kingdom CCPs' loss-allocation arrangements to cover losses other than investment losses, citing its agreement with the CPMI that 'losses relating to general business risks are properly the responsibility of the owners'.[105] However, it is doubtful whether it is, in principle, right that investment losses must not be allocated to participants, given that bank default may be as catastrophic as participant default, and affect the participants in a similar way. And it is certainly not right to construe the requirement of paragraph 29A as limited to investment losses: it is drawn more widely, and in making paragraph 29A the Treasury should be taken to have been equally concerned with life-threatening losses arising from all non-default sources.

103 Wendt, F, *Central Counterparties: Addressing their Too Important to Fail Nature* (January 2015), IMF Working Paper WP/15/21

104 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges, Clearing Houses and Central Securities Depositories) Regulations 2001, SI 2001/995

105 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual Report* (March 2015)

Responsibility for losses

14.31 Insofar as non-default losses have a different origin and could manifest themselves without being accompanied by participant default, it can be argued that the losses should be paid for from a different source from the waterfall of default backing.

To begin with, it may be noted that EMIR expects CCPs to have capital sufficient to ensure adequate protection against 'credit, counterparty, market, operational, legal and business risks which are not already covered by specific resources [for defaults]'.[106] Further detail is provided in EMIR RTS 152.[107] The amount of capital prescribed follows the operational-risk and counterparty-risk standards applied to banks, which may be the best standard on offer, but CCPs are not banks and they have very low levels of capital besides these amounts, unlike banks. The approach taken in EMIR RTS 152 is discussed further in **section 7.30**.

The CPMI considers that CCPs (that is to say, shareholders) should provide financial resources to cover custody and investment risk – the contribution of the CCP 'should reflect the degree of the involvement of the CCP in the decision-making process related to the custody and investment of participants' assets',[108] which rather suggests that the participants themselves are not expected to shoulder this species of loss unless there is a loss on an investment actually chosen by the participant. Whether the amounts prescribed by EMIR RTS 152 are sufficient to cover the losses which may arise is open to question.

The responsibility for losses should, it has been argued, depend on the ownership structure of the CCP: in a mutualised structure, the participants may be willing to pay more; and in any case, the cost of capital to the CCP may have an effect on clearing fees which may shift the argument towards a loss-sharing structure involving the participants.[109] What is certain is that there is no mood to have such a structure where statutory rules appear to settle the question, as in Europe.

Who should pay for excess losses?

14.32 The discussion above on the merits of the various tools available for recovery and resolution led to a stark conclusion: VMGH will work, for a short period, and then the only possibilities are to pass the hat round (to whom?) or to close the CCP. Assuming that closure is not allowed, being contrary to the principle of 'continuity of functions', someone has to pay.

106 EMIR, art 16(2)

107 Commission Delegated Regulation (EU) No 152/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on capital requirements for central counterparties

108 Bank for International Settlements Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, *Resilience of central counterparties (CCPs): Further guidance on the PFMI*, www.bis.org/cpmi/publ/d163.pdf, para 6.2.4

109 Lewis, R., and McPartland, J., 'Non-default Loss Allocation at Central Counterparties' (September 2017), *Journal of Financial Market Infrastructures*, vol 6, p 29

There is no consensus on that question, when the 'default waterfall' set out in EMIR is exhausted. It will be recalled that CCPs can call upon margin, the defaulter's default fund contribution, the CCP's own 'skin in the game', the non-defaulters' default fund contribution, and then 'sufficient pre-funded available financial resources' required, but not specified, under article 43 of EMIR.

It is assumed by regulators that the participants should be responsible:

> 'A key difference between banks and CCPs is that a CCP's recovery plan can be based on contractual agreements with its members. Unlike banks' protected depositors, they can be assumed to understand and manage their risk exposures. CCPs must have rules and procedures that allocate losses and liquidity shortfalls that are not covered by prefunded resources. From that perspective, CCPs are in a unique position in drawing on additional resources from members if and when needed.'[110]

In the United Kingdom, this principle is set out in statutory form.[111] CCPs must share excess default-related losses under the CCP's default rules, which in practice means among the CCP's participants (since shareholders and third parties are unlikely to be bound by default rules).

This may be an inevitable and pragmatic conclusion. If there is a choice between insolvency and member-financed recovery, in both outcomes the members will bear the cost. However, it is wrong to conclude from remarks such as that quoted above that CCP failure is the members' problem and theirs alone. Failure ought to be attributed to the system of governance of the CCP; the default waterfall ought to be balanced, so that all stakeholders contribute; and members may limit their liability to clients or pass costs out to the wider economy. Furthermore, the conclusion is not self-evidently the fair one. However, it is not entirely clear why policymakers assume that participants should be economically responsible for CCP recovery.[112] Other sources of end-of-waterfall funding exist.

14.33 The most obvious alternative is the shareholders of the CCP. The economics of CCP ownership are rarely commented on;[113] here it may be noted that CCPs are thinly capitalised: in Europe only 25% of the capital contributed by shareholders against risk is required to be available in the default waterfall,[114] and CCPs are seldom owned by their users. Rents (clearing fees) are paid to shareholders routinely while the CCP experiences business-as-usual conditions, whereas risks (default backing in the waterfall) are visited on users. The risk-and-reward equation of ordinary capital investment does not apply to CCPs, given that the primary risk arises when the CCP experiences a default, the management of which is the raison d'être of the CCP.

110 Coeuré, B, *Central counterparty recovery and resolution* (November 2014), Speech. See www.bis.org/review/r141124a.htm

111 RRRs, Sch, para 36

112 See also Wendt, *Central Counterparties,* IMF WP/15/21

113 See, however, Murphy, D, 'I've Got You Under My Skin: Large Central Counterparty Financial Resources and the Incentives they Create' (March 2017), *Journal of Financial Market Infrastructures*, vol 5, p 57; Cox, RT and Steigerwald, RS, '"Incomplete Demutualization" and Financial Market Infrastructure: Central Counterparty Ownership and Governance after the Crisis of 2008–9' (March 2016), *Journal of Financial Market Infrastructures*, vol 4, p 25

114 EMIR RTS 153, art 35(2)

One might sympathise with shareholders who do not wish to invest in an unlimited-liability enterprise, and one might raise the same over-concentration objection to a mutual ownership structure as to the principle of participant responsibility for recovery. Despite apparently settled policy that shareholders should not pay, and participants should, other possibilities apart from shareholders' capital and participant bail-in exist and deserve consideration.

CCPs could be obliged to look elsewhere for default backing in the same way that banks are incentivised through regulatory capital rules to seek capital from outside the banking sector. Other types of loss-absorbing instrument and layers of capital could be structured which (albeit at cost) could be utilised to aid recovery.[115] Examples recommended by the inquiry into the failure of the Hong Kong Futures Guarantee Corporation[116] included credit protection in the form of bank guarantees or an insurance policy.[117] In older guidance, the Committee on Payment and Settlement Systems (CPSS) said that a CCP should not rely 'primarily' on insurance, guarantees or letters of credit, but certainly did not rule them out.[118] CCPs should be encouraged to purchase these additional types of protection and, if their risk management strategy is unsuccessful, to fail if they suffer exceptional losses. A CCP's management team would have to assure backup providers of the robustness of their risk proposition, in the same way as investors; the risk would be assumed outside the over-concentrated inner circle of vulnerable firms; the cost would weaken the incentive of shareholders to drive management to generate dividends rather than build up reserves.

One further option for consideration is for CCPs (which, in practice, again means their users) to establish a cross-CCP resolution fund.[119] Whether in practice that would be feasible, given the immense international barriers to be overcome in establishing such a fund, and whether it would solve the fundamental problem of concentration of risk among too small a sector, are issues still to be debated. A variant which has more practical credibility is for CCPs and their members to place recapitalisation resources into an escrow fund held at the central bank,[120] along the lines of the Single Resolution Fund established in the European Union to facilitate rehabilitation of failing Eurozone banks.[121] EACH considers that the idea of a resolution fund would make it difficult for a CCP to manage its own default management process and recovery regime:[122] this argument, that cross-CCP links weaken solo-CCP risk management, is similar to those raised in connection with interoperability.[123]

115 See further **sections 7.33ff**

116 See **section 14.48**

117 Hay Davison, I, *The operation and regulation of the Hong Kong securities industry – Report of the Securities Review Committee* (May 1988), www.fstb.gov.hk/fsb/ppr/report/davison.htm, para 7.51

118 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Recommendations for central counterparties* (November 2004), www.bis.org/publ/cpss64.pdf, p 27

119 Coueré, B, *Ensuring an adequate loss-absorbing capacity of central counterparties* (April 2015), Speech, see www.bis.org/review/r150414a.htm

120 JP Morgan Chase & Co, *What is the Resolution Plan for CCPs?* (September 2014)

121 Cf Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund, arts 66ff

122 EACH, Additional subjects

123 See **section 15.21**

End-of-waterfall options

14.34 Various possibilities arise if a CCP has reached the end of its available financial resources, and the recovery and resolution tools have been tried without bringing an end to the problems. These include a further round of 'assessment' or calls on participants; voluntary transfer of positions and margin, insofar as possible, to another CCP, with an exodus of participants; and wholesale service closure on the CCP's initiative. There are also, possibly, the options of bail-out, and of initiating an insolvency procedure.

(1) *Further assessment*. The first possibility is a voluntary recapitalisation of the CCP, notwithstanding that the CCP has already made unprecedented demands on its members for additional funding. LCH has a voluntary payments option,[124] which applies after VMGH has been exhausted, There are indications that clearing members and other users of clearing do not – even though they may support VMGH to some degree – unconditionally favour the restarting of a CCP after the members have had to tip in significant additional funds after a major default.[125] Moreover, even where members are contractually obliged to tip in funds, they may be able to find arguable defences to resist such calls, and tying up the CCP in a legal battle may bring the CCP to the end before the challenge is resolved. Accordingly, the rulebooks of various CCPs state they will move to tear-up if assessment, voluntary payments, and VMGH fail to cure the problem.[126]

(2) *Transfer*. A participant in a failing CCP may seek to transfer its portfolio elsewhere. A successful portfolio transfer took place in 2019 between LCH and Eurex.[127] However, in a crisis, difficulties abound. While there may be alternative CCPs able to clear the relevant type of transaction, a portfolio transfer to another CCP is not something which can be done unilaterally. The problem is not the CCPs, but rather finding one or more market counterparties who are willing to take the other side of the trades – a cancelling trade at the old CCP and a replicating trade at the new CCP. It is not at all clear why any other market participant would wish to do so or what price they would charge, even for partial transfers. The pricing problem will be particularly acute in a market which is so disrupted by the default under management that the old CCP has failed to settle the defaulter's book within the ordinary process of auction and applying margin and waterfall resources – the overwhelming likelihood is that an attempt to transfer would fail precisely because price-discovery structures are in disarray. While the problem is most obvious where the CCP clears OTC products, there is no theoretical reason why exchange-traded products could not suffer market disruption, and failure of the default management process, in a similar manner.

124 Default Rule CS5

125 Blackrock Paper, 'Resiliency, Recovery, and Resolution'; JP Morgan *What is the Resolution Plan for CCPs?*

126 LCH Limited, Default Rules CS4, CS6, CS7; ICE Clear Europe, Rules 909, 914,916,1102; CME, Rules 802B, 802F for example

127 Eurex, DekaBank successfully switches swap book to Eurex Clearing (November 2019), Press Release, www.eurexchange.com/exchange-en/about-us/news/DekaBank-successfully-switches-swap-book-to-Eurex-Clearing--1666894

(3) *Exit.* Clearing members may wish to consider the right to terminate their participation. CCP rulebooks allow their members to leave by giving notice. Exit is, however, dependent on closing out the leaver's positions, which will be difficult in the circumstances of end-of-waterfall default management. Furthermore, exiting members are subject in every case to ongoing liability for defaults which happened or continue to happen during their notice period (see **Table 14.2**). If the CCP has not yet operated tear-up, the requirement that the exiting member should discharge its open positions implies the need to register opposite positions which cancel the economic effect of those open positions. This may be difficult, for similar reasons as apply to transfers. One further consideration relating to exit is that a transferee CCP will have a similar risk model to the old CCP. An exiting participant who has lost confidence in the risk approach of its old CCP could have limited faith in the risk approach of any competitor CCP which is offering to clear the same product.

(4) *Service closure.* Service closure arises when, following complete tear-up, the CCP decides not to continue to clear a particular type of contract. The power to initiate service closure is vested in the CCP, not the members, though CCPs typically allow their members a say in governance. But it is not obvious that CCPs can effectively shut up shop even if they invoke the power: clearing members and their clients will need to carry on creating new transactions, and the mandatory clearing rule will oblige them to clear those transactions. It is difficult to reconcile the idea of service closure with the FSB's continuity objective for CCP resolution. If the purpose of resolution is to re-start the service, then the CCP must stay open for clearing. Perhaps the FSB policy means that the CCP should implement a tear-up of the old pre-default positions and start afresh; but it is not clear that the rules of CCPs would actually work that way. It is also unknown how the regulators of the CCPs which do have tear-up and service closure rules would view an attempt to close the service. Full tear-up with service closure also has the effect of making the CCP a form of bankruptcy-remote vehicle, creating moral hazard: it would, barring regulatory intervention, be possible for a wholly incompetent CCP to mismanage its risks, mismanage a default, cause its members unmanageable losses, and then to close its doors without the usual investigatory and penal consequences which apply to corporate businesses which fail.[128] Financial sector businesses which are 'too systemically important to fail' in the ordinary way should not be exempt from the usual scrutiny applied to those which fail in more traditional ways.

(5) *Bailout.* This option is officially taboo, since the official sector guidance referred to in this chapter consistently says that taxpayer support for failed CCPs should be avoided. However, there is no law against it, and the draft European Regulation on CCP resolution would permit it.[129] Some commentators perceive that it is the only realistic option remaining after VMGH has been tried for a period, if the participants' appetite for further rounds of assessment has waned.[130]

128 For example, Company Directors' Disqualification Act 1986, ss 6, 10
129 Final compromise text (see **section 14.36**), arts 45-46
130 Singh and Turing (March 2018), IMF WP/18/65

Table 14.2 Exiting from a CCP – rulebook restrictions[131]

CCP	Exit rights	Continuing liability after exit	Defaults for which liable after exit	Service closure
LCH[132] (UK)	3 months' notice	Replenish default fund	Defaults before discharge or expiry of notice	6 months' notice
CME[133] (US)	10 business days after discharge	Replenish default fund; pay assessments	Defaults before discharge and next five business days (extendable for serial defaults)	No apparent power
Eurex[134] (DE)	30 days' notice	Replenish default fund; pay assessments	Defaults before discharge or expiry of notice, if claim on exiting member is made within 20 business days of discharge (extendable for serial defaults)	30 days' notice
ICE[135] (UK)	30 business days' notice	Replenish default fund; pay assessments up to a cap	Unless notice is given after an assessment demand, defaults before discharge or expiry of notice	30 business days' notice

NCWO

14.35 There should be some safeguard that the resolution process would not lead to an unpredictable or unfair result. In the case of bank resolution, the principle is 'no creditor worse off' – that is, that creditors should not be treated more adversely than if the bank had become subject to normal insolvency proceedings.[136] Professor Darrell Duffie points out that, in the case of a CCP, 'it is not clear what would be the most relevant counterfactual benchmark scenario … Failure resolution administrators have significant discretion over when the contractual default management process is to be interrupted by failure resolution, and also over which of various loss-allocation tools could be used ….How to apply the no-creditor-worse-off principle to CCPs therefore remains murky'.[137]

The standard counterfactual analysis is to consider what would have happened if the CCP had been put into insolvent liquidation.

131 First published, with minor differences, in Turing, D, 'Central Counterparties: Magic Relighting Candles?' (September 2019), *Journal of Financial Market Infrastructures*, vol 8, p 27
132 General Regulation 5, Default Rule 25, General Regulations 45, 9, Default Rules CS6, 15(g).
133 Rules 913, 913B, 818, 802B.
134 General Clearing Provisions 13.1, 6.3, 9, 13.1.
135 Rules 209, 917, 909, 918, 912, 209.
136 BRRD, art 74
137 Duffie, D, *Resolution of Failing Central Counterparties* (December 2014), Stanford Graduate School of Business Working Paper No 3256; see also Grace, A, *CCP resolution and ending the 'Too Big to Fail' agenda* (October 2015), Speech. See www.bankofengland.co.uk/publications/Pages/speeches/2015/871.aspx

NCWO is further emasculated by the dubious status of clearing members as quasi-creditors of a CCP at the end of its waterfall, a problem discussed in **section 14.45.** To apply the insolvency counterfactual to an entity whose principal class of 'creditor' is contractually obliged to forgo its creditor status is an exercise requiring a huge leap of imagination. Self-evidently, where creditors will receive nothing in liquidation is no better, and no worse, than a voluntary contractual waiver of what is owed. It may not be an exaggeration to suggest that NCWO is not a meaningful safeguard to protect the clearing members over the equity investors if things go badly wrong with the CCP.

THE EU RECOVERY AND RESOLUTION REGULATION

14.36 In 2016, the European Commission put forward a proposal for an EU Regulation setting out a regime for recovery and resolution of CCPs.[138] By the late summer of 2020 a 'final compromise text' of the draft Regulation was published,[139] suggesting that it might soon complete its long legislative gestation. Accordingly, some comments on the Regulation may be in order.

(1) *CCPs are not banks*. While the original Commission proposal was closely modelled on the BRRD, thinking has evolved substantially since 2016, with the result that the approach and tools for dealing with troubled CCPs looks rather different from the BRRD, albeit with some borrowed ideas. CCPs must have recovery plans, and resolution is initiated only once those plans have been tried and failed. Resolution authorities must draw up resolution plans covering both default and non-default scenarios.[140]

(2) *Second skin in the game*. CCPs must utilise a second tranche of skin in the game before having recourse to VMGH, tear-up or cash calls. The amount is between 10% and 25% of the (operational) risk capital prescribed by article 16(2) of EMIR. It is thus comparable in size to the first tranche of skin in the game, and open to similar criticisms.[141] Having said that, the concept of CCPs contributing anything at all from shareholders' funds before making financial claims on members after exhaustion of the default fund was strongly resisted by CCPs, and an issue which contributed to the delay in reaching the compromise.

(3) *Resolvability assessment*. The resolution authority has power to order a CCP to separate out its clearing services, even if this involves breaking netting sets, and to issue loss-absorbing financial instruments.[142] If the latter power is exercised in a manner analogous to the 'minimum requirement for eligible liabilities', CCPs will be required to have a tranche of bail-in-able capital instruments; such an policy would address many of the concerns relating to CCPs' capital structure discussed in **sections 14.31ff**.

138 European Commission, *Proposal for a Regulation of the European Parliament and of the Council on a framework for the recovery and resolution of central counterparties, etc* (November 2016), COM(2016) 856 final (Interinstitutional file 2016/0365 (COD))

139 Council of the European Union, *Proposal for a Regulation (etc) – Confirmation of the final compromise text with a view to agreement* (July 2020), ST 9397 2020 INIT (procedural update), ST 9397 2020 ADD 1 (compromise text)

140 Final compromise text, arts 9, 13

141 See **section 17.38(2)**

142 Final compromise text, art 17

(4) *Pre-resolution steps*. Before implementing resolution, the CCP's recovery plan should be followed, and the resolution authority has to conduct a valuation exercise.[143] The first of these requirements may leave few options for the resolution authority to try, since the CCP's recovery plan will contain the recapitalisation tools which are the likely way to restoring financial health to the CCP. The second is going to be difficult, and quite likely meaningless, if the CCP's position is such that positions cannot be valued in a climate of crisis. Further, Title IV has a set of measures for 'early intervention', to be used if the CCP is in breach of, or likely to infringe, the prudential requirements in EMIR or there are 'indications of an emerging crisis situation'. Unfortunately, the speed at which crises descend on CCPs is unlikely to allow time for leisurely processes like 'early intervention'. The early intervention tools are, essentially, a range of powers to direct the CCP in various ways, and a direct power to change senior personnel,

(5) *Resolution objectives*. The general policy of the FSB is adopted, but the Regulation will specify what is meant by 'critical functions' of a CCP, mentioning timely settlement of the CCP's obligations to clearing members and their clients and continuous access of clearing members and clients to securities and cash accounts.[144] Clearing per se may no longer be a critical function. The use of the word 'settle' imports a confusion between clearing and settlement previously seen in the United Kingdom[145] but the gist seems to be that resolution in Europe is intended to bring about a speedy end to the difficulties faced by a CCP in rematching its book following a default. Whether this is achievable with the tools on offer is another question. Likewise, while access to accounts and collateral is laudable, the extent to which this objective is compatible with use of resolution tools is also open to question.

(6) *Resolution tools*. The resolution toolkit comprises tear-up (called the 'position allocation' tool), VMGH and cash calls on clearing members (called 'loss allocation' tools),[146] write-down and conversion of debt instruments,[147] and transfer of the CCP or part or all of its business to a 'purchaser' or bridge CCP.[148] Resolution authorities have a range of ancillary powers, similar to those available under the BRRD.[149]

(7) *NCWO*. There is a no creditor worse off safeguard, with the curiosity that it protects shareholders as well as creditors. The counterfactual assumption is that the CCP applied all contractual arrangements in its rules and was wound up under normal insolvency proceedings. A person who suffers loss according to this analysis is entitled to a payment, but the identity of the payer is not specified.[150]

(8) *Third country CCPs*. Home state resolution of third country CCPs will be recognised unless there is an international agreement on cooperative resolution planning.[151]

143 Final compromise text, arts 23, 24
144 Final compromise text, art 21
145 See. **section 13.18(2)**
146 Final compromise text, arts 28–31
147 Final compromise text, art 32
148 Final compromise text, arts 40, 42
149 Final compromise text, arts 54–58
150 Final compromise text, arts 60, 62
151 Final compromise text, Title VI

(9) *Clearing obligation*. A resolution authority or regulator can ask for a suspension of the clearing obligation in respect of OTC derivatives cleared by the CCP. The procedure for this might be thought clunky, but it enhances the suspension option already included in EMIR as article 6a.[152] Additionally, the resolution authority can temporarily prevent a CCP clearing contracts of a type in respect of which the tear-up tool has been used.[153]

RESOLUTION OF UNITED KINGDOM INFRASTRUCTURES UNDER FSBRA

14.37 As far as the United Kingdom and non-CCP infrastructures are concerned, a special administration regime was introduced by the Financial Services (Banking Reform) Act 2013 (FSBRA). These procedures are the subject of the following sections.

Infrastructures which are also banks can be subject to the procedures under the Banking Act 2009.[154] These will be a limited group, since on the whole infrastructures incorporated in the United Kingdom are not banks,[155] but a CSD which has obtained authorisation to provide banking-type ancillary services will need a permission under the Financial Services and Markets Act 2000 (FSMA) to provide those banking services, and at least to the extent of those services it will be open to the authorities to resolve the CSD under the Banking Act. It is also theoretically possible that a payment system become authorised as a bank. Thus, the tools of bail-in, partial property transfer and transfer to a bridge bank are potentially available, and the short-term moratorium fending off creditor action could apply. Nevertheless. the norm in the United Kingdom is for infrastructures not to have banking permissions under FSMA, and the Banking Act regime as applicable to banks is not considered further.

The position of CSDs requires slightly more detailed analysis because the FSBRA regime, discussed below, is not available in respect of any banking-type ancillary services carried on by the CSD.[156] While the FSBRA regime cannot apply to banking activities, the converse may not be true: in other words the Banking Act regime may apply to the entity by virtue of its status as a bank, rather than with reference to specific activities carried on by the entity. This is a needless muddle, and it matters because the procedures are quite different, as discussed below.

Apart from the confusing position with regard to CSDs carrying on banking-type ancillary services, the demarcation between the Banking Act and FSBRA regimes is clear. The Banking Act applies to recognised CCPs and any system with a banking permission; FSBRA applies to recognised payment systems, recognised CSDs, and (if any might remain in the future) recognised clearing houses which are not recognised CCPs.

14.38 Part 6 of the Financial Services (Banking Reform) Act 2013 (FSBRA) creates a special administration regime for three classes of financial market

152 Final compromise text, art 80, inserting art 6b into EMIR
153 Final compromise text, art 29(6)
154 For banks, see **sections 13.3ff**
155 See **sections 8.6** and **8.16**
156 FSBRA, s 115(3), referring to FSMA, s 285(3D)

infrastructure: the operator of a recognised inter-bank payment system[157]; a recognised CSD operating a securities settlement system; and companies providing services to either of those classes of person, if designated by the Treasury.[158] Recognised CCPs are expressly left outside this regime.[159]

The special administration regime for infrastructures (FMI administration) is a modified form of the ordinary administration regime. Thus:

- The ordinary statutory provisions for administrations apply, with modifications.[160] Thus there will be a moratorium on claims enforcement and a formal statement by the FMI administrator of proposals for achieving the purpose of the FMI administration. There is the possibility for a liquidation of assets and a distribution to creditors. Pre-administration transactions may be scrutinised and avoided. However, only the Bank of England can apply to initiate FMI administration, and the Bank of England can issue directions to the FMI administrator.[161]
- FMI administration has modified objectives. The objective of an infrastructure special administration is to ensure that the system continues to be operated as an efficient and effective system; (in the case of a CSD) to ensure that its 'protected activities' continue; and to ensure that the FMI administration order is not prolonged, by use of one of two exit strategies.[162] 'Protected activities' are those things which a recognised CSD can do, apart from banking-type ancillary services.[163]
- The two exit strategies are rescue as a going concern of the company in FMI administration, and a 'transfer scheme'. Transfer schemes may involve part or all of the undertaking of the company in FMI administration. Approval of both the Bank of England and the court is required for a transfer scheme, and the Bank of England must consult the Treasury. The advantage of a transfer scheme over an ordinary corporate asset transfer is that liabilities may be transferred, and property rights which would otherwise be incapable of transfer can be transferred without the consent and without liability.[164] In the context of a payment system or securities settlement system the ability to transfer the entire operation of the system, including participants' and their clients' entitlements, will be valuable.
- Certain supplies must not be terminated after commencement of FMI administration unless payment is more than 28 days overdue. The supplies in question are computer hardware and software, financial data, communications infrastructure, data processing, access to data networks, and staff. Except as regards staff, this provision appears to be modelled on the special administration regime for investment banks under the Investment Banks Special Administration Regulations 2011.[165] The provision related to the supply of staff should not be read as enabling the FMI administrator to interfere with the terms of employees' own personal employment contracts.

157 See **section 8.3**
158 FSBRA, s 112(2)
159 FSBRA, s 112(3)
160 Insolvency Act 1986, Sch B1, as applied and modified by FSBRA, Sch 6
161 FSBRA, ss 116, 120
162 FSBRA, s 115(1)
163 See CSDR, Annex, Sections B and C
164 FSBRA, Sch 7, paras 4, 5
165 SI 2011/245

There are two points which may be noted about FMI administration. The first is that it will not unfold with the rapidity of a bank resolution, which can be expected to take place over a weekend. The FMI administration process, being a variation of ordinary corporate administration, will be more leisurely, even if the order itself is granted speedily. That model of resolution implies that the infrastructure has assumed no counterparty risk in providing its services, which may be true in many cases but cannot be guaranteed always to be so. The second point is that a property transfer (and all that comes with it, in the form of alteration of third parties' rights) will take place after judicial process, not executive fiat. A judicial process implies a scrutiny of the efforts being made to protect such rights, and the ability of representatives of affected groups to attend and be heard. Where an emergency demands transfer by the executive, as in special resolution of banks and CCPs, there is a set of 'safeguards' orders to protect certain rights against error or misjudgement by the officials: some safeguards are in place where CCPs are concerned, as the following discussion describes. But as regards CSDs and payment systems, the court looks after the matters covered by 'safeguards orders' in the cases of CCPs and banks.

14.39 Finally, it may be observed that, apparently notwithstanding the implementation of the FSBRA regime or even insolvency proceedings, the Bank of England could give directions to the operator of a recognised inter-bank payment system under section 191 of the Banking Act 2009.[166] Such remedies may be available to mitigate the worst consequences of failure of a payment system operator; though even the Bank of England does not have power to give direction to the *participants* in a payment system to keep it functioning notwithstanding its operator's insolvency.

SPECIAL RESOLUTION OF UK CCPS

14.40 For CCPs in the United Kingdom, recovery and resolution processes have received recognition and protection under a modified version of the Banking Act 2009. The legislation is not easy to trace, so a brief orientation statement may be appropriate. The starting-point is section 89B of the Banking Act 2009, which states that Part 1 of the Banking Act applies to 'recognised central counterparties' as it applies to banks, with modifications, but (subsection (1ZA)) without the changes brought about by the Bank Recovery and Resolution Order 2014 (BRRO)[167] and (subsection (1A)) disregarding provisions relating to bail-in. Thus, it is necessary to take an old (pre-1 January 2015) version of Part 1, apply the modifications set out in section 89B, and ignore the remaining provisions on bail-in. There is also special subordinate legislation relating to partial property transfers, in particular the Banking Act 2009 (Restriction of Partial Property Transfers) (Recognised Central Counterparties) Order 2014.[168]

As if this were not troublesome enough to navigate, further confusion arises because of changes to the Banking Act which came into force on 31 December 2014 and were repealed, in relation to banks but not CCPs, on 1 January 2015 under FSBRA.

166 See further **section 8.3**
167 SI 2014/3329
168 SI 2014/1828

The tools set out in Part 1 of the Banking Act are thus made available to recognised central counterparties as defined in section 285 of FSMA, that is CCPs authorised under EMIR by the Bank of England under FSMA.[169] The tools are not available in relation to holding companies of CCPs.[170] If a recognised central counterparty were structured as a bank, Part 1 tools would also be available, but by virtue of the CCP's status as a bank, but with somewhat different modifications as set out in sections 39A and 89C to 89E of the Banking Act. The following discussion focuses on traditionally structured UK CCPs which do not have bank status.

14.41 The following tools, which are available in the case of failing banks, are thus also applicable to CCPs: transfer to a private sector purchaser, transfer to a bridge bank and transfer of ownership, through the exercise of stabilisation powers. The objectives for which the powers may be exercised are somewhat different from those for banks:

- Instead of protection of depositors, an objective of special resolution of CCPs is to maintain the continuity of central counterparty clearing services.
- The objectives of protection of client assets, and minimising adverse effects on institutions such as exchanges and clearing houses that support the operation of financial markets, do not apply.
- The other objectives (stability of and public confidence in the financial systems of the United Kingdom, protection of public funds, and avoiding interference with property rights contrary to the Human Rights Act 1998) are substantially the same as for banks.[171]

The trigger for the use of the stabilisation powers is that the Bank of England is satisfied that the CCP is failing, or likely to fail, to satisfy the recognition requirements promulgated under section 286 of FSMA[172] and that it is not reasonably likely that the CCP will be able to maintain the continuity of any 'critical clearing services' it provides. Clearing services are 'critical' if the Bank of England considers that withdrawal may threaten the stability of the financial systems of the United Kingdom.[173]

At this point, two comments may be made. First, the Recognition Requirements Regulations (RRRs)[174] have a rather limited content, being replaced in most of their former detail by EMIR. In days when compliance with the RRRs meant having 'financial resources sufficient for the performance of its functions' and 'satisfactory arrangements for securing the timely discharge … of the rights and liabilities of the parties to transactions',[175] having a trigger based on failure to meet the standards required by the RRRs made perfect sense. Nowadays, the RRRs require little more than that the CCP complies with EMIR.[176] It is a multi-step process to trace a financial or operational crisis building in a CCP, via EMIR, to a breach of the RRRs. Secondly, the United Kingdom legislation

169 Banking Act 2009, s 89G
170 Banking Act 2009, s 89B(6) Table, disapplying s 83
171 Banking Act 2009, s 4, as modified under s 89B(6)
172 See **section 8.20**
173 Banking Act 2009, s 7, as modified under s 89B(6)
174 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges, Clearing Houses and Central Securities Depositories) Regulations 2001, SI 2001/995
175 RRRs, Sch, paras 16 and 19, no longer applicable to recognised CCPs
176 RRRs, Sch, para 29

is drafted with a local outlook only. The objective of exercise of powers is protection of United Kingdom stability. Clearing services are only 'critical' if the United Kingdom's financial systems are under threat. Yet the United Kingdom's CCPs have international reach and the financial system in which they operate is a global one. The Bank of England would have a difficult task in deciding whether to act in a case where a failing CCP could be allowed to collapse with dire overseas consequences but limited local impact, for example if the problem stems from financial instruments which have limited nexus with the United Kingdom's economy. Dire overseas consequences may have indirect adverse effects on the United Kingdom's long-term economic prosperity, but such considerations do not appear to be permitted in the Bank's assessment. A failing CCP may be left to its own devices notwithstanding the new recovery toolkit, whatever its shortcomings.

The stabilisation powers are resolution instrument powers, share transfer powers, and property transfer powers. Whether a simple transfer of ownership through exercise of share transfer powers would effectively stabilise a situation of failure of a CCP is doubtful, but one has to be aware that failures may stem from sources other than participant default. Property transfers are considered in more detail in **section 14.42** below.

Finally, various sections of the Banking Act 2009 dating from 31 December 2014 concerning 'resolution instruments', which apparently apply to CCPs because they do not exclusively concern bail-in, should be noted. Two are of interest, and may be summarised as follows:

- Under section 48H, a resolution instrument may require directors of the CCP to draw up a business reorganisation plan, and under section 48O directors may be required to comply with other general or specific directions set out in the instrument.
- Under section 48L, a resolution instrument may cancel, modify or convert securities.

Other powers which apply to CCPs and may be of interest are that termination rights may be curtailed in the case of a share transfer instrument or resolution instrument (sections 22 and 48M respectively) and that the Treasury has the power to amend the law under section 75.

Property transfers

14.42 Perhaps the most useful power granted to the Bank of England by Part 1 of the Banking Act 2009 is the power to make a property transfer instrument. Under this power all – or more likely some selection – of the assets and liabilities of the failing CCP may be transferred to a third party, such as a private sector purchaser or a bridge bank (a company owned by the Bank of England).[177] One might predict that, for a failing CCP, part of its cleared business relates to low-risk transactions (such as equities) which ought to be capable of continuing even if a problem has wounded another part (such as OTC derivatives); and if the businesses are separable, a partial lift-out might be achieved with suitable legal protection. The property transfer powers thus provide for a certain degree of immunity from challenge where this tool is used.

177 Banking Act 2009, ss 8, 11, 12, 33

To protect the effectiveness of transfer, one might note the following:

- Members' and counterparties' termination rights may be curtailed by virtue of section 38. So, rules or contractual rights which purport to give termination rights triggered upon the making of, or action taken under the terms of, share transfer instruments, property transfer instruments and resolution instruments may be ineffective. It may be observed that the ability to exercise close-out netting rights, which members may regard as particularly important, are emasculated by this provision. If CCPs are regarded as too important to fail, then the recovery powers are far more likely than a formal insolvency proceeding to come into operation in the event of a CCP suffering an event which could push it into insolvency. Notwithstanding that observation, while regulatory capital calculations persist in requiring a formal insolvency analysis of close-out netting, CCPs will remain under pressure to maintain rules which contemplate their own insolvency and to allow members to have a theoretical (but legally valid) right to close out and net off their positions and other exposures. However, the short-term moratoria introduced into the Banking Act in relation to banks undergoing resolution do not apply in the case of a failing CCP: for banks, the Bank of England can suspend payment obligations, secured creditors' enforcement rights and contractual termination rights until the end of the first business day after the publication of the resolution instrument.[178]
- Under section 63, the rump CCP entity and each group company must provide such service and facilities as are required to enable a transferee to operate the transferred business effectively. Under section 64, the Bank of England can cancel or modify contracts between the rump entity and group companies, add the transferee as a party to a contract, and confer and impose rights and obligations on any of them.
- The rulebook of the failed CCP may be applied to the transferee, with or without modifications, by virtue of section 89C. Likewise, under section 89D, the consequences of transfer for members, including the terms on which members participate in either the transferee or the transferor, may be stipulated in the transfer instrument.
- Under section 89E the transferee entity may receive authorisation automatically as a recognised central counterparty for a specified period. (Similarly, section 89G(3) removes an argument that a failed CCP which has lost its regulatory authorisation cannot be regarded as a 'recognised central counterparty' for the purposes of Part 1 of the Banking Act.)

It will also be observed that the members of the CCP could be adversely affected by a partial property transfer, in particular where linked assets and liabilities are de-coupled and that impairs the risk management of the member concerned. To protect the members, the following safeguards are in place:

- The principal worry for members (and indeed their clients) is likely to be the risk of unravelling of netting sets and the disjunction of security from the secured obligation. A property transfer which results in some, but not all, of a portfolio of nettable positions being transferred, or which results in the transfer of collateral without the relevant obligation (or vice versa), could undermine a risk management strategy and have deleterious

178 Banking Act 2009, ss 70A–70C

impact on the regulatory capital compliance of the affected members or clients. To reduce this risk the Banking Act 2009 (Restriction of Partial Property Transfers) (Recognised Central Counterparties) Order 2014[179] (the CCP Safeguards Order) introduces safeguards which should serve to protect netting, set-off and security. Article 3 of the CCP Safeguards Order prohibits a partial property transfer splitting up rights and liabilities where they are referable to the same default fund. So, if the CCP has a single default fund, a property transfer cannot separate any rights and liabilities of a person recorded in the CCP's accounts or which arise out of contributions to the default fund; and if there are several default funds, it cannot separate rights and liabilities recorded in the CCP's accounts as positions in the financial instruments covered by a particular default fund, assets held to cover those positions, or rights and liabilities which arise out of contributions to the same default fund. Article 5 prohibits the transfer of security without the secured liability and vice versa.

- Property held subject to the terms of a trust is subject to section 34(7), which allows for the terms of the trust to be altered or deleted. However, this may happen only to assist the transfer of the transferor's property rights or powers.[180]
- There is a wide power in section 89F for statutory instruments to be made to protect the financial interests of persons. It is not clear who would be obliged to fund the compensation payable, but given the overall objective of protecting the public purse set out in section 4, it seems likely that the payer would be the transferee of the surviving clearing business, with the statutory instrument being of an administrative nature only.

Finally, one might mention two other provisions which may be of interest. Article 6 of the CCPs Safeguards Order prohibits a property transfer which would render a market contract[181] unenforceable. It is not clear what might give rise to such a concern, since the deeming of a transferee to be authorised should remove an objection to enforceability for want of regulatory status which would otherwise arise under section 26 of FSMA. Also, by virtue of section 48A, a property transfer instrument may create liabilities. That is, it hardly needs to be said, an astonishingly broad power: The Bank of England would need to be very wary of the administrative law considerations which will constrain its exercise.

APPLICATION OF INSOLVENCY LAW TO INFRASTRUCTURES

14.43 The corporate operators of infrastructures will be subject to the normal statutory rules of insolvency: in the United Kingdom, the Insolvency Act 1986, the Insolvency Rules 1986, and various associated items of legislation such as the Company Directors' Disqualification Act 1986. Further, international provisions such as the EU Insolvency Regulation[182] and (as transposed by Member States)

179 SI 2014/1828
180 See s 37(8)
181 See **section 13.18(1)**
182 Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings

the Winding-up Directive,[183] Financial Collateral Directive[184] and Settlement Finality Directive[185] will also apply.

That leaves the special legislation in Part 7 of the Companies Act 1989 (Part 7), designed to protect infrastructures' default management procedures in the event of participant default, and the question whether it can be applied in an insolvency proceeding affecting the infrastructure itself. This question is explored in more depth below, but at the outset it may be worth recalling that Part 7 is not a separate insolvency regime applying to entities, but a modification of insolvency law in relation to market contracts, default action, certain transfers of property, and market charges.

14.44 Insolvency, as it affects infrastructures themselves rather than their participants, is a poorly documented subject. This is partly because there are few infrastructures relative to the number of participants, and still fewer insolvencies. In fact, the cases of infrastructure failure have typically been resolved without recourse to insolvency proceedings, no doubt because of the potentially devastating systemic consequences of an infrastructure being forced into a formal insolvency process. Nevertheless, the subject is important, as, without a study of it, the implications of an insolvency process cannot be fully understood, and appropriate planning cannot be carried out.

Initiating insolvency of CCPs

14.45 In ordinary commerce, a creditor or customer who has lost patience with a supplier of services has the option to invite the courts to initiate an insolvent liquidation of the supplier to ensure a fair distribution of its assets. However, where the creditor–customer is a clearing member of a CCP, the position is curiously different. VMGH does not postpone a member's entitlement to variation margin, it completely cancels it. Members continue to receive their due, but their due is nil, like a flawed asset cash collateral arrangement. Thus, clearing members are not creditors of the CCP for the foregone variation margin: the purpose of VMGH is to remove the main class of due debts during the period of VMGH. As non-creditors, clearing members are left in limbo: their standing to sue and to initiate insolvency proceedings is at risk.

In England and Wales, the ordinary position is that a company which cannot pay its debts may be wound up by the court, and an application for winding up may be made by any creditor, including a contingent or prospective creditor.[186] Not only may clearing members be unable to establish that they are 'creditors', but there may also be no solid ground for saying that the CCP cannot pay its debts. Although there may be a risk that members will not be paid their due in the future – returns of initial margin may be in jeopardy, or close-out payments due in respect of the default may go unpaid – this is to say that members are contingent creditors, not that they are already unpaid. Fear of future non-payment is not a default – unlike the terms of loan agreements, which typically

183 Directive 2001/24/EC of the European Parliament and of the Council of 4 April 2001 on the reorganisation and winding up of credit institutions

184 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements

185 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

186 Insolvency Act 1986, ss 122, 124.

envisage 'potential' events of default, the rules of the CCPs reviewed do not give remedies for anything other than actual non-payment.

The bizarre upshot of this is that it may be hard to initiate an insolvency proceeding for a CCP unless the CCP itself or its regulator decides to do so. If the mantra that 'continuity of functions' at any price is followed, that seems unlikely. Yet continuation in such circumstances appears to be in conflict with the wishes of clearing members, whom the CCP was designed to serve.

14.46 If these difficulties can be overcome, and a recognised clearing house or recognised CSD in the United Kingdom is to go into administration or to be wound up, the first step is for the Bank of England to be given two weeks' notice, during which time the Bank will decide whether to exercise a stabilisation power under the Banking Act 2009.[187] (It may be observed that the Banking Act powers are only available in respect of recognised CCPs and banks, so the purpose of the two-week wait for any recognised CSD is more likely to enable the Bank to initiate an FMI administration under FSBRA, although this is not expressly mentioned.) Once insolvency proceedings commence, the Bank can give directions to the insolvency practitioner.[188]

14.47 The features of a formal insolvency process for an infrastructure which may be worth special attention include the following.

(1) *Status of infrastructures as 'participants'.* By virtue of regulation 2(1) of the Settlement Finality Regulations (SFRs),[189] a central counterparty, a settlement agent and a clearing house are each to be regarded as a 'participant' in a designated system. A 'central counterparty' is defined as a person 'interposed between the institutions in a designated system and which acts as the exclusive counterparty of those institutions with regard to transfer orders'. In relation to payment and securities settlement systems, the system operator is likely to be a 'clearing house' (defined as a person 'responsible for the calculation of the net positions of institutions and any central counterparty or settlement agent in a designated system') or a 'settlement agent' (a person 'providing settlement accounts to the institutions and any central counterparty in a designated system for the settlement of transfer orders within the system and, as the case may be, for extending credit to such institutions and any central counterparty for settlement purposes').[190] By virtue of the SFRs, the insolvency officer of the infrastructure operator itself will be subject to the constraints which would apply in the case of an insolvent direct user of the infrastructure – including the inability to challenge transfer orders on various insolvency law grounds,[191] and the disapplication of the administration moratorium as it would otherwise apply to collateral security provided in connection with the system.[192] These constraints will not give any immediate relief to other participants in the failed system beyond the knowledge that perverse challenges under insolvency law are ruled out.

(2) *Performance by the infrastructure is not assured.* Although there is no universal right to close out and rule off the financial aspects of the

187 FSMA, Sch 17A, para 34
188 FSMA, Sch 17A, para 35
189 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/ 2979
190 SFRs, reg 2(1)
191 SFRs, regs 14, 16, 17, 19; see further **section 13.11ff**
192 SFRs, reg 19

uncertainty which an infrastructure's failure will cause, the inevitable consequence of an insolvency proceeding is that the infrastructure operator will cease to perform most of its obligations. Thus: payments will not be made and unsecured obligations will remain unperformed with impunity; deposits (including margin and default fund contributions) will suffer the same fate; and contractual to deliver securities or other property will not be performed. These reactions are not simply unfortunate; they are necessary, the legally required responsibility of the insolvency officer whose duty it is to maximise the estate for *pari passu* distribution among the creditors. Continuation of normal operations would be incompatible with that preservative function.

(3) *Cash deposits and title transfer collateral are gone.* As the infrastructure will be an unsecured obligor as regards cash deposits and title transfer collateral received, in an insolvency proceeding the character of those obligations as debts ranking for no special treatment will be apparent. They are not 'bankruptcy remote' entitlements.

(4) *Client segregation is compromised.* The obligation to segregate client cash and contracts as applied to CCPs[193] and CSDs[194] must be understood, as it will not survive insolvency. 'Segregation' of client cash and contractual entitlements depends on recording the cash and contractual entitlements in different accounts.

As regards CCPs, the objective of segregation is to protect the clients against the failure of a *participant* in a CCP, rather than failure of the CCP itself, so the accounts in question will exist only on the books of the CCP. This kind of segregation does not imply insulation from the insolvency of the account-provider: the 'segregation' may withstand the insolvency, in the sense that the client claims will remain distinguishable from the non-client claims, but this will not give the client claimants any priority in the insolvency process. The CCP will be liable as debtor in relation to cash claims and contractual entitlements, and its insolvency will reduce these claims to an entitlement to dividend only. Given the general language used in section 182A of the Companies Act 1989, which prohibits the set-off of house against client account balances, it should be clear that the liquidation or administration of a CCP should not disturb the firewall between them. (It is perhaps regrettable that, when Part 7 was amended so as to render it inapplicable to the insolvency of recognised central counterparties, it was not more clearly stated that section 182A applies to all relevant insolvencies, not just those of 'defaulters' and the limited class of non-defaulters listed in section 158(2).[195])

As regards CSDs, the analysis is different from CCPs, since CSDs have nowhere else to place assets for which they provide the root of title. One might distinguish the two by noting that CCPs have assets entrusted to them, which they then place with third parties, whereas CSDs acting as root of title are the fount of assets and do not have anything entrusted to them unless they are acting via interoperability arrangements.[196] So it is not easy to see how a CSD holding the root of title could ever achieve 'segregation' going beyond its own books – unlike a CCP, which can ask

193 EMIR, art 39
194 CSDR, art 38
195 See **section 13.24**
196 See **section 15.44**

its custodian to open a segregated client account. The law should provide that a CSD has no ownership interest in securities for which it provides a root-of-title service to its participants, and such securities should be bankruptcy-remote in the event of the CSD's failure. That result will not follow automatically from the 'segregation' obligations in article 38 of the CSDR.

(5) *Client and non-client assets may be trapped.* A CCP is likely to hold non-cash assets at a third party, who may, or may not, provide separate accounts referable to the CCP's own members' client and house accounts. Non-cash assets not belonging to the CCP might avoid falling into the insolvent estate, though as ever with omnibus accounts there may be a complex and protracted reconciliation effort to identify each claimant's true entitlement. Insolvency of a CSD ought not to jeopardise the integrity of the CSDs' records of entitlement either; but the circumstances which cause a CSD to become so fatally compromised before lift-out is implemented are highly likely to imply failure of record-keeping. Moreover, the insolvency regimes available to insolvent investment banks, designed to enable client assets to be returned speedily through a special administration process, do not apply to CCPs or CSDs in the United Kingdom, as they do not hold the regulatory permissions necessary to qualify as 'investment banks'.[197]

(6) *Close-out will not be uniform.* Solvent participants will take such action as they consider suitable to protect their own interests. Where they have the power to do so they will cease to make payments and post collateral. If they can close out contractual obligations to minimise loss they will do so; but this does not imply that all the obligations would be closed out, or all at the same time. Where margin is irretrievable, leaving contracts open so as to defer and reduce a loss may be the more logical approach. The upshot is that the insolvency procedure for a CCP could be very complex and slow to resolve. Regulators may seek to intervene to avoid these consequences, but the outcome cannot be assured.

CASE HISTORIES – FAILURES OF CCPS

14.48 There have been several failures of CCPs: the Caisse de Liquidation des Affaires en Marchandises in France in 1974, the Kuala Lumpur Commodity Clearing House in 1983, and the Hong Kong Futures Guarantee Corporation (the Guarantee Corporation) in 1987.[198] Perhaps the oldest is the failure of the Gold Exchange Bank in New York in 1866.[199] Recent research provides an interesting and detailed examination of the Caisse de Liquidation example. [200] However, the case in regard to which the most salutary detail is available is that of the Guarantee Corporation, illustrated in **Case Study 14.1**.

197 Banking Act 2009, s 232

198 Hills, B, Rule, D, and Parkinson, S, 'Central Counterparty Clearing Houses and Financial Stability' (June 1999) *Bank of England Financial Stability Review*; Norman, P, *The Risk Controllers* (Wiley, 2011), ISBN 978-0-470-68632-4, pp 131–146

199 Pirrong, C, *Back in black* (July 2010), blog, http://streetwiseprofessor.com/?p=4023

200 Bignon, V and Vuillemey, G, *The Failure of a Clearinghouse: Empirical Evidence* (December 2017) ECMI Working Paper No 6, see http://aei.pitt.edu/92749/

Case Study 14.1 The Hong Kong Futures Guarantee Corporation

THE PLAYERS

The Guarantee Corporation, whose function was to act as guarantor of contracts entered into on the Hong Kong Futures Exchange

ICCH (Hong Kong) Limited, which carried out the CCP risk management function for the Guarantee Corporation.

This arrangement left the Guarantee Corporation, rather than ICCH, with the financial exposure to defaulters, although ICCH was a shareholder in the Guarantee Corporation.[201]

THE BACKDROP

The global plunge in stock prices which took place during the period 15–20 October 1987. Of the indexes tracking the behaviour of the world's major financial markets, the Hang Seng Index (HSI) fell the furthest – a 45% drop over a three-week period. The Hong Kong Stock Exchange was closed to trading for a period of four days, as was the Hong Kong Futures Exchange, and when trading re-opened the fall in prices significantly exceeded the worst predictions. The spot HSI futures contract was reportedly the world's second-largest traded index contract at the time: as stock prices fell 33% on the day cash-market trading resumed, so the HSI futures contract fell from 3529 to 1975 (a 44% drop).[202]

THE CONSEQUENCES FOR THE GUARANTEE CORPORATION

During the period of the suspension, life had not been quiet in the futures market. Failures to post margin were predicted in respect of brokers exposed to the HSI futures contract, and ICCH had made intra-day margin calls. Owing to the financial weakness of the Guarantee Corporation, a support package of HK $2 billion was put together in time for the re-opening of the markets. This took the form of a loan by the Hong Kong Government (diverted from the Exchange Fund – sums intended to stabilise the Hong Kong dollar in the money markets), the Guarantee Corporation's shareholders, and members of the Futures Exchange. The expectation was that HK $2 billion would be sufficient to protect against a 1,000-point fall in the HSI.[203] Special legislation was passed to remove doubt as to the ability of the Guarantee Corporation to recover funds for repayment of the loans: this was achieved by a special levy on transactions in the HSI and on transactions done on the Stock Exchange, as well as from Futures Exchange members who had defaulted on margin calls.[204]

201 Norman, p 144

202 Cremer, R, and Zepp, R, *Stock Market Crash 1987: A Hong Kong Perspective* (UEA Press, November 1987), ISBN 962-308-003-4, pp 49, 88, 113

203 Cremer and Zepp, *Stock Market Crash 1987,* pp 78–79

204 Jacobs, P, speech to the Hong Kong Legislative Council moving the second reading of the Exchanges (Special Levy) Bill 1987 (28 October 1987)

Because the fall in the HSI was greater than expected, and some defaults had been anticipated,[205] the problem was worse than the authorities had bargained for: 43 Futures Exchange members were suspended for failure to meet margin calls, writs were issued against 39 brokers, and the newspapers carried reports of bounced cheques.[206] The Guarantee Corporation requested a further bail-out of HK $2 billion, this time to be split between the Hong Kong Government's Exchange Fund and three major banks. In the event, it was not needed.

14.49 Regardless of the causes of the Guarantee Corporation's failure, it may be remarked that the Guarantee Corporation did not suffer an insolvency event. However, the following comments might also be made. Special legislation was needed to ensure that the Guarantee Corporation could be restored to solvency. It is no solution to a problem of solvency to lend the insolvent person money: a loan must be repaid, so what is required is a source of permanent funding. While the appearance of the process to resurrect the Guarantee Corporation is that the shareholders were asked to bear the pain, the reality is different: the market users were the ultimate sufferers. This may be fairer than leaving the problem with the government (and the taxpayer) but the surviving market users, who had already sustained substantial losses in many cases owing to the collapse in equity prices, were being asked to plug the gap left by defaulters in a mutualisation scheme imposed on them, without their consent, after the event. There is much to criticise in this ad hoc manner of dealing with the problem.

14.50 The CCPs in the United States also had to deal with similar problems of large margin calls affecting the solvency of their participants in October 1987. The effect was as follows:

> 'Under normal conditions, banks typically extended short-term credit to clearing members to permit them to meet margin calls and to deal with the mismatch between the time that members had to post variation margin with the clearinghouse and the time that customers paid variation margin to the members. Given the huge amount of margin payments pending, and the uncertainty about the effect of the crash in prices on the financial condition of clearing members, many banks were reluctant to extend credit as normal. Absent credit, some CCPs' members would have been unable to meet margin calls, and the margin shortfalls would have exceeded the ability of the clearinghouses to meet their obligations to those with winning trades, thereby forcing the closure of the clearinghouses — and of the markets. Moreover, concerns about the solvency of clearing members sparked rumours about the solvency of the CCPs. These rumours sparked additional panic selling that contributed to the magnitude of the crash.
>
> Disaster was averted at the last minute due, in large part, to the intervention of the Federal Reserve. The Fed assured the market that it would supply sufficient liquidity to market members. It pressured banks to lend to securities firms and clearing members. It also permitted a large bank to absorb the

205 Hay Davison, I, *The operation and regulation of the Hong Kong securities industry – Report of the Securities Review Committee* (May 1988), www.fstb.gov.hk/fsb/ppr/report/davison.htm, para 6.14

206 Cremer and Zepp, *Stock Market Crash 1987,* pp 95, 101, 102

liabilities of a subsidiary that was a major clearing firm, thereby preventing its default. In the end, it was a close-run thing.'[207]

14.51 In the twenty-first century there seem to have been no cases of CCP collapse, but two situations have been interpreted as near-misses or at least object lessons.

(1) *KRX, 2013*. An execution error by HanMag Securities, a firm trading on the Korea Exchange, caused the firm to lose a sum approaching USD40 million which it was unable to satisfy. Under the rules in force, the skin-in-the-game segment of the default waterfall kicked in after USD 190 million of losses were covered by the mutual obligations under the participants' default fund. Clearing members had to top up their contributions after KRX utilised the fund to cover HanMag's loss. There was an outcry that the loss had fallen on the non-defaulting members.[208]

(2) *Nasdaq Oslo, 2018*. Failure to meet a margin call made in respect of electricity futures positions led to the default of the individual trader. The positions were auctioned as part of Nasdaq Clearing AB's default management process. Only four bidders participated in the auction, which gave a close-out price which exceeded the margin provided by the defaulter. Under the EMIR model, the skin-in-the-game provided by Nasdaq, a sum of €7 million, was utilised after the defaulter's own contribution to the default fund, but the bulk of the losses – a further € 166 million – was soaked up by the non-defaulters' contributions. The case raised questions about the integrity of the auction process and the effectiveness of the margin model used in a small, specialised market.[209]

CASE HISTORIES – FAILURES OF PAYMENT AND SECURITIES SETTLEMENT SYSTEMS

14.52 One example of failure of a settlement process may be the 'paper crunch' of securities settlement in the late 1960s and early 1970s.[210] Briefly, what happened was due to the complete absence of any settlement 'system', with broker-dealers left to sort out the problems of delivery of paper certificates and collection of payments from counterparties in the absence of any form of delivery-versus-payment assurance. When volumes rose, so did the unprocessed backlog in back-offices, and some firms were driven into bankruptcy. The outcome was the creation of the Euroclear system in Europe and the DTC in the United States.

Reports of collapses of systemically important payment and settlement systems are mercifully absent from the literature. This may be because many payment and

207 Pirrong, C, *The Inefficiency of Clearing Mandates* (July 2010), The Cato Institute, Policy Analysis No.665, http://www.cato.org/pub_display.php?pub_id=11990; see also Norman, pp 135–143

208 See McPartland, J and Lewis, R, 'The Goldilocks Problem: How to get Incentives and Default Waterfalls "Just Right"' (2017), *Federal Reserve Bank of Chicago* Economic Perspectives, Vol 41, No 1

209 See Bell, S and Holden, H, 'Two Defaults at CCPs, 10 Years Apart' (December 2018), *BIS Quarterly Review* p 75

210 See Norman, P, *Plumbers and Visionaries* (Wiley, 2007), ISBN 978-0-470-72425-5, pp 20–23; Donald, D, *Heart of Darkness: The problem at the core of the US proxy system and its solution* (December 2010), http://works.bepress.com/david_donald/3/

settlement systems have historically been operated by central banks. However, there are privately operated systems, and there have been some 'near misses', of which a useful illustration comes from the collapse of Baring Brothers in 1995.[211] The CPSS noted that the case

> 'demonstrates the potential problems … If the sending bank had not eventually agreed to borrow in order to cover its payment … [t]he clearing would have had to be unwound, so that no payments between any of the 45 ECU clearing banks would have been settled on the due day, even though less than 1% of those payments had anything to do with Barings. The failure to settle could have had very serious consequences for the banks, and for their customers'. [212]

211 See **Case Study 2.3**

212 Bank for International Settlements Committee on Payment and Settlement Systems, *Settlement risk in foreign exchange transactions* (March 1996), www.bis.org/publ/cpss17.pdf, s 2.2.5

15 Interoperability

INTEROPERABILITY DESIGNED, INTEROPERABILITY DEFINED

15.1 The G30's report on Clearing and Settlement in 2003 (the G30 Report)[1] made 20 recommendations on clearing and settlement. These were grouped into three sections, of which the first, with eight recommendations, is called 'Creating a Strengthened, Interoperable Global Network.' 'Promoting competition and innovation is not simply a matter of removing specific barriers, but also of creating compatible systems that permit seamless operations on a global basis.'[2] The G30 Report defines interoperability in the following terms:

> 'Interoperability refers to the ability of participants along the clearing and settlement value chain to communicate and work with service providers and other participants without special effort on the part of users. Interoperability involves more than technical compatibility of systems, although standardized communication, messaging, data, and timing are clearly essential. The ability of systems to interoperate also requires like or compatible processes, business practices, controls, technologies, products, access arrangements, and fee structures.'[3]

The G30's eight recommendations for interoperability cover automation of data capture and trade matching, harmonisation of messaging standards, development of reference data standards, synchronisation of timing, use of CCPs and securities lending, and automation and standardisation of asset servicing processes, corporate actions, tax claims and so forth. These recommendations are aimed at one aspect of interoperation of systems: compatibility, connectivity, and standardisation. Historical examples were given in the G30 Report about railway gauges, air traffic control arrangements, and telecommunications, all of which have been made internationally compatible. The securities industry needs equivalent measures.

Structural interoperability v standards

15.2 Having a single standard for post-trade services is clearly beneficial. The costs and delays in having to cope with multiple standards and local idiosyncrasies slow down processes and inhibit growth and international trade in investments. Without technical interoperability, it is difficult to achieve straight-through-processing, and manual interventions or bespoke technical solutions may

1 Group of Thirty, *Global Clearing and Settlement – A Plan of Action* (January 2003)
2 G30 Report, p 26
3 G30 Report, p 14

tend to introduce errors. Furthermore, 'interoperation will enable competition between payment processors, so that payment service providers can easily connect to or switch processing partners, or, if they desire to do so, to connect easily to other payments service providers directly. Technical interoperability will enable the payment processors to reach new markets. Interoperability will potentially create accessibility to and from all, thus realising a level playing field for all involved'.[4] While this statement was made in the context of technical interoperation between payment systems, the concepts and rationale translate readily into other post-trade environments.

Interoperability would thus appear to be about standards and technical matters. The development of Target2-Securities is an example of this type of interoperability,[5] but a long discussion about such details would be out of place here. Rather, in Europe, the concept of 'interoperability' has taken on a distinct meaning, referred to here as 'structural' interoperability, which is not primarily about the securities equivalent of railway gauges, telecommunications or other aspects of technical interoperability. Structural interoperability is needed because of the European policy to promote competition between infrastructures. And, because infrastructures need links in order to compete, structural interoperability is about obligations owed by one infrastructure to another.

Europe's post-trade infrastructure is still fragmented. The proliferation of trading platforms stimulated by MiFID,[6] and the focus on central clearing since the financial crisis of 2008, have together allowed numerous CCPs to develop in Europe. CSDs are still organised on national lines, despite the efforts of the post-crisis legislation. Yet there is a 'single market' which this infrastructure is supposed to serve. It is, in theory, possible for a Polish investor to sell a French share to an Irish fund on a Belgian MTF, clear the trade through a Dutch CCP, and, with the implementation of Target2-Securities, settle the trade through an Italian CSD. But the counterparty who has bought the French share may wish to clear the trade using another CCP and settle directly in the French CSD. Somehow those differences must be aligned: the fragments must be joined up. Joining the pieces requires the infrastructures to be 'interoperable'. In practice, that means that links must be forged between the interoperating entities. Structural interoperability is thus a matter of creating those links and making them work.

Definitions of interoperability – vertical and horizontal

15.3 'Interoperability' is curiously defined in the European Code of Conduct for Clearing and Settlement[7] (the Code). It means 'advanced forms of relationships amongst Organisations where an Organisation is not generally connecting to existing standard service offerings of the other Organisations but where Organisations agree to establish customised solutions. Amongst

4 European Automated Clearing House Association, *Technical Interoperability Framework for SEPA-Compliant Payments Processing* (March 2009), EACHA Taskforce Report v4.1, www.eacha.org/downloads/EACHA%20Framework%204.1%20CV.pdf, para 2.2

5 See section **2.23**

6 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

7 FESE, EACH and ECSDA, *European Code of Conduct for Clearing and Settlement* (November 2006), http://ec.europa.eu/internal_market/financial-markets/docs/code/code_en.pdf

its objectives, Interoperability will aim to provide a service to the customers such that they have choice of service provider. Such agreement will require Organisations to incur additional technical development'. This verbiage is unhelpful and, being opaque, it is unlikely to engender development of links between infrastructures.

The definition of an 'interoperability arrangement' in EMIR,[8] which is concerned with clearing, is a little better. In EMIR at least, it means 'an arrangement between two or more CCPs that involves a cross-system execution of transactions'. Surely not? 'Execution' is a word which might apply to fulfilment of orders or to settlement; CCPs are not involved in either of these, but the post-bargain pre-settlement aspects of transactions, 'Cross-system' clearing' is presumably what was intended.

15.4 It is probably better to think of structural interoperability in the following terms:

- Interoperability is needed where trading members of the same marketplace (or their agents) wish to use different infrastructures from each other to clear or settle their trades.
- Interoperability implies that there is either more than one CCP or more than one CSD providing post-trade services for a single type of trade done in the same marketplace.
- Interoperability requires that the different infrastructures agree on common standards and processes in order to provide efficient post-trade services to the satisfaction of all trading members according to their choice.
- Interoperability also implies that the interoperating infrastructures provide services to each other.
- Interoperability may be needed between infrastructures providing the same service (horizontal interoperability, as between two CCPs or between two CSDs) or between infrastructures providing different services (vertical interoperability, as between a CCP and a CSD).

Interoperability can thus mean 'access conditions' – in other words, the basis upon which one infrastructure allows another to participate in it or to enjoy the right to provide services to its participants: for example, the right of a CCP to clear for a platform, or the right of a CSD to settle transactions emanating from a platform or CCP.[9] This chapter is not concerned with those types of vertical inter-operation. Interoperability in the sense used here means horizontal interoperability between CCPs, between CSDs, and between payment systems.

15.5 The following points may be made at the outset, because they are central to the understanding of the issues arising in relation to horizontal structural interoperability:

(1) Where two *CCPs* are to clear the same marketplace, some traders will select one CCP and others will select the other. Since each CCP needs to have a matched book, there needs to be a sale-and-purchase contract between the two interoperating CCPs. Interoperability is thus about far more than standards: it is about counterparty risk and the terms on which CCPs are permitted to become participants in each other's system.

8 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, art 2(12)

9 See **section 11.24**

(2) Where two *CSDs* are to settle the same securities, the problem is different. Here the fundamental consideration is that in the majority of cases one CSD will have the 'root of title'[10] whereas the other will not. The CSD which does not have the root of title will only be able to settle transactions in securities to the extent that it has a securities account at the CSD which is the Issuer CSD, and debit and credit entries are made to that account whenever one of the trading parties participates in the Issuer CSD. Interoperability between CSDs is not about counterparty risk but it is about the terms on which participation in Issuer CSDs may be granted to other CSDs. (The exceptional case where the Issuer/Investor CSD dichotomy over root of title does not arise is where two CSDs rely on a 'common depository' to provide a common root.[11])

Merits of horizontal interoperability

15.6 Philosophically, horizontal structural interoperability is not straightforward. It requires infrastructures which are competing with each other for business to reach agreements among themselves about cooperation. At the heart of a horizontal interoperability arrangement is an agreement by one party to assist the other party in its effort to take away part of the first party's business. One party is likely to be an incumbent, and to wish to continue in that position, and so to be tempted to impose its own standards or in other ways to control the relationship; yet the objective of interoperability is equivalence of result for market users. Interoperability is, therefore, a somewhat unnatural order of things.

One might thus be tempted to ask whether fragmentation and re-connection is efficient or desirable. Other single markets – notably the United States – seem to manage quite well with a single, integrated infrastructure. But in Europe it is deliberate policy to have fragmentation. Competition between infrastructures is still believed to have beneficial, cost-reducing effects, notwithstanding that the complexities of interoperability introduce other costs and risks, as this chapter will explain. Consolidation of infrastructures (by mergers of CCPs with each other or CSDs with each other) faces regulatory and competition-driven obstacles which discourage a move towards a US model, notwithstanding a sheaf of market-user propaganda arguing for it.[12]

The following further observations might be made:[13]

(1) Interoperability is in theory pro-competitive. By enabling market participants to choose their preferred infrastructure, a variety of service offerings might be made available, so that investor A can choose cheap but cheerful, and investor B can choose proud but pricey. That theory, however, does not withstand the regulatory environment, which normalises the behaviour of infrastructures in the interests of reducing systemic risk. Cheap and cheerful, to put it simply, may not be allowed.[14]

10 See **section 2.18**
11 See **section 2.26**
12 See **sections 11.29–11.32**
13 Cf European Securities and Markets Authority, *Possible systemic risk and cost implications of interoperability arrangements – Final report* (March 2016), ESMA/2016/328
14 Cf **section 15.20**

(2) Having multiple interchangeable infrastructures should provide for redundancy and thereby protect against systemic risk. Dr Manmohan Singh says, in relation to CCPs, that '[a]ll else being equal, interoperability reduces both (i) the probability of default of CCPs since the overall netting will be higher, which results in smaller tail risks at CCPs, and (ii) the sizable collateral needs associated with offloading derivative risks to multiple CCPs'.[15]

(3) Where competition does occur, the cheapest or most efficient provider may indeed win out, but the consequence may be the elimination of the other interoperating infrastructures, resulting in a dominant winner or monopoly. But there is no incentive to infrastructures remaining small, and indeed this is potentially inefficient.

(4) Having interoperating CCPs clearing the same product potentially increases netting efficiency for participants, which might otherwise have to participate in several CCPs serving separate trading venues. On the other hand, the European Securities and Markets Authority (ESMA) noted in 2016 that 'the overlap of membership at CCPs party to interoperability arrangements is still relatively high', notwithstanding that the interoperability arrangements had been in effect for several years. 'This could indicate that membership at a CCP provides benefits which cannot be substituted by access to an interoperable link … It could also indicate that the benefits of interoperable arrangements have not been fully utilized yet.'[16]

(5) Not all commentators agree that a multiplicity of interoperating CCPs is optimal.[17] Indeed, one study draws the conclusion that a horizontal link can work to the disadvantage of the smaller CCP and reduce netting efficiency.[18]

(6) Commentators agree that interoperability between CCPs is hard to bring about.[19] In 2019, the links between CCPs in Europe consisted only of the following:[20]

- LCH Limited, SIX x-clear and EuroCCP have links between them for clearing of cash equities and ETF transactions
- LCH SA and CC&G have a link for clearing of Italian Government bond transactions.

15 Singh, M, *Making OTC Derivatives Safe – A Fresh Look* (March 2011), IMF Working Paper WP/11/66; see also Caserta, S, *Systemic Risk in Central Counterparties Clearinghouses*, in Engelen, P-J, and Lannoo, K, eds, *Facing New Regulatory Frameworks in Securities Trading in Europe* (Intersentia, 2010), ISBN 978-90-5095-973-5, pp 147–158

16 ESMA, March 2016 Report, para 105

17 See Evanoff, D, Russo, D, and Steigerwald, R, *Policymakers, Researchers, and Practitioners discuss the role of central counterparties* (July 2007), www.ecb.int/pub/pdf/other/rolecentralcounterparties200707en.pdf, p 10

18 Anderson, S, Dion, JP and Perez-Saiz, H, 'To link or not to link? Netting and exposures between central counterparties' (May 2013), *Journal of Financial Market Infrastructures* vol 1 pp 3–29

19 See, for example, Pirrong, C, *The Economics of Central Clearing: Theory and Practice* (May 2011), ISDA Discussion Paper No 1, www2.isda.org/attachment/MzE0NA==/ISDAdiscussion_CCP_Pirrong.pdf, p 43; Chlistalla, M, *OTC derivatives – a new market infrastructure is taking shape* (April 2010) Deutsche Bank Research, www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD0000000000256894.pdf, p 10; Kalogeropoulos, G, Russo, D and Schönenberger, A, *Link arrangements of Central Counterparties in the EU – Results of an ESCB survey* (July 2007), www.ecb.int/pub/pdf/other/rolecentralcounterparties200707en.pdf, pp 50–58

20 European Systemic Risk Board, CCP Interoperability Arrangements (January 2019), section 3.1

A former link between LCH Limited and SIX x-clear for clearing of derivatives traded on an order book shared between the London Stock Exchange and Oslo Børs was closed in June 2019 (see **Case Study 15.1**).

The European Systemic Risk Board (ESRB) noted in a report of 2016 (the ESRB 2016 Report) that there is no correlation between the number of CCPs authorised to clear an instrument class and the existence of an interoperability arrangement.[21] A senior spokesman for the European Central Bank suggested in 2015 that clearing members 'may not yet have fully grasped the benefits they would reap from widespread CCP interoperability' and 'it may take some years for market participants to seize all that EMIR has to offer in terms of incentivising interoperability'.[22] As discussed below, the problems are challenging, and the arguments valid on both sides, so that more may be needed than market participants' recognition that interoperability is good.

(7) Competition among CSDs is also very difficult to achieve through interoperability owing to the Issuer/Investor CSD 'root of title' issue. Investor CSDs act as intermediaries and introduce a layer of cost.[23] Whether CSD interoperability constitutes 'competition' among peers is debatable. Consequently, CSD interoperability does not provide for redundancy or systemic risk protection.

(8) The ESRB 2016 Report also draws attention to the possibility for interoperating CCPs to be used by clearing members for devious purposes.[24] These could include splitting a large position between two CCPs in order to reduce overall margin amounts, or to conceal the size of the position as part of a market-abusive scheme. No evidence has been presented of such behaviours occurring in practice.

In 2008 the Committee of European Securities Regulators, the forerunner of ESMA, conducted a comprehensive survey of regulatory reasons why, in practice, structural interoperability was not actually happening.[25] The report included the following barriers to interoperability in the summary of its findings:

- CCPs may be unable to carry on business in some Member States unless they hold a banking licence.
- CCPs and CSDs will typically have to go through a local process of obtaining authorisation or recognition in order to carry on business in a host Member State – in other words, there was no 'passport' for CCP or CSD activity.
- CCPs and CSDs impose criteria for participation which may be difficult for other CCPs/CSDs to fulfil, such as membership of the local stock exchange.

The last two of these barriers ought to have been removed by subsequent legislative rules.

21 European Systemic Risk Board, ESRB Report to the European Commission on the Systemic Risk Implications of CCP Interoperability Arrangements (January 2016)

22 Coeuré, B, The international regulatory agenda on CCP links (November 2015), Speech, www.ecb.europa.eu/press/key/date/2015/html/sp151102.en.html

23 See **section 15.46**

24 ESRB 2016 Report, p 19

25 Committee of European Securities Regulators, *Preliminary Technical Advice by CESR in response to the Mandate from the European Commission on Access & Interoperability Arrangements* (February 2009), www.cesr.eu/index.php?docid=5572

EUROPEAN LAW OF INTEROPERABILITY

15.7 Legal rules conferring rights whereby structural interoperability might be achieved have been strengthened, by virtue of provisions in the CSDR[26] compelling CSDs to grant horizontal access. As to the implementation of interoperability between CSDs and between CCPs, there is legislative material in the CSDR and EMIR[27] respectively. For interoperability between payment systems, there is limited legislation in the SEPA Regulation.[28] There is also provision which covers payment and securities settlement systems, and CCPs, in the Settlement Finality Directive (SFD).[29]

(1) The SFD was amended in 2009[30] to ensure that the insolvency protections made available to designated systems would apply effectively where the parties to a transfer order participate in different, interoperable systems. The operators of interoperating systems are also required to coordinate their rules on the moment of entry and irrevocability in their systems. Bearing in mind that all three main types of infrastructure (CCPs, CSDs and payment systems) may be designated under the SFD, this development has the broadest scope. The SFD is, however, not prescriptive as to the outcomes which interoperability should achieve. Indeed, the SFD says that one interoperable system's rules as to (i) the moment of entry of a transfer order into its system and (ii) the moment of irrevocability of a transfer order are *not* affected by any rules of the other systems with which it is interoperable.[31] The CSDR goes further in terms of requiring interoperable systems to achieve simultaneous finality, at least on the securities leg of a settlement.[32]

(2) EMIR contains an entire Title[33] on interoperability arrangements between CCPs which clear transactions in transferable securities and money-market instruments.[34] This provides for the CCPs' risk management to be adapted to the link arrangements, which must be the subject of an agreement; and for inter-CCP margin to be segregated and excluded from any 'right of use' otherwise available to a CCP.[35] CCPs must obtain regulatory approval for interoperability arrangements. It is recognised that the trading venues hold many of the cards which control the effectiveness of an interoperability arrangement. Accordingly, CCPs are granted 'non-discriminatory access' to data needed for performance of its functions, subject to compliance 'with the operational and technical requirements established by the trading venue'. Non-discriminatory access to settlement systems is also

26 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc

27 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

28 Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro etc

29 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

30 Directive 2009/44/EC of the European Parliament and of the Council of 6 May 2009 amending Directive 98/26/EC on settlement finality, etc

31 SFD, arts 3(4) and 5 respectively

32 CSDR, art 48(8)

33 Title V

34 EMIR, art 1(3)

35 Cf **section 15.22**

granted. Unfortunately, the relevant provisions are written in the passive voice, making it unclear on whom the relevant legal obligations lie, and thereby complicating the process of enforcement.[36]

(3) The CSDR, in addition to various provisions dealing with vertical interoperability, gives a CSD a right to become a participant in any other CSD, subject to regulatory approval.[37] There are also various risk management provisions:[38] linked CSDs have to have robust reconciliation; DvP has to be achieved across a link 'where practical and feasible'; and linked CSDs have to have identical moments of entry of transfer orders and irrevocability of transfer orders, and to use equivalent rules concerning the moment of finality of transfers of securities and cash, if they use a common settlement infrastructure.

