

**Does climate policy uncertainty really affect
corporate financialization?**

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Abstract: In recent years, disasters caused by climate change have brought marked losses to individual economic agents. To cope with fluctuating climate risks, climate policies have witnessed frequent adjustments worldwide, resulting in heightening uncertainty on climate policies that have become an important factor affecting business operations. This paper uses a fixed-effects model to study the role of climate policy uncertainty on the financialization of China's A-share listed enterprises. Our results find that a rise in climate policy uncertainty has a dampening effect on corporate financialization, while energy-intensive enterprises are most affected. Although climate policy uncertainty negatively impacts the size of enterprises' financial assets, the impact varies for different types of financial assets. This paper fills the gap by investigating the relationship between climate policy and corporate financialization. Under the backdrop of a rising climate policy uncertainty, our findings possess important implications for the improvement of enterprises' business strategies and policy effectiveness against global climate change.

Keywords: Climate policy uncertainty; Corporate financialization; Financial asset allocation

JEL classification: C33; O13; D21; P28; Q43

1. Introduction

Since the beginning of the new century, the global climate environment has witnessed an accelerating deterioration, and disasters caused by global warming have brought huge economic losses worldwide (Guha-Sapir et al. 2013; Duan et al., 2021). The 21st United Nations Climate Change Conference held in Paris in 2015, where 196 countries worldwide adopted *the Paris Agreement*, has therefore reached an agreement on climate risk management. As the country with the largest total carbon emissions worldwide, China plays a crucial role in achieving the world's carbon reduction targets. Against this backdrop, at the 2020 Climate Change Conference, China has pledged committed to achieve "carbon peaking" and "carbon neutrality" by 2030, and 2060 respectively. To fulfill the commitment, China's government has recently issued documents notably including the Guiding Opinions on Establishing a Modern System of Environmental Treatment and Guiding Opinions of the State Council on Accelerating the Establishment and Improvement of a Green and Low-carbon Circular Development Economic System, and emphasized controlling for climate risks in the 14th Five-Year Plan formulation. The above newly-issued policies demonstrate the importance of climate policy for future economic development in China. Thus, under the new background of combating against the climate change at the national level, studying the impact of climate policy uncertainty on individual corporate operations is of great importance. Enterprises can refer to the conclusions to adjust the level of financialization and make the right financial decisions.

Policy uncertainty refers to economic risks resulting from policy-making and regulation (Al-Thaqeb and Algharabali, 2019), and it is known that the policy environment has always been an important part of the sources of business risk (Tchankova,

2002). Many scholars have pointed out that policy uncertainty affects the enterprises' performance. For example, Jeong (2002) analyzes that policy uncertainty has a negative effect on enterprises' production investment, while this viewpoint is latterly supported by Gulen and Ion (2015). Given that economic policy is an essential component of public policy, Pastor and Veronesi (2012; 2013) point out the following conclusions that uncertainty in economic policy affects the business behavior of enterprises.

Climate policy is known to be another new source of external risk for enterprises operations, and rising uncertainty on climate policy will have important implications for the financial decisions of enterprises. However, there is still a lack of research to test this issue. In the field of policy uncertainty, the former has long been proxied by the index of economic policy uncertainty (EPU) developed by Baker et al. (2016), while little focuses on the uncertainty of the climate policy. With regard to the limited research on climate policy uncertainty, it mainly studies the construction of the climate policy uncertainty index proposed by Gavrilidis (2021). Fried et al. (2021) conclude empirically that climate policy risk reduces the macro risk of carbon emissions by reducing the capital stock. In terms of the impact on business operations, Golub et al. (2018) show that rising climate policy uncertainty leads to a delay in investment behavior by enterprises. Existing related literature also studies the dampening effect of climate policy uncertainty on enterprises' investment in emissions reduction (Golub et al., 2020). Thus, it can be seen that existing research on the impact of climate policy uncertainty focuses on enterprises' investment behavior, while far little focuses on its impact on corporate financialization. At the same time, research on the role of climate policy in enterprises' financial asset allocation has also been neglected. To this end, this paper fills the literature gap by investigating the impact

of climate policy uncertainty on corporates' financialization and their behaviors of financial asset allocation.

Specifically, the research is conducted using a comprehensive dataset covering all A-share non-financial listed companies from 2007 to 2019 through a fixed effects model. Corresponding research steps are summarized as follows: first, we study the impact of the extent of firm financialization on the climate policy uncertainty. Heterogeneity of the impact is then studied subject to different types of enterprises with different levels of energy consumption and different levels of competition. Moreover, we examine the behavior of enterprises' allocations to financial assets when climate policy uncertainty rises. Robustness of our findings is examined through a series of additional analysis.

