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Research on the Impact of Independent Directors' Tenure on Stock Price Crashes

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Abstract: *This paper empirically examines the impact of financial independent directors' tenure on stock price crashes, using listed companies from 2014 to 2020 as the research sample. The empirical results show a significant positive correlation between independent directors' tenure and stock price crashes. Moreover, compared to state-owned enterprises, the tenure of financial independent directors in non-state-owned enterprises has a more pronounced positive impact on stock price crashes. Further research reveals that the number of board meetings attended by independent directors does not effectively mitigate the risk of stock price crashes.*

Keywords: *Independent Directors' Tenure, Independent Directors' Attendance, Stock Price Crash*

1. Introduction

The independent director system is a crucial mechanism in corporate governance and is regarded as an important tool for alleviating agency problems. Independent directors primarily supervise the actual controllers and major shareholders of a company, thus playing a key role in protecting the interests of minority shareholders. Since the introduction of the independent director system in China in 2001, the China Securities Regulatory Commission (CSRC) has issued the "Guidance on Establishing an Independent Director System in Listed Companies," which mandates that all listed companies an independent director system.

Scholars have conducted in-depth analyses of various aspects, such as the proportion of directors, their place of employment, attendance frequency, gender, and network position. However, no consensus has been reached, which may be due to insufficient consideration of other important characteristics of independent directors, with tenure being one such feature. As China's economy and society continue to develop, the health of financial markets plays an increasingly important role in the country's financial system and even the broader economic system.

The factors influencing stock price crashes, along with how to prevent them, have become key research topics, and the independent director system is one of the important influencing factors. a review of the existing literature reveals that few scholars have analyzed the impact of independent directors' tenure on stock price crashes. The role of independent director tenure in stock price crashes is topic that warrants further investigation.

2. Literature Review

2.1 Governance Effects of the Independent Director System

Some scholars have studied the independent director system as a whole. Beasley (1996) found that the implementation of the independent director system can effectively reduce managerial misconduct. Wang Yuetang et al. (2006)[1] and Wang Yanfeng et al. (2024)[2] found a significant positive correlation between independent directors and corporate performance. Li Weian et al. (2014) discovered that independent directors can constrain the abuse of power by newly appointed managers and effectively suppress the influence of CEO succession on strategic changes. Qian Liping et al. (2023) [3] found that network structure of independent directors in listed companies is significantly positively correlated corporate innovation performance. Han Hongxiang et al. (2023) found that the resignation of independent directors has a negative impact on corporate performance.

Other scholars have explored the governance effects of independent directors from the perspective heterogeneity. Zahra et al. (1989) believed that the various characteristics of independent directors,

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as education, professional background, and work experience, can bring valuable resources and advisory benefits to companies, thus enhancing corporate performance. Ji Shangzhou et al. (2023) [4]confirmed that professor-independent directors can leverage their academic networks to provide valuable information to companies, thereby influencing board investment decisions. Joshua T. White et al. (2014) found that when independent directors come from academic backgrounds, market reactions are more positive. Zhang Aiping et al. (2020) found that the average age of independent directors has a positive impact on company performance, while education does not. Qiu Zhaoxiang et al. (2012) found that personal characteristics such as gender, education, professional background, multiple board memberships, age, and international experience of independent directors do not significantly affect company performance; only legal expertise, accounting expertise, and management experience have significant performance effects. Xie Tingting et al. (2024)[5] found that information technology independent directors can promote corporate digital transformation by reducing managerial short-termism and financing constraints.