(4) Provisions in MiFIR designed to facilitate vertical interoperability between CCPs and trading venues are disapplied where the link would require horizontal interoperability between derivatives-clearing CCPs.[39]

15.8 Under article 54(4) of EMIR, ESMA is obliged to issue guidelines or recommendations with a view to establishing consistent, efficient and effective assessments by national competent authorities of interoperability arrangements between CCPs. Guidelines and Recommendations were issued in 2013,[40] covering the following matters:

- *Legal risk*. ESMA lays down broad principles to ensure that interoperability arrangements are properly documented. On the substantive content of the documentation the Guidelines are not prescriptive, at least insofar as the matters discussed in this chapter are concerned.
- *Access*. ESMA attempts to remove arbitrariness from the establishment, extension and termination of interoperability arrangements.
- *Risk management*. This is an extensive guideline covering many issues discussed in detail in this chapter. One might highlight the following. Credit and custody risks should be assessed and mitigated no less rigorously for interoperating CCPs than for clearing members. Inter-CCP 'resources' are to be available to cover credit and liquidity risks, including those arising in extreme but plausible market conditions. Default management is considered, but ESMA stops short of being prescriptive: various matters are listed, but it is only guidance on what should be thought about. Interestingly, ESMA also advises that the membership criteria of the *other* CCP be considered, recognising that control-at-the-gate is an important way in which risk controls might be weakened.[41]
- *Collateral*. Inter-CCP collateral must be held in such a way as to be protected from the default of the receiving CCP. This is not exactly what the Guideline and Recommendation says, but it is what it means: see **section 15.24**.

36 EMIR, art 51(2)
37 Articles 50–52
38 CSDR, art 48
39 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc, arts 35(4) and 36(4); see **section 11.24**
40 European Securities and Markets Authority, *Guidelines and Recommendations for establishing consistent, efficient and effective assessments of interoperability arrangements* (June 2013), ESMA/2013/322
41 See **section 15.22(1)**

- *Cooperation between regulators*. ESMA calls for cooperation and information sharing during the assessment phase and in addition to the college arrangements under article 18 of EMIR.

15.9 As to CSDs, the European Central Bank's Eligibility Criteria for CSDs in Target2-Securities (T2S)[42] require a CSD which wishes to join T2S to do two things to assure interoperability: an Issuer CSD must make every security available to each other T2S CSD, and it must offer a basic custody service to each other T2S CSD. Interoperability between CSDs requires that the Issuer CSD allows the Investor CSD to become its client, and for CSDs participating in T2S there are no grounds on which the Issuer CSD could refuse.

Under CSDR RTS 392[43] the CSDR has been amplified with various provisions concerning interoperability of CSDs. These concern risk issues which an investor CSD should consider in relation to its participation in an issuer CSD, reconciliation procedures, and DvP.[44]

Cross-border links after Brexit

15.10 The departure of the United Kingdom from the European Union affects cross-border interoperability arrangements which were, until then, intra-EU affairs. From the viewpoint of both UK and EU legal systems these need to be re-evaluated and re-validated.

As regards the triangular CCP links between LCH Limited, EuroCCP and SIX x-clear, Title V of EMIR still applies in the European Union, provided that the United Kingdom is regarded as an equivalent jurisdiction and that LCH Limited is a recognised third-country CCP. Correspondingly, the United Kingdom will need to regard the Netherlands and Switzerland as equivalent and to recognise EuroCCP and SIX x-clear as recognised third-country CCPs under the 'onshored' version of EMIR. How simple this is likely to be is explored further in **sections 7.52ff**.

The position of CSDs is similar, but on a larger scale. According to the ESMA register of EU CSDs,[45] as of 8 June 2020 five CSDs had links with Euroclear UK & Ireland (EUI). These are: Clearstream Banking AG (Germany), Euroclear Bank SA/NV (Belgium), Euroclear Nederland, Euroclear Sweden and Monte Titoli (Italy). In each case, the EU CSD is a participant in EUI and so, in CSDR terms, is a 'requesting CSD' in respect of a link. In these cases, the continuation of the link is covered by article 50 of the onshored version of the CSDR, which reads: 'A CSD or third-country CSD shall have the right to become a participant of a CSD and set up a standard link with that CSD in accordance with Article 33 and subject to the prior notification of the CSD link provided under Article 19(5).'[46] However, as a 'requesting party' from a third country, it is technically possible

42 Decision of the European Central Bank of 16 November 2011 establishing detailed rules and procedures for implementing the eligibility criteria for central securities depositories to access TARGET2-Securities services (ECB/2011/20), OJ L 319/117

43 Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories, chapter XII

44 See further **sections 15.53** and **15.56**

45 European Securities and Markets Authority, CSD Register (June 2020), ESMA70-151-889

46 Central Securities Depositories (Amendment) (EU Exit) Regulations 2018, SI 2018/1320, reg 19(4)

for EUI to be denied access if it 'is not subject to a regulatory and supervisory framework comparable to the regulatory and supervisory framework that would be applicable to the requesting participant if it were established in the United Kingdom' or 'the rules of the CSD concerning settlement finality … are not enforceable in the jurisdiction of the requesting participant'.[47]

Additionally, Euroclear Bank is a 'receiving' CSD, meaning that EUI acts as 'investor CSD' in respect of securities for which Euroclear Bank is the 'issuer CSD'. As regards this arrangement, the EU version of article 50 applies, which although less explicit on the rights of third-country CSDs, appears to have similar effect; the third-country comparability and finality tests will also apply (with the reference to the United Kingdom replaced by a reference to the European Union).

The CSD links may be less vulnerable to political upheaval than the CCP links, not least because the prime movers in relation to CSD links are the CSDs themselves rather than state-run bodies. Further, the process for a competent authority to rescind a link appears to require supervisory intervention against an issuer CSD, rather than a political ruling that the UK, or as the case may be an EU Member State, is not 'equivalent'.

Soft law

15.11 The Principles for Financial Market Infrastructures (PFMI) set out a code of soft law.[48] Principle 20 covers all types of horizontal link between infrastructures. It recommends identification and management of all link-related risks, including legal, operational and financial risks, and spells out matters of particular concern in relation to CSD-to-CSD links and CCP-to-CCP links.

15.12 The Code of Conduct[49] also applies, in theory, to interoperability among CSDs and CCPs. The Code was brought into being as a device for self-regulation, perceived at the time to be more desirable and more rapidly achievable than a directive (as had first been proposed by the European Commission[50]). The Code is the product of the Federation of European Securities Exchanges, the European Association of Central Counterparty Clearing Houses (EACH), and the European Central Securities Depositories Association (ECSDA). It is voluntary in the sense that no statutory, regulatory or contractual arrangements make it enforceable by any person, whether or not that person is a member of one of the sponsoring associations. The Code has been supplemented by an Access and Interoperability Guideline (the A&I Guideline).[51] The A&I Guideline contains additional detail on access rights and obligations of the interoperating parties. Both the Code and the A&I Guideline address a range of permutations of access

47 CSDR RTS 392, art 89(2)(c), as modified by the Bank of England's Technical Standards (Central Securities Depositories) (Amendment etc.) (EU Exit) Instrument 2019

48 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf

49 FESE, EACH and ECSDA, *European Code of Conduct for Clearing and Settlement* (November 2006), http://ec.europa.eu/internal_market/financial-markets/docs/code/code_en.pdf

50 European Commission, *Clearing and Settlement in the European Union – The way forward* (April 2004), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0312:FIN:EN:PDF, p 11

51 FESE, EACH and ECSDA, *Access and Interoperability Guideline* (June 2007), http://ec.europa.eu/internal_market/financial-markets/docs/code/guideline_en.pdf

and interoperation among trading, clearing and settlement infrastructures: not only are the horizontal arrangements between CCPs, or between CSDs, covered, but also the linkages between trading platforms on the one hand and CCPs and CSDs on the other, or between CCPs and CSDs. The Code and the A&I Guideline have not been withdrawn, even though ESMA has issued its own Guidelines and Recommendations on CCP interoperability.[52] Since the Code and A&I Guideline cover rather different territory – the ESMA document is directed to regulators, whereas the Code and A&I Guideline are by and for the industry – the provisions of the Code may be worth examining.

15.13 The Code's provisions on access are as follows:

'25. Requests for access will be dependent upon considerations relating to the business case only of the requesting Organisation.

26. Standard unilateral access and transaction feed access shall be provided on a non-discriminatory price basis; any customised component of a unilateral access or transaction feed access should be paid for by the Organisation requesting access on a cost-plus basis unless otherwise agreed between the parties.

27. Access should be granted on the basis of non-discriminatory, transparent criteria and prices.

28. Requests for access should be treated expeditiously.

29. The process under which access requests are to be treated should be publicly available.

30. Refusals of access should only be based on risk related criteria or exemptions to access rights as detailed in MiFID. They should be explained in writing and communicated to the requesting Organisation promptly.

31. In case of disputes, the undersigning Organisations undertake to settle the dispute expeditiously.

32. In the event of a potential dispute, a mediation mechanism will be set up.

33. An Organisation requesting access to another Organisation should, in principle, comply with the legal, fiscal and regulatory arrangements applicable to the receiving Organisation.'

It might be noted that there is, *ex hypothesi*, no business case for the *receiving* organisation to allow the requesting organisation to share in the spoils of its quasi-monopoly. The purpose of this set of rules is to eliminate that as an excuse for the receiving organisation to deny interoperability. That is all very well for CSDs, but links between CCPs are not solely within the control of the incumbent CCP; in order to establish a link relating to a product traded on an organised venue, a requesting CCP needs to be engaged by the trading platform as well as to establish a link to the incumbent CCP. The Code applies to platforms as receiving organisation as well as CCPs. But access is not simply a matter of request and acceptance. As this chapter goes on to show, there are myriad technical and operational issues to address in making interoperability work, and

52 European Securities and Markets Authority, Guidelines and Recommendations for establishing consistent, efficient and effective assessments of interoperability arrangements (June 2013), ESMA/2013/322

as there is no business case for the receiving organisation to devote time, money and effort to solving them, the receiving organisation can claim to be complying with all of the above rules and still have no interoperability arrangements in place. The Code does not provide any machinery for enforcement of the access rights which it apparently gives or to test the behaviour of a receiving organisation which is failing to resolve difficulties in implementing interoperability where it has accepted a competitor's request. Without legislative force, it is no surprise that interoperability has been difficult to get started.

15.14 In relation to conditions of interoperability, the Code says the following:

'34. Establishment of Interoperability is subject to the business case of the entities concerned and on proper risk control.

35. To achieve such an optimised design both Organisations seeking interoperability, with the involvement of relevant stakeholders and the respective regulators in particular, need to have discretion in the design of the Interoperability relationship and not be limited in their solutions.

36. Against this background, the Organisations seeking Interoperability commit to the following:

- Any Organisation receiving a proposal for Interoperability will expeditiously enter into discussions with the proposing Organisation about the most appropriate design and procedures for establishing such an Interoperability relationship.
- They will conduct these discussions and negotiations in good faith and will avoid any undue delay.
- Organisations will consider appointing a mediator to facilitate these discussions and negotiations and to support the resolution of conflicts between Organisations.

37. An Organisation requesting access to another Organisation should, in principle, comply with the legal, fiscal and regulatory arrangements applicable to the receiving Organisation. To the extent that the proposed Interoperability arrangement requires either organisation to access the other, that Organisation should, in principle, comply with the legal, fiscal and regulatory arrangements applicable to the other Organisation.'

The spectre of the business case is raised again, but this time with more baneful effect. The *establishment* (that is to say, the implementation) of interoperability can apparently be blocked legitimately on business case grounds. Only 'against this background' will organisations commit to expedition, conflict resolution and so forth. In case that were unclear, the A&I Guideline emphasises the point: 'The Receiving Organisation cannot be forced to change its own market practices and standards towards its own participants, unless mutually agreed.'[53] And then applicable legal, fiscal and regulatory arrangements can be used to make the course even harder to run. With these difficulties it is a tribute to those infrastructures which, in the years following the adoption of the Code, actually managed to establish link agreements with their competitors.

53 A&I Guideline, para 52

The interoperability provisions of the Code might seem an unlikely survivor in their 2006 form after the adoption of EMIR and the CSDR, but they do not appear to have been withdrawn.

15.15 There is further soft law in the form of an EACH publication, the Inter-CCP Risk Management Standards.[54] There are seven standards, the most important of which is the prohibition of competition on risk grounds, which is analysed below. The others are: compliance with the CPSS-IOSCO recommendations for risk management; 'recognition' of the nature and regulatory status of CCPs, which is to say that, since CCPs have a different risk profile from ordinary participants (as discussed below), concessions on admission criteria are appropriate; measurement and management of inter-CCP exposure, in line with the A&I Guideline; performing an assessment of counterparty risk on the other CCP in order to inform a decision to interoperate or to continue with a link; transparency (information exchange); and operational flexibility on questions such as business hours and holidays.

15.16 Finally, in relation to CCPs and CSDs, mention should be made of the Recommendations issued by the European Central Bank and the Committee of European Securities Regulators (ECB-CESR Recommendations) in 2009.[55] These should probably be understood to have been superseded by the PFMI and ESMA's Guidelines and Recommendations issued under article 54 of EMIR.[56]

15.17 Soft law rules relating to interoperating payment systems are discussed at **section 15.61**.

STRUCTURE OF INTEROPERATION BETWEEN CCPS

15.18 Interoperability between CCPs is dictated by the essential function of a CCP, which is to replace the original counterparty on the trade: the CCP becomes buyer to the seller, and seller to the buyer. If the original buyer and seller participate in different CCPs, the buyer's CCP becomes its seller, and the seller's CCP becomes its buyer, but how will the CCPs manage their now unmatched books? Interoperability involves some structure whereby buyer's CCP buys from the seller's CCP – the clearing process, which ordinarily replaces one trade with two trades, will in a case of interoperation of CCPs create a longer chain of three back-to-back trades.

To achieve this objective, an interoperability arrangement can be structured in one of several ways:[57]

(1) *Mutual participation.* Most commonly, each CCP will become a participant in the other CCP, albeit on modified terms. Each CCP will

54 European Association of CCP Clearing Houses, *Inter-CCP Risk Management Standards* (July 2008)

55 European Central Bank and Committee of European Securities Regulators, *Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in The European Union* (June 2009), www.ecb.int/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf

56 See **section 15.8**

57 Cf Garvin, N, 'Central Counterparty Interoperability' (June 2012), *Reserve Bank of Australia Bulletin*, June Quarter 2012, pp 59–68

enter into the relationship expecting or demanding certain performance from the other, which would ordinarily be provided by a CCP's participants. But CCPs are one-way creatures in their normal clearing existence, receiving margin and default fund contributions from their participants and imposing rules and procedures upon them. To put the same proposition differently: CCPs do not ordinarily *give* margin or default fund contributions to third parties and do not expect to have to *obey* a third party's rules. A CCP which is itself a participant is not likely to be willing to be dictated to, when it is itself expecting to act as dictator. A compromise will be needed, hence the modified terms associated with mutual participation. This form of interoperability is referred to as a 'peer-to-peer link' in PFMI Principle 20.

(2) *Unidirectional participation.* Alternatively, one CCP can become a participant in the main CCP, and the main CCP will be able to distance itself from the clearing arrangements of the participant-CCP. The link between LCH and SIX c-clear for clearing trades on the virt-x market historically worked in this way.[58] Notwithstanding that the participant-CCP is a CCP, and may have been admitted to participation in the main CCP in a special membership category, the participant-CCP is acting as a GCM. The risks faced by the participant-CCP are the risks faced by GCMs[59] and the main CCP is able to remain aloof in the same way as it remains aloof from the clearing arrangements entered into by its GCMs. No doubt the participant-CCP will have to adjust its behaviour in order to provide margin and to be dictated to in relation to the positions which it holds with the main CCP, but that is the effect of the subordinate role which this structure presumes. This option may involve some degree of bespoke service provision to the participant-CCP and may thus grow into something closer to full interoperability. This form of interoperability is called a 'participant link' in PFMI Principle 20.

15.19 Three further possibilities ought briefly to be mentioned, although neither would completely solve the central problem identified, namely that different traders may wish to clear through different CCPs.

(3) *Facilitated transfer.* A link may be 'designed to facilitate the transfer of positions between CCPs … In such links, market participants may open positions in a product cleared by one CCP (the "host" CCP) but subsequently all these positions are transferred to the "home" CCP for that product. The "host" CCP takes on the counterparty risk of its participants until the positions are transferred to the "home" CCP, generally at the end of the trading day. After the transfer, the "home" CCP becomes the counterparty to the participant of the "host" CCP for the positions that are transferred'.[60]

(4) *Cross-margining.* The second example is 'cross-margining', a structure more common in the United States, where CCPs exist to serve different market segments, than in Europe.[61] Cross-margining enables a single

58 Kalogeropoulos et al, *Link arrangements of Central Counterparties in the EU* p 54

59 See **sections 19.18–19.22**

60 CESR and ECB, *Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union* (May 2009), www.ecb.int/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf, p 205

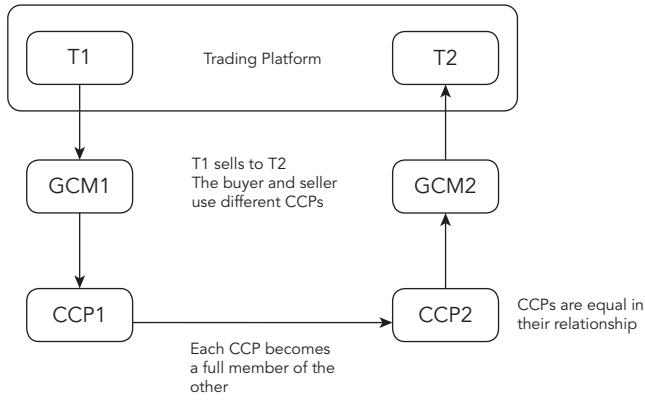
61 See, for example, Kalogeropoulos et al, p 50

participant, who participates in two CCPs, to amalgamate the margin calls made into a single flow, so that one CCP effectively acts as a conduit or agency for the delivery of margin to the other. Cross-margining may work so as to enable surpluses of margin in the participant's account at one CCP to be routed to the other CCP, to help the participant with its liquidity needs. This kind of interoperability arrangement may develop in Europe as specialist CCPs grow up to satisfy the demands of EMIR for OTC derivatives clearing.[62] Cross-margining arrangements have been fully analysed by the ESRB in a further report on CCP interoperability arrangements (the ESRB 2019 Report).[63]

(5) *Preferred CCP model.* This option allows market participants a choice without full interoperability. For a brief period, BATS, a trading platform, offered its participants a choice between clearing at its incumbent CCP, or a trio of (different) interoperating CCPs. The default situation was for the clearing to occur at the incumbent CCP, but if both parties to the transaction selected clearing at one of the three CCPs able to interoperate, their choice would prevail.[64] After six months, the incumbent CCP was fully interoperable with the other three.[65] More recently, the ESRB 2019 Report observes that the preferred CCP model was in effect for at least three trading venues in 2019.[66]

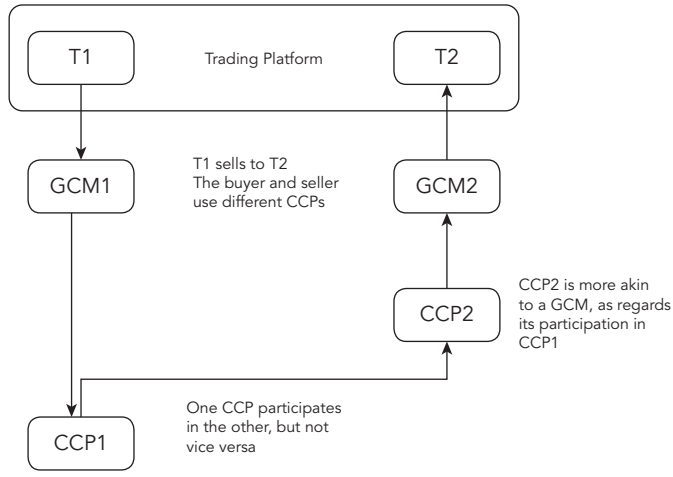
Models of interoperability

(1) Mutual participation

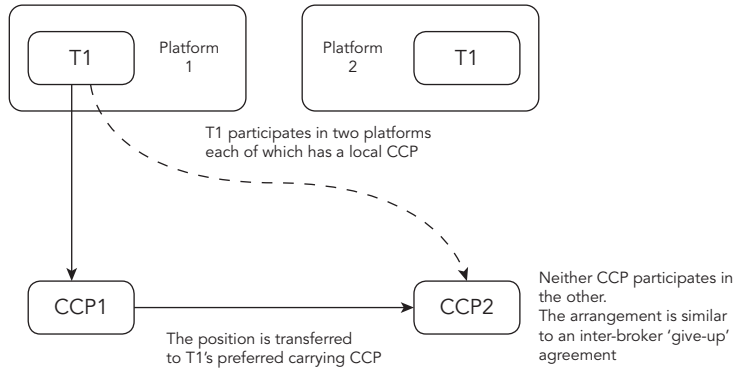


62 Cf **section 15.42**
63 ESRB, CCP interoperability arrangements (January 2019), Box 3
64 BATS press release (July 2011), www.batstrading.co.uk/resources/press_releases/BATS_Go_Live_Pref_Interop_FINAL.pdf
65 BATS-Chi-X press release (January 2012), www.batstrading.co.uk/resources/chi-x_press_releases/batschi-x-full-interop-go-live-final.pdf
66 ESRB 2019 Report, p 15

(2) Unidirectional participation



(3) Facilitated transfer



(4) Cross-margining

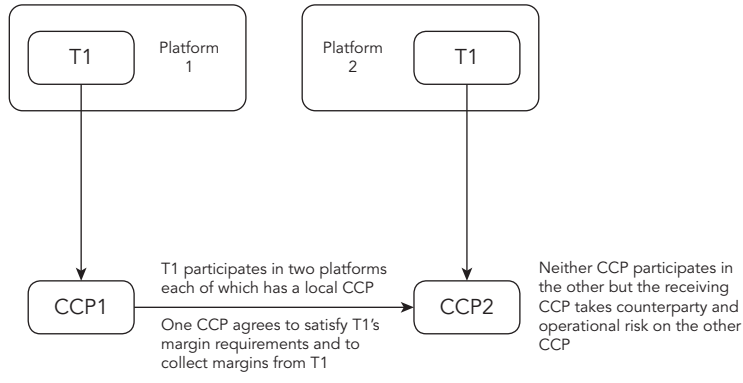


Figure 15.1

Competition, but not on risk; or a race to the bottom?

15.20 It is often suggested that CCPs should compete with each other, but not on questions of risk management. Various industry associations have warned that where CCPs compete for business, there is danger when they compete on quality of risk management.[67] This theme has been reflected in comments from the authorities, too: the European Central Bank says that competition between CCPs creates a risk of a 'race to the bottom',[68] and a joint presentation by regulators from the United Kingdom, the Netherlands and Switzerland on interoperability says that competition between CCPs on risk 'is not envisaged'.[69]

The response from the CCPs themselves is rather vague. The Code says nothing. The A&I Guideline states that 'competition between CCPs must not have a significantly detrimental effect on risk management standards in place'.[70] This is more an article of faith than practical guidance. The EACH Standards tackle the problem with more vigour than the Code, the A&I Guideline, or any official pronouncement. In summary, Standard 2 states categorically that risk management practices cannot be used as a competitive tool among CCPs. EACH itself considers that its Standards were 'adopted in order to prevent competition between CCPs leading to a decline in risk management standards'.[71]

It may, therefore, be appropriate to examine why and how competition between interoperating CCPs might give rise to a 'race to the bottom'. If CCPs were to compete on risk grounds, 'it is clear that the market would see a downward spiral of risk protections which would be to the detriment of all the CCPs concerned and the financial system as a whole. This must be avoided at all costs as a consequence of interoperability'.[72] Several illustrations are given as to what the standard prohibits and what it does not. First, a CCP must not set its initial margin at an imprudently low level to attract more participants. But that does not mean that all CCPs have to impose the same level of initial margin – the EACH Standards indicate that the balance of backing between initial margin and default funding may legitimately differ between CCPs. EMIR imposes only a floor on margin levels.[73] Secondly, CCPs cannot make exceptions to their margin policy so as to treat markets where there is interoperability with another CCP differently from markets where there is no interoperability. But, thirdly, CCPs

67 See, for example: European Repo Council, response to the ESCB/CESR consultation on recommended standards for CCPs (January 2009), www.ecb.int/paym/pdf/cons/escb_cesr/ERC_P.pdf?32e22db295b6a7d66a8d2d78ca87a1ef, p 11; Bundesverband der Deutschen Volksbanken und Raiffeisenbanken, Bundesverband deutscher Banken (BdB), and Deutscher Sparkassen und Giroverband, response to the same consultation (January 2009), www.ecb.int/paym/pdf/cons/escb_cesr/BVR_BDB_DSGV.pdf?ba6c59ebdc9ae1224b8b5ab13951a6c5, p 4; European Banking Federation, *CCP for CDS User Requirements* (February 2009), slide presentation, www.ecb.int/events/pdf/conferences/ccp_cds/AGENDA_ITEM3_EBF.pdf?ba0bd8065956f6f33d7c8b9796883b59, p 9

68 Schönenberger, A, *CCP Interoperability* (July 2009), ECB slide presentation, www.ecb.int/events/pdf/conferences/ccp_cds2/ECBInteroperability.pdf?691775cae468c3406c75acd8f3488d2a

69 AFM, DNB, and FSA, *Interoperability: Regulatory Expectations* (March 2010), slide presentation, http://ec.europa.eu/internal_market/financial-markets/docs/code/mog/20100315_afm_dnb_fsa_en.pdf, p 2

70 A&I Guideline, para 13

71 European Central Bank, minutes of the 18th meeting of the Contact Group on Euro Securities Infrastructures (June 2008), www.ecb.int/paym/groups/pdf/COGESI_minutes_18th_meeting_0608.pdf?d640863fa86e8773f441cec24f7aa22a , p 2

72 EACH Standards, Standard 2, para 2.2

73 Article 41(1)

can change their margin policy, and changes should be publicised. This exception is important: who is to decide whether a reduction in margin requirements, or a shift to alternative methods of risk protection, or a change in risk quantification algorithms, is 'imprudent' or whether the aim of the CCP was to attract more custom. It is naïve and unrealistic to suppose that a CCP would volunteer to withhold an innovation which would economise on margin requirements for its participants; competitors might deride the innovation as imprudent or unfair competition; but, since the CCP's margin policy will mainly be dictated by technical standards in EMIR RTS 153,[74] and regulators of infrastructures are likely to be conservative, there may be little incentive to innovate.

In a report for the European Parliament it was stated: 'CCPs will be restrained by regulation from competing on margins (also called race to the bottom) since this behaviour would weaken CCPs' risk mitigation mechanisms. However, it has been found that the major existing CCPs have demonstrated remarkable skill and conservatism in managing risk. It rather seems that CCPs compete on prudential risk management and financial integrity instead of attracting OTC-cleared derivatives volume.'[75]

Thus 'no competition on risk' is, however, more a slogan than a reality. To deny CCPs the 'right' to compete on risk grounds is absurd as well as unachievable. In the first place, CCPs should on principle be allowed to compete on risk grounds: if my risk model is better than yours, I should be permitted to advertise this, and the users of the market will benefit. Secondly, the reason why participants will choose one CCP over another is heavily influenced by the competing CCPs' approaches to risk management. Participants understand that the raison d'être of a CCP is management of counterparty risk – they will inevitably make their choice based upon their assessment of the competing CCPs' effectiveness at risk management. Rather than there being a 'race to the bottom', with CCPs vying to reduce margin and default fund levels to a dangerous level of cheapness, participants are just as likely to eschew a bargain-basement CCP. Competition on the price of clearing or the apparent efficiency of a CCP is likely to take second place to this consideration. To say that there must be no competition on this essential function is the same as saying there must be no competition on menus between two restaurants.

Perhaps the final comment on this question should be left to the evidence. A study which evaluated the risk-management policies of three interoperating CCPs observed substantial differences in their practices regarding capital of participants, margin quantification, margin eligibility and handling, default fund size and form, CCP's own capital, loss-sharing and waterfall structure.[76] There is competition on risk. The same study concludes that this does not lead to a race to the bottom.[77]

74 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties

75 Schröder, M, et al, *Assessment of the Cumulative Impact of Various Regulatory Initiatives on the European Banking Sector* (August 2011), Study for the European Parliament, PE 464.439, www.europarl.europa.eu/document/activities/cont/201203/20120313ATT40643/20120313ATT40643EN.pdf, p 15

76 Zhu, S, 'Is there a 'race to the bottom' in central counterparties competition?' (December 2011) *DNB Occasional Studies* Vol 9 No 6, Table 2

77 See, in particular, Table 3

CCP INTEROPERABILITY AND RISK

15.21 The real danger in the slogan of 'no competition on risk' is that it distracts attention from another feature of having competition between CCPs: that interoperability, without enhancement of the financial resources of each interoperating CCP, actually *increases* risk: it 'adds a channel for direct contagion between two or more CCPs'.[78] Disapplying the carefully erected fences designed to protect against counterparty risk in order to allow another CCP to become a participant is nothing other than detrimental to risk management standards already in place. Special risk management arrangements have to be crafted in order to address the special issues which arise when a CCP's counterparty is another CCP. The risk of contagion, as a problem in one CCP may, through its participation in another CCP contaminate the other CCP, has led regulators to state that formal links between CCPs increase systemic risk.[79] Interoperability is systemically troublesome, because it creates connectivity at the infrastructure level. On the other hand, if the alternative is a single CCP for the product serving the whole economy, that would be a point of risk concentration, which might be better contained through several interoperating CCPs. The optimum model has yet to be agreed upon.

In order to understand why interoperability increases risk, a discussion may be helpful on the subject of risk management of inter-CCP transactions. Mutual membership cannot be achieved without some watering-down by each CCP of its standards with regard to its management of counterparty risk. Whether it is appropriate to allow dilution of risk management because a CCP is a special kind of counterparty requires an assessment of whether CCPs are less prone to mishap than 'ordinary' participants. In part this depends on how CCPs are capitalised, governed and regulated, in part on what business they are able to conduct, and in part on how a counterparty risk event – the insolvency of a CCP – could actually arise.

Inter-CCP counterparty risk management

15.22 The basic problem of full interoperability between CCPs is the management of counterparty risk.[80] Normally a CCP will take care of this problem by control at the gate (restriction of participation to entities with adequate capital, operational ability, business profile etc); by collecting margin to secure the positions taken by the participant; by arranging default backing from resources provided by participants, either in the form of up-front default fund contributions or by having a power to call for additional funding from them in a crisis or to put a defaulter's unwanted positions onto them; and by having loss-sharing arrangements in case the default fund is insufficient.[81] In other words, CCPs impose obligations on their participants, they do not accept

78 European Systemic Risk Board, *ESRB Report to the European Commission on the Sytemic Risk Implications of CCP Interoperability Arrangements* (January 2016)

79 Joint Regulatory Authorities of LCH.Clearnet Group, *Investigation of risks arising from the emergence of multi-cleared trading platforms* (July 2008), www.dnb.nl/binaries/Investigation%20of%20risks%20arising%20from%20the%20emergence%20of%20multi-cleared%20trading%20platforms_tcm46-216876.pdf

80 Cf ESMA March 2016 Report, para 120

81 See **Chapter 17**

them. On each of these risk management fundamentals, an interoperability arrangement requires a complete re-think.

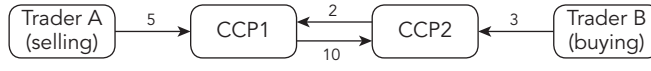
(1) *Control at the gate*. EMIR does not oblige CCPs to interoperate but says that they 'may' do so with regulatory approval, provided that certain preconditions are satisfied. Interoperability is allowable if the CCPs in question have been authorised for at least three years.[82] Nor does EMIR require relaxation of the criteria for participation which a CCP would otherwise wish to impose, but such criteria will typically not be designed with CCPs (as opposed to GCMs) in mind. The risk profile of a CCP differs from that of an ordinary clearing member: CCPs have no 'endogenous risk' (meaning that they have a balanced book from a market risk perspective, every sale being matched by a purchase at the same price), they have special risk controls, and they typically enjoy a special regime of regulation and oversight, which may include special insolvency protections such as those granted under the Settlement Finality Directive.[83] The EACH Standards mention these points, adding that CCPs have non-speculative business models which do not risk the institution's capital in order to make a profit.[84] This may be true where CCPs are run as non-profit utilities, but CCPs are very commonly run for profit and while they may not speculate in the cleared instruments CCPs are certainly indulging in risk-taking in the centralisation of counterparty risk. In aggregate, these considerations may not point to the conclusion that risk management is lowered if a CCP is allowed to become a participant; but they do show that different conditions of access for CCPs are almost unavoidable.

(2) *Default funding*. The ESMA Guidelines stipulate that 'interoperable CCPs are not allowed to contribute to each other's default funds or other financial resources as defined in Article 43 of [EMIR]',[85] reflecting a pre-existing principle in the A&I Guideline[86] which is also echoed in the PFMI.[87] That seems a defensible idea: a default fund is a means of mutualising risk. In other words, the survivors, with gritted teeth, agree to assist the CCP in its attempt to withstand any financial shock caused by another participant's default, even though the problem is not of their own making. But if you accept that the entire purpose of full mutual interoperability between CCPs is to enable participants to choose their preferred CCP – or, to put it the other way round, to escape the consequences of being in a different CCP – then it must follow that participants are deliberately choosing to be shielded from the financial shock caused by the other CCP's default. If a participant's own CCP has to contribute to another CCP's default fund, the viability of the contributing CCP is affected by the quality of risk management of the other CCP, and the participant might as well have joined the other CCP in the first place. However, if CCPs do not contribute to each other's default funds, those funds will be relatively under-funded, and the CCPs will need to find other financial resources to plug the gap.[88]

82 EMIR, art 54(2)
83 Kalogeropoulos et al, *Link arrangements of Central Counterparties in the EU* p 50
84 EACH, *Inter-CCP Risk Management Standards* (July 2008)
85 ESMA Guidelines, para 3(b)(v)
86 A&I Guideline, para 84
87 PFMI, para 3.20.17
88 Cf PFMI, para 3.20.17

(3) *Margin*. Whether a participant is buying or selling, the CCP will call for initial margin[89] – there is always some risk on the position, regardless of the direction of the trade. This means that a CCP is expecting to receive initial margin from both its selling and its buying participant. Where one of those participants is a CCP, the two CCPs are immediately brought into conflict, as each CCP will wish to make a margin demand on the other in respect of the same position. CCPs collect initial margin, they do not deliver it. From where does a CCP which is required to satisfy a margin call source the funds it needs? A CCP will not wish to diminish its financial resources by paying a margin call in respect of a position which, ordinarily, it would have required to be supported by a net inflow of margin. Some other source of funds is going to be required.

Margin flows between interoperating CCPs



CCPs' assessments of the initial margin requirements for a single trade:

CCP 1:	seller should pay 5;	buyer should pay 2
CCP 2:	seller should pay 10;	buyer should pay 3

Interoperability reduces the total initial margins received by both CCPs

Initial margin totals	CCP1	CCP2
Without interoperability:	7	13
With interoperability:	(3)	11

The more conservative CCP is less badly affected, and a more adventurous CCP with borderline risk management may be significantly impaired by having to provide margin.

Figure 15.2

Variation margin practices raise similar issues though on less grand a scale. Unlike initial margin, variation margin reflects the daily movement in market prices, and is both received and paid out by CCPs. If the price of a security rises, the value of the seller's contract diminishes, and there is an increase in the replacement cost to the CCP of the contract in case the seller defaults before settlement. So the seller must pay variation margin to the CCP. But there is a corresponding reduction in the replacement cost of the CCP's contract with the buyer if the buyer defaults, so the CCP will pass through the variation margin to the buyer. If the buyer is another CCP, however, the computation of variation margin may be done according to a different algorithm, and there is a possibility that the amount expected to be paid differs between the CCPs. Where the amount required by the second CCP exceeds that which is collected by the first CCP, the problem of diminution of resources arises again for the first CCP.

(4) *Directionality*. Closely allied to the question of margin is the danger that the counterparties to the cleared trade aggregate according to the position they took on the trade – crudely put, all the sellers are in one venue and

89 See **sections 17.23ff**

all the buyers in the other. This kind of directionality may have underlain the flow of margin observed in the LSE-Oslo Børs arrangement discussed in **Case Study 15.1**. If that happens, margin will flow out of one CCP and into the other, which may not only seem unfair to the paying CCP and its participants but may also represent an accumulation of risk which neither CCP can manage easily, since a successful close-out on default will need active bids from market participants on the opposite side of the market from the defaulter, and those bidders are not members of the CCP handling the default. It has been observed that build-up by a member of a one-sided position would ordinarily be met by a CCP with a call for 'concentration margin', but in a case where the party with the concentrated position is itself a CCP, it is unclear how the affected CCP should pass on the concentration margin demand when none of its members is itself excessively concentrated.[90] Even in OTC markets a basis spread can develop between CCPs.[91]

15.23 Another challenge is the process of default management and the default waterfall. First to be analysed is the case where the defaulter is not the CCP. There is a question whether interoperating CCPs should participate as clearing members in default management operations such as auctions to dispose of a defaulter's positions – presumably not, but the regulatory guidance is vague. Then there is the question of loss-sharing at the end of the default waterfall. The ESRB 2016 Report also points out that the thinking on how loss-sharing arrangements, which may typically involve margin haircuts and potentially the tear-up of positions,[92] would work in the context of interoperability has not been fully done. The Bank of England concluded that CCPs need not (but, presumably, could) allocate losses attributable to ordinary defaulters to interoperating CCPs but its interoperability standards go no further into loss-sharing scenarios.[93] Other questions which can arise are the danger to the CCP which is managing the default, if participants which are also members of the other CCP conclude that they are better served in that other CCP terminate their membership of the CCP which experienced the default; transfer of positions is easier if the participant has memberships in both.[94]

Secondly, one must consider the case where the CCP is itself in default. Here, one should start with the rules imposed by EMIR. A CCP has to have procedures for transfer of client positions and for the 'leapfrog' return of client collateral and gains in a manner which bypasses a defaulting clearing member.[95] How – indeed, whether – these are to work in a case where the defaulter is actually a CCP is unclear. The ESRB 2016 Report says that most interoperating CCPs treat a linked CCP as holding house positions only.[96] That would appear to be perverse, if convenient: everyone knows that CCPs do not have 'house' positions except for their treasury functions, which are not what this is about. Then there is the question whether a defaulting CCP should be treated as a defaulting member for the purposes of utilising the default fund – a difficult question, given that CCPs do not contribute to each other's default funds. The Bank of England concluded

90 See McPartland, J, and Lewis, R, 'The challenges of CCP interoperability arrangements' (June 2016), *Journal of Financial Market Infrastructures*, vol 4(4) pp 41–51
91 Cf. Khwaja, A, CME-LCH Basis (June 2014–May 2020), ClarusFT.com blog
92 See **section 14.16ff**
93 Bank of England, Implementation of ESMA's Guidelines, Standard 4
94 See also ESRB 2019 Report, section 4.2.2
95 EMIR, art 48
96 ESRB 2016 Report, p 12

that default funds should be available to cover CCP defaults.[97] And the loss-sharing at the end of the waterfall becomes an acute question if the members of the surviving CCP are expected to shoulder themselves the consequences of the other CCP's failure, by accepting write-downs of their margin entitlements or worse. These are difficult questions which remain unresolved.[98]

Porting of client positions across a link is, as the ESRB 2019 Report notes,[99] especially fraught. If a CCP which is in default is treated by the non-defaulting CCP in the same manner as an ordinary member, then the positions of the participants in the defaulting CCP should be transferrable, if possible, to other clearing members or clients of the non-defaulting CCP, since the members of the defaulting CCP look like 'clients' of a 'defaulting clearing member'. How the provisions of EMIR[100] which expect clearing members to offer individually-segregated and omnibus accounts, or for porting and leapfrog to be applied, are to work when the 'clearing member' is actually another CCP, is far from certain.ESMA's Guidelines[101] list a number of serious matters which regulators of would-be interoperating CCPs must consider in their assessment of the proposed link. ESMA does not prescribe solutions to them; just listing them indicates how challenging the case of a defaulting CCP might be:

- If the default waterfall is exhausted, how will the surviving CCP deal with uncovered credit losses?
- Could inter-CCP exposures be reduced by transferring positions from the defaulting CCP to the surviving CCP, or could the default fund of the defaulting CCP be utilised by the surviving CCP?
- Have the risks been properly disclosed to clearing members?
- What are the additional risks if there are more than two CCPs in the arrangement?
- What are the liquidity needs arising if an inter-CCP margin call is not met?
- How will inter-CCP margin be calculated? Will there be different risk parameters as compared with margins collected from clearing members?
- How will the surviving CCP continue to honour its obligations to its own members?
- What additional risk protections will be put in place to compensate for the overall weakening of risk management introduced by the interoperability arrangement?
- What are the arrangements to meet exposures arising in extreme but plausible market conditions?

15.24 The law and regulatory guidance do not go far to address these practical issues. The A&I Guideline says that CCPs 'have to arrange an adequate collateralisation scheme to cover the exposure of potential losses'.[102]

97 Bank of England, *Implementation by the Bank of England of ESMA's Guidelines and Recommendations on CCP interoperability arrangements: Summary of feedback received and policy response* (July 2015), Standard 3

98 ESRB 2016 Report, p 24

99 ESRB 2019 Report, section 5.3

100 EMIR, arts 39, 48

101 European Securities and Markets Authority, Guidelines and Recommendations for establishing consistent, efficient and effective assessments of interoperability arrangements (June 2013), paras (c) and (f)

102 A&I Guideline, para 84

EMIR lays down that CCPs are required to have risk management policies and procedures to address the implications of interoperation. In particular, EMIR mentions that the default of one CCP's participant should not affect an interoperating CCP,[103] and that risk issues requiring particular attention are 'potential interdependencies and correlations' relating to 'clearing member concentrations and pooled financial resources'.[104] Inter-CCP margining differs slightly from the regular margin requirements of EMIR. First, any right of use of margin securities provided by one CCP to another under a security interest must be disapplied;[105] but there is no restriction on the ability of a CCP to demand that margin under an interoperability arrangement is posted by way of title transfer collateral arrangement, and there is no restriction on re-use of margin posted by *participants* as inter-CCP margin. So, the restriction on use may be of limited value. Secondly, securities collateral must be deposited with a securities settlement system which has been designated under the Settlement Finality Directive,[106] ruling out the use of private sector custodians, but apparently not ruling out the interoperating CCP, which ought to be so designated.[107] Thirdly, if the CCP which has *received* collateral defaults, the collateral 'shall be readily returned to the providing CCP'.[108] This latter provision is unclear. It is tempting to read it as requiring a bankrupt CCP to hand back collateral even though the non-defaulting CCP may still owe obligations to the bankrupt CCP. That reading would, however, be wrong, for two reasons: it would worsen the affairs of the bankrupt CCP if it is required to surrender its collateral at a moment of extreme market shock, that is at a point when the *non*-defaulting CCP is likely to be at its most unstable; and it would probably contravene the 'anti-deprivation' principle of insolvency law.[109]

15.25 Various questions of principle and practice are left unanswered by these rules.

(1) A CCP required to post inter-CCP margin (CCP1) may be able to re-use margin collected from its participants. The PFMI do not expressly forbid the re-use of participants' margin for inter-CCP margining; and, in contrast to the recommendations dealing with default fund contributions, they do not say that the CCP has to raise supplementary financial resources to cover inter-CCP margin obligations.[110] ESMA has commented that its Guidelines[111] do not prohibit re-use of collateral for inter-CCP margining, provided that 'the arising extra risk is adequately assessed and covered by each interoperable CCP'.[112] Recycling margin, would, therefore, appear to permitted, despite at one stage being disavowed by regulators.[113] However, the ESRB 2016 Report observed that collateral

103 EMIR, art 52(1)(c)
104 EMIR, art 52(1)(d)
105 EMIR, art 53(2)
106 EMIR, art 53(3)
107 EMIR, art 17(4)
108 EMIR, art 53(5)
109 See **section 13.13(2)**
110 PFMI, paras 3.20.16–17
111 In particular, para 3(f)(i)(b)
112 ESMA March 2016 Report, paras 60, 64
113 AFM, DNB, and FSA, Interoperability: Regulatory Expectations (March 2010), slide presentation, http://ec.europa.eu/internal_market/financial-markets/docs/code/mog/20100315_afm_dnb_fsa_en.pdf, p 3

is not 'generally' rehypothecated,[114] and the Bank of England will not approve an interoperability arrangement which has this feature.[115]

(2) CCP2's margin demands may be high relative to the margin receipts of CCP1 in respect of the same trade.[116] If cash is going to flow out of a CCP, rather than into it, there is a question for CCP1 of liquidity management. This question will become acute at times when a market is in stress or when a participant in one or other CCP has defaulted (which may well be correlated events). Resources of CCP1 may become locked up in CCP2 if CCP2 is managing a default and declining to repay margin deposits. Interoperating CCPs are likely to need additional liquidity facilities.

(3) Inter-CCP margining thus demands an increase in resources, unless CCP1 has sufficient flexibility with re-used margin collected from its participants. The question may then arise as to who pays for the additional resources required. There are two choices: the participants in CCP1, or the shareholders of CCP1. Neither constituency will see why it is right that they should be asked to pay for risk not of their own making and outside their control.

Margin as a tool for managing CCP default risk

15.26 Thinking about margin as the means of managing a default of a *CCP* is likely to be wrong-headed. As noted above, CCPs are rather unusual counterparties/participants. The default of a CCP is a systemic risk event. Despite the awareness of these factors, the authorities have not found any recipe for risk management other than collateralisation of exposure. This approach is, unfortunately, fallacious. The purpose of margin is to cover the replacement cost of a defaulting participant's positions, and margin models used by CCP do not factor in credit differentials between different participants. Margin is calculated by reference to the expected loss in the event of a default by an entity which engages in trading, in other words that it has endogenous risk, and by observing market conditions in such events (including extreme market reactions such as that which followed the Lehman Brothers failure in 2008, and other non-default related conditions). These are the wrong scenarios against which to assess the loss suffered when a CCP defaults. Precisely because a CCP takes on no endogenous risk, the failure of a CCP must be entirely attributable to *exogenous* events – catastrophic failure both of one or more of its participants coupled with failure of the CCP's margining and default-management methodologies. Ordinary measures of expected post-default loss are inappropriate for such circumstances. The failure of a CCP implies a fundamental error by that CCP in either its risk management model or its operational support to give effect to the model: for example, the CCP either miscalculated the amount of margin or default funding it needed to contain the risk it was assuming, or if it calculated correctly it was unable to collect on the margin or default funding in order to support itself. These are catastrophically bad scenarios. 'Margin' in ordinary parlance is protection against ordinary market movements, not total failure of an infrastructure. It is thus arguable that margin is a red herring in the

114 ESRB 2016 Report, Table 1

115 Bank of England, *Implementation by the Bank of England of ESMA's Guidelines and Recommendations on CCP interoperability arrangements: Summary of feedback received and policy response* (July 2015), Standard 2

116 See **Figure 15.2**

interoperability debate. Yes, admittedly, collecting some margin from a CCP will provide a modicum of financial protection against such a catastrophe – but it is like insuring your life for £100: your dependants will not find the contribution particularly helpful. The joint regulators of LCH themselves acknowledged the issue of getting the risk measure wrong.[117] A better approach is to think of the inter-CCP margin as having the same function as a default fund: it is backing for when margin models fail.[118]

Compensating for non-contribution to a default fund through margin uplift 'does not offer the same protections as normal initial margin collateral,' according to the ESRB 2019 Report.

> 'Specifically, the additional collateral funded by members and posted to the other CCP for the interoperability arrangement would be appropriated in the event of the default of the posting CCP, and would therefore not be returned to the non-defaulting members of the defaulting CCP who posted it (whereas the initial margin posted by non-defaulting members would be protected). The net effect is that there is limited mutualisation among the members of each CCP, there is no cross-mutualisation of losses and interoperable margins behave like junior tranches of the default fund contribution.' [119]

Despite all this, in making its policy decision on the amount and source of inter-CCP margin, the Bank of England concluded that using the same measure as for a clearing member with the same positions was the appropriate course of action for an interoperating CCP.[120] The argument, approximately as set out above, that a higher level of margin was needed, was rejected on the basis that it would not 'strike an appropriate balance between safeguarding against the systemic risk of contagion between CCPs and maintaining the benefits of interoperability'.[121] It was, however, agreed by the Bank and all respondents to its consultation that the source of inter-CCP margin was to be separate from the margins collected by the CCP.[122]

15.27 Default fund contributions should, under the ESMA Guidelines, the A&I Guideline and the PFMI, not be made by one CCP to another.[123] Non-contribution could leave both CCPs short of financial resources. Supplementary funding may be needed to plug the gap. Yet default backing, rather than margining, might be the more appropriate tool for management of CCP-default risk. It has been argued that each CCP should augment its own default fund, from contributions by its non-CCP participants, to cover losses in the event of default by the interoperating CCP.[124] An objection to this proposal is that it imposes the financial burden on the participants in the surviving CCP, de-linking the cost from the risk.

117 Joint Regulatory Authorities of LCH.Clearnet Group, *Investigation of risks arising from the emergence of multi-cleared trading platforms* (July 2008), www.dnb.nl/binaries/Investigation%20of%20risks%20arising%20from%20the%20emergence%20of%20multi-cleared%20trading%20platforms_tcm46-216876.pdf, p 9

118 Cf ESMA March 2016 Report, paras 73, 97

119 ESRB 2019 Report, pp 30–31

120 Bank of England, *Implementation by the Bank of England of ESMA's Guidelines and Recommendations on CCP interoperability arrangements: Summary of feedback received and policy response* (July 2015), Standard 1

121 Bank of England, *Implementation of ESMA's Guidelines*, p 4; cf ESRB 2016 Report, p 19

122 Bank of England, Implementation of ESMA's Guidelines, p 3 and Standard 2

123 See **section 15.22(2)**

124 European Central Counterparty Ltd, *Recommendations for Reducing Risks Among Interoperating CCPs – A discussion document* (January 2010)

Regulatory views on inter-CCP risk management

15.28 In considering the problem in early 2010, a group of regulators from the United Kingdom, the Netherlands and Switzerland (countries in which three CCPs then seeking to interoperate were domiciled) issued a statement on inter-CCP credit exposures. This statement was presented to the European Commission's Monitoring Group, which had responsibility for oversight of the operation of the Code.[125] In summary, the regulators concluded:

- Inter-CCP credit exposures should be measured, monitored and mitigated with collateral.
- The collateral so provided should be extra collateral – it should not be sourced from the margin contributions made by other participants. It could, for example, be paid for by an increase in the default fund contributions made by other participants or a special levy on participants. (The notion that the cost is borne by the non-defaulting CCP's participants, and that this upsets the normal principle that the introducer of risk should pay the insurance premium or perverse incentives will follow, seems not to have troubled the regulators.)
- The collateral so provided should be pre-funded. Standby arrangements would not be acceptable.
- The interoperating CCPs should ensure that their assets do not become trapped in the other CCP in the event of that CCP's failure.

The regulators also drew attention to several other risks faced by interoperating CCPs: in particular operational/technical risks, legal risks, settlement risk and liquidity risk. These risks were also elaborated in a paper on CCP interoperability prepared by the regulatory college then responsible for oversight of the LCH group.[126] The paper points out in particular that the process of registration of contracts (typically novation)[127] by which the CCPs become interposed between buyer and seller may be less reliable when there is a link, for example if the point of irrevocability is differently defined by the two CCPs. It also explains that settlement risk can arise if the buy-in structures at the two CCPs require one CCP to deliver securities which it has not yet received. These are just two examples of the many operational issues which arise in establishing a link: the majority of the points which arise follow from the unusual nature of the link in the chain of transactions where both buyer and seller are CCPs (the inter-CCP contract). Operational and legal issues require compromise by both interoperating CCPs; as with the counterparty risk issues, compromise erodes the integrity of both CCPs' containment of risk.

To these points should be added the thorough (and, it is to be hoped, influential) ESRB 2019 Report, which draws further attention to risks involved in CCP

125 For a summary of the statement, see papers submitted to the Monitoring Group: AFM, DNB and FSA, *Interoperability and Regulatory Expectations*, slide presentation, http://ec.europa.eu/internal_market/financial-markets/docs/code/mog/20100315_afm_dnb_fsa_en.pdf, and FESE, EACH & ECSDA, *Joint Status Update of the Code of Conduct* (March 2010), slide presentation, http://ec.europa.eu/internal_market/financial-markets/docs/code/mog/20100315_fese_each_ecsda_en.pdf, p 8

126 Joint Regulatory Authorities of LCH.Clearnet Group, *Investigation of risks arising from the emergence of multi-cleared trading platforms* (July 2008), www.dnb.nl/binaries/Investigation%20of%20risks%20arising%20from%20the%20emergence%20of%20multi-cleared%20trading%20platforms_tcm46-216876.pdf

127 See **section 2.3**

interoperability arrangements and, in particular, the problems that arise if a CCP which participates in a link is itself in default or subject to recovery or resolution process.

Insolvency protection

15.29 To accommodate interoperability, various modifications have been made to the protective legislation designed to block the effect of insolvency laws which might interfere with the management of defaults. In the first place, changes to the SFD were made in order to deal with the following case: if a participant A in system A fails, and participant A had entered a transfer order in favour of a participant B in system B, it should not be possible to challenge the finality of the transfer to participant B on the grounds that participant A had nothing to do with system B.[128]

Secondly, the Part 7 Companies Act regime treats inter-CCP transactions as 'market contracts' and thereby gives some degree of protection.[129] In addition, the segregation rules were changed in a rather confusing way. Regulation 16 of the Financial Markets and Insolvency Regulations 1991[130] elaborates on when different transactions entered into by the same person should be treated as if they were entered into by different persons: this is to ensure that transactions booked to a GCM's 'client account', and the margin money which supports those transactions, are ring-fenced and not intermingled with losses or margin booked to the GCM's 'house' or 'proprietary' account. The regulation has been amended to cater for inter-CCP transactions, and it appears that the intention[131] was to provide that, on default by a CCP which is party to an interoperability arrangement, market contracts entered into by the failed CCP will be treated by the surviving CCP as if they were booked to a 'client account' and not intermingled or set off against other transactions.[132] It is not at all clear why the draftsman thought it necessary to specify that amounts related to market contracts entered into by a CCP under an interoperability link arise in a different capacity from amounts due under 'other market contracts'. Similar revisions to regulation 16 purport to cater for horizontal interoperability between CSDs and vertical links between different classes of infrastructure: these are equally difficult to interpret. In short, the provisions of this regulation dealing with relations between infrastructures are confused, and do not enhance interoperability.

Recovery and resolution

15.30 The ESRB 2019 Report discusses in detail the challenges which can arise when an interoperating CCP is subject to recovery or resolution processes. Questions which may arise in these situations include the following:

128 SFD, art 3(1), as amended
129 Companies Act 1989, s 155(3ZA); see **section 13.18(1)**
130 SI 1991/880
131 HM Treasury, *Summary of responses to consultation on amendments to Part 7 of Companies Act 1989* (December 2008)
132 Financial Markets and Insolvency Regulations 1991 reg 16(1A]

- Interoperating CCPs may be exempted from the loss-sharing provisions of CCPs' rulebooks, which will have the effect of diminishing the financial fall-backs available to the CCP attempting recovery.[133]
- However, this is not universally the case. VMGH and tear-up rules may apply to an interoperating CCP with which a CCP in recovery has a relationship. But

  > 'the non-defaulting interoperable CCP – which is hit by these losses – would need to anticipate such situations in its rulebook for it to have the same powers which allow it to pass losses on to its members. This is particularly clear in the case of VMGH. However, as long as the non-defaulting interoperable CCP is not itself in a state of recovery, it may lack the legal grounds for using recovery tools. A shortfall may even qualify as a default for the interoperable CCP, thereby triggering default management procedures. Hence, triggering recovery tools across interoperability arrangements could lead to significant contagion effects'.[134]

- Then there is the real risk that a default which forces a CCP into a situation where the loss waterfall beyond the ordinary default fund is invoked was not some isolated event in one unfortunate CCP, but a much wider market event. For example, the defaulter(s) may have participated in the interoperating CCP, which may itself have invoked its loss-sharing rules. The ordinary provisions of CCPs' rulebooks may be inadequate to deal with the situation. Operating issues with CCP interoperability

15.31 If margin is to be posted between CCPs, it creates operational issues as well as points of principle. The issues on which the interoperating CCPs will need to compromise include eligibility criteria and concentration limits for particular margin types and the timetable for postings. Eligibility criteria differ quite widely between CCPs and product lines. Even cash, which is universally accepted, can be complicated: what currencies are accepted, other than the receiving CCP's home state currency; what limits are imposed; should cash be posted to an account maintained by the CCP at the central bank? Timings can also be troublesome, particularly if the CCPs are in different time-zones and thus have different opening hours, or operate under different holiday schedules, quite apart from the question of grace periods. A CCP which is required to post margin to another CCP out of hours or at times when its liquid resources are low will need to put in place special, possibly expensive, liquidity management arrangements.

15.32 CCPs will need to receive a flow of trade data from the relevant trading venue. Where the venue is already served by a CCP, one possible method for a new CCP aiming to clear the same marketplace is to receive the flow from the incumbent CCP (L-shaped flow) rather than the venue itself (Λ- (called 'inverted-V')-shaped flow). L-shaped arrangements are more risky for the new CCP, because they expose it to a range of IT and connectivity risks which do not arise with the Λ-shaped model.

15.33 Settlement of the inter-CCP transactions raises a number of issues where the products cleared are not invariably cash settled. The settlement issues include similar points to margin as regards timetables and, as noted above,

133 ESRB 2019 Report, p 30, Table A.2
134 ESRB 2019 Report, p 33

tolerances referable to buy-in schedules. Additionally, the technical arrangements adopted by the interoperating CCPs may differ. Settlement instructions may be routed direct from the trading venue or created by the CCP: in the former case, the instructions need to cope with the extra link in the chain where the trading entities participate in different CCPs; in the latter, which CCP's instructions to the CSD will prevail? Operational practices at CCPs may also allow (or they may not allow) splitting of trades for settlement when a clearing member has only a partial quota of securities available for delivery; they may (or they may not) aggregate and net the participants' obligations before sending settlement instructions to the CSD; and they may (or they may not) use the same systems interface to generate and reconcile settlement information. Settlement discipline rules introduced under the CSDR may help but will not cure this difficulty.

15.34 Corporate actions will arise on securities which have passed through the CCPs' hands. Record dates may occur shortly before settlement, with action needing to be taken by the original holder of securities now transferred to one or more buyers. Exceptionally, the record date may occur while one or other of the CCPs is in actual possession of the securities. In any of these cases a decision may be needed as to which CCP owes duties in relation to the corporate action, how any rights or obligations are to be apportioned among buyers of the securities, and what limits there are on the requirement of each CCP to take action.

LEGAL ISSUES WITH CCP INTEROPERABILITY

15.35 The primary legal issue identified by the LCH joint regulators is the risk introduced by different moments of novation or registration at the two CCPs. This would create an imbalance: one CCP might consider that it has a valid pair of trades, one with its participant and the other with the interoperating CCP, whereas the interoperating CCP may consider that the transaction is not yet registered. The point is picked up by the PFMI[135] and legislated for (in slightly different ways) in both the Settlement Finality Directive[136] and EMIR.[137] The wider point at issue here is that, in a case of full mutual interoperability, neither CCP can dictate to the other that its own rules are better, and either a CCP will have to bear the risk of mismatch or change its own procedures (no doubt to the general disgruntlement of its participants). Related points will derive from the CCPs' respective rules on reconciliation of trade data, criteria for and timing of rejection of trades for registration, and the moment of finality. As finality of securities trade settlement is the preserve of CSDs rather than CCPs, this last comment is difficult to apply to CCPs clearing cash market transactions, but for CCPs clearing derivatives trades or other cash-settled transactions where netting equates to settlement it is a valid thought.

15.36 The rules of each CCP would be the ordinary starting point for determining how the operating issues should be handled. Each CCP will prefer its own rulebook to apply to the inter-CCP relationship, but this will not usually be possible where there is a conflict between the two CCPs' rules. In practice it may be that the CCPs agree that neither CCP's rulebook will apply, and instead a bespoke set of arrangements will be created to achieve interoperability

135 PFMI, para 3.20.3
136 SFD, art 3(4)
137 EMIR, art 52(1)

without the wholesale overhaul of either CCP's rules and procedures vis-à-vis all participants. If a CCP admits a third party to participate in its system, but that person is not bound but the CCP's rules, there is a question whether that might affect the ability of the CCP to rely on the protective settlement finality legislation:[138] article 2(a) of the SFD requires a system to have 'common rules'. Interoperating CCPs will need to take care not to abandon completely the idea that 'rules' apply to each other, even if special processes need to be put in place. The ECB-CESR Recommendations also mentioned the possibility that the interoperating CCP's rules, contracts and procedures may no longer be enforceable on the default or insolvency of a participant (which presumably includes the other CCP).[139]

15.37 CCPs will typically have powers to suspend registration and to take other action (including making emergency rule-changes) in the event of market disruption or other internal or external events which make it desirable for the CCP to take self-preservatory steps. Suspension by one, but not both, CCPs, can lead to mismatch; and any other self-preservatory steps could disrupt the interoperating CCP because of their effect on the inter-CCP contracts. Furthermore, if a CCP wished to change its rules in an act of self-preservation, and the inter-CCP contract is outside the scope of the rule changes, special arrangements between the CCPs may be needed to facilitate rapid modification of the inter-CCP obligations.

15.38 Liability is an extremely delicate topic. CCPs almost invariably exclude liability for everything in their dealings with their participants and take indemnities from them. The converse is demanded in an interoperability arrangement: that CCPs accept some degree of liability to each other. But where to draw the line is challenging. Clearly each CCP should be obliged, without exclusions, to perform its inter-CCP contract obligations. But even that simple proposition does not withstand close scrutiny, because a CCP can argue that consequential or indirect losses, or losses reasonably foreseeable in the peculiar circumstances of an inter-CCP contract which is not being performed, ought not to be passed between CCPs. Other obligations of CCPs might withstand a mutual exclusion of liability, but then the question will arise 'what binds CCPs to comply with their contract if they have agreed that no liability follows from its breach?'

THE LANDSCAPE OF INTEROPERATING CCPS

15.39 The PFMI urge extra caution where more than two CCPs are interoperating.[140] Certainly the problems listed above will become even more complicated. Quite apart from the number of bilateral interoperability agreements needed (EuroCCP pointed out that the number of agreements needed for n interoperating CCPs is $(n - 1) + (n - 2) + (n - 3) + \ldots + (n - n)$),[141] the difficulties of achieving compromise between two players will scale up proportionately when a third and a fourth CCP seek to come into the same marketplace.

138 See **sections 13.29ff**
139 ECB-CESR Recommendation 11 for CCPs (June 2009), para C4
140 PFMI Principle 20, Key consideration 7
141 European Central Counterparty Ltd, *Reducing Risks Among Interoperating CCPs* (January 2010), slide presentation

Case Study 15.1 The LCH-SIX Norway link

In December 2018, Olso Børs announced that it was going to close the 'linked derivatives order book partnership' with London Stock Exchange Derivatives Markets, with the consequence that the link between LCH Limited and SIX x-clear Norway would fall away.[142] The problem was not the trading but the cost of interoperable clearing. As explained by Oslo Børs: 'The current model of two interoperable clearing houses has required an additional margin to balance the risk between the two clearing houses. This additional cost will now cease and members will see lowered clearing margin costs as a direct result.'

Further insight into the challenges can be gleaned from the ESRB's Report.[143] The chart (taken from page 20) shows, over a period of eleven quarters during 2015–2018, the direction of margin flow between the two CCPs over the link. Where the bar has a value of less than 1, margin is flowing to the CCP; where it is more than one, it is flowing from the CCP; so, the two parts of the chart are reciprocal. (SIX data for the last five quarters was not presented.) Over this period, margin was in almost every period analysed flowing out of Oslo and into London. As the ESRB noted, 'the difference may be seen as reflecting the directionality of a risk flow from the members of one CCP to the members of the other'.

From the perspective of LCH, the risk being introduced to it across the link required margin, which needed to be sourced by SIX from its members. By re-internalising the risk into SIX the additional margining cost demanded by LCH could be removed.

15.40 The ESRB 2019 Report indicates that CCP interoperability arrangements remain few, and limited to cash products where the lifetime of cleared transactions is short and the risk low. By 2019 there were only two interoperability structures in Europe: a bilateral link between LCH SA and CC&G – both of them entities within the London Stock Exchange Group – and a triangular set of interoperability agreements among LCH Limited, SIX x-clear, and EuroCCP. The link between LCH Limited and SIX x-clear Norway was due to be closed (see **Case Study 15.1**). Since the financial crisis of 2008, the philosophical balance against which interoperability might develop has shifted subtly away from the dominance of competition theory and more towards a concern about systemic risk. The two are invariably in tension, as explored in **Chapter 11**. From imagining CCPs as general soakaways for unwanted risk, policy thinking has matured into better understanding of the systemically important role played by CCPs and the possibility that CCPs themselves may be vulnerable. As the pendulum has swung towards protection of the financial system, the attractions of interoperability have seemed lower. Although the ESRB 2019 Report tentatively encourages further discussion of the possibility of derivatives CCP interoperability, its list of risk concerns is long, which suggests that interoperability may still be some way off in that sub-sector.

142 Oslo Børs, Linked derivatives order book partnership ends in June 2019 (December 2018), www.oslobors.no/ob_eng/Oslo-Boers/About-Oslo-Boers/News-from-Oslo-Boers/Linked-derivatives-order-book-partnership-ends-in-June-2019, press release

143 ESRB Report, Chart 4

INTEROPERABILITY OF DERIVATIVES CCPS

15.41 Title V of EMIR is limited to CCPs providing clearing services in relation to transferable securities and money market instruments.[144] This means that interoperability is not legislated for in relation to OTC derivatives clearing, despite (a) OTC derivatives clearing being a main rationale for the adoption of this legislation and (b) the likely need for transatlantic links (and other links to and from the European Union) owing to the international differences between clearing requirements for OTC derivatives.

EMIR and MiFIR each contain provisions which acknowledge the difficulty of establishing interoperability for derivatives-clearing CCPs, and thus limit the ability of CCPs to demand access to trading venues' trade feeds and vice versa.[145]

Article 85(3)(d) of EMIR obliged ESMA to submit a report to the European Commission on whether the interoperability provisions of EMIR should be extended to cover further classes of financial instrument. The report[146] broadly concludes that interoperability is not suitable for OTC derivatives, but could be for exchange-traded derivatives. As regards OTC derivatives these are said to involve 'additional complexities'. ESMA noted that one interoperability arrangement was in existence for exchange-traded derivatives, allowing it to conclude that 'the potential benefits overcome the potential costs' involved in extending Title V to these products. But the discussion in ESMA's paper is thin. Derivatives are longer-term instruments than equities, bonds and other cash-market products. OTC derivatives involve greater difficulty owing to the absence of any organised market to which recourse may be had in managing a default. As the ESRB noted,[147] there is a question whether Title V in its original form and the ESMA Guidelines cover the risks inherent in derivatives-CCP links.

According to the register of CCPs authorised to clear OTC derivatives maintained by ESMA,[148] five CCPs (which include, as part of the Brexit transitional arrangements, LCH Limited as a 'European' CCP) clear interest rate derivatives, and two (including ICE Clear Europe, another UK CCP) clear credit derivatives. Evidently concentration of clearing of products covered by clearing mandates under EMIR into single CCPs for each product has not happened. The dispersal of clearing among CCPs suggests at least a prima facie case for interoperability of derivatives CCPs.

15.42 Interoperability is harder for OTC derivatives CCPs than for cash securities CCPs. The following points can be put forward in support of interoperability of OTC derivatives CCPs:

(1) The operational difficulties discussed in relation to securities should not arise.

(2) The demand for collateral which is a side-effect of OTC derivatives clearing would be mitigated, improving market liquidity conditions,

144 EMIR, art 1(3)

145 EMIR, art 8(4); MiFIR, arts 35(4) and 36(4)

146 European Securities and Markets Authority, *The extension of the scope of interoperability arrangements* (July 2015)

147 ESRB 2016 Report (January 2016), p 24

148 ESMA, *Public Register for the Clearing Obligation under EMIR* (April 2020), ESMA70-708036281-176

provided that the additional risk introduced by the link did not swamp the netting benefit of increased clearing levels.[149]

(3) Interoperability should allow additional CCPs to clear assets for which a clearing mandate is in place, without obliging market participants to have multiple CCP memberships. In the absence of interoperability, if party A, who participates in CCP1, enters into a transaction with party B, who participates in CCP2, it may be necessary for A or B to seek to participate in the other CCP, or employ a GCM, either of which would involve extra cost. Market pressure may build to force some interoperation of CCPs, at least as regards fungible products.

On the other hand, the following points might be mentioned:

(4) The inter-CCP margin requirements may be very large, and the need to fund these margin payments independently of margin collected from participants[150] could render interoperability economically unviable. In particular, concentration margin has been identified as a potent difficulty for interoperating derivatives CCPs.[151]

(5) Another difficulty with interoperation of derivatives CCPs is product fungibility. Derivatives CCPs need to be very careful how they select products for clearing.[152] Because OTC products do not emanate from an exchange or other trading platform, there is no guarantee that a product accepted for clearing by CCP1 is fungible with a product cleared by CCP2. (This objection is unlikely to be relevant if the product in question is on the list of mandatory-clearing derivatives prescribed under EMIR.)

(6) Transatlantic interoperable clearing may be harder than European interoperable clearing owing to differences in the risk management and regulatory regimes applicable to CCPs in different continents. Interoperating CCPs must take special care to manage the risk of CCP default, which involves novel and complex analysis. Regulatory approval of a transatlantic link is likely to be slower to achieve than for intra-EU cross-border link.

15.43 Official statements give guarded support for interoperability of OTC derivatives CCPs.[153] A variety of interoperability options for exchange-traded derivatives was discussed by the European Central Bank in a paper from 2002,[154] and revived in an IMF paper from 2010.[155] In particular, cross-margining[156] seems to find favour as a potential route towards interoperability. Full mutual interoperability is noted to be designed 'to promote competition among

149 Bank for International Settlements Committee on the Global Financial System, *The macrofinancial implications of alternative configurations for access to central counterparties in OTC derivatives markets* (November 2011), www.bis.org/publ/cgfs46.pdf, p 17

150 PFMI, para 3.20.16; see **section 15.25**

151 McPartland, J., and Lewis, R. 'The Challenges of Derivatives CCP Interoperaability Arrangements' (June 2016) *Journal of Financial Market Infrastructures* Vol. 4, p. 41; ESRB 2019 Report, section 4.2.1

152 See **sections 17.16–17.18**

153 CGFS paper 46, s 3.3; ESRB 2019 Report, p 41

154 Russo, D, Hart, T, and Schönenberger, A, *The Evolution of Clearing and Central Counterparty Services for Exchange-Traded Derivatives in the United States and Europe: a Comparison* (September 2002), ECB Occasional Paper No 5, www.ecb.eu/pub/pdf/scpops/ecbocp5.pdf

155 Kiff, J, et al, 'Making Over-the-counter Derivatives Safer: The role of Central Counterparties', in IMF, *Global Financial Stability Report* (April 2010), www.imf.org/external/pubs/ft/gfsr/2011/01/pdf/text.pdf, ch 3

156 See **section 15.19(4)**

marketplaces',[157] whereas cross-margining might provide benefits where this kind of full interoperability is unnecessary, or difficult to achieve. One possible benefit would be to reduce the inefficiency that participation in multiple CCPs creates for use of collateral. Cross-margining approaches could, for example, have the effect that one CCP acts as collateral agent for the other CCP as well as taking margin on its own account, so that a single aggregate net margin call could be made, and the need to transfer margin from CCP1 to CCP2 would be eliminated. However, it may also be noted that cross-margining has been used in the futures clearing space because of a natural symmetry: where a product is traded in two different markets, traders wishing to arbitrage between the markets will typically be long in one while they are short in another, so that margin calls at two CCPs will naturally offset. It is less clear that such logic would apply to OTC derivatives clearing.

INTEROPERABILITY OF CSDS

15.44 Interoperability between CSDs is different from interoperability between CCPs. This is because securities have a 'home' CSD – the CSD which provides the root of title,[158] and is referred to in the literature as the 'Issuer CSD' – and any user selecting a CSD other than the 'home' or 'root' CSD will need, ultimately, to connect through to it. Interoperability between CSDs has the purpose of facilitating this type of selection.

Regulation and competition

15.45 Unlike CCPs, it is extremely hard for competing CSDs to provide true equivalence of service, precisely because the Issuer CSD provides an essential function which no other CSD can match. As described in **section 2.17**, CSDs have two key roles: to keep the ultimate (root) record of entitlement to securities, and to provide a settlement engine which effects transfers between the accounts of persons entitled to securities.

- As to the root of title function, investors have no choice. The ultimate title to the securities in which they are investing is inherent in the security itself. The root of title is not a matter of 'choice' for the investor: to say that you bought a share in a French company but you really wish that it was the same company, but German, is to wish for the moon to be painted blue. But there *can* be choice in this matter: the issuer of the securities could, in theory, select the German root of title system rather than the French. But until the full roll-out of the CSDR, this type of choice will remain purely theoretical.
- It is different as regards the settlement function. Whether or not a CSD has outsourced its settlement engine functionality to T2S, it is possible for a non-Issuer CSD (referred to in the literature as an 'Investor CSD') to offer to act in a quasi-custody role,[159] holding a pool of securities at the Issuer

157 IMF paper, p 24
158 See **section 2.18**
159 See, for example, European Commission, *Clearing and Settlement in the European Union – The way forward* (April 2004), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0312:FIN:EN:PDF, p 5

> CSD and then offering, as between its participants, a settlement service purely dependent on the functionality and efficiency of its own settlement service offering. That does introduce an element of choice for investors. Some investors may, of course, choose a different CSD – possibly the Issuer CSD, or even a different Investor CSD – which means that there needs to be some means of supporting cross-system settlements. It is these scenarios which give rise to the need for CSD interoperability.

A consequence of this fundamental feature of CSDs is that the terminology applicable to interoperating CSDs is different. Immediately we are confronted with the need to distinguish between an 'Issuer' CSD and an 'Investor' CSD. That is simple enough, though of course an investor may participate in an 'Issuer' CSD. The European legislature has adopted slightly different terminology in CSDR RTS 392,[160] which refers in places to the 'requesting CSD' (read Investor CSD) and 'receiving CSD' (read Issuer CSD). Where two CSDs which do not hold the root of title – both, therefore, being Investor CSDs – wish to interoperate, this is described as a 'relayed link' since the Issuer CSD must be involved. Terminology, and taxonomy of CSD links, is further explored in papers produced by ECSDA.[161]

15.46 The purpose of competition between CSDs should therefore be explained. It is not possible, just because there is interoperability, for an investor to choose to use CSD2 in preference to CSD1 as a device to cut costs. This is true even if CSD2's prices are a fraction of those of CSD1. Transactions in a given security must always (subject to internalised settlement[162]) settle across the books of the Issuer CSD. If the Issuer CSD is bound to be involved, the involvement of a second CSD is bound to add a layer of *extra* cost. Competition may, in the long run, reduce CSD costs, but this would appear to require one of two things happen: a single, cheap, Investor CSD scoops the entirety of the Issuer CSD's clientele and internalises the entire settlement flow relating to the Issuer CSD's securities; or an Investor CSD absorbs the costs of the Issuer CSD as part of its own pricing programme – essentially offering a loss-leader service for securities domiciled at expensive Issuer CSDs.

