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Article

The impossibility of the impossible trinity? The case of Indonesia

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Abstract

The impossible trinity suggests that an economy cannot simultaneously achieve a fixed exchange rate, high capital mobility, and independent monetary policy without abandoning one of these. However, This paper looks at Indonesia's experiences from the 2009 QE and the 2013 taper tantrum, considering why Indonesian policy-makers were unable to use policies as per the trilemma, and the policy implications of this. There are three possible reasons why Indonesia found it difficult to implement this trilemma policy choice: differing monetary policy objectives, volatile floating exchange rates, and balance sheet effects. The commodity supercycle also plays an exogenous role, unable to be overcome by monetary or exchange rate policy while at the same time impacting fiscal policy, income redistribution, trade balance, and the exchange rate. Overall, this paper argues that monetary policy on its own is likely to be insufficient to manage the economy adequately. Other levers and factors, such as macroprudential policy, fiscal policy, capital flow management, and institutional quality, are critical to make the policy choices more effective.

Keywords: macroeconomics, impossible trinity, trilemma, monetary policy, fiscal policy, macroprudential policy, capital flow management, institutions, commodity supercycle, Indonesia.

JEL classification: E52, E58, E62, F41, F42, G15, G18

I. Introduction

Capital flow is like a double-edged sword. It is perceived to benefit both recipient countries and investors, who can diversify their risks and increase their returns. However, large capital flow disruptions also create significant challenges and issues for policy-makers in emerging markets and developing economies (EMDEs). The potential vulnerabilities that arise from capital inflows are a topic that has received much attention in crisis literature (Calvo *et al.* (1993); Kaminsky *et al.* (2003); and Reinhart and Rogoff (2009*b*)). This topic is especially relevant today as economies worldwide are still reeling from the most significant global economic shock in the twenty-first century: the Covid-19 pandemic. There is widespread concern that the Federal Reserve (Fed)'s exit strategy from its stimulus policy will increase uncertainty in EMDE's financial markets. This uncertainty is exacerbated further by the inflationary pressures in the US, brought on by increasing demand and supply shocks stemming from supply chain disruptions and rising energy and commodity prices. High inflation in the US and other nations puts significant pressure on the Fed to raise interest rates. An increase in US interest rates increases the possibility of capital outflows, raising concerns that a 'taper tantrum (TT) 2.0' will take place.

In preparing for a potential TT 2.0, lessons from the 2013 taper tantrum highlight that US tapering talk induced capital outflows for EMDEs, particularly for the so-called 'Fragile Five'[1] that had sizeable current account deficits (Aizenman *et al.*, 2014). A large current account deficit is not always harmful, especially one financed by long-term, productive foreign direct investment (FDI) from an export-oriented sector (Basri, 2017). However, it may exacerbate a country's vulnerabilities if financed by portfolio investment, as the 'Fragile Five' were. The 2013

[1] One group of countries—Brazil, India, Indonesia, South Africa, and Turkey—experienced the worst effects and was subsequently labelled the 'Fragile Five' by Morgan Stanley.

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TT illustrated that financial markets become anxious when the current account deficit exceeds 3 per cent, though this varies by country. Because of this anxiety, short-term portfolio investment, considered riskier than FDI, flows out of EMDEs.

Short-term capital outflows to which EMDEs are prone are indicative of policy credibility, legal certainty, or investment climate issues that affect the riskiness of short-term portfolios and are not fully covered by monetary policy. The lack of FDI, as opposed to short-term capital, can potentially be explained by the 'Lucas Paradox', which finds that, because of poor institutional quality and contrary to neoclassical economic theory, the capital flow does not flow from developed to developing countries. If a country can improve its institutions and overcome the risks associated with the volatility of its investment portfolio, investors will be more inclined to enter through FDI. Thus, it is crucial to consider the role of institutions when discussing attempts to reduce capital flow volatility (this is covered in section VI).

The 2013 TT also shows that EMDEs, including Indonesia, will be forced to raise interest rates and respond to the US to deal with the risk of capital outflows. This could prevent the economy from experiencing a full recovery, which has only recently begun, from the Covid-19 pandemic. The reason why policy-makers do not simply allow the currency to fluctuate in line with the market is that, as Warjiyo (2015) contends, excessive exchange rate movements can undermine the effectiveness of interest rates in achieving price stability due to both exchange rate pass-through to inflation and the real exchange rate effect on growth. Furthermore, Basri (2017) argues that the trauma of the Asian Financial Crisis looms large within the Indonesian context. A significant exchange rate shock caused by a sudden reversal of capital flows could result in the exchange rate overshooting, causing market participants to overreact. According to Warjiyo (2015), foreign exchange intervention to prevent excessive volatility in the exchange rate is an option. However, this becomes difficult for EMDEs like Indonesia, which have limited foreign exchange reserves.

For EMDEs, particularly the Fragile Five, the current account deficit in 2021 is much smaller than in 2013. While this may limit the impact of tapering, the issue of capital flow volatility remains a significant concern. Current accounts improved in many cases due to increased private savings caused by lockdowns. However, this is only temporary, and savings will return to normal levels, increasing deficits and the risk of capital outflow. Furthermore, in the case of Indonesia, foreign holdings of Indonesian government bonds are relatively small compared to 2013 (this is discussed further below).

Significantly, it is worth analysing the 2013 TT episode within the context of the impossible trinity framework, or trilemma, of capital flows, exchange rates, and monetary policy. The impossible trinity suggests that an economy cannot simultaneously achieve a fixed exchange rate, high capital mobility, and independent monetary policy without abandoning one. This theory argues that if exchange rates float, independent monetary policy is possible, even with a high degree of capital mobility. The Mundell trilemma emphasizes the importance of the exchange rate regime in dealing with the disruption of large capital flows. This theory has long dominated discussions about how central banks and governments should respond to capital flows.

The worldview suggests that EMDE countries, including Indonesia, should have been able to use monetary policy to insulate themselves from both US low interest rate policy, as experienced during the 2009 quantitative easing (QE), and high interest rate policy, as experienced during the 2013 taper tantrum. First, when the Fed cut interest rates during QE in 2009, Bank Indonesia lowered interest rates. However, policy-makers in Indonesia also wanted to avoid excessive boom, overfull employment, and inflation due to low interest rates. Therefore, policy-makers could implement monetary policy to strengthen the exchange rate, decreasing net exports and creating a trade deficit to prevent excess demand and preserve full employment without inflation. Second, when the Fed planned to raise interest rates during the taper tantrum 2013, Bank Indonesia also raised interest rates. However, policy-makers in Indonesia also wanted to avoid an economic slowdown caused by high interest rates. Therefore, policy-makers could implement monetary policy to weaken the exchange rate, increasing net exports, and creating a balance of trade surplus to preserve full employment. These two experiences show that the Indonesian policy-makers could not use monetary policy as the trilemma suggests.

