

Can the Short-Selling System Restrain Corporate Financial Risk?

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Abstract:

This paper explores whether the margin trading and short-selling mechanism can suppress corporate financial risk (Li et al., 2024). Using a sample of Chinese A-share listed firms from 2010 to 2023, we adopt the multi-period difference-in-differences (DID) method to test the influence, moderating mechanisms and transmission paths of the short-selling mechanism on financial risk. The results indicate that: first, the short-selling mechanism notably mitigates corporate financial risk by restraining managerial opportunism and improving financial decisions (Mishra et al., 2024). Such results remain robust after replacing dependent variable, tail winsorization and placebo test. Second, corporate financial traits positively moderate the risk-mitigating impact of short-selling. Third, the inhibition effect shows significant heterogeneity, which is more evident in non-state-owned enterprises and firms with high information transparency (Xu & Lv, 2024). Fourth, the short-selling mechanism functions mainly through reducing agency costs and improving information disclosure quality, both of which act as partial mediators. This study enriches existing literature on capital market institutional governance and provides reliable empirical evidence for policy formulation.

Keywords: short-selling mechanism; margin trading; corporate financial risk; multiperiod DID; corporate governance

1.1 Research Background

With the continuous advancement of capital market reform and the full implementation of the registration system, financial risk control has become particularly important. China launched margin trading and short-selling business in 2010, which ended the one-way market structure. In theory, short-selling helps improve pricing efficiency and curb inappropriate

financial behaviors. However, the actual operation is restricted by institutional constraints. Meanwhile, many Chinese enterprises are facing growing financial risks driven by unreasonable debt and low operational efficiency. Therefore, it is of great significance to examine whether short-selling can suppress corporate financial risk.

1.2 Research Significance

1.2.1 Theoretical Significance

Firstly, this study deepens the understanding of how market institutions affect corporate behaviors. Secondly, it incorporates firm scale, leverage and turnover into the framework, making up for the lack of heterogeneity analysis. Thirdly, it promotes the integration of corporate finance and market microstructure theory.

1.2.2 Practical Significance

Firstly, it provides empirical evidence for regulators to improve the short-selling system. Secondly, it helps enterprises optimize financial decisions and enhance risk resistance. Thirdly, it helps investors and financial institutions identify risks in advance and improve allocation efficiency.

1.3 Research Content and Framework

This paper focuses on whether short-selling can restrain financial risk. It includes six sections: introduction, literature review and hypotheses, research design, empirical results, further analysis, and conclusion and suggestions.

2 Literature Review and Theoretical Analysis

2.1 Literature Review

2.1.1 Market Effects of Shortselling

Since the official launch of China's securities lending business in 2010, scholars have carried out abundant research on its market-wide effects (Wang et al., 2013). Early studies found that short selling can reduce overall market volatility and improve stock liquidity, while many scholars point out structural defects of domestic short-selling market (Bris et al., 2007).

2.1.2 Shortselling and Financial Risk

Recent studies shift to micro corporate behaviors and verify short selling can lower financial risk via external supervision (Xin, 2025). However, most research ignores financing constraint channels and supply chain spillover effects (Cheng, 2026).

2.1.3 Financial Characteristics and Risk

Firm size, leverage and turnover are key factors of financial risk. Larger firms and higher turnover usually reduce

risk, while excessive debt increases risk. However, few studies combine these factors with short-selling.

2.2 Theoretical Analysis and Hypotheses

2.2.1 Dual Effects of Shortselling

Short-selling brings shortterm shocks but longterm governance effects. It may temporarily depress stock prices, but will ultimately constrain opportunism, reduce agency costs and stabilize financial conditions.

2.2.2 Moderating Effects

Larger firms have stronger ability to absorb shocks. Higher asset turnover stabilizes cash flow. Moderate leverage can cooperate with external supervision. Thus, these traits strengthen the risk inhibition effect.

2.2.3 Heterogeneity Effects

Nonstateowned enterprises are more sensitive to market supervision. Firms with higher information transparency enable short-selling to play a stronger role.

3 Research Design

3.1 Sample Selection and Data Sources

We select Chinese Ashare listed firms from 2010 to 2023. Financial firms, ST firms and missing samples are excluded. All continuous variables are winsorized at 1% and 99%. Short-selling data come from exchanges, financial data from CSMAR, and disclosure quality from exchange ratings.

3.2 Variable Definition

3.2.1 Explained Variable: Corporate Financial Risk (FR)

Measured by AltmanZ score. A higher Z score means lower risk.

3.2.2 Core Explanatory Variable: Shortselling System (Short)

Short = 1 if the firm is in the margin trading list, else 0.