15.47 At this point a few comments may be made about competition and dependency. Where both investors participate in an Investor CSD, the selection of the Investor CSD may be done for operational convenience – typically to enable the investors to use their 'local' CSD, with whose operational and connectivity requirements they will be familiar, for holding title to and transferring 'foreign' securities. Simplification of this type is to be commended, but it can be achieved in other ways (notably via T2S,[163] discussed below, or by using an agent bank); and where an Investor CSD is employed, the investors are taking custody risk on the Investor CSD, but without excising the Issuer CSD from the chain because it retains its fundamental role as holder of the root of title. Where a party to a trade participates in an Investor CSD, the dependency on the Issuer CSD is not eliminated: if the trade counterparty participates in the Issuer CSD, there must be a title transfer at that level, so the settlement engine of the Issuer CSD is being

160 Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories

161 European Central Securities Depositories Association, Typology of CSD links (November 2012); Overview of CSD links in Europe (January 2015)

162 See **section 2.22**

163 See also **section 2.23**

used notwithstanding one investor's choice of Investor CSD. If both investors participate in different Investor CSDs, the Investor CSDs are merely passive recipients of settlement instructions which are passed on to the Issuer CSD – they are functionally carrying out the role of agent banks.

Dual listing has been an important reason for creating links between CSDs. Owing to the want of technical interoperability – incompatible systems, communications, data requirements and so forth – it is easier for traders and their service providers using a particular stock exchange to plug into the local post-trade infrastructure built to serve that exchange, even where the security being bought or sold is not a local security for which the infrastructure was designed. This shifts the problem of connectivity and technical inter-operation to the Investor CSD to solve. Many inter-CSD links were developed to enable dually listed securities to be conveniently settled. Competition was involved – but competition between trading platforms, and this type of link between CSDs was not about a 'choice' of settlement venue. Traders and their service providers have, through the absence of technical interoperability, historically been denied a real choice owing to the costs of switching to settlement in a different CSD.

Link up Markets

15.48 Connectivity and technical interoperation can be viewed as an exercise in 'translation' between the language used by one CSD for data requirements and formats, timetables and other operational matters, and that used by another CSD. A central translation engine could, in theory, take the text used for settlement in one market and modify it so as to be comprehensible and effective in another. This was the idea developed by Link up Markets to facilitate cross-border settlement of transactions.[164] The need for a translation engine seemed less relevant after the adoption of Target2-Securities as the settlement platform for many European CSDs.

The settlement function – Target2-Securities

15.49 The principal function of a CSD apart from its root of title function is to provide for settlement. Despite the inescapable fact that an Issuer CSD holds the root of title and an Investor CSD does not, it is possible to devise an interoperable system between the two CSDs for settlement of securities transactions. Interoperability will thereby allow a participant in the Investor CSD to settle transactions in securities for which the Issuer CSD is the root CSD without the need for the participant to open an account at the Issuer CSD. Both CSDs could be Investor CSDs for the securities for which the other CSD is the Issuer CSD – providing reciprocal interoperability, if not exactly peer-to-peer interoperability as between CCPs.

15.50 Target2-Securities (T2S) is described in **sections 2.23ff**. As a settlement platform, rather than a CSD, T2S provides a coordinating and harmonising role between participating CSDs. The work done by the T2S builders and working

164 See Link up Markets, slide presentation (May 2010), www.linkupmarkets.com/pdf/LinkUpMarkets_May2010.pdf

groups illustrate the challenges involved in cross-CSD settlement; the following examples may be informative.[165]

- Investor CSDs may be unable to process corporate actions on securities issued into the Issuer CSD.
- Investor CSDs may not be able to process settlements which involve a different currency from their home currency.
- Investor CSDs may not be able to process partial settlements or other functionalities designed into the T2S platform.
- Investor CSDs may operate on a different calendar from the Issuer CSD.
- Investor CSDs may be unable to process all settlement messages using ISO 20022, and may have differing matching or validation rules from the Issuer CSD.
- The rules for cut-off for revocation purposes may differ between Investor and Issuer CSD.
- The Investor or Issuer CSD may not be able to handle withholding tax or voting issues which arise from the use of omnibus accounts, and they may conventionally include supplementary tax-related information which the linked CSD cannot handle.

What T2S can do is to solve these interoperability problems by imposing a common agreed standard, to which all CSDs must come up.

CONCLUSIONS ON INTEROPERABILITY AND COMPETITION BETWEEN CSDS

15.51 The following conclusions might be stated.[166]

(1) True horizontal interoperability among CSDs for their root-of-title functionality is, if not impossible, very difficult to achieve. Although issuers are permitted by the CSDR to have dually rooted securities, there will be formidable challenges. The example of the ICSDs may be followed; this would, at least, need a similar mechanism such as the 'bridge' between Euroclear and Clearstream, to rebalance the number of securities held by each CSD.[167] The fundamental dichotomy between a central root of title (connoting a single guardian of integrity of the issue) and competition between providers of that service is likely to be very difficult to resolve, at least in the first few years of operation of the CSDR.[168]

(2) Interoperability in relation to the root-of-title function can thus be disregarded, in relation to a single issue of securities. There is, however, no theoretical or practical objection to competition between CSDs seeking to provide the root-of-title function for *different* securities issues in the same market-place. If securities of series A are held at CSD1 and securities of series B at CSD2, there is no need for interoperability between the two CSDs. They need to be linked to the relevant trading platforms and CCPs,

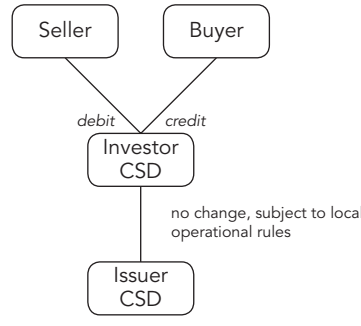
165 European Central Bank, Fifth T2S Harmonisation Progress Report (April 2015)
166 See also **section 11.7**
167 See **section 2.26**
168 Cf **section 6.24**

but those are vertical links rather than 'interoperable' links as discussed in this chapter.

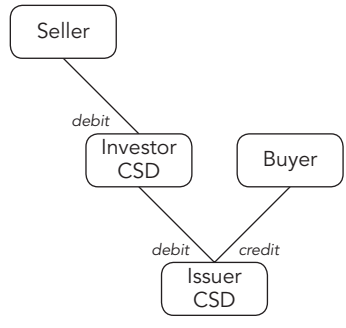
(3) Mutual participation by CSDs is a form of interoperability which may bring about a degree of 'competition' between CSDs. This will be competition for the settlement function. However, it will not constitute horizontal interoperability in the manner of competition between CCPs, but vertical competition: a CSD which cannot provide the root of title, but which offers a settlement service, is an Investor CSD providing 'internalised' settlement, akin to that potentially offered by an agent bank,[169] or an access service to facilitate settlement which takes place on the books of the Issuer CSD. These services take the Investor CSD into another marketplace, namely that occupied by agent banks, even though Investor CSDs may be given privileges not available to non-CSDs, such as a statutory right to a link.[170] In theory, a highly successful internaliser (Investor CSD) might capture all the settlement activity for a given issue onto its own books, and reduce the role of the Issuer CSD to a cipher; but whether that can happen in practice will depend on the pricing arrangements of the two CSDs.

Settlement between linked CSDs

(1) Investors both participate in an Investor CSD



(2) One Investor only participates in Investor CSD



169 See **section 2.22**
170 CSDR, art 50

(3) Investors each participate in different Investor CSD

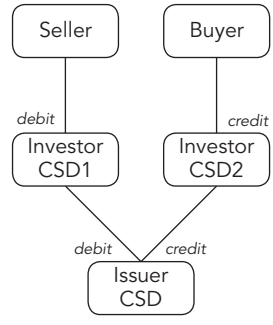


Figure 15.3

DVP IN INTEROPERABLE CSDS

15.52 Structural interoperability between CSDs – where the buyer is a participant in one CSD, and the seller a participant in another – requires that the settlement engines of the two CSDs are coupled together. To express the problem differently, links between CSDs require a solution to the DvP problem – how to ensure, for both participants, that there is simultaneous delivery and payment, when there are two infrastructures occupying the space between them. The CSDR states, in respect of links between CSDs, that 'links between CSDs shall permit DvP settlement of transactions between participants in linked CSDs, where practical and feasible.'[171]

The problem is this: each delivery versus payment transaction involving a single CSD requires four accounting entries to take place simultaneously: the seller's securities account is to be debited at the moment that seller's cash account is credited, while the buyer's cash account is debited at the moment that the buyer's securities account is credited. Tying up the payment and securities settlement systems is complicated enough but solved technologically in most European countries. When you introduce two CSDs into the picture, and accept that one of the CSDs must hold the root of title to all securities (ie, one CSD must act as Issuer CSD) so that the other CSD is no different from an agent bank in the eyes of the Issuer CSD, the number of book entries to occur simultaneously has been increased: the Investor CSD's accounts at the Issuer CSD are also involved, so there must be at least a debit (if the seller is a participant in the Investor CSD) or a credit (if the buyer is a participant in the Investor CSD) to the Investor CSD's account, and countervailing credit/debit entries to a cash account held somewhere in the Investor CSD's name.

The first point to note from this is that the Investor CSD, if acting as an agent bank, would ordinarily need to hold a cash account. Vanilla CSD functions do not necessarily require a CSD to hold cash for the purposes of settlement. Indeed CSDs can and generally will run securities settlement on their own books in parallel with cash settlement across the books of a central or commercial bank: DvP is a question of linking these systems up to achieve simultaneity of

171 CSDR, art 48(7)

settlement.[172] The accounts at the central bank would ordinarily be in the names of the CSD participants (or their settlement agents) – there is no need for the CSD itself to handle any cash. But to achieve structural interoperability, Investor CSDs may need to have cash – they cannot buy securities on behalf of their participants if they do not have cash, because the Issuer CSD could not transfer securities to the Investor CSD without a cash payment from the Investor CSD. Of course, the Investor CSD will obtain the cash by getting it from the buyer of the securities. But why would the buyer, who wants DvP – that is, not to take settlement risk – advance cash to the Investor CSD? To do so would violate the central principle of DvP, which is that transfer of title should be simultaneous with transfer of money, not behind it.

This central principle is reinforced by the CSDR. This requires that any interoperable CSDs using a common settlement infrastructure must establish identical moments of finality of transfers of securities and cash;[173] furthermore, all interoperable links between CSDs operating in EU Member States must support DvP settlement.[174] Where buyer and seller participate in different CSDs using T2S, it is therefore not to be allowed for seller to part with her securities before she is paid, or for buyer to part with his cash before he receives the securities with finality. There are two possible answers to this conundrum. The first is for cash liquidity to be made available to support a CSD link; the second is to rely on a cash bypass.

(1) *Cash liquidity*. The cash leg of the DvP can be addressed if the Investor CSD is allowed credit by the Issuer CSD, or maintains its own cash account using its own funds, or requires its participants to grant the Issuer CSD access to their cash accounts.[175] Each of these mechanisms has the drawback that one CSD is taking credit risk on another, or on the other's participants. If configured as a bank, an Investor CSD can offer a bank account to an Issuer CSD. So, if the Investor CSD has a participant acting as buyer, the Issuer CSD can transfer securities to the Investor CSD's account against a credit to its bank account with the Investor CSD. This involves the Issuer CSD taking credit risk on the Investor CSD; as the Investor CSD is a bank, this might be acceptable; but for the Issuer CSD it is 'settlement in commercial bank money,' which is not the preferred arrangement according to the PFMI[176] or CSDR.[177] This option may not be consistent with the CSDR unless both transfers are so close in time as to be indistinguishable, because buyer and seller do not receive simultaneous DvP, and one of them is forced for a short time to take credit risk on a CSD. CSDR RTS 392 provides for the case where linked CSDs are not authorised for 'banking-type ancillary services' and cannot provide cash accounts.[178] In this situation, prefunding is required; it is not explained how prefunding can be reconciled with the concept of DvP as ordinarily understood.

(2) *Cash bypass*. If the CSDs share a settlement engine, associated functionality may be able to identify that a particular transaction is to be

172 PFMI, para 3.12.2
173 CSDR, art 48(8)
174 CSDR, art 48(9)
175 ECSDA, *Cross-border Clearing and Settlement through CSD Links* (October 2006)
176 Principle 9, Key consideration 1
177 CSDR, art 40(1)
178 CSDR RTS 392, art 84(2)

settled across CSDs. This may enable a direct cash payment between the buyer and the seller without the need for an Investor-CSD cash account. Using an example where the seller participates in the Issuer CSD: instead of the expected account entries, there would be a debit of the seller's securities account; a credit to the Investor CSD's securities account, and a credit to the buyer's securities account, all occurring simultaneously, and at the same time as a debit to the buyer's cash account and a credit to the seller's cash account. This option may be achievable in T2S.

15.53 DvP is not an absolute requirement of the CSDR: it is only required where 'practical and feasible'.[179] The latter condition has been defined in CSDR RTS 392 as being satisfied when: (a) there is a market demand for DvP, evidenced by a request from a user committee of one of the CSDs involved; (b) the CSDs may charge a reasonable fee; and (c) there is a safe and efficient access to cash for settlement.[180] These conditions may be criticised as unnecessary in the case of (a) and (b), and under-specified in the case of (c), but the focus on cash is undeniably right.

One might therefore briefly consider whether settlement without simultaneous delivery and payment is achievable. As noted above, pre-funding is one possibility. Another option is to earmark or block securities, so that these are provisionally transferred but the moment of finality deferred until the cash has reached its destination. That, however, is a practice which is frowned upon where a link between CSDs is concerned. PFMI Principle 20 states that 'provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final'.[181] This has been transposed into article 48(4) of the CSDR, which says 'In the event of a provisional transfer of securities between linked CSDs, retransfer of securities prior to the first transfer becoming final shall be prohibited'. In these statements, 'retransfer' may be interpreted as meaning 'onward transfer'. It is a vital function of a settlement system designated under the SFD that a transfer order not be revoked after the moment defined by the system.[182] An Investor CSD may be unable to comply if the Issuer CSD can reverse a transfer in the Investor CSD's favour; so the Investor CSD ought not to treat any securities received into its account at the Issuer CSD on a provisional basis as being available for settlement in its own system.

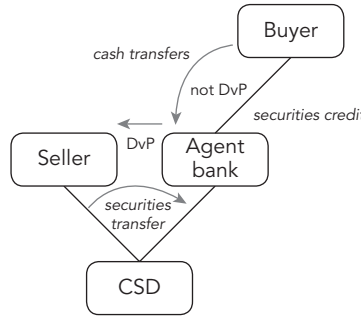
15.54 A final word may be appropriate on cash accounts and CSDs. Article 15(1)(d) of the T2S Guideline[183] requires CSDs in T2S to offer a basic custody service to other participating CSDs. No detail is given as to what is comprised in a basic custody service, either in the T2S Guideline itself or in the ECB's more elaborate Decision on eligibility criteria for CSDs.[184] However, providing a custody service without an accompanying cash account is difficult to imagine: dividend and other cash payments will pass through a custodian's

179 CSDR, art 48(7)
180 CSDR RTS 392, art 87
181 PFMI, para 3.20.6
182 SFD, art 5
183 ECB, Guideline of the European Central Bank of 21 April 2010 on TARGET2-Securities (ECB/2010/2), www.ecb.eu/ecb/legal/pdf/en_gui_ecb_2010_2_f_sign.pdf?d273a26be9382d3edeecc848515a410d
184 Decision of the European Central Bank of 16 November 2011 establishing detailed rules and procedures for implementing the eligibility criteria for central securities depositories to access TARGET2-Securities services (ECB/2011/20), OJ L 319/117

hands, so it would appear that a CSD complying with the T2S Guideline would need to have the capability of providing cash accounts. This may lead to the CSD acquiring the ability to offer DvP on one of ECSDA's models, described below, in any circumstances where T2S itself does not support the cash bypass model.

Cash bypass for DvP in interoperating CSDs

(1) Traditional situation: intermediary is agent bank



(2) Cash bypass: intermediary is a CSD with no cash account

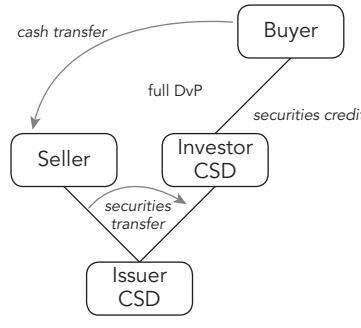


Figure 15.4

ECSDA models of cross-CSD DvP

15.55 There is only limited regulatory guidance on interoperability between CSDs in the A&I Guideline. This cites a number of technical issues (cut-off times, synchronicity, contingency plans, etc) to be overcome.[185] But it does not prescribe requirements or propose solutions. These are left to the European Central Securities Depositories Association (ECSDA). Two models have been developed by ECSDA to facilitate DvP in the context of a link, with different implications for liquidity and credit.[186]

(1) In the 'Issuer CSD' model, the Issuer CSD controls the moment of settlement.

185 FESE, EACH and ECSDA, *Access and Interoperability Guideline* (June 2007), http://ec.europa.eu/internal_market/financial-markets/docs/code/guideline_en.pdf, para 102

186 ECSDA links paper, p 34

If the Issuer CSD's participant is buying, there is no real problem: the settlement will not proceed until the buyer is ready with the cash and the seller is ready with the securities. The seller is (as far as the Issuer CSD is concerned) the Investor CSD, and the Issuer CSD can segregate/identify (or 'earmark' or 'block') the securities to be sold so that DvP can happen immediately upon that cash being ready in the buyer's cash account at the central bank. As far as the Investor CSD is concerned, it needs to debit the seller's securities account immediately on having its own account debited at the Issuer CSD level. That leaves the cash leg at the seller's account to be tied up, either through direct credit, or a credit to the Investor CSD's cash account at the central or commercial bank it uses for payments, or even (where the Investor CSD is a bank using the first option described above) by the Investor CSD making a debit entry to the Issuer CSD's account on its own books while it makes a credit entry to the seller's cash account. As the cash is coming in, the Investor CSD can time the DvP on its own books so as to follow instantly upon the movements it sees in its own cash and securities accounts.

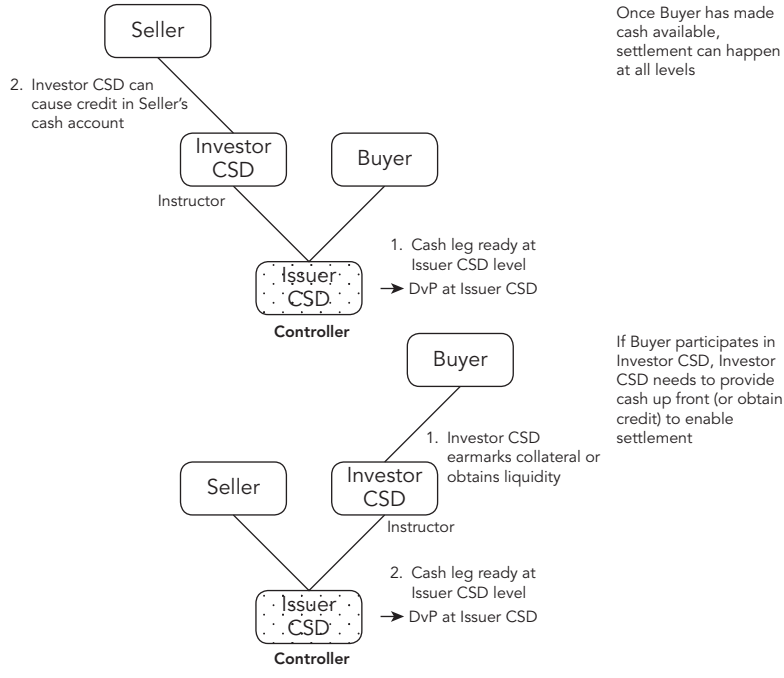
However, if the Issuer CSD's participant is selling, things are more complicated. The Issuer CSD will not transfer the securities to the Investor CSD's account until it can simultaneously transfer cash to the seller, and until there is cash in the Investor CSD's cash account nothing will happen. But the Investor CSD needs to offer DvP to its buyer participant. In order to decide whether chicken or egg will happen first, the Investor CSD needs to have a liquidity arrangement to ensure its cash account is credited, then the settlement can occur on a DvP basis at the Issuer CSD and, finally, hard on the heels of that DvP, the Investor CSD can credit the securities to the buyer, take the buyer's cash, and replenish its own cash resources. In practice, this will work if the Investor CSD has funds of its own, or its settlement bank is willing to extend the Investor CSD intra-day credit. To grant intra-day credit is a reasonable risk as the Investor CSD should finish each day with a net zero cash position, having no personal interest in any of the trades settling: danger only arises if the Investor CSD allows trades to proceed to settlement where its buyer participant will not pay. ECSDA suggests that pre-funding will only be needed if a settlement is due to take place overnight, which implies that intra-day credit is the norm.[187]

(2) The alternative to the Issuer CSD model is the 'Buyer CSD' model. In this case, which appears to be used by few, if any CSD links,[188] the buyer's CSD controls the moment of settlement. If the buyer participates in the Issuer CSD the arrangements are the same as for the Issuer CSD model. If the buyer participates in the Investor CSD, though, the Investor CSD can call for settlement across the books of the Issuer CSD at any time if it is a bank or has a liquidity facility with its settlement bank, and the transfer of securities will be made to the account of the Investor CSD even if the Investor CSD's buyer participant is not yet ready to settle. This approach decouples the settlements at Issuer and Investor CSD levels, with the Investor CSD taking a position in the instrument being settled. To address the credit issue, the Investor CSD can pledge the securities received to cover its overdraft. To have to take a position might seem unattractive for the Investor CSD, which probably explains why the model has not proved popular.

187 ECSDA links paper, pp 48–49
188 ECSDA links paper, p 34

ECSDA Models of DvP

(1) Issuer CSD model



(2) Buyer's CSD model

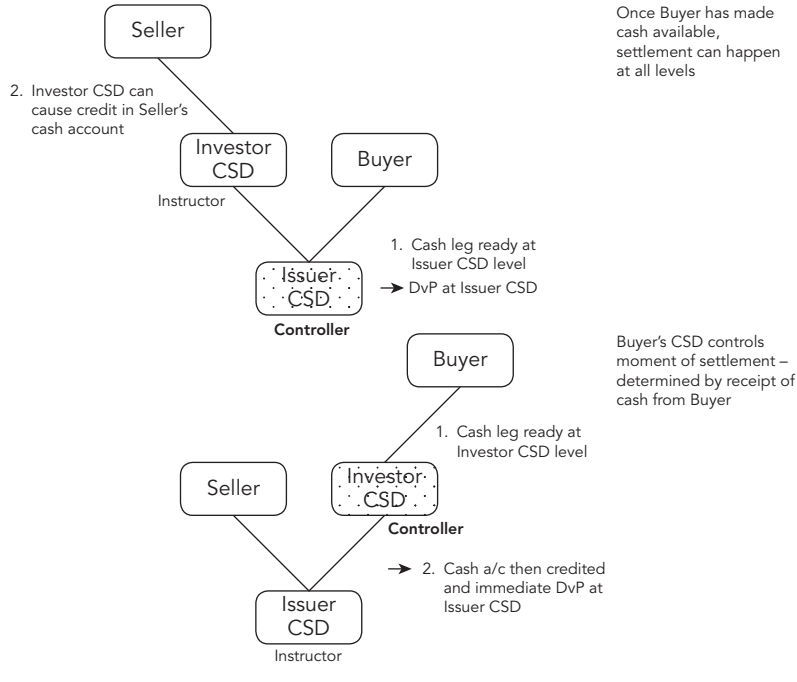


Figure 15.5

Other intermediary issues

15.56 Because a CSD which takes on the role of Investor CSD is acting as intermediary, in a quasi-custody role, the issues which such a CSD must confront will be similar to those faced by agent banks and which are discussed in **Chapter 19**. Among the most important are the following:

(1) *Omnibus account risk*. As explained in **section 19.15(3)**, an account provider who holds the securities for which it is responsible to its account-holders in an omnibus account (such as an Investor CSD holding foreign securities for its own participants at an Issuer CSD) may face the risk that a settlement system (the Issuer CSD) will identify securities in the omnibus account as available to satisfy the Investor CSD's settlement obligations, without regard to the identity of the client (participant) to whom they in fact belong. The settlement system may thus unwittingly use the 'wrong' securities to effect settlement, leaving the account provider (Investor CSD) with a shortfall which it must rectify. This problem is referred to in the ECSDA Links paper as 'borrowing from the pool'. Borrowing from the pool is disallowed under the PFMI.[189] The solution is either to use individually segregated accounts, or to adopt a 'settlement control mechanism'[190] to prevent instructions for settlement being submitted to the Issuer CSD before the Investor CSD has been supplied with the securities for the account of the selling participant.

(2) *Corporate actions*. A CSD acting as custodian would need to process corporate actions as if it were an agent bank. CSDs may not offer full-service corporate actions services.[191]

(3) *Fees*. A CSD acting as intermediary will wish to charge a fee for its pains. This cannot realistically be done at the expense of the Issuer CSD, so, if the principles of fee separation outlined in article 31(1) of the CSDR and the Code of Conduct[192] are to be followed, it should ordinarily be the case that use of a CSD link entails greater cost than direct participation in an Issuer CSD. That 'ordinary case' might prove to be wrong where both CSDs' fee tariffs are volume-based, so that a participant can get a cheaper rate by concentrating its business in an Investor CSD than from multiple Issuer-CSD participations, or where the technical costs of set-up for multiple Issuer-CSD participations outweigh the savings from disintermediation.

(4) *Contractual matters*. CSDs entering into links are invited to sign up to standardised contracts prepared by ECSDA.[193] Given that interoperating CSDs must accept a degree of counterparty risk in dealing with each other, many of the issues discussed above in relation to interoperating CCPs will also be relevant; for example, liability, rules, suspension of operations, etc. In particular, the point made in relation to CCPs – that infrastructures classically reject the notion of liability, which leads to a stand-off in a link arrangement – needs careful thought. The ECSDA model agreements include provisions addressing force majeure and liability as well as a number of technical issues; inter-CCP liability is sidestepped by envisaging that the Issuer CSD's 'general rules and business conditions … (including, without

189 PFMI, para 3.20.7
190 ECSDA links paper, p 20
191 European Central Securities Depositories Association, *Issuer Services*, Report (January 2008)
192 See **section 11.20**
193 European Central Securities Depositories Association, *Model Agreements* (March 2001)

limitation, liability arrangements) shall be applicable.'[194] Presumably if the link is reciprocal the principle applies in either direction. The solution adopted by ECSDA on liability neatly illustrates a vital difference between CSD links and CCP links: the Issuer CSD is at the head of the title chain and will always dominate the relationship as regards the securities for which it is ultimate keeper of title; CCPs are, where adopting full mutual interoperability, in a partnership of equals.

Operational issues with CSD links

15.57 A task force (TFAX) was established as part of the T2S programme to address issues arising in T2S from cross-CSD settlement. The task force reported in 2012,[195] noting eight issues: transmission of information, shareholder registration, tax processing, portfolio transfers, bond stripping, non-standard securities, CSDs' ancillary services, CCP instructions, issuance practices and message fields. It may be observed that many of the TFAX issues persisted into the European Post Trade Forum's report of 2017,[196] and may therefore be of wider significance than the limited T2S context might imply.

Mention should also be made of two particular operational issues which interoperating CSDs are likely to have to consider.

(1) *Matching and reconciliation*. The data flow from trading platforms or CCPs which generates settlement instructions needs to be handled carefully. If the flow is routed through one CSD to the other, that creates a dependency on the CSD which initially receives the data. If the data arrive at the two CSDs separately, that creates a need for reconciliation. Either way, there is risk for participants. CSDR RTS 392 recognises the importance of the issue, setting out three rules on reconciliation between interoperating CSDs.[197] These set out: a minimum reconciliation standard, which is that the Issuer CSD should transmit to the Investor CSD at least daily a statement showing the opening and closing balances of the Investor CSD's account, and the individual movements during the day; an obligation for suspension of securities from settlement in one CSD to apply to all linked CSDs; and a responsibility for the Investor CSD in consequence of corporate actions. The problem with corporate actions is that they may reduce (or increase, though this situation is not addressed by CSDR RTS 392) the number of securities in issue: recognising the superiority of the Issuer CSD's title, the Investor CSD is not permitted to implement the corporate action until the Issuer CSD has completed its own processing.

(2) *Role of the CCP*. Settlement instructions may be sent direct from the trading platform or its participants, or they may come from a CCP. If they come from a CCP they may be net or gross; the fact that CCPs

194 Model Agreement between European Central Securities Depositories, art 8

195 European Central Bank, *Report of the Task Force on Adaptation to Cross-CSD Settlement in T2S* (TFAX) (November 2012), www.ecb.europa.eu/paym/t2s/progress/pdf/subadapt/report/2012-11-28_Cover_note_to_the_report_of_the_TFAX.pdf?5c6203154ae73108f13e28dd94df8bc6

196 European Post Trade Forum, *EPTF Report* (May 2017) https://ec.europa.eu/info/publications/170515-eptf-report_en

197 CSDR RTS 392, art 86

carry out multilateral netting does not always mean that the CCP sends net settlement instructions, so that it is possible for CCPs to delegate netting for settlement purposes to the CCP.[198] One of the linked CSDs may be set up to handle gross settlement instructions and the other net; this will complicate the link and the reconciliation process. On the other hand, as ECSDA points out, where a single CCP is used to clear trades by participants in both CSDs, it is possible for the CSDs to eliminate the risk they would otherwise take on each other: this is because the CCP can maintain accounts in both CSDs, and carry out a free-of-payment transfer between the CSDs without compromising the quality of DvP in either CSD.[199]

CSD links in practice

15.58 With the introduction of the CSDR, a register has been established by ESMA, which includes much useful information on CSDs and the links between them. Evidently many links exist, as indicated by ECSDA in 2016; a direct comparison between ESMA's register and ECSDA's review is not possible while some CSDs' applications for authorisation remain outstanding. The picture is still emerging; some conclusions which may potentially be drawn from the information available are as follows:

- Five CSDs on the ESMA register as at June 2020 are not participants in T2S. It is not achievable to deliver simultaneous DvP between a buyer in one CSD and a seller in another unless the T2S platform is used to ensure that the cash and securities accounts of both parties are debited simultaneously, and that the reconciling entries on the CSD which acts as issuer CSD (where different from both transferor and transferee CSD) are also made simultaneously. Either DvP is not being given, or one part of the transfer is not happening with finality.
- There are various ways around this. One approach is that used by KPDW, the Polish CSD, which has links with seven other CSDs. KPDW describes its link arrangements, which are mainly designed to enable its investor participants to hold and transfer foreign securities, as 'tak[ing] place on the basis of FOP transfers of securities from the accounts of participants of the foreign CSD onto the KDPW account in this CSD and then onto KDPW participant accounts'.[200] That is fine for subsequent transfers, once the securities are credited to an account in the investor CSD. The problematic element is the free-of-payment (FOP) transfer into the investor CSD: it is difficult to see how this is taking place without the extension of credit by some person (transferor, transferee, or one of the two CSDs in the arrangement).
- 'Prefunding' as envisioned by CSDR RTS 392[201] for cases where there is no banking-type ancillary services licence will be an effective possibility, but it should be noted that the pre-funder is extending credit to the CSD which receives the pre-funding.

198 ECSDA links paper, para 4.2.3
199 ECSDA links paper, para 4.2.5.1
200 KDPW, *Processing of foreign securities* (February 2020), www.kdpw.pl/en/participants/foreign/Pages/cooper.aspx
201 Article 84(2)

- Another solution to the credit problem lies, in theory, in the availability of a licence for banking-type ancillary services for one or other of the CSDs. However, only one CSD (Euroclear Bank SA/NV) on ESMA's register as of June 2020 had such a licence. That is not the solution being used for most of the dozens of links recorded by ESMA.
- The use of a third-party bank is another possibility. Where a third-party bank provides securities or cash accounts for the investor CSD and, in turn, holds securities at an issuer CSD, it will be establishing an indirect link; many of the links in ESMA's register are noted to be indirect. A bank may instead provide the cash accounts to enable pre-funding or credit to facilitate a FOP transfer as described by KPDW, without the need for it to provide securities accounts. Article 54(4) of the CSDR would apparently require a bank providing either of these services to be a limited-purpose bank designated by the client CSD to provide banking-type ancillary services, and ESMA's register mentions no such designations. There is, however, a convenient exception where the bank in question settles cash payments for the CSD and the total annual value of such cash settlements is less than 1% of the total value of all transactions and €2.5 billion.[202] At least one CSD (Interbolsa) avails itself of this exception, and others may do so without expressly referring to it.

PAYMENT SYSTEMS

15.59 Where payment systems such as ACHs interoperate, this is to enable a participant in system 1 to make a payment to a participant of system 2. If the ACHs join each other's systems as participants, the pay-out from system 1 can constitute a pay-in to system 2, and the objectives of the ultimate payer and payee will be achieved.[203] From this very short description, the following conclusions can be drawn: first, that the type of interoperability experienced by payment systems is horizontal and mutual, unlike with CSDs (because the problem of hierarchy attributable to the 'root of title' to securities is absent); secondly, that ACHs will take risk on each other in the same way that they assume risk to their participants; and thirdly, that many of the risk and other issues previously identified in this chapter will be as relevant to payment systems as they are to other types of infrastructure.

These features make the study of payment system interoperability more similar to that of CCPs interoperating than CSDs. But some distinguishing factors should be noted at the outset:

(1) CCPs manage counterparty risk during the pre-settlement period, which means that they are exposed to their participants (and an interoperating CCP) for an extended time, requiring margin and more elaborate default-management processes. Also, because CCPs are responsible for contractual performance, they have a much wider range of obligations to each other when they interoperate, driven by the characteristics of the transactions being cleared. Payment systems may not need these features, and consequently interoperation may be simpler.

202 CSDR, art 54(5)

203 Cf Kokkola, T, ed, *The Payment System* (European Central Bank, September 2010), ISBN 978-92-899-0632-6, Chart 29

(2) Payment systems may aim to avoid taking risk on their participants; instead the participants take risk on each other, albeit in a form dictated by the rules of the system.[204] Accordingly, the credit and liquidity risks which a system operator can avoid – by having them assumed by the participants – in a case where it is operating alone have to be confronted head-on when the operator, or the system itself, is becoming a participant in another system.

(3) Payments are endemic, whereas CCP transactions are exceptional. Payment systems need to serve the whole community and to have a high degree of resilience. CCPs need to be resilient but only insofar as they carry out systemically important roles. Payment systems may exist in parallel, providing helpful redundancy in reaching all citizens, whereas CCPs carrying out clearing of similar products may do so because they serve different communities; the reasons for not having interoperability are different in the two cases.

15.60 Interoperability of payment systems should be considered from the perspective of the currency. Payment systems have historically been established with national reach. On a national level, bank account numbering is standardised so that all intermediaries can process domestic payment instructions via any chosen system; all account holders within the country are reachable through any system. Choice of payment system in payment processing is thus determined by a balance of cost and timing, rather than by accessibility of the payee. Where the currency serves a single nation it may be unnecessary to have multiple payment systems. Within a single country, reachability can be a substitute for interoperability.

By contrast, in the Eurozone, the currency has been created out of national progenitors which had their own payment systems. Here the need for interoperability is imperative in order to create cross-border reach across the international currency zone. Hence, the focus of the following sections is on the Single Euro Payments Area (SEPA) and its payment systems.

Where different currency types, with interchangeable value, are used as alternative means of payment, a new reason for interoperability emerges. The old system and the new may need to interoperate to achive full equivalence between the different models of payment. Emerging structures are considered further in **section 15.69**.

15.61 There is little literature on competition between payment systems, suggesting that competition may not be the driving force behind interoperability in this sector. There are various reasons for this. Until the development of the single European currency, there was no need for payment systems to establish links in order to compete with each other for business. Within a single country, different payment systems developed for particular purposes; settlement of payment transactions would take place ultimately across the books of the country's central bank or selected commercial banks. Competing systems attempting to win the same business were rare.

The Eurozone has, in theory, brought competition into the marketplace as payment systems doing economically equivalent functions could extend their offering into other countries. Such development has, however, been hampered by the diversity of standards for payment instruments such as credit transfers and

204 See **section 2.30**

direct debits: until the adoption of SEPA schemes and their uniform payment methodologies there was really no need for pan-European payment systems. The two main regulatory pronouncements – a set of Oversight Expectations from the ECB,[205] and a self-regulatory initiative from the trade association (EACHA) representing ACHs[206] – post-date SEPA. As is common in SEPA documentation, the acronym 'CSM' (clearing and settlement mechanism) is used to refer to payment systems – and thus to distinguish them from payment 'schemes' – in all the relevant European standards.

The Oversight Expectations follow the model of the PFMI, covering risk assessment, legal risk, operational risk, financial risk, access criteria, efficiency, governance and relayed links. As with the PFMI, the format for each 'expectation' is a headline, a set of key issues, and some explanatory text which highlights various things which the systems should take into consideration.

In addition, the ECB issued 'Terms of Reference' for SEPA-compliance of infrastructures[207] which include two relevant criteria:

> 'Criterion 2 – Interoperability. To promote the SEPA-compliance of infrastructures, infrastructures are asked to adopt interoperability rules, i.e. interface specifications and business procedures for the exchange of SEPA credit transfers and SEPA direct debit payment orders between banks and infrastructures, and between infrastructures, that are preferably mutually agreed upon by the relevant CSMs, and undertake to establish a link with any other infrastructure upon request, based on the principle that the cost for establishing the link is borne by the requesting infrastructure.
>
> Criterion 3 – Reachability. To promote the SEPA-compliance of infrastructures, infrastructures are asked to be able to send or receive euro payments to and from all banks in the euro area, either directly or indirectly through intermediary banks, or through links between infrastructures (in other words, to provide full reachability).'

Reachability and the SEPA Regulation

15.62 SEPA has brought the development of pan-European clearing and settlement systems for payments, and in particular the concept of 'reachability'. A payer participating in a payment scheme in its home country may need to reach a payee participating in another scheme in another country, and if the payer's local payment scheme is limited in its geographical scope, the objective of reachability requires arrangements between the systems so that the payment can get through. Indeed, the SEPA Regulation[208] stipulates that a payee's payment service provider which is 'reachable' for a national credit transfer must be reachable for credit transfers initiated by a payer through a payment service provider located in any Member State, and also makes a similar rule for

205 European Central Bank, *Oversight Expectations for Links between Retail Payment Systems* (November 2012)

206 European Automated Clearing House Association, *EACHA Interoperability Framework 6.0* (May 2012)

207 ECB, *Terms of reference for the SEPA-compliance of infrastructures* (April 2008)

208 Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro, etc, art 3

direct debit transfers. Attaining reachability has been a more important driver of interoperability of payment systems in Europe than competition theory. Thus, the EACHA Interoperability Framework specifies as its first goal 'creating reach in SEPA'. EACHA also explains that there are two sub-species of reachability:

(1) As to payment service providers, there is a need for a 'reachability directory' which works like the 'get directions' function on an electronic map, enabling a payer who needs to reach a payee to choose a route for this purpose. One such directory is provided by SWIFT.[209] In 2015 a group of six EACHA members established the European Clearing Cooperative to address questions of routing and reach, by creating a shared platform for processing of inter-CSM transactions.[210]

(2) As regards payment systems, there is a 'reach table' annexed to the EACHA Interoperability Framework which specifies the payment service providers which a particular payment system can reach, together with information such as cut-off times and the conditions under which payment service providers can be reached. Where payment systems are interoperable, the information extends to the payment service providers in the interoperable system.

15.63 Article 4(2) of the SEPA Regulation obliges operators of retail payment systems to ensure that their payment system is technically interoperable with other retail payment systems. They must also refrain from adopting 'business rules' that restrict interoperability. If the payment system is designated under the SFD, technical interoperability is only required with other designated payment systems. Apart from a temporary waiver, and background material in Recital (10), the SEPA Regulation does not legislate further about interoperability.

The following comments might be made about the SEPA Regulation's provision. First, the scope of the Regulation is limited: it applies only to credit transfers and direct debits denominated in euro, where both the payer's and the payee's payment service providers are located within the EU. This will exclude a vast range of payment arrangements, for example sterling payment systems or card payment arrangements. There are also important 'negative scope' provisions[211] which will cut back the application still further. Most important among these is the exclusion of 'payment transactions processed and settled through large-value payment systems' (meaning payment systems 'the main purpose of which is to process single payment transactions of high priority and urgency, and primarily of large amount'[212]). Secondly, the SEPA Regulation is remarkably free of detail on the management of risk and operational issues arising in relation to payment system links. These are left to 'the use of standards developed by international or European standardisation bodies', at least as far as technical interoperability is concerned, and to soft law, and regulatory and industry guidance as far as risk is concerned.

15.64 As far as the United Kingdom, as a participating country within SEPA, is concerned, the position is complicated by its departure from the European Union. The starting point for analysis is the scoping provision of the SEPA Regulation, which states:

209 SWIFT, *SEPA Plus Directory* (July 2013)
210 Dias, Equens, Iberpay, ICBPI, KIR, and Transfond, *ACHs join force to optimize European clearing services* (June 2015), Press Release
211 SEPA Regulation, art 2(2)
212 SEPA Regulation, art 2(18)

> 'This Regulation lays down rules for credit transfer and direct debit transactions denominated in euro within the Union where both the payer's payment service provider and the payee's payment service provider are located in the Union, or where the sole payment service provider (PSP) involved in the payment transaction is located in the Union.'[213]

Evidently, a PSP located in the United Kingdom is not within scope, whether or not another PSP involved in the transaction is in the European Union. So that would mean that payments to and from payment accounts in the United Kingdom do not have to comply with the reachability rules in the SEPA Regulation, nor do EU retail payment systems need to interoperate with any UK system. From an EU perspective, the United Kingdom is severed from SEPA.

The scoping provision in the United Kingdom's 'on-shored' version of the SEPA Regulation[214] says that it applies where one PSP is located in the United Kingdom and the other is in an EEA State, and countenances cross-border payments. The on-shored version of article 3 of the SEPA Regulation provides that UK-regulated PSPs must remain reachable, both as payee's PSP for credit transfers and as payer's PSP for direct debits, so there will be no obstacle at the UK end of the transaction, though no legislative guarantee of reach from the EEA end. However, it appears that the EPC's credit transfer and direct debit schemes may continue to apply to transactions involving UK PSPs.[215]

As regards interoperability, operators of UK retail payment systems must ensure interoperability with EEA systems, even though there is no reciprocal obligation.

Risk issues for interoperating payment systems

15.65 The risk issues may be similar to those facing CCPs which intend to interoperate. Contract and liability issues are likely to be very similar. Access criteria are likely to need adaptation, since payment systems will ordinarily restrict their membership to banks of sufficiently high credit, liquidity and operational standing, which are requirements other system operators may be unable to meet. Fees will have to be considered.

The following questions arise for interoperating CSMs. The basic idea is that a payment instruction is given to CSM1, with a view to a transfer to a participant in CSM2. If interoperability is to work like CCP interoperability, the CSMs would become participants in each other's systems, and there would be a payment transfer between the two CSMs of the net amount due to pass at the end of the relevant netting cycle. This simple model can give rise to a host of questions:

- Is it legally permitted for each CSM to participate in the other?
- What is the moment of finality? When CSM1 completes processing or when CSM2 does?
- What happens if the netting cycle in CSM1 is not timed to precede that in CSM2?

213 SEPA Regulation, art 1(1)

214 Credit Transfers and Direct Debits in Euro (Amendment) (EU Exit) Regulations 2018, SI 2018/1199

215 European Payments Council, *Brexit from 1 January 2021 onwards: Get ready for the end of the transitional period* (July 2020), www.europeanpaymentscouncil.eu/news-insights/news/brexit-1-january-2021-onwards-get-ready-end-transition-period

- Will the CSM itself be obliged to handle cash in order to achieve the cross-system transfer? If so, how?

15.66 These and other questions have been addressed by the EACHA Interoperability Framework, which proposes a model for credit and debit transfers in interoperating systems.

- For credit transfers, the idea is that the payer's bank sends its instructions to CSM1, which processes the netting, debits the payer's bank's account and sends the payment across for the account of CSM2. Only then are payment instructions sent to CSM2, which then processes the netting, debits the account to which the funds sent from CSM1 are credited, and transfers any net amount due to the payee's bank's account.
- Debit transfers follow a similar model, though with debit transfers the collection of funds is initiated by the payee. The payee's bank sends collection details to CSM1 which transmits the details to CSM2 for processing. CSM2 processes, debits the payer's bank, and transfers the funds for the credit of CSM1, which then completes the transfer to the payee's bank.

In each case, the payer's CSM processes first, then inter-CSM funds are transferred to the receiving CSM with finality before the receiving CSM begins processing. The principle is called 'settlement before output'. The EACHA model implies that each CSM participating in the link has a 'payment module' account which can be credited with inter-CSM funds transfers. Given that ACHs may not envisage the actual holding of funds and that their regulatory status may not permit it, two 'account models' are proposed for payment module accounts: the 'fiduciary account' model, where the CSM itself holds the account at the central bank, and the 'liquidity bridge' model, where the inter-CSM funds are transferred to an account of a participant in the receiving CSM. These models are intended to reduce risk: although the details are not clear, the intention is in either case that the entitlement to the funds in the payment module account is not vested in either CSM.

15.67 Interoperating payment systems are exposed to several particular risk issues which may deserve attention.

(1) *Counterparty risk in links.* As between the fiduciary account and the liquidity bridge models, there is evidently commercial bank risk in the liquidity bridge approach. Failure of the liquidity bridge bank will jeopardise the link as well as trigger the default rules of the receiving CSM. CSMs may wish to establish redundancy to ensure the continuity of the link. Unfortunately, wholesale adoption of the fiduciary account approach may be impossible where CSMs are not permitted to hold funds (even for third parties on a fiduciary basis). The ECB's Oversight Expectations do not forbid the use of commercial bank money as the inter-CSM 'settlement asset' but say that additional risk controls may be necessary. EACHA prefers the fiduciary account model in order to deal with the risk.[216]

(2) *Entitlement to funds in payment module accounts*. The EACHA model does not specify the actual owner of the funds in a payment module account. They may fall outside the ownership of the CSMs but the CSMs

216 EACHA Interoperability Framework, p 12

are unlikely to be the weakest link: the real question is to whom the funds belong in the event of a participant's failure. Honouring the 'settlement before output' principle, the transfers in the sending CSM have achieved finality, so the funds ought to belong to the participants in the receiving CSM for distribution according to the rules of the receiving CSM. Such rules ought to be immune from insolvency attack by virtue of the SFD. However, CSMs will need to ensure that there is clarity on the question in order to comply with the Oversight Expectations.

Without clarity in the system rules and the terms of the relevant accounts, the legal answer to who is entitled to funds credited to a payment module account is not straightforward. There is little illumination from the sparse case law on the failure of a bank in a chain of payments,[217] but it seems that, without a specific agreement, there could be a successful claim that the funds in the CSM's account are held by it as agent, trustee, on some other fiduciary basis,[218] or as a non-party beneficiary of a contract. In practice, the credit risk problem may be controlled by ensuring that the gap between the settlement cycles of the CSM which is the net payer and the CSM which is the net payee is reduced as far as possible. EACHA specifies that funds are only held by a CSM intra-day. The intra-day principle helps, in that the SFD[219] will ensure that transfer orders processed on the day of insolvency cannot be attacked under insolvency laws; but it may not be enough to keep the funds outside the estate of an insolvent system operator, since the SFD also requires that the system operator was unaware of the insolvency proceedings.

(3) *Stepwise reachability*. 'Settlement before output' introduces technical delays in attaining full reachability. The requirement to complete each step with finality before even instructions can be submitted to the next CSM makes a successful and timely payment dependent on the coordination of each payee-CSM's cut-off time with the completion of the payer-CSM's earlier settlement cycle. If a payee can only be reached through a long chain of CSMs, the coordination exercise may be difficult. Payments may clog up in the interoperating systems.[220] The Payment Services Directive (PSD)[221] imposes a next-day deadline for many cash transfers, which means that a leisurely approach to this problem is not permitted.

(4) *Liquidity and credit risk*. The EACHA principle of settlement before output means that CSM2 would not ordinarily be exposed to liquidity risk if the pay-out from CSM1 is delayed or cancelled, because the settlement instructions from CSM1 should not have been submitted until the funds are known to be available. But, as has been seen, this outcome is at risk if CSM1 fails during the processing day; and the principle itself may come under commercial or operational pressure in a long chain owing

217 Cf *Royal Products v Midland Bank* [1981] 2 Lloyd's Rep 194; *Abou-Rahmah v Abacha* [2006] EWCA Civ 1492

218 Brindle, M, and Cox, R, eds, *The Law of Bank Payments* (4th edn, Sweet & Maxwell/Thomson Reuters, November 2010), ISBN 978-1847035516, paras 3-087–3-097

219 Article 3

220 Renault, F, et al, *Congestion and Cascades in Coupled Payment Systems* (October 2007), Conference paper, www.ecb.int/events/pdf/conferences/pmfs/theme2_2.pdf?aee71c829ed989e02d7c77188dfc6ac1

221 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market etc, art 83

to the conflicting needs of safety and timely processing to meet the PSD deadline.

For these reasons CSM2 may need to have exceptional arrangements to cover the non-performance of the counterpart system. Payment systems typically have liquidity back-up lines and loss-sharing rules,[222] and an immediate question for interoperating systems is whether the commitments made by ordinary participants to these arrangements would be waived in respect of a participant which is another system. If they are waived (cf the non-participation of interoperating CCPs in each other's default funds), this may not be fatal: the bank participants in the non-defaulting system may be able to supply the needed liquidity and/or to absorb the losses, but the risk-sharing is distributed among fewer members. Supplementary or alternative arrangements (such as a guarantee fund) may be considered desirable to provide an additional buffer against the extra costs and risk introduced by interoperability.

(5) *Cross-system finality*. The moment of finality of settlement for a cross-system payment will depend on the finality of both settlement cycles. The EACHA Framework is based on serial attainment of finality for each step in the chain of payments: this is a different approach to that taken in relation to interoperating CSDs or CCPs, where finality coordination is expected. The ECB Oversight Expectations note a number of considerations which affect finality. In the first place, legal risk is higher for linked systems, because the rules applicable in the interoperating systems will be different, and the applicable laws may also differ. Second, unless the settlement before output principle is honoured, there may be difficulty, with the receiving CSM exposed to unwind risk. Thirdly, the ECB says that the rules for finality and irrevocability of linked retail payment systems should be harmonised, and the moment of finality and irrevocability of a payment transmitted via a link clearly defined;[223] failing this, a payment sent via a series of routing links carries a higher degree of finality risk than a payment sent across a single CSM. Fourthly, the finality concept tends to focus on the payee's receipt of funds so that he can use them, but it may be noted that the moment of finality will be earlier for the payer, who may be just as concerned as he needs to know that his payment obligation has been discharged. What happens about discharge, in a situation where ACH1 has completed processing with finality and ACH2 has not, is unclear.

Finality within interoperating systems under the SFD is assisted by a provision which allows a system operator to be regarded as a 'participant' in a system,[224] thereby avoiding the result that a system which interoperates with another ceases to be eligible for designation on the grounds that it has admitted a non-qualifying person as a participant.

(6) *R-transactions.* R-transactions are exception processing, 'where the letter "R" can signify "reject", "refusal", "return", "reversal", "revocation", or "request for cancellation"'.[225] R-transactions may be a source of risk in interoperating systems, as the rules for processing, including such matters as cut-off times and pre-conditions for use of the R-service, may differ between systems. Some R-transactions affect the finality of a payment, but

222 See **sections 16.12(6)** and **16.16**
223 ECB Oversight Expectations, p 5
224 SFD, art 2(f)
225 SEPA Regulation, recital (20)

others are processed after final settlement and have some characteristics similar to an independent payment transaction.

(7) *Access criteria.* Payment systems are typically risk-managed on the assumption that the payer-in is a bank or other regulated financial institution meeting high standards of credit-worthiness and ability to settle in central bank money, because of the credit risk taken by the other participants in a netting system. Payment system operators will not typically be able to meet such standards, yet by becoming participants (as opposed to operators) they become part of the chain of payers and payees and therefore exposed to each other. The ECB Oversight Expectations include familiar provisions[226] as to non-discriminatory access for interoperating systems.

15.68 The preceding discussion concerned retail payment systems. Interoperability among real-time and wholesale payment systems is relatively less well developed. In part this is because real-time payment systems had existed only outside the Eurozone, with the consequence that an inter-CSM transfer almost invariably involved a currency conversion. EACHA has proposed an interoperability solution to cope with this difficulty. [227]

New payment paradigms

15.69 In the United Kingdom, the questions of payment system interoperability have been less pressing than in the Eurozone. Standardised bank account numbering and sort code structures enable reachability of all bank accounts through each of the payment systems. Interoperability is not needed if the payer's bank simply and automatically selects the most appropriate system for the payment in question.

This model is open to challenge if new payment structures are created. If payment institutions are able to offer payment methods which do not need bank accounts, and so bypass the sort code/account number paradigm which underpins the functioning of traditional UK payment systems, the traditional ability to ignore interoperability would disappear. For example, a new payment paradigm based on mobile phone numbers as the unique identifier would not be compatible with existing payment processing, and would give rise to reachability issues without either all would-be payers and payees participating in the new system, or the creation of some form of interoperability. Another example might be the emergence of digital currency tokens which do not depend on bank accounts in order to be held or transferred; for them to be fully interchangeable with regular currency implies the creation of interoperability between the systems. These challenges are for the future, but possibly the very near future.

226 ECB Oversight Expectation No 5; see **sections 11.12–11.17**

227 European Automated Clearing House Association, Study on interoperability of immediate payment systems (January 2015)

16 Risk management in payment systems

RISK MANAGEMENT GUIDANCE

16.1 At European level there is no comprehensive pronouncement on risk management from the European Central Bank (ECB) equivalent to the regulatory technical standards on CSDs and CCPs. The reason is likely to be that the Principles for Financial Market Infrastructures (PFMI),[1] and, before them, the Core Principles for Systemically Important Payment Systems (the Core Principles)[2] have served as an effective and reasonably complete international handbook.

As explained in **Chapters 7** and **8**, at European and United Kingdom levels the regulation of payment systems closely follows the PFMI, selecting from the PFMI where a system is not considered to be of systemic importance, and rarely supplementing the PFMI. The guidance given in the PFMI on risk is typically expressed at a high level of generality, though the agenda is clear. Supplementary documentation from the ECB relates to interoperability between retail payment systems.[3]

16.2 As the ECB Oversight Standards implicitly recognise, payment systems come in a variety of forms. A few preliminary observations, pertaining to variety, may be appropriate before launching the description of risks faced within payment systems. Much of the guidance for infrastructures conflates two distinct risk problems: the risks faced by the payment system operator itself, and the risks faced by the system's participants. Some regulatory recommendations addressed to systems might better be addressed to participants and completely disapplied in relation to the system operator. However, a payment system operator may be in a similar position to a central counterparty, taking on its shoulders the risk associated with the handling of cash. In such cases the risk issues it faces may be very similar to those confronted by participants. Or it may be a processor, merely handling information – critically important information, of course – but without handling the asset of value. Both types of payment infrastructure need to have regard to the impact their operations will have on their participants and the wider economy. Failure to distinguish the essential differences between a value-transfer system and a processor will confuse the story of how the infrastructure should approach the problem of safeguarding the

1 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012)

2 CPSS, *Core Principles for Systemically Important Payment Systems* (January 2001)

3 European Central Bank, *Oversight Expectations for Links between Retail Payment Systems* (November 2012); see **section 15.61ff**

interests of its participants. Given the variety of structures, a uniform approach to risk management cannot be expected.

16.3 For payment systems, the primary areas of risk may be identified as legal risk (especially with respect to finality), credit risk, liquidity risk and operational risk. These are considered in turn. Much of the discussion on these topics may also be relevant to other types of infrastructure.

LEGAL RISK – FINALITY

16.4 Legal risk can be defined as the risk of inability to enforce rights or obligations;[4] though regulators tend to say it is the unexpected application of a law or regulation, or the unenforceability of contracts. In the context of financial market infrastructures, 'legal risk is the risk of the unexpected application of a law or regulation, usually resulting in a loss. Legal risk can also arise if the application of relevant laws and regulations is uncertain. For example, legal risk encompasses the risk that a counterparty faces from an unexpected application of a law that renders contracts illegal or unenforceable. Legal risk also includes the risk of loss resulting from a delay in the recovery of financial assets or a freezing of positions'.[5]

Legal risks facing operators of payment systems include the danger of an action in tort for misuse of discretion, particularly in circumstances involving participant failure. System operators who reserve discretion to (say) re-order settlement queues or to extend credit at the cost of participants may find that action can be taken against them. Damages in tort may be measured differently from damages for breach of contract; statutory immunity may not apply to payment system operators[6] for action taken under default conditions.

In the European Central Bank's book entitled 'The Payment System',[7] legal risks faced by payment systems are itemised as finality risk, netting risk, and robustness of rules against insolvency challenge. These issues are reflected in the focus of the PFMI. Netting and insolvency issues are considered in **Chapter 13**. For the present discussion that leaves the question of finality, insofar as that subject is not covered there as well.

16.5 The topic of settlement finality is introduced in **section 5.18**, where it was concluded that a payment which is 'final' is one which is irrevocable by the participants and irreversible under the rules of the system. It should perhaps be noted that settlement finality is *not* about guaranteeing that transactions which are submitted to a system and are irrevocable by the system must unavoidably proceed to final settlement. Confusion on this score was rife after the collapse of Lehman Brothers in 2008: unfortunately, 140,000 trades failed, notwithstanding that many were ostensibly protected by settlement finality legislation.[8] Settlement finality is not the same concept as settlement certainty. Provided that the participants know whether the securities or payment transfer has settled,

4 Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel, March 2009), ISBN 978-1-84766-303-0, p 9
5 PFMI, para 2.4
6 Cf Financial Services and Markets Act 2000, s 291, in relation to recognised bodies
7 Kokkola, T, (ed), *The Payment System* (European Central Bank, September 2010)
8 PricewaterhouseCoopers, *Lehman Brothers International (Europe) (in administration) – Unsettled trades – Market Update* (November 2008)

and that the transfer cannot be reversed, finality is achieved. It has, perhaps surprisingly, not been a policy objective to assure participants about certainty. The PFMI Principle on finality states:

> 'An FMI should provide clear and certain final settlement, at a minimum, by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.
>
> *Key considerations*
>
> 1. An FMI's rules and procedures should clearly define the point at which settlement is final.
> 2. An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. [A large value payment system or securities settlement system] should consider adopting RTGS or multiple-batch processing during the settlement day.
> 3. An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.'[9]

16.6 Finality risk arises for as long as *reversal* is still possible; typically, when a challenge, aiming to reverse the payment, can be made under the insolvency law applicable to one of the participants. The following five possible threats to finality have been identified: revocation risk (legitimate cancellation of settlement instructions under the rules of a system); illegality risk (the very transfer is unlawful, for example because it is in breach of sanctions legislation); attachments and tracing risk (the money did not belong to the payer and must be given back to its rightful owner); preference risk (insolvency challenge based on unfair selection of one creditor for payment by an insolvent payer); and zero-hour and void disposition risk (insolvency challenge to prevent any asset disposals after a cut-off time).[10] These can generally be dealt with either by rule changes within the system or litigation outside the system to establish the true entitlement to funds being transferred.

The insolvency-based challenges, however, are more troublesome, given that insolvency laws tend to be classified as being for the public good and therefore to override contractually agreed provisions where incompatible.[11] The following comments may be made:

(1) *Preference risk.* A payment may be open to challenge as a preference because it is made to a creditor after the payer's assets were less than its liabilities, and as a result the payee has received an unfair advantage over other creditors who will have to make do with a dividend. The payee may be ordered by the court exercising insolvency jurisdiction to return the payment. However, this does not mean that the payment originally made was not final: the return ordered by the court can take place outside the system, and no lack of clarity or effectiveness of the system's rule is

9 PFMI Principle 8

10 Turing and Cramb, *Managing Risk in Financial Firms,* pp 222–3

11 Cf Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings, art 7(2)(e); Directive 2001/24/EC of the European Parliament and of the Council of 4 April 2001 on the reorganisation and winding up of credit institutions, art 10(2)(d)

implied. One issue still remaining to be considered is whether the system operator can become implicated in the challenge. This is technically possible (if, in practice, unlikely) under sections 239(3) and 241(2) of the Insolvency Act 1986, which state that an order restoring the pre-preference position can be 'such order as the court thinks fit' and may 'impose any obligation on any person whether or not he is the person with whom the company in question entered into the transaction or (as the case may be) the person to whom the preference was given'.

(2) *Zero hour and void disposition rules.* Zero-hour rules deem insolvency proceedings to have begun at the stroke of midnight at the beginning of the day when the insolvency order was made. Void disposition rules render void and of no effect a disposition of any property of an insolvent company after a cut-off time, which is typically the opening of insolvency proceedings, and may thus be back dated to zero hour. Void disposition rules, to the extent deemed part of the overriding public policy aspect of insolvency laws, represent a potent threat to finality.[12]

(3) *Netting challenges.* It is explained in **section 13.14** how a multi-lateral netting system may be incompatible with the *pari passu* system of distribution of assets in an insolvency. (The same is true of bilateral netting, since the non-defaulting party invariably receives a higher percentage of recovery than if he paid up in full and proved for a dividend in the insolvency proceedings.) Application of these challenges to ACH or other payment systems dependent on netting for their efficiency algorithms could lead to an unwind of payments, such as that narrowly averted in the case of failure of Barings.[13]

Settlement Finality Directive

16.7 The Settlement Finality Directive (SFD)[14] is divided into three principal sections. The first sets out its scope, specifying which systems will benefit from its protective umbrella. 'Systems' are defined by the need to have at least three external 'participants', by the fact that they must be governed by the law of a Member State, and by the requirement to be 'designated' and notified to ESMA.[15] ESMA publishes a list of designated systems.[16] Some payment infrastructures, such as card schemes, could not readily satisfy the conditions needed to become designated. (It may be worthy of note that the system operator itself is a 'participant', so that the insolvency protections granted by the SFD apply to the insolvency of the system as well as external participants.[17])

In this context a comment may be made on the concept of an 'indirect participant', who is an institution, settlement agent or infrastructure with a contractual relationship with a 'participant' which enables the indirect participant to pass

12 See **sections 13.11(7)** and **13.11(15)**

13 CPSS, *Settlement Risk in Foreign Exchange Transactions* (March 1996), www.bis.org/publ/cpss17.pdf, pp 7–8; and see **Case Study 2.3**

14 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

15 SFD, arts 2(a), 10(1)

16 See www.esma.europa.eu/sites/default/files/library/designated_payment_and_securities_settlement_systems.pdf

17 SFD, art 2(f)

transfer orders through the system.[18] The purpose of the definition is, however, limited: the protective provisions of the SFD apply to participants only, except where a Member State has decided that an indirect participant can be considered a participant on grounds of systemic risk.[19] So, in general, a participant is not protected by the SFD against the insolvency of its client, only the insolvency of the system itself or other full 'participants'.

16.8 The second section of the SFD grandiosely states that 'transfer orders' and 'netting' shall be legally enforceable,[20] and that transfer orders may not be revoked after the moment defined by the rules of the system.[21] For the purposes of a payment system, a transfer order is, to all intents and purposes, a payment instruction.[22] Netting is 'the conversion into one net claim or one net obligation of claims and obligations resulting from transfer orders which a participant or participants either issue to, or receive from, one or more other participants with the result that only a net claim can be demanded or a net obligation be owed'.[23] The legal enforceability of these things is assured notwithstanding insolvency events affecting a participant, provided that the transfer order was entered into the system before the opening of insolvency proceedings. The moment of opening of insolvency proceedings is defined so as to exclude the operation of zero-hour and other retroactive timing rules.[24] The rule underpinning irrevocability is intended to nullify mandatory rules of law which might empower participants to disregard system rules which specify the point of no return for revocation of instructions.[25]

16.9 The third section of the SFD tackles some, but not all, troublesome issues arising from insolvency law.

- Article 4 provides that insolvency proceedings cannot automatically result in a freeze on a participant's funds on a settlement account, so that they remain available to be utilised by the system.
- Article 7 neutralises zero-hour rules and other rules of law which would have retroactive effects on a participant's rights and obligations. Many 'anti-avoidance' rules of insolvency law, such as preference rules, have retroactive effects, and unlike other protective legislation, article 7 is not limited to void disposition rules.
- Article 8 provides for supremacy of the governing law of the system, and thus of its rules, in the event of insolvency proceedings against a participant.
- Article 9 protects the rights of system operators and participants to 'collateral security', which is widely defined to mean 'all realisable assets' provided under a pledge, a repo or otherwise, to secure rights and obligations arising in connection with a system.[26]

The effect of the SFD is discussed further in **sections 13.29ff**.

18 SFD, art 2(g)
19 SFD, art 2(f)
20 SFD, art 3
21 SFD, art 5
22 See **section 13.30**
23 SFD, art 2(k)
24 SFD, art 6
25 Vereecken, M, 'Directive 98/26/EC on the European Union Payment Systems and Securities Settlement Systems' in Vereecken, M, and Nijenhuis, A, eds, *Settlement Finality in the European Union* (Kluwer, 2003) ISBN 90-130-048-73, para 5
26 SFD, art 2(m)

CREDIT RISK

16.10 Not all payment systems involve the assumption of credit risk by the system operator. Pure ACHs do not assume credit risk, as no money changes hands within the system, unlike in the case of a value-transfer system such as a multilateral netting DNS system, an RTGS, or an exchange-of-value system,[27] each of which requires a pay-in of funds to the operator. In these latter cases, the operator (or, in the case of a fully mutualised system such as the EBA's EURO-1 system, the other participants collectively) takes both credit and liquidity risk on each payer in relation to the payer's pay-in obligation.

16.11 The Core Principles noted that the credit risk issues are likely to arise primarily for the participants in the system rather than the operator itself.[28] However, this is not invariably the case:

(1) In a DNS system, where the system operator is, in effect, a central counterparty, a participant's failure to meet its pay-in obligation is a question of credit as well as liquidity risk. If the system is not to unwind the entire cycle of netted payment obligations it will need to have assurance that the paying-in participant will meet its obligations – the very netting mechanism impliedly involves the extension of credit. Failure to acknowledge this truth nearly led to the failure of the precursor to the current EBA Clearing system on the collapse of Barings in 1995.[29]

(2) In an RTGS system, efficiency in liquidity management by participants may require that the system operator make available credit to participants. It is inherent in the RTGS model that payments are made gross, thereby demanding that participants pay in the whole of the gross amount of each transaction which needs to settle. Where large volumes and large sizes are involved even the largest participants will be constrained to meet the demands of the system at all times of the day. Typically, therefore, RTGSs will allow credit extensions to their participants to avoid congestion and to enable transactions to settle. Credit typically takes the form of a repo facility.[30]

(3) In an exchange-of-value system, improved efficiency of processing may involve the extension of credit. If a participant has paid in an amount of currency Φ in anticipation of settling a transaction with a counterparty who has not yet paid in, so that that settlement remains queued, it may be possible for a different transaction of the same participant to settle, even though that other transaction involves a payment of currency Ψ which the participant has not yet paid in. The system may be able to lend the participant currency Ψ, thus allowing the second transaction to settle, and leaving the participant with a credit balance of the countervalue received on the second transaction (say in currency Ω). At all stages in the process the system will have 'collateral' recorded to the credit of the participant's account which, allowing for market fluctuations, should be sufficient to protect the system operator in the event the participant fails to pay in

27 See **section 2.30**

28 Paras 7.3.4, 7.3.5

29 CPSS, *Settlement Risk in Foreign Exchange Transactions* (March 1996), www.bis.org/publ/cpss17.pdf, para 2.2.5; see also **Case Study 2.3**

30 European Central Bank, *Payment and Securities Settlement Systems in the European Union* (the Blue Book) (August 2007), www.ecb.eu/pub/pdf/other/ecbbluebooknea200708en.pdf, vol 2, p 375

currency Ψ altogether. Note that the system operator would rarely be satisfied that the countervalue received in currency Ω is enough to cover the credit risk involved in lending currency Ψ, owing to the market risk on the collateral, so it is usually essential for each participant to pay in a small amount of some currency to cover that risk – in effect, the payment-in of currency Φ was to 'prime the collateral pump'.

16.12 Credit risk may be managed in a number of familiar ways. Classically the techniques for credit risk management are:

(1) *Barring the gate*. Controlling the right to participate in the system is the first line of defence. The issues which arise in relation to payment systems are the same for all types of infrastructure, save that in relation to undesignated payment systems there are legal constraints. These arise under article 35(1) of the Payment Services Directive,[31] which provides that payment systems' access criteria must be objective, non-discriminatory and proportionate, may not discriminate between 'authorised' and 'registered' payment service providers, and may not impose any restriction on the basis of institutional status. (Article 35(2)(a) of the Directive disapplies article 35(1) in relation to systems designated under the SFD.) RTGS systems may be operated by central banks, which require the participant to have a settlement account at the central bank. Central banks may have restrictive conditions for opening accounts, limiting the ability of some participants in the payments market to obtain access to the system. For other issues relating to exclusion of participants, see the discussion in **section 11.12**.

(2) *Capital and guarantees*. Payment system operators may, like other forms of infrastructure, rely on their participant having large amounts of capital or being supported by a guarantee from a person (such as the parent bank) who does.

(3) *Position limits*. A typical approach to limiting the amount of credit risk which participants assume against each other in a DNS system is described in a report on, curiously, RTGS (the Lucas Report).[32] This approach allows each participant to set bilateral limits against each other participant: bank X decides how much credit exposure it is willing to tolerate in relation to bank Y. The amount which a payer can be obliged to pay is calculated as the sum of the limits referable to that payer which have been agreed by all other participants. That payer may then be required to post collateral to cover the agreed aggregate amount. This model is adopted, for example, by the EBA's EURO-1 system.[33] The EURO-1 system allows for two credit limits: the *credit cap*, which limits the credit risk which the participant (P) is willing to take on other participants, and the *debit cap*, which is the maximum obligation which P can incur at any time. The credit cap is set by P and is the aggregate of all the individual credit exposures which P has set on the other participants. The debit cap is set by the other participants, and (subject to a minimum) is the total of all the individual credit exposures which the other participants are willing to

31 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market etc

32 CPSS, *Real-time Gross Settlement Systems* (March 1997), www.bis.org/publ/cpss22.htm, pp 40–41

33 Kokkola, T, (ed), *The Payment System* (European Central Bank, September 2010), ISBN 978-928990632-6

bear on P. A payment will be queued and not fed into the netting cycle if it would breach the receiving bank's credit cap or the paying bank's debit cap. The payment system operator will need to ensure that the caps are appropriate: in the 2011 Payment Systems Oversight Report, the Bank of England noted that the net debit position of a defaulter in the Bacs system could, at that time, have exceeded the amount of liquidity committed by surviving members.[34]

(4) *Netting*. Netting is inherent in a multilateral netting system. Netting does not eliminate credit risk. But the credit risk can be cut by increasing the number of cycles per day. The Bank of England noted, in its March 2015 annual report, that settlement risk – the credit risk that arises when a participant does not pay in its net dues, as happened with the Barings collapse – can be eliminated if members fully cover their net obligations with an advance pay-in, and that this approach was to be implemented in Bacs and Faster Payments in the United Kingdom.[35]

(5) *Collateral*. The PFMI specifically require financial market infrastructures to take collateral to cover current and potential future exposures to each participant.[36] This may be done, as in the EBA's EURO-1 system, by requiring each participant to contribute to what is essentially a cash default fund (although described as a liquidity pool) covering the maximum possible debit position of a participant.[37] Or it may be done, in an exchange-of-value system like CLS, by relying on the paid-in balances of the participant, which constitute the asset to be transferred or received, as a form of collateral in relation to credit extension. Where credit is extended by a central bank to cover intra-day liquidity it will often be done in conjunction with the central bank's overnight collateralised lending.[38] Issues (2) to (5) discussed in **section 17.28** are also likely to be relevant to collateral management by a payment system operator.

(6) *Loss-sharing*. The PFMI also require infrastructures to have rules and procedures for allocation of uncovered credit losses.[39] This may arise, for example, if collateral values are insufficient to cover the credit extended. Mr Tom Kokkola notes that loss-sharing structures have three components: an agreement as to whether it is 'defaulter pays' or 'survivors pay'; collateralisation; and practical arrangements to activate the structure so as to ensure settlement when there is a loss.[40] The Lucas Report notes that loss-sharing is only effective where the position limits are robust.[41]

16.13 When there is a robust collateral or loss-sharing arrangement in place, alongside position limits which apply in operational practice, the liquidity risk recommendation of the PFMI will be adhered to, namely that:

34 Bank of England, *Payment Systems Oversight Report 2011* (April 2012), www.bankofengland.co.uk/publications/Documents/psor/psor2011.pdf, para 1.2.3
35 Bank of England, The Bank of England's supervision of financial market infrastructures – Annual report (March 2015), p 12
36 PFMI Principle 4, key consideration 3
37 ECB Blue Book, www.ecb.eu/pub/pdf/other/ecbbluebookea200708en.pdf, vol 1, p 44
38 Allsopp, P, Summers, B, and Veale, J, *The Evolution of Real-time Gross Settlement – Access, Liquidity and Credit, and Pricing* (February 2009), World Bank Working Paper No 49002
39 PFMI Principle 4, key consideration 7
40 Kokkola, *The Payment System* p 117
41 Lucas Report, page 40

'A payment system … including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.'[42]

Tiering (indirect participants)

16.14 One further consideration pertinent to credit risk management in payment systems is the question of 'tiering'. Tiering occurs when a system's potential participants are in fact clients of the direct participants in the system, so that they do not participate directly. Some systems may have 'indirect' participants, such as EBA Clearing. The explanatory note to PFMI Principle 19 states that '[the risks] are most likely to be material where there are indirect participants whose business through the FMI is a significant proportion of the FMI's overall business or is large relative to that of the direct participant through which they access the FMI's services'.[43] There is a tension between (on the one hand) the desirability of a payment system protecting itself, and its participants, by having suitable rules to limit the amount of third-party business undertaken by its participants to what can practically be handled by the participant without undue risk, and (on the other) the social and regulatory need[44] for large-volume providers of payment services to have access to the system, either directly or indirectly. Indirect participants (who, setting aside the ability to input instructions directly, and the elusive possibility of protection under the SFD, are not participants at all) are at a disadvantage when their service-provider fails; however, this is a matter not for the system operator but for contingency planning by the indirect user of the system. Where the indirect user is a significant user, switching of service providers rapidly ought to be facilitated by the system operator.[45] The Bank of England has regularly alluded to the dangers of large-scale indirect participation and urged the United Kingdom's payment systems to reduce tiering.[46] The risk issues which the Bank mentions are the credit and liquidity exposures arising between the indirect and the direct participant, which may put either or both under stress. Another issue arising with tiering is the ability to continue to provide essential access to infrastructure during a resolution of a failing bank, as to which see **section 19.41**.

16.15 The post-crisis policy to oblige banks with substantial proprietary trading businesses to ring-fence their retail activities has also generated rules on tiering. Under article 13 of the Financial Services and Markets Act 2000 (Excluded Activities and Prohibitions) Order 2014 (the EAP Order),[47] after 1 January 2019 it is forbidden for a ring-fenced bank in United Kingdom to use an inter-bank payment system except as a direct participant, unless it uses a group company as its intermediary, or the rules exclude the bank from direct

42 PFMI Principle 7, Key consideration 3
43 PFMI, para 3.19.3
44 Cf PFMI Principle 21
45 Allsopp et al, World Bank paper
46 Cf Bank of England, The Bank of England's supervision of financial market infrastructures – Annual Report (March 2015), p 12
47 SI 2014/2080

participation, or there is a switchover plan enabling the bank to continue access if its first intermediary drops out, or the regulator allows indirect participation. For these purposes, the definition of 'inter-bank payment system'[48] only serves to exclude from the prohibition indirect participation in:

(a) payment systems operated by CCPs and CSDs,

(b) correspondent banking arrangements, and

(c) the Bank of England's Note Circulation Scheme.

