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Earnings Management, Economic Policy Uncertainty, and Corporate Green Innovation

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Abstract. Against the background of the coordinated promotion of global carbon neutrality and China's "dual carbon" strategy, corporate green innovation faces dual pressures from financial myopia and external policy volatility. Based on China's A-share listed companies from 2010 to 2021, this paper investigates the impact mechanism of accrual-based earnings management on corporate green innovation by constructing a two-way fixed effects model. And it further examines the moderating role of economic policy uncertainty (EPU) and the heterogeneity of property rights. The results show that accrual-based earnings management significantly suppresses corporate green innovation. Moreover, EPU amplifies the negative impact of earnings management on green innovation. The heterogeneity analysis indicates that non-state-owned enterprises are more vulnerable to the combined suppressive effects of earnings management and policy uncertainty, while state-owned enterprises (SOE) may be cushioned by institutional safeguards such as policy backing and a stronger commitment to social responsibility. It links financial manipulation to green innovation suppression, reveals EPU's moderating role, and informs tailored policy design in the Chinese context.

Keywords: Accrual earnings management, Economic policy uncertainty, Green Innovation, Moderating effect

1. Introduction

Enterprises, as key players in green innovation, make investment decisions that influence both their competitiveness and the achievement of national "dual carbon" targets. However, green innovation involves long cycles, high risks, and external impacts, often conflicting with traditional financial performance goals [1]. Existing research shows that, to meet short-term targets, management may engage in earnings management, such as manipulating asset impairment and revenue recognition, to improve financial outlook [2]. Despite the potential for financial manipulation to divert R&D funds, there is no consensus in the academic community on its impact on green innovation, which creates positive environmental externalities [3]. Meanwhile, China's economic policy uncertainty (EPU) continues to rise due to factors such as trade frictions, with unclear policy signals facing enterprises, which may intensify management's short-sighted tendencies and hinder long-term green investment [4]. The existing studies extensively discuss the driving factors of green innovation, including the roles of environmental regulation, government subsidies, and executives' environmental awareness [5-7]. However, the internal mechanisms of corporate financial behavior are underexplored. Despite

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the link between earnings management and distorted R&D investment, numerous studies emphasize traditional innovation. Due to the higher costs of environmental governance, financial manipulation may have a more severe impact on green innovation[8]. Besides, research on EPU largely addresses macroeconomic growth, with limited exploration of its micro-level impact on green transformation [9]. In the Chinese context, SOEs and non-SOEs may adopt different strategies to address earnings management (EM) and EPU due to differences in resource acquisition and policy burdens, yet this heterogeneity has not been fully explored [10]. Thus, by building a two-way fixed effect model, this paper aims to explore the inhibitory effect of accrual earnings management on corporate green innovation and its mechanism, whether economic policy uncertainty exacerbates this negative effect, and whether firms with different ownership types have heterogeneous responses. It may reveal how financial myopia hinders green transformation and inform targeted policy incentives.

2. Theoretical analysis and hypothesis development

2.1. Earnings management and corporate green innovation

The decision-making logic of corporate green innovation, as a long-term investment behavior with environmental positive externalities and technological complexity, is deeply affected by managerial agency problems. Based on the Agency Theory, management may manipulate short-term financial performance via accrual-based EM, driven by factors like job security or compensation incentives. This can involve adjusting asset impairments, deferring revenue, or capitalizing expenses [2]. Such financial manipulation diverts R&D resources and exacerbates information asymmetry, leading to misvaluation of green innovation projects by investors [3,8]. The dual nature of green innovation, environmental benefits and commercial value, intensifies its conflict with earnings management compared to traditional technological innovation. The long cycles and high specialized investments of green technology development make it hard to align returns with short-term performance targets [1]. Meanwhile, the environmental externalities of green innovation hinder the internalization of its market value, leading firms to prioritize “greenwashing” over genuine technological breakthroughs [5,11]. Firms with high earnings management often reduce R&D spending to smooth profits, but its effect on green innovation remains underexplored [12]. Thus, Hypothesis 1 is proposed:

H1: Accrual-based earnings management suppresses corporate green innovation.

