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Formalism or Substantialism: ESG and Stock Crash Risk

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Abstract

We use a specifically chosen data set of Chinese A-share listed businesses from 2009 to 2022 to investigate the complex relationship between stock crash risk and company Environmental, Social, and Governance (ESG) performance. Based on empirical investigation, a complex U-shaped dynamic is revealed, in which early advances in ESG performance work as a protective factor against stock collapse risk initially, but with ESG performing better, this impact reverses and becomes an enhancer of stock crash risk. We carry out a thorough mediation study to elucidate the underlying mechanisms, revealing the critical roles that business reputation and analyst scrutiny play in mediating the U-shaped link between stock crash risk and ESG. Furthermore, we explore possible moderating factors and find that the adoption of ESG in state-owned organizations and businesses operating in less marketized environments may be motivated by instrumental factors, which would ultimately increase the likelihood of a stock market crash. Thus, by providing a complex and dialectical approach that unites disparate points of view, our work adds to the specialist conversation on the economic consequences of ESG.

Keywords: ESG, stock crash risk, U-shaped dynamic

1. Introduction

Emerging widely in recent years, the notion of ESG investment offers a novel way to assess a company's sustainable development from three angles: governance (G), society (S), and environment (E). It is a basic framework for green transformation of firms and represents an emerging development philosophy that blends corporate social value with economic value, closely aligned with the spirit of the 20th National Congress of the Communist Party of China. In the current period of economic expansion, businesses should place equal emphasis on improving their own operations, management, and competitiveness as well as long-term, sustainable development, reduced carbon emissions, and environmental protection.

ESG investing has garnered significant interest from both academic and practical circles due to its outstanding track record in economic practice and its alignment with the concept of high-quality development (Capelle-Blancard, G., & Petit, A., 2019). Market participants are gradually coming to accept that by identifying potential long-term value, ESG assessments of firms may enable them to "beat the market" (Edmans, A., 2023). By favoring organizations with strong ESG performance, ESG investments incentivize long-term development potential and penalize resource-hungry, shortsighted enterprises. This concurrent focus on social and economic benefits has been crucial to preserving market stability during dangerous times. The ESG performance of microenterprises is intimately associated with the sustainable and sound growth of the macroeconomy.

Existing research indicates that a strong performance in fulfilling ESG responsibilities can send positive signals to the market, enhance corporate innovation levels (Li, Y., & Li, S., 2024). improve operational efficiency (Yildiz, F., Dayi, F., Yucel, M., & Cilesiz, A., 2024), and raise total factor productivity. ESG responsibility reports are regarded as signals of long-term commitment (Lee, C. W., & Zhong, J., 2015), which can strengthen corporate stock liquidity, reduce the risk of stock price crashes, and hence stabilize capital markets.

However, at present, there are no unified standards for ESG information disclosure among domestic enterprises, and there is a lack of institutional guarantees and management oversight. Some companies exaggerate their investments and achievements in environmental protection to obtain higher ESG ratings, using "Green Washing" tactics in their ESG reports to conceal unfavorable information such as financial failures (Zhang, D., 2022). Through strategic disclosure, these companies attempt to divert public attention away from their unethical behaviors, turning ESG into a tool for management rent-seeking (Jiang, C., Li, X., Xu, Q., & Liu, J., 2024). This behavior further increases the dimension of information asymmetry in the market. As embellished information

accumulates, agency conflicts intensify, making the risk of stock price crashes may even significantly increase.

This led us to conduct a thorough investigation into the underlying mechanisms and the nonlinear relationship between a company's stock price crash risk and its ESG performance. There is a significant U-shaped relationship between a listed company's ESG performance and stock price crashes. The relationship is weaker in the early stages and becomes more pronounced in later stages, with an approximate inflection point occurring at a Huazheng ESG score of 3.8. Additional investigation indicates that the U-shaped association between ESG and stock price crash risk involves intermediary roles for both analyst attention and corporate reputation. The instrumentalization of ESG is more likely to be the source of state-owned businesses' and businesses' responses to ESG regulations in less marketed areas.

