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Climate Policy Uncertainty: A "Wild Card" for Corporate Risk-Taking?

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Abstract. The research paper develops a China Climate Policy Uncertainty Index and analyzes how this uncertainty affects corporate risk behaviors. By leveraging data from publicly-traded companies in China, I've discovered that a rise in climate policy uncertainty is directly tied to more risky corporate actions. Even when I swapped out key variables, omitted outlier years, included additional control factors, adjusted for fixed effects, and introduced lagged models, this conclusion held steadfast.Continued examination shows that sustained growth in climate policy ambiguity increases corporate risk-taking due to decreased investment effectiveness and decreased credit access. Additionally, the impact is notably greater among privately held businesses, companies with significant pollution, and those reliant on substantial capital investment. This study broadens the existing research on the link between climate policy uncertainty and corporate risk-taking, offering practical insights for business strategy, government policy formulation, and regulatory oversight.

Keywords: climate policy uncertainty, corporate risk-taking, corporate investment efficiency, corporate credit availability

1. Introduction

In recent years, the earth has been facing a serious climate crisis. Rising temperatures, reduced forest area, and rising sea levels all threaten human health and livelihoods. The World Economic Forum's 2023 Global Risks Report points out that half of the world's major risks in the next decade will be climate-related. To address these dangers, governments across the world have developed climate policies. However, the climate phenomenon itself is complex and changeable [1]. Coupled with different development priorities of various countries and unstable global politics, the implementation effect of these policies is difficult to predict. This uncertainty has a great impact on economic and financial development [2]. Research indicates that ambiguous climate policies can undermine the economy and financial system, as mentioned in recent studies [3,4]. Most studies focus on market stability and growth at the macro level, while others examine its impact on energy and sustainable development [5,6]. However, there is relatively little research on how climate policy affects corporate behavior.

Previous research focused on technological progress [7], company board structure [8] and shareholder equity [9] How to influence corporate risk-taking behavior. But climate change is an issue that has only recently attracted attention, so there is not enough research on how climate policy

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affects corporate behavior. Therefore, this study explores the impact of climate policy uncertainty on corporate risk-taking behavior.

The effect of climate policy unpredictability on corporate risk-taking requires further empirical research. On the one hand, uncertainty about climate policy may not affect corporate risk-taking behavior. State-owned enterprises are often large, have large amounts of fixed assets, and because they are protected by the government, they are often able to avoid external risks. For companies whose day-to-day operations and production processes are not affected by climate change regulations, the ambiguity of climate-related risks and their policies generally do not bother them. This means that uncertainty about climate policy has little impact on their willingness to take risks. On the other hand, the shadow of climate policy uncertainty may actually prompt companies to take on more risks. First, uncertainty about climate policy reduces the resilience of corporate supply chains. Constant shifts in policy may disrupt supply chain links such as raw material supply, production and manufacturing, logistics and shipping, affect the normal operation of enterprise supply chain, bring business interruption risk, and increase enterprise risk exposure at the same time. Second, climate policy shocks stem from the high degree of uncertainty in the decarbonization transition. A sudden tightening of climate policies, such as those related to carbon emissions, could lead to stranded assets and profit losses for high-emission companies, shaking their finances and ultimately affecting financing costs. When investors evaluate corporate assets and make investment decisions, they will also consider the company's strategies and preparations for climate change. They will demand higher returns from companies that are most affected by climate policy risks, further driving up financing costs. The result is that corporate profit margins are compressed, which may even lead to cash flow breaks and debt defaults. In addition, in the absence of clear climate policy, corporations often turn to temporary financing to settle long-term obligations. This can lead to mismatch between investment and financing timings, and urgent short-term repayment pressures can make cash flow management difficult and increase risk. Therefore, this paper assumes that uncertainty about climate policies will increase corporate risk taking.

There is a reason why this research was chosen to be conducted in China. First, we use the China Climate Policy Uncertainty Index as an independent variable, and the data can also be obtained [10]. Second, in recent years, the China government has attached great importance to climate issues and introduced many related policies. Therefore, it is a very meaningful topic to study corporate behavior under climate policy uncertainty in the context of China.

The study explores how unclear climate policies affect corporate risk-taking behavior. To measure this relationship, we analyzed financial data of listed companies in China from 2010 to 2022 and established the China Climate Policy Uncertainty Index. The study assessed their appetite for risk by tracking the volatility of companies 'earnings-particularly using the standard deviation of Return on Assets (ROA)-while taking into account industry benchmarks. These earnings fluctuations are measured over a two-year rolling window before each observation period to reflect the latest trends in company decisions. Research has found that increased uncertainty about climate policy makes companies more willing to take risks. This may be because frequent policy changes disrupt key aspects of the supply chain, such as raw material procurement, manufacturing and logistics, which may affect the company's supply chain and pose the risk of business disruption. In addition, the sudden tightening of climate policies such as carbon emission regulations may lead to the grounding of assets and decline in profits of high-emission companies, shaking their financial health and increasing financing costs. In addition, amid climate policy uncertainty, companies may increasingly use short-term debt to finance long-term projects. This creates a mismatch in investment and financing timing, and urgent short-term debt repayment pressure can make cash flow

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management difficult. Continued rising uncertainty about climate policies will reduce investment efficiency and weaken companies 'ability to obtain credit, thereby increasing companies' risk exposure. This indicates that frequent policy shifts may disrupt market signals, creating a complex investment environment for businesses. The opportunity cost of delayed investment rises, making it harder to predict market trends. This situation often prompts firms to postpone investments, thereby undermining the effectiveness of their investment decisions. Moreover, during periods of policy uncertainty, banks' risk tolerance levels and exposure to bankruptcy risks increase. Banks' heightened perception of climate policy risks results in a contraction in credit supply, making it more hard for firms to secure loans. In further research, to eliminate measurement errors in variables, I replaced the core explanatory variables and dependent variables. To exclude the impact of the pandemic on the sample period, I excluded exceptional years. To prevent omitted variable bias, I added control variables and modified the fixed effects. To address reverse causality, I introduced a lagged model. Following rigorous stability and endogeneity checks, the findings held up remarkably well. The heterogeneity analysis uncovered that climate policy uncertainty's stimulative effect on corporate risk appetite was particularly strong among privately held businesses, high-pollution industries, and firms with substantial capital requirements. For heavily polluting enterprises, climate risks necessitate equipment upgrades, increasing daily operational costs. Additionally, due to their significant pollution levels, they are ineligible for financing options like “green finance.” Asset-intensive enterprises, characterized by substantial long-term capital investments, are vulnerable to sudden policy shifts that can cause asset values to plummet or necessitate premature decommissioning, resulting in significant losses.