2.2. The moderating effect of economic policy uncertainty

EPU affects green innovation by altering firms’ risk preferences and resource allocation strategies. Based on Bernanke’s theory of irreversible investment, when the external policy environment is highly uncertain, enterprises tend to delay or reduce long-term investment to avoid the risk of sunk costs [13]. The EPU index constructed by Baker et al. shows that the ambiguity of policy signals will greatly inhibit the capital expenditure of enterprises, while the sensitivity of green innovation, as a highly specific investment, may be more prominent [4]. In the relationship between earnings management and corporate green innovation, EPU may strengthen the negative effect via two types of mechanisms. In the risk aversion mechanism, the increase of EPU intensifies the management’s concern about the uncertainty of green innovation returns, and encourages them to give priority to short-term financial performance, amplifying the crowding out effect of earnings management on green resources [14]. In the financing constraint mechanism, policy uncertainty raises the cost of external financing, forcing enterprises to rely on internal funds, while cash flow fluctuations caused by earnings management may reduce green innovation budgets [15]. For example, EPU worsens

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R&D decline in financially constrained firms, with no distinction between traditional and green innovation [16]. Accordingly, this paper expects that EPU will strengthen the inhibitory effect of earnings management on green innovation, leading to Hypothesis 2:

H2: EPU has a negative moderating effect on the impact of accrual earnings management on corporate green innovation.

2.3. Differentiated impact of property rights heterogeneity

In the Chinese context, SOEs and non-SOEs differ systematically in resource endowment, policy burden, and agency costs, which may lead to variations in their response mechanisms to earnings management and EPU. For SOEs, thanks to the implicit guarantee and policy preference of the government, they have lower financing constraints and undertake more social responsibility goals [17,18]. Therefore, the green innovation of soes may be driven by administrative instructions rather than pure market logic. For example, Huang et al. noted that the greater emphasis on environmental performance in SOE executive assessments partially counteracts the short-term focus of earnings management [10]. In addition, SOEs have a stronger ability to interpret policy signals, which limits the impact of EPU on their green strategies [19]. In contrast, non-SOEs face more severe financing discrimination and market access barriers, making their green innovation more reliant on internal cash flow [20]. When earnings management weakens financial stability, non-SOEs may be forced to significantly reduce green investments to survive [19]. Besides, non-SOEs are more sensitive to EPU, and policy uncertainty may intensify their savings-oriented strategy, hindering long-term green investment. Based on the above analysis, this paper puts forward Hypothesis 3:

H3: The impact of accrual earnings management and economic policy uncertainty on corporate green innovation is heterogeneous, with the negative effects being more pronounced in non-SOEs.

3. Model construction and variable description

3.1. Model construction

To examine the direct impact of accrual-based EM on corporate green innovation, Model 1 is built.

$$lnGreen_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 lnEPU_t + \gamma X_{i,t} + \lambda_i + \mu_t + \varepsilon_{i,t} \quad (1)$$

where $lnGreen$ is the level of enterprise green innovation; the core explanatory variable EM is the absolute value of accrual earnings management; the moderating variable lnEPU is the natural logarithm of the economic policy uncertainty index; and the interaction term $\mathrm{EM} \times \mathrm{lnEPU}$ is used to capture the moderating effect of EPU on the relationship between EM and green innovation. X is the set of control variables, including enterprise size, profitability, and leverage ratio. And control enterprise industry fixed effect and year fixed effect respectively to alleviate the problem of missing variables. To test the impact of accrual-based EM on corporate green innovation and the moderating role of EPU, a two-way fixed effects benchmark model is constructed. By adding the interaction term between EM and EPU, Model 2 captures the moderating effect of EPU on their relationship. The specific form is as follows:

$$lnGreen_{i,t} = \alpha + \beta_1 EM_{i,t} + \beta_2 lnEPU_t + \beta_3 (EM_{i,t} \times lnEPU_t) + \gamma X_{i,t} + \lambda_i + \mu_t + \varepsilon_{i,t} \quad (2)$$