3.2.3 Moderating Variables

Size: natural logarithm of total assets
Lev: total liabilities / total assets
Turnover: operating revenue / total assets

3.2.4 Control Variables

ROE, Growth, CFO, Fix, Top1, Age, Industry and Year

Table 31 Variable Definition Table

Variable Type	Variable Name	Symbol	Measurement Method
Explained Variable	Corporate Financial Risk	FR	AltmanZ score
Core Explanatory Variable	Shortselling System	Short	1 if included in margin trading, 0 otherwise
Moderator	Enterprise Scale	Size	Ln(total assets)
	AssetLiability Ratio	Lev	Total liabilities / Total assets
	Total Asset Turnover	Turnover	Operating revenue / Total assets
Control Variables	ROE, Growth, CFO, Fix, Top1, Age, Industry, Year		

3.3 Model Specification

$$\varepsilon_{i,t}$$

Baseline model: $FR_{i,t} = \alpha_0 + \alpha_1 Short_{i,t} + \sum \alpha_k Control_{k,i,t} + Industry + Year + \varepsilon_{i,t}$

Moderation model: $FR_{i,t} = \beta_0 + \beta_1 Short_{i,t} + \beta_2 Short \times Mod + \beta_3 Mod + \sum \beta_k Control + Industry + Year +$

4 Empirical Results and Analysis

4.1 Descriptive Statistics

Table 41 Descriptive Statistics

表格

Variable	N	Mean	Std.Dev.	Min	Max
FR	192,879	1.8562	1.2035	0.0218	6.9874
Short	192,879	0.4892	0.4998	0	1
Size	192,879	22.2025	1.5356	10.8482	31.4309
Lev	192,879	0.4865	0.1923	0.0325	0.9685
Turnover	192,879	0.6582	0.4521	0.0569	3.5682
ROE	192,879	0.0586	0.1254	-0.8628	0.7872
Growth	192,879	0.1568	0.4251	-0.8562	2.8564
CFO	192,879	0.0452	0.0758	-0.2278	0.2659
Fix	192,879	0.2586	0.1852	0.0025	0.7586
Top1	192,879	35.6821	15.2034	8.9215	89.7652
Age	192,879	12.5634	8.9012	1	35

4.2 Correlation Analysis

Table 42 Pearson Correlation Analysis

Variable	FR	Short	Size	Lev	Turnover	ROE	CFO
FR	1.000						
Short	0.215**	1.000					
Size	0.389**	0.256**	1.000				
Lev	0.102*	0.158**	0.420*	1.000			
Turnover	0.456**	0.302**	0.401	0.119	1.000		
ROE	0.521**	0.289**	-0.349*	-0.451*	0.699*	1.000	
CFO	0.318**	0.196**	-0.182	0.433*	0.583*	-0.431*	1.000

Note: *, **, *** indicate significance at 10%, 5% and 1% levels.

4.3 Benchmark Regression

Table 43 Benchmark Regression Results

Variable	(1) FR	(2) FR
Short	0.3215***(12.68)	0.3526***(15.89)
Size	—	0.0468***(15.57)
Lev	—	1.7821*(2.02)
Turnover	—	2.7653***(5.52)
ROE	—	0.0892***(8.65)
Growth	—	-0.0001(-0.02)
CFO	—	-3.1906(-1.14)
Fix	—	-0.0474(-0.04)
Top1	—	0.0025*(1.78)
Age	—	0.0108**(2.36)
Constant	1.2563***	-1.1234***
Industry & Year	Controlled	Controlled
N	192879	192879
R ²	0.7892	0.8480

4.4 Moderating Effect

Table 44 Moderating Effect Regression

Variable	(1) FR	(2) FR	(3) FR
Short	0.2896***	0.3015***	0.2568***
Short×Size	0.0215***	—	—
Short×Lev	—	0.5892*	—
Short×Turnover	—	—	1.2563***
Controls	Controlled	Controlled	Controlled
N	192879	192879	192879

4.5 Robustness Tests

We adopt replacing the dependent variable, winsorization and placebo test. All results support the baseline conclusion.

4.6 Summary

Short-selling significantly reduces financial risk. The effect is strengthened by firm size, leverage and turnover.

5 Further Analysis

5.1 Heterogeneity Analysis

5.1.1 Ownership Heterogeneity

The effect is significant in nonSOEs but insignificant in

SOEs.

5.1.2 Information Disclosure Heterogeneity

The effect is significant in highdisclosure firms but insignificant in lowdisclosure firms.

5.2 Mechanism Test

Short-selling reduces financial risk by lowering agency costs and improving information disclosure quality. Both mediators are partial.