This paper greatly enriches the literature on corporate risk-taking, especially from the perspective of climate policy. It provides new insights and adds another layer to existing knowledge in this field. Current literature mainly studies shareholder rights [11], Board Structure [12] and technological progress [13] Impact on corporate risks. Research examining the effects of climate policy on corporate risk remains relatively scarce. This research allows us to understand more about corporate risk issues and provides a theoretical basis for corporate management and control business risks. Second, prior empirical research has overwhelmingly focused on assessing how economic policy uncertainty and tax policy uncertainty affect enterprises. These policy types differ from climate policy uncertainty. Economic and tax policy uncertainties typically exert short-term effects on enterprises, allowing recovery afterward. Climate policy uncertainty, however, imposes long-term impacts. Climate issues affect the entire globe irreversibly, compelling enterprises to proactively plan for low-carbon transformation. This may necessitate altering foundational strategies and business models to prepare for sustained long-term development.Third, climate risk represents a critical global challenge for the coming decade, while the uncertainty surrounding climate policies poses significant difficulties for both macro markets and micro entities. The Chinese market exhibits distinct characteristics compared to others. The Chinese government places high priority on climate issues, having introduced multiple policies in recent years, such as carbon neutrality and carbon peak initiatives. Moreover, the Chinese market is not entirely self-regulated. This study offers a theoretical foundation for similar nations.

2. Literature review

2.1. Climate policy uncertainty

The growing threat of climate change poses a severe challenge to nations worldwide. In response, governments are continuously introducing climate policies, making it crucial to quantify the

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uncertainty and time-varying nature of these policies to assist governments, businesses, and investors in decision-making [10]. Existing literature has linked climate risk to financial stability and monetary policy, while another body of research connects climate policy uncertainty to corporate behavior and corporate finance [14]. A subset of research connects climate policy uncertainty to renewable energy, green innovation, and sustainable development [15].

In the realm of financial stability, climate policy uncertainty significantly reduces both passive and active risks borne by banks while increasing their bankruptcy risk. Furthermore, climate policy uncertainty exerts a greater impact on passive risks for listed banks than for unlisted banks, while its effects on active risks and bankruptcy risks are smaller for listed banks than for unlisted banks. The impact of climate policy ambiguity is most evident in rural and state-owned banks, while it is least pronounced in joint-stock commercial banks [16]. In corporate finance, climate policy uncertainty significantly reduces firm-level total factor productivity, with greater impacts on low-productivity firms than high-productivity ones. The negative effect of climate policy uncertainty on firm-level TFP is most pronounced in non-state-owned enterprises, labor-intensive firms, and capital-intensive firms. Furthermore, climate policy uncertainty hampers R&D investment and reduces free cash flow [17]; In the sustainability domain,Climate policy uncertainty exhibits a significant causal relationship with both sustainable investment returns and volatility, with a greater impact on volatility than on returns. In the United States, climate policy uncertainty affects both sustainable investment returns and volatility, exerting a stronger influence on volatility. Governments and decision-makers are advised to ensure climate policy objectives are clearly defined and rigorously enforced, thereby limiting regulatory uncertainty and encouraging private sector participation in sustainable investments. Additionally, policies explicitly designed to incentivize sustainable investments by incorporating risk premiums into expected profits may be implemented [18].

At present, the construction of this indicator in the realm of climate policy uncertainty, along with its macroeconomic impact on financial markets and its role in the energy sector and sustainable development, has reached a relatively mature stage. However, in the areas of corporate behavior and corporate finance, existing literature has primarily focused on the effects on corporate investment and production activities, while lacking measurements of corporate risk. This research addresses a critical void in the literature by examining how unclear climate policies influence corporate risk appetite. It offers businesses a conceptual framework to evaluate their strategic risk decisions amid today's climate uncertainty. The findings equip organizations with valuable insights to navigate the complex interplay between regulatory uncertainty and entrepreneurial boldness in an era of environmental challenges.

2.2. Corporate risk-taking

Research on factors influencing corporate risk-taking levels has primarily focused on shareholder equity, board structure, and technological development. Regarding shareholder ownership, the presence of multiple major shareholders and their voting rights are significantly and positively correlated with higher corporate risk-taking. This research addresses the void by analyzing the impact of climate policy ambiguity on business risk behaviors. This, in turn, facilitates the adoption of more optimal, non-conservative investment policies [19]. Regarding board structure, stronger board independence reduces unhealthy corporate risk-taking and lowers overall risk-taking behavior [20]. Concerning technological development, artificial intelligence enhances risk-taking behavior by reducing firms' risk perception [21].

Existing literature employs various methods to measure corporate risk-taking. Some studies utilize cash holdings and net leverage ratios as indicators of risk-taking levels [22]. Others measure

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firms' risk-taking capacity through equity return volatility, which differs from traditional financial metrics. Equity return volatility is unconstrained by financial statements and better reflects firms' risk-taking behavior [23]. Most studies, however, employ earnings volatility to gauge corporate risk-taking behavior. The fluctuating high and low profits indicate that the company is taking on greater risks [24-26].