In its original form, the EAP Order adopted the Banking Act 2009 definition of 'inter-bank payment system'[49] with essentially the same carve-outs, but before it came into force, the cross-reference to the Banking Act was deleted. The explanatory note to the statutory instrument making the change[50] attributes it to the extension of powers given to the Bank of England to supervise systems which were not restricted to payments between banks, pursuant to which the definition of 'inter-bank payment system' in the Banking Act was changed so as to omit the word 'inter-bank'.[51] Where this seems to leave us is that ring-fenced banks covered by the EAP Order will still be banks, so the continued usage of 'inter-bank' makes some sort of sense; the intention of the EAP Order still appears to be to prohibit indirect participation in any system which the Bank of England may choose to oversee under Part 5 of the Banking Act 2009.[52]

LIQUIDITY RISK

16.16 Liquidity risk is another issue which is predominantly one that affects the participants in payment systems, but where a duty is imposed upon the system-operator to minimise liquidity burdens and disruptions upon the participants. The sources of liquidity risk in payment systems depend on the type of system:

(1) *RTGS.* RTGS structures inherently made demands on participants for significant amounts of liquidity. This is because each payment instruction is, in principle, settled as a separate unit, requiring pre-funding in full unless the system operator is willing to take credit risk on the payer participant. DNS systems, by contrast, do not require pre-funding of each payment transaction, and only a net pay-in per cycle is needed, thereby substantially reducing the liquidity demands made on participants.

The liquidity pressure imposed on participants may have the following adverse consequences. First, a payer participant may find that its payment instructions are indefinitely queued, while the system waits for the payer's account to accumulate a credit balance sufficient to enable a large payment to be processed. If the system operates a first-in, first-out (FIFO) processing algorithm, smaller payments in the queue will also not be processed. Other participants awaiting transfers from the payer may find themselves unable to settle outgoing payments because they are dependent on the incoming funds which are stuck in the queue. This phenomenon is called gridlock. Secondly, if market conditions are impaired, participants in a payment

48 EAP Order, art 13(11)
49 Banking Act 2009, s 182
50 Banking Act 2009 (Service Providers to Payment Systems) Order 2017, SI 2017/1167
51 See alo the Digital Economy Act 2017, Sch 9
52 See **section 8.3**

system may be untrusting of the ability of others to honour their obligations. RTGS systems tend not to be supported by guarantee mechanisms such as loss-sharing arrangements (because the credit risk inherent in the system is zero: failed settlements just fail, they do not proceed at a cost, as is the case with DNS settlement), so bank X may prefer to postpone submitting transfer instructions into the RTGS system until after transfers due from bank Y, whose ability to survive may be in question, have arrived with finality. Bank X's self-protective behaviour (which may be copied by all other participants) may also lead to gridlock.[53]

RTGS systems will thus typically have various liquidity mitigants built in. These can include avoiding the FIFO principle where appropriate, enabling other payments due from other participants to be freed up. Sophisticated queuing algorithms will pick irrevocable payment instructions from the queue and process them in the order which maximises the number of successful settlements.

> 'Complex algorithms consider the queues of several participants and search those queues for a set of payments between those participants that largely offset one another. Those payments are then settled by means of offsetting – i.e. either the individual payments are all effected simultaneously on a gross basis at the same legal and logical second, or net balances are settled. These algorithms can work on a multilateral or bilateral basis and can be run at discrete intervals (either at designated times or following a decision by the system operator) or be event-driven (being run, for instance, every time a participant's account is credited with an incoming payment or every time a payment is added to the queue).'[54]

One option for queue management is to identify a circle of payments (A→B→C→A) which can be taken out of the queue and be deemed to have settled.[55] Another queue management technique which frees up liquidity is to break up large payments into smaller units which stand a greater chance of success. Partial processing may be necessary in order to give effect to circles processing, since the chances of identical amounts flowing all the way round a circle will be low. (Whether a partial settlement can be regarded as *pro tanto* final may, of course, be a difficult question, but in Europe clear system rules will assist with legal certainty.)

The simplest solution for liquidity problems is for the participants to borrow to cover their liquidity needs. They may borrow from each other or in the money market generally, or they may be able to borrow from the central bank. Where the central bank is the RTGS operator, the question of central bank funding is wrapped up with questions about monetary policy and the central bank's role as lender of last resort. The Lucas Report suggests that smooth operation of the RTGS will be assisted if the participants do not have to go to the market for intra-day funds; the speed of the RTGS could become dependent on the effectiveness of interbank

53 Cf Kokkola, *The Payment System* p 122
54 Kokkola, *The Payment System* p 53
55 Lucas Report, pp 24ff

collateral settlement.[56] Central banks typically allow RTGS participants to access intra-day liquidity via repo facilities.[57]

(2) *DNS.* DNS structures may, notwithstanding that the liquidity pressures are lower than in an RTGS, have some liquidity features. A DNS system will typically impose position limits for the reasons discussed in relation to credit risk management. The old Core Principles for Systemically Important Payment Systems explained that position limits can lead to large payments being rejected by the system;[58] in a DNS environment the would-be recipient of the blocked transfer will therefore suffer an increase in the funds required to achieve effective settlement of its own outgoings in that cycle, and run the risk of its own payments being blocked when its own credit limit is reached; and these blockings will affect other participants in that cycle as the same logic is applied iteratively. Again, to address the risk, a DNS system can adopt mitigants similar to those described in relation to RTGS systems.

Having dealt with the problems in this analytical way, it is worth noting that in practice payment systems are typically hybrid systems – very short processing cycles will make DNS systems more similar to RTGS systems; and RTGS systems will typically adopt algorithmic solutions, including circles processing, which borrow DNS methodologies. So many modern payment systems should not be crudely classified as 'RTGS' or 'DNS', and should be recognised to need risk management features relevant to both categories.

16.17 Liquidity risk management is not exclusively about the operational rules of the system. Incentives may be built in to minimise the risk of gridlock, such as a pricing incentive (time-varying tariff) for early payers, or the classically British threat of being asked to explain bad behaviour over a cup of tea in front of your peers.[59] It has also been noted that the policy of the central bank with regard to intra-day liquidity is important: liquidity problems have been lower in Japan, where the central bank offered free (but collateralised) liquidity facilities than in the United States, where the Federal Reserve offered paid-for (but uncollateralised) facilities.[60] If the central bank is able to allow liquidity coverage assets, which must be retained by banks against the risk of general cash outflows, to do 'double duty' as a source of collateral for the central bank to extend liquidity, this may help, though at the risk that the prudential buffer may be needed for other liquidity coverage such as a run on deposits.[61]

16.18 The following further comments may be made in the context of liquidity risk management in payment systems:

- Intraday revocability may affect queue management, and may be forbidden in some RTGS systems, even though revocability will typically be revived for transfers remaining unsettled at the end of the processing day. A receiving bank may take the view that a queued transfer from another

56 Lucas Report, p 37

57 Cf Bank of England, *A Guide to the Bank of England's Real Time Gross Settlement System* (September 2010), www.bankofengland.co.uk/markets/paymentsystems/rtgsguide.pdf

58 CPSS, *Core Principles for Systemically Important Payment Systems* (January 2001), para 7.3.8

59 Ball, A, et al, *Intraday liquidity: Risk and regulation* (June 2011), Bank of England Financial Stability Paper No 11,

60 Shirakawa, M, '*Liquidity' and 'Payment and Settlement Systems'* (November 2008), Conference speech, www.boj.or.jp/en/announcements/press/koen_2008/ko0811f.htm

61 Ball et al, *Intraday liquidity* p 12

bank is highly likely to settle (as it cannot be revoked) and decide to treat it as 'as good as received'. The result could be a 'contractual settlement' as far as the bank's customer is concerned – in other words a decision by the bank to credit the customer's account notwithstanding that the funds have not yet been received by the bank itself with finality.[62]

- Regulatory rules on liquidity coverage may have a perverse effect. One possible consequence is that banks might manage their liquidity tightly for fear of regulatory attention; another is that banks might act so as to manage the regulatory obligations, rather than 'normally' or in the way which is best for general systemic safety and efficiency.[63]
- Where liquidity is scarce, the system's approach may come under pressure. Any weaknesses in liquidity management may translate into real problems if there is a default. The role of the central bank as liquidity provider of last resort will be crucial in this situation.[64]

OPERATIONAL RISK

16.19 Operational risk is as important as – arguably even more important than – the risks already considered. Systemically important payment system operators are, as noted at the beginning of this chapter, responsible to the wider economy for their smooth running. All payment systems, whatever their structure, have this responsibility, even if they have successfully arranged their affairs to avoid the problems of legal, credit and liquidity risk for themselves. Operational risk is not something that can be shifted outwards to be borne by the community of participants. Nevertheless, an operational risk failure will be felt in that wider community more than it is at home.

There is a wide literature on operational risk and its management. Selecting the parts which specifically apply to payment systems operators is a challenging and ultimately fruitless task. Operational risk is defined as 'the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk'.[65] Given the breadth of the subject, it is hardly surprising that official guidance on management of operational risk is set out at a high level of generality, focusing on governance, management information, policies and such like. Little insight is derived from these on what operational issues should be of concern to infrastructure providers.

Perhaps the starting point, in the context of payment systems, is that any business needs to have a rigorous approach to systems and controls in order to prevent operational risks. All businesses are exposed to the threat of fraud, HR problems, data losses, new business teething problems, and the fallout from mergers. The Basel Committee has issued guidance for banks on how to handle these day-to-day issues, including the following:

62 Lucas Report, p 27; see also **sections 19.32ff**

63 Ball et al, *Intraday liquidity* p 14

64 Cf Bernanke, B, *Clearinghouses, Financial Stability, and Financial Reform* (April 2011), Conference speech, www.federalreserve.gov/newsevents/speech/Bernanke20110404a.htm

65 Basel Committee on Banking Supervision, *Principles for the Sound Management of Operational Risk*, (Bank for International Settlements, June 2011), www.bis.org/publ/bcbs195.pdf, footnote 5

'In addition to segregation of duties and dual control, banks should ensure that other traditional internal controls are in place as appropriate to address operational risk. Examples of these controls include:

(a) clearly established authorities and/or processes for approval;

(b) close monitoring of adherence to assigned risk thresholds or limits;

(c) safeguards for access to, and use of, bank assets and records;

(d) appropriate staffing level and training to maintain expertise;

(e) ongoing processes to identify business lines or products where returns appear to be out of line with reasonable expectations;

(f) regular verification and reconciliation of transactions and accounts; and

(g) a vacation policy that provides for officers and employees being absent from their duties for a period of not less than two consecutive weeks.'[66]

These ideas are not peculiar to banks, or indeed infrastructures or payment systems, and do not need special treatment here. Instead, this section approaches the subject by attempting to select those operational risks which appear to have specific relevance to payment system. Literature looking at infrastructures homes in on three types of operational risk.

IT systems

16.20 Infrastructures depend critically on IT systems for their operation. Being specialist processors of high volumes of transactions there may be no manual alternative, as may exist for businesses with smaller volumes and more diversified activities. International guidance emphasises the virtues of capacity, reliability, scalability, and adaptability:

- 'Management should ensure the bank has a sound technology infrastructure that meets current and long-term business requirements by providing sufficient capacity for normal activity levels as well as peaks during periods of market stress; ensuring data and system integrity, security, and availability.'[67]
- 'Operational performance objectives and service-level targets should define both qualitative and quantitative measures of operational performance and should explicitly state the performance standards the FMI is intending to meet.'[68]
- '[A]n FMI's operational objectives should be periodically reviewed to incorporate new technological and business developments.'[69]
- 'An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives, such as the required processing speed.'[70]

66 Basel Committee on Banking Supervision, *Principles for the Sound Management of Operational Risk* (Bank for International Settlements, June 2011), www.bis.org/publ/bcbs195.pdf, para 50
67 Basel Committee on Banking Supervision, *Operational Risk Principles* (BCBS 195), para 53
68 PFMI, para 3.17.9
69 PFMI, para 3.17.9
70 PFMI, para 3.17.11

- 'An FMI's arrangements with participants, operational policies, and operational procedures should be periodically, and whenever necessary, tested and reviewed, especially after significant changes occur to the system or a major incident occurs. In order to minimise any effects of the testing on operations, tests should be carried out in a "testing environment." This testing environment should, to the extent possible, replicate the production environment (including the implemented security provisions, in particular, those regarding data confidentiality).'[71]

These precepts were probably adhered to by the Bank of England in 2014; but a serious outage occurred nonetheless (see **Case Study 16.1**). The issues which came up show that there are no clear lines between IT systems risk, disaster recovery and business continuity.

Case Study 16.1 The outage at the United Kingdom RTGS

On 20 October 2014, the Bank of England's RTGS, which settles sterling high-value payments, experienced an outage of nine hours' duration. The extended downtime had serious ramifications on matters such as the ability of house-buyers to complete their scheduled purchases on time, with respondents to a Law Society survey indicating that 24% of transactions had suffered delays of three hours or more and 30% did not complete on the scheduled day at all, implying that 700 transactions failed to complete as planned.[72] Things were not helped by the Bank having issued a media statement at around 10 am which said that 'the most important payments are being made manually', which, given that consumers' needs were not being attended to, fell short of being reputation-enhancing for the Bank.

The disruption was serious enough (although resolved on the same day) to lead the Bank to commission a report from Deloitte into the causes of the outage and the effectiveness of the Bank's response, and to make recommendations. Deloitte found that the failure arose out of changes made over a weekend to enable the transfer of a CHAPS membership from one bank to another, and that triggered three previously undetected defects in RTGS processes. The defects had lain unseen from as early as April 2013. The 'most important payments' referred to in the Bank's press release were CLS payments, which may have been systemically important, but the commentary implied that the Bank was disconnected from the everyday world. Deloitte's recommendations covered matters such as improvement of the governance, change and testing arrangements concerning RTGS, improvement of the Bank's crisis management capabilities, having a response capability which considers the needs of all stakeholders, better fire drills, and such like.[73]

71 PFMI, para 3.17.6
72 Deloitte, Independent Review of RTGS Outage on 20 October 2014 (March 2015), paras 12–13
73 Deloitte report, paras 23, 26, 57, 83ff

Business continuity and disaster recovery

16.21 The ability of the financial market infrastructure to keep functioning in the face of major incidents such as the terrorist attacks of 11 September 2001 has caused a good deal of anguish.

> 'The attacks on the World Trade Centre caused widespread destruction of physical infrastructure supporting financial institutions and extensive telecommunications breakdowns throughout the region. US equity markets were closed for four days and most bond trading ceased for two days. The clearing and settlement mechanisms for government securities, repurchase agreements and commercial paper were all disrupted. While payment systems continued to work well, operational and telecommunications breakdowns among major financial firms led to liquidity problems for several days. All major payment systems remained open past their normal closing times to help institutions trying to send funds or waiting to receive funds. Some institutions borrowed substantial amounts from the central bank discount window to obtain sufficient liquidity to meet their obligations. Others built up large cash balances or held on to government securities for precautionary reasons, thereby increasing market liquidity imbalances. Prudential regulatory requirements were relaxed in the face of credit and liquidity disruptions and unreconciled transactions.'[74]
>
> 'Some of the key steps the Federal Reserve has taken to improve our infrastructure and the delivery of critical central-bank and financial services include the following:
>
> - We have developed plans to ensure that critical central-bank activities, supervisory functions, and financial services operations have sufficient redundancy in facilities and staff. We have enhanced and tested business-continuity arrangements for critical functions and business lines.
> - Our facilities for providing critical financial services are backed up at fully operational, geographically diverse sites to ensure a speedy recovery even if the critical infrastructure is disrupted across multistate areas.
> - We have enhanced our resiliency for discount window lending and cash services provided by the Reserve Banks.
> - We have improved our tools and authority to provide liquidity in a crisis. In 2003, the Board established the primary credit program, as well as special arrangements for rapidly reducing the primary credit rate to the federal funds rate in an emergency. We also have improved the ability of the Board to approve the extension of emergency discount window credit.'[75]

Business continuity and disaster recovery thus assume a high profile among the operational risk concerns of regulators. General guidance on business

74 HM Treasury, Bank of England, and FSA, *UK Financial Sector Continuity,* www.financialsectorcontinuity.gov.uk/section.asp?catid=650

75 Olson, M, *Protecting the financial infrastructure* (September 2004), Testimony before the US House of Representatives Committee on Financial Services, www.federalreserve.gov/boarddocs/testimony/2004/20040908/default.htm

continuity[76] emphasises the need to develop recovery objectives, to communicate effectively, and to test the effectiveness of business continuity plans. The ECB's Business Continuity Oversight Expectations for Systemically Important Payment Systems,[77] now withdrawn, likewise mentioned the importance of secondary processing sites, ensuring that not all critical staff are in the same place at the same time, and avoiding over-dependence on single components or service providers.

On secondary sites, the PFMI set out detailed guidance, adding that the locations of secondary sites should have different risk profiles from the primary site:

> 'The objectives of an FMI's business continuity plan should include the system's recovery time and recovery point. An FMI should aim to be able to resume operations within two hours following disruptive events; however, backup systems ideally should commence processing immediately. The plan should be designed to enable the FMI to complete settlement before the end of the day even in case of extreme circumstances.'[78]

The ECB paper also discusses the dependency of the system on its participants. The technical failure of a participant may have adverse consequences for the system itself, and the ECB recommends that participants have their own back-up processing sites which should re-enable them to attain operational effectiveness within one business day. Of course, most participants will be banks and therefore subject to direct regulatory scrutiny; but the inclusion of specific recommendations targeted at participants in the ECB's supervisory 'expectations', directed at system operators, tends to encourage the insertion of rules directed at participants into systems' rulebooks.

Outsourcing

16.22 Being dependent on IT, an infrastructure will, at some level, be dependent on external suppliers for equipment, systems, power, data storage, communications media, software, maintenance and possibly staff. These external links may be classified as 'outsourcing', another subject on which there is an extensive regulatory literature, the general principles of which again do not need reiteration here.[79] Aspects of outsourcing which appear to be relevant to payment system operators include:

(1) *Custodians*. Systems may use custodians to hold collateral. Specific guidance in the PFMI focuses on custody risk and concentration risk (given that custodians may also be participants).[80]

(2) *Regulatory oversight of suppliers*. The PFMI indicate that the regulator of the system may wish to regulate the supplier directly, or to insist that the system operator obtain suitable assurances from the service provider that

76 Eg The Joint Forum, *High-level principles for business continuity* (August 2006), www.bis.org/publ/joint17.pdf

77 ECB, *Business Continuity Oversight Expectations for Systemically Important Payment Systems (SIPS)* (June 2006), www.ecb.eu/pub/pdf/other/businesscontinuitysips2006en.pdf?fc59335973d7e1054939600f55897d1e

78 PFMI, para 3.17.14

79 Cf The Joint Forum, *Outsourcing in Financial Services,* www.bis.org/publ/joint12.pdf (February 2005)

80 PFMI, paras 3.16.2–3

the provider complies with the regulator's requirements.[81] Annex F of the PFMI sets out five rules to be complied with by critical service providers, covering risk management, information security, operational resilience, technology upgrades and supply of information to the system and its users.

(3) *Emergency providers*. Systems may depend on their participants to provide liquidity or to buy collateral or otherwise support them in moments of turmoil. Turmoil which is serious enough to affect the infrastructure is likely to be having disruptive effects in the wider financial world, and the participants in question may be impaired in their ability to respond or even in a state of personal crisis management. The system operator needs to be satisfied that its ability to implement emergency provision is resilient in the face of such disruption and has adequate redundancy to ride out the non-performance of one or more participants.

Instant payments

16.23 Development of instant or faster payment arrangements for immediate retail payments can elevate the profile of certain risk issues. Instant retail payment systems are intended to have the immediacy of payment in physical cash, and so tend to be characterised not only by their immediacy but the need to be available 24 hours a day, seven days a week, holidays included. The Committee on Payments and Market Infrastructures (CPMI) observes that:

> 'Fast payments generally do not introduce new types of risk beyond those identified in previous reports as relevant for retail payments. However, the extent to which fast payments exacerbate some risks may warrant attention … An area that merits particular attention is the management of financial risks between payment service providers (PSPs) when settlement between PSPs is deferred; because a fast payment provides immediate final funds to the payee, deferred settlement between PSPs implies an extension of credit from the payee's PSP to the payer's PSP.'[82]

The credit risk on settlement issue arises because of the possibility of a mismatch between operating hours of the RTGS or other national inter-bank settlement system and the 24/7/365 availability of the instant payment system. If the payee is to receive its money with immediate finality at any time, it will not always be feasible for settlement to occur in real time between the payment service providers. Hence, two broad categories of settlement model for instant payment systems are described by the CPMI.[83]

- In one, the instant payment system and its participants carry out all validation checks in real time and the account of the payee is credited accordingly. The ensuing inter-PSP obligations are settled in the next settlement cycle, which will operate on a DNS basis. The United Kingdom's Faster Payments Service uses this structure.
- The alternative model is for settlement to happen on an RTGS basis, which would require the RTGS system to be open 24/7/365. The European Central Bank's TIPS service uses this model. According to Julius Weyman

81 PFMI, para 3.17.20

82 Bank for International Settlements Committee on Payments and Market Infrastructures, *Fast payments – Enhancing the speed and availability of retail payments* (November 2016)

83 CPMI *Fast Payments*, section 4.1

of the Federal Reserve Bank of Atlanta: 'A 24-hour operation that doesn't afford downtime, that will be required to operate continuously while moving ever-increasing volumes, is largely unique in the context of banking and legacy payments. Ceaseless operations of the nature being considered are not only more demanding and less forgiving on their face; they are arguably countercultural.'[84]

16.24 Specific risk issues which may arise will include the following.

(1) Credit risk in systems depending on a series of DNS cycles for settlement may be managed in a variety of ways. One is to set a series of limits (eg the United Kingdom's Faster Payments Service began with a maximum payment of £10,000 but has subsequently increased by stages to £250,000). Having more cycles per day ought to reduce the build-up of credit balances. Other risk mitigants suggested by the CPMI include loss-sharing, collateral, pre-funding and participant credit limits.[85] The last of these has the potential to conflict with service availability.

(2) RTGS arrangements typically increase pressure on liquidity, though with real-time retail payments the size of settlements may be too small for this to be an issue. 'Real-time gross' settlement might, in fact, be DNS with high-frequency cycles, which appears to be the structure adopted by some of the systems reviewed by the CPMI.

(3) The challenge of opening hours of the large-value wholesale settlement system might be overcome by using a commercial bank as the provider of settlement accounts. Although that implies settlement in commercial bank money, if it is a 'special purpose institution' whose settlement obligations are 'fully backed by funding in central bank money' the risks would appear to be low. The special purpose institution approach is used for BiR in Sweden.[86]

(4) Indirect participation may have an impact on performance; it may be more possible to separate service delivery (for which direct participation in the instant payment system is more desirable) and settlement (for which indirect participation, subject to the wider considerations discussed at **sections 16.14** and **16.15**, may be appropriate).

(5) Speed of processing reduces the timeframe for checking transactions for possible fraud, money laundering, authenticity and so forth. While most of the risk involved in pre-processing checks will need to be managed by the PSPs, system design might include a facility for suspending transactions (as well as rejecting those which are ineligible (eg because the transaction is too large or the payee details are incorrectly presented).

84 Weyman, J, *Risks in Faster Payments* (May 2016), Federal Reserve Bank of Atlanta Retail Payments Risk Forum Working Paper, www.frbatlanta.org/-/media/Documents/rprf/rprf_pubs/2016/risks-in-faster-payments.pdf

85 CPMI *Fast Payments*, section 4.2

86 CPMI *Fast Payments*, p 40

17 Risk management at CCPs

COUNTERPARTY RISK

17.1 The raison d'être of a CCP is the management of counterparty risk. This task can be divided into phases, which inform the structure of this chapter. In first place is the idea that participants who pose undue counterparty risk should not be admitted to the club. Secondly, there is the problem of product eligibility, which requires careful selection of products whose risk profile can be confidently predicted by the CCP, as when a participant defaults the CCP will itself have to shoulder the market and delivery risks until the defaulter's account is closed out. Once these choices have been made, there is the need to protect against credit risk, which is done by taking margin. Sufficiency of margin is a difficult issue, so the CCP will also need to consider its financial position in the event that the margin received is insufficient to cover the exposure to a defaulting participant: the default fund, loss-sharing among survivors, capital and other backing will need to be considered. If the participant defaults, the CCP will need to implement a default handling strategy, which will, in particular, shape the margining algorithm adopted by the CCP. Transfer of a defaulter's positions to a surviving participant may be an important service provided by a CCP, in the interests of the wider market. Finally, to help the CCP over the various obstacles which these activities may encounter, there is the benefit of statutory protection against insolvency-law challenge, which forms the last piece of the CCP's risk management armour.

The general principles of risk management for CCPs are, at international level, set out in the Principles for Financial Market Infrastructures (PFMI).[1] Hard law exists in the form of EMIR, which imposes mandatory standards within the European Union on exposures management, margin, default funds, client asset segregation, default procedures, investment risk, model risk and settlement risk.[2] EMIR's rules reflect generally-held standards in place elsewhere in the world.[3] The most comprehensive set of rules on CCP risk management is arguably that of the Commodity Futures Trading Commission in the United States, which additionally expects CCPs to have admission standards, contract eligibility standards, documented plans for managing extreme market events, and automated systems oversight and disaster recovery.[4] The approach of the

1 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf

2 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, Title IV, ch 3

3 For example, Reserve Bank of Australia, *Financial Stability Standard for Central Counterparties* (February 2009)

4 Commodity Futures Trading Commission, *Regulations,* Part 39

CFTC implies that more than counterparty risk is at stake, and indeed various other regulators recognise this.

A considerable amount of useful guidance on risk management at CCPs has fallen away or receded into the background since EMIR came into effect. Regulators now operate to the code of hard law, but it should not be assumed that they have no regard to the previous soft-law guidance or that such guidance is no longer fit for purpose. Accordingly, mention might be made of the following, each of which contains still-useful recommendations for good practice by CCPs:

- Recommendations for CCPs issued by the European Central Bank and the predecessor of ESMA (the ECB-CESR Recommendations).[5]
- Risk Management Standards put forward by the European Association of CCP Clearing Houses (the EACH Standards).[6]

The official status of these documents is not entirely clear. The ECB–CESR Recommendations can be assumed to have been overtaken as soft law by the PFMI, though the ECB and CESR considered it appropriate to adapt the predecessor of the PFMI – the CPSS/IOSCO Recommendations for CCPs[7] – to the European environment, and thus it might be that the European overlay is still relevant even in relation to the PFMI. The EACH Standards do not appear to have been withdrawn, but older EACH documents are difficult to access.

There is also official guidance from the Bank of England,[8] according to which:

- Risk management needs to go beyond the management of microprudential risks to the CCP itself and also consider systemic risks, and in particular systemic risk management should not be sacrificed to the commercial interests of owners.[9]
- Exposures may not be well covered by 'the usual CCP risk mitigants', for example where interoperability arrangements are in place; CCPs in interoperable structures need to show no reduction of protection (relative to the situation if all participants used the same CCP).[10]
- CCPs should be transparent with participants, authorities and the public with their plans for managing risk.[11]

OTHER RISKS

17.2 While counterparty risk is the most obvious risk for a CCP to manage, and the management of counterparty risk may encapsulate a wide range of other

5 European Central Bank and Committee of European Securities Regulators, Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union (May 2009), www.ecb.eu/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf

6 EACH, Standards of Risk Management Controls used by Central Counterparty Clearing Houses (November 2001)

7 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of IOSCO, Recommendations for Central Counterparties (November 2004), www.bis.org/publ/cpss64.pdf

8 Bank of England, The Bank of England's approach to the supervision of financial market infrastructures (April 2013)

9 Paragraph 3.1

10 Paragraph 3.3

11 Paragraph 3.5

subsidiary risks such as model and liquidity risk, it is worth a short foray into the other types of risk frequently encountered by financial institutions, to examine what else CCPs should have in consideration, and how they are expected to manage them.

17.3 Typically, a bank would be expected to manage the three 'Pillar 1' risks (credit, market and operational risks) set out in the Basel framework for prudential regulation of banks. But then regulators also expect banks to manage other risks under 'Pillar 2' of the Basel framework, and those other risks include matters as diverse as underwriting risk and pension risk. Based on the things which banks have to consider and the guidance in the PFMI, it is suggested that CCPs should have regard to the following matters in addition to counterparty risk:

(1) *Operational risk*. The operational matters which may require careful attention by the CCP include, at least, its IT systems (including disaster recovery), its staff, its control structure, and outsourcing. The subject of outsourcing is considered further in relation to the risk management function of a CCP at **section 17.5**.

(2) *Concentration risk*. This question is touched on in **sections 17.11** and **17.17(6)**. The CCP needs to consider its exposure not just in respect of a participant acting as such, but as part of a wider financial group (which may include deposit-taking banks which the CCP uses to hold its margin deposits, or for access to payment or settlement systems or in other business-critical ways). Concentration risk may also manifest itself in relation to product types and geographical factors. CCPs may wish to receive supplementary margin when a participant has built up a substantial share of the open interest in a particular cleared product.

(3) *Liquidity risk*. The PFMI specify that a CCP needs sufficient liquid resources to settle its obligations and to make variation margin payments, under a wide range of stress scenarios. A CCP should have liquidity to withstand the default of the participant (or, if it is involved in complex activities or systemically important in multiple jurisdictions, the default of two participants) which, together with its or their affiliates, have the largest aggregate payment obligation.[12] EMIR states the test slightly differently: a CCP must 'take into account the liquidity risk generated by the default of at least the two clearing members to which it has the largest exposures'.[13] Detailed rules for stress-testing and the content of a liquidity risk management plan are set out in EMIR RTS 153.[14] Liquidity issues are considered further in **sections 17.17(3)**, **17.29** and **17.65**.

(4) *Settlement risk*. Settlement risk manifests itself in a more complex manner for a CCP than for market participants dealing bilaterally. As with bilateral contracts, there is the risk that there is no simultaneous delivery against payment as between the CCP and its participant. This danger will arise where the cleared product is not a securities transaction settled at a CSD using a modern DvP system: the risk may be prominent in the commodities markets where physical delivery is likely to be decoupled from the payment. CCPs may wish to take 'delivery margin' to protect themselves

12 Principle 7, key consideration 4

13 EMIR, art 44(1)

14 Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on requirements for central counterparties, arts 32–34

from the gross settlement exposures which could arise. However, a more general issue for CCPs is the risk that one participant settles but the other does not, leaving the CCP with an unbalanced book. First to consider is the risk of non-delivery by a participant. Article 7(10) of the CSDR[15] obliges a CCP clearing transactions in transferable securities, money-market instruments, fund units and emissions allowances to be responsible for the buy-in of undelivered financial instruments in accordance with the timetable set out in the CSDR. Buy-in will happen after the due date for delivery, so the CCP must have some procedure for allocating the shortfall of financial instruments among the disappointed buyers in the meantime. Although some detail on a CCP's buy-in process is added to article 7(10) by CSDR RTS 1229,[16] the question of shortfall allocation is left to CCPs' discretion. The counterpart to non-delivery is failure of settlement of the cash leg of a transaction by a buying participant. This is more likely to be interpreted by the CCP as evidence of insolvency than a manifestation of settlement risk, although the non-payment could be caused by operational failure or insolvency of the CCP's cash management bank. As to the management of this aspect of cash-leg settlement risk, the PFMI strongly recommend that cash obligations referable to CCPs are settled in central bank money.[17] Whether this means that CCPs need to have access to central bank liquidity is discussed in **section 17.65**.

(5) *Investment risk*. Investment risk is not something special to CCPs: investments give rise to similar risk considerations for banks as they do for CCPs – namely, risk of loss of value, and risk of illiquidity – and those risks can be managed in the same way. EMIR RTS 152 sets out capital adequacy regulation for CCPs analogous to banks in relation to the CCP's own investments.[18] Investment risk is the subject of various strictures, considered in **section 17.11**.

(6) *Capital adequacy*. Whether the function of capital of a CCP is for protection of its creditors – in other words, to be a backup to the default fund – is considered in **sections 7.33**–**7.35**. Further discussion of capital top-ups for CCPs is in **sections 17.34** and **14.33**.

(7) *Legal risk*. Legal risk is noted to be particularly relevant to the ability to close out or transfer positions and to liquidate a defaulting participant's positions and margin. Legal risk issues of this nature are considered below in the context of default management and legislative protection against insolvency-law-based challenges.

17.4 EMIR obliges a CCP to have a risk committee, which must consider changes in the risk model, default procedures, membership criteria, product eligibility and outsourcing.[19] Articles 34 and 35 of EMIR are devoted respectively to business continuity and outsourcing. Various matters touched on in EMIR

15 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc

16 Commission Delegated Regulation (EU) 2018/1229 of 25 May 2018 supplementing [CSDR] with regard to regulatory technical standards on settlement discipline, arts 26, 27.

17 Principle 9; Annex E

18 Commission Delegated Regulation (EU) No 152/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on capital requirements for central counterparties, art 4

19 EMIR, art 28(3)

are addressed in more detail in EMIR RTS153; mention may be made of the following.

- Counterparty risk issues to which a CCP should have regard include the risks it bears from *and poses to* its clearing members and their clients, as well as other entities such as interoperating CCPs, payment and settlement systems, settlement banks and trading venues.[20]
- Information technology must be resilient, scalable, and have sufficient redundancy to process the residue of a day's transactions in the event of a disruption. Where new technology is introduced the CCP must be able to switch back to the old system. Testing (simulating stressed conditions) is required before systems are switched on after a change or after a disruption. Data security is also covered in detail.[21]
- Business continuity is addressed in considerable detail.[22] One might highlight that for 'business continuity' – that is, essentially, discontinuities caused by internal factors such as systems upgrades – the maximum allowable downtime is two hours, end-of day processes and payments must be completed at the required time and date without fail. Disaster recovery scenarios – where the discontinuity is extraneous in origin – are treated less quantitatively, but at least one back-up site is required, and there are rules about fire drills, internal and external communications, post-mortem reviews, and reporting of tests.
- As mandated by EMIR, regulatory technical standards go into detail on the following matters related to the CCP's main business of managing transaction-related counterparty risk, many of which are discussed further in this chapter: margin,[23] default fund parameters,[24] liquidity,[25] assets in the default waterfall,[26] collateral,[27] and models and stress-tests.[28]

Outsourcing

17.5 Article 35 of EMIR permits outsourcing in a similar manner to that permitted for CSDs under article 30 of the CSDR, and the comments at **section 18.23** may be applicable here. The rules on outsourcing by CSDs and by CCPs differ in that: the CSDR specifies that the infrastructure must be able to terminate its agreement (whereas EMIR is silent); EMIR requires the service provider under an outsourcing to implement the business continuity standards applicable to a CCP; and regulatory approval is needed for outsourcing of 'major activities linked to risk management' in the case of a CCP and for outsourcing of 'a core service' in the case of a CSD.

20 EMIR RTS 153, art 4(2)
21 EMIR RTS 153, art 9
22 EMIR RTS 153, arts 17–23
23 EMIR RTS 153, arts 24–28
24 EMIR RTS 153, arts 29–31
25 EMIR RTS 153, arts 32–34
26 EMIR RTS 153, arts 35–39
27 EMIR RTS 153, arts 37–42
28 EMIR RTS 153, arts 47–61

17.6 In **section 7.11(7)**, it is noted that the PFMI might be considered too thin as regards their prescriptions on outsourcing. It is generally thought that financial institutions should not be permitted to outsource the part of their activities which require a regulatory licence, and in particular that they may not delegate to a third party the decision-making and responsibility for ensuring that such activities are duly conducted in accordance with the requisite regulatory standards:

> 'The outsourcing of core management functions is considered generally to be incompatible with the senior management's obligation to run the enterprise under their own responsibility. Core management functions include, inter alia, setting the risk strategy, the risk policy, and, accordingly, the risk-bearing capacity of the institution. Hence, management functions such as the setting of strategies and policies in respect of the authorised entity's risk profile and control, the oversight of the operation of the entity's processes, and the final responsibility towards customers and supervisors should not be outsourced.'[29]

This robust statement is not repeated in the PFMI, but there is no fundamental reason why this basic rule should not be observed by an infrastructure of systemic importance.

For a CCP, the basic rule has been underscored by an addition to EMIR made in 2019: 'a CCP shall not outsource major activities linked to risk management unless such outsourcing is approved by the competent authority'.[30] That rule should avoid the problems arising from outsourcings illustrated in **Case Study 17.1**.

17.7 The basic rule would suggest that a CCP should particularly be wary of outsourcing any of the following aspects of its activities, which might be regarded as central to its regulated activity: the creation and maintenance of its register of cleared transactions; the assessment of applicant participants; the choice of cleared products; the margin and default fund methodology; and the management of defaults. Furthermore, given that the contributors to the default fund, rather than the owners of the CCP, stand to suffer from mismanagement in relation to these questions, it would suggest that where the governing body of a CCP does not answer to the default fund contributors, a decision to outsource any critical part of the operational functions underpinning these core activities should be subject to a veto by those contributors.

17.8 It might be expected that regulators would generally find it inappropriate for a CCP to delegate the risk management function of its operations to a third party, wholly or in part; or, if partial delegation can sometimes be acceptable, to set firm boundaries. Curiously, however, the position seems to be rather flexible. Examples of outsourcing of risk management by CCPs indicate a range of approaches. shown in **Case Study 17.1**.

29 Committee of European Banking Supervisors, *Guidelines on Outsourcing* (December 2006), www.eba.europa.eu/getdoc/f99a6113-02ea-4028-8737-1cdb33624840/GL02OutsourcingGuidelines-pdf.aspx, Guideline 3, para 1; see also Guideline 4

30 EMIR, art 35(1), final para

Case Study 17.1 CCP outsourcings

- The outsourcing of the risk management function of a CCP seems to have been one of several main causes of the failure of the Hong Kong futures clearing system in 1987. The structural arrangements in place there, criticised by the Hay Davison inquiry,[31] were as follows. The Hong Kong Futures Exchange used ICCH (Hong Kong) Ltd (ICCH) as its clearing house and Hong Kong Futures Guarantee Corporation Ltd (FGC) as a separate guarantor of the trades. ICCH did not act as central counterparty, but calculated margin requirements and managed FGC.[32] FGC had very low – less than $2 million – capital, and no default fund. Although ICCH had a 20% ownership stake in FGC, an error by ICCH in risk management would primarily affect market participants and FGC, but not ICCH itself. The Hay Davison report concluded that this structure was unworkable; that the clearing house should be the guarantor and manage its own risks; and that the clearing members of the Exchange should stand behind the clearing house by contributing a default fund.[33]
- NYSE Liffe received approval from the Financial Services Authority to become a self-clearing recognised investment exchange in June 2009.[34] Until development of its own clearing functionality, NYSE Liffe continued to employ LCH Limited as supplier of its clearing service, but not as CCP in the traditional sense:

  > 'LIFFE has appointed LCH as provider of certain clearing services, including the management of positions of any LIFFE Clearing Member that is declared a defaulter. These arrangements provide that, in the event of a Clearing Member default, each outstanding Registered Exchange Contract between the defaulting Clearing Member and LIFFE is automatically novated so as to substitute LCH as party in place of LIFFE (the Default Novation), thus enabling LCH to undertake its default management services.'[35]

  LCH Limited was also to provide margin calculation and collection services and to manage settlement and delivery obligations. In other words, the outsourcing was a complete delegation of the whole clearing function. To hand over risk management to a reputable CCP might not be regarded as imprudent, but one might equally expect there to be careful controls on the risk of conflicts of interest.
- Before EuroCCP merged with EMCF in 2013, EuroCCP 'leverag[ed] DTCC's technology and processing capacity' while also noting that '[r]isk management is the core competence of a central counterparty'.[36] From these remarks it would appear that some degree of outsourcing took place, though the risk management function would appear to

31 Hay Davison, I, et al, *The Operation and Regulation of the Hong Kong Securities Industry, Report of the Securities Review Committee* (May 1988), www.fstb.gov.hk/fsb/ppr/report/davison.htm
32 Hay Davison report, paras 7.3–7.9
33 Paragraphs 7.32, 7.48
34 NYSE Liffe London Notice No 3174 (July 2009)
35 NYSE Liffe London Notice No 3159 (June 2009), para 2.4
36 Depository Trust & Clearing Corporation, *Annual Report 2008* (2009)

have resided with EuroCCP itself since EuroCCP had its own risk committee and head of risk.[37]

- CC&G delegated its netting calculations to Monte Titoli, 'blurring the functions between the CSD and CCP'.[38] Calculation of net settlement positions might, however, be a mechanical rather than discretionary function, and thus not regarded as a delegation of risk management.

Investment risk

17.9 Given the expected influx of margin assets into CCPs in consequence of mandatory clearing, it may be thought remarkable that the PFMI contain only one paragraph on investment policy for infrastructures.[39] This states that investments should be claims on, or secured by, high-quality obligors, and be easily liquidated. The PFMI also warn of the risk of entering into repos with participants and proscribe investment in participants or their affiliates.

The Chair of ESMA has said that: 'CCPs need to be safer than banks, and for this reason they fully collateralise their exposure. Now all this collateral cannot be returned to banks through unsecured arrangements, otherwise we will be back to square one. We will therefore need to establish strict rules on CCPs' investment policies.'[40]

17.10 Article 47 of EMIR essentially repeats the PFMI, but adds the following:

- Financial instruments deposited as margin or default fund contributions must if possible be held with 'operators of securities settlement systems that ensure the full protection of those financial instruments'.[41] ('Operator of a securities settlement system' is an odd choice of phrase, betraying confusion about the roles of infrastructures, and merits a brief discussion. Evidently a CSD authorised under the CSDR will qualify. But EMIR pre-dates the CSDR and came into effect well before the authorisation of any CSD under it, so a broader meaning should be sought. In any event, a securities settlement system does not per se need to apply for authorisation under the CSDR unless it also provides the root-of-title function, so presumably a non-CSD custodian operating a settlement system would also qualify, if 'full protection of those financial instruments' is ensured.) The assumption underlying this rule is that custody risk is reduced if intermediation is disallowed; while that may be true, there may be disadvantages to direct holdings in CSDs, such as a reduced range of ancillary services which might more commonly be available from commercial custodians than from CSDs. Where a 'securities settlement

37 European Central Counterparty, *Corporate Governance* webpage (May 2012)

38 Comotto, R, *A White Paper on the operation of the European repo market, the role of short-selling, the problem of settlement failures and the need for reform of the market infrastructure* (July 2010), White Paper for the International Capital Market Association's European Repo Council, icmagroup.org/assets/documents/Maket-Practice/Regulatory-Policy/Repo-Markets/ICMA%20ERC%20European%20repo%20market%20white%20paper%20July%202010%20%282%29.pdf, para 8.14

39 PFMI, para 3.16.4

40 Maijoor, S, *Keynote Address at the AFME Market and Liquidity Conference* (February 2012), www.esma.europa.eu/system/files/2012-76.pdf,

41 EMIR, art 47(3)

system' is not used for custody, the choices are a central bank or a commercial custodian which has both low credit risk and assures isolation of the assets from the insolvency of the custodian; the belt-and-braces approach (bankruptcy remoteness should render credit risk irrelevant) is not explained.[42] Assets belonging to clearing members have to be held separately from the CCP's own assets.[43]

- Cash, by contrast, can be held 'through highly secure arrangements with authorised financial institutions, or alternatively, through the use of the standing deposit facilities of central banks or other comparable means provided for by central banks'.[44] Concentration limits are not specified but general guidance is given on how they should be set.[45] Cash which is not placed with a central bank must be secured with 'highly liquid financial instruments' (*sc*. a sub-set of securities which the CCP may accept as collateral from clearing members).[46] This is, then, the other way round from non-cash assets, reflecting the relative difficulty which CCPs may have (particularly if they are not banks) in opening accounts at central banks. Access to central bank liquidity may go hand-in-hand with the ability to hold cash directly in central bank funds, and the question whether CCPs need (or should be permitted to have) access to central bank liquidity is considered further in **section 17.65**.
- Reinvestment policy is covered in article 39 and investment of financial resources in article 47. CCPs are allowed to have a right of use of margins and default fund contributions collected under a security financial collateral arrangement, and title transfer[47] margin and default fund arrangements are not disallowed. If re-use takes place, article 47 applies, so that the CCP may only invest in cash or highly liquid financial instruments with minimal market and credit risk, and which are capable of being liquidated rapidly with minimal adverse price effect.[48] The only acceptable financial instruments in which 'financial resources' (meaning the fruits of capital raising and the default fund) may be invested are again 'highly liquid financial instruments'.[49]

17.11 The investment restrictions might be thought incomplete, if a sound investment policy for a CCP should be to avoid, as far as possible, any correlation between the loss of value on its investments and movement in the prices of products which the CCP is clearing. However, the PFMI emphasise the need of a CCP to liquidate assets in managing defaults, and in a contest between preservation of value and liquidity, liquidity would appear to be the winner.

CCPs which repo out non-cash assets to, or deposit cash with their participants, could be regarded as behaving imprudently. Another factor to consider is how a reinvestment might be structured so as to minimise concentration risk in a wider sense – that is, to minimise exposure to the banking sector, which will be the sector in which defaults arise. EMIR requires that CCPs consider their overall credit risk exposures to individual obligors and to ensure that exposures remain

42 EMIR RTS 153, art 44
43 EMIR, art 47(5)
44 EMIR, art 47(4)
45 EMIR RTS 153, art 45
46 EMIR RTS 153, art 45
47 See **section 6.10(2)**
48 EMIR, art 47(1)
49 EMIR RTS 153, art 43

within acceptable concentration limits.[50] There are, however, no quantitative limits as there are for banks in the Capital Requirements Regulation.[51]

MEMBER ELIGIBILITY

17.12 The first step in counterparty risk management is to keep the door barred against unwanted would-be participants. The function of the CCP is to manage counterparty risk, so it must ensure that its counterparties are robust, or it will simply be writing off the default fund contributions of its stronger participants.

The PFMI aim to balance the objective of fair and open access with the need to bar the doorway on grounds of risk.[52] Legitimate risk-based criteria are said to include operational, financial and legal requirements, and requirements relating to indirect (tiered) participation.[53] Before the legislative rules set out in EMIR and EMIR RTS 153 came into effect, the expected standards for CCPs were set out in the ECB-CESR Recommendations,[54] which were slightly more prescriptive. In relation to membership, Recommendation 2 specified that 'a CCP should establish requirements for participation to ensure that participants have sufficient financial resources and robust operational capacity, including a sufficient level of relevant expertise, necessary legal powers and business practices'.[55] This statement, and the next, which said that a CCP should have procedures to monitor that participation requirements are met on an ongoing basis 'either through timely access to reports … or directly if such reports are not available or do not contain the required information'[56] are weaker than the criteria commonly expected of banks for extending ordinary loan credit.[57] However, the supplementary notes to the ECB-CESR Recommendation emphasised financial and operational capacity, listing the following additional matters in a non-prescriptive way:

- capital adequacy
- credit rating
- parent guarantee
- risk management in respect of non-clearing clients whose positions are cleared
- collateral, payment and delivery arrangements
- fitness and properness of senior management and
- obligations to participate in default management processes.

50 EMIR, art 47(7); EMIR RTS 153, arts 34, 42, 45

51 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms etc, arts 387ff

52 PFMI Principle 18

53 PFMI, Principle 18, para 3.18.5

54 European Central Bank and Committee of European Securities Regulators, Recommendations for Securities Settlement Systems and Recommendations for Central Counterparties in the European Union (May 2009), www.ecb.eu/pub/pdf/other/pr090623_escb-cesr_recommendationsen.pdf

55 ECB-CESR Recommendation 2, Key Issue B1

56 ECB-CESR Recommendation 2, Key Issue B2

57 Cf Basel Committee on Banking Supervision, *Sound credit risk assessment and valuation for loans* (June 2006), www.bis.org/publ/bcbs126.pdf

The Recommendation noted that many of these things may have been vetted by the regulator of the proposed member already, which then raises the question whether it is safe for a CCP to rely on the fact that its own membership criteria correspond to the regulator's assessment criteria to reduce the admission burden on new applicants for membership, or to reduce the level of duplicate supervision which it might otherwise feel obliged to carry out. There is no official sanction of such a policy, and regulatory standards can be inconsistently applied, so it may be unwise for a CCP to rely too heavily on its participants' regulators.

17.13 It may be of interest to consider the participant eligibility rules of the United States' Commodity Futures Trading Commission (CFTC) for CCPs ('derivatives clearing organizations') under its jurisdiction.[58] These require fair and open access, forbidding restrictive standards if less restrictive requirements would achieve the same objective without materially increasing risk; they require that participants have access to sufficient financial resources to meet their obligations in extreme but plausible market conditions; they insist on capital and operational capacity requirements; and they require monitoring of and reporting by participants to the 'derivatives clearing organization'. The CFTC also forbids a 'derivatives clearing organisation' requiring its participants to be swap dealers or to maintain a swap portfolio of a given size or imposing a capital requirement of over $50 million for a swap clearing participant.[59]

As the CFTC criteria suggest, it may be tempting for a CCP to impose very burdensome admission criteria. However, as discussed in **sections 11.12–11.13**, this may be deemed to be an anti-competitive practice unless the criteria can be shown to be proportionate and risk-based.

17.14 LCH Ltd's membership criteria for its SwapClear service[60] impose various requirements which are not found in ECB-CESR Recommendation 2. These include (in addition to the standard requirements for capital, participation in the CCP's margin collection system called PPS, non-contravention of the United Kingdom rule prohibiting carrying on of regulated activities without authorisation,[61] being (in the case of a bank) 'appropriately authorised' by the banking supervisor of its home country, and having a functional back office arrangement) signing up to the default management process and participation in a default management fire-drill, having a bank or investment firm in the group, and being able to receive data on SwapClear contracts in particular formats. These supplementary criteria illustrate what a Consultative Report by the Committee on Payment and Settlement Systems (CPSS) said in relation to clearing of OTC derivatives: 'If an OTC derivatives CCP uses procedures which introduce specific roles for its participants in the default procedures, it may need to consider if and to what extent additional participation requirements are necessary in order to ensure that the participants are able to perform their roles as expected.'[62] It may be of interest that further criteria previously in effect, such

58 CFTC, *Final Rules for derivatives clearing organizations* (November 2011), 76 FR 69334, §39.12(a)

59 Cf **section 10.8(5)**

60 LCH Limited, *Clearing House Procedures* (March 2020), s 1.3.3

61 Financial Services and Markets Act 2000, s 19

62 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Guidance on the application of the 2004 CPSS–IOSCO Recommendations for Central Counterparties to OTC derivatives CCPs – consultative report* (May 2010), www.bis.org/publ/cpss89.pdf, Recommendation 2

as a minimum credit rating and a minimum interest rate swaps portfolio size, have been disapplied.

17.15 Having admitted a participant, a CCP takes on the burden of monitoring and, if necessary, ejection of participants who do not keep up to the standard. The old EACH Standards[63] state:

> 'Having admitted a firm to membership, the clearing house should ensure that the firm continues to meet the membership requirements, and should evaluate and keep under review the financial health of members – so that it is in a position to take any additional steps to protect its risks and therefore the integrity of the market or markets that it clears.
>
> 'Clearing house procedures should ensure that:
>
> (a) members' adherence to the membership requirements is monitored and enforced;
>
> (b) there is an evaluation of the standing of each member as an aide to the monitoring of exposures by the clearing house;
>
> (c) there is at least daily review of the member-specific exposures run by the clearing house;
>
> (d) there is liaison and information-sharing with statutory regulators, as appropriate and permitted;
>
> (e) there are information channels with other clearing houses/exchanges, as appropriate and permitted.'[64]

The old CPSS/IOSCO Recommendations for CCPs explained further:

> 'A priority, of course, should be to avoid defaults. … A CCP's participation requirements should include financial requirements that reduce the likelihood of defaults. Furthermore, a CCP should identify situations that it determines may pose a threat of default and develop early warning pre-default plans and procedures, such as increasing monitoring or imposing restrictions on a participant. These procedures should provide an incentive to participants for early notification of potential financial, liquidity or systems problems that could lead to a default.'[65]

The PFMI emphasise the need to monitor ongoing compliance with membership criteria and recommend additional collateral and reduced credit limits for participants who pose heightened risk; but the PFMI do not reiterate this specific guidance.[66]

CCPs may thus need powers to require participants to reduce their positions. Whether it is sufficient for such powers to exist under its rules is questionable: safer practice, where possible, may be to ensure that the trading platform from which the positions emanate can constrain the trading activity which gives rise to the cleared positions and is willing to intervene at the CCP's behest. This may

63 EACH, Standards of Risk Management Controls used by Central Counterparty Clearing Houses (November 2001)
64 EACH Standard A2
65 CPSS and Technical Committee of IOSCO, *Recommendations for Central Counterparties* (November 2004), Recommendation 6, para 4.6.1
66 PFMI, para 3.18.8

be challenging, if the CCP participant is a GCM clearing a number of NCMs' trades.

PRODUCT RISK

17.16 The amount of credit risk assumed by a CCP is not solely a function of the quality of its participants. The other principal factors in this equation are the type of transaction which the CCP accepts for clearing, and the question whether transactions have become binding between the CCP and both participants. It is thus, perhaps, curious that neither the PFMI, nor the older CPSS/IOSCO and ECB-CESR Recommendations, devote significant space to the question how a CCP should approach the topic of transaction eligibility. Furthermore, EMIR contains no specific rules on product selection by CCPs.

The PFMI note that the amount of margin needed by a CCP will be affected by the product cleared, and give a list of product risk issues, viz: price volatility and correlation, non-linear price characteristics, jump-to-default risk, market liquidity, liquidation procedures, and wrong-way risk.[67] But there is no real attempt to guide CCPs on how to approach the question of product eligibility. This may perhaps be attributed to the fact that political considerations are dictating that certain products be cleared, and that it would be unhelpful for the PFMI to complicate other policy objectives.[68] EMIR empowers ESMA to recommend a 'top-down' list of products which ESMA wishes to see cleared; it is implicit that such products are deemed to be safe enough to clear.[69] Not only does EMIR set out the framework for mandatory clearing of OTC derivatives, but it also obliges CCPs not to discriminate against contracts or venues when considering what products to clear.[70] Nowhere does the legislation suggest that CCPs might wish to be prudent, rather than arbitrary, in selecting products for clearing.

A CCP could, therefore, be forgiven for thinking that careful selection of products for clearing should be a relatively straightforward process. However, the CFTC Rules for 'derivatives clearing organizations' are prescriptive, listing seven factors which should at minimum be considered: trading volume; liquidity; availability of reliable prices; ability of market participants to use portfolio compression;[71] market access to create, liquidate, transfer, auction or allocate positions; measurability of risk for margin setting; and operational capacity of the CCP to address unusual risk characteristics of the product.[72] In relation to the last point, it may be noted that for clearing of OTC products the ability of a CCP to see a complete view of the market is not assured.[73] Bank of England staffers have also emphasised the importance of liquidity and standardisation in product selection.[74]

67 PFMI, para 3.6.3
68 See **Chapter 10**
69 EMIR, art 5(3); see **section 10.16**
70 EMIR, art 7(1); also Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc, art 35(1)
71 See **section 4.15**
72 CFTC Rules, 76 FR 69437, §39.12(b)(1)
73 See **section 10.8(1)**
74 Sidanius, C, and Wetherilt, A, *Thoughts on determining central clearing eligibility of OTC derivatives* (March 2012), Bank of England Financial Stability Paper No 14

It might also be noted that the regulatory principles for CLS also contain a chapter on product choice,[75] even though CLS is not a CCP (though it does operate a netting function and does take on counterparty risk vis-à-vis its participants).

17.17 Professor Craig Pirrong makes a number of comments regarding product eligibility, based on which the following observations might be made:[76]

(1) *Standardisation*. Standardisation helps, because it facilitates disposal by a CCP of a defaulter's portfolio in that there is greater prospect of a deep market. On the other hand, Professor Pirrong notes that standardisation does not necessarily entail simplicity: standardised products such as credit default swaps can behave in complex ways.

(2) *Complexity*. Complexity is an enemy of clearing, as it complicates the accurate computation of margin requirements and increases the risk of the CCP being a victim of information asymmetry.[77] Complex instruments may be difficult to hedge or liquidate.

(3) *Liquidity*. Illiquid products are difficult to price accurately, and give rise to a problem which CCPs may be ill-equipped to deal with, namely the responsibility of holding an unhedged position in a financial instrument for a period until the market frees up and a disposal can be arranged.[78] The liquidity of a product is not constant throughout its life – in particular, a credit default swap may become illiquid as it approaches maturity – and may change markedly at times of market stress, for example immediately after a participant default. Where cleared products are illiquid, position measurement may be doubtful, and the CCP may have to model a 'reasonable daily settlement price' where marking to market is not informative.[79]

(4) *Price behaviour*. Some products may experience exacerbated volatility or even discontinuities in price movement in particular circumstances. The 'jump-to-default' characteristic of credit default swaps (the risk that a credit event occurs too suddenly to have been reflected in the price of a credit derivative) has already been mentioned in relation to the PFMI. Jump-to-default risk has been noted to require immediate payments from potentially illiquid counterparties, presenting CCPs with acute liquidity issues if the CDS pay-out coincides with a participant default.[80] Other concerns with certain credit derivatives include possible conflicts of interest for banks which may have other relationships with the reference entity, and wrong-way risk which may arise when the credit quality of a clearing member is correlated with that of the reference entity.

(5) *Correlations*. Some products may behave in a way which is related to the risk of participant default or the loss of value of margin (ie, they engender

75 Board of Governors of the Federal Reserve System, *Protocol for the Cooperative Oversight Arrangement of CLS* (November 2008), www.federalreserve.gov/paymentsystems/cls_protocol.htm, paras 19–21

76 Pirrong, C, *The Economics of Central Clearing: Theory and Practice* (May 2011), ISDA Discussion Paper No 1

77 Cf. Yadav, Y, 'The problematic case of clearinghouses in complex markets' (January 2013) *Georgetown Law Journal*, Vol 101, No 2, pp 387–444

78 Cf **section 17.47**

79 ECB-CESR Recommendation 3, para C2

80 Kress, J, 'Credit default swaps, clearinghouses, and systemic risk: Why centralized counterparties must have access to central bank liquidity' (May 2011) *Harvard Journal on Legislation*, Vol 48, No 1, pp 47–93

wrong-way risk – that is, the risk that the CCP's exposure increases in tandem with the risk of default of a participant[81]). To give a simplistic example, a CCP should not clear a credit derivative referenced on its own participant, since there is wrong-way risk either if the participant trades in such products itself, or indeed if any other participant defaults (because the surviving participants' ability to price the derivative is affected by their assessment of the impact of the default on the referenced participant in its capacity as such). Professor Pirrong notes that dependencies of this sort are hard to model and may also change dramatically during periods of market stress. Exposure to participants can increase rapidly as a result of change in prices or the participant having taken a more entrenched position.

(6) *Concentration risk*. CCPs cannot avoid concentration risk, because their function is to centralise the management of counterparty risk for cleared products, and the need for rigorous product selection implies that they will have a less diversified investment portfolio than ordinary investors – albeit that in ordinary market conditions they will undertake no market risk. Concentration risk may be exacerbated because a particular participant, or group of participants, or a participant together with its clients, builds up a certain position in a product. The former Financial Services Authority's guidance to CCPs on counterparty credit risk, issued in 2012, said that concentration risk was related to wrong-way risk, and could be mitigated by calls for additional margin,[82] though this seems a less appropriate tool than, for example, position limits, which might differ by product.

Evidently the question of product choice overlaps with a discussion of measurement and management of credit risk and margining. It may also be noted that the factors which apply to the selection of products for mandatory clearing (discussed in **section 10.16**) differ from those set out here.

17.18 In cash equities markets where the duration of risk is both short and in most cases fixed, CCPs can 'employ risk control mechanisms other than margin requirements,' such as trading limits imposed by the market in which the participant operates. The implication is that trading limits will not be effective if the settlement period is longer or variable, or in relation to OTC clearing. The following comments may be made in this context.

(1) *Settlement period and risk*. Evidently the duration of the settlement period is relevant: the longer the time for which the position remains open, the greater the risk of a price movement which is troublesome enough to make the participant unable to meet the consequential margin call. However, it does not follow that short settlement periods make alternative risk control strategies more, rather than less, appropriate. Consider, for example, the futures markets, which have been cleared markets for many years.[83] Futures contracts have long life-spans, but CCPs which clear futures have a range of risk management options which may be better suited to long-tenor transactions, such as the power to require a participant to reduce

81 See **section 10.8(3)**

82 Financial Services Authority, *FSA Reviews of Counterparty Credit Risk Management by Central Counterparties* (January 2012), Finalised Guidance, www.fsa.gov.uk/static/pubs/guidance/fg12-03.pdf para 23

83 Kroszner, R, 'Central counterparty clearing: History, innovation, and regulation' in European Central Bank and Federal Reserve Bank of Chicago, *The Role of Central Counterparties* (July 2007), www.ecb.eu/pub/pdf/other/rolecentralcounterparties200707en.pdf, p 30

its positions, fix settlement prices,[84] or even to 'invoice back' (reverse) a transaction. (Not all of these powers are uncontroversial, as discussed in **section 14.22.**) But the general point is that different products have different risk profiles, and different mechanisms are needed: slavish reliance on margin, with all the risk that entails in terms of quantification and collectability, may be imprudent.

(2) *Absence of an organised market.* OTC products raise particular problems of product eligibility. In the first place, similar contracts may in fact differ in a significant risk-related parameter (consider, for example, past deliberations among market participants about which types of 'restructuring' constitute a credit event in relation to a credit derivative). Secondly, even when standardised, OTC products require some form of matching mechanism to ensure that the CCP is not bound vis-à-vis the seller but not vis-à-vis the buyer; pre-existing mechanisms may exist in relation to some trade types but not others. Thirdly, the liquidity of OTC products is likely to be more variable than where there is an organised trading venue. Finally, the default management arrangements for OTC positions will be more elaborate than where there is an organised marketplace, as discussed below. These considerations show that it would be wrong to draw the inference that position limiting is an inappropriate risk management tool in relation to OTC products.

REGISTRATION RISK

17.19 A more subtle problem than the self-evident risk of taking on a contractual position which is unwanted by the CCP is the question whether the contractual position *has* actually been taken on. The process by which a CCP becomes bound in a transactional relationship with a participant is referred to as 'registration'. There are two main reasons why registration might not be as easy as it might seem. First, the CCP needs to have an operational set-up which is effective in bringing about binding contractual relations in respect of each newly registered transaction. Secondly, the CCP will need to ensure that its registration system assures that there will always be a matched book – in other words that there is no risk of being bound by the buyer without being bound to the seller, or vice versa.

The effectiveness of the registration process is thus a mixed question of operational practice and law. As regards operational risk, where the transactions emanate from an exchange or other organised trading platform, it should be operationally straightforward to ensure that there is a matching engine in effect which feeds transaction data to the CCP only where it is certain that both buyer and seller are agreed on the essential terms of the bargain. The CCP can register the transaction without danger of mismatch, provided that the platform is willing to accept responsibility for the effectiveness of the matching engine. Where the platform is cleared by more than one CCP, the simplicity of this analysis breaks down, because data needs to flow from the matching engine to more than one destination.[85] Other mismatch errors arising in interoperability contexts include

84 Dale, R, 'Risk management in US derivative clearing houses' (September 1998) *Essays in International Financial & Economic Law*, vol 14

85 See **section 15.32**

where the CCPs' registration systems process identical data differently and require reconciliation.

OTC clearing also introduces difficulty into the registration process because of the absence of a single market operator from which a definitive feed of transaction data can be obtained. This problem may be solved in typical OTC clearing service through the use of a matching service supplier such as MarkitSERV. The CPSS has also drawn attention to the consequences of participants' activities being spread across different time-zones, which may include mismatch of timing of margin calls in relation to the opening hours of the participant's applicable settlement systems.[86]

17.20 From a legal perspective the important consideration is to ensure that the rules and operational processes of the CCP are effective to create binding relations and (where novation, rather than open offer, is used[87]), to discharge the old transaction. Both registration techniques rely on a degree of 'finality' protection in a manner similar to settlement systems. Here the question of finality is not about whether a payment or delivery has been done in a manner which cannot give rise to any risk of unwind or claw-back, but whether the creation of the contractual relationship is subject to such a challenge. For this reason, the protection given by the Settlement Finality Directive[88] is of value to CCPs in their armoury against risk. By virtue of the Settlement Finality Regulations,[89] a designated system must specify in its rules the point at which a 'transfer order' takes effect as having been entered into the system and the point after which a transfer order may not be revoked by a participant or any other party, and prohibit revocation by a participant or any other party of a transfer order from the point of no revocation. For this purpose, United Kingdom CCPs typically have special chapters of 'settlement finality rules' in their rulebooks.

Further, both registration techniques raise issues regarding the proper law of the contract. Formalities required for contract formation are determined by the proper law of the contract.[90] Where novation is involved, the requirements for a successful discharge of the original contract will be determined by the proper law of the original contract.[91] The interplay between the rules of the CCP, and the proper law of the bargain (particularly where this involves performance of obligations in other jurisdictions) may be non-trivial. Where open offer is the technique, the principal issue is likely to be whether the operational methodology satisfies the requirements for contract formation under the proper law of the transactions intended to become binding.

Drs Robert Bliss and Chryssa Papathanassiou[92] have identified other legal problems associated with novation. These include certainty over the moment of novation, so as to limit the risks associated with unexpected continuing exposure

86 CPSS–IOSCO Consultative Report CPSS 89, Guidance 4.1

87 See **sections 2.3** and **2.4**

88 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

89 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979, Sch, para 5

90 Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I), art 11

91 Rome I Regulation, art 12(1)(d)

92 Bliss, R, and Papathanassiou, C, *Derivatives clearing, central counterparties and novation: the economic implications* (March 2006), Wake Forest University Working Paper, www.wfu.edu/~blissrr/PDFs/Bliss-Papathanassiou%20-%202006,%20CCPs.pdf

to the original trading counterparty, and the extinction of security rights or other rights in rem when the original contract is dissolved. Where OTC derivative trades are novated to a CCP, any credit support associated with the pre-novation trade is thus at risk of falling away. Further, Mr Che Sidanius and Dr Anne Wetherilt point to the risk of failed novation where the process for registration of contracts is not automated.[93]

MARGIN

17.21 Two of the PFMI Principles are devoted to subjects relevant to margining. Principle 6 is directed to CCPs specifically and sets out the fundamental rules with regard to quantification of margin. Principle 5 has more general provisions relating to collateral. These can be summarised as follows:

(1) CCPs should cover credit exposures with margin commensurate with the product, portfolio and markets served.[94] (It may be noted that CCPs are *not* expected to vary margin levels in accordance with the credit-worthiness of the participant.)

(2) CCPs require reliable and timely price data for margin-setting, and contingency arrangements for when regular price sources are unavailable.[95]

(3) The amount of initial margin[96] should 'meet an established single-tailed confidence level of at least 99 per cent with respect to the estimated distribution of future exposure'.[97]

(4) Build-up of exposures should be limited by the collection of variation margin[98] at least daily.[99]

(5) Margin offsets between products are allowed if the risk on the products is significantly and reliably correlated.[100]

(6) Models should be back-tested daily. Models should be subjected to sensitivity assessment at least monthly against a wide range of possible market conditions, including extreme volatility and extreme changes in price correlation.[101] The margin system should be reviewed and validated regularly.[102]

(7) Collateral should have low credit, liquidity and market risks.[103]

(8) Collateral should be market to market daily.[104]

(9) Haircuts should be regularly tested, take into account realisable value and time to liquidate in stressed market conditions, and be stable and conservative in order to avoid procyclical adjustments.[105]

93 Sidanius, C, and Wetherilt, A, *Thoughts on determining central clearing eligibility of OTC derivatives* (March 2012), Bank of England Financial Stability Paper No 14
94 PFMI Principle 6, key consideration 1
95 PFMI Principle 6, key consideration 2
96 See **section 17.23**
97 PFMI Principle 6, key consideration 3
98 See **section 17.24**
99 PFMI Principle 6, key consideration 4
100 PFMI Principle 6, key consideration 5
101 PFMI Principle 6, key consideration 6
102 PFMI Principle 6, key consideration 7
103 PFMI Principle 5
104 PFMI, para 3.5.5
105 PFMI Principle 5, key considerations 2 and 3 and para 3.5.5

(10) Infrastructures should diversify holdings of collateral.[106]

(11) Foreign collateral should be useable promptly and its use should take account of foreign exchange risk.[107]

(12) Collateral management should be flexible enough to accommodate changes in margining, substitution, and re-use.[108] Re-use of collateral is expressly permitted during default management in order to access liquidity; in other circumstances, it is not forbidden, except 'as an instrument for increasing or maintaining … profitability'; but rules on re-use should be clear and transparent.[109] Cash collateral can be invested subject to management of custody and investment risks.[110]

17.22 EMIR and EMIR RTS153 adopt the general scheme of the PFMI. The rules are described in **sections 7.36(1)**. Bearing in mind that the rules set a minimum compliance standard, the purpose of the discussion here is to analyse the principles by which margining policy should be formulated.

In setting margin levels, a balance must be struck between opportunity cost for participants[111] and protection for the CCP. The question of the degree of prudence which should be adopted in setting margin requirements is discussed below, but while CCPs compete for business it is unavoidable that there will be some degree of competition among them on the (expensive to participants) level of margin collected. In a competitive market, the official regulatory standard becomes the floor in the 'race to the bottom',[112] and CCPs will assess the degree of prudence of their protective measures by reference to their default funds.

Initial margin and variation margin compared

17.23 In a discussion of margining, it is vital to distinguish between 'initial' and 'variation' margin. Initial margin is the buffer of collateral collected by the CCP to assist it in avoiding loss following a default. All new transactions registered at the CCP will thus require the posting of initial margin, unless the effect of the new transaction is to cancel, partly or wholly, an existing registered position. The CCP collects initial margin from both buyer *and* seller in respect of the same market transaction since either might default. Most of the discussion which follows is devoted to *initial* margin, being the first financial line of defence in the event of a participant's failure.

17.24 Variation margin, by contrast, is not part of the CCP's protective mechanism for managing defaults. It is merely the mechanism whereby the CCP keeps pace with price movements in the market. So, if the buyer agreed to pay 100 for some securities when the trade was done on Monday, but by Tuesday the price of the securities fell to 99, the CCP is exposed to the buyer by an additional 1 in the event of the buyer's failure unless the CCP collects 1 in variation margin from the buyer. Similarly, if the price had risen, the CCP's exposure to the buyer

106 PFMI Principle 5, key consideration 4
107 PFMI, para 3.5.8
108 PFMI, para 3.5.9
109 PFMI, para 3.5.10
110 PFMI Principle 16
111 See Kalavathi, L, and Shanker, L, 'Margin requirements and the demand for futures contracts' (April 1991) *Journal of Futures Markets*, vol 11, pp 213–237
112 See **section 15.20**

would have fallen, but its exposure to the seller would have risen. So, variation margin is a conduit payment, paid to the CCP by the participant with the loss-making position and paid on by the CCP to the participant with the gain-making position. Being a throughput, variation margin is almost invariably paid in cash.

Variation margin

17.25 Variation margin raises few technical issues because its quantification is a matter of observed fact, unlike initial margin determination, which requires predictive guesswork. Apart from risks associated with non-collection, the principal difficulty with variation margin arises from the accounting treatment in the books of participants of variation margin payments made to a CCP. The issue is this: if variation margin is merely collateral, held by the CCP on the title transfer basis, then it represents a debt owed by the CCP to the participant who has paid it. The participant might therefore need to show, in its accounts, that it had an obligation to the CCP, representing the losses accrued but not yet due on its transaction, and an offsetting entitlement or exposure to the CCP, in the form of the CCP's obligations regarding the variation margin. In order to present the amounts as set off in reported accounts, the accounting requirements are difficult to satisfy,[113] and so for some participants the 'offsetting exposures' characterisation may be less desirable than the alternative, which is that the payment of variation margin represents a settlement payment.

Settlement to market uses the following methodology. The CCP will open a 'settlement contract' on the same terms as the open contract but opposite in sense at the official closing price for the day, and will then calculate a settlement amount which results from the offsetting of the settlement contract against the open contract. This amount is the variation margin which is paid one way or the other; it is the same amount as if the CCP had calculated the daily change in contract price. The CCP then opens a new contract in the participant's account at the official price.

LCH Limited enables its SwapClear clearing members to choose between the methodologies: upon registration a contract can be treated as a 'CTM' (collateralised to market) or 'STM' (settled to market) contract.[114] If no choice is made, the transaction is treated as CTM. Other CCPs may have different practices. In the futures markets it has been traditional for CCPs to use the settlement-to-market approach, whereas OTC derivatives practice before the introduction of clearing collateralisation was the norm. It cannot be assumed that a particular approach is 'usual', so if the question is important it is worth making enquiry.

17.26 In its 2012 guidance for CCPs on credit risk management, the Financial Services Authority (FSA) said this on the subject of variation margin:

> 'The FSA considers the ability to calculate and promptly call variation margin a key aspect of [counterparty credit risk] mitigation. In considering the adequacy of the variation margin process the FSA may typically consider to what extent: the CCP has the operational capacity and authority to call variation margin on an intraday basis; and when a minimum threshold to call

113 International Accounting Standards Board, IAS 32 Financial Instruments: Presentation (January 2012)

114 LCH Limited, General Regulations (July 2020), reg 55(c)

variation margin is reached, the materiality of this threshold is compared to the size of the position cleared.'[115]

The subject of variation margin is thus closely connected with that of intra-day margin calls, considered further at **section 17.28(4)**. However, an intra-day call for variation margin is still a call based on previous price movements; it may be coupled with an intra-day call for additional *initial* margin, because a sizeable change in prices during the course of a day indicates a time of extreme volatility, and may imply that an adjustment to the CCP's initial margin model is needed.

Initial margin

17.27 As to initial margin, the issues are manifold and complex. The starting point is to examine what 'initial margin' is supposed to cover. The EACH Standards explained that 'the clearing house should establish prudent initial margin requirements that measure the latent market risk of the positions held by members – so that, should a member default, the clearing house has, in all but the most extreme market circumstances, sufficient margin to cover default losses without recourse to other financial resources at its disposal'.[116] The losses will arise in the following way. A participant who has defaulted will leave the CCP with an unmatched book, obliging the CCP to ensure performance to the non-defaulting participants but without the expectation of performance being rendered by the defaulter. Strategies for handling this mismatch are discussed in **sections 17.43–17.53**. Whichever is chosen, the size of the CCP's potential loss is predominantly driven by the market price at which the CCP can close off its mismatched book. The simplest way to envisage the problem is that the CCP must buy a replacement contract to plug the gap left by the defaulter. The cost of that exercise is a function of three variables: the duration of the period before the replacement exercise is completed, the steps taken to mitigate loss during that period, and the volatility of the market.