2.2 Factors Influencing Stock Price Crashes

A stock price crash is a severe economic phenomenon that not only affects the company's operations and investors' personal wealth but also threatens the healthy development of capital markets. Based on this, scholars have studied the factors influencing stock price crash risks from different perspectives. In terms of internal corporate governance, Efraim et al. (2010) found that stock-based compensation systems lead to stock overvaluation, increasing the risk of a stock price crash. Chen Xiongbing et al. (2019) confirmed that managerial power is significantly positively correlated with the risk of a stock price crash, as managers with greater power have more motivation and ability to conceal bad news, thereby increasing the crash risk. Peng Qifa et al. (2022) found that managerial overconfidence increases the risk of a stock price crash, with the effect being more significant in private enterprises. Li Shixin et al. (2023) found that executive shareholding induces opportunistic behavior among executives to meet performance targets, thereby increasing the risk of a stock price crash, while high-quality internal controls can mitigate the positive correlation between executive shareholding and stock price crashes. Zhou Lei et al. (2024)[6] found that executive compensation adjustments can significantly reduce stock price crash risks, with accounting information quality serving as a partial mediator between the two.

In terms of external corporate governance, Wan Dongcan (2015) found that higher audit fees reduce the risk of a stock price crash. Wu Xiaohui et al. (2019)[7] confirmed that institutional shareholding is significantly positively correlated with stock price crash risk. Zhang Xinmin et al. (2022)[8] found that hidden goodwill impairment exacerbates the risk of a stock price crash, but high-quality internal controls can mitigate this risk. Xue Shuang et al. (2022) found a significant negative correlation between accounting firm professional liability insurance expenses and stock price crash risk. Xiao Qingjing (2023) confirmed through a fixed-effects panel model that both external auditing and internal controls inhibit stock price crashes, and the two have complementary effects. Luo Xiying et al. (2023) confirmed that ESG is negatively correlated with stock price crash risk, with internal controls playing a mediating role between the two. Wang Yuli et al. (2024) found that tax regulation significantly reduces the risk of stock price crashes because standardized tax enforcement reduces corporate tax avoidance behavior, thereby lowering crash risks.

2.3 The Impact of Independent Directors on Stock Price Crashes

Rosenstein et al. (1990) found that external directors have a positive impact on stock prices. Fich (2005) found that if a company appoints the CEO of another company as an external director, the impact on stock prices is even more positive. Liang Quanxi et al. (2016) [9]found that after the introduction of the independent director system, the risk of stock price crashes in listed companies significantly decreased. Moreover, compared to companies without dissenting independent directors, those with dissenting independent directors experienced even lower crash risks, indicating that the independence of independent directors is more effective in preventing stock price crashes than the independence of management. Zheng Yuxin et al. (2019) found that independent directors with media backgrounds reduce stock price crash risk by supervising executives and improving internal and external information communication. Xu Xiaojun (2020)[10] found that the less independent the independent directors are, the higher the stock price crash risk, while their expertise exacerbates this risk. Cao Feng et al. (2024)[11] found that rookie independent directors increase the risk of stock price crashes, mainly because rookie directors are less likely to raise objections, reducing the quality of

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information disclosure.

In summary, scholars have studied the governance effects of independent directors, the factors influencing stock price crashes, and the impact of independent directors on stock price crashes from various angles, yielding rich findings. However, few scholars have explored the impact of independent director tenure on stock price crashes from this specific perspective.

3. Theoretical Analysis and Hypothesis Development

According to agency theory, the conflict between shareholders and management is a key factor leading to stock price crashes. Managers may act in their own interest, which could harm the company's well-being. Therefore, company owners need to implement mechanisms to restrain managerial behavior and avoid moral hazard and adverse selection. The independent director system helps balance managerial power and reduces the likelihood of stock price crashes caused by management intentionally concealing bad news, thereby protecting shareholders' interests.

The tenure of independent directors is a crucial characteristic of the independent director system. The longer an independent director serves, the more familiar they become with other board members and the company's affairs. However, particularly when facing high compensation, independent directors may be motivated by personal interests, potentially forming inappropriate alliances with shareholders, violating their fiduciary duties, and conspiring with management to the detriment of minority shareholders. Based on this, the following hypothesis is proposed:

Hypothesis 1:

Independent director tenure is significantly positively correlated with stock price crashes.