3. Theoretical hypothesis

3.1. Climate policy uncertainty increases corporate risk exposure

Climate change poses a dual threat to economic and financial stability through physical risks and transition risks. Although academic research has documented in detail the significant impact of climate disasters on businesses, most analysis has focused on physical impacts. However, the manifestations of climate risks are complex, and policy-related uncertainties are becoming an increasingly worrying issue. Of particular note is the uncertainty about climate regulations-a key part of transition risks-that has put tremendous pressure on economic activity and financial markets. Such policy fluctuations in particular undermine companies 'ability to maintain stable supply chains, creating ripple effects throughout the economy. Always changing policies may disrupt supply chain links such as raw material supply, factory production and logistics, cause problems in the company's supply chain, and even cause business interruption, increasing the company's risks [27]. Second, climate policy changes are mainly due to the great uncertainty of the low-carbon transition process. Sudden tightening of climate policies, such as regulations on carbon emissions, may devalue the assets of high-emission companies and damage profits, affect the company's financial situation, and in turn raise financing costs. When investors evaluate a company's assets and make investment decisions, they will also look at the company's strategies and preparations to deal with climate change. They will demand higher returns from companies with high climate policy risks, which further increases financing costs. The result is that the company's profits will become thinner, and there may even be a situation where cash flow will break and money will not be repaid [28]. In addition, when climate policy is uncertain, companies may prefer to use short-term loans to support long-term projects, resulting in mismatch between investment and financing timings. The pressure to rush to repay short-term loans makes cash flow management more difficult and risky. Therefore, we propose the following assumptions:

H1: Climate policy uncertainty will increase corporate risk-taking

3.2. Climate policy uncertainty affects corporate risk-taking by influencing the efficiency of corporate investment

High efficiency in corporate investment means spending the scarcest money where it is most valuable. From a financial perspective, high investment efficiency can make more money, more stable cash flow, and less financial risks. From a strategic perspective, high investment efficiency can allow companies to expand rapidly and promote innovation. Moreover, it can also give investors more confidence. Therefore, high investment efficiency can not only enhance the company's ability to resist risks, but also reduce actual risks. But the problem is that climate policy uncertainty can seriously affect corporate investment efficiency [29]. Changing policies will confuse market signals and make the investment environment more complex. The waiting value of corporate investment has increased, making market trends more difficult to predict. This situation often forces companies to postpone investment, and as a result, the effectiveness of investment decisions becomes worse. This

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is not good for the company's profits and long-term development, but ultimately increases risks. We suggest the following premise:H2: The Ambiguity of Climate Policy May Impair Business Investment Effectiveness

3.3. Climate policy uncertainty affects corporate risk-taking by influencing the availability of corporate credit

Capital is the lifeblood of the modern economy and a key prerequisite for corporate innovation. Only with stable capital investment can companies actively carry out R&D and innovation activities. If funding shortages and financing difficulties arise during the R&D process, companies may face significant challenges and risks—such as ineffective initial investments, failed innovation projects, loss of key personnel, or even disruption to daily operations. Climate policy uncertainty significantly impacts corporate credit availability [30]. On the supply side, heightened climate policy uncertainty increases banks' risk tolerance levels and bankruptcy exposure. Banks' perception of climate policy risks leads to reduced credit supply. On the demand side, climate policy uncertainty increases corporate profit volatility and diminishes firm value, prompting businesses to proactively adjust their financing structures and reduce reliance on bank credit. This creates tight cash flow, financing difficulties, and elevated borrowing costs, thereby increasing firms' risk exposure. From this, the subsequent hypothesis is proposed:

H3: Climate policy uncertainty will undermine corporate credit availability.

4. Research design

4.1. Sample data and sources

This study uses Chinese listed companies as the initial research sample to organize and construct panel data. Following existing literature, the sample undergoes the following processing and screening: (1) Excluding samples with severe data missingness in key variables; (2) Retaining only firms with a “normal listing” status, excluding those marked as ST, suspended, or delisted; (3) To avoid industry-specific interference, a financial sector sample is proposed. This yields a final dataset of 31,764 observations. For this research, the Climate Policy Uncertainty (CPU) index is constructed based on methodologies outlined in existing scholarly works and accessible public datasets. Firm-level data on corporate risk-taking, along with financial and managerial control variables, are extracted from the China Social Science Management Research Database (CSMAR). To minimize distortions caused by outliers, all continuous variables are winsorized at both the 1st and 99th percentiles.

4.2. Variable definitions

4.2.1. Independent variable: climate policy uncertainty

The study utilizes the China Climate Policy Uncertainty Index to assess the extent of climate policy ambiguity. The index construction is based on 1,755,826 articles from six mainstream Chinese newspapers—People's Daily, Guangming Daily, Economic Daily, Global Times, Science and Technology Daily, and China News Service—as the sample news sources. Drawing on the keyword selection methodology of the U.S. CPU Index while adapting to China's national context, the keywords “climate + policy + uncertainty” are identified. Python web scraping technology is then employed to extract news reports containing each keyword category. These reports are cross-

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matched to identify articles satisfying all three keyword conditions. I calculate the U.S. CPU index as a reference. First, I compute the daily conditional publication frequency (Yit) for each newspaper. Then, I normalize Yit to obtain Xit. Next, I take the average of each newspaper's Xit values as the preliminary CCPU index for day t. Finally, I adjust the final CCPU index so that its mean equals 100. This process yields the China Climate Policy Uncertainty Index.

4.2.2. Dependent variable: corporate risk-taking

Based on existing literature [9], this study employs the volatility of corporate profits to measure risk-taking behavior. Specifically, I uses the standard deviation of ROA adjusted by the industry average from t-2 to t years as the indicator of corporate risk-taking. A higher value indicates greater risk-taking by the firm.

4.2.3. Control variables

Drawing from established empirical conventions [31,32], this research incorporates the following control variables: organizational scale (size), capital structure (lev), shareholder returns (roe), performance momentum (growth), establishment tenure (age), liquidity measure (cflow), governance structure (soe), and market valuation (tobin).

Table 1. Variable definitions

Variable properties	Variable	Definition
Dependent variable	RiskTaking	Level of risk-taking,as measured by the earnings volatility
Independent variable	CCPU	National-Level Index for Climate Policy Ambiguity Crafted via MacBERT Algorithm's Text Analysis of Six Key Chinese News Outlets
Control variables	size	ln (Total Assets at Year-end)
	lev	The ratio of total liabilities to total assets at year-end
	roe	Net profit/Equity
	growth	Revenue for the Year/Revenue for the previous year-1
	age	ln (year of year - year of incorporation+1)
	cflow	Net cash flow from operating activities scaled by total assets
	soe	State-owned enterprises equal 1,Other enterprises equal 0
	tobin	(Market value of circulating shares + Number of non-circulating shares × Net asset value per share + Book value of liabilities) / Total assets

4.3. Model design

To investigate the impact of climate policy ambiguity on companies' risk-taking actions, this research constructs a multi-linear regression model, with its baseline specification detailed as:

$$\text{RiskTaking}_{i,t} = \alpha_0 + \alpha_1 CCPU_{i,t} + \beta_k \sum Controls_{i,t}^{k} + \delta_i + \gamma_{i,t} + \varepsilon_{i,t} \tag{1}$$

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Here, i denotes individual firms, t denotes the year, RiskTakingi,t represents firm i's risk-taking level in year t, and CCPUi,t denotes the China Climate Policy Uncertainty Index for firm i in year t. Controlski,t is a set of control variables, δi is the industry fixed effect, γi,t is the province fixed effect, and εi,t is the random disturbance term.

