Article

Corporate governance and capital market risk: New evidence from firm-specific measures among Chinese listed companies

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Abstract: This paper empirically analyzes the relationship between corporate governance and capital market risk using A-share listed companies in China's Shanghai and Shenzhen markets from 2008 to 2022 as a research sample. The study finds that corporate governance decreases capital market risk using new risk measurement at the firm level. Further analysis shows that such an effect is more pronounced in the sample of private companies, companies with a higher degree of indebtedness, and companies with a lower concentration of power. This paper's findings help us better understand corporate governance's role in stock risk and provide theoretical support and empirical evidence to improve the stability of the financial market in emerging markets.

Keywords: corporate governance; capital market; stock risk; firm-specific measurement; Chinese listed firms

1. Introduction

In the context of China's sustainable economic growth, corporate governance emerges as a key player in the success and growth of publicly listed companies. China's economic changes and increased global integration since joining the WTO have been significant. Effective corporate governance not only meets regulations and promotes sustainable development but also enhances global competitiveness, attracts investment, improves capital structure, and boosts value creation. The critical elements of equity structure, management incentives, and board dynamics significantly impact capital markets and economic growth. The global financial landscape, with emerging markets like China playing an increasingly prominent role, has undergone significant transformations over the past few decades. China's equity market, one of the largest in the world, has experienced unprecedented growth. However, this growth has been accompanied by unique patterns of capital market volatility and challenges in corporate governance, distinct from those in more developed markets. The peculiarities of the Chinese market, such as its regulatory environment, ownership structure, and market mechanisms, present both opportunities and challenges for investors and policymakers. To date, much attention has been paid to the consequences of stock price risk in Chinese capital market. Less attention has been paid to the driving factors of stock price risk in Chinese capital market.

The concept of corporate governance, while have been extensively studied with developed economies as research objects, requires further exploration within the Chinese setting. Corporate governance refers to the systems by which companies are directed and controlled. It focuses on the relationship between the agents and

shareholders and how it impacts organizational performance and risk management. In China, the prevalence of state-owned enterprises and the unique cultural and legal context add complexity to this dynamic, influencing capital market performance. Recent regulatory reforms and initiatives in China aimed at improving transparency, enhancing the role of boards, and protecting minority shareholders highlight the country's evolving nature of corporate governance. These changes underscore the need for empirical research to assess their impact on market performance and risk.

China's equity market differs from Western countries and is not as developed despite its rapid growth. This market is getting much attention, especially with how well China's stock markets are doing recently. The gap between the owners and the managers in companies, known as the principal-agent problem, gets more prominent because of the lack of information and the risk of managers not acting in the best interest of the shareholders (Fama and Jensen, 1993; Jensen and Meckling, 1976). This situation means shareholders need to take steps to ensure managers' decisions benefit the shareholders, which helps improve the company's value.

In China's early reform era, diminishing government intervention in listed companies was a primary focus. The 1990s saw a shift towards a deeper understanding of corporate governance, emphasizing management incentives, shareholder rights, and board efficiency. The establishment and growth of major stock exchanges in Shanghai and Shenzhen marked a pivotal phase in market evolution despite ongoing governance challenges. The rapid development of China's capital market in the 21st century has highlighted the strategic role of listed companies in resource distribution, with corporate governance emerging as a critical factor in determining their development quality. Strong governance structures enhance operational performance and reduce business risks, thereby boosting competitiveness. Conversely, weak governance may lead to short-sighted decisions harming long-term corporate welfare.

This study aims to examine the impact of corporate governance on the risk-adjusted performance of stocks in China's listed companies, using new composite risk measures. The research will focus on the effects of governance structures on stock risks and performance, with a particular emphasis on risk-adjusted metrics for their intuitiveness and clarity to investors. This approach is advantageous as it provides a comparable baseline for investment funds by considering total risk (Huang et al., 2002). The study seeks to contribute to the body of knowledge by examining the impact of corporate governance structures on the performance of China's capital markets, with a focus on new risk measures. By analyzing the interplay between corporate governance and market performance, this research aims to offer insights into how governance reforms can lead to more stable and efficient markets. Through a comprehensive analysis of China's listed companies, this study will explore the effectiveness of governance structure in mitigating risks associated with stock returns, volatility, and risk-adjusted performance.