In comparison with earlier studies, our work makes a few minor contributions: First, from the standpoint of micro-economic entity behavior, we add to the body of research on the financial implications of fulfilling ESG responsibilities. We offer a dialectical new perspective by approaching research differences from the perspective of capital market risk. Second, our research shows a U-shaped correlation between corporate stock price collapse risk and the execution of ESG responsibilities. We demonstrate how variations in environmental institutional development, the industry in which a company operates, and the enterprise's lifespan all affect the economic implications of ESG. This gives listed firms empirical evidence to help them better meet their ESG responsibilities. Lastly, by examining the economic consequences of corporate ESG, our research helps enterprises make dynamic ESG investment decisions based on their unique characteristics. It also offers valuable insights for governments to precisely support the fulfillment of ESG responsibilities by real enterprises, and provides a theoretical basis for China to further advance the construction of ESG systems.

2. Method

2.1 Sampling Procedures

We take all A-share listed companies in Shanghai and Shenzhen stock markets from 2009 to 2022 as the research sample. The longitude and latitude of the Confucian temple remains and the number of Jinshi in the ESG performance data of enterprises are from the CNRDS database, and the financial data and registration data of listed companies are from the CSMAR database. The main explanatory variables are obtained through software calculations. During the data collection and sorting process, follow the steps below for subsequent processing: 1. Remove the financial industry, real estate industry, and ST and *ST companies; 2. Remove samples with missing data for the main variables; 3. Deleting the sample 4 where the registration place changed during the sample period. All continuous variables were subjected to a 1% up-down tail-cutting process. Finally, we obtained a total of 31,661 annual observations of companies with ESG performance data.

2.2 Measures and Covariates

The dependent variable is the risk of stock crash. Drawing on existing research (Murata, R., & Hamori, S., 2021), we use two indicators to measure the risk of stock price crash, one of which is NCSKEW, which represents the negative skewness of the weekly return of stocks after market adjustment; Another indicator is DUVOL, which measures the change in volatility of stock price fluctuations. The larger the value of the two indicators, the greater the risk of stock price crash.

The explanatory variable is the ESG performance of the enterprise. The Huazheng Index ESG rating is adopted. The rating is divided into 9 levels, from high to low, AAA, AA, A, BBB, BB, B, CCC, CC, C. The rating is conducted 4 times a year, and the rating is assigned a score from 1 to 9. The average of the 4 scores per year is used to obtain the annual ESG performance of the enterprise.

Sigma is the standard deviation of the annual weekly specific return of individual stocks, Ret is the annual average weekly specific return of individual stocks, and Size is the size of the enterprise, measured by the natural logarithm of the total assets at the end of the period. Lev is the financial leverage ratio, which is equal to the total liabilities at the end of the year divided by the total assets at the end of the year. Roa is the net profit margin of assets, measured by dividing the net profit at the end of the year by the total assets at the end of the year. Growth is the growth rate of business operations, measured by the growth rate of main business income. Age is the age of the enterprise, measured by subtracting the year of registration from the current year. Balance is the equity concentration, measured by the proportion of the top three shareholders in the company's shares. InstShare is the shareholding ratio of institutional investors. Duel is whether the chairman and general manager are the same person. If the two positions are combined, assign a value of 1, otherwise assign a value of 0. Mshare is the management shareholding ratio, which is the sum of the company shares held by management members. Indep is the proportion of independent directors, measured by the ratio of the number of independent directors to the total number of

directors on the board.