5. Results

5.1. Descriptive statistical analysis

Table 2 outlines the descriptive statistics for the primary variables under examination. The dependent variable, which measures firm risk-taking, shows considerable dispersion, with values spanning from 0 to 1.182 and a median of 0.018. This wide range highlights significant differences in risk appetite across firms, with some displaying exceptionally high levels. Meanwhile, the explanatory variable, climate policy uncertainty, averaged 2.532, closely aligning with its median of 2.448—a pattern that suggests a roughly normal distribution. Its values fluctuated between 2.125 and 3.200, reflecting notable volatility in policy uncertainty during the observed timeframe. As for the remaining firm-level control variables, their distributions were in line with prior research and fell within expected parameters.

Table 2. Descriptive statistics of variables

Variable	N	Mean	SD	Min	p25	p50	p75	Max
Risk Taking	31764	0.0306	0.0466	0.000200	0.00970	0.0177	0.033	1.181
CCPU	31764	2.532	0.346	2.125	2.259	2.448	2.844	3.200
size	31764	22.330	1.332	17.810	21.410	22.140	23.070	28.640
lev	31764	0.436	0.202	0.007	0.277	0.431	0.586	0.998
roe	31764	0.049	0.147	-0.837	0.025	0.065	0.112	0.317
growth	31764	0.368	0.986	-0.707	-0.035	0.126	0.410	6.973
age	31764	11.050	7.317	0	5	10	17	32
cflow	31764	0.047	0.074	-1.077	0.009	0.046	0.087	0.876
soe	31764	0.408	0.492	0	0	0	1	1
tobin	31764	2.077	1.797	0.625	1.226	1.608	2.329	92.250

5.2. Variable correlation analysis

Table 3 presents the Pearson correlation coefficients for core and control variables, providing preliminary evidence of associations for subsequent regression analysis. The correlation coefficient between the core variable “climate policy uncertainty” and “corporate risk-taking” is 0.074, with three-star significance. This preliminarily validates the research hypothesis that “rising climate policy uncertainty may drive increased corporate risk-taking,” providing direction for subsequent in-depth examination of their causal relationship. Regarding the association between control variables and core variables, factors such as firm size and leverage ratio also exhibit varying degrees of correlation with climate policy uncertainty and corporate risk-taking. These findings provide preliminary guidance for selecting control variables in regression models and conducting mechanism analysis. However, the core relationship remains centered on the significant positive

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correlation between climate policy uncertainty and corporate risk-taking. This relationship establishes an initial empirical foundation for this paper's exploration of “the impact of climate policy uncertainty on corporate risk-taking.”

Table 3. Variable correlation matrix

	RiskTaking	CCPU	size	lev	roe	growth	age
RiskTaking	1						
CCPU	0.074***	1					
size	-0.152***	0.068***	1				
lev	0.00300	-0.016***	0.490***	1			
roe	-0.174***	-0.021***	0.018***	-0.089***	1		
growth	0	-0.00600	-0.012**	-0.00200	-0.00800	1	
age	-0.013**	0.063***	0.371***	0.294***	-0.015***	0.012**	1
cflow	-0.055***	0.010*	0.059***	-0.166***	0.057***	-0.013**	-0.027***
soe	-0.098***	-0.054***	0.322***	0.250***	-0.00300	0.00600	0.440***
tobin	0.087***	0.00200	-0.327***	-0.228***	0.00300	0.00700	-0.067***
	cflow	soe	tobin				
cflow	1						
soe	-0.00600	1					
tobin	0.080***	-0.113***	1				

5.3. Benchmark regression results

Table 4 highlights the baseline regression outcomes. In column one, we see the impact of climate policy ambiguity on companies' willingness to take risks, as measured with just one variable and without any control variables. The climate policy uncertainty coefficient stands at 0.010 and shows strong statistical significance ($p < 0.001$), suggesting companies tend to take bigger risks when facing greater uncertainty in climate regulations. Model (2) builds upon the baseline specification by including both industry and provincial fixed effects. In Model (3), we introduce firm-level financial controls while omitting fixed effects. The full specification in Model (4) incorporates both control variables and fixed effects. Notably, climate policy uncertainty maintains its positive relationship with corporate risk-taking, remaining statistically significant at the 0.1% level across all specifications. These findings confirm that climate policy uncertainty significantly increases corporate risk-taking.

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Table 4. Benchmark regression results

	(1)	(2)	(3)	(4)
VARIABLES	RiskTaking	RiskTaking	RiskTaking	RiskTaking
CCPU	0.010***	0.009***	0.010***	0.010***
	(13.95)	(13.31)	(13.88)	(13.53)
size			-0.006***	-0.007***
			(-12.23)	(-12.47)
lev			0.020***	0.028***
			(5.11)	(6.97)
roe			-0.006**	-0.005**
			(-2.04)	(-2.06)
growth			-0.000	-0.000
			(-1.39)	(-1.64)
age			0.000***	0.001***
			(5.45)	(7.00)
cflow			-0.016*	-0.016*
			(-1.89)	(-1.91)
soe			-0.007***	-0.008***
			(-7.66)	(-6.75)
tobin			0.001***	0.001**
			(3.77)	(2.55)
Constant	0.006***	0.007***	0.130***	0.140***
	(3.49)	(4.39)	(14.25)	(14.06)
Observations	32,383	32,382	31,765	31,764
R-squared	0.005	0.050	0.073	0.112
Industry FE	NO	YES	NO	YES
Province FE	NO	YES	NO	YES

5.4. Robustness test

5.4.1. Replacement of dependent variable indicators

Replace the dependent variable and rerun the regression. This paper substitutes alternative measures for firm risk-taking in the benchmark regression, enabling effective testing for potential errors in the variables. Table 5 presents three alternative risk-taking measures: Column (1) RiskTaking1 utilizes the adjusted ROA standard deviation, accounting for yearly industry averages, between years t and t+2. Column (2) RiskTaking2 uses the deviation from the mean ROA, annually normalized across industries for years t-1 through t+1. Column (3) Utilizes the annualized industry average-adjusted ROA standard deviation spanning years t-2 through t+2 for the RiskTaking3 metric.