Despite the promising aspects, corporate governance in China faces numerous challenges, including high equity concentration and pyramidal holding structures in enterprise groups, which significantly impact market performance. This paper will explore the complexities of corporate governance within China's listed companies, assessing its influence on stock risk and performance adjustments. The aim is to contribute to the ongoing dialogue on corporate governance, providing valuable

insights and recommendations for investors, managers, and regulatory bodies, thereby fostering the sustainable development of China's listed companies in the global economy. The primary research objectives are to ascertain the influence of corporate governance on the returns, volatility, and risk-adjusted performance of a firm's stock.

2. Literature review and theoretical framework

2.1. Corporate governance in listed companies

The academic discourse on corporate governance, a term of significant importance, has extensively discussed its genesis and evolution, with roots traceable to the 1970s in enhancing firms' long-run growth potential in the United States. The term "corporate governance" itself manifests in various forms, including "corporate governance mechanism," "corporate control system," and "corporate governance structure." Despite the lack of a universally accepted definition, scholars have approached the concept from diverse angles, enriching its understanding.

From a structural standpoint, corporate governance is often viewed as the interplay between managers, shareholders' meetings, and the board of directors, with some equating it directly with board governance. In terms of governance systems, it is perceived as an institutional framework encompassing reward and punishment, supervision, coordination, and checks and balances. Institutionally, it has been seen as a system involving auditors, shareholders, and directors, each playing distinct roles. The principal-agent theory perspective treats corporate governance as managing contractual relationships between agents and principals. Lastly, from the standpoint of governance challenges, it primarily addresses issues arising from the interactions among various stakeholders within a company. In 1999, the Organization for Economic Cooperation and Development (OECD) put forward a definition of corporate governance structure as a system that manages and controls a company, outlining the distribution of responsibilities and rights among company participants, setting corporate objectives, and devising means for their realization and operational monitoring.

Philip and Steven (1988) and Barko et al. (2022) pointed out that corporate governance rises from the interactions among senior management, shareholders, the board of directors, and other stakeholders. Zhang (1999) and Cornell and Shapiro (2021) described corporate governance as a mechanism addressing various agency problems within joint-stock companies. This description encompasses the relationships among owners of different elements within enterprises, particularly in terms of residual claim distributions and control rights, thereby influencing the relationship between entrepreneurs and capitalists. After synthesizing these varied perspectives, it becomes evident that corporate governance can be conceptualized narrowly or broadly. In a narrow sense, it involves a comprehensive system with internal and external mechanisms, where shareholders use supervisory and incentive mechanisms to establish principal-agent relations within the company. Broadly, it encompasses the interactions between the company and all relevant stakeholders, as well as related legal norms, management, product markets, and control markets.

First, there is an issue with the ownership structure, often dominated by major shareholders, leading to a lack of balance between shareholders' interests and potential

infringement on minority shareholders' rights. This results in significant shareholders seizing company funds, manipulating profits, and transferring assets. Equity dispersion sometimes leads to unstable control rights and operational inefficiencies. Secondly, the functionality of board directors is limited, primarily due to insider control, where internal directors dominate, hindering adequate supervision over the chairman and general manager. The independence of these directors is also questionable as they are often recommended by shareholders, limiting their supervisory capacity. Lastly, there exists a significant management incentive problem in many listed companies. Incentives are often tied to financial metrics, encouraging market and profit manipulation. The pricing of stock options can lead to undervaluation tactics by management to lower exercise costs or overvaluation to inflate stock prices during exercise periods. These governance challenges underscore the need for more balanced ownership structures, effective board operations, and better management incentives to enhance risk-adjusted performance in China's listed companies.

2.2. Impact of corporate governance on firms' profitability

In examining the influence of corporate governance on the performance of China's listed companies, it becomes evident that the ownership structure, characterized by a considerable proportion of state-owned shares, plays a critical role. This pattern, deeply rooted in the country's longstanding national conditions, exposes enterprises to various preferential policies. These include state-implemented favorable loan and tax return policies tailored for businesses in specific industries. Such initiatives have been mainly instrumental in accelerating the growth of small and medium-sized enterprises, significantly enhancing their profitability and overall performance (He et al., 2022; Ho, 2018; Jin, 2021; Qiu and Yin, 2019).