2.3 Model Design

Hypothesis H1, which investigates the nonlinear impact of company ESG performance on the stock price crash risk (L.Crushrisk) during the next period, is tested by Model (1). Both year fixed effects (year) and firm fixed effects (ind) have been accounted for in this fixed-effects model.

$$L.Crushrisk = \beta_0 + \beta_1 Crushrisk + \beta_2 \text{ESG} + \beta_3 ESG^2 + \beta_4 \text{Control} + \beta_5 \text{year} + + \beta_6 Stikid + \varepsilon_i$$

Models (2) and (3) employ the mediation effect approach to test Hypotheses H2, H3, and H4, by which an individual enterprise's ESG performance is impacted by the intensity of ESG performance (lnconf200) among firms situated in the same region. MV refers to the mediating variable and other indicators have the same meanings as in Model (1).

$$MV = \beta_0 + \beta_1 ESG + \beta_2 \text{Control} + \beta_3 \text{year} + + \beta_4 Stkid + \varepsilon_i \quad (2)$$

$$L.CrashRisk = \beta_0 + \beta_1 ESG + \beta_2 \text{ESG}^2 + \beta_3 \text{MV} + \beta_4 \text{MV*ESG} + \beta_5 \text{Control} + \beta_6 \text{year} + + \beta_7 Stkid + \varepsilon_i \quad (3)$$

3. Results

3.1 Statistics and Data Analysis

Table 1. Descriptives

Variable	Observations	Mean	Min	Max	SD
NCSKEW	31661	-0.335	-2.768	2.280	0.728
DUVOL	31661	-0.221	-1.547	1.412	0.481
ESG	31661	4.136	1	8	1.043
Ret	31661	0.313	-0.025	0.0678	0.0100
Sigma	31661	0.065	0.019	0.23	0.0253
size	31661	22.13	19.92	26.08	1.263
roa	31661	0.0400	-0.225	0.199	0.0600
lev	31661	0.408	0.0500	0.879	0.202
Balance	31661	0.736	0.0290	0.786	0.6000
age	31661	10.01	0	28	7.568
Growth	31661	0.164	-0.508	2.139	0.362
duel	31661	0.294	0	1	0.456
Mshare	31661	0.145	0	0.690	0.202
Indep	31661	0.375	0.333	0.571	0.0530
InstShare	31661	0.449	0.003	0.946	0.255

Table 1 presents the descriptive statistical results of key variables. The mean value of the E score is significantly lower than that of the S score, and mean of S in turn is significantly lower than that of G score. It is to be noted that the standard deviations of these three sub-components are relatively similar, suggesting that the differences in ESG sub-component performance among enterprises may share a certain degree of convergence.

The explanatory factors and the ESG performance of businesses are significantly positively correlated, according to the Pearson correlation coefficient test. Furthermore, all of the other factors' correlation coefficients match predictions. Additional Variance Inflation Factor (VIF) tests show that the variables that were chosen do not exhibit significant multicollinearity. The article does not disclose the particular statistics on these conclusions due to space constraints.

3.2 Baseline Data

3.2.1 Benchmark Model

The test results for Model 1 are shown in Table 2, where (1)(3) denotes findings without fixed effects and (2)(4)

denotes results with fixed effects. According to the regression results, there is a U-shaped relationship between corporate ESG performance and the risk of stock price collapse in the following period, with an inflection point around 3.8. The regression coefficient of ESG is negative at the 1% significance level after controlling for fixed effects and adding control variables, and the regression coefficient of ESG squared is positive at the same level. The first research hypothesis has been tentatively confirmed. Our regression results are likewise consistent with economic assumptions for control variables.