Our paper contributes to the existing related literature as follows: first, the paper uses a newly proposed index of climate policy uncertainty, i.e., climate policy uncertainty index developed by [Gavrilidis \(2021\)](#), through which the role of climate policy uncertainty on the enterprises financialization can be well examined. Second, this paper investigates the financial asset allocation behavior of various types of enterprises in the face of rising climate policy uncertainty that has been long devoid of in existing literature. Third, the results of this paper have practical implications on guiding enterprises' business decisions towards improvement of their asset allocation behaviors. At the same time, the results could also help enhance the effectiveness of the climate governance system for promotion of the environmental protection.

The remainder of this paper is structured as follows: the second part of the article provides a literature review; the third part discusses the hypothesis interpretation; the fourth part presents the model variables and data, and the fifth part summarizes the conclusions

of the paper and gives relevant recommendations.

2. Literature Review

Climate policy uncertainty is similar to economic policy uncertainty, which refers to the unpredictable component of government climate policy, including both uncertain policy expectations and effects and uncertain policy adjustments or changes. Concerns about climate policy arise from climate risk, and the latter is mainly due to carbon emissions. Different industries have different effects on carbon emissions, for example, green industries have a mitigating effect on carbon emissions, while the development of the financial sector promotes the carbon behavior of society (Li et al., 2021). The climate risk to carbon emissions itself also has the effect of promoting carbon emissions in business (Ren et al., 2022). The solution to the climate change dilemma is a combination of strategy and technology (Obersteiner et al., 2001), and climate policy as a strategy is also receiving attention from governments. Research on climate policy is also gradually being developed. To measure climate policy uncertainty, Gavrilidis (2021) construct a climate policy uncertainty index (CPU) based on the EPU proposed by Baker et al. (2016). There is relatively little research on climate policy uncertainty, especially for micro-level studies on the impact of climate policy uncertainty on investment. In general, uncertainty would lead to delayed investment of companies through the real option channel (Bloom, 2009). Chao and Wilson (2008) also find that volatile markets will delay investment in mitigation technologies. At the same time, it is shown that climate policy uncertainty may have a different effect. Fuss et al. (2008) show that when carbon market volatility increases, enterprises do not delay investment, but rather accelerate investment in less carbon-intensive technologies, and subsequent studies find that

uncertainty induced by climate policy regulation is positively associated with enterprises' decisions on investment for reduction of their ecological footprint (Lopez et al., 2017). At the macro level, Fried et al. (2021) conclude from a study of climate policy uncertainty that climate policy risk behaves much like a carbon tax, but it relies more on reducing capital stock to reduce emissions; but existing research overstates the effect of carbon taxes while ignoring the response to climate policy risk.

As "carbon peaking" and "carbon neutrality" has been increasingly important for China's economic development, climate policy uncertainty is becoming an important source of external risk for enterprises. Kang and Ratti (2014) point out that increased economic policy uncertainty would lead to changes in enterprises' investment. Climate policy uncertainty, as an important part of policy uncertainty, will also have an impact on corporate financial decisions. However, little attention has been paid to the impact of climate policy uncertainty on enterprises' financial investment behavior by far.

Epstein (2006) first introduced the concept of financialization as a phenomenon, in which the influence and size of the financial sector is rising in the society. Regarding the interpretation of financialization, Aalbers (2016) suggests that financialization includes seven aspects notably including the expansion of financial markets and the proliferation of financial instruments. And financialization is manifested by a greater proportion of profits generated by financial investment or speculation in the gross social product (GDP) (Krippner, 2005). The current trend of financialization is evident among listed companies in China, and 1,115 non-financial listed companies in China have purchased financial products from banks and securities companies for 1.2 trillion yuan in 2019 (Li and Wang, 2021; Xuezhong and Zhen, 2021; Huang et al., 2021). However,

constrained by the credit environment and other constraints, the motivation for China's corporate financialization is not precautionary savings but the pursuit of profit (Xu, and Xuan, 2021; Huang et al., 2021). With such motives, financialization has not played a positive role in the development of China's real economy. From the perspective of enterprises, the financialization of real enterprises sacrifices investment in production (Liu and Zhang, 2020; Pastor and Veronesi, 2012; 2013); from the perspective of economic operation, many scholars have argued that excessive financialization can be a hindrance to the development of the economy. For example, Seo et al. (2012) and Shin (2012) point out that the strengthening of financialization can weaken the boosting effect of monetary policy on the real economy. Most of the existing studies have explored the relationship between traditional market environment factors and corporate financialization, while little attention has yet focused on the fact that climate policy uncertainty plays an increasingly important role in corporate financial decisions. However, exploring the impact of climate policy uncertainty on corporate financialization is important for climate policy making that has implications for guiding corporate financial decisions.