DOI: 10.54254/2754-1169/2025.BJ25097

3.2. Variable definition

The dependent variable is corporate green innovation ($lnGreen$). To measure the level of corporate green innovation, this study uses the number of green patent applications as a proxy variable. Due to the right-skewed distribution of green patent applications, the intensity of green innovation is measured using ln(1+NumberofGreenPatentApplications) [20]. The explanatory variable is accrual EM. The modified Jones model is applied for industry- and year-specific regressions to calculate discretionary accruals (DA) [2]. EM is measured by the absolute value of DA, defined as follows:

$$TA_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2(\Delta Rev_{it}/A_{it-1}) + \alpha_3(PPE_{it}/A_{it-1}) + \varepsilon_{it} \quad (3)$$

where TA is total accruals (net profit minus cash flow from operating activities), A is total assets, ΔRev is the change in operating income, and PPE is net fixed assets. The absolute value of the residual of DA is EM, and a larger value indicates a higher degree of earnings manipulation.

The moderating variable is EPU (lnEPU). The China EPU Index constructed by Baker et al. is used, quantifying policy volatility through keyword frequency statistics from mainstream media like the South China Morning Post [4]. To match the patent application data, the natural logarithm of the annual EPU index is taken as ln(1+EPU). The control variables include return on assets (ROA), asset-liability ratio (Lev), monetary capital (Hbzj), R&D investment intensity (RD), ownership nature (Stock), firm Age (Age), ownership concentration (Largest) and firm Growth (Growth).

3.3. Data sources and processing

This study utilizes A-share listed companies in China from 2010 to 2021 as the initial sample, and after excluding ST/*ST firms, financial institutions, and observations with missing key variables, 24,156 firm-year observations are retained. Data on green patents and financial information of listed companies are sourced from the CSMAR database, while the EPU index is sourced from the official Economic Policy Uncertainty website (http://www.policyuncertainty.com). Detailed definitions and processing methods of all variables used in the model are provided in Table 1.

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Table 1: Definition of variables

Variable Type	Name	Symbol	Definition
Variable explained	Corporate green innovation	lnGreen	ln(1+NumberofGreenPatentApplications)
Moderating variable	Economic policy uncertainty index	lnEPU	ln(1+EnvironmentalPolicyUncertaintyIndex)
Explanatory variables	Accrual-based earnings management	EM	obtained using the modified Jones model as a reverse indicator; a higher value indicates lower earnings quality
	Return on assets	ROA	Measures firm profitability
	The asset-liability ratio	Lev	Expressed as the ratio of total liabilities to total assets at the end of the year; a higher ratio indicates higher leverage
	Monetary capital	Hbzj	The amount of monetary capital disclosed by the firm each year (calculated using the natural logarithm)
	R&d investment	RD	R&D expenditure divided by operating revenue
Variable of control	Nature of equity	Stock	Defined as 1 for state-owned enterprises and 0 for others
	Enterprise years	Age	Natural logarithm of the number of years since the firm's establishment
	Shareholding ratio of the top ten shareholders	Largest	Total shareholding ratio of the top ten shareholders
	Enterprise growth potential	Growth	Year-on-year growth rate of operating revenue

4. Empirical tests and results

4.1. Descriptive statistics

Table 2 presents the descriptive statistics of the variables. According to the data in the table, the mean of lngreen is 0.914 with a standard deviation of 1.177, indicating a large variation in the level of green innovation among the samples. The standard deviation of accrual earnings management is 0.085, indicating minimal variation between firms, which suggests a generally cautious approach to EM across companies. The standard deviation of economic policy uncertainty is 108.849, indicating substantial annual variation and high policy volatility. Further analysis of the correlation coefficient reveals that the correlation between lnEPU and EM is -0.1015, which is significantly negative at the 1% level. This indicates that, under conditions of high EPU, enterprises are more likely to engage in EM. The correlation coefficient between EM and $lnGreen$ is -0.0225, suggesting a weak negative relationship between earnings management and corporate green innovation. Intensified EM may lower earnings quality, limiting investment in green innovation and providing preliminary support for H1 that EM inhibits corporate green innovation.