Table 2. Benchmark regression

	(1)	(2)	(3)	(4)
Variables	L.NCSKEW	L.NCSKEW	L.DUVOL	L.DUVOL
NCSKEW	0.428***	0.445***		
	(0.0651)	(0.0685)		
DUVOL			0.458***	0.509***
			(0.0667)	(0.0677)
ESG	-0.0682***	-0.0732***	-0.0412***	-0.0489***
	(0.0218)	(0.0190)	(0.0141)	(0.0143)
ESG*ESG	0.00892***	0.00857***	0.00573***	0.00596***
	(0.00268)	(0.00239)	(0.00174)	(0.00176)
size	-0.000264	0.0529***	-0.00773**	-0.00345
	(0.00530)	(0.0144)	(0.00353)	(0.00381)
roa	-0.152	-0.446***	-0.210***	-0.293***
	(0.0979)	(0.125)	(0.0641)	(0.0639)
lev	-0.0736**	-0.149**	-0.0445**	-0.0426*
	(0.0312)	(0.0587)	(0.0206)	(0.0220)
Balance	0.0109	0.00796	0.00962*	0.00150
	(0.00848)	(0.0183)	(0.00566)	(0.00557)
age	-0.00134	0.00504	-0.000309	-0.00126**
	(0.000859)	(0.0504)	(0.000572)	(0.000574)
RevenueGrowth	-0.0572***	-0.0417**	-0.0407***	-0.0232**
	(0.0144)	(0.0162)	(0.00930)	(0.00945)
duel	0.00341	-0.00184	0.00108	-0.00561
	(0.0110)	(0.0183)	(0.00724)	(0.00720)
Mshare	0.000398	-0.00186**	0.000449*	1.44e-05
	(0.000405)	(0.000769)	(0.000266)	(0.000264)
Indep	0.000767	0.00358**	0.000234	9.57e-05
	(0.000948)	(0.00160)	(0.000626)	(0.000616)
InstShare	0.000591**	-6.83e-05	0.000521***	0.000319
	(0.000295)	(0.000629)	(0.000193)	(0.000195)
Ret	0.765	3.810***	0.669	5.665***
	(0.629)	(0.832)	(0.423)	(0.546)
Sigma	-1.673***	-1.848***	-1.267***	-2.301***
	(0.249)	(0.362)	(0.163)	(0.210)

Constant	-0.108	-1.424**	0.0919	0.115
	(0.119)	(0.625)	(0.0796)	(0.0863)
Year	No	Yes	No	Yes
Ind	No	Yes	No	Yes
Observations	26,274	25,789	26,274	26,274

3.2.2 Endogeneity Test

Table 3. Endogeneity test

	(1) If_ESG	(2) L.NCSKEW	(2) L.DUVOL
ESG_IND_P	-1.836***		
	(0.196)		
ESG		0.0739***	0.0501***
		(0.0194)	（0.0194）
ESG square		0.00880***	-0.0492***
		（0.0024）	（0.0024）
Imr		-0.160	-0.160
		(0.210)	（0.740）
Control	Yes	Yes	Yes
Year	Yes	Yes	Yes
Ind	Yes	Yes	Yes
Observations	32251	26270	26277

Sample selection bias resulted from the annual samples of businesses lacking ESG rating data being disregarded throughout the sample selection procedure. The Heckman two-step technique was used since the choice of whether or not to receive an ESG rating could originate from the self-selection behavior of the rating agencies or the firms. The proportion of other businesses in the same sector that received ESG ratings in the current year (ESG_IND_P) was incorporated as an exclusive constraint variable in the first stage. After obtaining the inverse Mills ratio (imr), the benchmark regression was once again initiated as the second stage.

The results showed that the coefficient of the ESG_IND_P constraint variable in the first stage was significant, while the imr coefficient in the second stage was not significant. Moreover, the coefficients of the explanatory variables in the two-stage regression were all significant. This indicates that despite the existence of some sample self-selection issues, the coefficients of the core explanatory variables after treatment were not significantly different from those in the benchmark regression and remained significant at the 1% level. Therefore, the results of the benchmark regression remain robust.

4. Discussion

4.1 Causes of Stock Price Crash Risk

Companies present ESG indicators and related data in their annual reports, much like they do with financial data, as they carry out their ESG obligations and engage in ESG practices. The information disclosed by companies can be either genuine valid information or disguise for distraction. The literature indicates that external market players as well as internal business factors are the main causes of stock price collapse risk (Gibson Brandon, R., Krueger, P., & Schmidt, P. S., 2021). Therefore, whether businesses employ ESG as a tool and how capital market players react to corporate ESG information contributes to the potential risk of corporate stock.