The duration of market risk which initial margin is intended to cover – what is called the 'margin period of risk' – is the period between the last valuation of the position or portfolio being managed and the moment of its liquidation, assuming all variation margin has been paid up. (This calculation requires the CCP to make an assumption about the time of the last delivery of variation margin.[117]) Regulatory standards about the price movement during the margin period of risk are undemanding. Professor Richard Dale[118] observed in 1998 that US CCPs clearing futures contracts set margin levels to cover the maximum one-day price movement on 95% of the days during selected historical observation periods. It may be that a one-day margin period of risk is prudent for the US futures markets, or was so in 1998, but for other transaction types such a standard might be regarded as lax. Modern practice is to use a longer period for transactions other than futures or cash equities.[119] Under CFTC rules, the margin period

115 Financial Services Authority, *FSA Reviews of Counterparty Credit Risk Management by Central Counterparties* (January 2012), Finalised Guidance, www.fsa.gov.uk/static/pubs/guidance/fg12-03.pdf, para 14

116 EACH Standard B4

117 Bank for International Settlements Committee on Payment and Settlement Systems, *Recommendations for Central Counterparties* (November 2004), para 4.4.3

118 Dale, R, 'Risk management in US derivative clearing houses' (September 1998) *Essays in International Financial & Economic Law*, vol 14

119 Cf PFMI, footnote 76

of risk is one day for commodity futures and five days for other swaps. The differences between the EU and US regimes were considered by ESMA in giving its advice on EU-US equivalence for the purposes of EMIR.[120] It was reported that the differences between the EU and US approaches to quantification of initial margin were responsible for the hold-up in agreeing equivalence, and following EU-US agreement the EU rules in EMIR RTS 153 have been brought into line with US practice.[121]

EMIR does not itself prescribe the margin period of risk but sets a minimum 99% confidence interval standard, in line with the PFMI: 'margins shall be sufficient … to cover losses that result from at least 99% of the exposures movements over an appropriate time horizon.'[122] The margin period of risk is set out in EMIR RTS 153, which prescribes a 99.5% confidence interval for OTC derivatives but leaves the 99% confidence test in place for other financial instruments, and sets out the time horizons, differentiating between OTC derivatives (five days), other products using gross-margin methodology (one day), and the rest (two days).[123] The one-day period can only be used if various conditions are met: in particular, it is for client accounts only, the identity of the clients must be known to the CCP, and hourly recalculations of margin are required. (In this context, it is noteworthy that the one-day timeframe cannot be used if the 'clients' include affiliates of the clearing member trading for their own account.) If it is generally accepted that market volatility increases at times of stress, and that stress is highly correlated with default by CCP participants, the 99%/99.5% standard also looks casual. The explanation is presumably this: 'Margin requirements impose opportunity costs on CCP participants. So, a CCP needs to strike a balance between greater protection for itself and higher opportunity costs for its participants. For this reason, margin requirements are not designed to cover price risk in all market conditions.'[124] This approach – that is, to collect margin on the basis that even on about 12 'ordinary market conditions' days each year it will be insufficient – may still be prudent if there is enough in the default fund to fill the gap. The apportionment of CCP protection between the default fund and margin is considered in **section 17.34**.

The Bank of England acknowledges the importance, and implicitly the difficulty, of setting initial margin levels. In its 2016 Annual Report on supervision of market infrastructures, the Bank said that it had reviewed the 'governance' of initial margin modelling and that:

> 'Four areas were identified where effectiveness could be improved: sharing model information between CCP and clearing members; clearing member due diligence on models; communication of the results of due diligence; and CCP board consideration of due diligence in their decision-making.'[125]

120 ESMA, Technical advice on third country regulatory equivalence under EMIR – US (September 2013), ESMA/2013/1157

121 Commission Delegated Regulation (EU) 2016/822 of 21 April 2016 amending Delegated Regulation (EU) No 153/2013 as regards the time horizons for the liquidation period to be considered for the different classes of financial instruments; see also Yadav, Y, and Turing, D, 'The extra-territorial regulation of clearinghouses' (March 2016), *Journal of Financial Regulation*, vol 2 no 1 pp 21–55

122 EMIR, art 41(1)

123 EMIR RTS 153, arts 24 and 26

124 CPSS Recommendations, para 4.4.3; see also EMIR, recital (66)

125 Bank of England, *The Bank of England's supervision of financial market infrastructures – Annual Report* (March 2016), p 12

One might observe that, since the clearing members bear the loss when margin models fail,[126] it is right that they should participate actively in the design of the model.

17.28 Other factors may also affect the sufficiency of initial margin:

(1) *Product risk*. This subject is considered in **sections 17.16–17.18**.

(2) *Collection risk.* CCP participants will usually pay variation margin in cash, as described above, but initial margin will be locked away for longer periods, and CCPs will be expected by their participants to allow for alternative forms of collateral to be deposited as initial margin. LCH Limited lists the following as acceptable types of collateral, in principle: cash and certain government and government-backed bonds.[127] Insofar as margin consists of cash, there may be some risk associated with the timetable for collection of the cash: the old EACH Standards state 'the clearing house should ensure that members' cash liabilities are finally settled as quickly and securely as possible, bearing in mind the currency mix of its business – so that money settlement risk is kept to a minimum'.[128] LCH Limited requires its participants to have accounts at one of a number of selected banks which allow LCH to draw cash from them by book transfer – ie without the need for transfer across any independent payment system – immediately. Securities collateral is clearly subject to collection risk, and on a larger scale owing to the duration of settlement cycles. Letters of credit and performance bonds may be useful in a default as a source of immediate liquidity, not involving the problems of sale, but are relatively inflexible after the point of receipt, and such collateral types are likely to fall away since the obligor must support them with collateral under EMIR.[129] Historical practices allowing use of performance bonds and certificates of deposit appear to have been discontinued at LCH Limited.

(3) *Valuation risk.* Securities collateral and cash collected in a different currency from that in which the exposure arises will involve market and currency risk, which should be reflected in a haircut applied by the CCP. Further, the need to liquidate securities or foreign currency will have an impact on the margin period of risk, unless the CCP has a liquidity line sufficient to tide it over until the margin is realised (but even this will entail some cost). Various studies show that it is unwise for a CCP to model the value realisable from collateral on the basis of Value-at-Risk methodology, and that haircuts should prudently be set so as to take account of more unusual price behaviour in extreme market conditions.[130] There is an unavoidable trade-off between complete protection and market acceptability of haircutting practice. If it is accepted that *both* the measure of risk to be collateralised *and* the value of the collateral collected are subject to this type of compromise, it follows logically that margin cannot

126 See **sections 14.32ff**

127 LCH.Clearnet Ltd, *Acceptable Collateral* (December 2015) www.lchclearnet.com/risk-collateral-management/collateral-management/acceptable-collateral; *LTD – Margin Collateral Haircut Schedule* (January 2020)

128 EACH Standard C7

129 See EMIR, art 46; EMIR RTS 153, arts 37ff, 62 and Annex I, section 2

130 Saardchom, N, 'Collateral valuation in clearing and settlement system' (December 2010) *journal of business and policy research*, vol 5, pp 36–53; Garcia, A, and Gencay, R *Risk–cost Frontier and Collateral Valuation in Securities Settlement Systems for Extreme Market Events* (May 2006), Bank of Canada Working Paper 2006–17

be expected to be sufficient to cover the CCP for all circumstances. Another danger is wrong-way risk:[131] collateral should not fall in value at the moment it is most needed, or if the exposure it is supposed to cover increases, but this is what could happen if a CCP were to rely too heavily on equities as collateral for cash equities clearing, or government bonds as collateral for clearing of interest rate products.

(4) *Changed market conditions*. Intraday margin calls – that is, increments to the amount of initial margin considered prudent to support a given position – may be needed if the market conditions have changed since the participant registered the positions with the CCP. Professor Dale's 1998 study indicated that intraday margin calls could be expected at the Options Clearing Corporation when initial margin was eroded by 50% during the trading day, or when the circumstances of an individual participant merited action; it may be questioned whether the 50%-erosion approach is prudent in the modern clearing environment. Intraday margining was studied in 2006 by Ms Froukelien Wendt, who discerned that three intraday margining practices were prevalent in Europe: routine intraday calls are made, as well as price-driven non-routine calls, and non-routine participant-specific calls attributable to the size of a participant's positions and, presumably, the CCP's opinion of that participant's financial standing.[132] (Routine intra-day calls would reflect changes in the portfolios of participants which have occurred since the beginning of the day, and would therefore not be attributable to changed market conditions.) Ms Wendt also observed that intraday calls can have 'side-effects', including alteration of trading behaviour (geared to the timing of routine calls), liquidity impact, investment in systems both by CCP and participants, the size of the default fund, and the risk assumed by a participant on its client (to whom an intraday margin call might not easily be passed on).

(5) *Model risk*. Model risk is an acute problem for CCPs setting their parameters for margin collection. The EMIR test of 'sufficient to cover losses that result from at least 99% of the exposures movements' inevitably means that CCPs' margin models will be based on 'normal' market conditions. It is easy to design models which predict 'normal' market price movements and 'normal' -margin periods of risk. But the numbers generated by such models are unlikely to do valuable duty in a market upset by the default of a participant which was robust enough to be allowed into the sanctum of (ex hypothesi high-quality credit) CCP participants. Two consequences flow: CCPs do not, in practice, design models which are that simplistic; and CCPs do not assume that margin alone would be good enough to protect them in times of disturbance.

Model risk is a well-studied problem in relation to OTC derivatives exposures, where for many years financial institutions have had to manage their own potential future credit exposure to each other. The Basel Committee on Banking Supervision has written extensively on prudent

131 See **section 17.17(5)**

132 Wendt, F, *Intraday margining of central counterparties: EU practice and a theoretical evaluation of benefits and costs* (July 2006), DNB Working Paper No 107, www.dnb.nl/binaries/Working%20Paper%20No%20107-2006_tcm46-146764.pdf;h=repec:dnb:dnbwpp:107

practices for model validation,[133] but the read-across to CCPs' margining practices is not explicitly made in the PFMI.

As regards CCPs and margin, there have been some theoretical studies, and a few empirical studies which test the sufficiency of margin actually collected.[134] One study back-tested various modelling techniques in relation to the Brent and FTSE-100 futures contracts, with the conclusion that margins provided a coverage level generally in excess of 99%, over a one-day time horizon.[135] It is clear that models become less robust in disturbed market conditions, owing to the problem of 'fat tails' (the probability of an actual price being a long way from the expected price being higher than predicted under a Normal or Gaussian distribution). Furthermore, the studies rely to a greater or lesser extent on G-ARCH modelling[136] to determine the behaviour of prices, so the reliability of the conclusions depends on the validity of this choice of starting-point. 'Historical data collected by CCPs will likely contain little information on the likelihood and size of extreme increases in exposure that are of a magnitude sufficient to exhaust member margin … This is because such market movements are, by definition, rare.'[137] Various analyses say that the shape of the fat tail may be influenced by various factors, including how members interrelate with one another.[138] The problem remains, though, that the eventualities are too rare for graphs of past price behaviours to provide reliable models for the future, and any attempt to map the tail is an exercise in inspired guesswork.

(6) *Portability of client positions and margin*. It is a requirement of EMIR[139] as well as an expectation of the PFMI[140] that CCPs make arrangements so that the positions, and accompanying margin deposits, supporting transactions entered into by clients of clearing members can be transferred to a second participant if the client's original clearing member defaults. Insofar as transfer is successful, the CCP may not need the margin to manage the default of the first clearing member. A high proportion of client clearing may in theory enable a CCP to reduce margin levels. On the other hand, ESMA notes that a low margin level makes it more likely that transfer would be impeded, because of the greater risk that a top-up

133 Bank for International Settlements Basel Committee on Banking Supervision, *International Convergence of Capital Measurement and Capital Standards* (June 2006), www.bis.org/publ/bcbs128.pdf, Part 2, s VI; *Findings on the interaction of market and credit risk* (May 2009), www.bis.org/publ/bcbs_wp16.pdf; *Revisions to the Basel II market risk framework* (July 2009), www.bis.org/publ/bcbs158.pdf; *Sound practices for backtesting counterparty credit risk models* (December 2010), www.bis.org/publ/bcbs185.pdf

134 Bates, D, and Craine, R, '*Valuing* the futures market clearinghouse's default exposure during the 1987 crash' (May 1999) *Journal of Money, Credit and Banking*, Vol 31, No 2, pp 248–272; Knott, R, and Mills, A, 'Modelling risk in central counterparty clearing houses' (December 2002) *Bank of England Financial Stability Review*, pp 162–174; Heller, D, and Vause, N, *Collateral requirements for mandatory central clearing of over-the-counter derivatives* (March 2012), BIS Working Paper No 373, www.bis.org/publ/work373.pdf

135 Knott, R, and Polenghi, M, *Assessing central counterparty margin coverage on futures contracts using GARCH models* (January 2006), Bank of England Working Paper No 287

136 Cf Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel, March 2009), ISBN 978-1-84766-3030-0, s 2.2

137 Cumming, F, and Noss, J, *Assessing the adequacy of CCPs' default resources* (November 2013), Bank of England Financial Stability Paper No 26

138 Cumming and Noss paper; Wendt, F, *Central counterparties: Addressing their 'Too Important to Fail' nature* (January 2015), IMF Working Paper WP/15/21

139 Articles 39 and 48

140 PFMI Principle 14

of margin, or default fund contribution, would be needed by the transferee participant.[141]

(7) *Cross-application between house and client accounts.* A CCP may wish to utilise surplus margin or close-out value on a house account to offset a loss on a client account, or vice versa. Neither of these seems self-evidently fair: use of 'house' money will favour clients at the expense of other creditors of the failed member and use of 'client' money will violate the principle of segregation. Regulation 16 of the Financial Markets and Insolvency Regulations 1991[142] obliges United Kingdom CCPs to treat 'market contracts' entered into on behalf of clients to whom a money-segregation duty applies under the Client Money Rules as entered into in 'a different capacity' from other contracts, which has the effect of prohibiting cross-use of surplus arising from close-out of such contracts (but not the bringing-in of surplus from other contracts).[143]

It might be noted that the factors discussed in this and the previous section are, in general (and with the notable exception of certain intra-day margin calls observed by Ms Wendt), ones which are independent of the credit quality of the CCP's participants. Counterparty-specific credit risk is managed by control at the gate;[144] the role of initial margin is to manage the potential future credit exposure specific to the participant's cleared portfolio.

Liquidity

17.29 Liquidity risk introduces a handful of troublesome considerations into the margining debate. First, the margin itself may be illiquid, as noted above. Secondly, the positions being closed out or managed may be illiquid, lengthening the margin period of risk, and imposing a requirement for more margin and exacerbating the impact of any volatility in the margin. Thirdly, regulators are rightly concerned that a CCP's ability to manage a default is as much about the liquidity pressures it faces in the post-default period as about the crude assets-versus-liabilities solvency of the CCP:

> '[A] CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.'[145]

The problem is that the CCP needs to continue to meet its obligations (in particular, but not exclusively, variation margin obligations) to the surviving participants in the CCP in the interim before the positions of the defaulter are closed out. These obligations need to be met from liquid assets. The post-default thirst for liquidity means that the CCP will need to maximise the amount of

141 European Securities and Markets Authority, *Draft Technical Standards for the Regulation on OTC Derivatives, CCPs and Trade Repositories* (February 2012), Discussion Paper ESMA/2012/95, p 26
142 SI 1991/880
143 See further **section 5.15**
144 See **section 17.12**
145 PFMI Principle 7, key consideration 4

collateral it obtains in the form of cash, and probably to have a liquidity facility with its bankers to provide for contingencies.

In its extreme form regulatory thinking suggests that CCPs should have access to central bank emergency liquidity.[146]

Other risks relating to margin

17.30 Brief mention may be made of a few other risks related to margin.

(1) There is the possibility that the participant fails to pay, or that delivery of securities collateral is thwarted by a settlement failure. Those risks may be operational or they may be indicators of insolvency. CCPs may aim to eliminate operational risks by requiring participants to have redundant back-up structures for making margin deliveries. In times of stress, when intra-day margin calls may be made, the CCP is likely to have a low tolerance for non-delivery of margin in a timely fashion.

(2) Secondly, the CCP may be the victim of custody failure. PFMI Principle 16 warns that CCPs should use regulated custodians and be sure that the assets held in custody are safe from claims of the custodian's creditors, and EMIR states a preference for non-cash assets to be held directly at a CSD.[147] If a custodian fails, the CCP should be immune from the effect of the insolvency of the custodian if the custody structure is legally robust, but there may nevertheless be delays in retrieving the collateral assets: even client assets held on trust may not be immediately accessible in the event of the custodian's failure.[148]

(3) Thirdly, there is a risk to the CCP's cash. Cash margin may be at a commercial bank unless the CCP is able to have a central bank deposit account. If a commercial deposit-taker fails, the CCP will lose a part of its risk protection. Bank failure is potentially catastrophic for CCPs: banks are likely to be (or to be affiliated to) CCP participants; bank failures are market-threatening events. The combination of extreme volatility busting margin models, default of a bank-affiliated participant, and loss of margin deposited at a failed bank may be one which can be contemplated only with terror, but in the event of failure of a major bank must prudently be regarded as highly correlated. The risk is mitigated by EMIR and EMIR RTS 153, which require a CCP's commercial bank deposits to be secured.[149] Closely related is the question of concentration risk. EMIR RTS 153 requires a CCP which accepts bank guarantees as collateral to comply with rules relating to concentration limits; furthermore, bank guarantees must be supported by collateral, which rather negates the utility of a guarantee, unless the clearing member has itself no access to a fund of eligible collateral.[150]

(4) Finally, it should be noted that recovery proceedings for failing CCPs may put margin – particularly variation margin – at risk, through a form of loss-sharing. This issue is explored in **section 14.20**.

146 See further **section 17.65**
147 Article 47(3)
148 See **section 6.4(11)**
149 See **section 17.10**
150 EMIR RTS 153, art 42 and Annex I section 2

17.31 Finally, it has been observed by Dr David Murphy, among others, that initial margin has a procyclical tendency.[151] The issue is that, as market conditions turn sour, which may be accompanied by greater volatility, the two principal variables which affect margining will change. First, the predicted possible future loss on contracts which might have to be closed out will rise; and secondly, the prudent prediction of the realisable value of collateral will fall. The upshot is that more collateral is needed, and that collateral has to come from somewhere, and there is procyclicality.

Various counter-measures, including those set out in EMIR RTS 153,[152] have been reviewed;[153] the conclusion is that there is a trade-off between reducing procyclicality and excessive margining during periods of low volatility.

ACCOUNT STRUCTURES; GROSS V NET MARGINING

17.32 One further concept related to margining needs mention, not because it creates risk for the CCP, but because it is relevant to the handling of defaults in cases where the CCP participant has cleared trades entered into by its clients. The historical practice, before EMIR, was for CCPs to provide a 'house' and a 'client' account for each participant, with the intention, supported by the law, that in the insolvency of the participant the 'client' account transactions and margin would be handled separately from the 'house' account.[154] Client money and client asset protections were structured so as to keep the client account transactions and margin away from the insolvent estate of the participant. All client transactions were, however, bundled together into a single omnibus account.

If an omnibus account is used, the question whether the CCP receives margin on a 'gross' or a 'net' basis becomes important. Take net margining: if the defaulting participant had two clients who had taken opposite positions in the market, as between the CCP and the participant there would be offsetting, mutually cancelling trades, and no margin would be called by the CCP. The margin collected by the participant would be in the participant's client money bank account, not at the CCP. Net margining occurs because the CCP regards the participant, not the client(s), as its counterparty. In the alternative, 'gross' margining, the two opposite market positions would each be registered with the CCP and would not be offset, and a margin call would be made in respect of each transaction. This is obviously more expensive for the participant and (assuming costs to be passed through to the clients) for the clients as well. Gross margining does, however, have a beneficial effect in the case where the participant defaults. It is much easier for the CCP to identify both the positions, and the margin, referable to each client, and thus it is much easier for the CCP to allow the combination of positions and margin to be transferred to another participant.

151 Murphy, D, Vasios, M and Vause, N, *An investigation into the procyclicality of risk-based initial margin models* (May 2014), Bank of England Financial Stability Paper No 29; Maruyama, A and Cerezetti, F, 'Central counterparty anti-procyclicality tools: a closer assessment' (June 2019), *Journal of Financial Market Infrastructures* vol 7 p 1

152 Article 28

153 Murphy, D, Vasios, M and Vause, N, *A comparative analysis of tools to limit the procyclicality of initial margin requirements* (April 2016), Bank of England Staff Working Paper No 597

154 See **section 5.15**

Since the coming into force of EMIR it has become obligatory for European CCPs to offer individual per-client accounts in respect of cleared client transactions.[155] There are, accordingly, several varieties of account which may be offered by CCPs, which include the following:

- Individually segregated client accounts (ISA).
- Traditional omnibus accounts margined on a net basis.
- Gross-margined omnibus accounts. These may exist in sub-species, for example where the margin (albeit collected on a gross basis) is pooled, so that participants with an interest in the account have an entitlement to their share of the value of the pooled margin, rather than to specific items of margin (as with an ISA). Where margin-pooling is operated, participants may share in the market risk associated with the margin assets, and may receive back different securities, or securities rather than cash, when they are entitled to a margin return. Wherever gross margining is in place for an omnibus account, the positions of each client will be noted separately at the CCP level (even if the exact identity of the client is not known).[156]

While the European Union and the United States were negotiating the basis on which US CCPs might be recognised under EMIR – that is, whether the European Commission would issue an equivalence determination in respect of US law and regulation applicable to CCPs – the question of 'net' versus 'gross' margining assumed a disproportionate degree of significance. CFTC rules obliged client accounts to be margined on a gross basis, whereas EMIR allowed a free choice (subject to client consent) but imposed a longer margin period of risk for both house and client accounts. After many months of negotiation, authorities on both continents agreed to adjust their positions.[157]

DEFAULT BACKING

17.33 It is evident from the discussion about margining that margin cannot reasonably be expected to be the sole line of defence against default of a CCP participant, even if it is rightly regarded as the first line of defence. Once a margin-exhausting event happens, the ordinary parameters for determination of price movement cease to be reliable. The PFMI state:

> 'A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources … In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP

155 EMIR, art 39(5)

156 See Commission Delegated Regulation (EU) 2017/2155 of 22 September 2017 amending Delegated Regulation (EU) No 149/2013 with regard to regulatory technical standards on indirect clearing arrangements, recital (13), and Commission Delegated Regulation (EU) 2017/2154 of 22 September 2017 supplementing [MiFIR] with regard to regulatory technical standards on indirect clearing arrangements, recital (13)

157 Massad, T, Statement of Chairman Timothy Massad Regarding Common Approach for Transatlantic CCPs (February 2016), CFTC Press Release www.cftc.gov/PressRoom/SpeechesTestimony/massadstatement021016

> in extreme but plausible market condition. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregated credit exposure for the CCP in extreme but plausible market conditions.'[158]

It may be noteworthy that this standard is not setting a level of protection to be covered by margin alone, but by the totality of the CCP's financial resources.

EMIR is slightly different from the PFMI: it obliges a CCP to maintain a pre-funded default fund to cover losses which exceed those covered by margin. It must 'at least enable the CCP to withstand, under extreme but plausible market conditions, the default of the clearing member to which it has the largest exposures or of the second and third largest clearing members, if the sum of their exposures is larger'.[159] Different funds may be established for different asset classes.

Size of default fund

17.34 The default fund must be appropriately sized to protect the CCP from the exceptional risks for which it is provided. While the PFMI lay down rules about testing sufficiency of resources, little guidance is given on the level of additional resources required. The EMIR ('cover-one') standard can be criticised: because margin is calibrated by reference to normal market conditions, default funds are used in abnormal ones, when several market participants may be stressed; so a default fund is likely to be needed when more than one clearing member has defaulted.[160]

EMIR RTS 153 sets out considerable detail on margin modelling, testing, and stress-testing: while these provisions are primarily directed at margin, clearly the results will inform the approach to sizing the default fund, as (for example) articles 53, 56 and 57 attest. But stress-tests, like statistical techniques for quantifying margin, cannot guarantee a 'right answer' to the level of default fund needed for what is essentially an unpredictable set of circumstances. Professors David Bates and Roger Craine[161] assessed the implications of a price move which exhausts the margin and sought to measure the 'conditionally expected additional required funds' to ensure that the CCP could perform its obligations on all contracts. Their study modelled the funds needed by the CME during the 1987 crash, and using various techniques calculated that the CME could have required between $1.2 billion and $10 billion of additional funds, if a price movement extreme enough to exhaust its margin – $2.5 billion in total – had occurred. They also concluded that a false sense of security may be given by 'aggressive margin requirement increases in October 1987' which by traditional margining methodology had 'reduced clearinghouse exposure to pre-crash levels by or before the end of November'. In another study of the 1987 stock market crash, it was found that with the level of margining then used, the exposure of the International Commodities Clearing House, which cleared

158 PFMI Principle 4, key consideration 4

159 EMIR, art 42(3)

160 Cf Pirrong, C, 'A bill of goods: CCPs and systemic risk' (June 2014), *Journal of Financial Market Infrastructure* vol 2 No 4, pp 55–85

161 Bates, D, and Craine, R, 'Valuing the futures market clearinghouse's default exposure during the 1987 crash' (May 1999) Journal of Money, Credit and Banking, vol 31, pp 248–272

primarily financial futures at the time, might exceed £40 million about once a year and £200 million once every 30 years.[162]

In 2012 a study using G-ARCH models to quantify margin shortfalls with respect to clearing of imaginary portfolios of interest rate swaps and credit derivatives concluded that a default fund could be set at 'a small fraction of dealers' equity' if margin is adjusted to reflect prevailing level of volatility.[163] This would imply that default funds can be kept low if margining is dynamically adjusted; but the PFMI indicate that margining should be designed so as not to have destabilising procyclical effects,[164] and dynamic margin model adjustment would appear to violate that recommendation.

17.35 All in all, it is a difficult question for a CCP to decide on the optimum balance between default fund and margin. If the cost of collateral, the probability of default, and the risk-mitigating effect of posting margin to the CCP are the only factors taken into account, there would appear always to be a case for having some element of non-margin default funding.[165] Default fund contributions are less dynamic than margin contributions. Default fund readjustments as between contributors are done 'on a regular basis' at Eurex Clearing AG[166] and readjustments are done monthly at LCH Limited for foreign exchange, swaps, repos and futures.[167] Default fund contributions might be preferable to margin contributions in order to reduce liquidity stress on participants in times of high market volatility. However, there may be moral hazard if there is no margin component.

Professor Pirrong points to the wrong-way risk inherent in large margins and the consequent unlikelihood of touching the default fund in default scenarios. Because of the unlikelihood factor, the default fund is only needed at times of extreme market stress when surviving clearing members can least withstand the utilisation of their contributions and the other loss-sharing mechanisms which the CCP may invoke. 'Thus, in crisis periods, dependencies between the backers of CCPs – the member firms (often banks) – and the exposures that CCPs are effectively writing protection against are highly likely to be of the wrong way variety.'[168]

A study by Paul Nahai-Williamson and his colleagues at the Bank of England[169] looked at various factors informing the balance between margin and default fund as protection for the CCP. In addition to underscoring some of the points recited above, their conclusions indicated: (i) that tilting the balance in favour of the default fund is desirable if the cleared product exhibits higher price volatility, in particular because where price behaviour tends towards fat tails, the cover provided by the (statistical-distribution-modelled) initial margin will be weak; and (ii) that credit quality of members is crucial to the choice, so that a tilt towards

162 Gemmill, G, 'Margins and the safety of clearing houses' (October 1994) *Journal of Banking and Finance*, vol 18**,** pp 979–996

163 Heller, D, and Vause, N, *Collateral requirements for mandatory central clearing of over-the-counter derivatives* (March 2012), BIS Working Paper No 373, www.bis.org/publ/work373.pdf

164 PFMI Principle 6, key consideration 3

165 Haene, P, and Sturm, A, *Optimal central counterparty risk management* (June 2009), Swiss National Bank Working Papers 2009-7

166 Eurex Clearing AG, *Clearing Conditions* (August 2020), Chapter I Part 1, s 6.1.1

167 LCH Limited, *Default Rules* (May 2020), Schs 5–10

168 See Pirrong, 'A bill of goods: CCPs and systemic risk'.

169 Nahai-Williamson, P, et al, *Central counterparties and their financial resources – a numerical approach* (April 2013), Bank of England Financial Stability Paper No 19

margin is indicated where weaker credit members are admitted – in other words, the 'defaulter-pays' model is preferable where probability of default is higher.

Ms Wendt considers that international standards could be strengthened in several ways. Noting that CCPs are potent sources of interconnectedness in financial markets, the approach to sizing of default funds based on simple stress tests looks feeble. She recommends that CCPs should conduct network analyses of interconnections and interdependencies which could affect the behaviour of members, positions and collateral, and to look across CCPs, other market participants and financial markets. She reminds us that service-provider default can be as significant in these respects as member default, and recommends that CCPs dependent on a small number of commercial banks should maintain additional capital sized by reference to the potential loss on default.[170]

17.36 The following further considerations may be relevant in creating supplementary financial backing for a CCP beyond what is available through margining.

(1) A default fund is not the only option: other structural possibilities include 'assessment' – that is, the power to levy financial contributions, and insurance. Assessment has commonly been used by US-based CCPs, though it may expose the CCP to unacceptable liquidity risk given the potential difficulty in enforcing guarantee obligations in times of market stress. For these reasons, together with the EMIR requirement for pre-funding, pre-funded default funds have become the norm for default backing in Europe. A combination of pre-funding and assessment is now normal in light of the focus by regulators on the ability of CCPs to recover from a major loss event. The reliability of 'assessment' as a default backup plan is considered further in **section 14.18**.

(2) Financial backing not consisting of margin implies that someone other than the defaulter may be paying for the losses. Default fund contributors may note that, in effect, they already contribute to the post-default recovery of the CCP through their availability as counterparties accepting the defaulter's closed-out positions – explicitly so in the case of OTC derivatives clearing, which entails the agreement by the survivors to bid for parts of the defaulter's book,[171] but also implicitly in the case of products traded on organised markets. Mutualisation of risk tends, with effective governance, to ensure that the CCP adopts prudent standards of risk management. These factors may result in a shift towards a higher proportion of contingency funding being in the form of margin, or other risk-reduction techniques, as opposed to default fund contributions, notwithstanding that it may be more costly for participants to provide margin than default fund backing.

(3) If survivors are paying, they will wish to ensure that their contributions are fair. The amount of contributions may be assessed by reference to their volume of usage of the CCP. More complex systems of contribution can be devised where the default fund is divided up according to product types (as with the LCH Limited default funds).[172] As to application of the survivors' contributions, while it might superficially seem appropriate to share losses by reference to the size of each survivor's trading relationship with the

170 Wendt, F, IMF Working Paper WP/15/21
171 See **section 17.49**
172 LCH Limited, *Default Rules* (May 2020)

defaulter, this is inherently unfair in a CCP, because (even where OTC trading is involved) a survivor's choice of counterparty is not, in a cleared market, influenced by the probability of default of the counterparty: the job of counterparty risk assessment is for the CCP.

(4) The choice does not have to be a binary one between the defaulter and the survivors, a point which may be forgotten in policy pronouncements on the implications of large defaults. One possibility, reflected in EMIR, is for the CCP (to be precise, its shareholders) to have 'skin in the game'. This option is explored below in **section 17.38**. Other possibilities include credit insurance[173] and mutualisation of risk among CCPs.[174] Insurance is expressly contemplated by the LCH Limited default rules but may also raise liquidity concerns.

(5) The remedies usually considered for excess losses tend to follow the approach taken by regulators to the problem of avoiding banks becoming 'too big to fail'. These may, however, be of doubtful relevance to CCPs. Bail-in is a tool which may work for banks because the policy it applies is for the wholesale market to forgo its claims in order to insulate retail depositors from bank failure. CCPs do not, typically, owe any direct obligations to retail depositors. The choice as to who should suffer is between the government and its taxpayers, the shareholders and any other investors, and the wider market. It is axiomatic in the post-crisis climate that governments and shareholders will not pay for financial institution failure again. There are no rules requiring shareholders to take responsibility. That leaves only the wider market, via the machinery of quasi-bail-in tools such as assessment and those described in **sections 14.17–14.22**. If adopted by CCPs, the bail-in lookalike tools have the effect of insulating the infrastructure and its owners from the consequences of their failure.

17.37 The 'survivors pay' principle raises the question not just of how to balance the risk between the defaulter and the survivors, but also which group of survivors should pay. As CCPs do not have to be owned by their participants, the shareholders might legitimately be regarded as a group of survivors who should suffer if the risk management of the CCP has been imprudent. Default backing may thus be provided through the capital of the CCP. Regulatory capital requirements for European CCPs are discussed in **sections 7.29ff**; suffice it to say here that the rules have not been set with default management in mind.

Default funding is more flexible than share capital, but it exposes the CCP to competitive disadvantage. A CCP which sets low default fund levels might be more attractive to participants than a more conservatively managed CCP. However, in a market shock, the CCP with the smaller default fund may struggle to survive without a capital injection from its shareholders or requesting the surviving participants for further funds. The notion that the CCP might have to seek consent of the participant-survivors in order to continue in business will

173 Cf. Jeffs, L, *Market innovation: A new breed emerges* (November 2014), FOW Clearing Special Report

174 JP Morgan Chase & Co, What is the Resolution Plan for CCPs? (September 2014), www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC0QFjAAahUKEwijhpaGi_7GAhUnKtsKHWmQB8E&url=http%3A%2F%2Fwww.jpmorganchase.com%2Fcorporate%2FAbout-JPMC%2Fdocument%2Fresolution-plan-ccps.pdf&ei=X5i3VePaF6fU7AbpoJ6IDA&usg=AFQjCNEsBkyChtRbdx1F1T3LZOCbsTaXeg&sig2=oZV6H6_Klt8PzF20OIXK2w&bvm=bv.98717601,d.ZGU&cad=rja

allow flexibility both in the structuring of default backing and in its quantification. In practice, any usage of the default fund will necessitate a call for top-up funding from the surviving participants; major CCPs do not oblige survivors to commit to honour top-up requests, though those who decline to make further contributions may have to cease to participate as clearing members.[175] Multiple resignations might significantly weaken a CCP, so that it may be unable to revive following a default which has led to a major usage of the default fund.

17.38 The difficulty of the choices confronting a CCP in structuring its default backing invites a further discussion as to whether it is appropriate for a CCP to be a fully mutualised loss-sharing vehicle. It is by no means settled policy that it should be so. Professor Randall Kroszner has described the historical development of CCPs from organisations integrated with investment exchanges and in which the members of the exchange were responsible for both governance and the impact of losses following default, to a dis-integrated structure whereby a CCP is run for profit and in which the owners may have little in common with the users.[176] Ms Wendt researched the ownership structure of the world's largest CCPs in 2015, including, in Europe, Eurex Clearing, ICE Clear Europe and two LCH CCPs; not one of the ten CCPs in her list is a fully mutual organisation and all the European CCPs had publicly listed parent companies.[177] In accordance with those remarks, it may be appropriate to consider the following issues:

(1) *Governance.* It has been pointed out that there is a conflict of interest between the interests of owners in a for-profit CCP and the interests of participants.[178] In his speech, Professor Kroszner stated that the CCP's governance arrangements should provide those with 'skin in the game' – those who stand to lose when the game goes wrong – with substantial influence over the CCP's risk controls. In this context one might consider the rules in EMIR for a risk committee. An EMIR-authorised CCP is obliged to establish a risk committee composed of clearing members' representatives, independent board members, and representatives of clients. Others may be invited to attend in a non-voting capacity, and the advice of the risk committee must be independent of direct management influence.[179] That certainly goes in the right direction, but while the committee is to advise the board on any arrangements that may impact the risk management of the CCP, including default procedures, the committee is an advisory body only without any decision-making power, and the ultimate decision on default backing and the degree to which the CCP can commit resources of its members remains out of the risk committee's control – unless the CCP has decided to go further than EMIR demands.

(2) *Skin in the game*. A CCP which is aiming to make a profit from clearing will distribute its profit in the form of dividends, which for a listed parent company will usually be payable twice yearly. Defaults which blast through the initial margin cover are not expected to occur on the same timetable, so there ought to be a reserves policy which enables the CCP

175 See LCH Limited, *Default Rules* (May 2020), Rule 25

176 Kroszner, R, Central Counterparty Clearing: History, Innovation, and Regulation (April 2006), Speech, Board of Governors of the Federal Reserve System, www.federalreserve.gov/newsevents/speech/kroszner20060403a.htm

177 Wendt, F, IMF Working Paper WP/15/21

178 FIA Global, CCP Risk Position Paper (April 2015)

179 EMIR, art 28

to store up capital against unwanted default risk.[180] Perhaps surprisingly, EMIR makes no specification about reserves beyond the requirement that a CCP has a minimum amount of skin in the game: 'dedicated own resources' of no less than 25% of its regulatory capital must be utilised before tapping the default fund contributions of non-defaulting members.[181] However, as explained in **section 7.30**, a CCP's regulatory capital is not calculated in any way by reference to default risk, and it is a completely irrelevant measure in this context, not to mention that it is likely to be small in size relative to the default fund itself: 2019 data on prefunded default resources indicated that a CCPs' share is typically less than 5% of the total.[182] Clearing members posting assets to the default fund will draw very little comfort from EMIR's skin-in-the-game rule. FIA Global say that the CCP's skin-in-the-game should be 'an amount that is material to such CCP and also aligned with the amount of risk in the CCP's system',[183] and JP Morgan Chase have suggested that the CCP's contribution to default backing should be the greater of 10 per cent of members' contributions or the largest single member's contribution.[184] The position is exacerbated by the regulatory trend of expecting CCPs to prepare for crises by having health-restoration machinery which imposes the burden of uncovered losses on members, as discussed in **sections 14.32ff**. An open-ended obligation imposed upon clearing members is incompatible with any governance structure which allows the short-term rewards of operating a clearing business to be shared by management and owners of CCPs who are different from the clearing members with the ultimate liability, if the clearing members do not have the power to control the decision-making and distribution of profits. Where there is unlimited liability, it could be suggested, it is inappropriate to have decision-making controlled by those who do not have to pay.

(3) *CCP's stake: position in the waterfall*. If it is accepted that CCPs' owners should contribute to the cost of defaults, it is not obvious that the EMIR skin-in-the-game rule should tell the complete story. Apart from the question whether the amount of skin prescribed by EMIR is adequate, there is a question whether the CCP should follow slavishly the suggested waterfall set out in article 45 of EMIR. Article 45 does not provide a complete code for structuring the waterfall. It is mandatory for the CCP to use the defaulter's margin and default fund contribution first, and its 'dedicated own resources' before the non-defaulters' default fund contributions, but nothing obliges the CCP to go straight to the non-defaulters after using its 'dedicated own resources'. There are options for the CCP to utilise reserves, call on an insurance policy, divide the default fund into tranches which are layered behind tranches of the CCP's capital, and anything else which the drafting team behind EMIR did not think of. It may be salutary that the market took it amiss in 2013, when the Korean exchange and CCP KRX reached straight for the default fund contributions of non-defaulters

180 See **sections 7.33ff**

181 EMIR, art 45(4); EMIR RTS 153, art 35

182 Khwaja, A., *CCP Quantitative Disclosures 3Q19 – Skin in the Game* (January 2020), Clarus FT blog www.clarusft.com/ccp-quantitative-disclosures-3q19-skin-in-the-game/

183 FIA Global, *CCP Risk Position Paper*

184 JP Morgan Chase & Co, *What is the Resolution Plan for CCPs?* (September 2014)

upon the default of HanMag Securities Corporation, without contributing any of its own assets.[185]

Further observations on this, and related topics, may be found at **sections 14.31ff**.

Structure of default funds

17.39 A default fund will typically be structured as a contribution by CCP participants of cash or securities collateral, which will be added to the contributor's margin in the event of the participant's own default, but which is also available in the event of another participant's default if the margin (and own default fund contribution) provided by the defaulter are insufficient to cover the losses sustained by the CCP in consequence of the default.[186] Default fund contributions are treated, as regards the contributor itself, as a supplement to margin: under Part 7 of the Companies Act 1989 the protections given to margin are also extended to 'default fund contributions', defined, in relation to a 'recognised clearing house', as a 'contribution … to a fund which– (i) is maintained by that clearing house for the purpose of covering losses arising in connection with defaults by any of the members of the clearing house, and (ii) may be applied for that purpose under the default rules of the clearing house'.[187] To benefit from such protection, the rules about the application of the default fund must constitute part of the CCP's default rules.

DEFAULT HANDLING

17.40 The PFMI relating to default handling are clear and correct. 'An FMI should have appropriate policies and procedures to handle participant defaults. … Further, a CCP needs an appropriate segregation and portability regime to protect customer positions in the event of a participant default or insolvency.'[188] The explanatory paragraphs cover, among other matters, suggested content for default rules,[189] waterfall of usage of financial resources,[190] and portability arrangements.[191]

Further guidance on what to look for in a good default management plan can be taken from the Payments Risk Committee's Recommendations for Due Diligence, which include 48 questions for CCPs aimed at checking their preparedness for managing defaults and evaluating the consequences of a default.[192]

17.41 Being a one-size-fits-all document, the PFMI can be criticised for avoiding some of the more troublesome detail with regard to default management, which, together with the older CPSS/IOSCO Recommendations targeted at CCPs, can be summarised as follows.

185 Grant, J, Song, J and Stafford, P, *Banks launch clearing review after Korean broker default* (March 2014), FT.com, www.ft.com/cms/s/0/14b59838-a4d6-11e3-9313-00144feab7de.html#axzz3hCfSoihk

186 See, for example, LCH Limited, *Default Rules* (May 2020), rules 15, 19

187 Companies Act 1989, s 188(3A)(b)

188 PFMI Principles 13–14, introductory text

189 PFMI, para 3.13.2

190 PFMI, para 3.13.3

191 PFMI Principle 14, key consideration 3

192 Payments Risk Committee, *Recommendations for Supporting Clearing Member Due Diligence of Central Counterparties* (February 2013)

- CCPs should strive to avoid defaults happening in the first place, through monitoring and (if necessary) imposing restrictions.
- CCPs should have powers promptly to close out or effectively manage a defaulting participant's positions and to apply collateral. Close-out, hedging and transfer are all contemplated as possible techniques, but it is expected that CCPs will prefer to liquidate positions quickly rather than hold and manage.
- CCPs should have procedures for dealing with the positions and margin of customers. Customer and proprietary assets should be handled separately. CCPs should structure their portability arrangements for customer positions and margin in a way that makes it highly likely that they will be transferred to one or more other participants.
- CCPs should be able to utilise promptly the financial resources maintained to cover losses and liquidity risk arising from defaults. The rules should specify the order in which resources will be utilised (the waterfall): a CCP will 'typically' look first to assets posted by the defaulting participant. Beyond that there is no prescription as to order of utilisation. The rules should specify the obligations of non-defaulting participants to replenish the CCP's resources.
- The rules and powers of the CCP should be able to withstand challenge under the insolvency regime applicable to the defaulting participant. In particular, collateral application should not be subject to a stay or reversal under applicable law.
- CCPs should manage defaults in a manner which causes minimal disruption to the market. The risk waterfall and loss-sharing can be a source of systemic risk, and recourse to this backstop is to be discouraged.[193]
- Default events and procedures should be publicised. In this respect, it may be noted that the European Association of CCP Clearing Houses has issued a Guideline[194] which specifies that the following six matters should be made 'available to market participants': Events of default; Waterfall of resources; Impact of default on settlement; Legal relationship between the CCP and customers; Treatment of house and client positions; Post-default news updates. Each of these is covered in a degree of detail and contains sub-recommendations.
- CCPs ought to be aware that some of their major participants are also major suppliers, and a default will need to be managed accordingly. The solution is not entirely in the chapter of rules for managing *member* default per se. Banks engage with CCPs in numerous ways: they are major clearing members, they are vital participants in the default management process, they are custodians, they provide cash liquidity and treasury services, and they are often shareholders and/or have appointees within the CCP's governance structure; for all these reasons CCPs are highly dependent on their immediate network of banks.

17.42 EMIR covers these matters in the following way; Ms Wendt points out that international regulatory standards (which are reflected in EMIR) do not address all the risks arising in default management.[195]

193 See Wendt, IMF Working Paper WP/15/21

194 European Association of CCP Clearing Houses, *Default Procedures Publication Guideline* (May 2010)

195 Wendt, IMF Working Paper WP/15/21

(1) A CCP must have detailed default procedures.[196]

(2) A CCP must take prompt action to contain losses and liquidity pressures resulting from defaults. Close-out should not expose non-defaulting clearing members to losses they cannot anticipate or control.[197] (In relation to the default handling of cleared OTC products, meeting this requirement may be challenging.[198])

(3) A CCP must notify its regulator before implementing the default procedure.[199] EMIR is silent on wider communications.

(4) A CCP must ensure that its default procedures are enforceable,[200] but EMIR does not itself provide the type of legal protection seen in Part VII of the Companies Act 1989 or the Settlement Finality Directive (SFD).[201] It is, however, envisaged that CCPs will be designated under the SFD.[202]

(5) A CCP must trigger the transfer procedures for individually segregated or collectively segregated client positions on request, assuming there is a replacement GCM which has previously committed to accept them.[203]

(6) A CCP may use clients' collateral only to cover positions held for their account.[204]

In the following sections, the following core aspects of default management, as well as certain practical issues, are studied in more detail: close-out and managing a defaulter's positions; transfer and portability; liquidity; and legal obligations imposed on CCPs managing defaults.

RE-ESTABLISHING A MATCHED BOOK

17.43 Upon an event of default, the CCP will have two considerations to manage: staunching the losses attributable to the failure of a participant which will no longer be able to satisfy its obligations; and ensuring performance continues vis-à-vis the surviving counterparties. At its most simplistic, a trade entered into by the defaulter with a survivor, which has been novated to the CCP, is a trade which is not going to be performed by the defaulter but which continues as regards the CCP's obligations to the survivor. The duality of duties means that a CCP cannot adopt the model of close-out followed in OTC bilateral arrangements such as the International Swaps and Derivatives Association's master agreement.[205] (That model involves the termination of all open transactions, a valuation process to establish the replacement cost or loss (or as the case may be, gain) of the terminated transactions, and an aggregation and netting to establish a single overall net monetary amount payable by one party to the other.[206]) To close out in this fashion will deal with the first problem,

196 EMIR, art 48(1)
197 EMIR, art 48(2)
198 See **section 17.49**
199 EMIR, art 48(3)
200 EMIR, art 48(4)
201 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems; see **sections 13.29ff**
202 Cf EMIR, recital (51), art 17
203 EMIR, art 48(5), (6)
204 EMIR, art 48(7)
205 See www.isda.org/publications/isdamasteragrmnt.aspx
206 ISDA master agreement (2002 Multi-currency cross-border version), s 6

viz. terminating ongoing relations with, and quantifying a claim against, the defaulter; but it does not deal with the second.

It is not a wholly free choice for a CCP to behave like a bilateral participant in the OTC market, that is to close out and simply leave its treasury department to take proprietary control over the unmatched position. That approach is disapproved by the Committee on Payments and Market Infrastructures (CPMI), which says:

> '[T]o address the likelihood that voluntary methods might prove insufficient to re-establish a matched book, a CCP will need to have a mandatory, ex ante agreed mechanism to do so, such as forced allocation or termination of contracts. Even though such tools carry potentially severe drawbacks and risks, a CCP should identify in its rules which mandatory tool(s) it would use to re-establish a fully matched book should voluntary mechanisms fail to do so.'[207]

That comment is made in the context of mechanisms to enable 'recovery' of a CCP whose margin and backup resources have proved inadequate;[208] so the CCP can assume that it is legitimate to attempt to manage a closed-out position for a reasonable period. EMIR obliges a CCP to take prompt action to contain losses resulting from defaults and to ensure that the closing-out of the defaulter's positions does not expose the non-defaulting clearing members to losses they cannot anticipate or control.[209] So the goal is to re-establish a matched book. Unlike investment banks, CCPs are not designed to carry proprietary positions and are unlikely to have the expertise to do so.

Close-out

17.44 Accordingly, the CCP's method of close-out will typically require some form of 'trading out' in order to re-establish a matched book, where each obligation owed by the CCP to a surviving participant is matched by another, opposite obligation owed to the CCP by another surviving participant. The result can be achieved by the CCP instructing a broker to take a new position on behalf of the defaulter in the marketplace, as illustrated in **Case Study 17.2**.

Case Study 17.2 Close-out (trading out) of cleared cash and futures products

X has defaulted with a single transaction recorded in its account at the CCP: X has contracted to buy 1000 shares of Mega PLC at a cost of £1 a share. CCP is obligated to pay its selling participant Y the £1000 for these shares on the delivery date. Unless it takes some action, CCP will be left with 1000 unwanted shares and a cash shortfall of £1000. So CCP instructs broker B to enter the market and, in its own name but on behalf of CCP, to sell 1000 shares of Mega PLC at the prevailing market price. B duly achieves a bargain at today's market price of 90p a share. B's market counterparty uses Z as its clearing member who is from this moment obliged to buy 1000

207 Bank for International Settlements Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, *Recovery of financial market infrastructures* (October 2014), para 4.5.5

208 See further **section 14.16ff**

209 EMIR, art 48(2)

Mega shares from CCP. CCP can now match the obligation of Z to buy with the obligation of Y to sell. B's obligation, entered into on behalf of CCP, to sell will be booked by CCP to the account of X, as if X had been B's client, with the consequence that X is now not only obliged to buy 1000 Mega from CCP at £1 but also also to sell 1000 Mega to CCP at 90p; vis-à-vis X, the delivery obligations net out to zero and the cash obligations net out at a sum owed to CCP of only £100, which CCP can set off against X's margin deposit.

While this example uses a cash securities trade, the logic is the same for cash-settled and derivative products.

17.45 The need for the CCP to re-establish a matched book makes it imperative to trade out rather than simply terminate. The processes of the CCP which achieve this are, however, theoretically at risk of challenge under insolvency laws:[210]

(1) One fear is section 127 of the Insolvency Act 1986. Section 127 renders void any disposition of a company's property after the commencement of winding-up unless the sanction of the court is obtained. The fear is that section 127 may render void the entry by the defaulter into a new contract in the manner envisaged by the process of trading-out. However, it does not appear that the cases relating to section 127 prohibit new contracts unless the contract creates a specifically enforceable obligation to deliver property.[211] Property transfer obligations under clearable contracts are unlikely to be specifically enforceable, owing to the fungibility of the property concerned. Any actual delivery or payment made by the defaulter may, however, be at risk. Nonetheless, the residual problem under section 127 is disapplied by section 164 of the Companies Act 1989.

(2) New contracts are more a problem of agency: loss of agency is perhaps more troublesome than section 127. Insolvency proceedings may terminate the agency of the CCP, with the result that the CCP cannot enter into closing-out positions on the defaulter's behalf and book them to the defaulter's account. This is the primary mechanism for neutralising the defaulter's obligations other than payment obligations. However, there are alternative devices for achieving this result, such as treating the cost of the closing-out contract as the gain or loss made by the CCP as a result of termination of the defaulter's pre-default positions. The possibility of protection under the Companies Act 1989 is considered in **section 17.62**. It may also be observed that administration and resolution actions taken under Part I of the Banking Act 2009 do not pose the same threat of invalidity to a CCP as a winding-up.

(3) Another threat is the rule against build-up of set-offs set out in the statutory insolvency set-off code.[212] The rule renders ineligible for set-off any obligation entered into by the insolvent person after a certain cut-off time, which is broadly the time of opening of insolvency proceedings.

210 See **sections 13.11–13.15** for a more comprehensive range of possible challenges

211 *Re French's Wine Bar Ltd* (1987) 3 BCC 173; *Sowman v David Samuel Trust Ltd* [1978] 1 WLR 22

212 Insolvency Rules 1986, SI 1986/1925, rr 2.85(2), 4.90(2); Bank Insolvency (England and Wales) Rules 2009, SI 2009/356, r 72(1); Investment Bank Special Administration (England and Wales) Rules 2011, SI 2011/1301, r 164(2)

This cut-off rule is designed precisely to stop counterparties 'building up' set-off rights.[213] This rule is disapplied by section 163 of the Companies Act 1989.

17.46

- A CCP will typically be given wide discretion as to how it conducts the close-out process and, in particular, as to the valuations ascribed to closed-out positions, expenses and collateral. English law is generally forgiving as regards actions taken in such circumstances by a non-defaulting party. The following conclusions may be drawn from the case law: A non-defaulting party which has exercised the right to close out has a duty to act honestly, in good faith and not arbitrarily, capriciously, perversely or irrationally.[214]
- A non-defaulting party 'is entitled to put its own interests first and is primarily carrying out the forced liquidation of the portfolio in order to reduce and ultimately eliminate the risk … to which it has been exposed'.[215]
- Insofar as rules require the CCP to achieve a 'commercially reasonable result' there will be a constraint on the exercise of its discretion, along the lines set out in *Associated Provincial Picture Houses v Wednesbury Corporation*.[216]
- Whether or not the rules require the CCP to act in a commercially reasonable manner, a CCP, which carries out a quasi-public function, is likely to be amenable to judicial review, in which case *Wednesbury* principles will apply.[217]

Hold and manage

17.47 An alternative for the CCP is to manage the defaulter's book for itself, subject to the considerations mentioned in **section 17.43**. In relation to cash equities positions, an obligation of the defaulter to pay for securities could possibly be covered by margin deposits, leaving the CCP with an unwanted long position in securities when delivered by the surviving selling participant. Those securities could be liquidated by the CCP at its leisure, which may be a prudent tactic in markets where the rapid sale of collateral could increase market volatility, depress prices, and affect the behaviour of members who may need to participate in auctions as part of the CCP's default management process.[218] Similarly, if the defaulter's position was that of seller, the CCP could rely on the trading venue's (or its own) buy-in procedures to be operated at the end of the conventional buy-in period, thus satisfying the entitlement of the CCP's surviving buying participant, with the costs of the buy-in being booked to the account of the defaulter. In essence, the CCP would rely on the venue to operate the default management process. This may be less effective if the relationship between the CCP and the venue is not close, as it cannot be assumed that the

213 See Towers, D, and Meinertz, C, *Set-off* in Marks, D (ed), *Tolley's Insolvency Law* (August 2013), paras S6038ff

214 *Paragon Finance v Nash* [2002] 1 WLR 685; *Socimer International Bank v Standard Bank London (No 2)* [2008] 1 Lloyd's Rep 558

215 *Euroption Strategic Fund v Skandinaviska Enskilda Banken* [2012] EWHC 584 (Comm)

216 [1948] 1 KB 223: see *Peregrine Fixed Income v Robinson Department Store* [2000] EWHC 99 (Comm)

217 *R v Panel on Take-overs & Mergers, ex p Datafin* [1987] QB 815

218 See further **section 17.49**

venue would exercise its powers in a way designed to protect the interests of the CCP.

The hold-and-manage option may, however, be less prudent in the case of markets with long buy-in periods, or products where buy-in is not feasible, where the CCP is exposed to volatility following a high-profile default, or for derivative instruments which can convert from being an asset to a liability. In these cases, there is a risk that holding and managing may leave the CCP with a loss which increases over time and could eventually exceed the value of margin held.

On the other hand, there remain a variety of possibilities for handling more complex products such as derivatives. Partial hedging, which will limit or contain the risk if not eliminate it altogether, may be possible. The Committee on Payment and Settlement Systems (CPSS) focused on the CCP's ability to deal in the underlying products to which a cleared OTC derivative relates. 'To manage the hedging and macro-hedging process, a CCP should consider (1) its ability and the timeframe required to obtain individual hedges for portfolio positions; (2) the cost of obtaining those hedges; and (3) its ability and the associated cost to actively manage the associated risks (including basis risk) of the hedging strategy up to the disposition of the portfolio of a defaulting participant.'[219]

Holding and managing OTC derivative positions may present particular complexities. On the one hand, liquidity may dry up, leaving the CCP with an unmatched holding whether it likes it or not. To force the surviving participants into an auction or to exercise put-option rights against survivors[220] may deepen an existing financial crisis or even begin one – the CCP will need to balance its wider duty to the market under article 48(2) of EMIR against its own need to mitigate loss deriving from the default. Another danger is that the default itself may have had an adverse effect on the prices attributable to the positions to be closed out or managed: for example, wrong-way risk may be exacerbated in times of credit default swap volatility.[221]

Transfer

17.48 A third option for a CCP is to transfer the defaulter's trades to survivors. Transfer is commonly considered in relation to clients' positions, on the basis that clients would prefer to be allowed to keep their positions open; this subject is discussed in **sections 17.54ff**, and some of the issues discussed there may be relevant even where no client is involved. In particular, the statutory protection under Part 7 of the Companies Act 1989 seems to be unavailable in relation to transfer of house positions, as discussed in **section 17.62(2)**.

Transfer may be achieved by the CCP 'creating' a synthetic transaction, one end of which is booked to the account of the defaulter, and the other to the account of one or more surviving participants. 'Transactions' may not be discrete: in

219 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Guidance on the application of the 2004 CPSS-IOSCO Recommendations for Central Counterparties to OTC derivatives CCPs – consultative report* (May 2010), www.bis.org/publ/cpss89.pdf, Guidance 6.2

220 See **section 17.49**

221 Brigo, D, and Chourdakis, K, 'Counterparty risk for credit default swaps – Impact of spread volatility and default correlation' (November 2009) *International Journal of Theoretical and Applied Finance*, Vol 12, No 7, pp 1007–1026

particular, interest-rate swap positions may change their shape as further swaps are registered to a participant's account, so that over time the identity of an original trade can be completely lost. This property of continuousness may make it difficult to identify a 'trade' registered at the CCP and its 'buyer' and 'seller'. (By contrast, exchange-traded derivatives and cash equities transactions are typically referable to discrete lots of a commodity or a security, and the participants who are long or short are easily identifiable.) The CCP may therefore need an algorithm to shape the balancing transactions which would cancel the unmatched positions of the defaulter. A transfer (whether a voluntary assumption by a survivor of the defaulter's position, or through forced allocation under the CCP's rules) is, in any event, likely to involve a close-out and establishment of fresh positions.

Thus the outcome of a transfer in a simple case, where no client is involved, will be similar to that achieved by trading out, with two differences: the CCP will be saved broking charges; and there may be market-integrity issues to be managed. On the latter point, considerations will include whether the price agreed with the survivor for the transferred positions is fair and whether any questions of market abuse could arise; and whether the CCP is obliged to offer the positions for acquisition among its participants generally.[222]

On these questions of fairness, it may be noted that the Swaps and Derivatives Market Association objected to the practice of limiting transfers to a select group of bidders, as is the practice with OTC derivatives CCPs:

> 'Another clearinghouse rule requires clearing members to utilize their own internal dealer desks to participate in auctions of the portfolios of any distressed clearing members. This rule limits broader auction participation. The true measure of success of an auction is achieving a clearing price and to achieve the optimal clearing price it is better to have more participants in the auction than fewer participants.
>
> Moreover, there is precedent in the OTC marketplace for rapid and highly organized auctions. For example, ISDA currently manages a default auction process when an event triggers a payout on a default swap and these auctions include many, not a limited few, participants. There were over 400 participants in the Lehman Brothers auction, which clearly yielded better prices than if there were less than 10 participants.'[223]

It may also be noted in this context that the CME managed the preponderance of its close-out of Lehman Brothers' book of cleared energy, foreign exchange, interest rate and equity derivatives through limited-participation auctions and transfer. Of these asset classes, the prices required from successful bidders exceeded the margin referable to them in two cases, though in the other two cases the margin referable was more than required. Overall, the CME had a surplus of margin. But the Examiner's report considered the availability of 'colorable claims' against the CME and the firms which 'bought [the] positions at a steep discount during the liquidation ordered by the CME' for losses sustained by Lehman Brothers as a result of the forced sales.[224]

222 Cf EMIR, art 36(1)

223 Swaps and Derivatives Market Association, *Lessening systemic risk: Removing final hurdles to clearing OTC derivatives* (September 2010), www.thesdma.org/pdf/skirmish_paper_091610.pdf, p 4

224 Valukas, A, *Lehman Brothers Holdings Inc. Chapter 11 Proceedings Examiner Report* (March 2010), web.stanford.edu/~jbulow/Lehmandocs/VOLUME%205.pdf, pp 1841–1871

OTC derivatives and auctions

17.49 Clearing of OTC derivatives or other transactions for which there is no commonly accepted market price gives rise to the special difficulty of liquidity risk in the market immediately after an event of default has occurred with regard to an OTC clearing participant. There is *ex hypothesi* no organised market or platform to which the CCP can go to replace closed-out positions and re-establish its matched book. There may, moreover, be no guarantee that the participants in the OTC market who were active before the event of default will wish to continue to make a market after that event. Prices quoted by surviving market participants may be well away from what was expected under 'normal' trading conditions; participants willing to trade may have no relationship with the CCP which is managing the default. CCPs which clear OTC products thus need to ensure the existence of a pool of market participants willing to take over the book of the defaulter, as an alternative to the venue-based trading-out strategy illustrated by the example given above. Consequently, 'an OTC derivatives CCP may need to consider having participants sign up ex ante to bid in an auction of the defaulting participant's portfolio, and, in extremis (ie if the auction process fails), accept an allocation of the portfolio to surviving participants'.[225]

The typical arrangement is to oblige survivors to take on undisposed-of transactions (or positions which represent aggregate transactions or sub-portfolios) under a pre-determined pricing mechanism.

The approach of LCH Limited involves an auction under which participants submit a best offer for each portfolio of transactions by sealed bid. LCH does not undertake to solicit bids from all its participants and indicates that non-participants may also be permitted to bid, stating that its aim is to 'ensure sufficient competitiveness to provide the best reasonable price'.[226] The approach assumes that the survivors would prefer to see the survival of the CCP rather than resign their clearing membership so as to escape having to assume unwanted transaction obligations. Mutualisation of risk encourages CCPs to adopt highly conservative transaction eligibility criteria.

17.50 CCPs' default auctions are somewhat strange beasts and it may therefore be appropriate to highlight some of the differences between a CCP auction and a 'normal' auction.

In the typical auction of an asset by a seller, the asset is something of positive value sold to the highest bidder; the auctioneer's objective is to get the best price from the bidders, and each bidder's objective is to get the asset for a price which is lower than the maximum it is willing to pay. By contrast, a CCP default auction is not a disposal of an asset, but a transfer of a liability of uncertain value: it is more like the action of an environmental agency seeking the lowest cost for a nasty clean-up exercise. The auctioneer's objective is to be certain to be rid of the problem without exceeding the resources available to pay for the clean-up. Each bidder's objective is to ensure that some other bidder is left with the problem. Furthermore, the auction process is very unlikely to take place in the competitive atmosphere of an auction-room like Christie's or Sotheby's: in a classic 'English' auction, bidders compete against each other openly whereas,

225 CPSS Consultative Report on OTC Derivatives CCPs (CPSS 89), Guidance 6.1

226 LCH.Clearnet, *Default Management Overview – Exchange and Commodity Derivatives Markets* (June 2010)

in a CCP auction, the bidders will be expected to submit sealed bids, invisible to the other bidders. Where sealed bids are solicited for an asset sale, the idea is that each bidder will offer its best price on an unconditional basis.[227] Where the bidders are reluctant participants, as in a CCP auction, an open competition would attract no bids, so bidding is a matter of contractual obligation imposed by the CCP's rules. Each sealed bid will represent the price which the bidder demands to take on the problem which the CCP wishes to be rid of; there is no guarantee that the bidder will offer its 'best' price.

These features mean that any comparison with classical auctions is likely to be based on wobbly foundations. What will determine a successful auction is influenced less by the competitive spirit among clearing members than the consequences for clearing members if the auction fails. Incentives and penalties thus play a key role.

Accordingly, official guidance issued by the CPMI on default auctions (the CPMI Auctions Paper), which considers many of the factors at work, is to be welcomed.[228] (It is regrettable that some of the CPMI's explanations are phrased in a traditional way, with bidders acting as willing buyers of assets, but that should not invalidate the broad thrust of the CPMI's recommendations.) The CPMI does not give a definition of a 'successful' auction, though it states

> 'In order to effectively minimise the potential losses and return to a matched book, a CCP aims to transfer the risk of the defaulting participant's entire portfolio in a timely manner. In an auction, a CCP generally seeks to liquidate the portfolio at a reasonable estimate of its market value (which may include a risk premium) while at the same time seeking to limit disruptions to the market to the extent possible.'[229]

Perhaps a successful auction, given these objectives and the constraints mentioned, is one where the CCP's matched book is restored at a cost which is reasonably in line with market prices and does not exceed the financial resources immediately available for default management.

17.51 Avoiding a failed auction is important for financial stability. The CPMI Auctions Paper warns that CCPs should be wary of self-protective (or 'gaming') behaviour by members participating in auctions. There is a risk that members may seek to offload the cost inherent in a 'winning' bid in the auction by framing their bids so as to 'lose' or to cause the auction to fail completely, thereby shifting the cost to the next group of persons at risk in the default waterfall. Where the number of bidders is low, the risk may be exacerbated; Nasdaq was criticised for inviting only four bidders to an auction of a defaulter's positions in 2018, the result of which was to eat into the CCP's default fund.[230]

227 Cf. *Harvela Investments v Royal Trust Co of Canada* [1986] AC 207

228 Bank for International Settlements Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, *Central counterparty default management auctions – Issues for consideration* (June 2020), CPMI Paper No 192

229 CPMI Auctions Paper, p 6

230 Osborn, T, *Nasdaq auction failure ignites anti-clearing backlash* (March 2019), Risk.net article, www.risk.net/our-take/6455216/nasdaq-auction-failure-ignites-anti-clearing-backlash

While some analyses suggest that game-theory can provide insights into CCP auctions,[231] bilateral or multi-round game models for clearing member behaviour are likely to be unreliable as pointers to good auction design which have multiple participants and only one round of play. Some game theory analysis implies that clearing members may 'cooperate' in the bidding in order to optimise the outcome for all parties, but collusive bidding may be unlawful.[232] Instead, it may be more useful to look at the options available to the CCP and its clearing members, as to which the following considerations may be relevant:

- If the market is not unduly disrupted by the default, the CCP may have a reasonable view as to the cost of clean-up. The CCP will fear, in such 'ordinary' default circumstances, that bidders will reckon that they can profit from the auction process by bidding at a higher price than the likely cost of clean-up. The CCP will wish to have mechanisms to keep bids in line with its view of market prices.
- Gaming may not be exclusively between the clearing members. A large amount of 'skin in the game' could, in theory, encourage auction bidders to try to maximise their returns in the knowledge that the default fund will not be touched;[233] an end-of-waterfall loss distribution which has a different incidence from the default fund may encourage bids which shift the burden onto those who bear proportionately more risk after the fund is exhausted.[234]
- Expanding the pool of bidders may reduce gaming risk. One option may be to invite clients of clearing members or the wider market to participate. Issues which would have to be addressed include the establishment of a clearing relationship for any successful bidder, the possibility that end-user participants in an auction may only seek a portfolio with a particular direction (and thus may have no interest in participating). [235]
- A CCP may wish to set a 'reserve price' in the knowledge that it should be able to hedge or dispose of the unwanted positions of the defaulter outside the closed circle of clearing members. A reserve price is a ceiling on the cost of clean-up, so that if no bids below the ceiling are received, the CCP cancels the auction and falls back on alternative default management strategies.[236] Those alternatives could be to adjust the incentives relating to the auction, or to hedge the defaulted positions in the wider marketplace (thus accessing a pool of cheaper bidders different from the clearing members whose bids were too high). But it should be remembered that if the default circumstances are unusual, so that market prices are hard to determine, setting a reserve will be difficult, and clearing members' bids may be high in reflection of the uncertainty for them in taking on a portfolio which was mispriced enough in the first place to cause a bad default. Absent such circumstances, however, the CCP may consider that

231 See Gregory, J, *Central Counterparties: Mandatory Central Clearing and Initial Margin Requirements for OTC Derivatives* (June 2014), ISBN 978-1-118-89158-2, John Wiley & Sons, section 10.2.2; Peer, N, and Lewis, R, 'The CCP recovery game: The default auction *as* a stag hunt' (August 2018), Tulane Public Law Research Paper No 18-9, SSRN ID 3228436

232 Harvey, B, and Meisel, F, *Auctions Law and Practice* (May 2006), 3rd edn, OUP, ISBN 978-0199266166, para 3.38

233 See further **section 7.35**

234 See **section 14.32**

235 See CPMI Auctions Paper, ch 6

236 See CPMI Auctions Paper, p 10

it can safely impose penalties on bidders whose bids are unreasonably larger than the reserve price.

- The CCP's dilemma is that it must be specified if the auction is to take place with a reserve.[237] If the CCP does not reasonably believe that it can set a meaningful reserve price, the absence of a reserve could signal to the clearing members that the clean-up costs may have no ceiling lower than the available default resources, thus encouraging bids at or higher than that (publicly known) level. The decision not to set a reserve would appear to imply that 'recovery' tools such as VMGH, a cash call on members, or tear-up (imposed pricing) are in play. Since recovery tools are the last resort of a CCP, a simple decision on a reserve sends a message to members about the survival of the CCP.
- A penalty could be shaped as a fine or 'juniorisation' (where unsuccessful auction bidders might be placed more 'junior' in the waterfall, so sharing in the cost of default management even though they did not take on the defaulter's portfolio).[238] The CPMI Auctions Paper offers various possible structures.[239] However, it is not clear that penalty arrangements will always be effective, especially if the pricing of the auctioned portfolio is difficult to ascertain.
- The risk of a penalty may not change bidders' behaviour. Bidders may reckon that the chances of their bid being the worst, implying the most unpleasant penal consequences, are low in a multi-participant auction. Theoretical study suggests it is not clear that a penalty is effective to reduce the cost burden on the CCP.[240]
- Where the auctioned portfolio is very problematic, a member may calculate that the risk of a penalty is worth taking, especially if the clean-up costs will exhaust the default resources. Being 'juniorised' in such circumstances is meaningless. Again, theoretical work indicates that, when the clean-up costs exceed what the members are able to afford (that is, after receiving from the CCP the default resources allocated to a 'successful' bidder), penalties may make no difference to the bidding: members will bid higher.[241]

At the end of the process, there is a fundamental uncertainty. Nobody can accurately foretell what the endgame for a CCP which has exhausted its available resources and recovery options will be. This makes the gaming analysis of auctions much harder to tease out. CCPs are not like banks, where the resolution process facilitates the creation of a 'bad bank' into which 'poor-quality assets' are dumped, enabling the old bank's users to walk away. A failed CCP has no residual 'assets' after its available resources are gone, and so the 'bad bank' option is not available. Clearing members who conclude that the case is hopeless may decline to bid or take steps to thwart the process in other ways. The problem is discussed further in **Chapter 14**.

237 *Barry v Davies (T/A Heathcote Ball & Co)* [2000] 1 WLR 1962; see also Harvey and Meisel, Auctions Law and Practice, section 6.99

238 For an example, see LCH Default Rules (March 2020), Sch 2, Rules 2.5 and 2.6

239 CPMI Auctions Paper, section 4.2.5

240 Ferrara, G, Li, X and Marszalec, D, *Central counterparty auction design* (August 2017), Bank of England Staff Working Paper No 669, Proposition 2

241 Ferrara et al. Working Paper No 669, Proposition 4

17.52 The following additional points might be made in relation to auctions:

- The Payments Risk Committee's due diligence recommendations invite CCPs to consider: how the portfolio is to be shaped for auction, and on the basis of what criteria; what happens if more than one bidder submits the same price; what the policy is on partial bids and minimum bid size; what the policy is on 'off-market' bids; and how to deal with no bids at all (among other things).[242]
- Legal requirements for auctions in the United Kingdom appear to require the CCP to display certain statutory information in the place where the auction is to take place.[243]
- The CCP may not have a wholly free hand as auctioneer. A duty of even-handedness will be owed to the bidders as with other multi-offeror contractual situations, so (for example) allowing bidders to withdraw bids, or failure to manage conflicts of interest, could lead to a challenge to the outcome.
- Admission of non-members to the auction may need a structural solution. While it is open to the CCP to have a hedge in place with a non-member counterparty, if the hedge position is to be a complete replacement for the defaulter's positions it needs to be managed exactly as a cleared position would be: with exchange of initial and variation margin, and backed by membership eligibility and default fund contributions. That implies that a non-member auction participant ought to be required to become a client of a clearing member, if not a clearing member, in short order in order to achieve a level playing field amongst bidders.

17.53 The following description by LCH Limited of its handling of the Lehman Brothers default illustrates what may be done:

> 'The total notional value of the portfolio was $9 trillion, encompassing a total of 66,390 trades across 5 major currencies. This was achieved through the risk neutralisation and competitive auctioning of the Lehman OTC interest rate swap portfolio among the SwapClear members … The management of the default involved:
>
> At default (Monday, 15 September 2008) the default management group (member firms form part of this group on a rotating basis) seconded preassigned and experienced traders to work alongside LCH.Clearnet's risk management team to apply hedges and neutralise the macro level market risk on the defaulter portfolio. All participants adhered to strict confidentiality rules throughout the process.
>
> The risk positions were reviewed daily and further hedges were executed in response to changing market conditions.
>
> From Wednesday, 24 September to Friday, 3 October, the competitive auctions of the five hedge currency portfolios were successfully completed.

242 Payments Risk Committee, Recommendations for Supporting Clearing Member Due Diligence of Central Counterparties (February 2013)

243 Auctioneers Act 1845, s 7; also Auctions (Bidding Agreements) Act 1927, s 3, Auctions (Bidding Agreements) Act 1969, s 4

> The default was managed well within Lehman margin held and LCH. Clearnet will not be using the default fund in the management of the Lehman default.'[244]

According to EACH, 'the CCP to which Lehman Brothers had its largest exposure only used 35% of Lehman Brothers' US$ 2 bn initial margin when managing its default. The CCP did not need to use Lehman Brothers' default fund contribution, the mutualised default fund and the CCP's own capital'.[245]

However, it may also be noted that there was some friction to begin with, when the UK Lehman administrators appear not to have understood the special legislation applicable to insolvencies in financial markets.[246]

CLIENT CLEARING – TRANSFER (PORTABILITY) OF CLIENT POSITIONS

17.54 Where a surviving participant is willing to take on the transactions of the defaulter, it will be expected that the CCP will have the ability to transfer positions from the defaulter's client accounts to the survivor's. Transfer will preserve the clients' investments from premature termination or from settlement in cash rather than by physical delivery. The CPSS noted that the potential for transfer of client positions may also have a stabilising influence, reducing the risk of a 'run on a counterparty' which may otherwise happen if a GCM's financial position deteriorates.[247] On the other hand, it has been said that segregation and portability can have economic effects which may seem odd: whereas use of an omnibus account involves a degree of loss-sharing among the clients using the account,[248] use of single-client accounts at the CCP 'effectively transfers the risk of customer default ([concurrent] with a clearing member default) to other clearing members via the default fund'.[249]

The technique for successful transfer of a client's transactions to a new GCM, following the default of the previous GCM, will depend on the structure of clearing arrangements at the CCP. The variables which determine the outcome are the counterparty and account structure allowed by the CCP, whether the CCP collects margin on a net or gross basis, and how the client transfers margin to the GCM. The last factor, in particular, may not be controlled by the CCP, and the success of the transfer may be affected by the adequacy of the client money and client asset protection regime applicable in the insolvency of the GCM.

Agency model

17.55 A fundamental precept of clearing is that a CCP needs to have certainty as to its participants' ability to fulfil their obligations. For this reason, and because

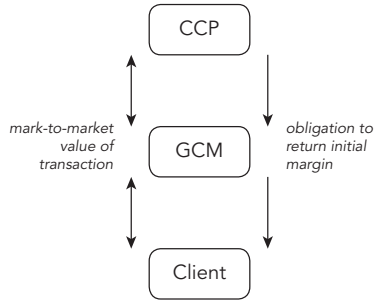
244 LCH.Clearnet Limited, Press Release (October 2008)
245 European Association of CCP Clearing Houses, *An effective recovery and resolution regime for CCPs* (December 2014)
246 Norman, P, *The Risk Controllers* (Wiley, 2011), pp 28–32; see also **section 17.68**
247 CPSS Consultative Report on OTC Derivatives CCPs (CPSS 89), Guidance 6.4
248 See **section 5.11**
249 Pirrong, C, *The Economics of Central Clearing: Theory and Practice* (May 2011), ISDA Discussion Paper No 1, www2.isda.org/attachment/MzE0NA==/ISDAdiscussion_CCP_Pirrong.pdf, p 31

of the risk that agency structures pose to multilateral netting under the rule in *British Eagle*,[250] CCPs tend to favour a principal-to-principal basis for their dealings with participants.[251] However, when it comes to transfer, an agency structure would be much simpler. The CCP could just ignore the defaulter, and the CCP and the client could agree on the appointment of a new agent. In non-European markets, this is a model which is often seen.

As it is, pure agency, where the GCM is no more than a transfer agent, is not usually regarded as a feasible option by European CCPs. A mixed model is sometimes encountered, which combines features of the purist principal-to-principal approach to risk management with the client-facing advantages of agency. In the mixed model, the GCM is the party which owes obligations to the CCP, but the CCP may, in the event of the GCM's demise, be entitled to perform its own obligations to the client direct. Where the CCP has this option, it can readily return margin to the client (and then the client can re-use it to support the same transactions, once they have been transferred in the CCP's books to a replacement GCM).