The question, and what this paper attempts to answer, is how policy-makers can manage capital flows if the impossible trinity does not function as predicted. This concerns the Indonesian government, the Fragile Five, and other EMDEs.

This paper looks at Indonesia's experiences from the 2009 QE and the 2013 taper tantrum, why Indonesian policy-makers were unable to use policies as per the trilemma, and the policy implications of this. These two economic episodes highlight how capital flows can expose vulnerabilities in some economies. This paper argues that the trilemma is not easy to apply in the EMDE case, particularly in Indonesia, for three reasons: differing monetary policy objectives, volatile floating exchange rates, and balance sheet effects. We show that the task was made more difficult by the fact that the commodity super-cycle was also having a significant effect on the Indonesian economy at the same time.

This paper is divided into sections. Section I serves as an introduction. Section II discusses the concept of the trilemma and managing capital flows. Section III highlights Indonesia's lessons from dealing with the 2009 Global Financial Crisis and the 2013 taper tantrum. Section IV explains why the trilemma policy choice is difficult to implement. Section V discusses why the Task was complicated by the commodity supercycle and procyclical fiscal policy. Section VI discusses the role of capital flow management and institutions. Finally, Section VII discusses the way ahead.

II. Impossible trinity (trilemma) and managing capital flows: a conceptual framework

In international macroeconomics and finance, Mundell's trilemma framework provides a powerful tool to analyse the links between exchange rates, capital flows, and monetary autonomy. As previously mentioned, with a fixed exchange rate, there is a case for interfering with the free movement of international capital flows by imposing capital controls to regain monetary autonomy (Farhi and Werning, 2012). By contrast, with a flexible exchange rate, monetary policy is already independent, and there is no *prima facie* case for restricting international capital mobility.

However, policy-makers and academics have put this view into question. Most notably, Rey (2013) postulates in her analysis that while countries with fixed exchange rates cannot have independent monetary policies in a world of free capital mobility, cross-border flows and leverage of global institutions transmit monetary conditions globally, even globally under floating exchange-rate regimes. A dilemma appears, with independent monetary policies only achievable when the capital account is managed.

Therefore, analysing and managing capital flows is crucial for policy-makers to maintain macroeconomic stability. The importance of the global financial cycle in creating boom and bust cycles in both emerging and advanced economies with capital inflows has been discussed extensively in the literature.[2] Rey (2013) finds that the monetary policy of a central country, such as the United States, affects the leverage of global banks, credit flows, and credit growth in the international financial system and is a determinant of the global financial cycle. Farhi and Werning (2014) propose that capital controls, in addition to monetary policy, are critical to smoothing trade and stabilizing the macroeconomy. With fixed exchange rates, capital controls have an essential macroeconomic stabilization role to play to regain some monetary autonomy and mitigate the impact of the recession. However, even in flexible exchange rate regimes, optimal capital controls allow central bankers to fine-tune macroeconomic responses. For example, in cases of excessive capital inflow, imposing a temporary tax on inflows and a subsidy on outflows would mitigate the required appreciation of the exchange rate, the increase in nominal interest rate, the reversal in the current account, and the drop in consumption.

In the event of capital inflows, the IMF (2011) also provides a macroeconomic framework regarding exchange rates, foreign exchange reserves, and monetary and fiscal policy, as shown in Figure 1: If the exchange rate is not undervalued and there are capital inflows, policy options include lowering the interest rate, rebalancing the mix of policies, and unsterilized intervention. If an economy is overheating, an appreciated exchange rate and sterilized intervention can lessen the effects of capital inflows. When there are adequate reserves, policy-makers have options to raise exchange rates or lower rates and rebalance the policy mix. Finally, if all three conditions are met, then capital flow management measures are appropriate.

In the event of managing capital outflows, Figure 2 depicts policy alternatives based on conditions of reserves, exchange rate, and the economy. When the exchange rate is undervalued, the policy option is to raise interest rates. In the lack of adequate reserves, the policy options available are to depreciate the currency or raise interest rates. Both the frameworks in Figures 1 and 2 can help policy-makers figure out how to handle the flow of capital and will be used to talk about Indonesia's experience with the 2009 QE episode and the 2013 taper tantrum.

III. Why the trilemma has limitations: lessons learned from Indonesia's response to the 2009 QE and taper tantrum 2013

(i) The 2009 QE

Background

The 2009 quantitative easing (QE) episode induced capital inflows to various countries, including EMDEs. EMDEs received half of the global capital flows from 2009 to 2012, with 90 per cent of capital flows into EMDEs concentrated in just eight countries (Sahay *et al.*, 2014). According to the IMF (2014), total market external financing,

[2] Diaz-Alejandro (1983), Calvo *et al.* (1996), Eichengreen and Portes (1987), Reinhart and Rogoff (2009*a*), and Lane and McQuade (2013) among many others.

such as bonds, equities, and loans, increased from $24.7 billion in 2010 to $32.6 billion in 2013, peaking in the second quarter of 2013 (and then declining due to the taper tantrum). Sahay *et al.* (2014) show that portfolios dominated capital inflows into Emerging Markets in Asia (excluding China). The dominance of portfolio capital inflows in EM Asia poses a much greater risk of capital outflows than FDI. At the same time, some resource-rich