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Table 2: Descriptive statistics of relevant variables

Variable	Obs	Mean	Std. dev.	Min	Max
lnGreen	24,156	0.913997	1.177429	0	6.981
EM	24,156	0.06902	0.085144	0	3.2973
lnEPU	24,156	226.8809	108.8492	92.114	390.38
Size	24,156	19852.47	9665.795	81	36315
ROA	24,156	0.035191	0.097489	-4.946	0.7858
Lev	24,156	0.41188	0.202678	0.0075	3.9191
Hbzj	24,156	19515.35	9908.432	11	36312
RD	24,156	4.717559	6.307274	0	424.93
Stock	24,156	0.320458	0.466662	0	1
Age	24,156	1.88849	0.949689	0	3.4339
Largest	24,156	58.33568	14.99557	3.588	101.16
Industry_num	24,156	127.0634	84.03873	1	332
Growth	24,156	0.471082	7.584078	-28.589	865.9

Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01

4.2. Benchmark model and moderating effect analysis

4.2.1. Benchmark regression analysis

The regression analysis results for H1 are shown in Table 3. In column (1), only the dependent and independent variables are included in the model without any fixed effects, and the adjusted R-squared is 0.001, indicating that the model explains only about 0.1% of the variation. In column (2), after adding industry and year fixed effects, the adjusted R-squared increases to 0.219, showing a significant improvement in the model's explanatory power to about 21.9%. In column (3), after controlling for variables such as ROA, RD, and Growth, the adjusted R-squared is 0.167, indicating that the model's explanatory power further improves with the inclusion of these control variables. In column (4), after further controlling for fixed effects, the adjusted R-squared increases to 0.357, suggesting that the model's explanatory power improves to 35.7% with the inclusion of both control variables and fixed effects. The regression results reveal that in all four models, the regression coefficient of EM is negative and significant at the 1% level, indicating that the higher the level of earnings management, the lower the level of corporate green innovation output, thus confirming H1.

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Table 3: Accrued earnings management and green innovation of enterprises

	(1) lngreen	(2) lngreen	(3) lngreen	(4) lngreen
EM	-0.376***	-0.576***	-0.246***	-0.323***
	(0.097)	(0.095)	(0.087)	(0.081)
ROA			0.477***	0.381***
			(0.111)	(0.083)
Lev			1.280***	0.893***
			(0.090)	(0.076)
Hbzj			0.000***	0.000***
			(0.000)	(0.000)
RD			0.013***	0.007***
			(0.004)	(0.002)
Stock			0.078*	0.116***
			(0.042)	(0.038)
Age			-0.010	0.051***
			(0.018)	(0.017)
Largest			0.001	0.002*
			(0.001)	(0.001)
Growth			0.000	-0.001
			(0.001)	(0.001)
_cons	0.940***	0.954***	-0.410***	-0.445***
	(0.021)	(0.019)	(0.106)	(0.090)
N	24156	24121	24156	24121
R2	0.001	0.219	0.167	0.357
adj. R2	0.001	0.211	0.167	0.351

4.2.2. Moderating effect analysis

Table 4 reports the moderating effect of lnEPU on the relationship between earnings management and green innovation. In column (1), only industry fixed effects are controlled, while in column (2), only year fixed effects are included. Column (3) controls for both industry and year fixed effects. The regression results show that the suppressive effect of accrual EM on corporate green innovation remains significant under the moderating effect of EPU. The coefficient of the interaction term EM×lnEPU is significantly negative, suggesting that economic policy uncertainty exerts a negative moderating effect on the relationship between accrual earnings management and corporate green innovation. After adding the moderating term to the model, the coefficients of the other variables remain relatively unchanged, indicating that the model is robust. The results show that accrual earnings management limits green innovation, with economic policy uncertainty moderating this effect, confirming H1 and H2.