3. Research hypothesis

(1) Climate policy uncertainty Impacts corporate financialization trends. Financial assets have the properties of both storage liquidity and investment profitability, and may be held by companies for different purposes when market conditions change.

On the one hand, as market conditions change and future revenues become more unpredictable, to prevent future liquidity shortages, enterprises hold cash or liquid short-term financial assets to reduce the negative impact of a financial chain failure on their

operations ([Opler et al., 1999](#)), this is known as precautionary savings. When climate policy uncertainty rises, as an important element of the external risks faced by enterprises, policy risk increases ([Tchankova, 2002](#)), and the incentive for managers to hold precautionary reserves accordingly increases. Enterprises hold large amounts of liquid assets, and use working capital management to cope with the impact of the external environment, reducing the business risk of enterprises. ([Bloom et al., 2007](#)).

On the other hand, derivative financial instruments not only serve as liquidity reserves, according to the portfolio theory of [Markowitz \(1959\)](#), the use of financial derivatives, such as futures, options, forward contracts, can also hedge and reduce the operating risk of enterprises. Moreover, as climate policy uncertainty increases, the implicit expected rate of return in the market increases, which will also encourage risk-seeking enterprises to increase investments ([Segal et al., 2015](#)).

Therefore, when climate policy uncertainty rises, enterprises will use more funds for precautionary savings to protect their capital chains or hedge their risks, while some companies will also take advantage of market opportunities to make profits. In this case, enterprises will invest more money in financial assets, making the trend towards corporate financialization even stronger.

However, rising climate policy uncertainty may also lead to a weakening of corporate financialization for several reasons. First, from the perspective of enterprises, when policy uncertainty rises, enterprises have higher expectations of market uncertainty, which will delay their due investment behavior ([Han and Qiu, 2007](#)). In terms of research on the path by which stock price volatility affects enterprise investment, [Fischer and Merton \(1984\)](#) are the first to find that stock price volatility

affects an enterprise's investment decisions by influencing the enterprise's cost of capital. The following literature, including [Morck et al. \(1990\)](#), [Blanchard et al. \(1993\)](#), [Baker et al. \(2003\)](#), finds that financing cost is an important reason for stock price fluctuations to affect companies' investment decisions. In the period of rising climate policy uncertainty and stock price volatility, business managers whose investment preference is risk-averse would expect higher uncertainty in the market and will be less willing to invest for risk-averse reasons.

Second, regarding the nature of financial assets, which are inherently liquid and volatile, [Brunnermeier and Pedersen \(2009\)](#) show that the volatility of financial assets is correlated with liquidity. Further research also finds that increased volatility of financial assets is associated with a decline in liquidity. When climate policy uncertainty increases, market prices are prone to dramatic fluctuations, making the liquidity of financial assets diminish rapidly. Influenced by liquidity saving purposes, enterprises' willingness to hold financial assets decreases, leading to decreases in the ratio of financial assets and weakening trend of corporate financialization. Combining the two different scenarios, the following two hypotheses are accordingly proposed in this paper.

A1: As climate policy uncertainty rises, the willingness of enterprises to hold financial assets decreases and the trend towards financialization of enterprises decreases, and vice versa.

(2) Climate policy uncertainty affects the financial asset allocation structure of enterprises. In the face of complex market environments, [Shiller \(2000\)](#) argues that investors have limited rationality. [Froot et al. \(1992\)](#) analyze investor blindness and dependence. Subsequent research has also confirmed that there exists significant

heterogeneity among different individual investors (Boehme et al., 2021). In domestic research, Yang, et al. (2017) also find that, due to different requirements, enterprises will invest idle funds in financial assets with different liquidity and/or maturity to realize the investment of liquidity reserves or financial assets. When enterprises save for liquidity or hedge risks, rising climate policy uncertainty can cause enterprises to allocate more funds to short-term financial assets with strong liquidity, and to sell long-term financial assets that are difficult to liquidate. When climate policy uncertainty rises, enterprises may exploit market volatility and invest in long-term financial assets, using the proceeds from the financial assets to compensate for lower main business income and maximize their economic efficiency.

Combining the above two scenarios, the following two hypotheses are proposed.

A2: As climate policy uncertainty rises, the growth rate of companies' short-term assets rises more significantly relative to their long-term financial assets, and vice versa.