Some academics contend that opportunistic actions by business managers are motivated by self-interest and serve to conceal damaging firm information. Unfavorable knowledge is concealed and builds up underwater until it surpasses a threshold that causes a focused outbreak, a stock price crash. The risk of a stock market crash can also be induced by the actions of capital market investors. Overindulgence of institutional investors to the market could result in the continues cover of unfavorable information, while the excessive investment returns expectations

encourage the managers abuse opportunistic information embellishment. The third participants, the analysts, also contribute to the risk. The optimism bias leads to overpricing, while analyst attention means more information mining, inhibiting stock price bubbles.

Existing literature primarily focuses on "negative news" to analyze the triggers of stock price crashes, neglecting the role of "positive news". Corporate information manipulation strategies involve not only deliberately hiding negative news but also exaggerating positive news (Zhao, C., Chen, S., & Cao, W., 2020). Managers manipulate financial statement numbers or textual disclosures to exaggerate performance, leading investors to have overly optimistic estimates, causing stock prices to deviate from fundamentals and creating stock price bubbles. The destructive force caused by this is no less than deliberately hiding negative news. Companies tend to only report good news and hide bad news, and most reports exaggerate achievements (Lu, H., Deng, T., & Yu, J., 2019). To maintain the consistency of reports, managers have to uphold the exaggerated disclosure of positive news, keep covering up lies with more lies, and conceal the true operating conditions of the enterprise day by day. The company's stock price will ultimately suffer an unprecedented "deluge", leading to a stock price crash.

4.2 Analysis of ESG Performance Reducing the Risk of Stock Price Collapse

Firstly, a company's reputation may rise as a result of improved ESG performance. According to the resource-based approach, businesses that uphold ESG principles can gain moral and reputation capital, which can provide them a distinct competitive edge and increase their ability to withstand long-term risk (Sun, H., Zhu, S., & Zhang, X., n.d.).Reputation capital is an intangible asset that can assist businesses in obtaining consumer and supply chain resources, easing their financial restrictions, and lowering operational risks. A company's high image can help distract stakeholders from malfeasance during a black swan crisis event, giving the business more time to recover and become more resilient to shocks. This reduces the likelihood of a stock price crash.

Secondly, increased business information transparency can result from improved ESG performance. Stakeholder theory suggests that active disclosure and meeting ESG obligations can help reduce knowledge asymmetry. The financial information from the financial statements is enhanced by these non-financial data. The long-short disparity brought on by investors' diverse ideas has been somewhat mitigated by high-quality ESG information disclosure, increasing stock prices' information reflection level and enhancing market efficiency. Companies that actively carry out their ESG obligations also demonstrate a long-term strategic vision and a reduced propensity for short-term opportunistic behavior, which includes a lower likelihood of withholding unfavorable facts.

In conclusion, efficiency market holds if the disclosure of ESG completely and accurately represents the success of corporate ESG investment, thus curbing stock price bubbles and helping to reduce the risk of stock price collapse.

4.3 Analysis of ESG Performance Increasing the Risk of Stock Price Collapse

Initially, ESG reporting has the potential to be a tool used by management to pursue personal benefits. CEOs may deflect criticism and hide their subpar financial results or agency problems by inflating the ESG report and projecting a responsible business image. Management facing bad news can "greenwash" ESG reports in order to hide unpleasant facts (Huang, S., 2022). In order to protect their short-term interests and improve their personal reputations, management of organizations without true ESG policies may turn to pandering tactics in response to obligatory disclosure rules (Xiao, H. J., 2024). The association between stock price collapse risk and ESG performance is moderated by the role of agency problems.