DOI: 10.54254/2754-1169/2025.BJ25097

Table 4: Moderating effect test

	(1) lnGreen	(2) lnGreen	(3) lnGreen
EM	0.301*	0.441***	0.485***
	(0.157)	(0.123)	(0.125)
ROA	0.276***	0.104*	0.126**
	(0.088)	(0.062)	(0.060)
Lev	0.865***	0.296***	0.298***
	(0.076)	(0.076)	(0.072)
Hbzj	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
RD	0.005**	0.006**	0.002
	(0.002)	(0.003)	(0.002)
Stock	0.116***	-0.096*	-0.063
	(0.038)	(0.050)	(0.047)
Age	0.060***	0.030*	-0.043***
	(0.017)	(0.016)	(0.016)
Largest	0.003**	0.005***	0.004***
	(0.001)	(0.001)	(0.001)
Growth	-0.000	0.001	0.001
	(0.001)	(0.001)	(0.001)
lnEPU	0.000***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
EM_lnEPU	-0.003***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.001)
_cons	-0.522***	-0.042	0.149*
	(0.089)	(0.098)	(0.090)
Annual fixed effect	No	No	Yes
Industry fixed effect	Yes	Yes	Yes
N	24121	23680	23645
R^2	0.326	0.727	0.736
adj. R^2	0.319	0.683	0.691

4.3. Model heterogeneity test

Listed companies are divided into state-owned and non-state-owned groups based on ownership structure for separate heterogeneity regression tests, controlling for industry and year fixed effects, as shown in Table 5. Columns (1) and (2) present the heterogeneity test for the main effect of H1 without including the moderating effect. The results demonstrate that, for both state-owned and non-state-owned enterprises, the level of accrual EM has a significantly negative impact on green innovation, thus indicating that managerial EM behavior may undermine the green innovation

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output of firms. This aligns with the explanation of managerial short-term opportunistic behavior in agency cost theory. Columns (3) and (4) further add EPU and the interaction term between EM and EPU for the moderating effect test. The results show that in the SOE group, both EM and EPU negatively affect green innovation, but EPU's moderating effect is insignificant. In the non-SOE group, both EM and EPU significantly hinder green innovation, with EPU notably moderating the relationship between EM and green innovation negatively.

The impact of EPU on the relationship between EM and green innovation is heterogeneous, with ownership structure playing a key role in explaining the moderating effect of EPU. For SOE, internal governance issues may have a greater influence on green innovation decisions than external environmental fluctuations. With implicit government guarantees and financing advantages, SOEs are able to create resource buffers. Even when confronted with changes in the policy environment, their strategic adjustments are hindered by institutional inertia, which limits the moderating effect of EPU. For non-SOEs, EPU directly suppresses green innovation and strengthens the negative impact of EM. This supports the framework effect theory in behavioral finance: as external uncertainty increases, non-SOE managers become more risk-averse, relying more on EM to maintain short-term performance, which crowds out long-term investments like green innovation. From an institutional view, green innovation in SOEs is a compliance-driven political task, with decision-making shaped by a "policy objectives-resource allocation" framework. As such, external economic changes are filtered through hierarchical structures. In contrast, innovation in non-SOEs follows market logic and is highly responsive to policy signals. EPU disrupts market expectations, prompting managers to increase EM, resulting in a chain of "uncertainty-agency problems-reduced innovation." Besides, different regulatory pressures on environmental disclosure may lead to varying substitution effects of EM on innovation in SOEs and non-SOEs. EPU increases debt costs, straining non-SOE cash flow, leading to accrual manipulation and reduced innovation budgets. It also shifts focus from innovation to earnings smoothing, hindering progress.