4. Research Design and Research Data

4.1 Sample selection and data sources

This paper selects the data of A-share listed corporations (except ST, PT and financial sectors) from 2007 to 2019 as the research sample. For climate policy uncertainty, this paper follows the climate policy uncertainty (cpu) parameter constructed by Gavrilidis (2021). The financial data of the enterprises selected from the CSMAR and the macro data from the National Bureau of Statistics. In order to eliminate the effect of extreme values, a 1% two-sided tailing was applied to the continuous variables at the enterprise level.

4.2 Empirical Model and Variable Definitions

We follow Peng et al. (2018) and classify the financial assets of enterprises into five accounts, i.e., trading financial assets, derivative financial assets, available-for-sale financial assets, held-to-maturity investments, and investment properties.

This paper explores the relationship between climate policy uncertainty and corporate financialization through the following approach.

$$fag_{i,t} = \alpha fa_{i,t-1} + \beta cpu_t + \delta x_{i,t} + \mu_i + \varepsilon_{i,t}$$

The core explanatory variable of the regression model is $fag_{i,t}$. This variable denotes the financialization trend of the target enterprise, and is measured by the growth rate of the enterprise's investment in financial assets. "i" is for different enterprises and "t" is for different years. The data is transformed through the first-order difference (multiplied by 100) to the value of the logarithm of the size of the financial assets held by the enterprise. $fa_{i,t-1}$ represents the size of financial assets owned by an enterprise in the previous year, which is measured by the natural logarithm of the total value of the enterprise's financial assets (multiplied by 100). This variable is introduced in the model to measure the effect of the size of the enterprise's pre-existing financial assets on the enterprise's tendency to financialize. If the regression result of α is significantly greater (less) than 0, it means that the more (less) financial assets the enterprise has, the stronger the enterprise's tendency to financialize. If the regression result of α is not significant, it indicates that the scale of existing financial assets has no obvious influence on the trend of corporate financialization.

cpu_t is the core explanatory variable in this paper, it measures the level of climate policy uncertainty between 2007 and 2019. To obtain a smoother annual dataset, we average the climate policy uncertainty index values for all months of the corresponding

year and take the logarithm to represent the climate policy uncertainty index for that year. Different regression results for β have different significance: if the β value is significantly less than 0, it means that the rise in climate policy uncertainty causes a weaker trend of corporate financialization; accordingly, Hypothesis A1 is correct.

$x_{i,t}$ reported other control variables that might influence the level of corporate financialization. On the microeconomic level, $x_{i,t}$ includes enterprise-level factors such as relative financial and real economy returns, enterprise size, Tobin's Q, profitability, growth, and financial leverage. At the macroeconomic level, variables such as the chain rate of GDP growth are controlled. Climate policy uncertainty is a time series variable. The model cannot control time fixed effects. To reduce the possibility of missing explanatory variables, we introduce μ_i to denote the fixed effects of individual enterprises. ε stands for the residual term of the model.

In order to measure the financial asset allocation behavior of enterprises when climate policy uncertainty increases, we divide financial assets into the following five components: trading financial assets, available-for-sale financial assets, held-to-maturity investments, investment properties and Long-term equity. The specific variables are set as shown in Table 1.

Insert Table 1

5. Empirical analysis

This section presents the results of the empirical analysis. The first subsection presents the descriptive statistics of the employed. The second part provides an empirical test for Hypothesis A1 using a fixed effects model. To verify the heterogeneity of the

impact of climate policy uncertainty on corporate financialization, the third and fourth subsections classify the sample using the degree of energy consumption and the degree of industry competition. Group regressions are conducted on the different groups of the sample after classification. Part five then examines Hypothesis A2 using a fixed effects model. Changes in different types of financial assets are specifically examined. In the final subsection, robustness tests are conducted to reassure the accuracy of our findings.

5.1 Descriptive statistics

The results of the descriptive statistics for the main variables are shown in Table 2. The explanatory variable *fag* has a maximum value of 958.2 and a minimum value of -906.1, indicating a wide variation in the trend of corporate financialization. The core explanatory variable is *cpu*. The maximum value for *cpu* is 3.089 and the minimum value is 0.732, with a standard deviation of 0.777. It is evident that climate policy uncertainty is highly volatile over the statistical period. Sufficient variation in the variables is known to make the empirical study feasible and meaningful.

Insert Table 2

5.2 Baseline regression

To test for Hypotheses A1, Table 3 presents the regression results for the impact of climate policy uncertainty on corporate financialization. It is clear that after controlling for the enterprise-level control variables, a fixed-effects model regression estimation of the model reports the regression coefficient of -2.7526 for the impact of climate policy uncertainty (*cpu*) at the 1% significance level. The regression results strongly suggest that when climate policy uncertainty increases, the tendency for corporate financialization diminishes. To control for the potential issue of variable omissions

regarding the macroeconomic environment, we introduce the GDP chain growth rate into the regression, which yields a coefficient of -2.4248.