The differences in ownership structures between state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs) lead to variations in corporate governance mechanisms, both internally and externally. First, SOEs bear greater social responsibilities, such as employment and social stability, which attracts more media and public attention. This results in greater external supervision. Additionally, SOEs face more internal pressures and regulatory constraints, limiting the operational flexibility of executives and reducing opportunities to profit by concealing bad news. As a result, the supervisory role of independent directors is weakened, regardless of their tenure.

In contrast, non-SOEs are more profit-driven and receive less public scrutiny than SOEs. This creates greater motivation for longer-serving independent directors to collude with management. Furthermore, SOE executives are often government officials, whose political prospects may be more important than other personal interests, leading to stronger self-restraint. Based on this analysis, SOE executives are less likely to collude with independent directors than their non-SOE counterparts. Therefore, the following hypothesis is proposed:

Hypothesis 2:

Compared to SOEs, independent director tenure in non-SOEs has a significantly positive impact on stock price crashes.

4. Research Design

4.1 Data Sources and Sample Selection

To mitigate the impact of the global COVID-19 pandemic on corporate stock prices from 2020 to 2022 and highlight the effectiveness of micro-level governance, this study selects publicly listed companies from 2014 to 2020 as the initial research sample. To avoid interference from outlier data, the following data processing steps are taken: (1) remove financial and insurance companies; (2) eliminate samples with missing data; (3) exclude ST (special treatment) listed companies; (4) discard samples with less than 30 weeks of annual weekly return data; (5) Winsorize continuous variables at the 1% and 99% percentiles to eliminate outliers. After this data processing, a final sample of 7,551 observations is obtained. The data for this study primarily comes from the Guotai'an Database and the Wind Database, while the internal control index is sourced from the Dibo Database.

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4.2 Variable Definition

4.2.1 Dependent Variable: Stock Price Crash Risk

Drawing on the approaches of Chen et al. (2001) and Hutton et al. (2009), the study employs the negative return skewness (NCSKEW) and the downside risk to upside risk ratio (DUVOL) as measures of stock price crash risk.(As shown in Table 1) The risk of a stock price crash is calculated using the following methods:

First, annual regressions are conducted using the weekly data of individual stock i for Model (1), and the stock-specific weekly returns $W_{i,t}$ are calculated based on the residuals.

$$r_{it} = \alpha_i + \beta_1 r_{M,t-2} + \beta_2 r_{M,t-1} + \beta_3 r_{M,t} + \beta_2 r_{M,t+1} + \beta_2 r_{M,t+2} + \varepsilon_{i,t} \quad (1)$$

Among them, The cash dividend reinvestment yield for individual stock i in week t is represented by $r_{i,t}$; $r_{M,t}$ is the weighted average weekly capital yield of all stocks in the corresponding market based on their market capitalization in t weeks.; Excluding the impact of non-simultaneous transactions, add lagged and leading terms of the market return rate r_M to model (1). $\varepsilon_{i,t}$ is the residual term. $W_{i,t} = Ln(1+\varepsilon_{i,t})$ represents the unique weekly return rate of a specific stock.

Secondly, the measure of stock price collapse risk is constructed based on $W_{i,t}$.

(1) The negative skewness coefficient of returns, NCSKEW:

$$NCSKEW_{i,k} = -\frac{[n(n-1)^{3/2}\sum W^3_{i,k}]}{[(n-1)(n-2)(\sum W^2_{i,k})^{3/2}]} \quad (2)$$

(2)The fluctuation ratio of returns, DUVOL.

$$DUVOL_{i,k} = \log\frac{[(n_u-1)\sum_{down} W^2_{i,k}]}{[(n_d-1)\sum_{up} W^2_{i,k}]} \quad (3)$$

In Model (2), n represents the number of trading weeks in a year for stock i. In Model (3), n_d and n_u respectively represent the number of weeks where the weekly return of stock i is higher or lower than the annual average return.

4.2.2 Explanatory Variable: Tenure of Independent Directors

Drawing on previous research, the number of years a financial independent director has served is used as the measurement indicator(As shown in Table 1).