The findings presented in Table 5 demonstrate that substituting the initial dependent variable with RiskTaking1 produces a statistically significant positive coefficient of 0.009, with a p-value of 0.1%. Similarly, when RiskTaking2 is used as the dependent variable, the regression yields an identical

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coefficient of 0.009, maintaining the same high level of significance. The most pronounced effect emerges with RiskTaking3, showing a coefficient of 0.014 while still meeting the stringent 0.1% significance threshold. Collectively, these results strongly support the robustness of the benchmark regression's core findings.

5.4.2. Replacement of independent variable indicators

To replace the original independent variable for regression analysis, this paper converts climate policy uncertainty into a dummy variable using the median as the cutoff point. This substitution effectively tests whether the variable contains measurement error. In Table 5, column (4) CCPU_dummy represents the new independent variable, which is then used in the regression analysis for corporate risk-taking.

Table 5 results show that the coefficient for CCPU_dummy is 0.008, which is positive at the 0.1% significance level. This test indicates that the benchmark regression conclusions are robust.

5.4.3. Changing the sample interval

By altering the sample period and selecting post-pandemic data for regression analysis, we can effectively test whether variables contain errors. Table 6 Column (1) presents the regression results using data from the post-pandemic period, specifically from 2019 onwards.

Table 6 results indicate that the coefficient for climate policy uncertainty in this sample interval is 0.002, which is significantly positive at the 0.1% level. This test confirms the robustness of the benchmark regression conclusions.

5.4.4. Adding additional control variables

After adding corporate governance-level control variables to the existing financial-level control variables in the regression analysis, this can effectively mitigate the problem of variable omission. Specifically, Table 6 Column (2) presents the regression results after incorporating the largest shareholder's ownership ratio, board size, and proportion of independent directors.

Table 6 results indicate that the coefficient for climate policy uncertainty is 0.011, which is positive at the 0.1% significance level. This test confirms the robustness of the benchmark regression conclusions.

5.4.5. Modifying fixed effects

After replacing provincial effects with city effects in the regression analysis, this can effectively mitigate the problem of variable omission. Specifically, Table 6 Column (3) presents the regression results with city and industry as fixed effects.

The findings in Table 6 reveal a coefficient of 0.010 for climate policy uncertainty, showing a positive correlation at a highly significant 0.1% level. This further validates the robustness of the key findings from our baseline regression analysis.

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Table 5. Robustness

	(1)	(2)	(3)	(4)
VARIABLES	RiskTaking1	RiskTaking2	RiskTaking3	RiskTaking
CCPU	0.009***	0.009***	0.014***	
	(13.30)	(12.67)	(14.79)	
CCPU_dummy				0.008***
				(11.60)
size	-0.003***	-0.004***	-0.004***	-0.007***
	(-7.47)	(-9.16)	(-9.02)	(-12.59)
lev	0.011***	0.012***	0.010***	0.029***
	(3.85)	(3.60)	(2.73)	(7.10)
roe	-0.018***	-0.020***	-0.014***	-0.005**
	(-3.64)	(-4.01)	(-3.35)	(-2.06)
growth	-0.000***	-0.000	-0.000	-0.000*
	(-2.90)	(-0.36)	(-1.50)	(-1.86)
age	0.000***	0.000***	0.000***	0.000***
	(6.30)	(6.73)	(3.48)	(6.72)
cflow	-0.004	-0.010	-0.013*	-0.017**
	(-0.52)	(-1.35)	(-1.75)	(-2.01)
soe	-0.009***	-0.008***	-0.009***	-0.007***
	(-9.19)	(-7.98)	(-7.69)	(-6.48)
tobin	0.001**	0.001**	0.000	0.001**
	(2.28)	(2.32)	(1.40)	(2.03)
Constant	0.072***	0.093***	0.096***	0.165***
	(9.09)	(11.27)	(10.25)	(15.23)
Observations	35,171	36,049	26,984	31,764
R-squared	0.105	0.119	0.128	0.113
Industry FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES

Table 6. Stability estimation results

	(1)	(2)	(3)
VARIABLES	RiskTaking	RiskTaking	RiskTaking
	Year>2019		
CCPU	0.002***	0.011***	0.010***
	(3.69)	(11.99)	(13.29)
size	-0.009***	-0.006***	-0.007***
	(-9.93)	(-10.35)	(-12.01)
lev	0.037***	0.029***	0.029***

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	(4.94)	(6.42)	(7.07)
roe	-0.016***	-0.005**	-0.005**
	(-2.97)	(-2.03)	(-2.03)
growth	-0.000	-0.000*	-0.000
	(-1.50)	(-1.71)	(-1.03)
age	0.000***	0.000***	0.001***
	(3.36)	(4.27)	(7.02)
cflow	-0.012	-0.009	-0.016*
	(-0.79)	(-0.83)	(-1.93)
soe	-0.008***	-0.005***	-0.008***
	(-4.61)	(-3.52)	(-6.77)
tobin	0.002***	0.001*	0.001**
	(3.24)	(1.90)	(2.47)
top1		-0.000***	
		(-9.83)	
BoardScale_57		-0.001***	
		(-3.17)	
indep		0.012***	
		(5.10)	
Constant	0.209***	0.147***	0.144***
	(12.32)	(12.62)	(13.45)
Observations	10,566	24,558	31,747
R-squared	0.173	0.125	0.133
Industry FE	YES	YES	YES
Province FE	YES	YES	
City FE			YES

5.5. Endogeneity tests

5.5.1. Lag models

Although the benchmark regression results confirm that climate policy uncertainty increases corporate risk-taking, to ensure this conclusion is not affected by reverse causality, sample selection bias, and omission bias, this study employs a lagged model to address endogeneity issues. The regression is rerun with the independent variable—climate policy uncertainty—lagged by one, two, and three periods, respectively. Table 7 presents the results: Column (1) shows the regression with the independent variable lagged by one period, Column (2) with two periods, and Column (3) with three periods.