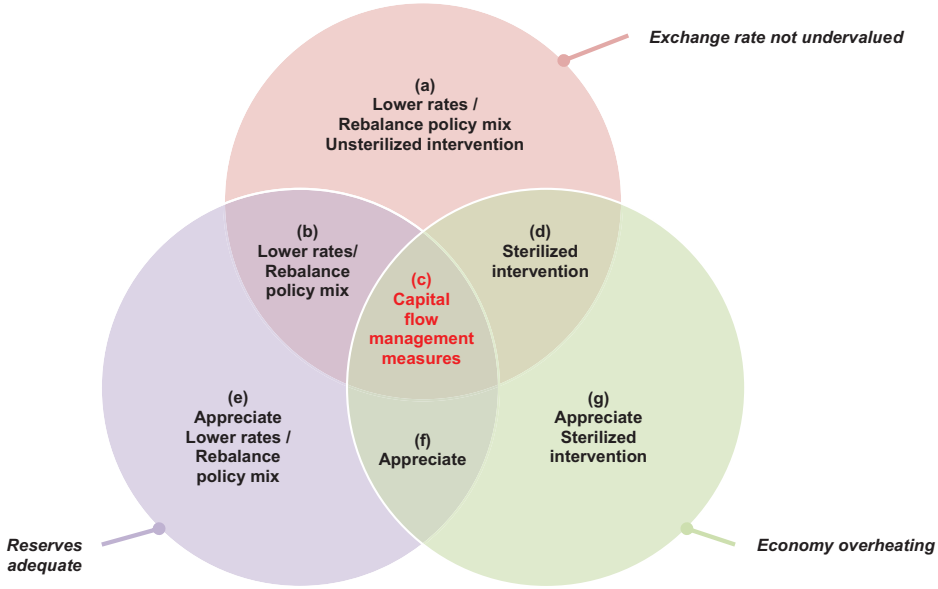


Figure 1: Coping with capital inflows: policy considerations. *Notes*: Each circle represents cases where the relevant condition is met. For example, the top-most circle ('Exchange rate not undervalued') represents cases where the exchange rate is assessed to be broadly in line with fundamentals or overvalued. The intersection of all three circles (the area marked (c))—where use of capital flow management measures may be appropriate—reflects cases where the exchange rate is not undervalued, reserves are judged to be adequate, and the economy is overheating. Other intersections similarly represent other confluences of factors. For example, the top left intersection (area (b)) represents cases where the exchange rate is not undervalued, reserves are judged to be adequate, and the economy is *not* overheating (since the case is outside the 'Economy overheating' circle). Areas of no intersection represent cases where one of the circles—but not the other two—is applicable. For example, the bottom right area ((g)) represents cases where the economy is overheating, the exchange rate is assessed to be undervalued, and reserves are judged to be inadequate. 'Lower rates/ Rebalance policy mix' refers to loosening monetary policy; to the extent that fiscal policy is tightened, there would be more room to lower policy rates. *Source*: IMF (2011).

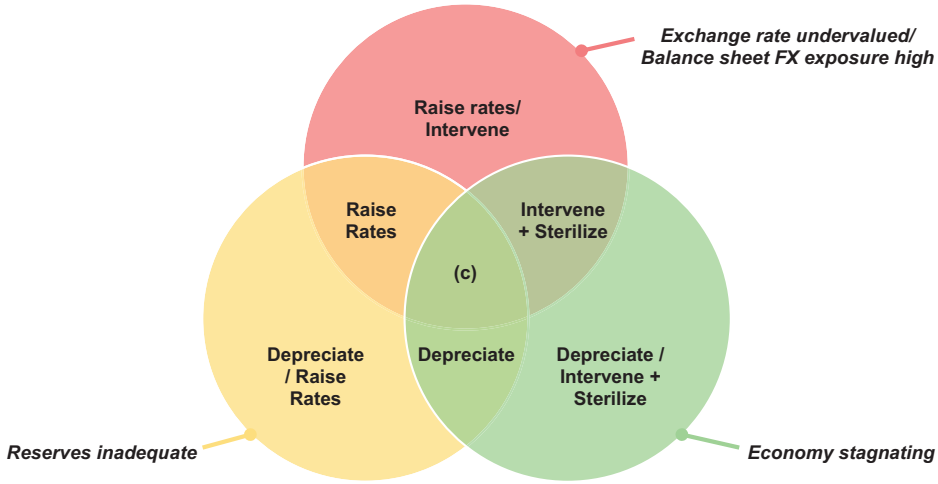


Figure 2: Managing capital outflows. *Note*: A country in (c) may be in crisis or imminent crisis. *Source*: Tok (2018).

countries, including Indonesia, enjoyed the benefits of rising export prices coming from the commodity super-cycle, during the period from 2002 to 2012.

The commodity boom and capital inflows have impacted Indonesia, Brazil, and South Africa. In Indonesia, capital also poured into the country, and both FDI and portfolio investment played a significant role. Incoming FDI favoured the domestic market and natural resources. Increased FDI and portfolio investment boosted Indonesia's economic growth, which reached 6.5 per cent in 2011. Investment growth peaked in 2012, with investment increasing by 9.8 per cent. According to the Asian Development Bank (ADB), an improving investment climate, recent strong economic growth, and increased credit drove high investment growth. Also, consistent with Rey's argument (2014), investment in Indonesia increased due to various company expansions in terms of credit channels and risk-taking effects. The Jakarta Composite Index significantly increased, and government bond yields reached their lowest point in 2012. Companies in Indonesia competed to find external sources of financing due to the lower cost of funds. Furthermore, as per Rey's (2013) argument, companies increased their investment.

While the EMDEs benefitted in the short term, this positive impact did not last long because this economic improvement in EMDEs was driven by external factors: capital inflows and commodity booms (Rodrik, 2015). For Indonesia, one of the concerns at the time was the low level of investment in the export-oriented sector. There was also a risk of currency mismatch in the case of FDI oriented to the domestic market because revenue was earned in Rupiah while repatriation was paid in US dollars. In addition, the FDI that was focused on natural resources was highly vulnerable to the commodity supercycle, particularly during commodity price declines.

Bank Indonesia's response

Bank Indonesia lowered interest rates to anticipate capital inflows caused by QE. This was in response to lower interest rates in the US and consistent with the framework discussed in section II. As previously stated, the combination of capital inflows, commodity boom, and low interest rates propelled economic growth to above 6 per cent. The commodity super-cycle also caused a significant improvement in Indonesia's current account position.

While the economy was strong, Bank Indonesia was facing a policy conundrum. Lower interest rates and sterilized intervention are required to mitigate capital inflows in times of overheating, when the exchange rate is not undervalued, and when foreign reserves are limited, as discussed in section II. However, lower interest rates would boost investment, worsening an already overheated Indonesian economy. Bank Indonesia could have performed sterilization, but the cost would have been exorbitant, as the amount required for each dollar received would have been roughly the difference between the Bank Indonesia rate and the Fed Funds rate.

As previously stated, Bank Indonesia chose to lower interest rates and use foreign exchange reserves to stabilize the Rupiah. Two opposing effects were at work here. First, intervention in the forex market, and a reduction in interest rates to moderate exchange rate appreciation, led to an increase in Indonesia's current account surplus. Second, the low interest rates stimulated aggregate demand, reducing the current account surplus. Over the medium term the second effect exceeded the first. The commodity supercycle's boom phase had also served to significantly improve Indonesia's current account position. But the combination of increased aggregate demand and exchange rate appreciation (due to the Bank of Indonesia's inability to completely sterilize capital inflows), led to a widening current account deficit by the second quarter of 2011. This situation was then greatly worsened by the end of the upward phase of the commodity supercycle which happened by 2012.

When the tapering talks began in 2013, the widening current account deficit and declining foreign exchange reserves (Figure 3) resulted in massive capital outflows. These dynamic capital flows have reduced monetary policy's independence and caused Bank Indonesia to shift its focus from monetary policy to controlling inflation and maintaining the exchange rate (Juhro, 2010; Goeltom and Juhro, 2013). To mitigate the capital outflow, Bank Indonesia implemented various policy responses by allowing the exchange rate to appreciate and accumulating reserve assets. In addition, Bank Indonesia installed different macroprudential policies, including implementing reserve requirements, mitigating the impact of the US dollar flowing into the economy, and creating a 6-month holding period for investors buying central bank bills, among other levers (Agung *et al*., 2022)

The role of fiscal policy

Fiscal policy is one tool for managing capital flows and commodity super-cycles. However, there is a risk that fiscal policy will become procyclical to capital flows and commodity super-cycles, particularly in developing countries.