4.2.3 Control Variables

Table 1 Variable definition

Type	Variable name.	Symbol	Variable definition
Dependent variable	Negative skewness coefficient.	NCSKEW	Please refer to model (2) for specific calculations.
	Fluctuation ratio of income.	DUVOL	Please refer to model (3) for specific calculations.
Explanation of Variables	Compensation of Financial Independent Directors	lnfrq	Number of Years Served by Financial Independent Directors
Control variables.	Monthly average excess turnover rate.	DTURN	Difference between the monthly turnover rate of stock i in year t and the monthly turnover rate in year t-1.
	Annual weekly return rate.	RET	Average weekly return rate of stock i in a specific week of year t.
	Annual weekly rate of return standard deviation	SIGMA	Annual standard deviation of the specific weekly return rate of stock i in year t.
	Asset-liability ratio	LEV	Total liabilities/total output value.
	Company size	SIZE	Natural logarithm of the total assets of the company.
	Growth potential	GROWTH	Growth rate of the main business income.
	Percentage of shares held by the largest shareholder	SDS	Percentage of shares held by the largest shareholder.
	Board size	lnS	Natural logarithm of the number of directors on the board of the company.
	Net asset net profit margin	ROE	Net profit/total shareholder equity.

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Referencing the studies of Gong Yifei (2020), Zheng Chunmei et al. (2021), and Wang Huacheng et al. (2014), this paper controls for the following factors: monthly average excess turnover rate (dturn), annual weekly return of the stock (ret), standard deviation of the company's annual weekly return (sigma), debt-to-asset ratio (lev)), company size (size), growth potential (growth), shareholding ratio of the largest shareholder (sds), board size (lns), and return on equity (ROE)(As shown in Table 1).

4.3 Research Model

To validate Hypothesis 1, regression model (4) is established, with (NCSKEW) and (DUVOL) for company i in year t .

$$\text{Crash}_{it} = \beta_0 + \beta_1 \text{lnfrq}_{i,t-1} + \beta_2 \text{Controls}_{i,t-1} + \sum Year + \sum ind + \varepsilon_{i,t-1} \quad (4)$$

To validate Hypothesis 2, regression analysis of Model 4 will be conducted separately for state-owned enterprises and non-state-owned enterprises.

4.4 Empirical Results and Analysis

4.4.1 Descriptive Analysis

After the data collection and processing, the descriptive statistics for the main variables are shown in Table 2. The skewness of negative returns (NCSKEW) and the ratio of return volatility (DUVOL) have means of -0.321 and -0.233, respectively, indicating a small difference between them and an overall negative trend. The large range between the maximum and minimum values suggests significant differences in stock price crash risks among companies. The maximum value for the term of independent directors (lnfrq) is 4.615, while the minimum is 0.000, with a standard deviation of 0.938, indicating a considerable disparity in the tenure of independent directors in listed companies in China.

Table 2: Descriptive Statistics

VarName	Obs	Mean	SD	Min	Max
NCSKEW	7551	-0.321	0.775	-5.170	4.342
DUVOL	7551	-0.233	0.710	-3.202	3.681
lnfrq	7546	3.195	0.938	0.000	4.615
dturn	7551	46.487	36.848	1.385	355.998
ret	7551	-0.002	0.003	-0.005	0.002
sigma	7551	0.000	0.995	-7.789	10.321
lev	7551	0.461	0.200	0.009	0.996
size	7551	22.589	1.306	16.000	28.223
growth	7551	0.450	7.099	-1.000	431.235
sds	7551	33.404	14.626	3.620	89.990
lns	7551	2.135	0.196	1.099	2.890
roea	7551	0.009	1.088	-50.082	2.324

4.4.2 Regression Results Analysis

The regression results for Hypothesis 1 are presented in Table 3 (Total Sample). The results indicate that the tenure of independent directors (lnfrq) is significantly positively correlated with the stock price crash indicators NCSKEW and DUVOL at the 10% level, thus supporting Hypothesis 1. This suggests that a longer tenure of independent directors not only fails to mitigate stock price crashes but rather increases the risk of such crashes. This may be attributed to the fact that a longer tenure allows independent directors to become more familiar with the management, facilitating "collusion or rent-sharing." This could explain why regulations in China stipulate that independent directors cannot serve more than six years on the board of a single company.