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Table 5: Heterogeneous regression of the impact of EM and EPU on corporate green innovation

	(1)State-owned group lnGreen	(2)Non-state-owned group lnGreen	(3)State-owned group lnGreen	(4)Non-state-owned group lnGreen
EM	-0.595***	-0.207**	0.419*	0.549***
	(0.160)	(0.091)	(0.230)	(0.161)
ROA	0.566*	0.456***	-0.140	0.170***
	(0.300)	(0.085)	(0.197)	(0.062)
Lev	0.669***	0.979***	0.278*	0.222***
	(0.153)	(0.089)	(0.149)	(0.080)
Hbzj	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
RD	0.013**	0.006**	0.000	0.003
	(0.006)	(0.002)	(0.004)	(0.002)
Age	-0.022	0.053***	-0.154***	-0.020
	(0.040)	(0.018)	(0.048)	(0.018)
Largest	0.008***	-0.002**	0.008***	0.003***
	(0.002)	(0.001)	(0.002)	(0.001)
Growth	-0.002	-0.001	0.002	0.001
	(0.002)	(0.001)	(0.002)	(0.001)
lnEPU			0.002***	0.001***
			(0.000)	(0.000)
EM_lnEPU			-0.002	-0.002**
			(0.001)	(0.001)
_cons	-0.640***	-0.109	0.414*	0.077
	(0.189)	(0.100)	(0.215)	(0.098)
N	7704	16378	7597	15938
R^2	0.401	0.334	0.782	0.702
adj.R^2	0.387	0.326	0.741	0.646

4.4. Robustness test

4.4.1. Alternative measurement of independent variables

To test the robustness of the conclusions, an alternative variable approach is used. Specifically, the calculation method of accrual earnings management was changed from the Jones model to the DD model, and then the model test was re-conducted. The results in Table 6 show that for H1, the regression coefficient of EM is still significantly negative at the 1% level. For H2, the regression coefficients of EM and the cross-terms of EM and lnEPU are still significantly negative at the 1% level, and the moderating effect exists. For H3, the interaction term is insignificant for state-owned enterprises but significant at the 5% level for non-state-owned enterprises, supporting H3. Thus, this result does not alter the main findings of the study.

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Table 6: Regression results of the model robustness test

	(1) lnGreen	(2) lnGreen	(3)State-owned group lnGreen	(4)Non-state-owned group lnGreen
EM	-0.262***	-0.140*	0.118	-0.196**
	(0.053)	(0.077)	(0.157)	(0.093)
ROA	0.000***	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Lev	0.923***	0.262***	0.317**	0.182**
	(0.079)	(0.072)	(0.145)	(0.080)
Hbzj	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
RD	0.007***	0.002	-0.000	0.002
	(0.002)	(0.002)	(0.003)	(0.003)
Stock	0.124***	-0.109**		
	(0.039)	(0.049)		
Age	0.056***	-0.037**	-0.173***	-0.007
	(0.018)	(0.017)	(0.054)	(0.019)
Largest	0.002*	0.005***	0.009***	0.004***
	(0.001)	(0.001)	(0.002)	(0.001)
Growth	0.000	0.000	-0.001	0.001
	(0.001)	(0.001)	(0.003)	(0.001)
lnEPU		0.001***	0.002***	0.001***
		(0.000)	(0.000)	(0.000)
EM_lnEPU		0.001***	0.000	0.001**
		(0.000)	(0.001)	(0.000)
_cons	-0.524***	0.205**	0.460**	0.132
	(0.097)	(0.096)	(0.234)	(0.102)
N	22317	21867	6811	14963
R^2	0.359	0.738	0.781	0.705
adj. R^2	0.353	0.691	0.740	0.647

4.4.2. Instrumental variable method

To further test robustness, an instrumental variable approach is used to replace accrual EM. To avoid potential bidirectional causality, the lagged value of EM is used as an instrument, eliminating endogeneity issues. After using the instrumental variable, the model results are consistent with the baseline regressions in Tables 3 and 4, and the estimates still support H1 and H2. In the subgroup regressions, the results with the instrument are similar to those in Table 5, still supporting H3. In short, the robustness tests show no significant changes, confirming the conclusions' reliability.