Fiscal policy, low interest rate policy, and capital flows: The low interest rate policy has resulted in capital inflows to emerging or developing economies and affects fiscal policy in developing countries. Gavin and Perotti (1997) and Kaminsky *et al.* (2003) demonstrate that, in bad times, the governments of many developing countries are unable

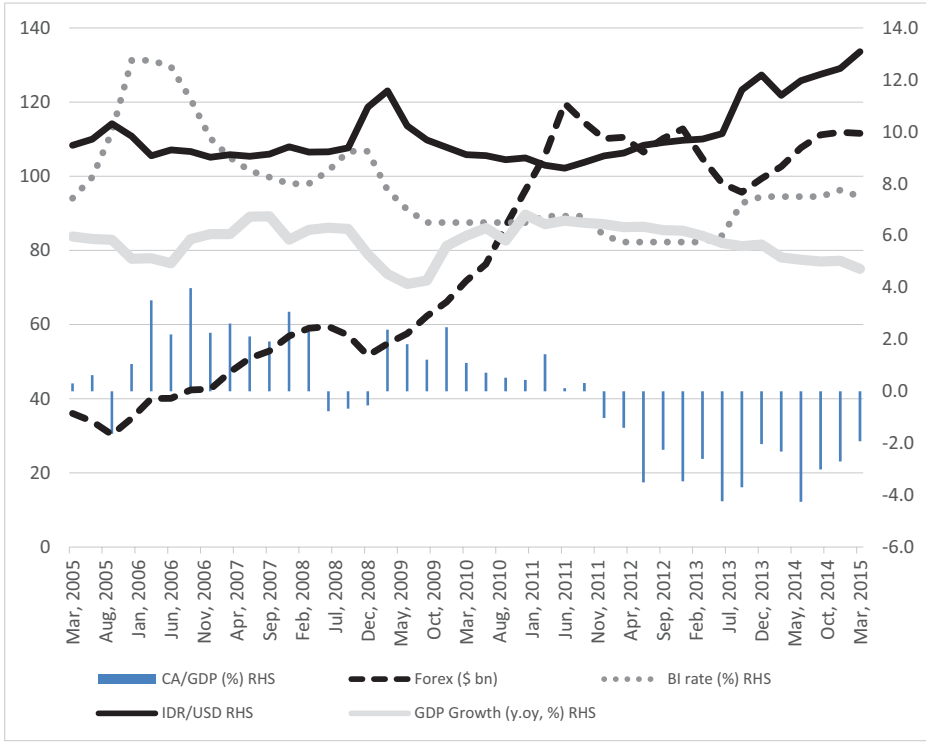


Figure 3: Indonesia: GDP growth, exchange rate, current account/GDP, and foreign reserves. *Source*: Basri (2017).

to borrow due to very high interest rates. As a result, developing countries find it challenging to increase their fiscal deficits. In good times, the opposite is true. The QE case demonstrates that low interest rates enabled the government to increase its fiscal deficits. The implication was that when capital inflows occurred as a result of QE, developing-country deficits did not fall because low interest rates allowed developing-country governments to borrow money to finance their fiscal deficits. Furthermore, increased tax revenues as a result of the commodity boom enabled emerging-market governments to increase their spending (this is discussed separately in the following section). Conversely, when interest rates were high, as they were during the taper tantrum, developing countries reduced their deficits.

Fiscal policy and the commodity super-cycle: Frankel (2006) argued that expansive monetary policy in the US contributed to increased commodity and energy prices. Consistent with this, Saghaian and Reed (2015) and Kim (2022) show that QE impacted commodity and energy prices. Of course, QE is not the only explanation for the commodity super-cycle; China's high economic growth has also pushed up energy and commodity prices. This commodity boom affects a country's terms-of-trade and fiscal position because commodity super-cycle terms-of-trade increases induce real exchange rate appreciation. Corden and Neary (1982) argue the spending effect drives this real exchange rate appreciation. In resource-rich developing countries, governments receive energy and commodity revenues, initiating a spending effect.

Many studies suggest that resource-rich emerging countries with commodities booms have procyclical fiscal policies (Kaminsky, 2010; Herrera *et al.*, 2019). This is also true for Indonesia. Basri and Rahardja (2011) show that energy and commodity prices significantly impact the government's budget. Even though the commodity super-cycle increased government revenue, it also increased the cost of energy subsidies. Thus, the budget-to-GDP deficit increased during the QE period. The increase in the deficit can be attributed to two factors: low interest rates, as previously discussed, and increased spending as a result of increased tax revenues as a result of the commodity super-cycle. In the case of Indonesia, the latter was the more powerful factor, as evidenced by an increase in energy subsidies as a result of the commodity super-cycle. Increased energy subsidies resulted in increased oil imports, exacerbating the situation and increasing the budget deficit and current account deficit even more (Figure 3).

To mitigate the impact of the terms-of-trade shock, theoretically, central banks should intervene in foreign exchange markets to moderate nominal exchange rate appreciation due to the commodity boom (assuming that the commodity boom is temporary). However, this must be accompanied by fiscal tightening to offset private-sector expansion (Corden, 1997). Fiscal consolidation can be achieved by adopting a resource rent tax, the earnings from which can be used to assist poor people affected by rising energy and commodity prices, such as food subsidies.

Another option is to cut fuel subsidies and use the savings to help the poor. However, experience shows that these policies are not politically simple (this is discussed in section V).

(ii) The 2013 taper tantrum

Background

In May 2013, Fed Chairman Ben Bernanke considered tapering QE to end the programme. These comments resulted in a fall in EMDE stock markets and currency rates, especially in countries with current account deficits (Aizenman *et al.*, 2014). Eichengreen and Gupta (2014) argue taper tantrums were far worse in countries with significant currency appreciation and widening current account deficits. Here we see how QE policies caused the currency to appreciate, widening the current account deficit in the following period (the taper tantrum period).

The Fragile Five countries, including Indonesia, were hit especially hard by this announcement.[3] The Rupiah began to fall, bond yields rose, and stock markets began to decline. The situation worsened when Bank Indonesia stated that the current account deficit had reached 4.4 per cent of GDP. Capital outflows were driven by tapering talk and concerns about a relatively high current account deficit/GDP. The Rupiah plummeted, the stock market dropped, and government bond yields and credit default swaps skyrocketed.

Policy-makers in Indonesia focused on efforts to reduce the current account deficit because tapering talks was beyond their control. The government addressed this by implementing expenditure-reducing and expenditure-switching policies. They reduced expenditure by decreasing fuel subsidies and raising interest rates to limit investment, thus lowering the budget deficit. They also set an expenditure-switching policy by allowing the exchange rate to follow the market. As a result, Indonesia, like India, handled the problem relatively successfully.