However, the prevalence of state ownership also brings significant risks. The dominance of legal person shares, often associated with relatively low-profit margins, can lead to a decline in the actual profitability of these enterprises. Similarly, a high proportion of tradable shares is linked to lower profitability. In these scenarios, the scattering of shares among numerous shareholders results in minimal individual influence on corporate operations, leading to limited participation in enterprise supervision and shareholders' meetings. This dilution of ownership and control significantly impairs the governance efficiency of enterprises, ultimately affecting the effective allocation of resources.

The internal structure of equity within these enterprises emerges as a key determinant. In their comprehensive study on 460 listed manufacturing companies, Titman and Wessels (1988) and Zhang and Li (2022) identified eight factors that significantly influence capital structure. Their research, employing factor analysis and linear structure models, unveiled a distinct negative correlation between profit levels and debt ratios, with companies involved in extensive research or bearing high sales costs tending to have lower debt ratios. They also noted a significant negative correlation between the short-term debt ratio and company size.

Another critical aspect is the degree of ownership concentration. A balanced equity distribution among multiple shareholders ensures operational transparency and

is preferable to a highly concentrated or excessively dispersed ownership structure. The case of Vanke, a veteran listed company, exemplifies the challenges of overly dispersed stock ownership. Following its listing, Vanke experienced significant corporate governance events, namely the conflicts "the battle between Jun and Wan" and "the battle between Bao and Wan," which were eventually resolved by regulatory intervention. These events highlighted the adverse effects of excessive equity dispersion and shed light on how managerial teams can exploit such dispersion for corporate control. Chen and Peng (2020) performed descriptive and regression analyses on relevant data for a specific sector of firms. They found a positive relationship between corporate profitability, company size, and the quality of accounting information disclosure. This correlation suggests the need for improvements in board structure and incentive mechanisms to enhance corporate governance and performance in China's listed companies.

2.3. Risk-adjusted performance measurement

Over the past few decades, significant advancements have been made in risk-adjusted performance measurement methodologies. The concept, which began with the Sharpe Ratio, has evolved to incorporate more comprehensive and nuanced approaches, reflecting the complex nature of modern financial markets. For instance, the Modified Sharpe Ratio, proposed by Gregoriou and Gueyie (2003), addresses some of the limitations of the traditional Sharpe Ratio by integrating skewness and kurtosis into risk assessment. This advancement is particularly relevant for the Chinese stock market, which is known for its volatility and asymmetric information distribution.

Further, Fama and French (1993) introduced multi-factor models that have been extensively used to evaluate risk-adjusted returns. Ang et al. (2006) and Blitz and Vliet (2007) also show that stocks with low volatility, high skewness, low kurtosis tend to generate high risk-adjusted returns. These models have been adopted in numerous studies focusing on emerging markets, including China, where traditional CAPM models often fail to capture market dynamics.

More recent studies have introduced new composite risk measures, which combine various risk factors to provide a more holistic view of the risk-return profile of investments. Zhu et al.'s (2020) study utilizes Value at Risk (VaR) and Conditional Value at Risk (CVaR) to assess the risks in China's pilot carbon markets, finding that CVaR is more effective in capturing the risks, especially the tail risks, in these markets. Additionally, it explores the risk spillover effects among the carbon markets of Guangdong, Hubei, and Shenzhen, revealing significant risk spillovers between the Guangdong and Shenzhen markets. Hu and Borjigin (2024) point out that geopolitical risks, economic policy uncertainty, and climate risks (natural disasters) exert a substantial influence on the extent of risk transmission between global equity markets and international energy markets. Hussain and Rasheed (2023) estimate the impact of financial literacy, investor's personality and overconfidence bias on investment decisions by using risk tolerance as a mediator variable and showed that financial literacy, investors' personality, and overconfidence bias are significantly relevant to risk tolerance and investment decisions.

Additionally, the increasing focus on ESG (Environmental, Social, and

Governance) factors in investment decision-making has developed risk-adjusted performance measures that integrate these aspects. Gupta and Chaudhary (2023) investigate whether investing in ESG-compliant companies is more beneficial in developed and emerging markets, using risk-adjusted criteria and the EGARCH model to compare ESG indices against broad market indices. The findings reveal that ESG indices generally offer better risk-adjusted returns and more downside risk protection, suggesting ESG-compliant investments are prudent. However, the performance of ESG indices is relatively similar between developed and emerging markets.