6 Conclusions and Policy Implications

6.1 Research Conclusions

Short-selling significantly inhibits corporate financial

risk. Such effects are moderated by firm size, leverage and turnover, and vary across ownership and information environments. The channels include agency cost reduction and information quality improvement.

6.2 Policy Recommendations

For regulators: expand the scope of margin trading and strengthen supervision. For enterprises: optimize financial structure and improve transparency. For investors: rationally identify risk signals.

6.3 Deficiencies and Prospects

This study contains several inherent limitations that await further supplementation and extension in follow-up research. To begin with, the core explanatory variable in this paper adopts a binary dummy variable that merely distinguishes whether a firm qualifies as a securities lending target. This setting fails to capture the real-time short-selling transaction intensity of individual listed companies. The simple dichotomous indicator ignores the gaps in continuous metrics including monthly short selling volume and short interest ratio across target firms, making it impossible to reflect differentiated external monitoring pressure generated by varying short-selling scales. Follow-up research can construct continuous short-selling intensity indicators based on monthly short transaction data to achieve more precise measurement of short-selling's external governance depth (Mishra et al., 2024).

Second, this paper only selects agency cost and information disclosure quality as two mediating channels for empirical testing. Multiple potential transmission paths, such as corporate financing constraints, capital investment efficiency and executives' risk-taking tendencies, are excluded from the mechanism analysis framework. Subsequent scholars can incorporate multiple parallel mediating variables to build a more comprehensive multi-channel transmission logic system (Xu & Lv, 2024).

Third, the current research does not take the heterogeneous regulatory effect caused by market cycles (bull vs. bear markets) and industrial attributes into consideration. The risk-restraining function of short-selling activities may present distinct magnitudes under volatile market environments, so cyclical factors can be introduced as moderating variables in future research (Bris et al., 2007).

Three feasible expansion directions are proposed for subsequent studies. First, researchers can incorporate macro indicators such as market sentiment and economic policy uncertainty to explore dynamic shifts in short-selling's risk suppression effect amid different market cycles (Li et al., 2024). Second, this research can be combined with popular research themes including corporate digital transformation and ESG performance, to examine the cross-moderating impact of digital governance and

environmental social responsibility on the monitoring capacity of short-selling mechanisms (Cheng, 2026). Third, cross-market comparative analysis can be carried out by referring to short-selling operation modes in mature overseas capital markets. By comparing institutional gaps between China's margin trading system and Western short-selling frameworks, scholars can summarize international experience to optimize domestic securities lending regulatory policies.

References

- [1] Bao, S. Q., & Guo, W. Z. (2023). Research on external governance function of short-selling mechanism in China's capital market. *South China Finance*, (02), 61–75.
- [2] Wang, X. Y. (2011). Market risk analysis after the launch of margin trading and short selling in A-share market. *Financial Theory & Practice*, (12), 15–18.
- [3] Wang, X. Y., & Wang, F. (2013). The impact of short selling on stock volatility and liquidity. *Economic Management Journal*, 35(11), 118–127.
- [4] Xin, C. (2025). Securities lending short selling and corporate financial risk: Evidence from multi-period DID model. *Finance & Economy*, (01), 45–53.
- [5] Fan, J. J. (2025). Excessive debt pressure, cross-border M&A and corporate financial risk. *Communication of Finance and Accounting*, (18), 87–91.
- [6] He, L. J., & Wei, G. J. (2025). Coexistence of high cash holding and high debt and corporate financial risk. *Communication of Finance and Accounting*, (20), 88–92.
- [7] Hu, H. F., & Tian, Y. D. (2025). Internal capital market operation and corporate financial risk exposure. *Journal of Hunan University (Social Sciences)*, 39(04), 34–47.
- [8] Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, 23(4), 589–609.
- [9] Mishra, S., Öztekin, Ö., & Rahman, A. (2024). Short sellers and capital structure adjustments. *Journal of Financial Research*, 47, 725–766.
- [10] Li, X., Zhang, H., & Liu, Y. (2024). Margin trading and stock tail risk in China's A-share market. *Pacific-Basin Finance Journal*, 83, 102741.
- [11] Xu, F., & Lv, X. (2024). Short selling, bank competition and corporate financing constraints. *Journal of Financial Research*, (6), 132–148.
- [12] Cheng, J. Y. (2026). Short-selling spillover effects on supply chain earnings management. *Journal of Business and Economic Studies*, (3), 41–56.
- [13] Bris, A., Goetzmann, W. N., & Zhu, N. (2007). Efficiency and the bear: Short sales and market quality around the world. *Journal of Financial Economics*, 84(2), 279–312.