The regression results for Hypothesis 2 are shown in Table 3 (State-Owned Enterprises Group and Non-State-Owned Enterprises Group). The findings reveal that, within the State-Owned Enterprises Group, the tenure of independent directors (lnfrq) is not significantly correlated with the stock price crash indicators NCSKEW and DUVOL, indicating no significant relationship between independent director tenure and stock price crashes in state-owned enterprises. Conversely, in the Non-State-Owned Enterprises Group, the tenure of independent directors (lnfrq) exhibits significant positive correlations with the stock price crash indicators NCSKEW and DUVOL at the 1% and 5% levels, respectively.

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This suggests that in non-state-owned enterprises, a longer tenure of independent directors correlates with an increased risk of stock price crashes, thereby validating Hypothesis 2.

Table 3: Regression Analysis of Key Variables

	Total sample		State-owned enterprise group		Non-state-owned enterprise group	
	(1)	(2)	(1)	(2)	(1)	(2)
VARIABLES	NCSKEW	DUVOL	NCSKEW	DUVOL	NCSKEW	DUVOL
lnfrq	0.0167*	0.0147*	-0.0240	0.00278	0.0316***	0.0271**
	(0.00940)	(0.00818)	(0.0172)	(0.0153)	(0.0118)	(0.0109)
Control variables	Control	Control	Control	Control	Control	Control

4.4.3 Robustness Test

To examine the robustness and reliability of the results, this study employed two methods: first, adjusting the budget interval for stock price crash risk by lagging the crash risk indicator by one period; second, incorporating a leading indicator in the model. According to the regression results presented in Table 4, the findings are consistent with the original results, indicating that the initial outcomes are credible.

Table 4: Robustness Test

	Change the prediction interval for stock price crash risk		Instrumental variables.	
VARIABLES	NCSKEW	duvol	NCSKEW	duvol
lnfrq	0.0166*	0.0192**	0.490***	0.651***
	(0.00933)	(0.00903)	(0.136)	(0.135)
duvolt-1		-0.154***		
		(0.0129)		
NCSKEWt-1	0.299***			
	(0.0380)			
Control variables	Control	Control	Control	Control

5. Whether the attendance of independent directors inhibits stock price crashes

The attendance frequency of independent directors can effectively reflect their level of effort (Dong Guoping et al., 2023) and can significantly enhance company value (Chou et al., 2013). To examine the impact of independent directors' attendance frequency, their tenure, and stock price crashes, models (5) and (6) were constructed, replacing the dependent and independent variables in model (4). The variable lnattende represents the natural logarithm of the average number of board meetings attended by financial independent directors per year.

The results presented in Table 5 (Full Sample) indicate that independent director tenure is positively correlated with independent directors' attendance frequency at the 1% level. This suggests that compensation is positively related to the effort level of independent directors, consistent with prior research. According to the findings in Table 5, independent directors' attendance frequency (lnattende) shows a significant positive correlation with the stock price crash indicators NCSKEW and DUVOL, demonstrating a positive relationship in the non-state-owned enterprise sample, while the correlation in the state-owned enterprise group is positive but not significant.