In conclusion, the literature on risk-adjusted performance measurement offers a rich array of methodologies and perspectives. These studies not only provide a theoretical foundation for evaluating stock performance but also offer practical insights for investors and policymakers in the context of China's dynamic market environment.

2.4. Relevant theories

The signaling theory, introduced by American economist Spence in 1974, addresses the behavior of market participants in situations of information asymmetry. It emphasizes the role of specific signals sent by the signal sender (often the seller) to the signal receiver (the buyer) to reduce the degree of information asymmetry and break through it. In the capital market context, information asymmetry often leads to "adverse selection," severely affecting market trading efficiency and sometimes halting trading activities. To mitigate these challenges, signaling theory advocates transmitting credible signals from the informed party to the less-informed party to facilitate effective trading outcomes (Joseph, 2000; Spencer, 2002; Welch and Yoon, 2022). In terms of corporate governance, this theory suggests that management, possessing more intimate knowledge of a company's operations than external investors, can influence investor perception and confidence through strategic signaling. This informational content is particularly relevant when evaluating the risk-adjusted performance of stocks, as the signals from corporate management can significantly impact investors' perceptions of risk and value, thereby affecting stock performance.

On the other hand, the agency theory, a fundamental concept grounded in the agency conflict of listed companies, plays a crucial role in understanding the conflicts and interests in corporate governance. It posits that a divergence of interests exists between managers and shareholders and between controlling and minority shareholders (Cvijanović et al., 2022; Jensen and Meckling, 1976). The theory highlights the separation of management and ownership, with managers focused on fixed salaries and short-term gains and shareholders concerned with dividends and long-term capital appreciation. This divergence can lead to conflicts, especially when managers engage in short-term speculation at the expense of shareholders' long-term interests. The theory also underscores the conflict between controlling and minority shareholders, where the actions of the former can negatively impact the latter. From a corporate governance standpoint, agency theory suggests that dividend payments can align interests by limiting cash flow for short-term speculation and providing returns to shareholders, thus reducing agency costs.

Moreover, the salience theory, which means decision-makers' attention is drawn to the most unusual attributes of the options they face because of these cognitive limitations (Bordalo et al., 2012; Kontek, 2016; Treepongkaruna et al., 2022). These salient attributes are consequently overweighted in their decisions, and non-salient attributes are neglected. They propose a novel theory of choice under risk that formalizes such salient thinking and demonstrate that salience can account for fundamental puzzles in decision theory.

These theories, the signaling theory, the agency theory, and the salience theory, are not just theoretical constructs, but they provide a robust framework for understanding and analyzing the real-world dynamics of corporate governance practices in China's listed companies. Particularly, they shed light on the transmission of information and the alignment of interests between different stakeholders, and how these factors influence the risk-adjusted performance of stocks. By applying these theories, we can gain a deeper understanding of the dynamics in the Chinese stock market and how corporate governance practices shape the performance of listed companies. This application of theory to practice is the cornerstone of our research, providing a deeper understanding of the Chinese stock market and its corporate governance practices.

3. Empirical research design

3.1. Population and samples

This study examines the relationship between the levels of a firm's corporate governance and the performances of its stocks for all public-listed companies in China. The data on corporate governance levels is obtained from SynTao Green Finance, STαR ESG Database, and its ESG Risk Radar System, while the stock data is collected from the CSMAR database. The sample covers 2008 to 2022.

Our research methodology involves a systematic process. At the end of each month, companies are categorized into five or ten portfolios based on their corporate governance levels during that month, which we refer to as the formation month. Subsequently, we conduct a comprehensive analysis of the returns, volatilities, and risk-adjusted performances of all the portfolios in the subsequent periods, known as the analysis periods.

3.2. Dependent variable calculation: Novel firm-specific stock risk (NFSR)

Our construction of the dependent variable follows the computation procedure shown below. First, to compute the stock return of each stock, this study will use the gross holding period return as the return indicator. The holding period return is calculated as:

$$R_{i,t} = \frac{P_{i,t} + D_{i,t} - P_{i,t-1}}{P_{i,t-1}}, \tag{1}$$

where $P_{i,t-1}$ and $P_{i,t}$ are the stock prices of the beginning and end of the period, respectively. $D_{i,t}$ is the possible dividend income during the period, and $R_{i,t}$ is the gross holding period return.