Therefore, the following conclusion can be drawn: the regression results support Hypothesis A1. When climate policy uncertainty increases, the investment ratio of financial assets of Chinese enterprises decreases and the trend of corporate financialization weakens due to the increase in climate policy uncertainty.

Insert Table 3

5.3 Heterogeneity analysis: Different energy consumption degrees of the enterprise

Climate policy is an important part of policy uncertainty. On the one hand, when climate policy uncertainty increases, the increase in macro business risks of enterprises will affect their financial decisions. On the other hand, [Kido \(2016\)](#) points out that economic policy uncertainty in the US has a dramatic impact on the world commodity market. Just like the U.S., China is one of the major suppliers and consumers of commodities, policy adjustments in China also affect the volatility of commodity markets. ([Imai et al., 2008](#)). The increased policy uncertainty will lead to significant price volatility in the world commodities represented by coal, while most domestic commodity prices are linked to international commodity prices. When climate policy uncertainty increases, the volatility of the prices of coal and other upstream raw materials of domestic enterprises will accordingly increase. However, as different energy-consuming industries rely on different basic resources, the business decisions of enterprises will be affected differently when the corresponding commodity prices fluctuate.

According to the *2010 National Economic and Social Development Statistics*

320 *Report*, there are six major energy-consuming industries in China. These industries are:
321 chemical raw materials and chemical products manufacturing; ferrous metal smelting
322 and rolling processing industry; non-ferrous metal smelting and rolling processing
323 industry; non-metallic mineral products industry; petroleum processing, coking and
324 nuclear fuel processing industry; electricity and heat production and supply industry.
325 According to the intensity of energy consumption in the industries, this paper divides
326 the sample of enterprises into groups of high, medium and low energy-consuming
327 enterprises, and conducts the empirical analysis using fixed-effects models for each
328 group after grouping the samples.

329 According to the regression results, the coefficient of impact of climate policy
330 uncertainty(cpu) on corporate financialization(fag) is -28.7781 for enterprises in the
331 high-energy consumption group; for enterprises in the medium energy consumption
332 group, the coefficient of impact is -2.4235; for enterprises in the low energy
333 consumption group, the coefficient of impact of climate policy uncertainty(cpu) is
334 negative but insignificant. The statistical results indicate that enterprises with different
335 levels of energy consumption are affected differently by the uncertainty of climate
336 policies, and high energy-consuming enterprises are significantly more affected than
337 other enterprises. When climate policy uncertainty increases, the impact of coal price
338 fluctuations on financial decisions of high-energy-consuming enterprises is more
339 pronounced, revealing that corporate managers will use more funds for liquidity storage
340 to prevent from financial crises. At the same time, for less energy-consuming enterprises,
341 their production is less affected by coal prices, and the tendency of financialization of
342 enterprises is less attenuated compared to high-energy-consuming enterprises,

Insert Table 4

5.4 Heterogeneity analysis: Different industry competition degrees of the enterprise

The impact of climate policy uncertainty, in addition to industry differences in energy consumption, may also vary depending on the degree of competition in the industry. For measurement of industry competition, this paper calculates the Herfindahl index ([Herfindahl, 1997](#)) based on sales, and classifies industries with a Herfindahl index below the median as highly competitive and those above the median as less competitive. The regression results obtained after classifying the sample are shown in Table 5 below.

Regression results show the evident heterogeneity in the impact of climate policy uncertainty on enterprises with different levels of industry competition. For enterprises in industries with a high degree of competition, the coefficient of impact of climate policy uncertainty is -1.8707, while being insignificant. The coefficient of the impact of climate policy uncertainty is -6.2740 for enterprises within industries with a low degree of competition. The above comparison shows that the dampening impact of climate policy on the financialization of enterprises is relatively more pronounced in industries with less competition.

It is known that uncertainty of climate policy prompts producers to wait and see if the government will commit further to climate policy ([Fuss et al., 2008](#)). This waiting is a real option effect. In specific, if it is more valuable to understand the government commitment than to invest immediately in mitigation technology, the option value will exceed the technology value and the investment will be delayed. For enterprises in highly competitive industries, enterprises put a lot of capital into market competition,

and when climate policy uncertainty increases, they are more inclined to wait for policy commitments, and the weakening trend of financialization is not obvious. However, for industries with a low degree of competition, such industries generally have high investment thresholds, high energy consumption, and oligopoly within the industry. In times of heightened climate policy uncertainty, enterprises tend to use more capital for liquidity storage, as evidenced by a marked reduction in corporate financialization in low-competition industries.