In addition, the margin cost of ESG practice arises with ESG performance, leading to possible inflation of ESG words. Improved ESG performance is a must if companies aim to draw ESG investment and achieve a resource reflow (Wei, L., & Chengshu, W., 2024). Companies with notable better ESG performances within their industry tend to attract more attention of investors. But the margin cost of ESG investment keeps uprising. As a result, it seems less appealing to take actual practice after ESG hits a certain point. Managers are therefore prone to inflate their ESG strengths, much like what happened in traditional financial fraud. If their announcement should be re-recognized ostentation, these superior ESG performers enjoy a more liquid but risky premium in stock market.

In summary, effective ESG practices can mitigate the risk of stock price collapse for corporations. Conversely, ESG information disclosure beyond reasonable capabilities, implying the concealment of negative information and exaggeration of positive information, exacerbates the risk of corporate collapse.

Therefore, we propose the following hypotheses:

Hypothesis H1: The ESG performance of listed companies increases corporate reputation capital, reduces corporate agency costs, and thereby reduces the risk of stock price crashes.

Hypothesis H2: The ESG performance of listed companies is a tool to cover up negative news and exaggerate

positive news, thereby increasing the risk of stock price crashes.

To validate the rationality of these hypotheses, we employ a moderated mediation model. Specifically, our validation process consists of three steps:

Step 1: We first examine whether corporate ESG performance has a significant impact on the subsequent stock price crash risk, establishing a benchmark for our analysis.

Step 2: Next, we introduce control variables to assess whether corporate ESG performance has significant direct effects on various variables of interest. This step aims to isolate the independent influence of ESG performance from other potential confounding factors.

Step 3: Finally, we incorporate variables and their interactions with ESG into the baseline regression model to test whether these interactions significantly moderate the impact of ESG performance. This step helps uncover the conditional effects of ESG performance under different contexts.

The results of these analyses are presented in Table 5.

Table 5. Mechanic Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	L.Reputation	L.NCSKEW	L.DUVOL	L.Agency	L.NCSKEW	L.DUVOL
ESG	0.343***	-0.0696***	-0.0494***	-0.0166***	-0.0779***	-0.0488***
	(0.0178)	(0.0248)	(0.0159)	(0.00443)	(0.0239)	(0.0152)
ESG*ESG	-0.0173**	0.00536	0.00420*	0.00172***	0.00880***	0.00594***
	（0.0091）	(0.00354)	(0.00228)	（0.00051）	(0.00277)	(0.00178)
L.Reputation		-0.00589***	-0.00587***			
		(0.00132)	(0.00143)			
L.Reputation*ESG		0.00388**	0.00233*			
		(0.00194)	(0.00125)			
L.Agency		0.351**			-0.0887	0.0146
		(0.023)			(0.201)	(0.131)
L.Agency*ESG					0.0342	0.000488
					(0.0535)	(0.0364)
Control	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes	Yes

4.3.1 Reputation as Mechanic Variable

We selected twelve reputation evaluation indicators and used factor analysis to obtain the corporate reputation score Reputation. Then, the scores were divided into ten groups from low to high, assigning them values from 1 to 10. The larger the value, the better the reputation of the company (Guan, K., & Zhang, R., 2019). Table 5, column 1, shows that there is an inverted U-shaped relationship between corporate ESG performance and corporate reputation, with the inflection point around an ESG performance score of 10. Since the ESG score range from 1 to 10, it can be assumed that ESG performance always has a positive impact on corporate reputation, but the margin declines as the ESG score hits higher. Columns 2 and 3 show that the ESG primary term coefficient remains unchanged and still significant, while the secondary term coefficient becomes smaller and no longer significant.

The smoother U-shaped curve of corporate ESG performance following the component's removal indicates that the reputation factor serves as a helpful mediating function in the influence of corporate ESG performance. Enterprise managers actively embrace ESG practices to increase stock liquidity, attract investors, and present a favorable company image. The skewness coefficient improves by roughly ESG*0.00388-0.00589 for every 1 point increase in reputation score, staying mostly positive. The reputation mechanism has a positive moderating effect on the relationship between corporate ESG performance and corporate ESG performance. When companies aggressively pursue ESG ratings, their corporate reputation level is no longer taken as positive indicators by investors; on the contrary, it acts more like exacerbate of the negative effects of concealing risk concerns.