Then, to estimate the risk of investing in stocks, this study uses the variance, skewness, and kurtosis as the volatility indicators, and the total risk based on these three indicators can be defined as Hybrid Variance (HV). We compute HV to be:

$$HV = M_2 - \frac{RP}{3\mu}\left[M_3 - \frac{RT}{4\mu}M_4\right], \tag{2}$$

where $RP = -\mu U'''(\mu)/U''(\mu)$ is the coefficient of relative prudence; $RT = -\frac{\mu U''''(\mu)}{U'''(\mu)}$ is the coefficient of relative temperance (Wang et al., 2022).

This study finally evaluates the risk-adjusted performance of stock by the abnormal returns estimated from the following regressions:

$$\begin{aligned} R_{i,t} &= \alpha_{i,t} + \beta_{i,1}R_{m,t}, \\ R_{i,t} &= \alpha'_{i,t} + \beta'_{i,1}R_{m,t} + \beta'_{i,2}R_{m,t}^2 + \beta'_{i,3}R_{m,t}^3, \end{aligned} \tag{3}$$

$$\begin{aligned} M_2 &= E\left[R_{i,t} - E[R_{i,t}]\right]^2, \\ M_3 &= E\left[R_{i,t} - E[R_{i,t}]\right]^3, \\ M_4 &= E\left[R_{i,t} - E[R_{i,t}]\right]^4, \end{aligned} \tag{4}$$

where $\alpha_{i,t}$ is the abnormal return under the CAPM assumption, while $\alpha'_{i,t}$ is the abnormal return considering skewness and kurtosis. By definition, NFSR could be measured simply by the high moments risk components, such as M_4, or the residual variation of return after considering the systematic risk, such as the residual variation of Equiation (3).

3.3. Independent variable calculation: Corporate governance (CG)

As per Zhou et al. (2020) and Ding et al. (2022), we use principal component analysis to create a comprehensive corporate governance index. This index is based on various factors, including board supervision, management incentives, and more. For instance, we utilize the amount of compensation earned by executives as a percentage of share value held by executives to represent the management team's incentive strengthness. We then calculate the number of independent directors as a percentage of the board size to quantify the degree of management supervision by insiders. Next, we adopt two ratios, namely the ratio of shares in institutional investors' hands and the cumulative ratio of shares held from the second to the fifth largest shareholders, for the aim of measuring the degree of management supervision by outside shareholders. We continue to construct a dummy for which we set its value to 1 if the CEO assumes a dual role as the chairperson of the board. This binary variable has implications on the CEO's power in the proces of making critical corporate decisions. Finally, we employ principal component analysis to create a comprehensive index of corporate governance relying on the above mentioned indicators. The score sourced from the first principal component is defined as the proxy for the quality of corporate governance. Moreover, we divide all sample firms into two groups---one group consisting of firms whose corporate governance score falls below the median of the whole sample, whereas the other group consisting of those with a higher-than-median corproate governance score.

Our control variables include (1) Nature of ownership: a state-owned company's ownership is assigned a value of 1; otherwise, it is 0. (2) Balance Sheet Ratio. The ratio of the company's total liabilities to total assets defines the gearing ratio. (3)

Executive shareholding ratio is the ratio of executive shareholding to total shares. (4) Board size is the number of people on the company's board of directors. (5) Growth, measured by Tobin's Q. (6) Profitability, measured by the company's gross operating margin. (7) Asset structure is the company's current asset ratio as a measure. (8) Enterprise size, which is the company's total assets. (9) Gender: labeled as one when the CEO's gender is male, otherwise recorded as 0. (10) Age, measured as the CEO's actual age.

3.4. Regression specification

This paper constructs the following model to test the question in this paper.

$$NFSR_{i,t} = \alpha + \beta_{i,1}CG_{i,t} + \beta_{i,2}CV_{i,t} + FE_i + \mu_{i,t}$$

In the above model, $NFSR_{i,t}$ denotes the level of novel firm-specific stock risk, and $CG_{i,t}$ denotes the level of corporate governance. $CV_{i,t}$ is the control variable in this paper, which includes firm size (SIZE), debt (LEV), total net asset margin (ROA) board size (BOARD), and nature of ownership (STATE). This paper also controls for fixed effects (*FE*), specifically firm-fixed effects and year-fixed effects.