Insert Table 5

5.5 Heterogeneity analysis: Different financial asset allocation of the enterprise

In response to Hypothesis A2, a fixed-effects model regression with climate policy uncertainty is further conducted, using the growth rates of different types of financial assets allocated by enterprises as the explanatory variable.

An increase in climate policy uncertainty will not only affect the degree of corporate financialization, but also the allocation structure of their financial assets. Different types of financial assets are affected by climate policy uncertainty differently depending on their maturity, liquidity, and role. This section examines the impact of the increase in climate policy uncertainty on the growth rates of different types of financial assets, and the empirical results are shown in Table 6.

The regression results show that for trading financial assets, the impact coefficient of climate policy uncertainty (cpu) is 10.6055 and is statistically significant at 1%; for available-for-sale financial assets, the impact coefficient of rising climate policy uncertainty (cpu) is -3.4177 and it is statistically significant at 5%; Financial assets held

to maturity are significantly negative at 5% statistical significance, with a corresponding coefficient of -12.4295; long-term equity is impacted positively with a coefficient of 2.5118 in the face of rising climate policy uncertainty (cpu) and is statistically significant at 5%. The allocation to the investment property category is affected by climate policy uncertainty (cpu) with a negative but insignificant coefficient.

From the regression results, it is clear that for enterprises, although the trend of corporate financialization generally weakens, enterprises' allocation behavior to different financial assets varies due to different roles individual financial assets and different purposes of the financial allocation. When climate policy uncertainty rises, enterprises tend to sell available-for-sale and held-to-maturity financial assets, and replace some of the proceeds with trading financial assets.

Overall, the above results confirm the validity of Hypothesis A2, which states that when climate policy uncertainty rises, the growth rate of the short-term financial assets of enterprises increases more rapidly than that of the long-term financial assets.

Insert Table 6

5.6 Robustness test

Robustness tests were conducted using different classification criteria for the degree of competition in an industry. In the paper, the Herfindahl index of the industry competition is calculated using sales data. To test for the robustness, the Herfindahl index is calculated using the total asset size of the company. The regression results of the robustness test are shown in the following table.

It is clear that the regression results for calculating the degree of competition in the industry using enterprise size are highly consistent with the results using sales. The

paper uses a different method for the data classification, and the results of the robustness tests demonstrate that the conclusions of our baseline research are held.

Insert Table 7

6. Main conclusions and policy recommendations

This paper employs the climate policy uncertainty index constructed by [Gavriilidis \(2021\)](#). We use this index to verify the impact of climate policy uncertainty on corporate financialization. The data we uses came from 2007-2019 covering non-financial industries listed in A-shares in China. We show that rising uncertainty of climate policy will exert a dampening role in corporate financialization. Second, there exist evident industry heterogeneity in the impact of climate policy uncertainty on corporate financialization. The impact on the financialization of medium energy consuming enterprises is less affected, and low energy consuming enterprises are not significantly affected. Third, for industries with different levels of competition, climate policy uncertainty has a greater impact on enterprises in industries with low levels of competition. Fourth, although the overall tendency of corporate financialization decreases when climate policy uncertainty rises, enterprises' allocation behavior varies for different types of financial assets. When climate policy uncertainty rises, enterprises are more likely to invest in financial assets that can regulate liquidity, such as trading financial assets, in order to hedge losses from rising climate policy uncertainty.

The findings of this paper shed new lights on solving the current issue of arbitrary financialization of enterprises in China. A rise in climate policy uncertainty has obvious implications for corporate financialization, which has important implications for

433 enterprise reform in the face of the pressure of deepening green development in the
434 future. Enterprises should accurately understand the existence of climate policy
435 uncertainty and consider it as an important factor that might affect their business
436 operations. On the other hand, China should continue with the process of RMB
437 internationalization, and enhance its pricing power of commodities, in order to reduce
438 the adverse impact of climate policy uncertainties on business activities, and promote a
439 smooth and healthy operations of the economic system as a whole.

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Table 1. Variable definitions.