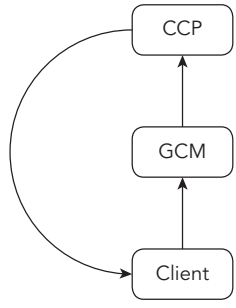
Transfer of client transactions

(1)



Transfer of a client's position will need to take account of both (1) the client's obligations and entitlements as against the GCM and (2) the GCM's obligations and entitlements as against the CCP. Typically the CCP will owe margin-return obligations to the GCM (which, in turn, the GCM will owe to the client); and the CCP may owe, or be owed, the net loss or gain on the transactions (and again the GCM may owe, or be owed, the same by the client).

(2)



Where an agency model is in effect at the CCP, the CCP may owe its obligations direct to the client (albeit that while the GCM is solvent, this obligation can be satisfied by payment and delivery to and from the GCM). But the client will owe obligations to the GCM, because the CCP requires the GCM to be its own obligor.

250 See **Case Study 2.1** and **section 13.14**
251 See **section 2.13**

(3)

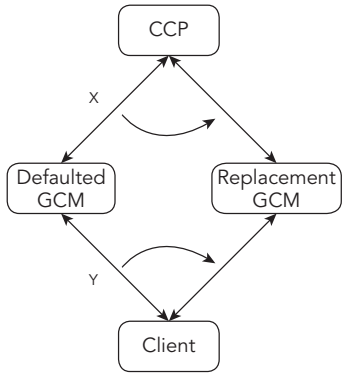


Figure 17.1

17.56 The following observations may be made about a mixed-agency model for assisting transfer.

- While better for the client than a strict principal-to-principal model, a significant number of the same issues arise as in a principal-to-principal case. In particular, the client's positions and the margin associated with them will need to be separately identifiable; and the basis on which margin is provided needs to be structured so as to avoid any risk that the margin is not part of the insolvent estate of the failed GCM. Furthermore, even under the mixed-agency model, the client may owe obligations to the GCM, which will have to be satisfied somehow. These points are considered below in relation to the principal-to-principal model.
- The ability of the CCP to leapfrog over the failed GCM needs, even in an agency case, to be legally robust against possible insolvency challenge. If the GCM is liable to the CCP for any net *obligation* to the CCP in respect of client transactions, it seems asymmetric that the *benefit* of the GCM's positions will be removed from the GCM's estate. This effect will have to be tested and proved against insolvency laws which restrict 'deprivation' clauses or cherry-picking.[252]

Portability under the principal-to-principal model

17.57 At the outset, it should be said that transfer is only feasible where there is no default by the client whose positions are to be transferred. If there was such a default, and the clearing member is also a defaulter, the ordinary machinery for close-out would apply. If a defaulting client's positions are held in an omnibus account, that would jeopardise the transfer of other clients' positions, unless a gross margining model has been used.[253]

Under the principal-to-principal model, there are obligations owed by the CCP to the GCM, and vice versa; and there are obligations owed by the GCM to the client, and vice versa. The obligations arising between the GCM and the client may not match those between the CCP and the GCM, despite them being

252 See **section 13.13(2)**
253 Cf **section 17.32**

referred to frequently as 'back-to-back'. Accordingly, any portability analysis needs to consider the transfer of four types of obligation, two of which are more readily under the control of the CCP:

(1) *The obligations owed by the GCM to the CCP*. These obligations are those which the margin posted by the GCM is supposed to satisfy. In theory, then, the transfer of these obligations might be achieved without loss to either CCP or GCM, since the margin can be used to meet any loss sustained by the CCP. If the position is to be transferred as an open contract to a replacement GCM, the margin previously posted by the defaulting GCM could, in some arrangements, be transferred to the margin account of the replacement GCM. Evidently such a transfer will require the positions being transferred, and the associated margin, to be clearly separable from any other transactions. But there are residual issues to consider: in particular, whether the transfer of margin would violate any proprietary rights of the defaulting GCM, for example an equity of redemption (if the margin assets were owned by the GCM, the right to recovery of the excess over the value of the secured obligations).

(2) *The obligations owed by the client to the GCM*. If the transaction, or portfolio of transactions, which the client has with the defaulting GCM is out-of-the-money, or the client is behindhand with margin payments, the client will still have to satisfy its obligations. The defaulting GCM can, to the extent that posted margin is represented by a payment or securities-redelivery obligation owed to the client, utilise margin for this purpose. But such an approach would amount to close-out rather than transfer. Transfer of (from the client's perspective) out-of-the-money transactions will deprive the GCM's estate of an asset; selecting the in-the-money transactions for transfer, leaving behind the out-of-the-money transactions is cherry-picking, and exacerbates the risk for the GCM's estate, if the portfolio was margined on a net basis. In practice, the solution is likely to be that as between the client and its former GCM, full close-out, application of margin, and payment of any balance owed by the client will be needed, and as between the client and the replacement GCM, a portfolio of positions reflecting the transfer at CCP level will be created anew at prevailing prices. If there is a surplus of margin due to the client from the defaulting GCM, this can be handled as outlined below at sub-section (4) below (obligations owed by the GCM to the client).

(3) *The obligations owed by the CCP to the GCM*. These obligations form part of the estate of the GCM and raise similar issues to those discussed under sub-section (2) above (obligations owed by the client to the GCM), namely deprivation of an asset or cherry-picking, if transferred to another GCM. In practice one solution adopted by European CCPs is to confer upon the *client* a proprietary entitlement to whatever the CCP owes the GCM, so as to neutralise the argument that transfer interferes with an asset of the estate. There are, however, some issues to consider. The first is the effectiveness of the proprietary solution (typically a security interest, securing what the GCM owes to the client): it may be difficult to fit the security interest over the thing owed by the CCP into the collateral eligibility criteria under the Financial Collateral Directive (FCD),[254] which

254 Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements

may leave the security interest solution open to challenge.[255] Also, given that the value of the GCM's obligations to the client may not be an exact match with the value of the property hypothecated, there is still a danger of the arrangement being treated as a deprivation for the GCM's estate.

(4) *The obligations owed by the GCM to the client*. If what is due to the client can be satisfied through hypothecation of the CCP's obligation to the defaulting GCM, the client may be able to seize that item of property and transfer it to the replacement GCM. While slightly odd, what is happening in such a case is that the client does not *actually* seize this property but authorises the CCP to make use of it as collateral for the account of the replacement GCM.

Mechanism for transfer of client positions

17.58 In a case where the CCP deals exclusively with its participant GCMs as principal, the success of an attempt to transfer client positions will, therefore, depend on a large number of matters. A detailed study by OTC Derivatives Dealers for the Board of Governors of the Federal Reserve System and other supervisors (the Fed Report)[256] divides the subject into two classes of issue: 'segregation' issues and 'portability' issues. The importance of segregation issues is emphasised by the distilled version of the Fed Report,[257] which states:

> 'The presence of the following factors related to the Segregation Analysis could significantly enhance the Portability Analysis: (i) margin being held away from the CMs; (ii) margin not being commingled with the property of the CMs, and if possible, not commingled with the property of other custodial claimants of the CMs; (iii) the existence of a direct contractual relationship between customers and the margin holder; (iv) margin being free from liens and setoff rights (except liens and setoff rights in favor of the CCP and the CMs in respect of customer trades); and (v) margin not being subject to rehypothecation or on-transfer by the CMs (except to the CCP as margin for customer trades).'

17.59 The segregation issues can be summarised as follows.

(1) The transactions between the failed GCM and the CCP need to be clearly identified. This is not always the case. The principal obstacle is net omnibus accounts in which the transactions attributable to several, or indeed all, of the GCM's clients, have been collectively recorded. The omnibus account may contain transactions which are offsetting as a result of one client having bought a particular product which another client has sold, for the same delivery date. These offsetting transactions may be netted out by the CCP's risk management processes, making it impossible to achieve a transfer to the replacement broker of a replica position unless all clients participating in the omnibus account wish to transfer and can all agree with the replacement broker for the creation of the new relationship, in particular as regards the positions to be transferred.

255 See further **section 17.62**

256 AllianceBernstein et al, *Report to the Supervisors of the Major OTC Derivatives Dealers on the Proposals of Centralized CDS Clearing Solutions for the Segregation and Portability of Customer CDS Positions and Related Margin* (June 2009)

257 See www.newyorkfed.org/markets/Distilled_Report.pdf (July 2009)

(2) The transactions between the failed GCM and the CCP which are to be transferred need to be margined separately from other transactions. Although an omnibus position at the CCP can be transferred to the new GCM, the result will likely be a margin shortfall for the new GCM, because it needs to dis-aggregate the clients in order manage its own risk, and it will not have access to the pool of surplus margin called by the failed GCM but not passed to the CCP. The omnibus clients will be unwilling to have to produce margin afresh in order to achieve the transfer. But if the GCM has retained the surplus margin called from clients and held it in a manner which is both outside the insolvent estate of the GCM and also immediately accessible to the clients for transfer to the replacement GCM, transfer of an omnibus net-margined portfolio is more realistic.[258]

This analysis leads to the conclusion that gross-margined omnibus accounts or individually segregated client accounts, as envisaged by article 39(3) of EMIR, will be the simplest structures to facilitate transfer of client transactions. The impact of EMIR might be mentioned at this point. Article 39(5) allows clients to choose between an omnibus account and an individually segregated account. The old practice whereby futures brokers allowed some clients to hold positions in the firm's own 'house' account – called 'non-seg' clients – is not permitted.[259] What is left open is whether an affiliated firm, which might be the dealing arm of the clearing member's organisation, can legitimately be treated alongside other clients in an omnibus account. It appears that European practice on this question varies.

In conclusion: a net omnibus account (as envisaged by article 39(2)) is not fatal, but it will only work if the whole account transfers across as a single unit (as envisaged by article 48(5) of EMIR), and that will require the consent of all clients who use the omnibus account, and some additional structuring if net margining is used. A gross omnibus account (where margin is called by the CCP without regard to offsetting positions) would work for the purposes of transfer in the same way as an individually segregated account, subject to the risk associated with pooling of collateral where this is the practice.[260]

17.60 The portability issues can be summarised as follows.

(1) The positions (transactions and associated margin) registered in the name of the defaulting GCM must be transferable at the CCP level. Potential obstacles to this apparently simple requirement may be that the request for transfer is made after the CCP has closed out the positions, or that there is an objection under the insolvency law regime applicable to the GCM that to carry out the transfer would deprive the insolvent estate of an asset. Typically, insolvency law objections can be overcome via protective legislation such as Part 7 of the Companies Act 1989 or the Settlement Finality Regulations.[261]

(2) The positions between the client and the GCM must be transferable at the client level. Unless the CCP has some sort of contractual or other

258 See also Rasheed, TZ, and Zebregs, B, 'Can a house divided between itself stand? Segregation in derivatives clearing' (May 2012) 5 *JIBFL*, 293–300

259 European Securities and Markets Authority, Questions and Answers – Implementation of the Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (EMIR) (March 2015), CCP Answer 8(b)

260 See **section 17.32**

261 See **Chapter 13** and **section 17.62**

jurisdiction over the client (which is not a common situation, given that clients are not members of CCPs) this part of the transfer is more challenging. If the client's transactions are in-the-money for the client, then they will represent a liability of the insolvent estate, and if the corresponding transactions between the GCM and the CCP are transferred, it is unlikely that the insolvency officer of the failed GCM would object to the estate being relieved of that liability. But the insolvency officer will not be likely to be in a position to respond to a request for transfer until long after the client had hoped for a result – a self-help remedy is needed. In practice, though, the issue with transfer of the client's positions with the failed GCM is not that the client seeks to transfer a liability, but an asset of the estate: the net amount of the margin retained by the failed GCM after satisfying the contractual obligations on both sides.

(3) The margin deposited by the client with the GCM which has stayed at that level needs to be separable from the GCM's insolvent estate. The client will need to overcome the objections of insolvency and property law that the margin deposited with the failed GCM can be extracted from the insolvent estate and transferred to the replacement GCM. If the margin was initially transferred to the GCM on the title transfer basis,[262] the client's claim is merely an unsecured monetary claim, and separation may be impossible.

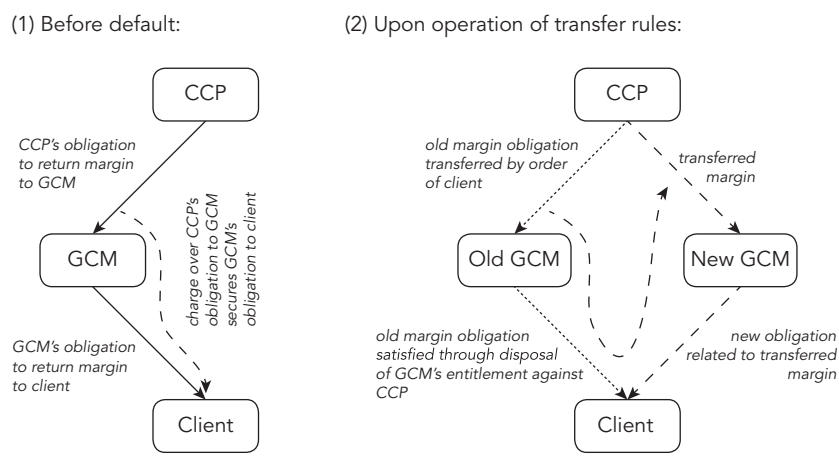
The structural options should therefore be assessed.

- *Security interest collateral*. If an omnibus account is used with net margining at the CCP level, surplus margin will have been left with the GCM and may be recoverable only with difficulty.[263] If the client is still the owner of the collateral asset it may be able to extract its asset, subject to the practical difficulties discussed in **section 13.15**.
- *Title transferred by the client to the GCM*. If the client transferred title in the margin absolutely to the GCM, the client's claim against the GCM is an unsecured claim; the client's hope for a transfer looks, on the face of it, doomed. It is not sufficient consolation that EMIR obliges a clearing member whose client has opted for individual client segregation to pass on excess margin to the CCP[264] and requires a CCP to 'readily return' surplus margin not needed to cover default losses direct to the client,[265] since EMIR makes regulatory rules and does not alter insolvency or property law.[266] So, if the GCM is acting as principal, the balances on its accounts at the CCP may be sums due to the GCM's estate, and the client may be no better off.

  However, it may be possible to leapfrog over the GCM. If the GCM has passed on the margin to the CCP – for example by virtue of article 39(6) of EMIR – the margin may be returnable to the client provided that it does not fall into the GCM's insolvent estate. This can be achieved by the GCM entering into a charge in favour of its client in relation to any entitlement of the GCM to a return of margin from the CCP. The obligation secured by the charge is the GCM's net obligation to the client. Upon transfer, the client will notionally

262 See **section 6.10(2)**
263 Cf. Fed Report, footnote 11
264 EMIR, art 39(6)
265 EMIR, art 48(7)
266 Cf Financial Markets Law Committee, *Response to the FSA Consultation Paper entitled 'Client assets regime: EMIR, multiple pools and the wider review' (CP12/22)* (February 2013), para 2.11

seize the security (the margin return entitlement due from the CCP) and hand it to the client's replacement GCM, where it can be used to satisfy the replacement GCM's margin obligations to the CCP. In this way both the transactions, and the collateral supporting them, can be moved to the replacement GCM's account.



The GCM may create security over the CCP's obligation to transfer margin back to the GCM. The security will secure the GCM's own obligations to the client. If the GCM defaults, the client can take possession of the security, and order it transferred to the replacement GCM to satisfy the new GCM's margin obligation to the CCP.

Figure 17.2

- *Margin was charged by the client direct to the CCP*. Another option is for the client to hand the collateral to the GCM only for the purpose of charging it to the CCP on account of the GCM's obligations to the CCP. This style of margining would be effective to isolate the margin deposit from the insolvency of the GCM if the CGM has no interest in the margin assets. Unfortunately, the GCM will usually wish to have such an interest in order to protect the GCM in case the client defaults, when the GCM will itself need recourse to the margin; and so the GCM will usually take a second-ranking interest in the collateral behind the CCP. Transfer of the margin without regard to the GCM's interest again runs the risk of a deprivation argument being made.

Transfers – statutory protection

17.61 Article 39(11) of EMIR has, since 18 December 2019,[267] required that Member States' national insolvency laws shall not prevent a CCP from acting in

267 Regulation (EU) 2019/834 of the European Parliament and of the Council of 20 May 2019 amending [EMIR] as regards the clearing obligation, the suspension of the clearing obligation, the reporting requirements, the risk-mitigation techniques for OTC derivative contracts not cleared by a central counterparty, the registration and supervision of trade repositories and the requirements for trade repositories, art 2(a)

accordance with articles 48(5), (6) and (7) of EMIR, that is to say the transfer and leapfrog rules. This belated recognition that there might be obstacles to transfer and leapfrog is welcome, though not without its difficulties. In the first place, there may be debate as to the competence of the European Union to make binding legislation affecting Member States' substantive insolvency laws: historically it has been thought that the legislative competence was limited to measures relating to judicial cooperation in accordance with article 81 of the Treaty on the Functioning of the European Union.[268]

Then there are also questions as to whether article 39(11) (which is directed to the Member State of incorporation of the participant) would protect transfer and leapfrog taking place outside the territory of the Member State where a defaulting clearing member is incorporated (in some countries, insolvency jurisdiction stops at the border); whether restrictions on national insolvency laws would extend to CCPs in third countries where transfer (and/or leapfrog) does not take place by virtue of article 48 of EMIR; and how article 39(11) will work alongside article 8 of the SFD (which is directed to the jurisdiction in which the CCP is based).

17.62 Given the difficulties over transfer of client positions, one may ask to what extent there is protection under English law, as discussed in **sections 13.16ff**, given to CCPs against attack under insolvency laws.

First, one might consider the SFD and the FCD, as these are European-level measures. The SFD protects transfer orders and netting, but a 'transfer order' consists of an instruction by a participant in a system, and it may take some conjuring to imagine the collection of transfers envisaged in **Figure 17.2** as meeting that requirement. One possible manner of extending protection to clients might be to have them designated under the SFD as 'indirect participants' in a designated settlement system on grounds of systemic risk.[269] This might, however, be a tall order. The FCD protects title transfer collateral arrangements and netting and removes formality requirements in relation to security interests. Perhaps more helpfully, the FCD also permits 'appropriation' of financial collateral in a default situation, which might possibly facilitate the transfer of a client's entitlement to collateral held at the CCP as shown in **Figure 17.2**. But the FCD will be of little help here, since the block of positions and collateral credited to the account at the CCP may not qualify as 'cash', 'financial instruments', or 'credit claims', which are the only eligible forms of collateral to which a right of appropriation applies. At the United Kingdom level, modifications were made to Part 7 of the Companies Act 1989[270] in 2013 to facilitate position transfers. One outcome of the modifications, perhaps unexpected, was to cut back the afforded by Part 7 as compared with the previous law.

The availability of statutory protection can be summarised thus:

(1) *Loss of agency.* It will be recalled that s 159 of the Companies Act ensures that certain things cannot be 'regarded as to any extent invalid at law on the ground of inconsistency with the law relating to the distribution of the assets of a person' in certain forms of insolvency proceeding. In contrast with the law as it stood before 2013, the list of things thus protected is

268 Treaty on the Functioning of the European Union, OJ 2012/C326/01

269 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979, reg 9; see also **section 16.7**

270 See **section 13.23**

rather limited. One particular concern in relation to transfer is the CCPs' right to book new positions or debits to the defaulter's account under the provisions of its rules. This may depend on the CCP's continuing authority to do so, which may be impaired by an automatic loss of agency upon insolvency. In this regard, the cut-back protection is not very helpful. For one thing, it is not clear that loss of agency is part of the law relating to the 'distribution of assets' of the defaulter, unless it is permissible to construe the phrase as encompassing other aspects of insolvency law such as loss of agency. That is not so easy, since the words about 'distribution of assets' ought to be given some meaning.

(2) *Transfer of house positions*. Part 7 protects from challenge under insolvency law action taken by a recognised central counterparty to 'settle' clearing member house contracts, that is to say transactions registered in the house account of a clearing member at the CCP.[271] Unfortunately the very wide meaning of 'action to settle' which prevailed in the earlier version of Part 7, which would have encompassed transfers as well as close-outs, seems no longer to apply, because the statutory draftsman has now distinguished between action to 'transfer' and action to 'settle' and, as far as clearing member house contracts are concerned, there is no express protection for transfers. This may have the result that the meaning of 'settle' has been narrowed, even as the definition of 'transfer' has been widened. Section 189A of the Companies Act 1989 defines a 'transfer' in extremely wide terms – in relation to a client position, but not a house position, unfortunately – which include 'terminating or closing out [the contract] and establishing an equivalent position between different parties'. So the process of trading out described in **section 17.44** falls within the definition of 'transfer'; indeed it is hard to envisage any form of re-establishing a matched book which might not technically be said to fall within the section 189A definition. While this provides satisfactory protection for transfers of client positions, it leads to the unhappy conclusion that anything a CCP might do in respect of the house positions of a defaulter which is not 'settlement' is a 'transfer' and left outside the protective envelope of Part 7. Since it cannot be intended that CCPs are wholly unprotected in relation to handling house positions of defaulters, some more liberal, but untidy, interpretation of 'transfer' and 'settle' is needed.

(3) *Direct clearing of client positions*. Part 7 protects from challenge under insolvency law action taken to 'transfer' a clearing member client contract – that is to say transactions registered in the client account of a clearing member at the CCP – together with the value of any associated title transfer collateral (called a 'qualifying collateral arrangement' in Part 7).[272] In addition, any security interest collateral which needs to be transferred to cover a net deficit on the positions of the client will be a 'qualifying property transfer', which is also protected.[273] That takes care of the position as between the CCP and the defaulting clearing member. As between the defaulting clearing member and the client, some protection also applies: the transactions between them are called 'client trades' and title transfer collateral passed to the clearing member is also a 'qualifying collateral

271 Companies Act 1989, ss 158(1)(c) and 159(1)(d)
272 Companies Act 1989, ss 158(1)(c),(e) and 159(1)(d),(g)
273 Companies Act 1989, ss 158(1)(f) and 159(1)(h)

arrangement', and transfers of these are also protected.[274] But security interest collateral still left at the clearing member level is not protected since it is outside the scope of a 'qualifying property transfer'.[275] Despite the omission of security interest collateral stuck with the clearing member, the client ought to be able to achieve a clean transfer to a replacement clearing member; the security interest collateral left outside Part 7 still belongs to the client and the client can retrieve it in due course without needing the help of Part 7.

(4) *Indirect clearing of customer positions*. EMIR and MiFIR[276] have aimed to protect customers of clients, largely because they have been forced to clear positions which once could be dealt with under bilateral industry master close-out agreements. Here the fear is insolvency of the client, rather than of the clearing member. Part 7 aims to replicate the protection granted in the case of clearing member default in the circumstance of client default: the transfer of the 'client trades' originally between clearing member and (now defaulted) client, and between client and customer ('indirect client'), together with title transfer collateral, are protected, as is any security interest collateral at the clearing member level which is needed to cover the transferred positions (but only if there is a corresponding transfer at the CCP-GCM level as well, which may be a somewhat unlikely scenario; see **section 13.25**).

The following further observations about the effect of Part 7 may be appropriate:

- Part 7 provides protection against insolvency law, not other challenges which might be made. At least some of the danger in relation to transfers is not that 'insolvency law' as such has been infringed, but that the property rights of a person (who happens to be a defaulter, and may or may not be subject to insolvency laws) have been violated. Part 7 is silent on property law challenges. But this may not be a substantive weakness, given that section 159 expressly validates transfers which are inconsistent with the 'law relating to the distribution of assets' of a person subject to insolvency proceedings.
- Part 7 applies where the CCP is a 'recognised central counterparty', which is a status only available to CCPs incorporated in the United Kingdom. As to 'third country central counterparties', section 170A(2) of the Companies Act 1989 extends the application of Part 7 to transactions cleared through such CCPs, with minor modifications which do not affect the analysis set out here. So, where the default of a person subject to United Kingdom insolvency proceedings is in question, the protections should apply regardless of the home state of the CCP. The converse is almost true: where a foreign participant in a United Kingdom CCP is a defaulter, section 183 of the Companies Act 1989 provides a protective shield, as discussed in **section 13.47(5)**.
- The Bank of England's power to give directions in relation to a CCP managing a default also enables the Bank to direct an insolvency practitioner in order to facilitate the transfer of a clearing member client

274 Companies Act 1989, ss 158(1)(d),(e) and 159(1)(e),(g)
275 Companies Act 1989, s 155A(4)
276 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc

contract, a client trade, a qualifying collateral arrangement or a qualifying property transfer.[277]

- The Recognition Requirements Regulations[278] include additional provision regarding transfer rules included in the rulebook of a CCP which go beyond the minimum specified by articles 48(5) and (6) of EMIR. The obligations are described in **section 8.21**.
- Where Part 7 is not available, because both clearing member and CCP are based outside the United Kingdom, or the protections are regarded as too weak, it may be worth using a security interest to ensure the transfer of the positions. It would be advisable to see if the relevant system of property law allows for enforcement in the manner envisaged in **Figure 17.2** or if additional measures are needed to ensure trouble-free transfer. However, the Settlement Finality Regulations (SFRs)[279] may be more useful than Part 7. Regulation 14 of the SFRs uses the awkward drafting formula referring to 'distribution of assets', but if this can be construed in the broader sense, then the list of things protected is better than Part 7 since it includes 'the default arrangements of a designated system', which ought to cover almost anything a CCP wishes to do.

Client clearing – portability in practice

17.63 The arrangements to facilitate the transfer of a client's transactions to a replacement GCM will thus typically include the following components.

(1) First, a replacement GCM must be lined up to take on the positions; this cannot be done overnight, as the replacement GCM will need to be persuaded to take on the new client and indeed the portfolio of transactions. A pre-arranged standby clearing relationship will be prudent.

(2) Secondly, if an event of default occurs, the client will need to notify the CCP that it wishes to have its transactions moved to the replacement GCM before the CCP takes action to close them out.

(3) Thirdly, the client will need to extricate any surplus margin from the failed GCM, either through the client asset and client money protection mechanisms or through the arrangements provided under the auspices of the CCP.

(4) Fourth, the client may need to close out its position with the failed GCM. As it will typically be impossible, against the constraints of insolvency law, to have the failed GCM assign the book of transactions associated with the client to the replacement GCM, the client will need to close out those transactions and open up new transactions with the replacement GCM. As to close-out, the client may need contractual rights (for example under a netting agreement) to terminate its obligations to the failed GCM and to establish a net obligation.

(5) Finally, the replacement GCM will register the transferred positions and margin to the account of the client once details have been notified, and

277 Companies Act 1989, s 166(3A)
278 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges, Clearing Houses and Central Securities Depositories) Regulations 2001, SI 2001/995
279 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979

may need to make a top-up margin call to reflect price movements during the period between the last margin payment and the completion of transfer.

17.64 One final consideration is whether it is legitimate for the client to 'cherry-pick' transactions to be transferred. Cherry-picking is usually a concept which is considered with regard to a *defaulting* party – that is, the fear that a liquidator will selectively choose to perform transactions which are in-the-money for the insolvent estate, but repudiate the others. (The term 'cherry picking' usually refers to a power of insolvency officers to terminate or repudiate certain contracts – such as those burdensome to the insolvent company – while affirming beneficial contracts.) In this context, however, the problem arises from the other perspective: a client with a portfolio of transactions may prefer to transfer the transactions which are in-the-money from the client's perspective, leaving the remainder closed out. Under English insolvency law, such a strategy might not be unlawful. There is no deprivation to the estate of the value of the closed-out transactions, since the client cannot escape his obligation to pay up the close-out amount once the election to close out rather than transfer has been made. On the other hand, market standard documentation requires that if close-out is to be done, it should be for all transactions, and not some only.[280] This is presumably because of a concern that if cherry-picking is to be denied to the insolvent party, on grounds of fair reciprocity it should also be denied to the solvent party.

LIQUIDITY

17.65 Liquidity risk has been particularly identified as an issue for CCPs in managing defaults. '[A] CCP may need to maintain sufficient liquid resources to meet payments to settle required margin and other payment obligations over multiple days to account for multiday hedging and close-out activities as directed by the CCP's participant-default procedures.'[281] CCPs will therefore wish to ensure that their margin assets are in suitably liquid form, and that repo or other investment operations can be unwound rapidly if needs be.

The introduction of mandatory clearing of OTC derivatives has shone a light on one aspect of liquidity availability, namely the ability of CCPs to tap a central bank's lender-of-last-resort function. Nothing inherent in the liquidity needs of a CCP suggests that only a central bank can fulfil the role of liquidity provider: commercial banks could, in theory, provide this service. Both commercial and central banks are likely to wish to have any loans made in the exigencies of default-management supported by collateral. Thus, the liquidity question for a CCP is principally whether there is a repo lender willing to provide liquidity on demand. Pre-arranged commercial standby facilities may be satisfactory. But the risk is that market circumstances at the time of a default may make such arrangements difficult or expensive to arrange and difficult to enforce at the time of need. The most troublesome issue is the adequacy of such facilities, and that is likely to be what has prompted the 'central bank' debate in relation to OTC derivatives clearing.

280 Securities Industry and Financial Markets Association, Cross-Product Master Agreement, version 1, s 2.1; European Federation of Energy Traders, Master Netting Agreement, s 4.1

281 PFMI, para 3.7.9

The question is whether infrastructures, in particular CCPs, could have access to the central bank's 'liquidity window'. In the United States, CCPs, like banks, can apply for emergency credit from the Federal Reserve's discount window in 'unusual or exigent circumstances', if they are designated as being of systemic importance by federal regulators; the approval of the United States Treasury is needed.[282] In Europe, CCPs which are structured as banks could, in principle, apply to their local central bank for emergency liquidity assistance. The Bank of England has stated that United Kingdom-based CCPs who are not banks can also apply.[283] After some litigation[284] the relative responsibilities of the ECB and the Bank of England in relation to liquidity assistance were agreed in 2015,[285] but after Brexit it is possible that new arrangements will apply.

All that would tend to suggest that obtaining liquidity is simple, but that is not going to be so. In the first place, central banks and commentators fear that central bank liquidity is a source of moral hazard, so that liquidity is available only on reluctantly or on unattractive terms. Only high-quality assets are likely to be accepted by the lender of last resort. 'There can be no commitment from the central bank to provide liquidity, and that's a basic principle of central banks in general, not only for CCPs but for banks as well.'[286] Liquidity is liquidity; it is not a bail-out. A failed CCP with no hope of rescue will not find a central bank willing to act even as secured lender or a discounter to buy its assets. Dr Manmohan Singh notes that, in 1987, central bank liquidity assistance for the CME was channelled through clearing members which were banks, rather than being provided directly.[287] The lesson may be that, despite the explicit recognition of eligibility for support, CCPs with regulator-approved recovery plans could still struggle, even in a crisis, to show that they are especially deserving of central bank liquidity support.

It has been argued that CCPs 'must' have access to central bank funds in order to clear certain products.[288] The argument runs that jump-to-default risk on credit default swaps exposes CCPs to acute liquidity pressures, since participants' liquidity could dry up precisely at the time these derivative products generate a need for large volumes of payments, thus bringing about a nasty cocktail of defaults, high cash-flow needs, disrupted markets and reluctant lenders. A lender of last resort is accordingly highly desirable.

It should also be borne in mind that no lender of last resort will guarantee to prop up a failed institution. If the CCP in liquidity difficulties has no assets to pledge as collateral, it may be insolvent as well as illiquid, and needs a more radical resolution.

282 Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, s 804

283 Bank of England, *The Bank of England's Sterling Monetary Framework* (June 2015), para 37

284 See **section 9.10**

285 European Central Bank, *European Central Bank and Bank of England announce measures to enhance financial stability in relation to centrally cleared markets in the EU* (March 2015), Press Release, www.ecb.europa.eu/press/pr/date/2015/html/pr150329.en.html

286 Coeuré, B, *Ensuring an adequate loss-absorbing capacity of central counterparties* (April 2015), speech, www.bis.org/review/r150414a.htm

287 Singh, M, *Limiting taxpayer 'puts' – An example from central counterparties* (November 2014), IMF Working Paper WP/14/203

288 Kress, J, 'Credit default swaps, clearinghouses, and systemic risk: Why centralized counterparties must have access to central bank liquidity' (May 2011) *Harvard Journal on Legislation*, Vol 48, No 1, pp 47–93

LEGAL OBLIGATIONS IN DEFAULT MANAGEMENT

17.66 The provisions of Part 7 of the Companies Act 1989 go rather further than the protection of CCPs from insolvency law challenges. They also supplement the provisions of the Recognition Requirements Regulations (RRRs)[289] by regulating the behaviour of CCPs as regards their management of defaults.

17.67 In summary, Part 7 imposes the following obligations and privileges on a CCP managing a default.

(1) The Bank of England may give directions to a recognised clearing house about the conduct of default proceedings.[290] In particular, the Bank can direct the CCP to take default action or to desist from action, and may do so to facilitate the use of special resolution powers under the Banking Act 2009.[291] Directions to desist lapse may not be given afresh if the defaulter is subject to insolvency proceedings.[292] A direction may include sub-directions about the exercise of specific powers under the default rules. Conversely, an insolvency office-holder can apply to the regulator where a 'relevant insolvency event' has occurred in relation to a CCP participant, but the CCP has not taken default action, the consequence of which is that the insolvency law protections of Part 7 will cease to have effect unless, within three business days, the CCP initiates default action or informs the regulator that it proposes to do so forthwith.[293]

(2) A United Kingdom CCP is required to certify to the Bank of England the net sum payable under the default rules to or from the defaulter in respect of each creditor or debtor on completion of the default proceedings. [294] This rule fits with the duty of a recognised CCP under the RRRs to have in its default rules a provision to enable a net sum to be computed after the liquidation of an account and the return of collateral.[295] (Historically, the RRRs demanded of CCPs that the default rules provide for all rights and liabilities of the defaulter under unsettled market contracts to be discharged, and the sums payable by or to the defaulter to be set off so as to produce a net sum to be certified.[296] With EMIR now governing default management by CCPs, the detailed requirements for default rules have gone, but the certification obligation remains; the certification is in practical effect a point in time indicating the completion of the default management process by the CCP.) Any creditor or debtor of the defaulter can inspect the reports made to the Bank, insofar as the report relates to the sum certified to be due to or from him or its calculation.[297] The net sum is treated as a provable debt and can thus be set off against other sums due to or from the defaulter which have nothing to do with the default

289 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges, Clearing Houses and Central Securities Depositories) Regulations 2001, SI 2001/995
290 Companies Act 1989, s 166
291 Section 166(3); see **section 13.2**
292 Companies Act 1989, s 166(6)
293 Companies Act 1989, s 167
294 Companies Act 1989, s 162(1)
295 RRRs, Schedule, para 35
296 RRRs, Schedule, para 25(1)(a) and (b)
297 Companies Act 1989, s 162(5), (6)

proceedings.[298] The insolvency office-holder must reserve against the outcome of the default proceedings.[299]

(3) The CCP and its officers receive certain exemptions from liabilities,[300] and failure by a CCP to comply with its own rules do not prevent the matter being treated as done in accordance with the rules for the purposes of Part 7, subject to the failure not substantially affecting the rights of any person entitled to require compliance with the rules.[301]

Practical implications of the Part 7 regime

17.68 Shortly before ceding its supervisory role in respect of CCPs, the Financial Services Authority issued a brief guide on the interplay between the Part 7 regime and the duties of insolvency officers.[302] This document was prepared after consultation with various accounting firms whose partners have taken the role of insolvency practitioner in various clearing member defaults, and discusses the following, among other points:

(1) The obligation of the insolvent clearing member (and thus its insolvency officers) to give information and assistance to a CCP handling a default. The broad conclusion is that the insolvency officer cannot resist information requests despite a demanding timescale imposed by the CCP and despite the newly appointed officer struggling to get to grips with the affairs of the defaulter.

(2) The cancellation of settlement instructions.[303] Where the CCP wishes to cancel a settlement, and this cannot be done unilaterally, the insolvency officer will issue matching cancellation instructions to the relevant CSD.

(3) The problem of the insolvency officer's personal liability. It is suggested that information might be forthcoming with greater alacrity if the insolvency practitioners are released from personal liability. The problem is surely wider than the supply of information; but the intention is clear, that individuals cannot be expected to shoulder the financial risks of assisting with snap decisions in troubled markets.

17.69 One further issue, which acknowledges the potentially vital role played by a clearing member's custodian or cash bank, was alluded to by the Examiner of Lehman Brothers Inc. as follows:

> 'The CME did not give "liquidation only" instructions to LBI because it was in default with respect to any CME margin requirements, but rather for general financial insecurity reasons related to LBHI's bankruptcy filing … The CME also was concerned that JPMorgan might cease acting as LBI's settlement bank with the CME Clearing Division. Although it was technically possible to conduct transactions with the CME without a settlement bank,

298 Companies Act 1989, s 163(2)
299 Companies Act 1989, s 161(2)
300 Companies Act 1989, s 184(3), (5)
301 Companies Act 1989, s 184(2)
302 Financial Services Authority, *Cooperation Guidance between Recognised Bodies and Insolvency Practitioners to Assist Management of Member Defaults by Recognised Bodies (Recognised Clearing House Version)* (May 2011), www.fsa.gov.uk/pubs/other/cooperation_guidance.pdf
303 Cf **section 18.20**

> no CME clearing member had ever done so. [Tim Doar, Managing Director of Risk Management in the CME Clearing House Division] stated that it would have presented an unprecedented situation and additional risk to the CME and noted that on Wednesday, September 17, [Bank of America] ceased acting as LBI's settlement bank with respect to the other dominant domestic derivatives clearing organization, the Options Clearing Corporation.'[304]

In this respect, it might be noted that neither Part 7 nor the SFRs empower a CCP to disallow an agent bank from exercising a termination right under its settlement agreement.

304 Valukas *Lehman Brothers Holdings Inc. Chapter 11 Proceedings Examiner Report*, pp 1848–1849

18 Risk management at CSDs

CSDS' ROLE AS SETTLEMENT SYSTEMS

18.1 CSDs have two principal functions, as discussed in **section 2.17**: the operation of a settlement system for transfer of securities, and the provision of a central register of ultimate title to the securities in issue.

The risks faced by CSDs, as settlement systems causing the transfer of title to securities by means of book entries, are similar to those faced by payment systems. In particular, aspects of finality, credit, liquidity and operational risk are common to all central settlement system operators. There is no need to repeat here what is said in **Chapter 16**, which considers each of those topics in detail. This chapter focuses on those matters which stem from the special operations of a CSD as an exchange-of-value system, and as ultimate custodian for an issue of securities.

However, unlike a payment system, a CSD's role as keeper of the ultimate record of title places it, among securities intermediaries, adjacent to the issuer of the securities. Many of the functions assumed by CSDs in addition to their basic roles of settlement system operator and ultimate title registrar will be attributable to this proximity: those functions are commonly referred to as 'issuer services' or 'asset servicing', and involve the processing of actions engaged in by an issuer with its investors.[1] The risk issues which arise will frequently overlap with those arising in relation to corporate actions processing and those experienced by agent banks, which are discussed in **Chapters 20** and **19** respectively.

The other differentiating aspect of a CSD is its central role as guardian of the integrity of the issues of securities. In this respect, the problem faced by a CSD is essentially a problem of custody risk. A CSD is obliged to safeguard the integrity of the issue, by virtue of article 37 of the CSDR.[2] A CSD may, however, seek to pass on the burden of losses of securities to its participants. Euroclear, which operates a group of CSDs, has as part of the 'ESES Terms and Conditions' a set of rules which enable any of Euroclear's 'ESES' network of CSDs to determine that there has been a 'Securities Loss' and then to take actions which include reduction of the holdings of the clients with securities of the affected issue.[3]

1 Cf European Central Securities Depositories Association, *CSD Issuer Services* (October 2013)
2 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc
3 Euroclear, *ESES Terms and Conditions* (July 2015), art 10

DELIVERY VERSUS PAYMENT

18.2 The central issue for risk management by a CSD is how to ensure that it can achieve simultaneous exchange of cash for securities, or delivery versus payment (DvP). Indeed, in 2000, the International Securities Services Association's recommendations for management of risk in securities settlement systems specified reduction of settlement risk through 'the implementation of real delivery versus payment' as its priority.[4] Failure to achieve DvP leaves the payer with settlement (or Herstatt) risk:[5] the risk of having paid its money to a buyer who has suffered the opening of an insolvency procedure before delivering the securities, or a seller having delivered securities to a buyer who becomes insolvent before paying. Either of these situations may leave the first mover in the unwelcome position of an unsecured creditor for the whole gross value of the transaction.[6] DvP eliminates the risk by ensuring that there is no first mover.

Unfortunately, the subject of DvP is cluttered with political jumble. Two political sub-topics may thus require analysis: the 'three models of DvP' and the question of 'central versus commercial bank money'.

Models of DvP

18.3 In 1992 the Committee on Payment and Settlement Systems (CPSS) issued a report describing three models of DvP:

> 'The Study Group has thoroughly reviewed most of the securities transfer systems in use or under development in the G-10 countries. On the basis of this review, the Study Group has identified three broad structural approaches to achieving DVP (or more generally, to creating a strong linkage between delivery and payment in a securities settlement system):
>
> Model 1: systems that settle transfer instructions for both securities and funds on a trade-by-trade (gross) basis, with final (unconditional) transfer of securities from the seller to the buyer (delivery) occurring at the same time as final transfer of funds from the buyer to the seller (payment);
>
> Model 2: systems that settle securities transfer instructions on a gross basis with final transfer of securities from the seller to the buyer (delivery) occurring throughout the processing cycle, but settle funds transfer instructions on a net basis, with final transfer of funds from the buyer to the seller (payment) occurring at the end of the processing cycle;
>
> Model 3: systems that settle transfer instructions for both securities and funds on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle.'[7]

In truth, only the first of these is DvP. Model 2 implies that there continues to be risk on the payment leg until the processing of the funds transfers is final. Model 3 implies that both legs are at risk until, separately, they achieve finality.

4 International Securities Services Association, *ISSA Recommendations 2000* (June 2000)
5 See **Case Study 2.4**
6 For further examples of potential gross risk, see **section 19.15**
7 Bank for International Settlements Committee on Payment and Settlement Systems, *Delivery versus Payment in Securities Settlement Systems* (September 1992), www.bis.org/publ/cpss06.pdf, para 1.9

The purpose of the report in 1992 was to 'enhance central bank understanding of issues relating to securities settlement systems', rather than to criticise existing methodologies, with the result that terminology was adapted to enable a greater number of systems to claim to be delivering DvP than a purist approach would have allowed. A 2004 study by the European Central Bank showed that a wide range of approaches to DvP was practised in Europe.[8] Nowadays, only Model 1 should be recognised to deliver DvP. Although in 2012 the European Central Bank (ECB) reported that six EU securities settlement systems still used Model 3, all had migrated to Target2-Securities (T2S)[9] by September 2017.[10]

The CPSS report pointed out that Model 1 systems provided their enhanced protection against Herstatt risk at some cost. Real-time gross settlement requires higher levels of liquidity in both cash and securities than net settlement: Model 1 systems are therefore vulnerable to higher fail rates, and credit extensions may be needed for their participants, and the credit risk thus taken was assessed to be potentially of the same magnitude as the principal risk – that is, the Herstatt risk intended to be avoided by a choice of Model 1.[11] These concerns are not to be dismissed lightly.

However, whether Model 1 DvP can be achieved is likely to be a question of technical feasibility. In the first place, Model 1 requires the processing of securities transfers and payments to be done using RTGS methodology. Secondly, the two transfers must be inter-conditional so that each is a *sine qua non* relative to the other. Thirdly, if the securities settlement system is operated independently of the payment system, the link between the systems needs to be utterly robust so that there is no danger of mismatch in terms of timing or conditionality. The closer the payment and securities settlements are, from an organisational perspective, the easier it will be to fulfil these objectives.

DvP under the SFD

18.4 The European Post Trade Forum (EPTF) noted in its report[12] that the Settlement Finality Directive (SFD)[13] regime is deficient in that it fails to guarantee DvP. Originally conceived as a guarantor of settlement finality in unidirectional payment systems, a late modification of the directive during the legislative process brought securities settlement systems within its scope but failed to recognise that the majority of securities settlements also involve a cash leg. The result is that the SFD provides settlement finality separately for the securities and cash legs, but no reciprocal conditionality of settlement. Achieving dual finality is left to the systems involved to organise.

8 European Central Bank, *The Use of Central Bank Money for Settling Securities Transactions* (May 2004), www.ecb.eu/pub/pdf/other/useofcbmoneyforssten.pdf

9 See **section 2.23**

10 European Central Bank, *Settlement Fails – Report on Securities Settlement Systems (SSS) Measures to Ensure Timely Settlement* (April 2011), p 9; *Central Securities Depositories (CSDs) connected to T2S* , www.ecb.europa.eu/paym/target/t2s/profuse/shared/pdf/List_of_CSDs_connected_to_T2S.pdf

11 CPSS report on DvP, para 1.10

12 European Post Trade Forum, EPTF Report (May 2017), https://ec.europa.eu/info/sites/info/files/170515-eptf-report_en.pdf, EPTF Barrier 10

13 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

Central v commercial bank money

18.5 A closely connected issue relates to the 'cash asset' in which the payment leg is settled. Proximity between payment and securities transfer systems can readily be achieved if both systems are operated by the central bank, as has typically been the case where the securities settlement system is exclusively devoted to the settlement of government bonds. Such a structure has led to an orthodox view that the cash leg ought, for preference, to be settled in 'central bank money', which is to say by transfer across the books of the central bank.[14] However, it is equally possible to settle the cash leg across the books of a commercial bank in order to achieve the same result – that is the approach at Euroclear Bank and Clearstream Banking Luxembourg, the two ICSDs which operate Eurobond settlement systems.

The Principles for Financial Market Infrastructures (PFMI) indicate that the advantage of central bank money for settlement is the avoidance of credit and liquidity risks.[15] However, the PFMI acknowledge that there are limits to this advantage: not all CSD participants may be eligible to hold accounts at the central bank, forcing them to use, and thus to take credit risk on, an agent bank (with all that implies for DvP, as discussed in **section 15.52**); and, as regards liquidity, central banks should not be regarded as a limitless supply of liquidity, since central banks tend to regulate, and require collateral for, the release of liquidity. Nevertheless, linkage of CSDs to central banks is the norm for equities settlement in Europe: eurozone (T2S) CSDs and the United Kingdom all use this structure, as well as those of many other countries.

Commercial bank money, on the other hand, is not an unmitigated panacea.[16] Where the CSD is not itself a bank across whose books the cash transfers take place, the CSD will typically have a settlement bank, or a group of settlement banks to provide this service. Selecting a single commercial bank concentrates risk and is dubious practice on competition policy grounds. On the other hand, an oligarchy spreads the risk at the cost of DvP and immediate finality. The effect of having several banks involved can be illustrated with an example. CSD participant B is buying securities. B banks with settlement bank X, whereas his counterparty seller S banks with settlement bank Y. At the moment of settlement, the CSD records the transfer of title from S to B, and immediately takes steps to record that X owes funds to Y. In CREST, where US dollar cash settlement arrangements take this form,[17] Banks X and Y reckon up with each other on a net basis at the end of the settlement day. Evidently this is 'Model 2 DvP', or to put it more bluntly, the settlement banks are taking risk on each other owing to the absence of true DvP. Moreover, since the cash leg settlement in Model 2 is a DNS system,[18] it is vulnerable to unwind if one of the settlement banks fails, potentially affecting the finality of all settlements effected on that day.

A CSD which wishes to open its doors to immediate Model 1 DvP to its whole constituency, without the constraints of central bank eligibility criteria, may wish to provide the cash accounts itself, which implies that the CSD would

14 CSDR, art 40(1); CPSS and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Markets Infrastructures* (April 2012), Principle 9

15 CPSS and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Markets Infrastructures* (April 2012), para 3.9.3

16 See also **section 5.16**

17 Euroclear UK & Ireland, *CREST Reference Manual* (June 2016), Chapter 6

18 See **section 2.33**

need authorisation to provide banking-type ancillary services.[19] Apart from the ICSDs, this model has not typically been followed in Europe.

18.6 The EPTF also noted in its report[20] a difficulty when CSDs settle cash legs in a currency other than that of their home state. Foreign-currency settlement was reportedly rare (the only examples given by the EPTF, in May 2017, were the Danish CSD VP, which was able to settle in SEK, and the UK CSD Euroclear UK & Ireland, which was able to settle in USD and EUR) as a result of various obstacles, high among which is the eligibility of CSDs (which may not be banks) to open central bank accounts outside their home country. In consequence, CSDs wishing to settle transactions in non-domestic securities may be obliged to rely on commercial banks for the cash leg, notwithstanding the apparent preference in the CSDR for central bank money settlement.

However, the use of commercial banks for cash settlement creates another difficulty. The CSDR classifies the provision of cash accounts as banking-type ancillary services; if the CSD does not provide the cash account itself, but relies on a third party, that third party must be a 'designated credit institution',[21] which is limited in scope to provide banking-type ancillary services and no others, and subject to more stringent prudential regulation than a normal bank.[22] The EPTF noted that 'as of the end of 2016, no credit institution had expressed an intention to apply for DCI status … there is no business case for them to create a separate legal entity, especially given the very limited purpose such an entity would have and the unusual risk profile this would create'.

Those CSDs which are themselves constituted as banks may not find the limitation of scope problematic. In conclusion, it may be said that the playing-field is uneven, and the constraints imposed on non-bank CSDs may thwart the objective of the CSDR to improve cross-border competition in securities settlement.

PROCESSING OF SETTLEMENTS

18.7 It is apparent that efficient processing and true DvP are forces pulling in opposite directions. CSDs need to adopt processing algorithms which enable immediate finality for both securities and cash transfers without, if at all possible, exposing their participants to intolerable liquidity pressure. The problems are similar to those faced by payment systems, with the added complication that the participants' liquidity pressures arise in relation to their cash requirements as well as their securities delivery obligations.

Processing of securities transfers on an RTGS model[23] may be unachievable in practice if the agent banks responsible for settlement of the cash leg are unable to proceed owing to shortage of cash liquidity. Similarly, a participant who is a seller of securities may be unable to proceed to settlement until another transaction in respect of which the same participant is buyer has settled, which may in turn depend on timeliness of a receipt from a third participant or the cash liquidity constraints of the first participant. Efficient processing algorithms will

19 See **section 7.51**
20 EPTF Report, EPTF Barrier WL2
21 CSDR, art 54(2),
22 CSDR, art 54(4)(d), (e)
23 See **sections 2.36** and **16.16**

be able to look intelligently at the queue of transactions and identify cases where allowing one transaction to settle first will free up many more transactions for settlement. Likewise, as with payment systems processing, techniques such as circles processing, partial settlement, and multilateral netting will all speed up efficiency.[24]

CSDs must comply with the settlement discipline rules set out in CSDR RTS 1229.[25] CSDs must have hold-and-release mechanisms, recycle unsettled transfer orders, and have partial settlement solutions.[26]

Cyclical and net settlement

18.8 Multilateral netting borrows from CCPs and ACHs the idea of taking all transactions in the queue and working out the overall single net delivery or receipt for each participant for each security. However, multilateral netting implies a cyclical system for settlement, and requires that multilateral netting is able to withstand attack, in the event of insolvency of one of the participants, under the rule in *British Eagle* or its non-English equivalent.[27]

If cyclical processing is used, the cycles at the CSD and the linked payment system must be tied together, so that the use of cycles does not introduce Herstatt risk.[28] Cyclical settlement systems would also appear to be examples of Model 3 DvP. However, this may not be a disaster, depending on how the cycle operates. One example of a cyclical system which poses little or no Herstatt risk is where the queuing algorithm selects a group of transactions which neatly match, so that no net delivery or receipt is needed, and 'nets them out' so that only net cash payments are due, and the moment of finality is when the cash payments are settled in the payment system. This example is referred to as circles processing. Typically, a circles process and the coupled payments will settle in a fraction of a second. A more interesting variant is where the algorithm simply operates a multilateral netting cycle very rapidly, so that only net securities and cash transfers are made, but with completion occurring in a fraction of a second. Where this degree of rapidity is achievable, there is little danger to the participants in terms of Herstatt risk, because the algorithm can check that the net payers or deliverers will, at the moment the cycle is completed, be able to fulfil their obligations: unlike the classic Herstatt problem, the participants are not asked to part with their asset in the hope that their counterparty, or another user of the system, will at some later stage in the day be able to perform. Modern processing algorithms freely adopt miniature processing cycles along these lines, and because finality is assured in real time, they are characterised as 'RTGS' rather than 'DNS' systems[29] (despite settlement being achieved through multilateral netting rather than gross, trade-by-trade).

24 See **section 16.16**
25 Commission Delegated Regulation (EU) 2018/1229 of 25 May 2018 supplementing [CSDR] with regard to regulatory technical standards on settlement discipline
26 CSDR RTS 1229, arts 8-10, 23
27 See **Case Study 2.1** and **section 13.14**
28 See **Case Study 2.4**
29 See section 2.36

As to *British Eagle* risk, the Settlement Finality Directive (SFD)[30] ought to ensure that, from the moment determined under the rules of the system, multilateral netting is effective and proof against insolvency attack.[31] Depriving the insolvency officer of his weapons, however, is not a guarantee that things will go smoothly from an operational perspective. If a multilateral netting system requires that a net payer or net deliverer must make a payment or delivery, and the payer or deliverer fails to perform, there will not be enough cash or securities to go round, and no legal stipulation can plug the hole. So the system must either (a) have failsafe components to eject from the batch of settlement instructions any transactions which would be compromised owing to the absence of securities ready for delivery from any net transferor, or insufficiency of funds on the part of any net payer, or (b) have standby liquidity arrangements so that the gap is filled by other participants. For these reasons, CSDs – or, more accurately, their participants – are exposed to liquidity and credit risks.

Partial settlement

18.9 Partial settlement is a further processing technique which may be used by CSDs to improve settlement rates. Where a participant is due to transfer 100 securities but has only 80 available, it may be possible for the participant to settle his obligations in part and receive the equivalent proportion of the purchase price. Whether this is legally permitted will depend on the terms of the contract between the buyer and seller of the securities; under the general English law, partial non-delivery would not discharge the seller's delivery obligation, unless trading platform rules have provided for different results. Market commentators dislike partial settlements as 'operationally inefficient'.[32]

Continuous net settlement

18.10 Another technique which may be useful is, in effect, to disregard the consequences of delivery failures. One unhappy consequence of a DNS processing arrangement is that the whole of a cycle's settlements for a particular security may be put in jeopardy if a single participant with a net delivery obligation fails to deliver the totality of the securities required. The problem can be solved if the system has an algorithm which shares out the securities which are actually received in a given cycle, so that they are delivered to some net receivers, even if some of the receivers only receive a partial settlement. That leaves the failing deliverer and the short-changed receivers to be dealt with. The solution is to put these obligations and entitlements into the next cycle. This may result in two things with ongoing effects:

- If the failed delivery continues overnight, the 'next cycle' may be on the next day, potentially leaving the failing deliverer with a penalty to pay, and the short-changed receivers with an entitlement to compensation.

30 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

31 SFD, art 3

32 International Securities Services Association, *ISSA Recommendations 2000* (June 2000), www.issanet.org/pdf/rec2000.pdf, p 23

- If the CSD itself 'guarantees' timely settlement, the CSD may have to intermediate in the compensation process, and if the reason for the fail is that the deliverer has become insolvent, the CSD will have to shoulder the counterparty risk itself. The giving of a guarantee self-evidently entails the assumption of credit risk, and therefore can be done only by a CSD which is authorised to provide 'banking-type ancillary services' under the CSDR. A CSD-guarantor may wish to take an indemnity and security interest over participants' securities in order to manage the credit risk inherent in the guarantee.

LIQUIDITY RISK MANAGEMENT

18.11 Guidance on liquidity risk issues is set forth at Principle 7 of the PFMI, based on which the following comments might be made:[33]

(1) Modern, fast, frequent batch processing reduces liquidity demands. It is suggested that CSDs might introduce incentives to submit transactions early into the system.[34] The issue which the latter recommendation seeks to address is a temptation to which participants may be exposed, namely to hoard their own liquidity (in cash or securities) by submitting settlement instructions only when they are rich in the asset which they are due to transfer. Participants can also be assisted in the task of liquidity risk management through the provision of information about their positions.

(2) Failure by a participant to deliver securities (and failure to pay, which may in fact be default) may have to be covered by a combination of fallback liquidity provision by one or more other participants. Such services will have to be paid for, and for that reason it may be appropriate for the CSD to hold collateral posted by each participant. CSDs, being account providers for their participants, are well-placed to take collateral by asserting a security interest over the securities recorded to the credit of their participants' accounts, and may also be able to treat the transactions themselves as self-collateralising. The techniques of fails coverage through securities loans and self-collateralisation to manage cash liquidity are discussed in **sections 18.12** and **18.18**.

(3) Sources of liquidity risk include the banks and service providers on whom the CSD may be dependent for cash deposits, liquidity loans, and securities lending. CSDs may wish to have counterparty limits or other risk limiting strategies to reduce dependency and concentration risk.

(4) Rules and procedures are desirable to deal with the possibility that the liquidity risk management arrangements fail to address the problem completely. Default management procedures should be explicit and should aim to avoid the risk of unwinding settlements. Default rules are considered in **section 18.19** in connection with credit risk management.

33 Cf **section 7.11(4)**
34 PFMI, para 3.7.7

Securities lending

18.12 A highly important technique for addressing liquidity issues is to enable participants who are short of deliverable securities to borrow them from others who are long. Securities loans might be privately arranged – participants ought, generally, to be at liberty to seek loans in the private marketplace – or they might be more swiftly and efficiently brokered by the CSD itself. Issues related to securities lending are explored in **Chapter 21**.

A CSD is uniquely in a position to organise a loan between the long and short participant, as it can see where the shortfalls will arise and where no liquidity pressure will be introduced for the long participant in making the loan. Agency securities lending mediated by a CSD does not constitute 'banking-type' ancillary services.[35] The CSD may invite participants to join its lending programme on standardised terms, which provide for fees, collateralisation and automation, assuring a relatively low degree of risk for lender as well as benefit for the borrower. However, the arrangements are not risk-free. A securities loan involves a transfer of ownership of the lent securities, and thus the assumption by the lender of credit risk on the borrower. Collateral provided should be valued according to the totality of the credit risk, which includes not just the value of the securities lent, plus change in market price over the likely buy-in period, but buy-in costs, the loss of any corporate action such as a dividend during the loan, the lending fee, and the costs (including market risk of fall in the value of the collateral) of liquidation of the collateral. Collateral would usually be selected and valued by the CSD as part of its service, and a lender will thus assume risk on the CSD's agency lending processes. A further area of risk arises in relation to the legal uncertainties connected with taking collateral over securities held in accounts.[36]

The PFMI specify that a CSD which re-invests its participants' assets should adopt a risk management strategy for investing participants' assets which is consistent with its own overall risk-management strategy, and fully disclose its approach to its participants.[37]

The position of a CSD at the centre of a market, where it has sight of all possible candidates for fails-coverage assistance and many potential lenders of securities, gives rise to a competition policy concern. CSDs compete in this field with agency lenders, who are typically agent banks offering a range of securities services to their clients including fails-coverage and securities lending services. CSDs might aim to profit from their whole-market view, by arranging stock loans the agent banks would wish to intermediate themselves, if only they had the same market knowledge. Abusive exploitation of the whole-market view may in some circumstances be actionable under article 102 of the European Union Treaty unless duly justified.[38]

Although agency securities lending is not a banking-type ancillary service, the CSDR does not address the points just alluded to, and fails to include any regulatory restriction (other than a general duty to manage conflicts of interest[39])

35 CSDR, Annex, Section B, para 1(a)
36 See **sections 6.9ff**
37 PFMI, para 3.16.4
38 Cf **sections 11.18ff**
39 Article 26(3)

to combat the risk that a CSD acting as securities lending agent with a view of the whole market could exploit a dominant position unfairly.

Alternative measures for streamlining settlement

18.13 In theory, a CSD might be willing to allow its participants some leeway in relation to shortfalls incurred in the course of a settlement cycle. An overdrawn securities account would, if allowed, enable a participant to settle a transaction notwithstanding that it has insufficient deliverable securities, and to cover the overdraft with collateral in the form of the credit balances in respect of other types of security. Provided that the overdrawn participant does not transfer its collateral securities, this might be considered legitimate risk management by the CSD. However, the CSD also has a role as guardian of the integrity of the issue – in other words, the CSD may not allow the number of securities credited to its accounts to exceed the number issued by the issuer.[40] Allowing an overdraft violates that principle, since the transferee of the securities represented by the overdraft has obtained securities out of thin air, and the total number credited to the accounts provided by the CSD would exceed the number in issue. Thus, 'securities overdrafts, debit balances or securities creation shall not be allowed'.[41]

Actual practice may be more nuanced. CSDs may allow for 'provisional' settlement where a cyclical net settlement process is adopted. Provisional settlement implies that the CSD has allowed transactions to proceed to 'settle' in the cycle even though one or more participants had not made available the net deliverable amount of securities required ahead of time. The settlement remains provisional until the last security is delivered by the net transferor: in other words, until the state of finality is attained, securities perceived to have been credited to transferees may not actually exist.

Cash leg liquidity risk – self-collateralisation

18.14 If a securities overdraft is not permitted, there is less likely to be a constraint on cash overdrafts, at least as far as settlement in commercial bank money is concerned. Even central banks may be willing to lend money to certain participants short of ready money, provided that adequate collateral is provided. Collateral is, again, something which the CSD can very simply deliver on the borrowing participant's behalf, and thus a CSD may be in a position to broker an automatic repo facility for its participants, whereby collateral is delivered automatically on standardised terms to the central bank (or other cash lender). Collateral management services are also not 'banking-type' ancillary services under Section B of the Annex of the CSDR. The risks will be similar to those described in relation to securities loans.

Securities settlements against cash provide an inherent source of collateral – a loan of the purchase price of securities can be seen to be covered by the securities received. Such a loan might be considered to be 'self-collateralising' if the arrangements for treating the securities received as collateral are effective.

40 CSDR, art 37
41 CSDR, art 37(3); cf PFMI, Principle 11, Key consideration 2

However, the value of the securities received may be insufficient to cover the gross value of the loan, and once the other factors are taken into account (market risk, cost of enforcement, and interest) it may often be thought that the cover is insufficient. Risks faced in connection with purchase-money security interests are discussed further in **section 6.11(3)**.

From the foregoing discussion it will be apparent that management of liquidity risk can transform it into credit risk. Accordingly, credit risk is the next topic for analysis.

CREDIT OPERATIONS OF CSDS

18.15 Credit operations by a CSD raise the stakes in the risk game of securities settlement. Participants in a CSD, and investors in securities, do not expect the operation of a CSD to be a risk-taking activity. Commercial considerations may intrude, however, and in a marketplace where CSDs cannot compete on the efficiency of the settlement engine after the introduction of T2S, CSDs may have to offer credit in order to differentiate their settlement services. If the CSD is not within the T2S family:

> '[A Securities Settlement System] may settle securities on a gross basis and funds on a net basis (DvP model 2) or settle both securities and funds on a net basis (DvP model 3). Further, an SSS that uses a DvP model 2 or 3 settlement mechanism may explicitly guarantee settlement, whether the guarantee is by the FMI itself or by its participants. In such systems, this guarantee represents an extension of intraday credit from the guarantor.'[42]

CSDs following the lead of agent banks in the range of services which they offer will potentially be subject to a similar set of risks. There is no need to repeat here the assessment of credit-related risks commonly confronted by agent banks.[43] What follows is a discussion of issues most likely to be encountered by CSDs; some of the points identified may indeed be applicable to agent banks.

CSDs as lenders of cash and securities

18.16 It was noted in **section 18.3** that true DvP may impose challenging liquidity pressures on CSD participants. CSDs are expected to attain high standards of efficiency in the interests of their users.[44] A CSD operator may thus arrange, or even itself extend, credit for participants to assist them with liquidity management.[45] If it provides the credit directly, the CSD will need to adopt the usual credit risk management devices available to lenders: restricting the class of participants eligible for credit to those of the highest standing; imposing limits and ejecting trades from the queue if the limit would be exceeded; taking collateral and other credit support; and having a loss-sharing system which protects the CSD in the event that other controls should fail.

42 PFMI, para 3.4.9
43 See **Chapter 19**
44 PFMI Principle 21
45 Cf Russo, D, et al, *Prudential and Oversight Requirements for Securities Settlement* (December 2007), ECB Occasional Paper No 76, www.ecb.eu/pub/pdf/scpops/ecbocp76.pdf, pp 25–28 and Annex 1

Arranging for credit to be provided between participants would not expose the CSD itself to its participants and would thus present less of a public policy question than a CSD offering the credit directly.

18.17 Liquidity pressures are not confined to the cash leg of transactions, and CSDs will equally wish to smooth the way for their participants on the securities side. If the CSD acts as lending agent for securities loans between participants, the CSD ought to be able to step aside if either participant fails, allowing the principals to bear the residual risk. Where the loans are collateralised, that risk might be small. But often the CSD itself will be responsible for selection of the collateral supporting the loan, and notwithstanding the disclaimers of liability commonly found in CSDs' rulebooks there may be some residual liability for the CSD if the collateral arrangements are deficient in some way. For example, if the collateral were subject to wrong-way risk (the value of the collateral falls when the collateral-provider fails) this could be attributed to a failure by the CSD to manage the collateral effectively.

Furthermore, CSDs may have assets of their own: they are obliged to invest their capital prudently, and the possibility arises that CSDs will have own-account holdings of government bonds or other financial instruments in respect of which the CSD is both CSD and investor.[46] As investor, the CSD may wish to engage in lending as principal. Quite apart from the obvious implications for the CSD from a credit perspective of participating in a lending market as principal, such activity would require the careful management of conflicts of interest. The CSDR requires such conflicts to be managed.[47]

Collateral arrangements

18.18 A CSD which extends credit to its participants is expected to cover the exposure with collateral.[48] That practice implies that the CSD should adopt all prudent means to manage and control the risks associated with collateral: the PFMI mention limiting the types of asset treated as acceptable collateral, valuation and haircutting, avoidance of concentration, legal risk in taking collateral across borders, and operational issues related to timing of liquidation of collateral, and management.[49]

CSDs have, of course, a primary source of collateral assets in their immediate control, namely the assets in respect of which it acts as CSD. The CSD may need to have regard to the possibility that the beneficial interest in the securities provided as collateral may be vested in a person other than the participant to whom credit is being granted. The CSDR obliges CSDs to offer client accounts – both omnibus and individually segregated – to participants,[50] which will simplify the case where the participant pledges its own stock for credit; but cases of collateralised credit for transactions on a client account remain difficult.

46 Cf PFMI, para 3.16.4

47 Article 26(3); Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing [CSDR] with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories, art 50

48 PFMI, Principle 4, key consideration 3

49 PFMI, Principle 5, key considerations

50 CSDR, art 38

DEFAULT RULES AND DEFAULT MANAGEMENT

18.19 One, possibly striking, feature of the limited literature on regulation and risk management of CSDs is the rarity of discussion of default by a participant in a CSD. By contrast, this subject occupies much of the discussion relating to operation of payment systems and is the major focus of debate around management of CCPs. In the United Kingdom the Recognition Requirements Regulations (RRRs),[51] which set forth the basic regulatory regime for recognised CSDs, do not impose any requirement regarding default rules. This is not just a consequence of rearranging the RRRs to conform to the CSDR: when CSDs were treated as species of recognised clearing house, they did not need to have default rules.[52]

However, CSDs in the United Kingdom do have the benefit of various protections against insolvency risk.

- In relation to CSDs, the protections conferred by Part 7 of the Companies Act 1989[53] apply to 'market contracts' entered into by the CSD with a participant or with another type of infrastructure.[54] Action taken by a recognised CSD with respect to market contracts, the default rules of a recognised CSD, and the rules of a recognised CSD as to settlement of the market contracts, will prevail over the law of insolvency.[55]
- A charge in favour of a recognised CSD can be treated as a 'market charge' and thereby benefit from additional insolvency-proofing[56] if it is a charge provided as margin in respect of market contracts entered into by the CSD or secures a sum payable to the CSD from a participant.[57]

All of these apparently helpful provisions are open to objection on grounds of irrelevance and, in some cases, substance. In the first place, recognised CSDs do not enter into 'market contracts' with their participants in the way that CCPs do. They may have contracts with their participants which arise out of banking-type ancillary services, but it is questionable whether such arrangements should in principle benefit from Part 7 protections, and arguable that in law they do not (on the grounds that the ancillary services are not covered by the 'recognition' status of the CSD but a separate banking licence[58]). In the course of its core activities as a recognised CSD a CSD would not usually take margin or incur credit risk, making the provisions on market charges difficult to understand. The idea that securities are able to be 'set off' like debts is wholly anomalous in English law. The only provision which makes some degree of sense is the protection of default rules and the action taken by the CSD under them; but it should be noted that transactions entered into between the CSD's participants or their clients would not constitute 'market contracts' as defined by the Companies Act 1989.

18.20 More usefully, a CSD will benefit from its status as a designated system under the SFD.[59] Under paragraph 6 of the Schedule to the Settlement

51 Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges, Clearing Houses and Central Securities Depositories) Regulations 2001, SI 2001/995
52 RRRs, reg 8
53 See **sections 13.16ff**
54 Companies Act 1989, s 155(3ZA)
55 Companies Act 1989, ss 158(1)(b), 159(1)(b),(c)
56 See **section 13.21**
57 Financial Markets and Insolvency Regulations 1991, SI 1991/880, reg 11A
58 Cf **section 8.16**
59 CSDR, art 39(1)

Finality Regulations,[60] a system to be designated in the United Kingdom must have default arrangements which are appropriate for that system in all the circumstances. Thus, a United Kingdom CSD will be unable to avoid having default rules. The content or objective of such rules is, however, not spelled out.

The default rules of CREST are limited in scope and content. The principal power which Euroclear UK & Ireland (EUI, the operator of CREST) asserts in a default situation is disablement of the defaulting participant.[61] Notes (which are not part of the Rules) explain the process, and are worth quoting extensively, since they show how different the approach to default management is from that in a CCP:

> 'EUI can be expected to take the following actions under its default arrangements in the event that it is notified that insolvency proceedings have commenced against a CREST member (a "defaulting participant") …
>
> 1. *Initial disablement*. Unless a defaulting participant's participation is already suspended, EUI will in normal circumstances immediately suspend its participation on receiving notification that insolvency proceedings have commenced against the defaulting participant. This will result in all settlement involving the defaulting participant immediately being suspended.
> 2. *Conditions for re-enablement*. EUI will not re-enable the defaulting participant's participation, unless EUI is satisfied that:
>   (a) systemic or other types of risk that arise by reason of the participation of the defaulting participant in [CREST] would be limited or otherwise mitigated by re-enabling its participation;
>   (b) … re-enablement … will not cause EUI to be in breach of any direction or requirement of any regulatory authority or body to whose jurisdiction it is subject;
>   (c) … re-enablement … will be consistent with the effect and operation of the default rules … of any relevant exchange or clearing house;
>   (d) … re-enablement … can be effected without material interference with or disruption to the efficient operation of [CREST]; and
>   (e) the defaulting participant (or its insolvency office-holder) has complied with all requirements and conditions that may be imposed by EUI … .'

The Notes were added as guidance following the default of Lehman Brothers to clarify the likely behaviour of EUI in a default of a participant. However, the guidance does not explain why EUI chooses to exercise its discretion in this manner; disablement seems to prevent discharge of market contracts through settlement – which may be thought surprising – and the need to persuade EUI to engage in the cautious process of re-enablement in order to carry out a settlement may be regarded as an unnecessary impediment, especially where a participant is in administration and dispositions of its property are permitted by insolvency law.

CREST takes the process one step further as regards unsettled trades which are in its system. In these cases the practice is to impose a requirement on both

60 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999 No 2979
61 CREST Rules (September 2015), r 13, s 6.2

the defaulter and all market counterparties to 'match delete' pending settlement instructions of all types.[62]

18.21 In operating a policy of cancelling pending instructions and freezing accounts in a case of participant default, CREST is not an outlier. The same pattern is observed in CSDs across the Euroclear and Clearstream groups. This may be surprising, in light of policy guidance from the Financial Stability Board which – at least as far as resolution is concerned – states that infrastructures should ensure continuity of access to critical functions. Now, of course, resolution and default can be different things, but when it is recognised that the objective of the policy guidance is to ensure that market users such as clients and investors should not be deprived of access to their assets when their intermediary is in difficulty, the distinction is less obvious.

Perhaps, then, one might seek to understand why the CSDs consider it appropriate to freeze accounts, cancel instructions and even terminate membership in cases of participant default. The CSDs themselves do not generally explain the policy underlying their rules, but insolvency-related dangers might arise from fears of stays or void disposition laws, or from the muddle which has historically accompanied defaults whereby doubt is cast on whether assets are client assets or proprietary. Whether such concerns remain valid in light of post-crisis regulatory and legal reforms is questionable, and if they are the driver of the freeze-and-cancel default policy of CSDs it may also be asked if they should survive in the context of broader regulatory policy aiming for continuity of service even when defaults occur.[63]

OPERATIONAL RISKS

18.22 A CSD's approach to management of operational risks will probably not differ greatly from that of other infrastructures or indeed from that of agent banks. The CSDR singles out IT security, reliability, and capacity, as well as business continuity and disaster recovery (including a standard that recovery should take place fast enough to enable settlement to complete on the scheduled date).[64] A useful guide to business continuity planning has been issued in the United States by the Depository Trust & Clearing Corporation, setting out in detail arrangements for back-up facilities, redundant functionality, communications and human resource issues, keeping people informed, and testing.[65]

Outsourcing, and T2S

18.23 A CSD will typically be dependent on external providers for a range of services, in particular software. Again, managing outsourcings is an experience which will not be widely different from that of other infrastructures. A list of

62 See also Euroclear UK & Ireland, *MF Global UK Limited in special administration – matched deletion and settlement discipline* (December 2011), Operational Bulletin No 1819

63 On the issues in this paragraph, see further Turing, D, CSDs and participant default, in Binder, J-H, and Saguato, P, eds, *Financial Market Infrastructure: Law and Regulation* (expected December 2020), OUP, SSRN ID 3685093

64 Article 42

65 Depository Trust & Clearing Corporation, *Safe, Secure, Setting New Standards – An Updated Report to the Industry on Business Continuity Planning* (October 2011); see also **section 16.21**

relevant considerations can be briefly set out, based on the principal sets of regulation, viz. the Joint Forum's guidance (1),[66] the MiFID Implementing Regulation[67] (2), and the guidelines issued by the Committee of European Banking Supervisors (3).[68]

- Regulated firms should notify their regulator of a material outsourcing. (2, 3)
- Outsourcing may not result in a delegation of responsibility by senior management for the core competence or regulated activity which the regulated firm undertakes. (1, 2, 3)
- The supplier should have the ability and capacity to perform the outsourced functions and may in some instances have to be regulated itself. (1, 2, 3)
- The contract with the supplier should address key issues of which examples are service quality, monitoring, sub-contracting, and termination. (1, 2, 3)
- The supplier should be monitored so that corrective measures can be taken. (1, 3)
- The supplier should protect confidential information. (1, 2, 3)
- The regulated firm should be able to terminate the outsourcing without detriment to service, and able to transfer the service back to itself or a third party. (1, 2, 3)

In common with EMIR, the CSDR sets out detailed legislative rules in the primary EU legislation, which cover this familiar ground, with variations in emphasis.[69] Where a CSD is configured as a bank, the national rules on outsourcing which apply to banks will also apply to the CSD. However, these are not harmonised in the case of a bank which is not providing investment services and to which MiFID is irrelevant.

18.24 However, the most crucial form of outsourcing by CSDs arises because of the development of Target2-Securities (T2S). This project requires participating CSDs to outsource to the ECB the service of providing the settlement engine, which is the functional software which the CSD needs to carry out its main business activity.