4. Empirical results and analysis

4.1. Descriptive statistics

The descriptive results of the variables show that the mean value of NFSR is 20.15, with a minimum value of 1.24 and a maximum value of 61.72, which indicates that the level of ESG disclosure varies between companies, with some companies varying significantly from one another. The mean value of CG was 26.80, with a minimum value of 0 and a maximum value of 137, suggesting that the level of analyst attention also varies across firms and that the level of analyst attention may vary significantly across firms. Below, **Table 1** presents the descriptive statistics.

Table 1. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
NFSR	6888	20.146	6.51	1.24	61.722
CG	6888	26.802	21.409	0	137
SIZE	6888	22.969	1.311	19.198	28.509
LEV	6888	0.463	0.22	0.008	8.009
ROA	6888	0.047	0.125	−3.911	7.445
BOARD	6888	2.187	0.206	1.099	2.89
BOTH	6888	0.202	0.401	0	1
SR	6888	0.085	0.185	0	5.91
STATE	6888	0.52	0.5	0	1

Next, we conducted the Pearson correlation analysis for the main variables used in this paper, and the corresponding results are in **Table A1** in Appendix. The correlation coefficient of NFSR and CG is −0.085.

4.2. Benchmark multiple regression analysis

Table 2 reports the results of testing model (1), with the explanatory variable being the extent of NFSR and the explanatory variable being CG. The results in column (1) show that the estimated coefficient of CG is −0.02, which is significantly negative at the 1% level ($t = 5.49$), which indicates that corporate governance is negatively related to corporate stock risk. To prevent other factors from confounding the results, we control for other variables such as firm size (SIZE) in this paper, and the results are shown in column (2). The estimated coefficient of CG is still significantly negative at the 1% level ($t = 3.74$), which indicates that corporate governance is significantly and negatively related to corporate stock risk. These estimation results mean that firms with better corporate governance have a lower level of equity risk.

Table 2. Multiple regression results.

	(1)	(2)
	NFSR	NFSR
CG	−0.0203***	−0.0146***
	(5.49)	(3.74)
Cons	19.60053	6.869948
	(184.35)	(2.21)
CV	No	Yes
FE	Yes	Yes
F Statistics	30.13	7.19
R^2	0.8042	0.8051
No. of obs.	6888	6888

Notes: *, **, *** represent significance at the 10%, 5% and 1% levels, respectively, and CV is a control variable, specifically including the range of control variables described previously. The standard error clustered at the firm level.

4.3. Further analysis

Our initial focus is on business ownership. Relying on a robust body of existing research, we establish that the ownership structure of firms has a profound impact on a range of business behaviors and outcomes, including corporate governance (Huang et al., 2022; Wu, 2012). To ensure the validity of our findings, we applied our benchmark model to a carefully selected subsample of SOEs and private firms, aiming to further analyze the impact of corporate governance on NFSR. The regression results, presented in **Table 3**, provide a clear picture. The estimated coefficient of −0.0280 for private firms is significantly higher than that of state-owned firms at the 1% significance level, and is notably positive at the 1% level ($t = 5.60$). This robustly indicates that corporate governance has a more significant impact on private firms than on state-owned firms, a finding that can be confidently relied upon.

Table 3. Examining the impact of business ownership.

	(1)	(2)
	NFSR	**NFSR**
	State-owned	**Private**
CG	−0.0019	−0.0280***
	(−0.30)	(−5.60)
Cons.	4.9568	3.6408
	(0.94)	(0.92)
CV	Yes	Yes
FE	Yes	Yes
F Statistics	2.27	9.98
R^2	0.7942	0.8021
No. of obs.	3566	3288

Notes: *, **, *** represent significance at the 10%, 5% and 1% levels, respectively, and CV is a control variable, specifically including the range of control variables described previously. The standard error clustered at the firm level.