Abbreviation	Variable interpretation	Remarks
fag	Financial assets growth rate	Difference between the current year and last year's logarithm of financial asset assets $\times 100$
fa	Logarithmic value of the size of financial assets	Natural logarithm of the size of financial assets for the year $\times 100$
cpu	Climate policy uncertainty	Annual average of the Climate Policy and Uncertainty Index
cs	Company size	Natural logarithm of the company's total assets
tobinq	Tobin Q	Market capitalisation / total assets
roa	Profitability of the business	Net profit/total assets
sg	The growth of sales	Difference between the natural logarithm of last year's and current year's Main business revenue $\times 100$
leverage	Financial leverage	Total liabilities/total assets
gdpq	Real GDP growth rate	Difference between the natural logarithm of last year's and current year's GDP $\times 100$
fom	Financial and operate margin	Financial and Real Relative Yield
fov	Financial and operate	Three-quarter rolling standard deviation of financial returns versus three-quarter rolling standard deviation of real returns
tfa	Transactional financial assets	Natural logarithm of the size of financial assets held for trading for the year $\times 100$
afss	Available-for-sale securities	Natural logarithm of the size of available-for-sale financial assets for the year $\times 100$
htms	held-to-maturity securities	Natural logarithm of the size of financial assets held to maturity for the year $\times 100$
ios	Investment on stocks	Natural logarithm of the size of investment on stocks for the year $\times 100$
ip	investment property	Natural logarithm of the size of investment property for the year $\times 100$
tfag	Transactional financial assets growth rate	Difference between the natural logarithm of last year's and current year's financial assets held for trading $\times 100$
afssg	Available-for-sale securities growth rate	Difference between the natural logarithm of last year's and current year's available-for-sale financial assets $\times 100$
htmsg	held-to-maturity securities growth rate	Difference between the natural logarithm of financial assets held to maturity last year and this $\times 100$
iosg	Investment on stocks growth rate	Difference between the natural logarithm of last year's and current year's investment on stocks $\times 100$
ipg	investment property growth rate	Difference between the natural logarithm of investment property of the previous year and the current year $\times 100$

Table2: Descriptive statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
tobinq	17,244	2.433	2.203	0.235	48.27
cs	17,241	21.49	1.296	10.73	28.29
cpu	17,252	1.676	0.777	0.732	3.089
gdpg	16,706	2.941	1.647	-1.033	6.234
sg	16,669	50.11	33.63	-88.80	274.5
leverage	17,241	43.70	22.70	3.761	121.3
roa	16,702	1.065	2.428	-6.707	7.635
tfa	3,240	1,520	269.1	633.6	2,254
afss	5,617	1,731	241.3	0	2,491
htms	643	1,571	325.6	548.1	2,113
ios	12,261	1,776	232.5	0	2,548
ip	6,605	1,710	185.8	820.5	2,339
tfag	2,575	-11.92	158.6	-1,169	781.6
afssg	4,837	9.755	88.12	-1,151	1,168
htmsg	513	0.886	91.22	-490.0	678.8
iosg	11,714	1.831	72.98	-775.0	1,550
ipg	5,955	6.906	50.29	-492.8	815.1
fom	17,238	2.348	376.7	-22,706	36,958
fov	14,223	0.283	1.448	0	61.04
fag	9,326	9.282	99.87	-906.0	958.2
fa	10,414	1,733	233.7	0	2,496

Table 3. The impact of climate policy uncertainty on corporate financialization.

Dependent variable G	(1) FE	(2) FE
cpu	-2.7562*** (0.009)	-2.4248** (0.039)
fa	-0.2657*** (0.000)	-0.2652*** (0.000)
cs	23.1714*** (0.000)	22.9282*** (0.000)
tobinq	0.5663 (0.730)	0.2684 (0.880)
roa	-0.6932 (0.333)	-0.7501 (0.280)
sg	0.0519 (0.376)	0.0519 (0.377)
leverage	-0.1042 (0.540)	-0.1103 (0.513)
fom	0.0023 (0.213)	0.0023 (0.210)
fov	-0.1354 (0.835)	-0.1265 (0.847)
gdpg		0.4432 (0.451)
R-squared	0.106	0.107

Note: *** p<0.01, ** p<0.05, * p<0.1, indicates significant at 1%, 5% and 10% statistical significance

Table 4. Impact of climate policy uncertainty on enterprises with different levels of energy consumption.