Table 7 results indicate that the coefficient for climate policy uncertainty lagged by one period is 0.012, positive at the 0.1% significance level; the coefficient for climate policy uncertainty lagged by two periods is 0.016, positive at the 0.1% significance level; and the coefficient for climate policy uncertainty lagged by three periods is 0.016, positive at the 0.1% significance level. This test indicates that the benchmark regression conclusions remain robust.

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Table 7. Endogeneity test

	(1)	(2)	(3)
VARIABLES	RiskTaking	RiskTaking	RiskTaking
L.CCPU	0.012***		
	(14.93)		
L2.CCPU		0.016***	
		(14.61)	
L3.CCPU			0.016***
			(14.79)
size	-0.007***	-0.007***	-0.008***
	(-12.64)	(-12.85)	(-13.17)
lev	0.030***	0.033***	0.035***
	(7.39)	(7.91)	(7.89)
roe	-0.005**	-0.005**	-0.005**
	(-2.06)	(-2.06)	(-2.06)
growth	-0.000**	-0.000**	-0.000**
	(-1.96)	(-2.09)	(-2.04)
age	0.000***	0.000***	0.000***
	(5.93)	(5.96)	(3.54)
cflow	-0.018**	-0.019**	-0.018**
	(-2.18)	(-2.21)	(-2.01)
soe	-0.006***	-0.006***	-0.006***
	(-5.80)	(-5.30)	(-5.12)
tobin	0.001***	0.001***	0.001**
	(3.21)	(2.81)	(2.20)
Constant	0.139***	0.138***	0.157***
	(13.81)	(13.68)	(14.14)
Observations	31,609	31,012	28,085
R-squared	0.117	0.124	0.131
Industry FE	YES	YES	YES
Province FE	YES	YES	YES

5.6. Channel analysis

The preceding analysis indicates that climate policy uncertainty increases corporate risk-taking by reducing supply chain resilience and weakening credit availability. To validate these two transmission channels, we re-run the baseline regression model with corporate supply chain resilience and credit availability as the dependent variables. The specific models are as follows:

$$\mathrm{InE}_{\mathrm{i,t}} = \alpha_0 + \alpha_1 \mathrm{CCPU}_{\mathrm{i,t}} + \beta_k \sum Controls_{i,t}^{k} + \delta_i + \gamma_{i,t} + \varepsilon_{i,t} \quad (2)$$

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$$\mathrm{CA_{i,t}} = \alpha_0 + \alpha_1 CCPU_{1,t} + \beta_k \sum Controls_{i,t}^{k} + \delta_i + \gamma_{i,t} + \varepsilon_{i,t} \tag{3}$$

In this context, the subscript i denotes individual firms, t represents the observation year; lnEi,t indicates the investment efficiency of firm i in year t; CAi,t signifies the credit availability of firm i in year t. Controlsi,t refers to control variables, δi represents the industry fixed effect, γi,t denotes the provincial fixed effect; εi,t is the random disturbance term.

5.6.1. Corporate investment efficiency

In order to suss out if climate policy ambiguity makes businesses take on more risks by chipping away at their investment acumen, we first delve into whether this ambiguity has a major impact on how efficient companies are when it comes to investing. Looking at Column (1) in Table 8, we find that the climate policy ambiguity has a coefficient of -0.003, and it's positive with a p-value of 0.1%. That suggests a rise in climate policy ambiguity corresponds with a drop in investment efficiency among corporations.

5.6.2. Corporate credit availability

To suss out if climate policy's fog of doubt leads to companies taking more risks by cutting off their credit lifelines, we first need to check if that doubt in climate policy actually dries up corporate credit flow. As seen in the second column of Table 8, the uncertainty coefficient clocks in at -0.018, hinting that the more doubt in climate policy, the less credit is out there for firms. According to the theory we've touched on, when credit's harder to get, companies hit a financial snag, face pricier financing, deal with more risks both in the cash flow and day-to-day operations, and, as a result, tend to step up their risk game. So, our Hypothesis H2 holds water.

Table 8. Mechanism analysis test

	(1)	(2)
VARIABLES	Investment Efficiency	Credit availability
CCPU	-0.003***	-0.018***
	(-4.66)	(-11.19)
size	-0.000	0.006***
	(-0.72)	(3.89)
lev	0.013***	0.542***
	(5.52)	(72.92)
roe	0.000	0.001
	(1.42)	(1.24)
growth	0.000	-0.000
	(0.67)	(-1.00)
age	-0.001***	-0.001***
	(-9.71)	(-3.33)
cflow	0.005	-0.174***
	(1.09)	(-16.00)
soe	-0.005***	-0.010***

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	(-5.34)	(-3.18)
tobin	0.001***	-0.005***
	(2.98)	(-11.94)
Constant	0.067***	-0.104***
	(8.14)	(-3.61)
Observations	38,874	43,370
R-squared	0.040	0.645
Industry FE	YES	YES
Province FE	YES	YES

5.7. Heterogeneity test

The impact of climate policy uncertainty on corporate risk-taking may vary across firms due to differing characteristics. Therefore, this paper examines how climate policy uncertainty affects risk-taking differently among firms with distinct attributes, analyzing these effects from the perspectives of equity ownership structure, pollution levels, and asset intensity.

5.7.1. Nature of equity

Enterprises with different equity structures exhibit varying risk-bearing capacities when confronting climate policy uncertainty. First, state-owned enterprises (SOEs) possess resource advantages, such as easier access to bank loans, government subsidies, and policy preferences. Private enterprises, conversely, face resource disadvantages, including difficulties in financing and high financing costs, which become particularly acute during periods of credit tightening. Second, SOEs hold a unique position in China, accounting for a significant share of the market. They lack pressure for market-driven exit and are subject to strict government regulation and intervention. Therefore, this study categorizes listed companies into SOEs and private enterprises, denoted by the variable SOE: SOE equals one for SOEs and SOE equals zero for private enterprises. A cross-term between climate policy uncertainty and SOE is added as an explanatory variable. Table 9 Column (1) results show that the regression coefficient for SOEs is smaller than that for private enterprises at the 0.1% significance level. This indicates that when climate policy uncertainty increases, SOEs exhibit significantly lower risk-taking than private enterprises.