The terms and conditions on which the outsourcing takes place should be seen as participation in a public arrangement rather than analogous to an arrangement with a supplier of software. The ECB has also published a Memorandum of Understanding which summarises (at a very high level of non-specificity) what the contracts cover.[70] However, the issues which arise for CSDs in outsourcing to T2S (notwithstanding the distinctions that the ECB notes) will typically be more complex and troublesome than the Memorandum of Understanding might suggest. In particular, one might note that the following provisions are normally heavily negotiated in an outsourcing agreement:

66 The Joint Forum, *Outsourcing in financial services* (February 2005), www.bis.org/publ/joint12.pdf

67 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc; Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing [MiFID] as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive, arts 30, 31

68 CEBS, *Guidelines on Outsourcing* (December 2006)

69 CSDR, art 30

70 ECB, *Target2-Securities Memorandum of Understanding* (July 2009), www.ecb.eu/paym/t2s/pdf/T2S_MoU.pdf?1bf03f283a6afd10535d18b1a9e140c1

(1) *Service levels.* It would be ordinary practice for an outsourcing firm to require its supplier to adhere to agreed service levels, and for some form of credits to be provided to the firm in cases where those levels are not met. The Eurosystem, as a public organisation, is likely to be reluctant to make such commercial concessions.

(2) *Liability for breach, and indemnity for losses.* Heavy negotiation will often take place, even in a private context, about the degree to which the supplier should be liable for losses sustained by the outsourcer. Where the outsourcer is wholly dependent on the supplier for the centrepiece of the service provided by the outsourcer, which is the case with T2S, the expectation is that the supplier will assume a significant level of liability. Indemnities may be requested to cover cases where negligence or other default by the supplier cannot be proved, but the outsourcer suffers loss nonetheless. Conversely, the supplier may demand an indemnity from the outsourcer in cases where the provision of the service exposes the supplier to liabilities which are not attributable to the supplier's fault. Both the Eurosystem and the CSDs will be unused to conceding the assumption of liability for losses sustained by any other person. The liabilities for mis-performance could be large, as they involve potentially the loss by an investor of its assets.

(3) *Compliance with international standards.* Of the eight key matters identified above from international regulatory standards relating to outsourcing, T2S looks problematic in at least four cases: delegation of governance and control, monitoring of service performance with a view to corrective action, termination rights, and exit strategies.

(4) *Pricing*. The rationale for the T2S project is reduction of cost of settlement. But the T2S project is costly, and the Eurosystem has asserted that the project should be self-reimbursing.[71] CSDs cannot be compelled to adopt a particular pricing structure, and the adoption of a new, outsourced, system for settlement and keeping of registers cannot be assumed to involve a saving of cost, even if it does involve an increase in efficiency. Participating CSDs will nevertheless have no choice but to accept the pricing imposed by the Eurosystem.

18.25 After several years of experience with T2S, one commentator points out:

'Expectations have been high. Not all have been met:

- The cost of settlement has not reduced. Indeed, it has increased. Even if this is explained by transaction volumes (lower than predicted at the launch of the project in 2010) and by the project's high amortisation costs, it is disappointing
- Cross-border settlements (from one CSD to another) are easier and cheaper. However, they still account today for less than 1% of T2S transactions and hence are comparatively insignificant
- We do not yet have a single European capital market – issuers have continued issuing in the markets that they and their investors know best

71 ECB, Governing Council Decision (November 2010), www.ecb.eu/press/pr/date/2010/html/pr101119.en.html

- Competition between CSDs remains limited. Its impact on pricing is unclear as some CSDS have increased their asset servicing fees. Nor has competition led to consolidation of CSDs.'[72]

18.26 The CSDR does not ignore T2S. The solution is to jettison the international standards altogether:

> 'Paragraphs 1 to 4 [ie the basic set of conditions for outsourcing] shall not apply where a CSD outsources some of its services or activities to a public entity and where that outsourcing is governed by a dedicated legal, regulatory and operational framework which has been jointly agreed and formalised by the public entity and the relevant CSD and agreed by the competent authorities on the basis of the requirements established in this Regulation.'[73]

Cybersecurity risk

18.27 In 2016, the CPMI issued a paper entitled 'Guidance on cyber resilience for financial market infrastructures'.[74] It is clearly right for the CPMI to acknowledge the importance of the issue, but more meaty analysis, case-studies and practical pointers are to be found in a paper by the European Systemic Risk Board (ESRB) on the same topic, which is informed by greater experience with the topic.[75] Although not directed at infrastructures (unlike the CPMI paper), the ESRB spells out cyber vulnerabilities based on its study of actual incidents. Thought-provoking scenarios such as loss of account balance data are analysed: the lessons are likely to be valuable for any organisation providing accounts, including a CSD. Each example is assessed in four stages: context, shock (the attack), amplification (where impacts spill over, e.g. 'operational to operational', 'operational to confidence', 'operational to financial'), and systemic. Individual vulnerabilities, with ranking according to prevalence, are presented.

Operators of essential services must report security incidents under the framework of the Network and Information Security Directive,[76] which is clearly a vital element in staying on top of cyber security risk. Although banks, CCPs and even trading venues are regarded as operators of essential services for these purposes, CSDs not constituted as banks are outside its scope. The omission of CSDs might be thought curious in view of their role at the heart of the economy, as guardians of title to financial assets.

Corporate actions and asset servicing

18.28 Another area of operational risk which perhaps deserves better attention is asset servicing. The processing of corporate actions is considered in more

72 Cameron, A., *Why are we still talking about T2S?* (August 2019), BNP Paribas Securities Services Insights, https://securities.bnpparibas.com/insights/still-talking-about-t2s.html

73 Article 30(5)

74 CPMI, Guidance on cyber resilience for financial market infrastructures (June 2016), www.bis.org/cpmi/publ/d146.pdf

75 European Systemic Risk Board, Systemic cyber risk (February 2020), www.esrb.europa.eu/pub/pdf/reports/esrb.report200219_systemiccyberrisk~101a09685e.en.pdf

76 Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union

detail in **Chapter 20**. Here, however, it may be noted that the feature which will distinguish the services offered by competing CSDs is their approach to asset servicing.[77] Asset servicing is believed to be a potent source of operational risk, largely because of the wide range of possible corporate actions,[78] the fact that the issuers are free to invent their own types of corporate action and services they need, and the constant struggle of intermediaries to evolve their systems and controls to keep pace with what issuers and markets are doing. Automation of corporate actions processing is, therefore, more of a challenge than for other securities processes.

In comments on a draft version of the PFMI, Thomas Murray pointed out that it was a 'significant oversight' that the PFMI contain no recommendations on asset servicing. Thomas Murray give independent 'risk ratings' to CSDs in order to assess risk exposures arising in relation to settlement, safekeeping and asset servicing. For asset servicing risk, Thomas Murray consider that risk factors include 'corporate action and proxy arrangements, centralised information source, obligations on issuers to provide information to the CSDs and CSDs' liability for the accuracy, completeness and timeliness of corporate action information and the processing of corporate action instructions'.[79] Neither the PFMI nor the CSDR seeks to address any of these matters in any detail.

BREXIT AND IRISH SECURITIES

18.29 One example of cross-border use of a CSD in Europe which persisted quietly for many years was the settlement of Irish securities in CREST, hence the name 'Euroclear UK & Ireland' once CREST had been acquired by the Euroclear group. The decision of the United Kingdom to leave the European Union changed that relationship. With all the uncertainties over Brexit, the danger was that CREST would cease to be an eligible CSD for Irish securities. Although the United Kingdom was temporarily deemed to be 'equivalent' for the purposes of the CSDR,[80] if CREST were to cease to be recognised upon the completion of Brexit, Irish securities traded on a venue (a feature of trading which would, in light of the trading obligation in MiFIR,[81] be difficult to avoid) must be transferred into an authorised or recognised CSD on or before the intended settlement date,[82]

77 Cf **section 2.23**

78 Cf Loader, D, *Clearing, Settlement and Custody* (Butterworth-Heinemann, 2002), ISBN 0 7506 5484 8, pp 141–154

79 Thomas Murray, consultation response letter (July 2011), www.bis.org/publ/cpss94/cacomments/thomasmurray.pdf, pp 1, 15

80 Commission Implementing Decision (EU) 2018/2030 of 19 December 2018 determining, for a limited period of time, that the regulatory framework applicable to central securities depositories of the United Kingdom of Great Britain and Northern Ireland is equivalent in accordance with [CSDR]

81 Regulation (EU) 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc, art 23

82 CSDR, art 3(2)

Euroclear Bank was chosen by Euronext Dublin to replace CREST as issuer CSD for Irish securities with effect from the completion of Brexit. No Irish CSD was to be established.[83] The implications of this were:

- Issuers were enabled to migrate the CSD function to Euroclear Bank by the Irish Migration of Participating Securities Act 2019, subject to a sunset provision taking effect on 30 March 2021 or a later date appointed by the Minister for Finance.[84]
- Securities not migrated to Euroclear Bank could continue to be held in CREST through its 'investor CSD service', but with settlement in GBP or USD, not euro.[85]
- Euroclear Bank is an issuer CSD as well as an ICSD and investor CSD. The use of Euroclear Bank continues the cross-border nature of Irish securities settlement.
- Settlement in Euroclear Bank could make use of the T2S platform.
- The nature of a holding via Euroclear Bank differs in various respects from a holding via CREST.

The last point may deserve some elaboration. Under Irish law, the transfer of title to securities in was permitted by the Irish Companies Act 1990 (Uncertificated Securities) Regulations 1996[86] to be done by an operator and with the issuer being, in essence, obliged to update its register of members to accord with 'operator-instructions emanating from CREST. After the transfer of Irish securities into Euroclear Bank, the legal owner of the securities would be Euroclear Nominees Limited, and investors would hold interests arising under Belgian law. Substantive differences appear to arise in relation to schemes of arrangement, long holding-chain operational challenges in administering corporate actions, and enforceability of foreign (non-Belgian) court orders prohibiting transfer.

83 Euroclear Bank, *Delivering continuity of Irish securities settlement in the long term post-Brexit* (May 2019), White paper, www.euroclear.com/content/dam/euroclear/About/regulatory-landscape/EuroclearBankWhitePaper-DeliveringcontinuityofIrishsecuritiessettlementinthelongtermpostBrexit.pdf

84 Section 16

85 Euroclear, *Irish corporate securities migration update* (August 2019), www.euroclear.com/about/en/regulatorylandscape/Brexit/Irish-corporate-securities-migration-update.html

86 Irish SI No 68 of 1996

19 Risk management at the agent bank

19.1 For a private provider of clearing and settlement services – that is to say, a service provider who is a participant in, rather than an operator of, clearing and settlement infrastructure – the central problem of risk management is that the service provider (in this chapter called the 'agent bank' for simplicity) faces in two directions. As a participant, the agent bank will be under obligations to the clearing or settlement infrastructure, which will expose the agent bank to liabilities. And as a service provider, the agent bank will in consequence take credit, liquidity and operational risk on its client.

In this chapter the duties and obligations imposed on the agent bank by the infrastructure are first examined, followed by the implications the agent bank's relationship with the infrastructure has for its relationship with its client. Finally, the position of an agent bank is considered for where the agent is at one remove from direct participation in an infrastructure.

RISK ISSUES RELATED TO THE INFRASTRUCTURE

19.2 An agent bank assumes numerous obligations to an infrastructure operator when it accepts the responsibilities that accompany the status of participant in the infrastructure system. Those obligations can manifest themselves as risks, which have been studied by various industry representatives.[1] Clearing members may have a choice as to where to clear, for example where the transaction to be cleared was entered into over the counter; and a choice of settlement venue for transactions in equities may also be possible. The existence of choice makes the assessment of risk worthwhile.

The following risk issues may deserve comment.

Liquidity risk

19.3 Infrastructures will impose strict timetables upon their participants as regards payment and delivery. All clearing and settlement systems require adherence to such rules, for the efficiency of operation of the system depends on

1 Cf Payments Risk Committee, Recommendations for Supporting Clearing Member due Diligence of Central Counterparties (February 2013)

it. Under the Principles for Financial Market Infrastructures (PFMI),[2] systems are expected to comply with basic standards of efficiency and effectiveness;[3] 'to mitigate and manage liquidity risks from the late-day submission of payments or other transactions, an FMI could adopt rules or financial incentives for timely submission'.[4] Thus, payment and securities settlement systems will typically have cut-off times by which transaction data must be submitted if the transfer is to take place on a particular day; payment systems will typically have pay-in schedules, failure to comply with which will lead to queued transfers being bunked out of the queue, and CSDs may operate similar timetables with regard to deliverable securities; and CCPs will have strict pay-in timetables for margin calls.

Participation in the system means that the agent bank assumes a duty to comply with these operational requirements and must manage the liquidity risk that that entails. The PFMI set forth numerous precepts which, while ostensibly addressed to infrastructure operators, actually constitute guidance to participants on the issues to be considered:

- Participants may be explicit liquidity providers to an infrastructure, for example as settlement service provider to a CCP, or in the event of settlement failure by, or insolvency of, another participant.[5] Infrastructures are expected to carry out due diligence on the liquidity provider's ability to understand and manage these risks.[6]
- Participants may be exposed to liquidity risk on each other in a DNS settlement environment,[7] owing to the threat of unwinding of settlements in the event of another participant's failure.[8] DNS systems are expected to provide information and tools to assist participants in managing these risks.[9]
- Participants may be subject to allocation of uncovered liquidity shortfalls.[10]

In addition to these considerations, participants will wish to have regard to the general guidance on management of liquidity risk, which will be as relevant here as in other areas of financial sector endeavour.[11]

2 Bank for International Settlements Committee on Payment and Settlement Systems and Technical Committee of the International Organization of Securities Commissions, *Principles for Financial Market Infrastructures* (April 2012), www.bis.org/publ/cpss101a.pdf

3 Principle 21

4 PFMI, para 3.7.7

5 PFMI, para 3.7.1

6 PFMI, para 3.7.5

7 See **section 2.33**

8 PFMI, para 3.7.3

9 PFMI, para 3.7.4

10 PFMI, paras 3.7.18–19

11 See, for example, Turing, D, and Cramb, E, *Managing Risk in Financial Firms* (Tottel, March 2008), ISBN 978 1 84766 303 0, ch 8; Institute of International Finance, *Principles of Liquidity Risk Management* (March 2007); Committee of European Banking Supervisors, *Second Part of CEBS's Technical Advice to the European Commission on Liquidity Risk Management* (September 2008), www.eba.europa.eu/getdoc/bcadd664-d06b-42bb-b6d5-67c8ff48d11d/20081809CEBS_2008_147_%28Advice-on-liquidity_2nd-par.aspx; Bank for International Settlements Basel Committee on Banking Supervision *Principles for Sound Liquidity Risk Management and Supervision* (September 2008), www.bis.org/publ/bcbs144.pdf

Credit and lock-in risk

19.4 Participants are typically exposed to infrastructures in a direct sense (participants may have sums on deposit, either intra-day or on a longer-term basis, with payment system operators and CCPs) and contingently (participants may be obliged to contribute funds, such as margin and default funding). GCMs are exposed as principal to CCPs; only in some cases do CCPs' rules allow GCMs to close out their positions with the CCP on the CCP's own default and manage the risk as they would with a defaulting client.[12] The risks which GCMs face as participants in CCPs has led to the creation of a voluntary disclosure framework for CCPs, which they may use to explain to GCMs how their rules and practices operate in areas ranging from governance, to loss-sharing.[13] Where a CCP's rulebook does not contemplate its own default, the GCM will need to consider how such a default would in practice be managed; the GCM could be locked-in to non-performing contracts.

Other sources of credit risk may arise because of the manner of operations of the system. For example, a DNS system involves a time interval between processing and finality: a recipient of funds in a DNS system takes credit risk on the other participants until the moment of finality is reached.[14] Again, a delivery obligation may be converted to a payment obligation under buy-in rules if it is not complied with.

19.5 The conditions of participation may indirectly involve the assumption of credit risk. For example, a system operator may be able to pass on costs which it incurs through indemnity provisions, including through loss-sharing rules; it may be empowered to claim damages for rule breaches or to levy fines; and it may be able to 'assess' the participant for top-up contributions to replenish default backing following a market crisis. In relation to these matters, the participant will wish to understand its ability to exit the system so as to avoid or limit the future application of liability. Participants may be locked-in under the system rules so that they cannot resign, or if they can resign, they cannot exempt themselves from liability by doing so. Careful scrutiny of the system operator's ability to impose liability on ex-participants will be desirable.

19.6 A further example of lock-in risk arises where a CCP may impose default management duties on its participants, so that participants are obliged to bid at auction for portfolios of the defaulter's book of cleared transactions. As well as committing the participant to bid for (and thus potentially acquire, at the price which is best for the CCP, and thus worst among the bidding participants) a book of unwanted transactions, it is possible that in the market conditions prevailing after a default the ability to on-sell or hedge is impaired. For example, credit default swaps may be subject to wrong-way risk (the risk that the exposure on the instrument increases with deterioration of the credit quality – so that the risk assumed is greater after the default than before it, even if the reference credit is not the credit of the defaulter), so that the locked-in risk is greater than the participant may have assumed before the default.[15]

12 Cf **section 12.12(4)**

13 Federal Reserve Bank of New York Payments Risk Committee, *Recommendations for Supporting Clearing Member Due Diligence of Central Counterparties* (February 2013)

14 Kokkola, T, *The Payment System* (European Central Bank, September 2010), ISBN 978-92-899-0632-6, p 116

15 Cf **section 17.17**

A GCM will wish to consider whether it is feasible or appropriate to demand that its clients contribute to mutualised default-related (or other) losses, for which it is responsible to a CCP. The Committee on Payments and Market Infrastructures notes that 'it is typical practice for direct participants to pass on losses on indirect participants' cleared positions and in such cases direct participants tend to prefer allocating losses through gains-based methods. Conversely, because direct participants typically do not pass cash calls on to indirect participants, indirect participants tend to prefer allocating losses through such calls.[16]

Custody, settlement and finality risk

19.7 Participants depend on the integrity of the registration system operated by the CSD in carrying out its root-of-title function in the same way as a custody client depends on its custodian. The risk includes not only that static holdings of securities become erased through operational error or (if the CSD does not create records which are legally the definitive indicator of title) shortfall, but also that upon a transfer there is a mis-recording.

Another facet of custody risk is the danger that securities become trapped in the system. A system operator may have a lien or security interest in relation to any liabilities of the participant, so that securities or funds to which the participant may be entitled cannot be immediately withdrawn owing to the existence of actual or even contingent liability to the system operator. CCPs which accept securities collateral under a security interest ought in theory to return those securities if the secured obligations are discharged or alternative acceptable collateral is tendered. However, if the CCP is itself in financial difficulties, the ability to extract unencumbered assets is not assured to any greater extent than any securities placed with an insolvent custodian: the experience of the Lehman Brothers clients seeking to recover their proprietary assets was that this was extremely slow and uncertain.[17]

It might also be observed that some infrastructures may levy a charge for depositing assets needlessly with them. For example, excess collateral left with LCH Ltd is subject to such a charge.[18]

19.8 Settlement risk is, classically, distinct from custody risk. Settlement (or Herstatt) risk arises when a participant pays or delivers what it is obliged to, but does not receive the countervalue in return.[19] The system is expected to be designed so as to eradicate this risk.[20] But even where the system does not purport to be an 'exchange of value' system, there is finality risk if the receiving participant is led to believe that the funds or asset have been transferred, but there is still the possibility of unwind. Hence a settlement system is expected to provide final settlement, at latest by the end of the value date.[21]

16 Bank for International Settlements Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, *Recovery of financial market infrastructures* (October 2014), para 4.2.7
17 See **sections 6.4(11)** and **6.4(10)**
18 LCH Ltd, *Procedures* (April 2016), section 4, para 1.1.2
19 See **Case Study 2.3**
20 PFMI Principle 12
21 PFMI Principle 8

A further settlement-related issue is that a guarantee of settlement finality does not equate to a guarantee that settlement will happen. The distinction between these two concepts is vital but frequently overlooked. Settlement finality is simply an assurance that a settlement which has taken place will not be reversed. There is, however, no obligation on the settlement system to carry out a settlement, other than obligations which the system has assumed voluntarily under its rules. Some systems do not assume any absolute duty to process transactions queued for settlement and may unilaterally decide to freeze unprocessed settlement instructions.[22] Unsettled transactions represent market risk for participants, who may be limited in their ability to pass on the costs and risk to their clients.

19.9 Finally, mention may be made of the liquidity-risk management device used in the CLS system, known as the In/Out Swap. It may be observed that the pay-in and pay-out timetables of CLS put the participating banks under liquidity pressure. Ahead of settlement, and by looking at the net positions of its participants for the forthcoming settlement day, CLS Bank is able to observe that Bank A is due to pay in a large quantity of currency Φ and that Bank B is due to pay in a large quantity of currency Ψ; but CLS Bank can see also that Bank A is due to receive a large quantity of currency Ψ and Bank B to receive a large quantity of currency Φ. The pay-in requirements of both banks would be significantly reduced if A and B had entered into a foreign exchange transaction between them under which A paid Ψ to B in return for B paying Φ to A. Such a transaction would help their liquidity positions but not their overall economic one, so the In/Out Swap involves both the proposed FX transaction, which is booked into the CLS system, and the creation of its mirror image (whereby B pays Ψ to A in return for A paying Φ to B), which cancels out the effect of the 'In' transaction, which is settled outside CLS.[23]

In/Out Swaps are an example of how a prudent device for managing one risk can open up another category of risk. The 'Out' transaction is settled outside CLS, and for that reason it cannot be settled on a Payment versus Payment basis and involves exactly the type of foreign exchange settlement risk which CLS was designed to limit. This may not, of course, be a bad thing: in the first place there will be the saving in liquidity risk; and secondly, when the multilateral netting effect of CLS[24] is taken into account, the overall reduction in settlement risk across the portfolio of Bank A or Bank B's FX settlements is likely to be substantial.

Concentration risk

19.10 Participants frequently constitute an inner circle of multi-service banks, to whom the operator of market infrastructure is likely to turn for its own financial services needs. Infrastructures may need deposit-takers, cash managers, repo and other credit facilities, brokers and buyers of securities, custody and depositary services, registration and record-keeping, hedging and so forth. Participants will often find themselves carrying out functions where the infrastructure is the client of the participant. The infrastructure may be under

22 See **sections 13.32(4)** and **18.20**

23 Mägerle, J, and Maurer, D, *The Continuous Linked Settlement foreign exchange settlement system (CLS)* (November 2009), Swiss National Bank Report, www.snb.ch/en/mmr/reference/continuous_linked_settlement/source/continuous_linked_settlement.en.pdf

24 See **section 2.42**

duties to ensure that services provided to it comply with the PFMI guidelines relating to custody[25] and outsourcing of critical services.[26]

Furthermore, participants may also be owners of the infrastructure operator or capital providers. Ownership may not invariably imply limited liability. These roles may increase the degree of exposure which a participant has to the infrastructure, including potentially express or implied obligations to recapitalise the infrastructure following a serious loss. Such risks may be compounded when participants are encouraged to nominate employees to carry out governance roles, including directorships, within the infrastructure organisation.[27] Careful monitoring and management of conflicts of interest will be essential where the relationship between a participant and an infrastructure is multi-faceted.

RISK ARISING FROM STRAIGHT-THROUGH PROCESSING AND INDIRECT PARTICIPATION

19.11 Many of the risk issues described above derive from the expectation that modern financial market infrastructures will be fast and, to that end, will support straight-through processing (STP). 'An FMI should be efficient.'[28] Speed and STP give infrastructures little ability to intervene and recalibrate in response to disruptive events, so the result is to transfer the associated risk to participants. Participants, however, may have even less control over the obligations they assume. The most important risk issue for participants is arguably that STP removes the ability of the participant to pull the plug – that is, to terminate the provision of services to a client before the exposure which those services involves becomes unacceptable.

All activities of an agent bank involve, to a greater or lesser degree, the provision of access to a clearing or settlement system to a client who is not a direct participant in that system. The client relies on the agent bank to satisfy the system's conditions of access, which will in all cases involve minimum criteria for financial and operational robustness. But the client may wish to have a speedier service than that which is implied by submission of clearing or settlement instructions to an agent bank and waiting on the agent bank to pass on those instructions to the infrastructure – STP will be more immediate and provide the client with a post-trade experience which is more akin to direct participation in the infrastructure than the basic two-step model. And, where infrastructures are all linked in a value chain involving the trading platform, the CCP, and the payment and securities settlement systems, it may be that the booking of a matched trade at the moment of trading automatically generates both clearing and settlement instructions which go immediately, and irrevocably, to the clearing and settlement infrastructures concerned. The agent bank may be unable to intervene in this process, and until the client's ability to commit the agent bank is disabled, the agent bank's commitment may continue.

25 PFMI Principle 16
26 PFMI, Annex F
27 Cf **section 9.22**
28 PFMI Principle 21

Tiering issues for the agent bank

19.12 PFMI Principle 19 exhorts market infrastructures to consider the risks which 'tiered participation arrangements' may engender.[29] It seems that tiering comprises any arrangement for service provision by a participant to a client. The following issues which can arise from indirect participation:

(1) In ordinary usage an 'indirect participant' is a special type of client who can submit instructions or data directly to the infrastructure, and thus receive a service similar to any other participant. In this type of indirect participation, narrower than that envisaged by the PFMI which expect indirect participants not to be bound by the system's rules,[30] the infrastructure requires the indirect participant's obligations (in particular in terms of credit and liquidity) to be satisfied by a direct participant as a condition of the indirect participant's access. Whether or not the indirect participant is bound by the rules, failure by the indirect participant to comply may expose the direct participant to liabilities.

(2) Infrastructures may impose criteria relating to how direct participants manage their client relationships, particularly where the volume of business transacted through the infrastructure by the client is significant. Infrastructures' rulebooks should allow the infrastructure to

> 'gather basic information about indirect participants in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements. This information should enable the FMI, at a minimum, to identify (a) the proportion of activity that direct participants conduct on behalf of indirect participants, (b) direct participants that act on behalf of a material number of indirect participants, (c) indirect participants with significant volumes or values of transactions in the system, and (d) indirect participants whose transaction volumes or values are large relative to those of the direct participants through which they access the FMI'.[31]

A direct participant may not have the whole-market view of its client's activities. Insofar as the direct participant is not the exclusive supplier of services, the overall amount of risk being assumed by the client relative to its resources may be difficult to determine.

(3) An indirect participant may default; related issues will include whether the direct participant has to any extent internalised the flow of instructions,[32] whether the indirect participant's business is large in scale relative to the resources of the direct participant, whether the relationship of principal and agent in relation to the transactions will survive the insolvency of the indirect participant,[33] and the availability of the mechanisms of the infrastructure to provide effective and risk-minimising default management in the case of a person who is not a direct participant.[34] The

29 Cf **sections 7.11(9)** and **16(14)**
30 PFMI, footnote 148
31 PFMI, para 3.19.5
32 See **sections 2.10** and **2.22**
33 See **section 13.13(3)**
34 Cf **sections 17.54ff** in relation to 'client clearing'

Bank of England observes that direct participants may be at risk because they offer credit or liquidity lines to their indirect participant clients.[35]

(4) Indirect participants may themselves be agent banks. One difference for risk purposes from other clients is that the degree of straight-through processing may be greater, thus implying that the direct participant may wish to insist on vigilance and control on the part of its client. A further consideration is that once access to a payment system which is designated for the purposes of the Settlement Finality Directive (SFD)[36] has been offered by an agent bank to a payment service provider, it becomes necessary under article 35(2) of the Payment Services Directive (PSD)[37] for the same opportunity to be given to other payment service providers. (In the United Kingdom, the rule[38] is the same notwithstanding the departure from the European Union, though the 'designated systems' in question will be UK-designated systems rather than systems designated by any EU competent authority.) The issues arising for agent banks finding themselves in the position of indirect participants are considered in **sections 19.37ff**.

(5) The SFD allows for 'institutions' (banks, investment firms, and certain public authorities) and 'settlement agents' who have contractual relationships with system participants enabling them to pass transfer orders through the system – that is, who are indirect participants – to be considered by a Member State as full 'participants' on systemic risk grounds.[39] Where this status is granted, other participants in the system will be given the insolvency protections of the SFD if the indirect participant were to fail. Except where this is the case, participants have no protection against the risk of legal challenges, attributable to the insolvency of their clients, including other indirect participants.[40] The UK position under the Settlement Finality Regulations[41] is essentially the same.

Straight-through processing

19.13 The crucial question with any STP-related arrangement is how to limit the ability of a client to commit its agent bank to assume the client's risk. To answer the question it is first essential to understand the moment at which the commitment arises: in a case where the agent bank is clearing or settling the client's trades, it may well be the moment of trading, where there is an organised trading platform. Where trades are executed over the counter (that is, away from an organised platform), the payment and settlement instructions may have to be specially generated, which limits the degree of STP-related risk. Where STP-related risk is unavoidable, agent banks may wish to have regard to market guidance on limiting risk in cases where access to markets is granted by

35 Finan, K, Lasaosa, A and Sunderland, J, 'Tiering in CHAPS' (December 2013), *Bank of England Quarterly Bulletin 2013* Q4, pp 371–378

36 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems

37 Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, etc

38 Payment Services Regulations 2017, SI 2017/752, reg 104

39 SFD, arts 2(f) and (g)

40 See **section 13.32**

41 Financial Markets and Insolvency (Settlement Finality) Regulations 1999, SI 1999/2979, reg 9

intermediaries who assume risk in respect of their client' positions: the recipes for limiting the risk include position limits, real-time monitoring, fat-finger quantity limits, kill buttons and so forth. [42]

MiFIR introduced a requirement for exchange-traded derivatives transactions to be submitted for clearing in a timely and automated fashion.[43] This is fleshed out in MiFIR RTS 582 unless the transaction is to be immediately and automatically cleared, the clearing member must test each client order against a position limit, and the venue will not allow the order to proceed to execution if it is not within the limit.[44]

In the next section, the ways in which STP-related risks can arise for a participant providing access services for any client, whether or not an indirect participant, are explored in more detail. All involve exposure of the participant to its client.

EXPOSURES TO THE CLIENT

19.14 The topics considered below are those which describe the origins of the agent bank's potential exposure to its client. However, the risk originates, the agent bank will have in mind that most issues can be sorted out if the client is still solvent. The threats to the agent bank's ability to limit its exposure in the event of a formal insolvency procedure, or steps being taken under a 'special resolution regime' applicable to failing financial institutions, are considered in **Chapter 13**. Other related risks are operational: how the agent bank might deal with everyday issues, typically while the client remains in good financial health, is considered in **Chapters 20**–**22**.

An agent bank may find itself carrying out duties for a client which expose the agent bank not directly to an infrastructure, but to another agent bank or intermediary. The questions which arise in that context are explored in **sections 19.37ff**.

Securities settlement risk – gross or net risk

19.15 Agent banks which settle securities transactions may be exposed to their clients in respect of the value of the transactions concerned. If managed, the size of the risk ought to be a market risk amount – that is to say, the difference between the contractually agreed price for the securities and their actual present value. However, there is a danger that the agent bank can be exposed to the full (gross) value of the transaction being settled. The risk can materialise in one of three ways:

(1) *Client buying.* If the client is buying securities, the agent bank which is responsible for settling the cash leg of the transaction will find that the STP

42 See Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc, art 17(5); Futures Industry Association, *Market Access Risk Management Recommendations* (April 2010), www.finextra.com/finextra-downloads/newsdocs/FIAMarket_Access-6.pdf

43 Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments etc, art 29(2)

44 Commission Delegated Regulation (EU) 2017/582 of 29 June 2016 supplementing [MiFIR] with regard to regulatory technical standards specifying the obligation to clear derivatives traded on regulated markets and timing of acceptance for clearing, art 2

settlement instructions are sent to the system automatically, with the result that its cash account at the payment system is to be debited, whether or not the agent bank's client has paid the agent bank. Consequently, the agent bank is (unless the client has paid up front) committing to provide credit to the client if the client does not pay before the moment of settlement; and this commitment is irreversible from the moment at which the STP instructions are initiated. That moment will, in relation to modern trading platforms, typically be the moment of matching on the platform, or (to express it differently) imperceptibly after the moment of trading. Where the trade-to-settlement cycle is of two (T+2) days' duration, the agent bank carries a contingent future credit exposure to all clients who do not wish to tie down cash for the duration of the cycle. In such a case, the theoretical size of the agent bank's exposure is the (gross) payment obligation on the trade; but in some markets (such as France[45]) there is a statutory lien over the securities purchased at the agent bank's expense, and at common law a similar lien might be implied in favour of a bank.[46] Prudent agent banks back this up with contractual liens and security interests, thereby reducing the risk to the (net) difference between the price contractually agreed by the client and the actual saleable value of the securities delivered. However, the right to rely on the countervalue to offset the purchase price of the transaction may be at risk of challenge under insolvency laws, which raises further questions of 'gross risk' explored in **section 19.25**.

(2) *Client selling.* If the client is selling securities, two different scenarios need to be considered. In some cases, the client will hold securities at the CSD in an account in its own name (in which case the agent bank acts as account operator). If the client has insufficient securities in its account, the settlement will fail partially or wholly, and the agent bank should not ordinarily be liable for its client's failure, unless one of three exceptions applies:

- first, because article 7(10)(c) of the CSDR[47] imposes responsibility for timely settlement on the 'participant', in cases where the transaction was in a financial instrument admitted to trading on a venue but not actually executed on a venue or cleared at a CCP;
- second, because there is a regulatory rule which obliges the seller's agent bank to take responsibility for fails;[48]
- third, where the settlement system or market operator insists on a 'Model B' structure under which the agent bank is required to underwrite its clients' obligations.[49]

However, the client may have asked the agent bank, for regulatory or other reasons, to open an individually segregated account at the CSD for the client, but in the agent bank's name.[50] In such a case the agent bank may be liable, even without a formal Model B obligation, to make good any losses suffered by the buyer of the securities for failure to make timely

45 Code Monétaire et Financier, art L. 211-18
46 *Brandao v Barnett* (1846) 12 Cl & F 787, HL; cf **sections 6.10(4)** and **6.11(3)**
47 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc
48 Cf Règlement général de l'AMF, art 322
49 See **section 19.27**
50 CSDR, art 38(4) and (5)

delivery. Evidently the size of the risk in this situation is net (difference between contract price and replacement cost).

(3) *Borrowing from the box.* The other situation which falls to be discussed where a client is selling is where the client allows its securities to be held in an omnibus account. If the agent bank holds several clients' securities in a single account at the CSD, the settlement may not fail when the client has not provided sufficient securities to satisfy its obligation. This is because the bank's other clients may hold securities of the same description, and the settlement system operator cannot of course distinguish the selling client's securities from those of clients who have static holdings. In such a case the settlement will proceed in accordance with the STP instructions, but the agent bank will now be left with a duty to its other clients to replenish the missing securities. (This problem of using another client's securities is sometimes called 'borrowing from the box', or 'borrowing from the pool'. An attempt to regulate the risk has been made in the MiFID Implementing Directive,[51] but that relates only to securities financing transactions rather than simple sales.) Again, this duty represents a credit risk on the client who failed to provide the securities, but theoretically the size of this risk is the (gross) price paid for the replacement securities. In practice the agent bank will ordinarily be the cash leg settlement agent as well as the securities leg settlement agent, and will have either a banker's right of set-off[52] or explicitly agreed set-off rights so that the cash price received can be set off against the liability of the client to refund the agent bank for buy-ins carried out by the agent bank or other losses, and in such cases the risk is reduced to a net risk.

The agent bank may be powerless to eliminate these risks unless the bank can defer the moment at which irrevocable settlement instructions are submitted to the system concerned. Where STP governs the submission of instructions, the process may be wholly outside the agent bank's control. Even where STP does not govern the process of submitting instructions, the agent bank will have to comply with the cut-off times of the system, after which timely settlement will be unachievable. The longer the interval between the cut-off time and the moment of settlement imposed by the system operator, the longer the period for which the agent bank is at risk, unless of course the agent bank has insisted on up-front payment (or, in relation to securities, delivery) before agreeing to submit any instructions for settlement.

Fails coverage

19.16 Article 7 of the CSDR requires a buy-in process to be available for cases where a seller of securities has failed to deliver in a timely manner. Execution of the buy-in is to be done by the CCP, if the transaction is cleared, and in other cases, as specified by CSDR RTS 1229 the obligation will fall upon the trading

51 Commission Delegated Directive (EU) No 2017/593 of 7 April 2016 supplementing [MiFID] with regard to safeguarding of financial instruments ad funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees, commissions or any monetary or non-monetary benefits, art 5(2)

52 For review, see *Halesowen Presswork & Assemblies Ltd v National Westminster Bank* [1971] 1 QB 1, CA

party to the transaction.[53] The agent bank's duty is to notify its client of the fail, so that the buyer's broker can initiate the buy-in process, assuming that buy-in is not ruled out as impossible.[54] The agent bank's duty is not limited to notifying the client: its responsibility is to ensure that the broker is aware.

Although agent banks are not drawn into the buy-in process beyond this, they are in the firing line as far as fails are concerned. CSDR article 7(9) obliges CSDs to suspend participants which fail 'consistently and systematically' to deliver on the intended settlement date. Article 39 of CSDR RTS 1229 sets out the quantitative tests for consistent and systematic failure. There is no special treatment for client transactions.

None of this applies in the United Kingdom, since the relevant implementation date occurred after the end of the Brexit transition period, and this particular reform instead is replaced by a Government proposal to 'consider the future approach to the UK's settlement discipline framework, given the importance of ensuring that regulation facilitates the settlement of market transactions in a timely manner while sustaining market liquidity and efficiency'.[55] Until that is completed, the intention is that the market's own disciplinary arrangements, applied by Euroclear UK & Ireland, will continue in force. It should not be assumed that the importance of settlement fails is being ignored in the United Kingdom, as the Bank of England's staffers note that they may lead to gridlock and illiquidity.[56]

Agent banks may also consider providing a fails coverage service to clients who are participants in trading venues and who are exposed to penalties and buy-in obligations.

Payment system settlement risk

19.17 Agent banks which submit transfer instructions to a payment system take credit risk more openly if they do so at a time when they have not received adequate funds from their client.

A more subtle variant of the problem arises in relation to a payment system such as CLS which operates an 'exchange of value' system.[57] Here the issue is similar to that described above with regard to securities settlement. Transactions which fall to be settled by CLS may include foreign exchange transactions which do not originate from any trading platform and are not subject to the tyranny of STP; nevertheless CLS Bank, like other system operators, has cut-off times after which submitted instructions are rejected for the next day's settlement cycle, so that the agent bank will be committed to paying into CLS Bank the payable amounts due in respect of all instructions submitted before the cut-off. Again, if the agent bank has not received funds from its client in the payable currency before that time, it will be taking credit risk on the client. It may be

53 Commission Delegated Regulation (EU) No2018/1229 of 25 May 2018 supplementing [CSDR] with regard to regulatory technical standards on settlement discipline, arts 30ff

54 CSDR RTS 1229, art 21

55 Chancellor of the Exchequer Rishi Sunak, *Financial Services Update: Written Statement* (June 2020), HCWS309

56 Gurrola-Perez, P, He, J, and Harper, G, *Securities settlement fails network and buy-in strategies* (September 2019), Bank of England Staff Working Paper No 821

57 Cf PFMI Principle 12; see also **section 2.40**

impracticable to obtain up-front funds from its client, because (a) the amount of currency due from the client will be in part a function of the amount of that currency potentially receivable from other CLS participants, some of which might be single-leg payments, and the details of which may not be known to the agent bank in time, and (b) where the currency payable by the client is Asian, the payment systems in the Asian markets will have closed relatively early in the European processing day, so that the client would effectively have to tie up funds more than a whole day before settlement in order to provide up-front funding.

A further variant arises in relation to the Bacs payment system in the United Kingdom. Bacs operates on a three-day settlement cycle, so that an agent bank must submit instructions to Bacs three days before the settlement date. The agent bank is committed under Bacs rules to make the payment once the instructions have been submitted to Bacs, but unless the agent bank has guaranteed the payment to the payee, it is not permitted to earmark funds then standing to the credit of the client's account, since the Financial Conduct Authority (FCA) interprets regulations 81 and 86(1) of the Payment Services Regulations (PSRs)[58] to mean that the 'time of receipt' of a payment order must be no later than the moment at which the funds cease to be available to the client.[59]

Principal risk with CCPs

19.18 GCMs are, as described in **section 2.13**, typically placed in a principal-to-principal position vis-à-vis the CCP. In all typical European structures, the GCM will be obliged to undertake liability to the CCP in respect of any registered transactions entered into by its client. So, if the client defaults, the GCM will still be obliged to perform its obligations in respect of the client's transactions even if, as between the GCM and the client, the GCM has closed out and realised collateral in respect of its client-facing risk. The ongoing liability to the CCP will involve continuing with an obligation to post variation margin, initial margin on any transactions entered into by the client on the day of its default and in respect of intra-day margin calls (the risk of which may be correlated to markets disrupted by defaults), and to perform contracts which reach maturity without having been closed out. All these duties imply credit risk on the client.

The GCM will expect to be able to cover the risk concerned by margins collected from the client. Post-default liability for ongoing margin calls is considered below. The GCM will wish to close out the positions taken by the client by taking opposite positions in the marketplace and applying any margin received (including margin returned by the CCP once close-out is completed and any settlement amount paid) in a similar manner to that in which a CCP manages a participant default.[60] The GCM may, however, let transactions proceed to maturity, in which case a (gross) liability to deliver securities or make payment for securities will arise, which will not be covered by margin, margin being quantified by reference to (net) close-out methodology.[61] As with an agent bank providing settlement services, the GCM will wish to retain the payment received for securities delivered, or vice versa; as principal, this ought in theory to be

58 SI 2017/752

59 Financial Conduct Authority, *The FCA's role under the Payment Services Regulations 2017 and the Electronic Money Regulations* (June 2019), para 8.240

60 See **sections 17.44–17.45** and **19.30**

61 See **section 17.27**

the outcome. GCMs will, however, wish to consider the standing settlement instructions given to a CCP in respect of transactions on a client account. If securities or other deliverable assets are credited straight to a client's account, the GCM (despite acting as 'principal' vis-à-vis the CCP) may have arranged to transfer title to the client even if the client has not paid. However, assuming this issue has been avoided, any (net) market risk remaining ought to be covered by margin, assuming it has been received and is of adequate quantum.

Margin risk with CCPs

19.19 GCMs will be obliged to meet margin calls issued by CCPs in very short timeframes, and as regards routine daily margin calls, the margin collection arrangement is likely to be by way of direct debit from the GCM's bank account. The amount of margin due from the client may be unexpected, owing to the ability of the CCP to impose an exceptional *intra*-day margin call, or because it is a function of the day's trading by the client and there is limited time between the close of the relevant market and the closure of the payment systems during which the GCM must calculate the client's contribution to the margin call due to be satisfied the next morning, and collect the contribution from the client. Evidently the GCM takes credit risk on its client in respect of the margin likely to be due in respect of the client's open positions. The duration of the risk period is from the moment that the client last satisfied a margin call to the moment when all the client's positions can be closed out, which may be several days (or in relation to cleared OTC products, significantly longer).

19.20 GCMs may offer a 'collateral transformation' service to clients, under which the GCM is able to post eligible collateral to the CCP in respect of the client's cleared transactions even though the client is unable to provide such collateral itself. If the client can furnish the GCM with some other species of collateral, this may be an acceptable arrangement for all parties. The GCM will need to be wary of the basis and wrong-way risks that it might entail.

19.21 Margin risk may also involve a species of borrowing from the box, as became evident in the default of Griffin Trading. Where clients of a GCM which is not a bank accept an omnibus account arrangement in respect of their cleared transactions, the cash margin which they have contributed will be held in a client money bank account under the client money rules. The CCP will debit margin calls from this bank account in respect of the omnibus account to which all client transactions are recorded. As with the securities settlement system, the CCP cannot tell which clients have contributed margin to this bank account and which have not, so the risk is that the CCP takes funds which belong to clients other than the one whose trades gave rise to the margin call. The GCM will be in the position of having to make whole the client money bank account even if the client in question fails to honour its own margin obligations. As in the case of Griffin, the obligation to top up the client money bank account may cause the insolvency of the GCM. [62]

62 See **Case Study 5.1**

Additional issues for GCMs

19.22 Various other points for GCMs to consider in the context of 'client clearing' of OTC derivatives transactions (but which are of broader application) have been identified: need for parity between the infrastructure's rules and the clearing agreement between GCM and client; issues relating to indirect access, and the need for clients to regulate the behaviour of their own customers, in conjunction with 'onboarding' rules about new customers; collateral management; treatment of transactions which fail to clear; and harmonisation of operational requirements between the CCP and the GCM, and dovetailing all that with the client's own arrangements.[63] GCMs should also consider their ability to withdraw from the services provided to their clients, including whether this is permitted under the contractual arrangements agreed with the client, the rules of the CCP, and the insolvency law applicable to the client.

Additionally, the obligation imposed on GCMs to ensure that the terms on which they offer clearing services to clients are fair, reasonable, non-discriminatory and transparent, discussed at **section 11.15** should be mentioned.

Settlement agents' risk with CCPs

19.23 An agent bank which is not acting as GCM might assume that there is little to fear in providing a settlement service to a client which is itself a participant in a CCP. However, the usual settlement-related risks, described in **section 19.15**, will apply. So, there is the potential for settlement risk when an agent bank provides services to a client who has contracted to buy securities in a cleared market, and the client clears its own trades. The client may need, for example, an agent bank to settle the trades, and for these purposes the agent bank is in no different a position from the agent bank providing a settlement service in relation to an uncleared trade. If the client fails to pay for securities bought, the agent bank will (by virtue of the STP instructions issued at the moment of trading) be unable to avoid paying the CCP for the securities, and will ordinarily have the securities delivered by the CCP to its account. This scenario has the following results, which might be thought curious:

- the CCP, which had taken margin from the self-clearing client in respect of the trade, no longer needs the margin because the trade has settled; the CCP's pool of margin is thus augmented.
- the agent bank, by contrast, who will ordinarily not have taken 'margin' to cover itself in respect of settlement risk, will be left to cover the difference between the price paid for the securities and their actual value.
- the margin is thus in 'the wrong place'; if the agent bank had provided a GCM service as well as a settlement service, it would have received margin in respect of its GCM function, which could have provided a pool of collateral from which to cover the loss, provided that there is no rule prohibiting the use of margin in this way, which in some countries there may be.[64]

63 See AllianceBernstein et al, Letter to the Federal Reserve Bank of New York (March 2011)
64 Cf Code Monétaire et Financier, arts L. 440-7 and 440-8

Void dispositions risk

19.24 Several of the situations described expect that the agent bank will be able to rely on a payment or securities received (the countervalue), coupled with rights of set-off or security, to reduce the size of the risk from a 'gross' to a 'net' amount, exposing the agent bank to market risk on the client's trade for a period but not the whole principal amount. While the agent bank may be able to create contractual set-off rights and ensure it has an effective security interest over in relation to securities it holds, there are nonetheless significant remaining insolvency issues which may conspire to convert the risk back to a gross risk.

19.25 The problem is that frameworks of insolvency law regard payments or deliveries of property belonging to the insolvent person as being void if they occur after, or in some cases even before, the moment of opening of insolvency proceedings. These rules of law are referred to as 'void disposition rules'[65] and the moment with effect from which a disposition of property is void as 'the critical time'. Void disposition rules may have the following effects on the size of settlement-related risk, and whether it is gross or net:

(1) *Bankrupt seller, securities pre-delivered*. If the client is selling and has pre-delivered the securities to the agent bank, then if settlement takes place after the critical time, there is a void disposition of the securities. Although one might expect that the disposition is in favour of the market counterparty, it may be possible under insolvency law for the agent bank who effected the transfer to be sued for the value of the disposed-of securities by the insolvency officer of the client. This is not a problem – or at least the risk is a net risk – so long as the agent bank can retain the countervalue. Whether that is possible may depend on the application of insolvency set-off in relation to post-insolvency receipts or the agent bank obtaining effective security over the incoming cash.

(2) *Bankrupt buyer, cash pre-paid*. If the client is buying and has pre-paid the agent bank, then the debit made by the agent bank to the client's account may be a void disposition if done after the critical time. Again, if the agent bank may be attacked by the insolvency officer for the amount of cash disposed of, the agent bank would wish to retain the countervalue to keep the risk net in size. Whether this is achievable may depend on a further application of void disposition rules, namely whether it is legally possible for a security interest to bite on an asset coming into the ownership of an insolvent person after the critical time.

(3) *Bankrupt seller, securities* not *pre-delivered*. If the client is selling but did not pre-deliver, any securities which were in fact delivered by the agent bank should not be regarded as a void disposition of the client's property. The risk here is that the countervalue is regarded as being wholly due to the client, rather than the agent bank, notwithstanding that the agent bank provided the securities for the settlement, and that any diversion of sale proceeds to the agent bank for the purposes of reimbursement is regarded as a void disposition. Again, whether the agent bank can retain part or all of the countervalue received is likely to depend on the interplay of void disposition and post-insolvency set-off rules.

65 See **section 13.13(1)**

(4) *Bankrupt buyer, cash* not *pre-paid*. If the client is buying but did not pre-pay, the agent bank has used its own funds to effect settlement. As with the bankrupt seller scenario, the risk is that the countervalue cannot be retained, unless under the relevant system of property law it is clear that the securities received by the agent bank are owned by the agent bank itself or subject to its security interest despite the fact of receipt after the critical time.[66]

19.26 The following supplementary remarks may be made about gross and net risk arising from the application of void disposition rules:

(1) In practice few systems of insolvency law seem to operate so as to expose agent banks to gross risk in this way.

(2) Similar considerations may apply to participation in any exchange-of-value system, such as CLS; it is immaterial that there are no securities involved.

(3) The operators of infrastructures do not face these problems because they have the protection of the Settlement Finality Directive,[67] which provides that transfer orders are enforceable as between participants notwithstanding the opening of insolvency proceedings.[68] Except in the unlikely event that a client is an 'indirect participant' in a designated system,[69] this safe harbour is not available to a participant in its dealings with a non-participant.

(4) Limited protection against void disposition rules may be available under the Financial Collateral Arrangements (No 2) Regulations 2003.[70]

(5) Other techniques available to agent banks for management of these risks are the traditional ones available for handing credit risk, such as: refusing to provide services to clients with weak credit status; imposing, monitoring and enforcing position limits; ensuring that there are contractual rights to terminate the services provided at will or in prescribed circumstances; having rights of set-off and netting; taking collateral; taking third-party guarantees. Finally, it should be noted that the set-off rights which an agent bank may rely on may also depend on the effectiveness of indemnity rights given by the client to the agent bank in respect of the actions voluntarily or involuntarily taken by the agent bank in relation to the client's transactions.

VOLUNTARILY ASSUMED EXPOSURES TO THE CLIENT

Model B clearing

19.27 Firms offering custody and settlement services may enhance the service by offering 'Model B clearing' services. It is unfortunate that the phrase 'Model B clearing' has no single meaning. In some manifestations the activities of a Model B clearing firm expose it to risks similar to those of a GCM, even in the

66 Cf **section 6.11(3)**
67 Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems
68 See **section 13.30**
69 Cf **section 16.7**
70 SI 2003/3226 3226; see **sections 13.37ff**

absence of a CCP. The subject requires some analysis before the risks can be classified.

Before the introduction of a central counterparty to serve the London Stock Exchange (LSE), it was a requirement of the LSE's rules that member firms take steps to ensure that their transactions would settle, and to this end they were required to nominate either a 'Model A' or a 'Model B' clearing agent.[71] Model A agents accepted responsibility for arranging settlement of the member firm's trades, but did so as agent (typically, in a CREST environment, by acting as sponsor or account operator in relation to the firm's own account at CREST). Model B agents accepted responsibility for settlement in their own names, thus taking liability as principal to the rest of the market in respect of their client's transactions. A Model B clearing agent in this old-fashioned sense was, by virtue of exchange rules and practices, obliged to honour its client's trade and was, albeit facing out to a large number of counterparties, acting as if it were a GCM.

> 'Model A and Model B clearing are arrangements whereby firms outsource part or all of their back office to a fully regulated third party.
>
> With Model A clearing the clearing firm performs a series of administrative functions such as the movement of stock and cash for settlement purposes, the reconciliation of bank and stock accounts, and the processing of corporate actions and dividends. However, the correspondent firm retains full responsibilities for the functions carried out by the clearing entity from a regulatory basis.
>
> With Model B clearing, the Model B clearing firm becomes the legal counterparty to all trades and adopts the primary settlement risk until the transactions are fulfilled. Correspondent firm records are transferred to the clearing firm's system and a standard suite of dedicated accounts is established specifically for each co-respondent. The clearing firm will still undertake functions such as the settlement of transactions, the movement of stock and cash, the reconciliation of bank, trading and custody accounts and the process of corporate actions and dividends.'[72]

19.28 Now that central counterparty clearing has been introduced for LSE trades, the need for this old form of Model B clearing has disappeared, since all trades will be cleared by the trading member itself or by its GCM. Nevertheless, the LSE rulebook retains a definition of 'model B firm', and the use of the term persists more generally. The following observations may be made about Model B clearing in the post-CCP environment.

(1) Under LSE rules, a Model B firm is defined as 'a member firm that takes on all immediate liabilities for trades dealt by an introducing firm' (an introducing firm being a member firm that uses the services of a model B firm).[73] The LSE rules no longer impose counterparty-risk liabilities on Model B firms, even though it is still contemplated that Model B firms persist.

71 Rules of the London Stock Exchange, pre-CCP editions, rr 10.13 and 10.14

72 Association of Private Client Investment Managers and Stockbrokers, *Review of Capital Requirements for Banks and Investment Firms – Response to Commission Services Third Consultation Paper 1st July 2003* (October 2003), http://ec.europa.eu/internal_market/bank/docs/regcapital/cp3/contributors-list/association-private-client-investment-managers-stockbrokers_en.pdf, Annex 3

73 London Stock Exchange, *Rules of the London Stock Exchange* (September 2015), Definitions

(2) Model B firms offer services in the London market on the basis that their name is 'given up' by the executing broker to the market so that the Model B firm is responsible for settlement. The structure is used in particular (but not exclusively) in the bond markets where transactions may not be centrally cleared, and the confidence of the counterparty in a trading firm's ability to perform its obligations needs to be assured.[74]

(3) A typical Model B structure will enable a financial intermediary (the executing broker, that is the Model B firm's client) to advertise to its own customers and to its market counterparties that they are not taking counterparty risk on the intermediary. The customers can avoid taking the risks associated with the intermediary being interposed between the customers and the market counterparty, and the market counterparty can avoid settlement risk on the intermediary.

(4) In a typical Model B structure, the Model B clearing firm will provide individualised settlement accounts for each of the intermediary client's customers, rather than an omnibus account. However, the Model B clearing firm will look to the intermediary client to carry out all regulatory duties owed to customers, such as those arising under the FCA's Conduct of Business Sourcebook,[75] and the firm will also carry out its credit assessment on the intermediary client (not the customers). As settlement agent, the firm will at least have the STP risk described above and may have a wider duty to the market to settle trades even if the settlement instructions have not yet been submitted to the infrastructure. The implication of this structure is that the Model B clearing firm is exposed to the risk that its intermediary client does not pay or deliver securities and cannot persuade its customer(s) to do so either.

(5) As there is no market rule to require a Model B firm to undertake obligations to an unknown population of potential counterparties of its clients, it would appear to follow that (a) the Model B firm can agree to limit the circumstances in which it is willing to undertake settlement responsibility by contract with its intermediary client, and (b) the ability of the market counterparty to take direct action against the Model B firm is limited. To these conclusions it may be remarked that Model B firms will, upon submission of settlement instructions to the relevant CSD and/or payment system, find themselves exposed to STP risks as described in **section 19.11** in respect of their own client's possible non-performance.

(6) LSE rule 5000 and the associated guidance state that a member firm, whether acting as agent or principal, is responsible for ensuring each trade effected by it is settled. Thus, a Model B firm could be compelled to perform to the market counterparty if the firm's client has failed and if the firm has not issued irrevocable settlement instructions. It is, however, less obvious that a Model B firm is liable to perform to its client if the market counterparty fails. Model B firms may seek to limit or eliminate this liability in their client documentation.

74 International Capital Market Association, *Rules and Recommendations* (October 2009), Rule 322.1

75 Financial Conduct Authority, *Handbook of Rules and Guidance, Conduct of Business Sourcebook*; see in particular COBS 2.4.3R (November 2007)

Margin shortfalls and lending

19.29 GCMs should also consider their degree of control over the quantum of margin taken from clients. It is tempting to follow the margin amount prescribed by the CCP for a given position, assuming that this is an accurate sizing of the risk. But in normal conditions CCPs assess margin requirements by reference to the product being cleared and its own default management process, but not the credit quality of the CCP's counterparty;[76] a GCM may need to take a more nuanced view, and in particular take account of the likely time-line for closing out a failed client's positions. Those considerations might suggest that GCMs could consider levying higher margin calls than the CCP levies itself.

Approaching the issue from the other direction entirely, a GCM may, where permitted to do so by CCP and market rules, wish to take care of margin calls from the CCP while reducing the frequency or amount of calls made on the client, or even without making any demand at all on the client. A GCM may thus offer a liquidity facility to its client in respect of margin calls made by the CCP in respect of the client's trading. The facility will oblige the GCM to allow the client to run an overdraft in respect of margin calls satisfied by the GCM in respect of the client's account.

EMIR[77] does not disallow such a practice, but where a facility is entered into it will expose the GCM to credit and liquidity risks. Evidently, the client may be unable to meet the potential future losses against which the margin requirement was imposed. A GCM may be willing to forgive the timely payment of margin calls, or even to forgo margin calls altogether if trading is kept within agreed parameters, with regard to a high-grade client. Liquidity risk may also arise where the client's trading pattern is volatile, as the liquidity facility will be drawn upon heavily in times of heightened market activity by the client.

A more sophisticated variant of lending of margin arises where the GCM agrees to accept collateral from the client which is ineligible to be delivered onwards to the CCP. Here the GCM accepts the market risk on the collateral received. The risk is a basis (imperfect correlation) risk, between the collateral posted to the CCP and the collateral received, subject to the overriding consideration that only if the client fails will the risk materialise.

19.30 A GCM would need to close out not just the position it holds facing the client but also the position vis-à-vis the CCP. Its terms of business may permit a termination and liquidation vis-à-vis the client, but as regards the CCP the classical close-out method would be to put on an opposite position so as to neutralise the client's position registered at the CCP.[78] But the GCM will need to be aware that a formal insolvency proceeding in respect of the client may automatically cancel the GCM's authority to enter into new positions on the client's account.[79] Where a GCM has been obliged to pass along excess margin to a CCP in consequence of article 39(6) of EMIR, until the client's position has been closed out it may be difficult to get hold of the excess margin to cover the GCM's own costs and losses when its client is in default.

76 See **sections 17.27–17.28**
77 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories
78 Cf sections **17.44–17.45**
79 See **section 13.13(3)**

GCM accessing multiple CCPs

19.31 A GCM may also offer to act as a point of access to many CCPs for a single client. Clients carrying out arbitrage strategies involving the simultaneous trading of single product on many exchanges will be attracted to this service, in particular while different CCPs are used to clear for different trading platforms. The bonus which using a single GCM provides, over and above the simplicity of aggregated margin calls and relationship management, is the possibility of margin offsets. A client who is long on market A but short on market B would have dual margin obligations if it participated directly in the CCPs for those markets, but a GCM who sees the whole portfolio may accept that the client's net position is flat, and rationalise that if both trades were cleared at the same CCP the margin requirement would be zero.

To take such a view may require the GCM to consider a variety of issues. First, there may be market rules which disallow the practice altogether. Secondly, the GCM will have to meet margin calls from both CCPs, paying initial margin to both CCPs, but collecting nothing from its client – that is effectively an extension of credit, albeit credit given to the CCPs. Thirdly, if the client defaults, the GCM will need to manage the close-out of both long and short positions in such a way as to minimise loss; because the trades were done in different market-places there is no guarantee that the trades actually do offset perfectly, with the result that actual market differences will add to the overall cost of close-out. The prudent GCM will factor these considerations into its combined-access service and demand at least some margin from the client in addition to compensation for its funding costs.

The matter is complicated by the introduction of mandatory facilitation of transfer of client positions in the event of a GCM default, under article 48 of EMIR. For this to be effective, the client will wish to be able to isolate and deal separately with the sub-groupings of positions which are held at each CCP: these may be closed out or transferred as each CCP decides, and an across-the-board close-out as between the client and the defaulting GCM may no longer be appropriate. Market documentation has been developed by the International Swaps and Derivatives Association and the Futures and Options Association to enable clients to deal with each sub-grouping and its associated collateral separately, and GCMs may face demand from clients to put this in place.[80] Likewise 'clients' who are themselves agent banks using GCMs to access CCPs in which they are not direct members may wish to avail themselves of this type of agreement.

Contractual settlement

19.32 An agent bank will wish to create for its client a clearing and settlement service which is, as near as possible, equivalent to the service which the client would experience if it were a direct participant in the clearing or settlement system concerned. This near imperative may lead the agent bank into areas of risk which it is not necessary to assume in order to provide the service, but which

80 International Swaps and Derivatives Association, Inc, and Futures and Options Association, *Client Cleared OTC Derivatives Addendum* (June 2013); Futures and Options Association, *FOA Clearing Module* (October 2013)

flow from enhancements which the agent bank offers. 'Contractual settlement' is an example of service enhancement carried out to mimic the behaviour of the settlement system.

As a direct participant in a settlement system, the agent bank will be a beneficiary of the DvP assurance which the system provides.[81] The system's rules and operations will be designed to ensure that there is no risk that any participant can deliver without receiving payment, or pay without receiving payment (or in a PvP system like CLS, pay without receiving the countervalue). The fundamental concept underlying DvP and PvP is simultaneous debits and credits of participants' accounts, in both directions. However, for the clients of the direct participant, simultaneity is not achievable. Unless the client's counterparty is the agent bank itself, or another client of the agent bank – a situation considered below – the counterparty's delivery can at best be simultaneous with the agent bank's payment, or vice versa.[82] The interposition of the agent bank ensures that the client is shielded from settlement risk as regards the counterparty, but it does not provide the client with complete freedom from settlement risk: it has substituted the agent bank for the counterparty in this respect. So, the client can ask the agent bank to carry out a simultaneous debit and credit on the agent bank's books: in other words, not to debit the client's account until the moment when a corresponding credit of the countervalue is made.

This structure does not yet give the client an equivalent experience to direct participation in the settlement system. There may be timing delays – for example, in CLS, the pay-out schedule in favour of the agent bank will be timed to follow on from the bulk of the day's settlement activity, and may be later in the client's working day than commercially desired by the client. To defer the simultaneous debit-and-credit across the agent bank's books until the pay-out from the system may be unacceptable; and the agent bank may therefore offer to anticipate settlement by making the relevant entries on its own books in favour of the client at an earlier stage in the day, possibly even before the transaction in question has settled with finality. This service is referred to as 'contractual settlement'.

19.33 An agent bank which is willing to provide a contractual settlement service undertakes additional settlement risk. The settlement system typically avoids settlement risk for its participants by requiring them to pay in ahead of settlement, in order that the central settlement accounts which it provides or operates are in credit (or covered by collateral) at the time of simultaneous debit-and-credit across the books it controls. The pre-requisite of pre-payment will thus put the agent bank of a paying client into a position where it must choose between (a) deferring the moment of contractual settlement, but committing its own funds to the settlement process before the moment arrives when it can debit its client's account on its own books, and (b) giving immediate contractual settlement, but awaiting the payout or delivery from the system and meanwhile assuming the risk that the client withdraws the cash or securities which the client, looking at its account, considers duly received.

An agent bank which chooses option (b) may not be assured that the pay-out in the desired currency will occur; or indeed that the transaction will settle at the system. If either of these problems were to materialise, the agent bank would have

81 See **section 18.2**
82 Cf **section 15.52**

credited its client's account with something it does not yet have, exposing itself to liquidity and market risk in relation to its voluntarily assumed obligations. An agent bank which chooses option (a), on the other hand, is making a credit extension to the client, and may wish to ensure that it has effective rights to the countervalue received in the settlement in order to reduce its risk to a net, rather than a gross, risk.[83]

(From the client's perspective the risk is different: while the agent bank has its cash, the client takes credit risk on the agent bank, and simultaneous debit-and-credit does not alleviate this risk. A client whose agent bank opts for (b) assumes custody-shortfall risk[84] on the agent bank who may not have the securities promised. At least contractual settlement ensures that the client has something, even if it is only an unsecured claim, at all stages in the process. Without contractual settlement, the agent bank would debit the client's account at the time of making the pre-payment or pre-delivery to the system, and the client would have nothing until the countervalue is credited to its account following settlement at the system.)

On-us settlement

19.34 A variation on the theme of contractual settlement is 'internalised', or 'on-us' settlement. This term is used where the agent bank acts for both buyer and seller in the transaction, and by operational dexterity it is possible to achieve settlement across the books of the agent bank without the need to send settlement instructions to the central system. Whether this is frequently achievable is the subject of debate.[85] Clearly the parties to on-us settlement assume risk on the agent bank but avoid the timing mismatch issues which flow from having additional steps in the chain. The agent bank will escape many of the STP-related issues described above, but still faces void disposition risk from its clients.

Primary issuances

19.35 Another variation is where the client is unable to achieve DvP without the assistance of the agent bank. This may happen where the agent bank assumes the role of issuing agent or, within the Euroclear and Clearstream context, common depository. In any primary issue of securities there needs to be a moment when the subscribers' payments, having been collected, are delivered to the issuer, and the securities being issued become 'live' and registered as held by the subscribers or their nominees. The situation just described commonly involves the issuing agent providing the DvP role, shielding both issuer and subscribers from settlement risk. In a multi-entity chain, it is not possible for all parties to enjoy DvP, as the following example illustrates.

A Eurobond issued for settlement in both Euroclear and Clearstream will be held by a common depository.[86] Subscription monies will be collected by or for the lead manager of the issue, and the global note will be delivered to

83 See **section 19.15**
84 See **section 6.7(7)**
85 See **section 2.22**
86 See **section 2.26**

the common depository. The steps that are still needed are for the monies to reach the issuer and for the common depository to record the bond as in issue and held, as to the appropriate number of individual notes each, by Euroclear and Clearstream. There is, accordingly, a chain of four: lead manager facing subscribers, ICSD, common depository, and issuer. The problem of DvP is solved by the common depository shouldering the settlement risk, as follows. The lead manager confirms that it wishes the issue to occur; the ICSDs undertake to pay the common depository; the common depository then issues the bond to the ICSDs and simultaneously makes a payment to the issuer; and subsequently the common depositary receives its funding. The common depository is free to agree to pay the issuer as paid, but this transfers the settlement risk to the issuer, who may be unwilling to accept it.

Payment systems access

19.36 Agent banks offering access to payment systems will need to be aware not only of the obligation, arising under the PSD, to offer access to non-clients on similar terms,[87] but the wider risk issues associated with participation in instant payment systems.[88] Instant payments give less time for pre-processing checks and can cause operational headaches. 'There are … challenges for banks, foremost among them being the overlaying of single real-time payments on to an existing batch processing infrastructure … Processing single payments [affects] the infrastructure, from channel to payment processor, including general ledger, sanctions and anti-money laundering (AML) systems, reporting databases, customer accounts payable/receivable…and reconciliation.'[89] Fraud, in particular, has been associated with instant payment systems, with some evidence suggesting that levels can rise when such systems are brought into service.[90]

EXPOSURES TO AN UPSTREAM INTERMEDIARY

19.37 Where an agent bank cannot access an infrastructure directly, for example because the infrastructure is located in another country where licensing or other restrictions apply, in order to service the agent bank's client's needs it may be necessary to engage an intermediary, such as a local agent bank, to help. So, global custodians may seek the services of a local custodian to act as settlement agent in the market, payment banks may need a nostro bank to settle payments in a foreign currency, and clearing service providers may need to hire a local clearing member rather than participate directly in the local CCP. In each of these instances the 'upstream' risks can resemble those taken in relation to an infrastructure. In particular, the upstream intermediary may pass on the losses

87 See **section 19.12(4)**

88 See further **section 16.23**

89 Imran Ali of Citibank quoted in Weyman, J, *Risks in faster payments* (May 2016), Federal Reserve Bank of Atlanta Retail Payments Risk Forum Working Paper, www.frbatlanta.org/-/media/Documents/rprf/rprf_pubs/2016/risks-in-faster-payments.pdf

90 ACI Worldwide, *Immediate Need for Fraud Prevention – Best Practices for Preventing Fraud in a Real-time World* (September 2016), www.pymnts.com/wp-content/uploads/2016/09/Best-practices-for-preventing-fraud-in-a-real-time-world.pdf

and costs it experiences, so the discussion above may be relevant. But some specific points may arise, which may be examined here.

Clearing

19.38 Clearing via an intermediary GCM raises a number of points, of which the issues associated with 'indirect clearing' are probably the most contentious. These are discussed at **section 19.40**.

A few minor points may be disposed of briefly:

- The intermediary GCM should, if based in the EEA, comply with article 39 of EMIR, thereby providing the client with risk information on the CCP and the account structures offered, which ought to include individual segregation as well as one or more varieties of omnibus account.
- In Europe, a client dealing with a GCM will be able to insist on segregation in an individual client account but may prefer the lower cost associated with an omnibus account. The omnibus option may come at greater risk in terms of lower likelihood of transfer (porting) on default and the impact on collateral.[91] But the client should also consider that the GCM may become subject to default action by various CCPs, each of which may take different action and at different times. To enable porting to happen wherever possible, it will be necessary for the client to be able to deal separately with each set of cleared transactions. Market documentation has been created to that end.[92]
- Variation margin may be posted in respect of some cleared transactions as title transfer cash collateral, constituting both intermediary and client collateral receivers and collateral takers. Traditional clearing documentation may not envisage that collateral is anything other than *initial* margin, which always moves upstream, and thus catering only for the case where the intermediary is collateral taker. So, adaptations may be needed to ensure the integrity of the arrangement and the correct calculation of close-out amounts.
- The intermediary may be subject to regulatory capital constraints, with the result that it aims to minimise or eliminate the capital requirements associated with the service it provides. One such mitigant for the intermediary may follow from article 306(1(c) of the Capital Requirements Regulation (CRR),[93] which provides that the exposure value of the cleared transactions is zero if the intermediary agrees with its client a limited-recourse arrangement, so that no liability arises for the intermediary if the CCP defaults. Limited recourse clauses may thus be seen in clearing agreements.
- Restrictions on the use of the cash and other assets of the client's customer may apply. These are considered further in **section 19.42**.

91 See **sections 17.32** and **17.60**

92 ISDA/FOA Client Cleared OTC Derivatives Addendum (June 2013); FOA Clearing Module (October 2013)

93 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms etc

Article 305 of the Capital Requirements Regulation

19.39 Article 305 of the CRR enables clients to obtain a favourable regulatory capital treatment of trades cleared through intermediaries, provided that certain requirements are met. These are onerous and, in some respects, difficult to understand.

In order to obtain the favourable capital treatment, four conditions must be met. In outline, there must be segregation and porting arrangements and they must operate to isolate the client from losses due to the intermediary's insolvency. In detail, the requirements are as follows. First, the client's positions and assets must be segregated in the hands of the clearing member and at the CCP: they must be bankruptcy remote in the event of insolvency of the clearing member or its other clients. Secondly, there must be legal arrangements to facilitate transfer of the client's positions and collateral to another clearing member within the margin period of risk if the original clearing member becomes insolvent. Thirdly, the client must have a legal opinion that it would 'bear no losses' on account of the insolvency of the clearing member or its other clients; the opinion must be obtained under each of six potentially relevant legal systems. Fourth and finally, the CCP in question must be a 'QCCP', which means a CCP authorised or recognised under EMIR.[94]

A few interpretation points might be mentioned.

- The insolvency of the clearing member's other clients may give rise to loss. Imagine that the client has participated in an omnibus account arrangement provided by the clearing member. If another client fails, there may be a margin shortfall which is either shared among the clients or replenished by the clearing member (which may be unable to do so if it is also insolvent). With such an arrangement it is unlikely that the four requirements of article 305(2) would be met; however, article 305(3) also allows a favourable capital treatment, though less generous, if this is the only thing which causes the tests to be failed.
- Transfer (porting) is not mandated – only that there should be arrangements to 'facilitate' porting. While in some markets, transfer is the accepted route for default management with regard to client trades, in others it is not possible. Clients' interests can be protected in a variety of ways, one of which is for the CCP to make direct (leapfrog) payments to the clients to ensure they suffer no loss. It can be argued that insisting that there is porting machinery is excessive. On the other hand, all CCPs for which this favourable treatment is applicable will be authorised or recognised under EMIR, which effectively demands that porting machinery is in place.
- The legal opinions requirement can cause dismay, particularly with six jurisdictions to look at. In fact, the requirement is slightly less alarming. Three of the jurisdictions are those of the CCP, the law governing the cleared transactions, and the law governing the agreements necessary to bring about porting. These are all likely to be the CCP's jurisdiction. That leaves the jurisdiction of the clearing member, the law governing the collateral, and the jurisdiction of the client itself. The jurisdiction of the clearing member is self-evidently sensible, given that the clearing member's insolvency is the principal issue at stake. The 'law governing the collateral' should be understood to be the law governing the disposition

94 CRR, art 4(1)(88)

of the collateral, which is usually that of the place where the collateral is located,[95] and this would typically be the place where either the clearing member or the CCP is located, and not adding another jurisdiction to the list in practice. The jurisdiction of the client causes most difficulty, because lawyers cannot think of any reason why the law of the place of the client might impose losses on the client itself in the event of default of a third party; but that is probably the complete answer to the problem, needing only the shortest of legal opinions to comply with the requirement.

- The phrase 'bear no losses' is starkly extreme and also merits some interpretation. The fact is that it would be impossible for counsel anywhere to give an opinion that the client would bear no losses whatsoever. All transactional arrangements give rise to some risk of loss. The real question is not whether there would be no loss, but whether there would be a *credit* loss due to the intermediation arrangement. Article 305 is concerned with regulatory capital to support credit exposures of banks and investment firms. If the clearing set-up is viewed as a loan, does the insolvency of the clearing member affect the repayment of the loan? This way of looking at it redirects attention to the question whether the client is exposed to the clearing member, or to the CCP; and as the favourable capital treatment is to risk-weight the client's exposure as if it were an exposure direct to the CCP, that is presumably the correct way. So, it is suggested that 'bear no losses' ought to be read as 'bear only such credit losses as would arise if the client had a direct clearing relationship with the CCP'.

Finally, perhaps, it should be noted that the fact that a CCP is authorised under EMIR does not imply that compliance with article 305 is guaranteed. EMIR's requirements for porting and leapfrog transfers do not guarantee bankruptcy-remoteness or even legal effectiveness of these arrangements. Omnibus account arrangements may expose clients to fellow-client risk. The analysis needed for the purposes of article 305 is likely to need not just an assessment of the CCP's rules and documentation, but also the clearing documentation in place between the clearing member and the client, the insolvency regime applicable to the clearing member, the collateral arrangements, the account structure, and the applicable client money/client asset regimes.

Indirect clearing

19.40 An agent bank which is acting as client in a clearing chain may have to consider the attractiveness of its service offering to its own customer, as well as the risk it faces looking upstream to its clearing member service provider. The advantage which the agent bank may gain from taking the role of 'client', in terms of being isolated from the credit risk on the clearing member through porting and leapfrog, would be lost to the customer unless the agent bank can offer an upgrade of protection. This upgrade is called 'indirect clearing'.

Both EMIR[96] and MiFIR[97] make provision in respect of 'indirect clearing'. Indirect clearing ought not to be difficult to understand, since it merely extends the chain of intermediaries so that the ultimate investor is not the client of the GCM but the client's customer, or possibly at an even further remove. Structures involving extended chains of back-to-back transactions have been commonplace

95 But see also **section 6.6** in relation to location of securities collateral
96 Article 4(3)
97 Article 30

in the futures markets, as noted by ESMA in a 2015 consultation paper on indirect clearing.[98] However, as addressed by EMIR, an indirect clearing arrangement must not increase counterparty risk and must ensure that the assets and positions of the person whose transaction is being cleared benefit from protection equivalent to that under articles 39 and 48 of EMIR; those articles address segregation, portability of transactions in a default scenario, information obligations and 'leapfrog' transfers of residual value bypassing the insolvent estate of a failed intermediary. As explained in **section 17.57**, formidable difficulties may exist in rendering transfers immune from insolvency challenge, and similar objections can arise in relation to leapfrog payments. For the GCM, there is also a danger of *British Eagle* risk.[99] The primary legislation differs, in that EMIR is concerned with making clearing mandatory for certain types of product, whereas MiFIR is permissive: EMIR states that one way of complying with the clearing obligation is to enter into an indirect clearing arrangement with a clearing member, and MiFIR permits indirect clearing of exchange-traded products as if there were some legal or regulatory reason why they might be forbidden. Nevertheless, MiFIR adopts the EMIR approach: protection akin to articles 39 and 48 of EMIR must be given if an arrangement is to qualify as a permitted indirect clearing structure.