Independent variable G	(1) high_FE	(2) middle_FE	(3) Low_FE
cpu	-28.7781*** (0.000)	-2.4235* (0.061)	-1.2085 (0.549)
fa	-0.3415*** (0.007)	-0.2618*** (0.000)	-0.2923*** (0.000)
cs	55.7255*** (0.009)	20.8796*** (0.002)	27.4225*** (0.004)
tobinq	13.8151*** (0.000)	1.2044 (0.542)	-5.2004** (0.042)
roa	-4.0942** (0.035)	-1.2693* (0.079)	2.9389*** (0.010)
sg	0.5430** (0.023)	0.0665 (0.413)	-0.04040 (0.574)
leverage	-1.9282** (0.041)	-0.1849 (0.375)	0.3044* (0.068)
fom	0.5075 (0.145)	0.0003 (0.608)	0.0052*** (0.000)
fov	13.1707 (0.192)	-0.3627 (0.669)	0.1916 (0.855)
gdpg	-3.5573** (0.038)	0.2554 (0.711)	1.3740 (0.144)
R-squared	0.290	0.102	0.158

Note: *** p<0.01, ** p<0.05, * p<0.1, indicates significant at 1%, 5% and 10% statistical significance

Table 5. Impact of climate policy uncertainty on enterprises with different levels of industry competition.

Dependent variable G	(1)	(2)
	HC_FE	LC_FE
	High level of competition	Low level of competition
cpu	-1.8707 (0.138)	-6.2740** (0.040)
fa	-0.2624*** (0.000)	-0.3474*** (0.000)
cs	23.6877*** (0.000)	20.5959** (0.019)
tobinq	0.4573 (0.805)	-1.0263 (0.756)
roa	-0.7316 (0.312)	-0.9341 (0.473)
sg	0.0610 (0.313)	0.0268 (0.866)
leverage	-0.1217 (0.494)	-0.2190 (0.502)
fom	0.0024 (0.197)	-0.0335 (0.369)
fov	-0.2815 (0.699)	2.4636 (0.135)
gdpg	0.6022 (0.319)	-0.7656 (0.590)
R-squared	0.105	0.169

Note: *** p<0.01, ** p<0.05, * p<0.1, indicates significant at 1%, 5% and 10% statistical significance

Table 6. The impact of climate policy uncertainty on different financial assets.

Dependent variable G	(1) Transactional	(2) Available for sale	(3) Held to maturity	(4) Investment properties	(5) Long-term equity
cpu	10.6055*** (0.007)	-3.4177** (0.024)	-12.4295** (0.029)	2.5118** (0.021)	-0.5271 (0.592)
fa	-0.2810*** (0.000)				
cs	-19.3927 (0.261)	18.1568*** (0.006)	3.9194 (0.683)	21.0534*** (0.000)	3.5583 (0.258)
tobinq	-0.0406 (0.993)	-0.2060 (0.935)	7.6632 (0.309)	1.2476 (0.533)	-0.4678 (0.662)
roa	0.7843 (0.701)	-0.3733 (0.725)	2.4011 (0.593)	0.0827 (0.907)	-1.0126 (0.186)
sg	-0.0355 (0.823)	0.0515 (0.753)	0.1802 (0.123)	0.0369 (0.592)	0.0813* (0.057)
leverage	0.0314 (0.952)	-1.2348*** (0.001)	-0.1269 (0.861)	-0.2380** (0.034)	0.0750 (0.496)
fom	0.0287** (0.010)	0.0025 (0.312)	-0.0033 (0.939)	0.0001 (0.789)	0.0004 (0.290)
fov	-0.7056 (0.486)	-0.7347 (0.124)	7.3929 (0.275)	-0.5680** (0.034)	0.2054 (0.600)
gdpq	6.7387*** (0.003)	1.1392 (0.161)	-5.9237* (0.051)	0.7217 (0.113)	-0.2303 (0.671)
afss		-0.2140*** (0.000)			
htms			-0.2460* (0.068)		
ios				-0.2021*** (0.000)	
ip					-0.2412*** (0.000)
R-squared	0.098	0.111	0.101	0.094	0.114

Note: *** p<0.01, ** p<0.05, * p<0.1, indicates significant at 1%, 5% and 10% statistical significance

Table 7. Robustness tests.

Dependent variable G	(1)	(2)
	HC_FE	LC_FE
	High level of competition	Low level of competition
cpu	-1.7841(0.133)	-6.4888 (0.166)
fa	-0.2644*** (0.000)	-0.2899*** (0.000)
cs	22.2210*** (0.000)	32.2475*** (0.009)
tobinq	0.2160 (0.906)	0.7269 (0.819)
roa	-0.6172 (0.344)	-1.2667 (0.568)
sg	0.0368 (0.533)	0.3315* (0.077)
leverage	-0.0740 (0.664)	-0.4348 (0.321)
fom	0.0024 (0.195)	-0.0107 (0.871)
fov	-0.2064 (0.772)	0.9633 (0.547)
gdpg	0.6662 (0.286)	-0.9870 (0.546)
R-squared	0.106	0.139

Note: *** p<0.01, ** p<0.05, * p<0.1, indicates significant at 1%, 5% and 10% statistical significance