Table 5: Independent Directors' Attendance Frequency and Stock Price Crashes

	Total sample			Non-state-owned enterprise group		State-owned enterprise group	
	(1)	(2)	(3)	(1)	(2)	(1)	(2)
VARIABLES	lnattendance	NCSKEW	duvol	NCSKEW	duvol	NCSKEW	duvol
lnfrq	0.329***						
	(0.00892)						
lnattendance		0.0556***	0.0286*	0.0817***	0.0367**	0.0241	0.0105
		(0.0178)	(0.0150)	(0.0224)	(0.0185)	(0.0309)	(0.0270)
Control variables	Control	Control	Control	Control	Control	Control	Control

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6. Conclusion

This study uses a sample of listed companies from 2014 to 2020 to empirically examine the impact of independent directors' tenure on stock price crashes. The findings indicate a significant positive correlation between the tenure of independent directors and the risk of stock price crashes; that is, longer tenures of independent directors are associated with higher risks of stock price crashes. Based on an analysis of the ownership structure of Chinese enterprises, it is found that in non-state-owned enterprises, the tenure of independent directors shows a significant positive correlation with stock price crashes, whereas in state-owned enterprises, the relationship is positive but not significant. Further investigation reveals that although the compensation of independent directors is significantly positively correlated with their attendance frequency, the frequency of attendance does not effectively mitigate stock price crashes; instead, it appears to have a facilitating effect. This research provides important insights for further regulating the system of independent directors.

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3) Guangzhou Huashang College 2022 Quality Engineering Project: "Excellence in Management Accounting Talent Training Experimental Class" (HS2022ZLGC13)

References

*[1] Wang Yuetang, Zhao Ziye, Wei Xiaoyan. Does Board Independence Affect Company Performance? *Economic Research*, 2006, (05): 62-73.*

*[2] Wang Yanfeng, Guo Ting. The Effectiveness of Independent Directors on the Performance of Companies Listed on the Sci-Tech Innovation Board: Based on the Perspective of CEO Shareholding Heterogeneity. *Journal of Shanxi Finance and Taxation College*, 2024, 26(01): 34-39.*

*[3] Qian Liping, Lei Yu, Chen Xin, et al. Exploring the Mechanism by Which the Network Structural Holes of Independent Directors Affect Innovation Performance: The Moderating Role of Corporate Marketing Capability and Organizational Slack. *Journal of Central University of Finance and Economics*, 2023, (11): 116-128.*

*[4] Ji Shangzhou, Qian Shuqing, Fan Rui. The Network Connections and Heterogeneous Investment Policies of Professors in Independent Director Roles. *Friends of Accounting*, 2023, (04): 49-54.*

*[5] Xie Tingting, Yang Yong. Can Information Technology Independent Directors Facilitate Digital Transformation in Enterprises? Based on the Perspectives of Management Short-sightedness and Financing Constraints. *Journal of Xinjiang University of Finance and Economics*, 1-10.*

*[6] Zhou Lei, Zhang Jingxin, Zhou Pinghua. Adjustments in Executive Incentives, Accounting Information Quality, and Corporate Stock Price Crash Risk. *Journal of Beijing Technology and Business University (Social Science Edition)*, 2024, 39(03): 108-121.*

*[7] Wu Xiaohui, Guo Xiaodong, Qiao Zheng. Institutional Investors' Collective Behavior and the Risk of Stock Price Crashes. *China Industrial Economy*, 2019, (02): 117-135.*

*[8] Zhang Xinmin, Qing Chen. Goodwill Impairment Concealment, Internal Control, and the Risk of Stock Price Crashes: Empirical Evidence from Listed Companies in China. *Journal of Social Sciences, Jilin University*, 2022, 62(02): 82-95 + 236-237.*

*[9] Liang Quanxi, Zeng Haijian. Reform of the Independent Director System, the Independence of Independent Directors, and the Risk of Stock Price Crashes. *Management World*, 2016, (03): 144-159.*

*[10] Xu Xiaojun. Does the Independent Director System Affect the Risk of Stock Price Crashes? A Study from the Perspectives of Independence and Professionalism. *Friends of Accounting*, 2020, (08): 95-103.*

*[11] Cao Feng, Zhang Xueyan. Rookie Independent Directors and the Risk of Stock Price Crashes. *Management Review*, 2023, 35(08): 268-282.*