4.3.2 Agency as Mechanic Variable

We conduct the management expense ratio as a variable for the company's agency mechanism (Agency). Table 5, column 4, indicates that there is a U-shaped relationship between corporate ESG performance and the management

expense ratio, with an inflection point of approximately 4.8, significant at the 1% level. However, columns 5 and 6 show that a lower management expense ratio does not necessarily imply better crash risk resistance. The empirical results suggest that while corporate ESG performance can enhance internal operational efficiency by constraining extravagance and waste, leading to cost reduction and increased long-term investment performance, agency costs do not directly impact short-term risk resilience or moderate the relationship between corporate ESG performance and stock price crash risk. Thus, the agency mechanism is not supported.

4.3.3 Investor Attention as Mechanic Variable

By taking the logarithm of the number of securities analysts who follow a given firm plus one, we may properly evaluate investor attention (Attention). With an inflection point of 2.735, Table 5, Column 7 shows a U-shaped relationship between corporate ESG performance and analyst attention, suggesting that for most companies, better ESG performance draws more attention from analysts. Columns 8 and 9 demonstrate that the U-shaped link between corporate ESG performance and risk is not significantly moderated by analyst attention. Increased analyst focus attenuates the detrimental effects of ESG performance, flattening the company risk-ESG performance connection curve and moving the inflection point to the right. When corporate ESG performance exceeds 3, improved ESG performance attracts more analyst attention, and analysts' information mining partially eliminates the masking effect of ESG information on potential risks (Feng, H., Ding, C., Yue, W., & Liu, G., 2023). These findings indirectly support that ESG performance can indeed obscure negative information and exaggerate positive information.

Table 5. Mechanic Analysis

	(7)	(8)	(9)
	L.Attention	L.NCSKEW	L.DUVOL
ESG	-1.850***	-0.0553**	-0.0424***
	(0.402)	(0.0245)	(0.0158)
ESG*ESG	0.338***	0.00560*	0.00455**
	(0.0553)	(0.00299)	(0.00196)
Attention		-0.00867**	-0.00403***
		(0.00193)	(0.00141)
Attention*ESG		0.000311	0.000374
		(0.000559)	0.000293
Control	Yes	Yes	Yes
Year	Yes	Yes	Yes
Ind	Yes	Yes	Yes

5. Conclusion

Applying principal-agent and information transmission theories, we have revisited the relationship between company ESG performance and the risk of a stock market fall. Utilizing financial report data from Chinese A-share listed companies from 2009 to 2022, we applied a range of econometric techniques to empirical tests.

Initial findings support the existence of a strong U-Shape correlation between corporate ESG performance and the probability of a stock market crash. This correlation is especially strong for state-owned businesses and businesses in highly polluting industries. Additionally, corporate ESG performance, as a non-financial supplementary information, influences firms' non-financial performance investments through reputation mechanisms and information transparency mechanisms. In contrast, the agency problem rises up as ESG shifting to a more expensive and less attractive idea.

The following policy recommendations are the result of these findings: Businesses must, first and foremost, recognize the polarity and significance of ESG performance, emphasizing the intrinsic incentives for employee behavior and achieving formal and corporate system alignment. This necessitates developing an internal ESG incentive framework tailored to China's unique national context. Second, encouraging ESG practices necessitates a comprehensive approach that blends supportive, flexible management practices with mandatory regulatory disclosure requirements. This will incentivize managed entities to proactively assume ESG responsibilities and make decisions that promote sustained business expansion. Thirdly, the advantages of corporate ESG performance must to be widely recognized. It is crucial to actively promote the development of relevant systems, improve market processes, and make greater use of ESG investments in order to successfully drive corporate behavior.

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