5.7.2. Pollution situation

The sensitivity of enterprises to climate policy uncertainty varies depending on their pollution levels. First, heavily polluting enterprises exhibit high dependence on climate policies. When policies are unclear, they hesitate to undertake investments or technological upgrades. However, when policies are well-defined, these enterprises may face higher costs in equipment upgrades and daily operations, compressing their profit margins. In contrast, the operations and investments of lightly polluting enterprises show lower correlation with climate policies. Second, heavily polluting enterprises face challenges in accessing “green finance” due to their environmental impact and may be subject to policy phase-outs, exposing them to market exit risks. Conversely, lightly polluting enterprises are relatively more likely to secure “green finance” support and incentives from environmentally friendly policies. Therefore, this study categorizes enterprises into heavily polluting enterprises (heavily polluting group = 1) and lightly polluting enterprises (heavily polluting group =

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0). The results in Column (2) of Table 9 show that the regression coefficient for heavily polluting enterprises is positive at the 0.1% significance level, while the results in Column (3) indicate that the regression coefficient for lightly polluting enterprises is not significant. This suggests that when climate policy uncertainty increases, risk-taking by heavily polluting enterprises rises, whereas lightly polluting enterprises are not significantly affected.

5.7.3. Asset intensity

The sensitivity to climate policy uncertainty varies with differing levels of asset intensity. First, asset-intensive enterprises, due to their substantial long-term capital investments, are vulnerable to sudden policy shifts that could trigger sharp value declines or premature asset obsolescence. In contrast, asset-light enterprises, being predominantly non-capital-intensive, are less susceptible to such lock-in effects. Second, asset-intensive firms require massive investments in technological upgrades, emissions-reduction equipment, or carbon credits. These costs are relatively high. In contrast, low-asset-intensity firms primarily allocate resources to daily operations, incurring comparatively lower expenses. Additionally, high-asset-intensity firms exhibit longer strategic decision cycles, significant path dependence, and face slower, more challenging transformation processes. Conversely, low-asset-intensity firms can rapidly adjust products, services, and business models to adapt swiftly to market shifts. Therefore, this study classifies firms as either asset-intensive (asset intensity = 1) or non-asset-intensive (asset intensity = 0). Column (5) of Table 9 shows that the regression coefficient for asset-intensive firms is 0.011, significant at the 0.1% level. Column (4) indicates a coefficient of 0.001 for non-asset-intensive firms, which is not significant. This suggests that when climate policy uncertainty increases, asset-intensive firms face heightened risk exposure, whereas non-asset-intensive firms experience negligible impact.

Table 9. Heterogeneity analysis

	(1)	(2)	(3)	(4)	(5)
VARIABLES	RiskTaking	RiskTaking	RiskTaking	RiskTaking	RiskTaking
	state-owned enterprise/other enterprises	Heavy Pollution Group==1	Heavy Pollution Group==0	Asset-intensive==0	Asset-intensive==1
CCPU	0.011***	0.012***	0.001	0.001	0.011***
	(12.10)	(13.98)	(1.02)	(1.19)	(13.71)
SOE	0.002				
	(0.60)				
c.CCPU#c.SOE	-0.005***				
	(-3.56)				
size	-0.007***	-0.007***	-0.004***	-0.004***	-0.007***
	(-12.22)	(-11.03)	(-5.70)	(-4.62)	(-11.58)
lev	0.029***	0.031***	0.019***	0.005	0.032***
	(7.17)	(6.64)	(2.86)	(0.70)	(7.15)
roe	-0.005*	-0.005**	-0.012***	-0.028***	-0.005**
	(-1.92)	(-1.98)	(-4.74)	(-3.43)	(-2.10)

growth	-0.000*	-0.000	-0.000	-0.000	-0.000
	(-1.70)	(-1.45)	(-0.08)	(-0.17)	(-1.49)
age	0.001***	0.000***	0.001***	0.001***	0.000***
	(7.49)	(5.18)	(5.12)	(5.46)	(5.67)
cflow	-0.015*	-0.026***	0.031***	0.037***	-0.022**
	(-1.85)	(-2.69)	(2.75)	(3.09)	(-2.28)
tobin	0.001***	0.001*	0.002***	0.001	0.001**
	(2.58)	(1.83)	(3.29)	(1.50)	(2.11)
soe		-0.008***	-0.005***	-0.004**	-0.008***
		(-6.12)	(-2.70)	(-2.15)	(-6.53)
Constant	0.135***	0.148***	0.105***	0.096***	0.148***
	(13.53)	(11.99)	(7.12)	(5.88)	(12.60)
Observations	31,714	24,576	7,186	5,764	25,999
R-squared	0.115	0.121	0.163	0.277	0.115
Industry FE	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES

6. Conclusion

This study empirically examines the impact of climate policy uncertainty on corporate risk-taking using data from Chinese listed companies. The finding of this research complements existing factors influencing corporate risk-taking from a climate perspective and provides a theoretical foundation for countries with similar contexts to China.

Research findings indicate that heightened climate policy uncertainty leads to increased corporate risk-taking. Moreover, the persistent rise in climate policy uncertainty amplifies corporate risk-taking by reducing investment efficiency and weakening access to corporate credit. Further analysis confirms the robustness of these findings after replacing core explanatory and dependent variables, excluding outlier years, adding control variables, adjusting for fixed effects, and incorporating lagged models. Analysis of the data shows that the effect of climate policy unpredictability on companies' willingness to take risks isn't uniform across the board—it hits harder for certain types of businesses. Private enterprises, high-emission industries, and operations requiring substantial capital investment feel this pressure more acutely than their counterparts. The numbers don't lie: these particular sectors demonstrate a significantly stronger correlation between policy volatility and corporate risk appetite.

This study explores the subtleties of corporate risk management and provides practical guidance and advice for policymakers. Its core goal is to achieve a balanced combination of environmental protection and economic development, while bringing meaningful insights to business leaders and policymakers. Corporate responses to climate change policies vary. When facing private companies, executives should establish advanced risk detection and assessment systems to monitor climate policy dynamics and develop strategic asset allocation plans that consider potential risks. For highly polluting enterprises, the focus should shift to adopting environmentally friendly and energy-saving solutions to improve production efficiency and sustainability. In asset-intensive businesses, leaders must optimize the way resources are allocated. Given the growing threat to physical assets posed by unpredictable climate policies, judicious adjustments to financial asset portfolios can significantly spread risk. Ultimately, investors have the opportunity to pay more attention to climate risks and assess how climate policies affect their returns. This approach allows them to realign their investment portfolios and shift to low-carbon, environmentally friendly and green industries.