Bank Indonesia's policy responses

Consistent with the framework discussed in section II, and in response to tapering in the US, Bank Indonesia raised interest rates by 175 bps to anticipate capital outflows caused by taper tantrum. This contractionary policy to mitigate capital outflows dragged down the economic growth to around 5.5 per cent. While Indonesia and India managed to stabilize their financial markets and were no longer classified as members of the Fragile Five shortly, policy-makers faced a policy conundrum.[4]

Higher interest rates, exchange rate depreciation, and sterilized intervention are required to mitigate capital outflows in times of tapering when the exchange rate is not undervalued and when foreign reserves are limited, as discussed in section II. However, higher interest rates would cut investment and help to improve the trade balance while interrupting economic growth. As in the 2009 QE, Bank Indonesia could perform sterilization but only at a high cost, as the amount required for each dollar received would be roughly the difference between the Bank Indonesia rate and the Fed Funds rate.

As previously stated, Bank Indonesia chose to raise interest rates to moderate the depreciation of the exchange rate and intervene in the currency market to prevent excessive volatility. However, there was a cost here: the slowdown of economic growth and full employment (Figure 3). As stated earlier, these dynamic capital flows have reduced monetary policy's independence and caused Bank Indonesia to shift the focus of its monetary policy from the safeguarding of employment to the control inflation and the stablization of the exchange rate (Juhro, 2010). Bank Indonesia also took multiple steps, including several macroprudential measures, such as tightening loan-to-value rules. In addition, it imposed a penalty if the loan-to-deposit ratio fell below 80 per cent or exceeded 92 per cent. Finally, Bank Indonesia attempted to address the growing private foreign debt by requiring non-financial enterprises to hedge their foreign exchange exposure in 2014 (Agung *et al.*, 2019).

Interestingly, despite the Rupiah's significant depreciation during the 2013 taper tantrum, Indonesia did not encounter a currency crisis. Basri (2017) argues that, unlike at the time of the Asian Financial Crisis, there was not a fundamental problem in Indonesia's banking sector at this time. It is true that the taper tantrum took place when there was a large current account deficit. Nevertheless a combination of monetary tightening, budget cuts, and a

[3] To read the details analysis on this, please see Basri (2016, 2017).

[4] *The Economist*, 22 February 2014, 'Capital Flows in Indonesia: No More Fragile', http://www.economist.com/news/finance-and-economics/21596989-how-worlds-fourth-most-populous-country-weathering-emerging-market; CNBC, 6 February 2014, 'India and Indonesia: Not So Bad After All?', http://www.cnbc.com/2014/02/06/india-and-indonesia-not-so-bad-after-all.html.

depreciating exchange rate worked well. In particular, because Indonesian banking conditions in 2013 were so much better than in 1998, an increase in interest rates by 175 bps did not greatly affect the banking sector.

The role of fiscal policy

As previously stated, Indonesia implemented an expenditure-cutting policy to tighten fiscal policy to address the current account deficit. The budget deficit was under increasing strain due to rising global oil prices, which impacted fuel subsidies. The continuation of the fuel subsidy would negatively impact the current account deficit, leading to capital outflow. Intuitively, *ceteris paribus*, if the current account experiences a deficit, reducing expenditure and investment or absorption would help mitigate this. Assuming stable tax revenues and savings over time, then changes in the budget deficit (surplus) or investment will translate to the current account balance. As discussed above, the government attempted to decrease the budget deficit by slashing fuel subsidies and allocating these funds to infrastructure, poverty, and health programmes.

IV. Why is it difficult to implement the trilemma policy choice in the face of capital inflows?[5]

There are three possible reasons why Indonesia is having difficulty implementing this trilemma policy choice.

(i) Differing monetary policy objectives

The previous discussion shows how policy-makers confront a dilemma because they have at least two policy objectives: full employment and trade balance (Blanchard, 2017). In the case of QE 2009, Bank Indonesia faced a conundrum if it allowed the exchange rate to appreciate excessively. Indonesia's economy expanded due to a combination of capital inflows (which led to banks increasing their loans and a balance sheet effect), the commodity boom, and low interest rates. Figure 3 shows that economic growth peaked in Q2 2011 when the economy grew by 6.5 per cent. However, the combination of commodity and coal price declines and exchange rate appreciation, as discussed in section III(i), turned the current account surplus into a current account deficit by the end of 2011. As a result of the decline in net exports, economic growth began to slow in 2012. This condition persisted along with the growing current account deficit in Q2 2013 when economic growth was only 5.8 per cent.

This was Bank Indonesia's dilemma. The Indonesian economy was in a trade surplus (also a current account surplus) and over-employment at the time QE began and peaked in Q2 2011. In a trade surplus situation, such as in 2010–11 in Indonesia, demand expansion due to interest rate cuts will encourage over-employment but result in a trade deficit or current account deficit. If Bank Indonesia raises interest rates, the exchange rate will appreciate even faster, putting pressure on the current account deficit, potentially leading to capital outflows and slowing the economy. This current account deficit makes it difficult for Bank Indonesia to encourage exchange rate appreciation to suffocate the boom.

During the 2013 taper tantrum, the opposite occurred. As previously stated, economic growth has begun to slow and grew 5.8 per cent in Q2 2013 compared to 6.5 per cent in Q2 2011. The current account/GDP deficit reached 4.4 per cent in the second quarter of 2013. Policy-makers face a conundrum in the face of a trade balance deficit, a current account deficit, and slowing economic growth. To narrow the current account deficit, policy-makers must introduce a contractionary policy (as discussed in section III(ii)), but as a result, slowing economic growth continues.

As previously discussed, Indonesia eventually prioritized 'stabilization over growth', with policy-makers opting for a contractionary policy to narrow the current account deficit at the expense of economic growth. Policy-makers had the luxury of choosing this policy in 2013 because, while economic growth was slowing, it was still relatively high. However, as previously stated, the current situation is different. The impact of the Covid-19 pandemic continues to make economic growth vulnerable. As a result, the contractionary policy of raising interest rates ahead of the current Fed rate hike will hinder economic recovery. Nevertheless, if Bank Indonesia does not follow the Fed's lead, the risk of capital outflows will rise. Fortunately, as previously stated, the Fragile Five countries have a current account surplus. Because only a few foreigners own government bonds in Indonesia, capital outflows have not had the same impact as in 2013.

Fiscal policy is an option to deal with the taper tantrum by implementing a spending reduction policy and cutting fuel subsidies. However, in the case of QE in 2009, using fiscal policy was politically difficult. Furthermore, the problem with fiscal policy is that it is rigid. Grenville (2023, this issue) argues the limitations of fiscal policy as well (this is discussed later)

[5] In particular, we thank David Vines for helping us to clarify this argument.