EMIR RTS 149[100] and MiFIR RTS 2154[101] spell out the detail of the requirements for indirect clearing. The following observations might be made:

- The product scope of indirect clearing is limited. Under EMIR, it applies to OTC derivatives subject to the clearing obligation. Under MiFIR, it applies to exchange-traded derivatives.
- Clearing members have to keep accounts in such a way that a client can open separate accounts for its own and its customers' (ie the indirect clients') business. Clearing members must be able to distinguish collateral held for the account of each indirect client within an omnibus indirect client account.[102] They must also open a special account at the CCP for indirect clients' business.
- When providing services to a client in respect of indirect clearing, clearing members must offer to provide an omnibus account for all indirect clients and a gross-margined omnibus account for all indirect clients.[103] In order to do the margin calculations, the CCP must be able to identify separately the positions of each indirect client, and so GCMs must open at the CCP accounts which correspond to the omnibus accounts provided to clients in respect of indirect client business.
- Clearing members are obliged to establish procedures to manage client default and to commit contractually to triggering transfer procedures to be handled by another client or clearing member and to pay over any liquidation proceeds to the indirect clients.[104] The procedures for net

98 European Securities and Markets Authority, *Indirect clearing arrangements under EMIR and MiFIR* (November 2015), para 50

99 See **section 13.14**

100 Commission Delegated Regulation (EU) No 149/2013 of 19 December 2012 supplementing [EMIR] with regard to regulatory technical standards on indirect clearing arrangements, etc

101 Commission Delegated Regulation (EU) 2017/2154 of 22 September 2017 supplementing [MiFIR] with regard to regulatory technical standards on indirect clearing arrangements

102 EMIR RTS 149, art 4(2); MiFIR RTS 2154, art 4(2)

103 EMIR RTS 149, art 4(2); MiFIR RTS 2154, art 4(2); see **section 17.32**

104 EMIR RTS 149, art 4(7); MiFIR RTS 2154, art 4(7)

omnibus accounts differ from those for gross omnibus accounts. For net omnibus accounts, the process is to liquidate and transfer any surplus to the client for the account of indirect clients; for gross omnibus accounts, to transfer the positions and to make a leapfrog payment to each indirect client in respect of any surplus.[105] As observed in commentaries around the RTS,[106] the RTS cannot bring about immunity from challenges which may be brought under insolvency laws to a transfer or leapfrog payment; a GCM offering indirect clearing services needs to find a private sector solution to this problem.

- Unlike GCMs, who are obliged to pass up all surplus collateral to a CCP where a client has opted for individual client segregation,[107] the obligations of a client offering indirect clearing are more limited. Clients must make arrangements to have the information available to the GCM to facilitate prompt return to the indirect clients,[108] but have no obligation to pass collateral along the chain. GCMs will nevertheless wish to receive margin and may dictate whether there is to be a supplementary margin requirement so, in practice, there may be little difference.
- Indirect clearing can apply to a long chain of intermediaries. Long chains are recognised where an adjacent pair from clearing member, client, and indirect client are in the same group of companies; it does not matter if the end indirect client is in the same group as the indirect client. The entities in the chain must hold appropriate regulatory status, and the duties of GCM and client are shared out among them according to the structure used. Other types of chain are not allowed.[109]
- The laws of the United Kingdom have been adapted to facilitate indirect clearing, in some limited respects. Part 7 of the Companies Act 1989 provides CCPs with a shield against insolvency attack for transfers of positions and title transfer collateral following default of a client as well as default of a clearing member, but this is of little value to a GCM facing an insolvency challenge.[110]

Indirect participation in payment systems

19.41 An agent bank which cannot (or is unwilling to) become a direct participant in a payment system may again need to rely on the services of another bank in order to make payments through that system. This set-up raises again the question of 'tiering', already considered at **section 19.12** from the perspective of the direct participant.[111] Additional issues for the indirect participant may include:

- the impact of operational failure of the direct participant on the ability to continue processing;

105 EMIR RTS 149, art 4; MiFIR RTS 2154, art 4
106 ESMA November 2015 consultation paper, para 35ff; Financial Markets Law Committee, *Issues of Legal Uncertainty arising in the context of Indirect Clearing of Exchange Traded Derivatives under MiFIR* (October 2015)
107 EMIR, art 39(6)
108 EMIR RTS 149, art 5; MiFIR RTS 2154, art 5
109 EMIR RTS 149, art 5b; MiFIR RTS 2154, art 6
110 See **section 17.62**
111 See Finan, K, Lasaosa, A, and Sunderland, J, 'Tiering in CHAPS' pp 371–378

- the impact of a solvency-related failure of the direct participant, which may lead to a termination of the processing arrangement – it seems that (a) the direct participant, being a defaulter, may be unceremoniously ejected from the system, and (b) there is no requirement in the Bank Recovery and Resolution Directive for a bank offering access services to continue to provide such services during resolution, unless the client is a transferee of part of the failed bank's business;[112] and
- whether incoming payments may be trapped in the insolvent estate of the direct participant.

A ring-fenced bank in the United Kingdom is subject to constraints on its ability to access a payment system indirectly. Only if the direct participant is itself a ring-fenced body in the same corporate group, or the eligibility criteria prevent the bank having direct access, or there is a standby access arrangement (or the ability to switch to another payment system) is indirect access allowed. The PRA is able to grant permission for indirect access 'due to exceptional circumstances'.[113]

Custodial obligations

19.42 An agent bank needing to use the services of another custodian or settlement agent will need to consider the constraints on such activity.

First, the MiFID Implementing Directive limits the ability of agent banks to allow security interests, liens or rights of set-off to subsist over a client's financial instruments or funds.[114] The MiFID Implementing Directive only permits the 'deposit' of financial instruments with a third party if due skill, care and diligence are exercised in the selection of the third party, and in general only if the third party is a duly regulated person.[115] Similarly, there are constraints on deposits of cash, and the use of client's assets.[116] In relation to agent banks regulated by the FCA in the United Kingdom, the rules on these matters are elaborate, and discussed in **section 6.20**.

Further, the set of duties which account-providers ought ordinarily to provide might be informative: these are set out in article 10 of the Geneva Convention.[117] The intermediary should also, if based in the EEA and participating directly in a CSD, comply with article 38(5) of the CSDR, thereby providing the client agent bank a choice between an individually segregated account at the CSD or an omnibus account, as well as a risk statement.

112 Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms etc, art 65

113 Financial Services and Markets Act 2000 (Excluded Activities and Prohibitions) Order 2014, SI 2014/2080, art 13

114 Commission Delegated Directive (EU) 2017/593 of 7 April 2016 supplementing MiFID with regard to safeguarding of financial instruments and funds belonging to clients, product governance obligations and the rules applicable to the provision or reception of fees, commissions or any monetary or non-monetary benefits, art 2(4)

115 Article 3

116 MiFID Implementing Directive, arts 4 and 5

117 Unidroit Convention on Substantive Rules for Intermediated Securities (October 2009); see further **section 6.7**

PRICE REGULATION

19.43 Given that the origins of much legislative activity in the field of clearing and settlement lie in a concern that the cost of these activities is too high,[118] it would be natural to ask whether there has been any attempt to regulate the price of clearing and settlement services provided by agent banks. Although there have been inroads into freedom of pricing of some financial services – notably for card payments[119] – there are few restrictions likely to affect providers of clearing and settlement services. The following may, however, be mentioned:

(1) Pricing structures agreed on a multilateral basis are likely to be challenged on competition law grounds. Numerous investigations and decisions took place in the 1990s over eurocheques and credit transfer systems in particular.[120] Card schemes and direct debit arrangements are tightly regulated.[121]

(2) Passing on charges for a payment service to another person may not be permitted. 'OUR' and 'BEN' coded credit transfers (under which the costs are paid by the transferor and the transferee respectively), and indeed interbank pricing for payments generally, are likely to be limited by article 62 of the PSD (regulation 66 of the PSRs in the United Kingdom). Where a payment does not involve a currency conversion, the rule is that the payee pays the charges levied by his payment service provider (PSP), and the payer pays the charges levied by his PSP. Article 62 can be opted out of by a non-consumer by agreement with his PSP, but of course even a non-consumer cannot control the agreement between his counterparty and the PSP of that counterparty, so the self-denying 'OUR' structure has been effectively killed off. It may be noted, however, that for the purposes of the PSD payment services do not include 'payment transactions carried out within a payment or securities settlement system' or 'payment transactions related to securities asset servicing'.[122]

(3) Article 81 of the PSD (regulation 84 of the PSRs) requires that PSPs and their intermediaries transfer the full amount of a payment and refrain from deducting charges from the amount transferred. A payee may agree with its PSP that charges made by the payee's PSP can be deducted before the payee's account is credited.

(4) Article 3 of the Cross-border Payments Regulation[123] requires that charges levied by a PSP in respect of cross-border payments within the European Union are the same as charges for corresponding national payments of the

118 See **section 1.29**

119 Cf European Commission, *Sector Inquiry under Article 17 of Regulation (EC) No 1/2003 on retail banking* (January 2007), COM(2007) 33 final

120 For review, see Gyselen, L, *EU Antitrust Law in the Area of Financial Services* (October 1996), Fordham Corporate Law Institute, 23rd Annual Conference on International Antitrust Law and Policy

121 Case COMP/34.569 – Mastercard, *Summary of Commission Decision of 19 December 2007 relating to a proceeding under Article 81 of the EC Treaty and Article 53 of the EEA Agreement* (November 2009), OJ (C) 264, page 8; Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro, etc, art 8; Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment transactions

122 Articles 3(h) and (i)

123 Regulation (EC) No 924/2009 of the European Parliament and of the Council of 16 September 2009 on cross-border payments in the Community, etc

same value and in the same currency. It is not clear that the limitations of scope regarding payments within settlement systems or payments related to securities asset servicing, mentioned above in relation to the PSD, apply to the Regulation.

(5) Article 38(1) of EMIR requires disclosure by clearing members of the prices and fees associated with the services provided; these have to be disclosed separately for each service and function, including discounts and rebates, and the conditions to benefit from the reductions. Curiously, the equivalent provision in the CSDR, article 34, applies only to CSDs and not to their participants.

20 Dividends, corporate actions and voting rights

RELATIONSHIP OF STATIC OWNERSHIP TO CLEARING AND SETTLEMENT

20.1 At the outset of this chapter, it is appropriate to explain why it exists at all. The subject of clearing and settlement is, above all, concerned with the transfer of interests in securities which is the very essence of trading. Once the clearing and settlement process is completed, the investor may enjoy the investment that has been acquired, which will entail not just the right and ability to dispose of that thing, but in the meantime to receive income as payable on the securities acquired, to participate in corporate actions, and (where the securities acquired include this right) to vote on the affairs of the enterprise in which the investment has been made. But these attributes just described are properly classified as the ongoing incidents of a static investment, which will occur regardless of any activity amounting to clearing or settlement. Furthermore, risks associated with corporate action processing do not appear to relate closely to clearing and settlement issues.[1]

Accordingly, Giovannini Barrier No 3 identified differences in national rules relating to corporate actions as one of the obstacles to efficient cross-border clearing and settlement:[2]

> 'National differences in the rules governing corporate actions, e.g. the offering of share options, rights issues etc., can be a barrier to efficient cross-border clearing and settlement. As corporate actions often require a response from the securities owner, national differences in how they are managed may require specialised local knowledge and/or the lodgement of physical documents locally, and so inhibit the centralisation of securities settlement and custody. Particular difficulties in respect of corporate actions arise from the inconsistent treatment of compensation and cash accruals and from the differing practices used to apply the effects of corporate actions to open transactions, e.g. different countries apply different treatments to the payment of a dividend on a security involved in an open transaction.'[3]

1 See Oxera, *Corporate action processing: what are the risks?* (May 2004)
2 See **section 1.26**
3 Giovannini, A, et al, *Cross-Border Clearing and Settlement Arrangements in the European Union* (November 2001), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/first_giovannini_report_en.pdf, p 47

The initiatives to dismantle Barrier 3 have been taken by the industry, rather than through legislation. The Corporate Actions Joint Working Group (CAJWG) have issued a definitive guide to Market Standards for corporate actions processing, covering distributions such as dividends, reorganisations and transaction management.[4]

The authority of Prof Giovannini is enough to indicate that the subject of corporate actions (including dividend and voting) is unavoidable in the field of clearing and settlement. In order to understand the relevance, it is first necessary to describe the relationship, in terms of timing, between corporate events and the transfer of securities.

20.2 Since Giovannini, there has been the report of the European Post Trade Forum (EPTF).[5] This was unable to state that Giovannini Barrier 3 was completely dismantled, principally because national divergences in practice on corporate actions and voting rights might re-emerge and undo some of the (still incompletely implemented) work of the CAJWG in implementing the second Shareholder Rights Directive (SRD2).[6] Coupled with the likely divergence of the United Kingdom from standards applicable in the European Union following Brexit, the fear may be well-founded.

DIVIDENDS

20.3 Let us imagine that a company whose equity securities are traded on a stock exchange has announced that a dividend is to be paid shortly. The dividend will be paid to those shareholders whose names appear on the register on a particular date, known as the 'Record Date'. An investor who has completed his acquisition of shares by the Record Date will receive the dividend. An investor who has bought the shares a few days later, so that his transfer is not completed until after the Record Date, will not. The price of the shares will thus be lower for trades which settle after the Record Date. The first date on which the trading price of the shares is reduced to reflect the receipt of dividend by the seller, rather than the buyer, is called the 'Ex Date', as the price is 'ex-dividend' (ex-div); where the price includes the dividend element it is a 'cum-dividend' (cum-div) price.

The relationship between the Ex Date and the Record Date depends on the length of the trading cycle. So, if a market operates on a T+2 cycle, and the company's Record Date is on Thursday:

- A trade done on Monday will ordinarily settle on T+2, which is Wednesday, and the buyer will receive the dividend, because the registration of the buyer's name will occur before the Record Date.
- A trade done on Tuesday will settle on Thursday. Assuming that the company does not close its books on the Record Date until after the

4 Corporate Actions Joint Working Group, *Market Standards for Corporate Actions Processing* (2012)

5 European Post Trade Forum, EPTF Report (May 2017), https://ec.europa.eu/info/sites/info/files/170515-eptf-report_en.pdf

6 Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement; see EPTF Report, EPTF Barrier 1 and (as to SRD2) **section 20.15**

completion of all settlement activity, the buyer will again receive the dividend.

- A trade done on Wednesday will settle on Friday, that is after the Record Date, and thus no dividend will be received by the buyer; the seller will receive it instead. So the sale price ought to be lower than Tuesday's price. Wednesday is thus the Ex Date.

The mathematical formula is expressed by the CAWG in the following way: Ex Date precedes Record Date by the settlement cycle minus one business day.[7]

Evidently the pricing of securities depends on the reliability of the Ex Date/ Record Date arrangement. If all goes according to this plan, then the clearing and settlement of transactions will remain unaffected by the payment of the dividend. But things do not always run according to this plan, and when they do not the providers of clearing and settlement services will become involved in the reconciliation and adjustment process. This is the main reason for a chapter on corporate actions appearing in a book on clearing and settlement.

MISMATCHED DATES AND MARKET CLAIMS

20.4 If the seller has sold cum-div but received a dividend, the seller will, in effect, be paid the dividend twice: first, because it was reflected in the price received for the shares, and secondly, because the seller was the actual recipient of the dividend distributed by the company. A readjustment is needed to restore buyer and seller to the positions which they should have. Such adjustments are referred to as 'market claims'.

Under the Global Principles for Corporate Actions issued by the International Securities Services Association, the CSD should be the person responsible for generating market claims.[8] Thus the payment obligations of the unjustly enriched settlement system participant will be increased by the amount of the dividend (or its payment entitlements reduced) when the dividend is distributed, bearing in mind that the actual dividend payment date is typically some days or even weeks after the actual Record Date.

20.5 There are several commonly encountered situations where an adjustment is needed. The following may be mentioned:

(1) *Settlement fails*. The principal reason why the seller may receive the dividend twice is that the seller was late in settlement – in other words, the settlement failed to be made on time. The subject of fails is explored further in **Chapter 21**.

(2) *Record date anomalies*. In some markets the concept of the Record Date is a relatively recent innovation. The CESAME group's report noted: 'In most countries, there is a *de facto* record date, not always enshrined in the law or explicitly recognised by market practices (eg in Germany the "KV-Stichtag", or in Italy a record date which is calculated from the ex-date). Moreover, the record date timing is not always defined as an "end of day

7 CAJWG Market Standards, p 14

8 International Securities Services Association, *Global Principles for Corporate Actions and Proxy Voting* (June 2012), p 11

date" (eg as in Estonia, Denmark).'[9] With the introduction of real-time gross settlement of securities transfers, there is a risk that the register of shareholders used for the purposes of determining dividend entitlement might be struck at the wrong time relative to the completion of settlement cycles on the Record Date. Careful synchronisation of the records used by the company or its paying agent to the settlement cycle is needed.[10]

(3) *Special trading*. Notwithstanding the convention of pricing cum and ex dividend, it is possible to reverse the conventional arrangement with a 'special cum' or 'special ex' price. Evidently these trades expressly contemplate an adjustment between buyer and seller so that the dividend is paid to the other party to the trade than the one showing as holder on the Record Date.

(4) *Securities Lending*. Where an investor lends securities to a market counterparty it is generally not intended that the loan deprives the investor of the income on the securities. A market claim can be generated in order to restore to the lender the dividend paid to the buyer, as holder of record, on the Record Date.

MORE COMPLEX CORPORATE ACTIONS

20.6 The example discussed in the foregoing sections of this chapter related to the simplest and most predictable of corporate events. Other events, such as bonus and rights issues, distributions with a scrip option, share buy-backs, and share splits and other reorganisations all raise similar questions with regard to transfers close to the Record Date. Complex corporate actions can be divided into various subgroups, according to their impact in terms of clearing and settlement.

Mandatory actions

20.7 Securities distributions and transformations fall into this category. Distributions arise when (for example) there is a bonus issue – the investor does nothing, and additional shares are credited to her account. Transformations arise when a security is replaced by a different asset – such as on a share split, or a merger where shares in company A are replaced by shares in company B. The principal issue in relation to these types of corporate action is the same as that on cash distributions: the record date for the corporate action needs to be followed, so that the trading in the security cum-entitlement, or in the old security, ceases on the day one settlement period ahead of the record date. The issues which can give rise to a mismatch of price and asset traded for dividends are thus equally relevant to securities distributions. The recommendations of the CAJWG regarding market claims are neutral as to the nature of the distributed asset.[11]

9 CESAME, *The Work of the Clearing and Settlement Advisory and Monitoring Experts' Group ('CESAME' group): Solving the industry Giovannini Barriers to post-trading within the EU* (November 2008), http://ec.europa.eu/internal_market/financial-markets/docs/cesame/cesame_report_en.pdf, p 95

10 See Clearstream Banking Frankfurt, *Removal of Giovannini Barrier 3* (August 2011)

11 CAJWG Market Standards, p 41

Securities distributions and transformations have the potential to give rise to fractional entitlements on settlement of the corporate action. If each investor is entitled to three new shares for every hundred shares already held, the chances are low that every investor holds an exact multiple of 100 shares; and the problem is compounded at each level in the holding chain: so a custodian may hold 1,234,567,890 shares, and get 37,037,036 new shares and cash compensation for its entitlement to seven-tenths of a share. But the custodian has 17 clients who have different holdings of the shares, respectively totalling 23,232,323 shares, 98,765,432 shares, etc, and these clients will each need to receive a whole number of new shares and cash compensation. The result is that the custodian will be left with a small number of nuisance shares which cannot be distributed and thus need to be disposed of in order to fund the cash compensation which the custodian needs to provide.[12]

Elective actions

20.8 Elective actions involve the exercise by the investor of some optional right, such as the opportunity to receive extra shares in lieu of dividend. In some circumstances the optional component of the corporate action may be separately tradeable (in the United Kingdom, such a right may be referred to as a 'renounceable' entitlement), and in markets following the CAJWG Market Standards[13] the optional component will be represented by an 'interim security' with its own ISIN.

20.9 Again, the principal issue with regard to clearing and settlement is the relationship between the key dates associated with the corporate action. The dates in relation to elective actions are somewhat different from those applicable to a mandatory action such as a distribution. In place of the Record Date, the date of central importance is the 'Market Deadline', after which the CSD of the issuer will no longer accept notice of elections. Working back from the Market Deadline, the last date on which a buyer of the securities can be assured to receive the right to participate in the elective action along with the securities is the 'Guaranteed Participation Date'. Provided that the transaction settles the day before the Market Deadline, the buyer should have time to exercise the election before the Market Deadline expires. But this is brinkmanship, and a more robust procedure is for a buyer to issue a 'Buyer Protection' instruction to the seller, which requires the seller to exercise the election in accordance with the buyer's wishes before settlement. To give time for the seller to act, the cut-off time for a Buyer Protection instruction (the Buyer Protection Deadline) is one business day before the Market Deadline. Hence the Guaranteed Participation Date is one settlement cycle before the Buyer Protection Deadline.[14] A buyer who has contracted to buy the securities on or before the Guaranteed Participation Date can make his own election on settlement, or issue a Buyer Protection instruction before the Buyer Protection Deadline and have the seller do it for him. If the seller fails to deliver the securities in a timely fashion, there is a risk that a buyer who did not issue a Buyer Protection instruction could lose the benefit of his desired election. The CAJWG Market Standards do not make allowance

12 CAJWG Market Standards, p 19
13 CAJWG Market Standards, p 23
14 CAJWG Market Standards, pp 27, 37

for a market claim in these cases, presumably because the Buyer Protection machinery[15] ought to be adequate to avoid loss or disappointment.

20.10 Where securities transactions are cleared through a CCP, immediately after the trade date a buyer's counterparty will be the CCP. A CCP is therefore likely to receive a number of Buyer Protection instructions which will need to be allocated among its various selling participants. LCH Limited addresses the issue as follows: 'Allocation Notices are created using the Allocation Methodology that matches Buying Members with Selling Members in the following order: (1) an outstanding settlement obligation of equal size; then (2) an outstanding settlement obligation of greater size; and (3) an outstanding settlement obligation of greatest size (i.e. the largest available if the largest available is smaller than the elected position).'[16] It may also be noted that the EquityClear Procedures of LCH Limited require a clearing member which has issued a Buyer Election Notice to indemnify the CCP in respect of losses suffered by the CCP as a result of any breach of the terms and conditions of the relevant corporate action.[17]

20.11 Reciprocal actions occur when the investor, as well as the issuer, is required to act in order to give effect to the action. Examples are rights issues, and their converse, tender offers. Reciprocal actions involve the added complication for custodians of gathering in the payment required by their clients who elect to participate in the action, but do not otherwise appear to raise any additional issues.

VOTING

20.12 Voting by shareholders of a company is a subject which gives rise to a good deal of comment. One area of concern is 'empty voting', by which is meant the separation of the investment interests of the long-term shareholder from the person who is entitled to exercise the voting rights attributable to the share. Empty voting may occur as a result of several types of economic activity:

(1) The record date applicable to the vote may be different from the general meeting at which the vote is taken, and different again from the date on which shareholders are sent voting papers. There was, in 2011, no harmonised law on this subject in the European Union; such law as there is, is described below. Shares may be traded during the period between the announcement of the vote and the taking of the vote; in particular, they may be sold between the record date and the date of the vote, meaning that those who voted may not have any continuing interest in the issuer.

(2) Securities may be lent. A securities loan in Europe transfers title to the borrower.[18] One potential result is that the borrower does not vote at all, because the borrower has no long-term interest in the fate of the issuer; another is that the loan was taken out with the intention of conferring the voting rights on the borrower. It is open to the parties to agree that the lender should be able to direct the borrower to exercise voting rights in a particular way. However, the International Securities Lending Association points out that its 2010 Global Master Securities Lending Agreement

15 CAJWG Market Standards, pp 45–46
16 LCH Limited, *Procedures* (April 2020), Section 2D 1.14.6(c)
17 LCH Limited, *Procedures* (April 2020), Section 2D 1.14.3(d)
18 See **section 21.2**

includes a borrower's warranty that each loan is not being entered into for the primary purpose of obtaining or exercising voting rights, and that its Securities Borrowing and Lending Code of Guidance states that there is consensus that securities should not be borrowed for voting purposes.[19]

The European Commission consulted on the possible discouragement of borrowing in order to obtain voting rights in 2007[20] and ESMA called for evidence on the subject again in 2011.[21] The results were mixed.[22]

One further issue arises in relation to securities loans: the risk of operational error, where a custodian is mistaken about the voting entitlement in relation to the securities, and records the vote of the wrong party to the loan, or even records the votes of both parties ('over-voting'). While over-voting has attracted regulatory attention in the United States,[23] it appears not to have been under the spotlight in Europe.

(3) Derivatives transactions may be entered into which confer an economic interest without granting any voting rights. A short position in a derivative may be hedged with a long position in the physical instrument, for which the hedger has no particular interest in exercising voting rights.

20.13 The problem is complex as, until electronic voting methodologies gain widespread currency, the practical effort required to distribute and collect voting papers necessitates a time gap to complete the steps between the announcement of a vote and the taking of the count: the despatch to ultimate investors and receipt by them of voting papers, due time for investors to consider the issues and return their completed voting papers, and the validation and counting of votes. These processes depend on traditional communication methods, whereas share trading takes place in fractions of a second, and settlement is within two business days of trade. The anomalies which arise can include the following:

- an investor may send back physical voting papers, but have sold his shares before the record date, giving rise to reconciliation issues for the registrar or other person responsible for vote counting;
- an investor may vote on shares which she has disposed of after the record date but before the general meeting at which the vote is taken; and there is no general system for a 'market claim' by the purchaser of the shares in such a case;

19 International Securities Lending Association, *ISLA's Response to ESMA's Call for Evidence on Empty Voting* (November 2011), www.esma.europa.eu/system/files/ISLA_Response_to_ESMA_Call_for_Evidence_on_Empty_Voting_Nov_11.pdf

20 European Commission, *Fostering an Appropriate Regime for Shareholders' Rights, Third consultation document of the Services of the Directorate General Internal Market and Services* (April 2007), http://ec.europa.eu/internal_market/company/docs/shareholders/consultation3_en.pdf

21 European Securities and Markets Authority, *Call for evidence – Empty voting* (September 2011), www.esma.europa.eu/system/files/2011_288.pdf

22 European Commission, *Synthesis of the Comments on the Third Consultation Document of the Internal Market and Services Directorate-General 'Fostering an Appropriate Regime for Shareholders' Rights'* (September 2007), http://ec.europa.eu/internal_market/company/docs/shareholders/consultation3_report_en.pdf; www.esma.europa.eu/consultation/Call-evidence-Empty-voting#responses

23 NYSE Euronext, *NYSE Regulation Fines Deutsche Bank Securities $1 Million for Failure to Supervise Handling of Customer Proxies* (February 2006); *NYSE Regulation, Inc. Fines UBS Securities, Goldman Sachs Execution & Clearing, and Credit Suisse Securities (USA) $1.35 Million for Proxy-Handling Violations in Corporate Elections* (June 2006)

- an investor may acquire shares before the record date and yet fail to receive voting papers, including in cases where the settlement cycle had completed before the record date; or
- an investor may not receive voting papers with adequate time to act, or even at all, because the chain of intermediaries is too long, and the challenge of reproducing papers, distribution and translation, and giving time for postage, collection, collation and reporting to the next intermediary in the chain is too difficult to overcome.

20.14 The legal rules which exist to mitigate empty voting, and to reduce the anomalies mentioned above, are few and relatively unsuccessful.

(1) The Shareholder Rights Directive (SRD)[24] aimed to eradicate 'blocking': that is, shareholders are not to have their right to sell or transfer their shares between the record date and the general meeting restricted.[25] Issuers are required to allow at least 8 days between the convocation of a general meeting and the record date, to set the record date to occur not more than 30 days before the general meeting,[26] and to allow at least 21 days between convocation and the meeting.[27] These timings are variable between Member States,[28] and the CESAME group noted that the SVRD 'did not solve the discussion around a long or short period between record date and date of the general meeting; a long period has the benefit of giving time to intermediaries to process information but the disadvantage of an increased likelihood that the person voting will not be a shareholder by the time the meeting takes place thus requiring many updates of communications; the opposite applies regarding a short period'.[29]

(2) The SRD does not deal fully with the blocking of securities for voting purposes. For example, the SRD does not cover fixed-income securities. Where the SRD does not apply and the issuer has not implemented a record date procedure for determining eligibility to vote, the historical practice of 'blocking' may occasionally still be encountered. Blocking ensures that there is identity of voting and ownership interests (but, of course, neither necessarily corresponds to long-term economic interest).

(3) The Transparency Directive[30] requires that shareholders must notify the issuer of the proportion of voting rights they hold where the proportion reaches, exceeds or falls below certain thresholds.[31] The notification requirement applies in a wide variety of circumstances where a transaction involves something other than a simple transfer, including temporary transfer, collateral arrangements and custody arrangements where the custodian is given voting discretion.[32] It may be considered regrettable that the Transparency Directive uses a different definition of 'shareholder' from the SRD. In any case, there is a question as to whether the ultimate

24 Directive 2007/36/EC of the European Parliament and of the Council of 11 July 2007 on the exercise of certain rights of shareholders in listed companies
25 SRD, art 7(2)
26 SRD, art 7(3)
27 SRD, art 5(1)
28 European Commission, *List of days provided for according to Article 15 of Directive 2007/36/EC* (October 2010), OJ C 285/1
29 CESAME group report, p 95
30 Directive 2004/109/EC of the European Parliament and of the Council of 15 December 2004 on the harmonisation of transparency requirements in relation to information about issuers, etc
31 Transparency Directive, art 9(1)
32 Transparency Directive, art 10

investor or the actual registered nominee should be treated as the shareholder. This ought to be resolved by SRD2, as discussed in **section 20.15**, though the United Kingdom seems to have taken a different path from the rest of Europe.

THE SECOND SHAREHOLDER RIGHTS DIRECTIVE (SRD2)

20.15 With effect from 3 September 2020, Member States (including, for these purposes, the United Kingdom) are to have implemented modifications to the SRD, brought into play through SRD2, to (i) ensure that end investors holding their shares through a long chain of intermediaries can enjoy their rights and (ii) remove obscurity from the voting and engagement behaviours of institutional investors, asset managers and proxy advisors. As regards the first of these objectives:

- Article 3a of the SRD is intended to enable a company to identify its investors and, under article 3b, to communicate with them. To that end, obligations are placed on intermediaries to transmit information up and down the chain. The connection is about more than just corporate actions and voting: companies want to understand their investor base, reward long-term shareholder loyalty with perks, and facilitate good governance through having investors that actually care about how the company is run and evolves. [33] Article 3c enhances voting by obliging intermediaries to facilitate direct exercise of the rights or to exercise the rights on the investors' behalf.
- It is clear that the target of the SRD2 reforms is not the companies but the custodians and other intermediaries who stand in the chain between the issuer and its investors. This causes a compliance issue, since the intermediaries may not be located in the same state as the issuer, or the investor, who are the persons most immediately concerned with the question of compliance. Intermediaries' compliance is in the hands of the authorities of the Member State where the issuer is incorporated,[34] and, although third-country intermediaries are supposed to comply,[35] it is far from clear how an intermediary operating in a different Member State or a third country is within reach of the enforcement authorities of the competent (issuer's) home state.
- A Commission Implementing Regulation[36] sets out standardised formats for the transmission of information and requires transmissions to be electronic and machine-readable. Although ISO 20022 is not expressly mentioned, it is clearly envisaged that this standard will be used ('internationally applied industry standards such as ISO').[37] The effective date of the Regulation is 3 September 2020, in other words before the

33 SRD2, Recitals (7), (8)
34 SRD, art 1(2)
35 SRD, art 3e
36 Commission Implementing Regulation (EU) 2018/1212 of 3 September 2018 laying down minimum requirements implementing the provisions of [SRD] as regards shareholder identification, the transmission of information and the facilitation of the exercise of shareholders rights
37 Commission Implementing Regulation, art 2(3)

expiry of the transition period for the departure of the United Kingdom from the European Union.

- The interpretation of the concept of 'shareholder' – the beneficiary of the assurances supposedly conferred by the SRD – is left to Member States.[38] Ordinarily, in the context of the directive, and its clearly stated purposes of conferring protections along the chain of intermediaries to the end investor, one would expect that the CAJWG approach to defining the end investor would apply. This is the 'physical or legal person who holds the security for his own account, not including the holder of a unit of a UCIT (undertaking for collective investments in transferable securities)'.[39] Subject to the oddity of the United Kingdom interpretation (discussed below), the discretion left to Member States should not be to cut out classes of end investor, but to facilitate proper adherence to company law which may disqualify shareholders on account of matters like incapacity, non-compliance with the company's by-laws and such like, and which will differ from one country to another.

20.16 Mention may also be made of an issue not yet tackled in the SRD. The EPTF observed that each country has its own rules and requirements for the information which issuers of securities wish to obtain on their shareholders. Diversity leads to complexity in cross-border processing, since data fields, content and even messaging standards differ from one place to another. Accordingly, the EPTF called for greater standardisation.[40] At the heart of the concern is the assumption that connecting issuers and investors means that issuers want to know about the end-investor, not the intermediary whose name appears on the CSD's register as the immediate holder of the securities and that end-investors want to know about the affairs of the company in which they have invested. Shareholder registration rules can get in the way of this, even if the objectives of shareholder registers are the same.

It may be said that article 3a of the SRD now ensures that companies have the right to identify their shareholders, but it will also be noted that the directive limits the right to investors holding more than 0.5% of the issuer's shares or voting rights, and that the harmonisation of data-gathering is restricted. There is no bar to Member States and their issuers demanding more information than that mandated by the SRD.

SRD2 in the United Kingdom

20.17 The United Kingdom has implemented SRD2, though not in a manner which would be recognised as compatible with the objectives of the SRD. The approach to implementation is set out in a Transposition Note accompanying the Companies (Shareholders' Rights to Voting Confirmations) Regulations 2020.[41] In relation to articles 3a and 3b, the Transposition Note asserts that no action is needed to give effect to them in the United Kingdom, since '[i]n the UK the shareholder is the person registered as the member in the company's register of

38 SRD, art 2(b)

39 CAJWG Market Standards, Glossary. The Standards for General Meetings use the same formula

40 EPTF Report, EPTF Barrier 5

41 SI 2020/717; for the Transposition Note see www.legislation.gov.uk/uksi/2020/717/pdfs/uksitn_20200717_en.pdf

members required to be held by a company under section 113 of the Companies Act 2006 for certificated shares' and the rights specified in the two articles of the SRD already exist – in favour of registered members. So, as with the SRD in its original form, the rather bizarre idea has been retained that 'shareholder' means the legally registered member of the company, ignoring the chain of intermediaries and, arguably, defeating the purpose of SRD2.

That way of looking at the definition of 'shareholder' is almost certainly wrong and, but for the departure of the United Kingdom from the European Union, would be open to challenge. The following remarks may be made:

- Numerous references in SRD2 explain that the purpose of the directive is to address the disconnection that may occur when a chain of intermediaries separates the company from its 'shareholders'.[42] To take the course followed by the United Kingdom requires a leap of imagination.
- The SRD does, of course, allow Member States to set their own parameters on who is a 'shareholder', since article 2(b) defines 'shareholder' as 'the natural or legal person that is recognised as a shareholder under the applicable law'; no doubt the United Kingdom's approach is to take this literally, despite the contradictions it apparently entails. But the definition in the SRD is intended to allow Member States' company laws to have effect: so, for example, an investor may be disqualified from being regarded as a shareholder for voting or other purposes on grounds of non-compliance with the company's rules or under the general law. The SRD does not attempt to harmonise those restrictions; what it does try to do is connect issuers and investors.
- The EPTF Report indicates that the UK approach is wrong.[43] The EPTF was concerned with cross-border post-trade matters within the European Union, so maybe its views are of limited relevance; but the consequences of the divergent UK approach for cross-border post-trade corporate actions processing may be mentioned. In particular, EU issuers may regard UK investors holding through a chain as 'shareholders' with rights which ought to be provided by intermediaries in the chain. Since the SRD is directed at intermediaries, an intermediary will have little choice but to comply with the SRD as implemented in the rest of Europe, rather than the UK model. Likewise, the outcome is unclear when an EU intermediary considers its client to be an intermediary, but the client is a UK intermediary who would not feel obliged to meet SRD obligations since under UK law only registered members of the company benefit.
- In the United Kingdom, the only persons who might be an 'intermediary' for the purposes of SRD2 are CREST and the company registrar. It seems likely that a company registrar would qualify as an 'intermediary' by virtue of conducting 'maintenance of securities accounts on behalf of shareholders or other persons'; the position of CREST is less clear, but CREST is likely to wish to comply, partly because the Euroclear group will be well-prepared anyway, and partly because of its intermediation role in respect of CREST Depositary Instruments (which are a form of global depositary receipts).

42 SRD2, Recitals (4), (8), (12); the addition of para (5) into SRD art 1, of point (d) into SRD art 2, etc

43 EPTF Report, pp 52, 55

- Finally, there is a possible overlap between the provisions of section 793 of the Companies Act 2006, which enable a company to identify end-investors, and article 3a of the SRD. Without harmonisation of the Companies Act and SRD regimes, two operationally distinct systems may be needed by custodians handling both UK and EU investments for their clients.

21 Securities lending

IMPORTANCE OF SECURITIES LENDING

21.1 Securities lending plays a vital role in clearing and settlement. The ability to 'lend' securities, so that they can be put to use where they are needed, ensures that long-term investors can retain the benefits of their investment while short-term needs of market participants are also catered for. Short-term needs include coverage of delivery obligations to settle trades or meet collateral calls, where insufficient stock is available or a transaction counterparty is late in settling its own obligations, hedging, and investment plays which do not envisage a long-term exposure to the investment.[1]

FUNDAMENTAL CONCEPTS

Ownership of lent securities

21.2 At the heart of securities lending in Europe is the fact that the word 'loan' is a misnomer. A securities loan requires the outright transfer of ownership of the securities being 'lent'.[2] The 'borrower' is free to treat the securities in the same way as any other securities in its absolute ownership, so the borrower can sell, pledge, redeem or otherwise dispose of them. The borrower's obligation at the end of the loan is to transfer back to the lender 'equivalent' securities; if the borrower has disposed of the securities originally lent, then the borrower must obtain the equivalent securities in the market in order to satisfy its re-delivery obligation.

The second fundamental concept relating to securities lending flows from the first. Because the loan involves an outright transfer of title to the securities, the lender has replaced its ownership of a security with a personal (ie, a non-proprietary) claim on the borrower for the duration of the loan. The lender accordingly has a credit exposure on the borrower since they may be unable to satisfy its obligation to deliver equivalent securities at the return date. Note that, even if the borrower has retained the securities, they belong outright to the borrower, so that if the borrower is insolvent at the return date, the lender cannot claim the securities for itself: they belong to the insolvent estate of the borrower and the lender's claim is for a dividend based on the value of the securities

1 See Faulkner, M, *An Introduction to Securities Lending* (March 2004), www.bankofengland.co.uk/markets/gilts/securitieslending.pdf, ch 3

2 GMSLA 2010, paras 2.3 and 4.2; GMRA 2011, paras 6(e) and (f)

which will no longer be returned. In consequence, the lender will ordinarily take collateral from the borrower, either in the form of cash, or other securities for which the borrower has no current need.

Fees, rates and rebates

21.3 The lender will expect to be paid a lending fee.

Where the lender accepts only cash collateral, it may be convenient to document the securities loan as a repo (sale-and-repurchase) transaction. A repo is typically a form of secured financing under which the borrower of cash puts up securities as collateral on a title-transfer basis, and pays a 'repo rate' which is a species of interest payment to the lender of cash. In the securities lending world, the 'lender' is the lender of securities and the 'borrower' is the borrower of securities; repo terminology dubs the securities lender the 'seller' and the securities borrower the 'buyer' under the notion of sale followed by repurchase.

The desire of the lender to receive a lending fee, and the desire of the cash provider to receive a repo rate, create between them a tension which has implications for securities clearing and settlement. Where the cash provider's desire for specific securities is high, the repo rate which the cash provider is willing to receive may be reduced. A reduced repo rate is typically referred to as a 'specials' rate, referring to the 'special' securities which are the subject of the repo, and contrasting with the (higher) general-collateral rate. In times of low interest rates, the specials rate payable may be very low, even negative. At other times, the interest due to the securities borrower will apply as a rebate to the lending fee otherwise expected by the securities lender. Some implications of this tension in relation to fails are explored further below.

Documentation

21.4 Market standard documentation for securities loans and repos is similar to the Master Agreement structure for derivatives transactions. Securities loans may be documented in a number of ways; since 2011 the Bank of England's Securities Lending and Repo Committee[3] directs interested persons to the 2010 edition of the Global Master Securities Lending Agreement (GMSLA 2010)[4] for securities lending and the 2011 edition of the Global Master Repurchase Agreement (GMRA 2011).[5] As well as the expected clauses dealing with delivery of securities, payment of a rate, return of equivalent securities, and title transfer, both types of market standard documentation also contain the following important provisions:

- Clauses dealing with collateral: delivery of collateral, marking to market, return to the collateral provider of surplus collateral, and substitution.[6]

3 See www.bankofengland.co.uk/markets/Pages/gilts/slrc.aspx
4 International Securities Lending Association, *Global Master Securities Lending Agreement* (January 2010)
5 Securities Industry and Financial Markets Association and International Capital Market Association, *Global Master Repurchase Agreement, 2011 version* (April 2011)
6 GMSLA 2010 para 5; GMRA 2011 paras 4, 8

- Clauses dealing with the effects of insolvency and other events of default by either party. In brief, the non-defaulting party will be given the option to 'close out' the outstanding transactions, in other words to treat the obligations to deliver equivalent securities, and return equivalent collateral, as accelerated so that they are immediately performable; and, if the obligations of the defaulting party are not performed, the obligations of both parties will each be ascribed a 'default market value' which is payable in money. The default market values are aggregated and set off, to result in a net money amount due one way or the other.[7]
- Clauses dealing with income on the securities lent and collateral.[8] The transferee of the loaned securities or collateral will be the absolute owner and therefore entitled to receive and keep the income; to adjust the position back to the desired economic position of the parties, they are expected to 'manufacture' income payments which are made between them. The documentation also contains provisions dealing with the tax treatment of these manufactured payments.[9]

21.5 One aspect of the documentation which receives little emphasis is the impact of corporate actions which apply to loaned securities. It is a consequence of the absolute transfer of title to the borrower that the borrower may not hold the loaned securities at the time of a corporate event; furthermore, it is difficult to ascertain, in general terms, what the money value of a corporate action other than an income or restructuring event may be. The GMSLA 2010 allows the provider of securities (lender or collateral provider) to give to the other party a notice that 'it wishes to receive Equivalent Securities or Equivalent Collateral in such form as will arise if the right [under the corporate action] is exercised or, in the case of a right which may be exercised in more than one manner, is exercised as is specified in such written notice'.[10] The GMRA 2011 does not address corporate actions at all.

21.6 Each type of documentation[11] allows for the possibility of a lending agent. Agency lending enables a custodian, who holds securities for long-term investors such as pension funds, to identify borrowers with borrowing needs, and to match lending and borrowing interests. Lenders will authorise their custodians to enter into market-standard lending documentation on their behalf with approved lists of counterparty borrowers, and authorise them to accept certain types of collateral according to their risk appetite. Agency lending introduces the following features into securities lending:

- The lender will need to enter into an authorisation agreement with the custodian, enabling the custodian to effect and administer the loans. The agreement may go further and permit the custodian to reinvest cash collateral received (eg, by entering into repos) in order to recoup, and possibly exceed, the interest paid to the securities borrower.

7 GMSLA 2010 paras 10, 11; GMRA 2011 para 10
8 GMSLA 2010, para 6; GMRA 2011, para 5
9 GMSLA 2010, paras 6.3(b), 12; GMRA 2011, paras 6(b), 11
10 GMSLA 2010, para 6.7
11 GMSLA 2010, Agency Annex; The Bond Market Association and International Securities Market Association, *Global Master Repurchase Agreement (2000 Version) Agency Annex* (October 2000), www.sifma.org/Services/Standard-Forms-and-Documentation/MRA,-GMRA,-MSLA-and-MSFTAs/GMRA_Agency-Annex-%E2%80%93-Supplemental-Terms-and-Conditions-for-Agency-Transactions/

- The agent/custodian will have authorisation agreements with lenders, each enabling the entry into securities loans with certain borrowers. On the other side, the agent/custodian will have GMSLA or other market standard lending documentation with each borrower, to which a number of lender clients of the custodian are party as principal. The agent/custodian has a pivotal role in sourcing and aggregating the securities lent out to a particular borrower, ascertaining the collateral due from the borrower, and allocating the collateral to the lenders concerned.
- Collateral received from any particular borrower will belong to a group of lenders who have, between them, provided the securities which have been lent. The collateral account of each lender will need adjustment to reflect the changes in value of the lent securities and the collateral received, as well as the differential appetite of the lenders to receive collateral. Accordingly, the agency annexes to market standard lending documentation allows for pooling by the agent of collateral held, and adjustment as between the accounts of its principal lenders, notwithstanding that the collateral is in the ownership of the lenders.

REGULATION OF SECURITIES LENDING

21.7 The Securities Financing Transactions Regulation (SFTR)[12] creates an obligation on financial institutions which are party to repo or securities lending transactions to ensure that the details of the transactions are reported to a trade repository.[13] The policy objective of the SFTR is to recognise that repo and similar activities are a form of financing and to enable regulators to gain a better perspective on the size of the exposures involved. The rationale is similar to that relating to the mandatory reporting of derivatives transactions under EMIR.

In the United Kingdom version of the SFTR,[14] the scope of the Regulation is restricted to transactions entered into by (i) entities established in the United Kingdom and (ii) a non-UK entity through a UK branch. This means that an EU-established entity will be subject to two versions of the SFTR in respect of transactions done by its UK branch. As no cross-border recognition of trade repositories is contemplated under either EMIR or the SFTR, there are complications in complying simultaneously with the UK and EU versions of the SFTR, as discussed in **section 7.65**. In carrying the SFTR forward after Brexit, the Treasury opted not to complete the implementation of the SFTR inasmuch as it would impose a reporting obligation on non-financial counterparties.[15]

The SFTR also creates a duty for collateral-takers to inform collateral-providers of the risks involved in re-use of securities transferred as collateral, where there is a security interest including a right of use or a title transfer collateral arrangement.[16]

12 Regulation (EU) 2015/2365 of the European Parliament and of the Council of 25 November 2015 on transparency of securities financing transactions and of reuse etc
13 SFTR, art 4
14 Transparency of Securities Financing Transactions and of Reuse (Amendment) (EU Exit) Regulations 2019, SI 2019/542
15 Chancellor of the Exchequer Rishi Sunak, Financial Services Update: Written Statement (June 2020), HCWS309
16 SFTR, art 15

21.8 The Short Selling Regulation constrains 'short sales' of shares and sovereign debt instruments.[17] Although repos and securities loans are not treated as short sales,[18] the restrictions on short selling can affect securities lending in two principal ways:

(1) First, an open securities loan may have the effect that a lender who is also an intending seller of securities does not 'own' the securities at the moment of agreeing to the sale, and is therefore technically engaging in a short sale, even if the securities loan can be unwound in time to deliver against the sale contract.

(2) The converse of this position is where a borrower of securities enters into a sale contract relating to the borrowed securities. The Short Selling Regulation regards this type of activity as a short sale, because the borrower will be economically 'short' after delivering against the sale, owing to his obligation to return equivalent securities at the end of the securities loan.[19]

In these two cases, the short-seller will potentially be obliged to report a significant short position in shares or sovereign debt to its regulator and to disclose its position publicly;[20] and the short sale transaction may be completely forbidden unless the short-seller has borrowed the asset or made alternative provisions such as standby arrangements.[21]

21.9 The following further regulatory matters might also be noted.

(1) Under the Short Selling Regulation, regulators may look into the pricing of securities loans in times of market turmoil.[22]

(2) There have been various probes into 'empty voting' associated with securities lending, as discussed in **sections 20.12–20.14**.

(3) The Financial Stability Board has drawn attention to the stability implications of lack of transparency in the securities lending and repo markets, which are viewed as part of the 'shadow banking' system.[23] The SFTR is the legislative response to this issue in Europe.

FAILS AND SETTLEMENT DISCIPLINE

21.10 Settlement fails are, from a policy perspective, considered to be undesirable. The European Central Bank (ECB) notes that fails may expose transaction counterparties to credit or liquidity risk, and that the fear of fails encourages financial firms to hoard securities with adverse consequences for market liquidity.[24] It could also be mentioned that a fail may have the result that a corporate event is missed by the intended transferee, and the loss suffered

17 Regulation (EU) No 236/2012 of the European Parliament and of the Council of 14 March 2012 on short selling and certain aspects of credit default swaps, art 12
18 Short Selling Regulation, art 2(1)(b)((i) and (ii)
19 Short Selling Regulation, art 2(1)(b)
20 Short Selling Regulation, arts 5–7
21 Short Selling Regulation, arts 12, 13, 17
22 Short Selling Regulation, art 19
23 Financial Stability Board, *Securities Lending and Repos: Market Overview and Financial Stability Issues* (April 2012), www.financialstabilityboard.org/publications/r_120427.pdf, p 14
24 European Central Bank, *Settlement Fails – Report on Securities Settlement Systems (SSS) Measures to Ensure Timely Settlement* (April 2011), www.ecb.eu/pub/pdf/other/settlementfails042011en.pdf

for a missed event may be high; it may be that the high level of operational risk assumed by regulators to be associated with securities services[25] is in part attributed to corporate actions and fails.

In its 2011 consultation relating to CSDs, the European Commission put forward an explanation for settlement fails:

> 'Settlement fails can have different causes. Failed communication can occur all along the chain of communication between trade and settlement … Other [causes] can be operational failures, such as computer errors or system breakdowns. Most settlement fails occur because of a seller's inability to deliver securities it expected to receive from an unrelated transaction, which can lead to a "daisy chain" of settlement fails. A final reason for fails can derive from a short selling strategy, where a seller sells a security it does not own, and where there are insufficient incentives to avoid a failed settlement by borrowing it to make delivery.'[26]

Preventing fails

21.11 The ECB put forward a number of suggestions for reducing fail rates in 2011.[27] These included operational improvements such as straight-through processing and queue management, to speed up settlement; interposing a CCP; improved matching and securities-flow (hold-release) mechanisms; publication of fails data; and, of course, securities lending. To a degree, these ideas have been adopted by EU legislation.

21.12 Under the CSDR,[28] infrastructures are obliged to take steps to minimise fails, although the responsibility for upholding settlement discipline in equity markets is shifting towards CCPs. CSDs must put in place a fails monitoring system, report to their regulator and 'to any person with a legitimate interest' on fail rates and establish procedures to facilitate settlement of failed trades (including penalties). Persistent offenders could be suspended from participation in their CSD, CCP, or trading platform, and publicly named and shamed. The CSDR mandates a four-day buy-in period for all transferable securities, money-market instruments, fund units and emission allowances traded on regulated markets, MTFs or OTFs, or cleared by a CCP.[29] Buy-ins would be effected by the CCP, where involved. If the transaction is not cleared, the primary responsibility shifts to the trading venue where it was executed: the venue must have buy-in rules though the buy-in can be effected by members. If there is no venue, then the CSD must include in its rules an obligation imposed on its members. Thus, for uncleared OTC transactions, agent banks may be forced to cover failed

25 Cf **section 12.6**

26 European Commission, *Public Consultation on Central Securities Depositories (CSDs) and on the Harmonisation of certain aspects of securities settlement in the European Union* (January 2011), DG Markt G2 D(201)8641, http://ec.europa.eu/internal_market/consultations/docs/2011/csd/consultation_csd_en.pdf, p 36

27 ECB Settlement Fails paper, Box 1, p 5

28 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories etc

29 CSDR, art 7(3)

trades. The duties of different classes of market participant and infrastructure as regards fails avoidance are set out in regulatory technical standards.[30]

The position on settlement discipline in the United Kingdom, following its departure from the European Union, is different: the CSDR obligations do not apply, as discussed in **section 19.16**.

21.13 A delivery failure may have risk implications for a CCP. First, the CCP will be unable to fulfil all its delivery obligations to buying participants without borrowing. Secondly, the CCP may be left with a net long position in a security if it is not possible to deliver out all the securities received: for example if participant X has failed to deliver 50 shares, but participant Y has fulfilled its obligation to deliver 50 shares, the CCP will be unable to satisfy its obligation to deliver 100 shares to participant Z. The rules of the CCP and of the market may not allow for partial settlement, or the apportionment of a shortfall may require re-matching of settlement instructions by the affected buying participants, which might not be achievable in the time available. If a CCP is left with a net holding of shares for a day or two there may be corporate actions requiring intervention, expenditure and potentially liability for the CCP. The CCP may adopt 'splitting' or 'shaping' rules to facilitate disposal of shares which are actually delivered.

21.14 Securities lending has a key role to play in management of failed settlements. If a seller can borrow securities in order to fulfil a delivery obligation, a fail can be averted. However, there is a risk of perverse results when interest rates are very low, as the European Repo Council of the International Capital Market Association explains:

> 'When interest rates fall to low levels, the economic incentives to remedy delivery failures that are created by the generally-accepted market convention are weakened. If repo rates fall to negative levels, the convention can even produce perverse results. A negative repo rate means that the repo seller (cash borrower) is paid by the repo buyer (cash lender). Therefore, if a repo seller fails at the start of a repo, it is the repo buyer who would have to pay the repo rate and who would be penalised, even though it is the repo seller who has failed. This could encourage repo sellers to enter repo transactions with no intention to deliver, in order to profit from a negative rate (a so-called "strategic fail").'[31]

Although the European Repo Council indicated that 'such abusive behaviour has not been reported in the European Market''[32] it was recommended that a repo seller (securities lender) who fails to deliver in respect of a repo with a negative repo rate should suffer a readjustment of the repo rate to zero or termination of the transaction by the buyer (borrower).

30 Commission Delegated Regulation (EU) 2018/1229 of 25 May 2018 supplementing [CSDR] with regard to regulatory technical standards on settlement discipline

31 European Repo Council, *A white paper on the operation of the European repo market, the role of short-selling, the problem of settlement failures and the need for reform of the market infrastructure* (July 2010), para 6.21

32 Cf, for the US position, Fleming, M and Garbade, K, *Explaining Settlement Fails* (September 2005) Federal Reserve Bank of New York Current Issues in Economics and Finance, Vol 11, No 9, http://www.newyorkfed.org/research/current_issues/ci11-9.pdf

CLEARING OF SECURITIES LOANS

21.15 A further market development which has been proposed in relation to securities lending is the potential for a CCP to clear securities loans. LCHhas operated a repo clearing service since 1999. Eurex Clearing offers a securities loans clearing service, which does not expect beneficial owners of lent securities to provide margin or a default fund contribution. Given that securities lending is typically a fully-collateralised activity (unlike, say, OTC trading of securities) the policy rationale behind a move towards clearing of securities loans may be unclear; the Bank of England has pointed to enhanced transparency,[33] but a CCP is a sledgehammer to crack that particular type of nut, and the SFTR provides an alternative solution.

The International Securities Lending Association (ISLA) found arguments on both sides of the question of desirability of a CCP for securities loans.[34] ISLA's report noted that securities lending is a two-sided market, so that typical lenders are hardly ever borrowers, and that would mean 'opportunities for position netting are low'. Also, ISLA point out that the characteristics of the counterparty, as opposed to the transaction, dictate terms of securities loans: factors such as likelihood of recall of lent securities and tax rates on manufactured dividends are relevant. CCPs eliminate counterparty issues and call margin based on product characteristics; how in practice issues such as tax would be addressed in a cleared environment is not self-evident. The need for a central counterparty is significantly reduced by the presence of the securities lending agent at the fulcrum where lenders and borrowers interact. In practice the securities lending agent will take on many of the responsibilities traditionally borne by a CCP in relation to counterparty risk management, such as counterparty selection, collateral collection, and default management. The key difference is that the agent does not become counterparty to either borrower or lender, or (even though sometimes lenders may be indemnified against losses where collateral is insufficient) unconditionally underwrite the performance of either party to the loan.

On the other side of the argument, the following points may be made. One may be that the cost of regulatory capital, which is reduced for securities borrowers and any securities lending agent who indemnifies the lender against default losses. These costs are reduced when the borrower or indemnitor is exposed to a CCP which may, in turn, reduce transaction costs for the lender. The cost equation depends on the costs of membership, margin and default coverage, which will counterbalance the regulatory capital advantage.

Another factor is the borrower's ability to use, and potentially profit from, collateral received from the borrower. Unlike practice in the uncleared marketplace, where a CCP acts as counterparty the CCP traditionally receives collateral but does not provide it. If this approach is adopted for cleared securities loans, a lender of securities on a cleared loan would no longer receive cash or securities collateral; the borrower, on the other hand, would be expected to provide it. However, for cleared securities loans the cash collateral for the loan (referred to as 'principal

33 Tucker, P, *Shadow Banking, Financing Markets and Financial Stability* (January 2010)

34 International Securities Lending Association, *A Central Counterparty in the European Equity Securities Lending Market? Initial Report of an ISLA Working Group* (May 2009)

collateral') can be provided by the borrower as usual and transferred all the way through the CCP to the lender. The principal collateral is treated in the same way as the cash leg on a repo, and the CCP's margining role is then restricted to the variation margin calculation as the respective values of lent securities and collateral provided move with the market. In this model both borrower and lender are liable for margin calls.

22 Tax

SCOPE OF DISCUSSION RELATING TO TAX

22.1 Taxation touches our lives in inescapable ways, and it is desirable not simply to dismiss the subject of tax, for two main reasons.

In the first place, the different approaches of Member States to tax issues arising in connection with clearing and settlement are responsible for two of the Giovannini barriers.[1] Giovannini Barrier 11 cited a number of difficulties relating to withholding tax: different approaches to granting relief; and restrictions on which intermediaries are permitted to grant at-source relief, in particular by requiring a local person to carry out or intermediate in this role. Efforts to dismantle this barrier have been made, as further discussed below. The other Giovannini tax barrier (Barrier 12) relates to the role of infrastructures in collection of transaction taxes. Progress in dismantling this particular barrier is less demonstrable; worse, the notion of co-opting clearing and settlement service providers into the fiscal reporting and collection system has expanded. This is the second major reason for a discussion of tax issues.

The two Giovannini tax barriers were studied by the European Commission's Fiscal Compliance Experts Group (FISCO) which produced two reports,[2] leading to a Commission Recommendation on Withholding Tax Relief Procedures.[3] The FISCO reports do not purport to cover all taxation issues relative to clearing and settlement, and are limited in what they propose as solutions. In particular, FISCO's terms of reference[4] did not extend to recommending the abolition of taxes, which reflects a European political reality. In truth, the disharmony in Europe over taxation issues extends well into the field of clearing and settlement, with the inevitable consequence that cross-border investment is complicated and made more expensive owing to differences in the incidence of taxation as well as differences in the procedures for collection and allocation of reliefs. In its examination of the Giovannini barriers, FISCO reported that some (but by no means all) Member State rules relating to withholding tax collection and relief procedures were attributable to substantive withholding tax rules; and that 11 out of the then 27 Member States levied transaction taxes on securities transfers,

1 See **sections 1.26ff**

2 FISCO, *Fact-finding study on Fiscal Compliance Procedures related to Clearing and Settlement within the EU* (April 2006), http://ec.europa.eu/internal_market/financial-markets/docs/compliance/ff_study_en.pdf; FISCO, *Solutions to Fiscal Compliance Barriers Related to Post-trading within the EU* (October 2007), http://ec.europa.eu/internal_market/financial-markets/docs/compliance/report_en.pdf

3 Commission Recommendation of 19 October 2009 on withholding tax relief procedures, COM(2009) 7924 final

4 European Commission, *Mandate for the EU Clearing and Settlement – Fiscal Compliance Experts' Working Group* (April 2005), http://ec.europa.eu/internal_market/financial-markets/docs/compliance/mandate_en.pdf

and in a few of the 11 responsibility for collection was in the hands of settlement service providers.[5] Furthermore, FISCO only dipped its toe into the water as regards tax issues not highlighted by Giovannini, so capital gains tax gets only a passing mention.[6]

FISCO was replaced by the Tax Barriers Business Advisory Group (T-BAG), whose mission was to suggest new arrangements to simplify and streamline withholding tax reclaim procedures. Their report, which contains a useful and informative history of developments together with a comparative study of American practice, was published in 2013 but has not led to any substantive regulatory or legal change.[7]

The European Post Trade Forum, which reported in 2017, was unable to report progress, reiterating 'inefficient withholding tax procedures' as EPTF Barrier 12, describing it as 'a burdensome impediment to efficient cross-border investment'.[8]

Both providers of clearing and settlement services and their clients will typically be liable for direct taxes on profits derived from their everyday activities. The tax issues which arise from these ordinary activities, which do not specifically relate to clearing and settlement, are, however, outside the scope of this work.

TAXES

22.2 At the outset one might conveniently seek to identify the taxes which providers of clearing and settlement services might encounter in the course of their intermediation activity. Taxes which one might regard as commonly relevant to clearing and settlement services include the following:

(1) *SDRT and stamp duty*. United Kingdom stamp duty[9] is payable on certain kinds of 'instrument'.[10] These include transfers on sale of property such as securities and, in some cases, agreements to transfer. Given that securities can be transferred without either a written agreement or a written instrument of transfer, a more likely transfer tax in the United Kingdom will be stamp duty reserve tax (SDRT), which is payable in respect of agreements to transfer chargeable securities.[11] SDRT at 0.5% of the consideration is usually due from the person who agreed the purchase of chargeable securities for cash (ie, in most cases, the transferee's broker). There is a complex array of exemptions, in respect of securities, transfer types, and transferees. There is also a set of statutory instruments which disapply stamp duty and SDRT in relation to transfers to and from a CCP, to avoid the consequence that multiple transfers would occur by virtue of the chain of principal-to-principal deliveries (including the added problem of interoperability between CCPs, which involve an extra inter-CCP

5 FISCO Fact-finding study, pp 31, 46
6 FISCO Fact-finding study, p 22
7 Tax Barriers Business Advisory Group, *Workable Solutions for Efficient and Simplified Fiscal Compliance Procedures Related to Post-trading within the EU* (May 2013)
8 European Post Trade Forum, EPTF Report (May 2017)
9 See description in the FISCO Fact-finding study (April 2006), p 38ff; for a comprehensive essay see also Yates, M, and Montagu, G, *The Law of Global Custody* (4th edn, Bloomsbury, January 2013), ISBN 978 1 84766 877 6, ch 10
10 Stamp Act 1891, s 14; Finance Act 1999, Sch 13
11 Finance Act 1986, s 87

transfer).[12] Thus, provided that the CCP in question is covered by one of the statutory instruments, only one payment of tax is required in respect of cleared transactions. Rather splendidly, section 110(1) of the Finance Act 1990 abolished SDRT, but the 'abolition date' has not yet been set by HM Treasury.

(2) *VAT*. VAT is payable by the supplier on a taxable supply of goods and services. Most financial services are exempt: in particular, the transfer or receipt of money and the transfer or receipt of securities.[13] However, some services provided in connection with back-office activities may fall outside these exemptions. Notably, supply of SWIFT electronic messaging facilities for funds transfers is not an exempt financial service.[14]

(3) *Capital gains tax. C*lients may be liable for capital taxes due in respect of gains made when the capital value of assets disposed of has increased since the acquisition of the asset.[15] Professor Alberto Giovannini's first report noted that some countries' capital gains tax regimes imposed collection or reporting obligations on intermediaries: 'Examples of such difficulties include (i) a national requirement for computation of capital gains tax at the time of settlement for individual transactions, imposing a costly administrative burden on foreign operators in an environment where securities are held through multiple tiers of custodians, central securities depositories and other financial intermediaries; and (ii) the imposition of a minimum custody period on certain securities, which are then heavily taxed if this obligation is breached.'[16] FISCO found that in Hungary, Italy and Spain, tax legislation required capital gains tax to be applied at source in relation to securities transactions,[17] but FISCO's mandate did not extend to recommendations to modifying the way in which these taxes are collected.

(4) *Withholding taxes*. Tax authorities in the country where a security is issued will typically require a deduction to be made from any payment of income in respect of the security. To make things complicated, some Member States levy withholding tax on fixed income securities at the moment of transfer, deeming the income to have accrued daily (*pro rata temporis*).[18] The investor in that security may also suffer a tax charge in respect of the same income payment in the investor's own country. To avoid double taxation, some countries have agreed to allow investors' relief, or partial relief from withholding tax. Withholding tax relief may be given at source (resulting in a lower deduction) or may have to be claimed in arrears by the investor. The consequence of these rules is that the amount of withholding tax deductible will depend on the withholding tax policy of the country of issue and the country of tax residence of the investor. All of the above would appear to be of limited relevance to

12 Stamp Duty and Stamp Duty Reserve Tax (European Central Counterparty Limited) Regulations 2011: Eurex Clearing AG, SI 2011/666; LCH.Clearnet Ltd, SI 2011/ 669; SIX x-clear AG, SI 2011/ 670; Cassa di Compensazione e Garanzia SpA, SI 2011/ 2205; ICE Clear Europe Limited, SI 2013/1382; European Central Counterparty NV, SI 2014/ 9

13 Value Added Tax Act 1994, Sch 9

14 *Nordea Pankki Suomi (Taxation)* [2011] EU ECJ C-350/10

15 In the United Kingdom, under the Taxation of Chargeable Gains Act 1992

16 Giovannini, A, et al, *Cross-Border Clearing and Settlement Arrangements in the European Union* (November 2001), http://ec.europa.eu/internal_market/financial-markets/docs/clearing/first_giovannini_report_en.pdf, p 53

17 FISCO Fact-finding study, p 22

18 FISCO Fact-finding study, p 21

clearing and settlement, apart from two considerations. First, as pointed out in discussions on the Giovannini barriers, impediments to the static holding of securities have an insidious effect on cross-border investment and thereby indirectly raise the costs of clearing and settlement. Secondly, adjustments in the form of 'market claims' need to be made when a security subject to an income event is transferred, and the complications arising from the differential withholding tax treatment of the buyer and seller cannot be ignored. Withholding tax may also be deducted in some Member States from market claims in respect of shares traded cum-div[19] where the buyer receives compensation for dividend paid to the seller; and where the seller purchased ex-div in order to fulfil a delivery obligation on a cum-div trade, the seller's compensation payment may be treated as if it were a dividend.[20] Withholding tax practices, and their impact on post-trade services, have been the subject of continuous analysis since the establishment of FISCO in 2003. These practices are considered further in the following section.

WITHHOLDING TAX RELIEF

22.3 FISCO's mandate was focused on fiscal *compliance* barriers. Accordingly, in its second report, FISCO's recommendations related primarily to tax processes, rather than harmonising tax rates or the existence of taxes. The recommendations were, by and large, transposed into a European Commission Recommendation – that is, the weakest form of European quasi-legislative measure – on withholding tax relief procedures.[21] The Recommendation urges the following action by Member States:

- To grant withholding tax relief at source; and in cases where this is not achievable, to adopt streamlined refund procedures in accordance with the Recommendation's specifications. (By 2009, 14 Member States had procedures for giving relief at source.[22])
- For the securities intermediary proximate to the investor to act as withholding agent (the person who deducts the withholding tax); and in cases where this is not achievable, for information on entitlement to relief to be passed along the custody chain in a pooled (as contrasted with investor-specific) form.
- For criteria for financial intermediaries to act as withholding or information agents to be proportionate and non-discriminatory.
- To adopt alternatives to official certificates of residence to enable investors to claim relief.

One might assess the Recommendation as being a weak response to the issues identified by FISCO. A high degree of generality surrounds the specific recommendations: in particular, it is left to Member States to decide when exceptions arise, and therefore to adopt the more cumbersome routes set forth in it; and (of course) it is a mere Recommendation, which carries no duty of

19 See **section 20.3**
20 FISCO Fact-finding study, p 22
21 European Commission Recommendation of 19 October 2009 on withholding tax relief procedures, COM(2009) 7924 final
22 European Commission, Economic impact document, p 18

compliance. The Commission chose a Recommendation, rather than a formal legislative act which could actually involve obligations and their enforcement, because 'national withholding tax procedures … is an area which is political[ly] sensitive'.[23] To create a binding legislative instrument would require unanimity among the Member States, which would appear to have been impossible to obtain 'within a reasonable timeframe'. Admitting defeat, the Commission says 'it is clear that a Commission Recommendation will not eliminate the Giovannini Barrier 11 totally'.[24]

In the United Kingdom, interest paid by a 'relevant entity' is not subject to withholding; for these purposes, a 'relevant entity' includes a recognised clearing house, a recognised CSD, a third country CCP and a third country CSD.[25]

22.4 The T-BAG Report noted sadly that '[it] is a common commentary in the investor community that it is one thing to *have* an entitlement and quite another and more difficult thing to *receive* an entitlement. This serves as an apposite commentary of the current state of play in the market today'.[26] The T-BAG noted that Member States typically chose one of three tax relief procedures; they recommended the use of the 'tax relief at source' model, under which entitlements are applied on the date of payment, together with a system of approved tax intermediaries, meeting internationally accepted standards, who would be responsible for reporting to Member States.

More discussion took place in 2017 in the context of the European Union's 'Capital Markets Union' initiative, leading to a Code of Conduct on Withholding Tax.[27] This makes further recommendations as to best practice, but the Code is expressed to be 'a non-binding document which calls for voluntary commitments by Member States'. It cannot be assumed that it will fare any better than any of the preceding initiatives calling for action in an area which is perceived at all levels as highly sensitive to Member States.

CO-OPTING OF INTERMEDIARIES INTO THE TAX PROCESS

22.5 Under regulation 4 of the Stamp Duty Reserve Tax Regulations 1986,[28] an 'accountable person' must give notice to HM Revenue and Customs of each charge to tax and pay the tax due. 'Accountable persons' are listed in regulation 2, which sets out a hierarchy of buyer's and seller's brokers. Only if there is no other accountable person does the buyer itself become the accountable person. SDRT collection is a responsibility firmly placed on the intermediaries acting in respect of the trade, although it is unlikely that an agent bank is an accountable person.

But, under Regulation 4A, Euroclear UK & Ireland is obliged to notify HM Revenue and Customs of each charge to tax which has arisen and to pay

23 European Commission, Economic impact document, p 4
24 European Commission, Economic impact document, p 5
25 Income Tax Act 2007, s 886
26 T-BAG Report, p 15
27 European Commission DG TAXUD, Code of Conduct on Withholding Tax (November 2017), https://ec.europa.eu/taxation_customs/sites/taxation/files/code_of_conduct_on_witholding_tax.pdf
28 SI 1986/1711

the tax due, when the securities are transferred by means of the CREST system. A curious aspect of the CREST-HMRC reporting regime is that transactions emanating from different trading venues appear not be able to be netted, at least as far as interoperating CCPs are concerned. So, to take an example: imagine that A sells 100 HugeCo shares to B on platform 1, and C sells 100 HugeCo shares to D on platform 2. A and D both use CCP1 as their CCP, and B and C both use CCP2. As between the CCPs, there is no need for a net transfer of HugeCo shares. Unfortunately, it seems that the SDRT reporting regime prevents the elimination of the two, opposite, inter-CCP transfers of 100 shares.

22.6 The FISCO Fact-finding study commented on the SDRT regime as follows:

> 'In relation to paperless transactions, the obligation imposed upon any system operator to collect taxes will give rise to compliance costs. The compliance costs will, however be the same, whether the operator is in the UK or outside the UK – save in relation to any obligation imposed on a non-UK operation to appoint a UK tax representative. In relation to transactions requiring the execution of documents of transfer and the payment of duty on those documents, a non-UK based person will have somewhat greater postage costs in arranging for the documents to be stamped but that cost should not be significantly greater. There is no provision which expressly requires these taxes to be collected only through UK situated persons.'[29]

Because the SDRT process is essentially neutral in terms of cost for both residents and non-residents of the United Kingdom, FISCO's conclusion was that no procedural reforms were needed in order to bring down the Giovannini barriers. The United Kingdom is not alone in levying taxes similar to SDRT: FISCO also named Belgium, France, Greece and Ireland as having tax charges based on exchange-trading of securities, and Finland, Italy, Malta, Poland, Portugal and Slovenia as having other transaction taxes.[30] These taxes are all different in small ways. Without some degree of harmonisation, differences in transaction taxes will continue to keep the complexity of investment within the single European market – particularly cross-border investment – at a high level.

22.7 Finally, it should be mentioned that a complex regime under section 96 of the Finance Act 1986 for levying an SDRT charge of 1.5% on securities transferred to a person whose business was the provision of 'clearance services' has been abolished, following a judgment adverse to the United Kingdom in *HSBC Holdings plc and Vidacos Nominees Ltd v HMRC*.[31] 'In the light of the ruling HM Revenue & Customs (HMRC) accepts that Article 11(a) of Council Directive 69/335/EEC of 17 July 1969 concerning indirect taxes on the raising of capital, as amended by Council Directive 85/303/EEC of 10 June 1985 (now Council Directive 2008/7/EC) ("the EC Capital Directive"), must be interpreted as meaning that it prohibits the levying of a duty such as the charge to SDRT imposed by section 96 Finance Act 1986 on the issue of shares into a Community clearance service.'[32] In the 2017 Budget, the UK Government stated that it

29 FISCO Fact-finding study, p 41
30 FISOC Fact-finding study, s 3.2
31 ECJ, case C-569/07 (November 2009), OJ (C) 282, p 6
32 HMRC, *Stamp Duty Reserve Tax (SDRT): Claims for refund following the decision of the European Court of Justice HSBC Holdings and Vidacos Nominees Ltd v HMRC,* www.hmrc.gov.uk/so/sdrt-claims-ecj.pdf

would not reintroduce the charge following the United Kingdom's exit from the European Union.[33]

FATCA

22.8 The adoption by the US legislature of the Foreign Account Tax Compliance Act (FATCA)[34] has extended the duties of agent banks in particular. FATCA does not specifically target clearing and settlement activities: its objective is to facilitate the collection by the United States' Internal Revenue Service (IRS) of data on United States' persons' foreign assets and income. At the centre of FATCA is the idea that 'foreign financial institutions' will enter into agreements with the IRS, under which the foreign financial institution undertakes to identify United States persons who are beneficially entitled to assets credited to financial accounts which the institution provides. The foreign financial institution will obtain a waiver from its United States clients to enable the institution to report holdings, receipts and withdrawals, both of cash and securities, made in respect of the account. Evidently a tax-related reporting obligation in respect of all settlement activity will be required. Failure to enter into an agreement with the IRS brands the institution a 'non-compliant foreign financial institution', with the result that all United States-sourced income and proceeds (fixed or determinable annual or periodical income, sales proceeds, and potentially 'passthru' payments) will suffer a withholding of 30% before being transferred to the institution. Failure by a client to give the institution permission to give information to the IRS or a waiver of secrecy laws brands the client a 'recalcitrant account holder', in respect of whom the institution must withhold 30% of United States-sourced income and proceeds (such income and proceeds being the 'passthru' payments referred to earlier), and in some cases to terminate the provision of accounts to the client.

33 HM Treasury, Autumn Budget 2017 (November 2017), para 4.10

34 Hiring Incentives to Restore Employment Act of 2010 (March 2010), Pub L No 111–147, 124 Stat 71, Title V

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