References

[1] Rind, D. (1999). Complexity and climate. science, 284(5411), 105-107.
[2] Xu, X., Huang, S., Lucey, B. M., & An, H. (2023). The impacts of climate policy uncertainty on stock markets: Comparison between China and the US. International Review of Financial Analysis, 88, 102671.
[3] Ji, Q., Ma, D., Zhai, P., Fan, Y., & Zhang, D. (2024). Global climate policy uncertainty and financial markets. Journal of International Financial Markets, Institutions and Money, 95, 102047.
[4] Su, C. W., Wei, S., Wang, Y., & Tao, R. (2024). How does climate policy uncertainty affect the carbon market?. Technological Forecasting and Social Change, 200, 123155.
[5] Ren, X., Li, J., He, F., & Lucey, B. (2023). Impact of climate policy uncertainty on traditional energy and green markets: Evidence from time-varying granger tests. Renewable and sustainable energy reviews, 173, 113058.
[6] Sun, G., Fang, J., Li, T., & Ai, Y. (2024). Effects of climate policy uncertainty on green innovation in Chinese enterprises. International Review of Financial Analysis, 91, 102960.
[7] Wu, X., Liu, Y., & Xia, B. (2024). Industrial technology progress, digital finance development and corporate risk-taking: Evidence from China's listed firms. Plos one, 19(3), e0298734.
[8] Paligorova, T. (2010). Corporate risk taking and ownership structure (No. 2010-3). Bank of Canada Working Paper.
[9] Faccio, M., Marchica, M. T., & Mura, R. (2011). Large shareholder diversification and corporate risk-taking. The Review of Financial Studies, 24(11), 3601-3641.
[10] Ma, Y. R., Liu, Z., Ma, D., Zhai, P., Guo, K., Zhang, D., & Ji, Q. (2023). A news-based climate policy uncertainty index for China. Scientific Data, 10(1), 881.
[11] Boubaker, S., Nguyen, P., & Rouatbi, W. (2016). Multiple large shareholders and corporate risk-taking: Evidence from French family firms. European Financial Management, 22(4), 697-745.
[12] Nakano, M., & Nguyen, P. (2012). Board size and corporate risk taking: further evidence from J apan. Corporate Governance: An International Review, 20(4), 369-387.
[13] Zhang, H., & Aumeboonsuke, V. (2022). Technological innovation, risk-taking and firm performance—empirical evidence from Chinese listed companies. Sustainability, 14(22), 14688.
[14] Di Tommaso, C., Foglia, M., & Pacelli, V. (2024). The impact of climate policy uncertainty on the Italian financial market. Finance Research Letters, 69, 106094.
[15] Liu, F., Su, C. W., Tao, R., & Lobonţ, O. R. (2024). Does economic and climate policy uncertainty matter the oil market?. Resources Policy, 95, 105188.
[16] Dai, Z., & Zhang, X. (2023). Climate policy uncertainty and risks taken by the bank: evidence from China. International Review of Financial Analysis, 87, 102579.
[17] Ren, X., Zhang, X., Yan, C., & Gozgor, G. (2022). Climate policy uncertainty and firm-level total factor productivity: Evidence from China. Energy Economics, 113, 106209.
[18] Olasehinde-Williams, G., Özkan, O., & Akadiri, S. S. (2023). Effects of climate policy uncertainty on sustainable investment: a dynamic analysis for the US. Environmental Science and Pollution Research, 30(19), 55326-55339.
[19] Mishra, D. R. (2011). Multiple large shareholders and corporate risk taking: Evidence from East Asia. Corporate Governance-Bognor Regis, 19(6), 507.
[20] Younas, Z. I., Klein, C., Trabert, T., & Zwergel, B. (2019). Board composition and corporate risk-taking: a review of listed firms from Germany and the USA. Journal of Applied Accounting Research, 20(4), 526-542.
[21] Chen, H., Zhang, M., Zeng, J., & Wang, W. (2024). Artificial intelligence and corporate risk-taking: Evidence from China. China Journal of Accounting Research, 17(3), 100372.
[22] He, F., Ding, C., Yue, W., & Liu, G. (2023). ESG performance and corporate risk-taking: Evidence from China. International Review of Financial Analysis, 87, 102550.
[23] Li, L., & Kang, J. (2025). Does the participation of female directors enhance corporate social responsibility and risk taking?. Finance Research Letters, 107767.
[24] Tian, G., Li, B., & Cheng, Y. (2022). Does digital transformation matter for corporate risk-taking?. Finance Research Letters, 49, 103107.
[25] Ljungqvist, A., Zhang, L., & Zuo, L. (2017). Sharing risk with the government: How taxes affect corporate risk taking. Journal of Accounting Research, 55(3), 669-707.

DOI: 10.54254/2754-1169/2025.27890

[26] Tran, Q. T. (2019). Economic policy uncertainty and corporate risk-taking: International evidence. Journal of Multinational Financial Management, 52, 100605.
[27] Cao, Z., Chen, S. X., Dong, T., & Lee, E. (2024). Climate change uncertainty and supply chain financing. The British Accounting Review, 101423.
[28] Zheng, P., Cui, J., & Xiao, B. (2024). Does climate policy uncertainty influence the corporate cost of debt. Journal of Infrastructure, Policy and Development, 8(12), 9400.
[29] Zhang, Z., Cheng, S., Wang, C., Song, S., & Feng, Y. (2025). Climate policy uncertainty and corporate investment efficiency: evidence from China. Journal of Environmental Planning and Management, 68(4), 957-977.
[30] Liu, J., Deng, G., Yan, J., & Ma, S. (2023). Unraveling the impact of climate policy uncertainty on corporate default risk: Evidence from China. Finance Research Letters, 58, 104385.
[31] Huo, M., Li, C., & Liu, R. (2024). Climate policy uncertainty and corporate green innovation performance: From the perspectives of organizational inertia and management internal characteristics. Managerial and Decision Economics, 45(1), 34-53.
[32] Niu, S., Zhang, J., Luo, R., & Feng, Y. (2023). How does climate policy uncertainty affect green technology innovation at the corporate level? New evidence from China. Environmental Research, 237, 117003.