(ii) Volatile floating exchange rate

Dornbusch (1976) illustrates the phenomenon of currency overshooting. This is due to differences in the speed of adjustment across markets owing to both sticky prices in the goods market and the fact that the response of trade volumes to exchange-rate change is gradual. The previous example demonstrates a difference in the rate at which the trade balance is adjusted to the exchange rate. We can see from this concept that an adjustment effort, as discussed in section II, will result in an exchange rate overshoot. For example, during the taper tantrum of 2013, when the US planned to raise interest rates, the Indonesian exchange rate had to be depreciated significantly enough to ensure that economic activity continued to run normally because net exports respond slowly to exchange rate changes. This raises the issue of the policy's credibility. Furthermore, exchange rate expectations play a role. An overshooting exchange rate impacts exchange rate expectations. As previously stated, the 1998 Asian Financial Crisis traumatized Indonesia. Basri (2017) argues that India can run a much larger fiscal and current account deficit than Indonesia, potentially because of India's macroeconomic history and capital account. Because India avoided the Asian Financial Crisis, the market is less 'jittery', and capital is not expelled as quickly as in Indonesia.

The exchange rate overshoot could cause a market panic, increasing the exchange rate expectation of depreciation. The characteristics of the Indonesian economy, combined with the experience of the Asian Financial Crisis, influence policy-makers' ability to make decisions. Therefore, Bank Indonesia cannot solely focus on controlling inflation and must also maintain the exchange rate for two reasons. First, an excessive exchange rate shock caused by a sudden reversal of capital flows may cause exchange rates to overshoot, causing market participants to overreact. Second, persistent capital inflows may undermine the effectiveness of monetary management because efforts to manage liquidity in the economy by raising interest rates may be offset by the massive size of the capital inflows. High capital inflows, on the other hand, should be met with intensive interventions to manage exchange rate appreciation pressures, causing the amount of excess liquidity in the banking system to increase significantly (Goeltom and Juhro, 2013; Juhro, 2010). These capital flow dynamics can make it more difficult for monetary policy to respond to external forces. As previously stated, foreign exchange intervention to prevent excessive volatility in the exchange rate is an option in this situation.

(iii) Balance sheet effects

According to Calvo and Reinhart (2002), balance sheet effects are one of the reasons central banks are relevant in depreciating their currencies to allow their currencies to devalue in response to external shocks. In concept, if debts are denominated in dollars and revenues in domestic currency, unexpected exchange rate changes will affect firm balance sheets. The increased risk premium raises investment and borrowing costs (Tovar and Quispe-Agnoli, 2008).

For example, the low interest rate environment in the US encourages banks in Indonesia to increase lending through the financial accelerator effect. In line with this, data show that credit growth in Indonesia in 2011 exceeded 25 per cent. Furthermore, in the case of original sin,[6] the appreciation caused by capital inflows has additional balance-sheet consequences. According to Rajan (2013), strong currency and asset prices reduce agents' loan-to-value ratios, lowering the risk perception of leverage. This will lead to an oversupply of credit from cross-border lending, leading to balance-of-payment issues.

During the 2013 taper tantrum, the opposite was true. Credit expansion fell from 22 per cent in early 2013 to 11.6 per cent in early 2014. Balance sheet effects can also explain this. The US tapering talk induced capital outflows from Indonesia. As a result, banks reduced their loans in response. Furthermore, from the standpoint of original sin, unhedged foreign borrowing exacerbates the burden of US dollar-denominated debt. As a result, it would appear on the company's balance sheet. Therefore, the contractionary impact on the economy will be even more significant. This may explain why Indonesian policy-makers are hesitant to fully implement the trilemma policy option of using the exchange rate as a shock absorber. Calvo and Reinhart (2002) refer to this as 'Fear of Floating'.

Aside from this original sin (Shin, 2021), the primary source of Indonesia's vulnerability before 2020 was the country's reliance on portfolio financing to finance its current account deficit. In the case of Indonesia, bond market panic is frequently triggered by foreign bond investors. Foreign bond investors play a relatively large role of foreign holders in financing the government's deficit and will sell their investment portfolios if there is a shock in the US, such as the taper tantrum, or if the Fed's interest policy is normalized, causing financial market turmoil.

As previously discussed, the risk of a 2022 'taper tantrum 2.0' does not appear to be as high as it was in 2013 due to a decreasing share of foreign holdings of Indonesian government bonds from 32 per cent in 2013 to 14.6

[6] This term was coined by Barry Eichengreen, Ricardo Hausmann, and Ugo Panizza to refer to a situation in which 'countries are not able to borrow abroad in their domestic currency'.

per cent by the end of September 2022. Overall, Indonesia is less vulnerable than it was in 2013 because it relies less on external financing. In addition, there has been a capital outflow, particularly at the start of the April 2020 pandemic. Capital flows have not fully returned to emerging markets, including Indonesia, resulting in a relatively small share of foreign holdings of Indonesian government bonds compared to 2013.

V. Why the task was complicated by the commodity super-cycle and procyclical fiscal policy

The previous discussion shows how the trilemma policy choice has been difficult to implement in Indonesia due to (i) multiple monetary policy objectives, (ii) volatile exchange rates, and (iii) balance sheet effects. Aside from these factors, the commodity super-cycle is an exogenous factor that cannot be overcome by monetary or exchange rate policy, as suggested by the trilemma choice. This commodity super-cycle has an impact on fiscal policy, income redistribution, trade balance, and, of course, the exchange rate. But these fiscal and income redistribution policies fall outside the purview of monetary and exchange rate policies. This is what makes implementing the trilemma especially difficult in the presence of the commodity supercycle..

When considering the impact of the commodity super-cycle on fiscal policy, three factors must be considered.

(i) Procyclicality and fiscal policy

As discussed above (and also in section III), increases in commodity and energy prices will increase export revenues and lead to a spending effect, encouraging fiscal expansion (a decrease in commodity and energy prices have the opposite fiscal effect). This demonstrates how rising commodity prices cause fiscal policy to become procyclical. Furthermore, as previously discussed, an increase in export revenues will affect the appreciation of the exchange rate. Section II discusses how policy-makers must lower interest rates and rebalance the policy mix in the event of capital inflows (tighten fiscal policy). However, because fiscal policy is procyclical, this becomes difficult to achieve in the presence of the commodity super-cycle.

This complicates macroeconomic management by the Indonesian government. This is particularly true in Indonesia (Basri and Rahardja, 2011). The rise in commodity prices that coincided with QE in 2009 improved trade terms and increased revenue for the Indonesian government. Natural resources constitute a significant portion of the Indonesian government's revenue. While the commodity super-cycle increased government revenues, it also increased the fiscal burden of energy subsidies. The implication is that when oil and energy prices fall, the economy and the government's ability to fund its budget suffer. This is the reason for fiscal policy's procyclicality.

The combination of monetary and fiscal expansion (section III) increased aggregate demand while moderating the current account surplus and eventually bringing the country into a current account deficit. This exogenous shock caused by the commodity super-cycle causes domestic expenditure on domestically produced goods to increase initially, then decrease and improve the external position before deteriorating. And, as discussed in section IV, efforts to implement trilemma policy choice are difficult due to three factors (multiple monetary policy objectives; exchange rate overshooting; and balance sheet effects).