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5. Conclusion

This paper investigates how EM and EPU affect corporate green innovation in China. The findings show that EM significantly inhibits green innovation, with EPU amplifying this negative effect, while the nature of property rights moderates the relationship, as SOEs are less affected by EM and EPU due to their policy advantages. These results highlight the role of institutional environments in shaping firms' financial and environmental decisions. From a policy perspective, improving green investment disclosure and creating mechanisms to offset EPU impacts, such as green bonds, are recommended. For non-SOEs, a green transformation fund could ease financing constraints, while integrating long-term green incentives into governance and adapting to policy signals can prioritize low-cost green technologies. Future research should broaden green innovation metrics and explore cross-border comparisons to boost global carbon neutrality governance.

References

[1] Aghion, P., Van Reenen, J., & Zingales, L. (2013). Innovation and institutional ownership. American Economic Review, 103(1), 277-304.
[2] Dechow, P.M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. The Accounting Review, 70(2), 193-225.
[3] Roychowdhury, S. (2006). Earnings management through real activities manipulation. Journal of Accounting and Economics, 42(3), 335-370.
[4] Baker, S.R., Bloom, N., & Davis, S.J. (2016). Measuring economic policy uncertainty. The Quarterly Journal of Economics, 131(4), 1593-1636.
[5] Porter, M.E., & Linde, C. (1995). Toward a new conception of the environment-competitiveness relationship. Journal of Economic Perspectives, 9(4), 97-118.
[6] Berchicci, L., & King, A. (2022). Corporate environmental responsibility through the lens of green innovation. Strategic Management Journal, 43(3), 546-571.
[7] Cohen, D.A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. Journal of Accounting and Economics, 50(1), 2-19.
[8] Huang, Y., Song, F.M., & Xu, L. (2017). Financial structure and corporate innovation in China. China Economic Review, 45, 68-81.
[9] Lyon, T.P., & Montgomery, A.W. (2015). The means and end of greenwash. Organization & Environment, 28(2), 223-249.
[10] Zang, A.Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. The Accounting Review, 87(2), 675-703.
[11] Bernanke, B.S. (1983). Irreversibility, uncertainty, and cyclical investment. The Quarterly Journal of Economics, 98(1), 85-106.
[12] Gulen, H., & Ion, M. (2016). Policy uncertainty and corporate investment. The Review of Financial Studies, 29(3), 523-564.
[13] Bonaime, A., Gulen, H., & Ion, M. (2018). Does policy uncertainty affect mergers and acquisitions? Journal of Financial Economics, 129(3), 531-558.
[14] Chen, Y., Wang, Y., & Lin, L. (2020). Economic policy uncertainty and corporate investment: Evidence from China. Pacific-Basin Finance Journal, 62, 101350.
[15] Allen, F., Qian, J., & Qian, M. (2005). Law, finance, and economic growth in China. Journal of Financial Economics, 77(1), 57-116.
[16] Lin, B., Xie, J., & Zhao, Y. (2020). Corporate social responsibility and green innovation: Evidence from China. Energy Economics, 91, 104879.
[17] Wang, Y., Wei, Y., & Song, F.M. (2022). Uncertainty and corporate R&D investment: Evidence from Chinese listed firms. China Economic Review, 71, 101727.
[18] Song, Z., Storesletten, K., & Zilibotti, F. (2011) Growing like China. American Economic Review, 101(1), 196-233.
[19] Cull, R., et al. (2015). Government connections and financial constraints: Evidence from a large representative sample of Chinese firms. Journal of Corporate Finance, 32, 271-294.

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[20] Tao, F., et al. (2021). Has environmental regulation achieved both quantity and quality improvement in green technology innovation? Evidence from the environmental protection target responsibility system. China Industrial Economics, (2), 136-154.