We next draw attention to the concentration of corporate power. The degree of concentration of power in a business is also an important influencing factor in formulating and developing a business strategy. The degree of power concentration in different firms can affect firm performance differently (He et al., 2011; Jensen and Meckling, 1976; Jiang et al., 2020). Based on the results in **Table 4**, we found that the estimated coefficient of -0.0151 for firms with low power concentration is more significant than that of firms with high power concentration at the 1% significance level. Corporate governance is significantly and negatively related to firms with low power concentration, which means that the effect of corporate governance is more significant for firms with low power concentration than for firms with high power concentration.

Table 4. Examining the impact of corporate power concentration.

	(1)	(2)
	NFSR	**NFSR**
	High concentration of power	**Low concentration of power**
CG	−0.0049	−0.0151***
	(0.64)	(3.24)
Cons.	−3.4341	9.7956
	(−0.51)	(2.59)
CV	Yes	Yes
FE	Yes	Yes
F Statistics	3.35	4.91
Adjusted R^2	0.8410	0.8085
No. of obs.	1283	5453

Notes: *, **, *** represent significance at the 10%, 5% and 1% levels, respectively, and CV is a control variable, specifically including the range of control variables described previously. The standard error clustered at the firm level.

Finally, we explore the impact of corporate indebtedness. Operating with debt is a standard business strategy used by modern companies. It can help finance the enterprise and provide financial support for further development, but it also has the risk of breaking the capital chain for the enterprise (Li, 2022). A company's debt situation can communicate to the market that it is in debt. The debt profile of a firm can signal to the market whether the firm can grow steadily and is a vital prerequisite for studying capital structure. Therefore, we have a different approach to the debt structure. We have analyzed firms with different levels of debt. Based on the results in **Table 5**, we find that the estimated coefficient for highly indebted firms is −0.0148 at the 5% level of significance and −0.0094 at the 10% significance level for low-indebted firms. Corporate governance is significantly and negatively related to highly indebted firms, which means that the effect of corporate governance is more significant for highly indebted firms than for less indebted firms.

Table 5. Examining the impact of corporate indebtedness.

	(1)	(2)
	NFSR	NFSR
	High debt	Low debt
CG	−0.0148**	−0.0094*
	(2.38)	(1.78)
Cons.	7.1476	4.1990
	(1.38)	(0.86)
CV	Yes	Yes
FE	Yes	Yes
F Statistics	3.74	3.05
Adjusted R^2	0.8290	0.8062
No. of obs.	3369	3353

Notes: *, **, *** represent significance at the 10%, 5% and 1% levels, respectively, and CV is a control variable, specifically including the range of control variables described previously. The standard error clustered at the firm level.

5. Conclusion

This paper provides evidence to support the effect of corporate governance on firm stock risk from a micro-empirical perspective. We directly contribute to the extant literature on the effect of corporate governance and enrich the growing strand of literature related to the driving factors of capital market risk in emerging country. The study concludes that corporate governance is essential in decreasing stock risk that the publicly listed companies are exposed to. Therefore, on the one hand, the Chinese government should pay attention to the cultivation of talent who can take up the position of "corporate governance," improve the level of corporate governance, monitor the financial behavior of managers and shareholders, and actively use corporate governance as a functionary monitoring mechanism to enhance the comprehensive strength, competitiveness and stable development of China's financial market. On the other hand, companies should recognize the importance of corporate governance to their strategic development and financial risk. Corporate governance is

a crucial requirement for reducing their financial market risk. Besides, policymakers should take advantage of the corporate governance as a formal institutional to enhance the stability of capital market. Finally, this paper did not assess the impact of corporate governance with different industry traits on stock risk. Future research could revisit the impact of corporate governance on stock risk by considering the individual backgrounds of different industries and regional heterogeneity.

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Appendix

Table A1. Correlation analysis.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) NFSR	1.000								
(2) CG	−0.085	1.000							
(3) SIZE	0.445	0.238	1.000						
(4) LEV	0.155	−0.098	0.453	1.000					
(5) ROA	−0.020	0.185	−0.065	−0.345	1.000				
(6) BOARD	0.101	0.040	0.222	0.106	−0.013	1.000			
(7) BOTH	−0.105	0.060	−0.151	−0.103	0.057	−0.189	1.000		
(8) SR	−0.171	0.086	−0.302	−0.238	0.077	−0.193	0.226	1.000	
(9) STATE	0.221	−0.092	0.357	0.238	−0.069	0.281	−0.304	−0.456	1.000