(ii) The distributional effect of the commodity super-cycle

The increase (decrease) of commodity and energy prices have a bi-distributional effect. On the one hand, the increase in energy prices has benefitted commodity exporters, but it has created a burden for consumers. As a result, some groups benefitted from the commodity boom (energy and commodity exporters) and other groups that suffered losses as a result of the commodity boom (consumers). Conceptually, what the government needs to do is tax rents from commodity and energy exporters and distribute them to consumers. However, we must proceed with this policy with caution because subsidies to all consumers are not always well-targeted. Several studies, including Alatas *et al.* (2019); Basri *et al.* (2020); Coady *et al.* (2015) demonstrate that Indonesia's fuel subsidy policy is an inefficient subsidy policy that primarily benefits the upper-middle class and not the poor. Furthermore, the addition of subsidies will put pressure on a larger budget deficit (this is discussed further below).

(iii) Income redistribution effect and fiscal procyclicality

As previously stated, the government's efforts to protect consumers through increased subsidies result in fiscal policy expansion. Fiscal policy becomes procyclical as a result of the effect of income redistribution. As discussed in point (i) Indonesia should implement a tight fiscal policy when capital inflows occur, but the commodity super-cycle makes the fiscal policy procyclical. To address this issue, the government must implement targeted subsidies to ensure that benefits reach the poor. As a result, fuel subsidies must be reduced and redistributed to the poor. This

will help reduce the subsidy burden and at the same time protect the vulnerable. Reducing spending on fuel subsidies would position Indonesia's fiscal policy to be more counter-cyclical and make room for more discretionary spending (Basri and Rahardja, 2011). Those three factors fall beyond the scope of the trilemma. The commodity super-cycle makes it extremely difficult to implement policy choices in the trilemma.

The opposite was true in 2012, when energy and commodity prices began to fall, reducing export revenues. The drop in commodity and energy prices increased the current account deficit due to the collapse of exports and limited the ability to engage in counter-cyclical activities. When confronted with a trade (current account) deficit and an economic slowdown, the government should embark on fiscal expansion. However, if the government increases spending, the current account deficit will rise. This may cause more money to leave the country, causing the exchange rate to overshoot. The Indonesian government and Bank Indonesia faced a policy dilemma here. The Indonesian government decided to reduce fuel subsidies in 2013, raising the price by 45 per cent and allocating some of the funds for social assistance for the poor, such as direct cash transfers, infrastructure development, and health programmes. This policy had two effects: reducing the current account deficit and making the fiscal policy less procyclical by increasing the capacity in the government budget for discretionary spending. According to Basri *et al.* (2020), this policy is a triple win. First, it benefits the environment, reducing the demand for fossil fuels. Second, it benefits the poor because fuel subsidies are enjoyed mainly by the upper-middle class. Third, it benefits macroeconomic management because it provides fiscal space and eases pressures on the current account deficit. Nonetheless, because the overall government spending cut was procyclical, it negatively affected growth.

As previously discussed, under these circumstances, the Indonesian government should have tightened its fiscal policy to reduce the financing need and, therefore, the pressure on the Rupiah. In practice, however, due to the budget cycle, applying tight fiscal policy during an economic boom attracts political backlash. Ghosh *et al.* (2018) argue there are no emerging market countries with tight fiscal policies when capital inflows occur. One reason is that fiscal policy is rigid because it must adhere to the budget cycle. For example, the government attempted to raise fuel prices in 2012, but the Indonesian parliament rejected it, with the fuel price adjustment successfully implemented only in 2013. Cutting fuel subsidies is unpopular and politically challenging, even though some of the money is used to help the poor through direct cash transfers.

Fiscal policy is thus constrained and procyclical as a result. Failing to anticipate either the impact of the commodity super-cycle or fiscal procyclicality can result in a macroeconomic shock for the economy and a shock in the external balance. Monetary policy is incapable of resolving this. In other words, commodity super-cycles and fiscal procyclicality make implementing the trilemma more difficult. These aspects of the Indonesian economy influence and affect how Indonesian policy-makers make decisions and policy choices.

VI. Capital flow management

We have shown how the QE episode and the taper tantrum episode highlight the difficulty that policy-makers in EMDEs, particularly Indonesia, face in implementing the policy choices described in the impossible trinity or trilemma. We have given three reasons for this, namely the existence of more than one objective of monetary policy, the volatility of exchange rates, and the influence of balanced sheet effects. We have also shown that the commodity supercycle can increase this difficulty because of its effects on fiscal policy, income redistribution, the trade balance and the exchange rate.

During the time that we have been examining, Indonesia was experiencing all the effects of quantitative easing and of the taper tantrum and of the commodity supercycle. Under such conditions, it seems that monetary policy on its own is likely to be insufficient to manage the economy adequately. The previous section has demonstrated that, in such circumstances, the mix—of monetary policy, macroprudential policy, and fiscal policy—becomes essential. We will see that some types of capital flow management can help make the policy choices more effective.

While the governments and central banks of Indonesia and India handled the taper tantrum reasonably well, it came at the expense of economic growth. As previously discussed, Indonesia's policy options are constrained. As a result, we believe that additional tools for managing macroeconomic stability and capital flows, such as capital flow management, would assist Indonesia and developing countries in responding to capital flow volatility. While price stability is the anchor of Bank Indonesia's inflation targeting framework, macroprudential policy measures have been actively deployed to mitigate the accumulation of systemic risks to financial stability and achieve price stability under the central bank's policy-mix strategy, particularly since 2010. The main goals of macroprudential policy measures have been to balance maintaining financial stability and increasing the financial

system's contribution to economic growth. Capital flow management has also aided the central bank's policy mix (Basri and Siregar, 2023).

Indonesia, which faced two types of shocks, needs an integrated policy mix. Monetary policy helps stabilize aggregate demand through interest rates and exchange rates, while capital controls are used to reduce the economic impact of capital-flow shocks. Furthermore, fiscal policy is used to ensure that monetary policy does not disrupt the external balance, resulting in exchange rate overshooting. Enacting fiscal policy, such as a resource-rent tax, reducing fuel subsidies, and then reallocating funds to assist the poor through direct cash transfers in the face of commodity price shocks, help stabilize consumers' real income. Unfortunately, implementing this fiscal policy is complicated. Blanchard (2017) argued that a country would be forced to rely on monetary policy if fiscal policy is unavailable. However, monetary policy affects not only domestic demand but also the exchange rate via the interest rate differential. Therefore, the role of capital control becomes important in removing the effect of the interest rate differential.

Despite this, it is important to note that capital flow management should not be considered a panacea. Forbes *et al.* (2015) find that capital flow management related to international exposures can improve measures linked to financial fragilities, such as bank leverage, inflation expectations, bank credit growth, and exposure to portfolio liabilities. However, these measures have little significance in affecting equity indices, inflation, interest-rate differentials, or the volatility of exchange rates, portfolio flows, or interest-rate differentials in the short and medium term. Some papers point towards the existence of threshold effects: capital flows are beneficial only after a country has reached a certain amount of institutional or financial sector development (see Bekaert *et al.*, 2005).

An underlying but common feature of the QE and TT episodes and the commodity supercycle is the importance of institutions. Good institutions can help to stabilize portfolio capital flows and promote FDI. The need for capital control is reduced when institutions are strong. Furthermore, fiscal policy is inextricably linked to political economy and institutions, as discussed in section III. As a result, we consider it appropriate to touch on this issue in the next section.

(i) How institutions complicate macroprudential policy

In conjunction with capital flow management, institutional quality is critical to attract capital flows and reduce volatility. One of the main reasons that the effect of the taper tantrum was so exacerbated in Indonesia was that political pressure led to a delay in the speed with which the government was able to respond. As such, the strength, trust, agility, and capability of the institutions in a country are key factors in its ability to respond to capital volatility.

Among the research analysing the relationship between institutional quality and capital flows, the Lucas Paradox finds that, contrary to neoclassical economic theory, capital does not flow from rich to poor countries. However, in the taper tantrum episode, Indonesia suffered from an excess of capital inflow. As such, there could be a case where emerging economies suffer from too much short-term capital inflow but not enough FDI, which more directly affects the economy's long-term development.

There are various reasons cited for the Lucas Paradox and why emerging economies suffer from a lack of FDI. For example, Lucas (1990) suggests that low levels of human capital reduce the return to capital and may thus block foreign investment. Caselli and Feyrer (2007) suggest that a related difficulty may arise because of the lack of complementarity of human capital to physical capital. Capital flows to the developing world may also be blocked by moral hazard and lack of collateral (e.g, Gertler and Rogoff, 1990), a history of serial default (e.g. Reinhart and Rogoff, 2004), or due to informational frictions (e.g. Portes and Rey, 2005). In addition, capital may flow 'upwards' as rich countries' larger market size is associated with superior diversification opportunities and low transaction costs (e.g. Martin and Rey, 2004). Well-functioning institutions and foreign investment may also be affected by a third, hard-to-account-for factor, namely trust or, more generally, social capital (e.g. Guiso *et al.*, 2004, 2006). In addition, there might also be an issue of reverse causation, as foreign investors ask governments to enhance investor protection, remove bureaucratic barriers, and tackle corruption. Alfaro *et al.* (2008) find that institutional quality has shaped international capital flows in the last 30 years.

Papaioannou (2009) finds that institutional underdevelopment (political risk) is a key explanatory factor of the lack of foreign financing in the developing and underdeveloped world. Poorly performing institutions, resulting in weak protection of property rights, legal inefficiency, and a high risk of expropriation, are significant impediments to foreign bank capital. Alfaro and Charlton (2007) find that bad policies, such as fiscal deficits, inflation, and bank fragility, seem to matter for the financial crises, which may be regarded as episodes of extreme volatility. Countries with lower levels of inflation volatility tend to experience lower levels of uncertainty regarding the

inflows of external capital. When not followed by proper regulation and supervision, financial liberalization can lead to greater capital flows intermediated through banks and increasing bank credit and later to abrupt reversals in capital flows. Moreover, the positive correlation between bank credit and capital flow volatility might be due to cronyism in the banking sector.

Taking Indonesia's case, it could be that if emerging economies such as Indonesia are better suited to manage the instability created by short-term inflows of portfolio capital, then this would create a less risky environment for those wishing to carry out FDI.

The importance of best practice policy responses to capital volatility is even more significant, considering that episodes of capital inflow bonanzas have become more frequent as restrictions on international capital flows have been relaxed worldwide. Reinhart and Rogoff (2009*b*) find that capital inflow bonanza periods are associated with a higher incidence of banking, currency, and inflation crises in all but high-income countries. Furthermore, the cyclical components of GDP, net capital flows, and real fiscal spending reinforce each other. Authorities presume that the 'good times' are permanent and, as such, can fully support a fully fledged expansion in real fiscal spending. The procyclical nature of government spending potentially explains why the odds of a financial crisis increase around capital flow bonanzas. The current account deteriorates into the bonanza year and improves steadily thereafter, following a V-shape. Current account deficits are, on average, the largest for the low-income countries and smallest for the advanced economies, consistent with the evidence reported earlier on cut-off values. The real exchange rate shows a cumulative appreciation up to the bonanza year and a sharp depreciation afterwards.

However, macroprudential policy is more challenging to implement with lower institutional quality and trust. As seen in previous sections, many reasons inhibit the implementation of what may be the theoretically correct macroprudential policy: the commodity super-cycle and fiscal policy procyclicality, dependencies on the budget cycle, political backlash from cutting back spending, and jittery markets sensitive to foreign exchange volatility following the Asian Financial Crisis. Indonesia arguably handled the taper tantrum relatively well by bucking the trend of increasing government spending and instead lowered the budget deficit by decreasing fuel subsidies. Furthermore, it avoided the sharp depreciation in the real exchange rate, tailoring its policy to the domestic context. Overall, the 2013 taper tantrum episode in Indonesia provides an interesting case study of how a developing country reacts to a huge capital inflow and potential lessons learned for other developing countries facing similar issues.

VII. The way ahead. Indonesia: more stable, yet remains vulnerable

Despite various reforms, Indonesia is still vulnerable to external shocks (Basri, 2018). For example, interest rate increases in the United States are expected to cause a 'taper tantrum 2.0', albeit on a smaller scale than in 2013. Pressure on the exchange rate will occur, as well as contractionary effects via balance sheet effects. This will cause economic disturbance as the world recovers from the Covid-19 pandemic. Furthermore, the risk of non-performing loans (NPLs) rises. Indonesia is currently relaxing regulatory forbearance, so the NPLs appear low, but the loan at risk (LaR) is relatively high. As a result, if the Financial Supervision Agency performs normalization, the NPLs will rise. A significant increase in the Fed Funds Rate creates a dilemma for Bank Indonesia: on the one hand, if Bank Indonesia does not follow the Fed's interest rate increase, there is a risk of Rupiah depreciation due to capital outflows; on the other hand, if the interest rate is raised, the risk of NPLs increases, undermining the economic recovery. In this context, the policy mix of interest rate, foreign reserves intervention, macroprudential policy, and capital flow management becomes critical. It is also worth noting that, in the case of Indonesia, the government intends to reduce the budget deficit to less than 3 per cent by 2023. This must be done with caution, as the simultaneous tightening of monetary and fiscal policy can be a double whammy (Basri *et al.*, 2022). The timing of stimulus withdrawal becomes critical, and it must be based on the evolution of the economic situation.

The normalization of US monetary policy will increase the risk for highly leveraged companies. In the case of Indonesia, the combination of Covid-19's impact, tightening liquidity due to the normalization of monetary policy in the US, and the weakening of the Rupiah exchange rate will impair these companies. Given that several Indonesian state-owned enterprises are experiencing problems as a result of the preceding discussion, the risk of contingent liabilities to the Indonesian government budget is also increasing.

All of the issues raised in this paper leave us with few policy options and raise the question of whether the impossible trinity is far too optimistic and applicable to Indonesia.

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