

Can short selling be effective in curbing financial risk?

Yue Liu Xinlu Liu

Haikou University of Economics,
Haikou, Hainan, 570100, China
E-mail: ly17389711392@163.com

Abstract:

This study takes Chinese A-share listed companies from 2009 to 2023 as the research sample to empirically study the relationship between short selling and financial risk. The research results show that as the intensity of short selling transactions increases, the financial risk of enterprises decreases accordingly. At the same time, the test of the moderating effect reveals that compared with enterprises with low equity concentration, the short selling mechanism helps to reduce the financial risk of enterprises with high equity concentration; compared with state-owned enterprises, the short selling mechanism helps to reduce the financial risk of non-state-owned enterprises. Through PSM tests, instrumental variable tests, and empirical research, the above research findings are supported. Through the test of the mediating mechanism, it is found that the short selling mechanism reduces financial risk by alleviating agency conflicts and improving the quality of corporate information disclosure.

Keywords: Short selling, financial risk, Concentrated ownership, Ownership nature of enterprises

1.Introduction

China's financial sector has experienced substantial expansion driven by sustained economic development and global integration, characterized by diversified financial institutions and innovative instruments. This growth has facilitated corporate operational efficiency, with publicly traded firms attracting significant capital inflows that fuel capital market development through progressive expansion of listed entities. The contractual obligations between listed entities and their stakeholders form the foundation of financial market interactions. During corporate financing

activities, creditors meticulously evaluate financial vulnerabilities to safeguard their investments. Elevated financial risk levels correlate with increased funding costs, potentially undermining corporate stability and security valuations while jeopardizing investor returns. Such conditions may precipitate capital market instability, underscoring the critical importance of rigorous financial risk analysis for listed enterprises. From an operational standpoint, effectively managing financial risks within publicly traded firms serves dual purposes: mitigating adverse organizational impacts while enhancing the stability and sustainable

growth of broader economic and social systems. This investigation evaluates how securities margin trading regulations influence corporate financial risk exposure, extending the analytical framework by integrating ownership structure characteristics (specifically equity concentration levels) and enterprise typology distinctions. Such multidimensional examination yields practical insights for corporate governance optimization, enabling business entities to develop comprehensive risk mitigation strategies and operational guidelines. Concurrently, the findings supply policymakers with empirical evidence to refine margin trading institutional frameworks, while establishing an evidence-based reference for future modifications to eligible securities lists within margin trading systems.

Theoretically, the institutionalization of regulated short-selling frameworks has empowered market participants to strategically employ bearish positions in revealing critical corporate disclosures, creating enhanced return-generating opportunities. This market-driven oversight mechanism imposes substantial reputational and financial penalties on corporate decision-makers pursuing speculative strategies, while simultaneously addressing asymmetric information challenges in capital markets. The mechanism amplifies informational efficiency in equity valuations and improves corporate disclosure practices among exchange-listed entities. Consequently, the regulatory framework governing securities lending serves to moderate managerial decision-making patterns in publicly traded corporations, effectively diminishing operational risk occurrences and containing fiscal vulnerabilities. Contemporary academic inquiries predominantly concentrate on analyzing price discovery dynamics and earnings manipulation behaviors within margin trading contexts. This research expands the analytical scope by investigating corporate conduct dimensions, thereby enriching existing scholarship on securities lending mechanisms' organizational impacts.

2. Literature Review

During the last decade, Chinese securities markets have experienced progressive liberalization alongside the implementation of short-selling policies, prompting scholars to undertake comprehensive studies regarding these finan-

cial instruments. Academic investigations have particularly focused on analyzing market efficiency improvements and behavioral patterns emerging from these regulatory developments within evolving economic frameworks.

2.1 The impact of short-selling mechanisms on analysts' earnings forecasts

Following the implementation of short-selling frameworks, permitted equities have exhibited enhanced precision in analysts' corporate earnings predictions, evidenced by diminished upward bias and more reliable forecasts. Empirical studies indicate that non-star analysts, constrained by limited access to privileged data, benefit disproportionately from these regulatory tools through expanded corporate disclosure channels, resulting in measurable improvements in profit projection quality. Concurrently, enterprises characterized by limited institutional ownership stakes and opaque disclosure practices demonstrate substantial gains in financial transparency and reporting accuracy under short-selling regulations, which consequently elevates the reliability of analyst evaluations. [1]

2.2 The Impact of Short Selling Mechanisms on Corporate Social Responsibility

Within short-selling frameworks, corporate entities might curtail social responsibility initiatives motivated by value preservation objectives, while simultaneously potentially escalating such activities to mitigate reputational risks. These variations in CSR investment levels fundamentally correlate with agency cost dimensions, representing tangible manifestations of principal-agent conflicts. When firms strategically expand CSR commitments, this practice diverts scrutiny from short-selling investors regarding corporate malpractices, thereby undermining the regulatory framework's intended governance efficacy. [2]

2.3 The Impact of Short Selling Mechanisms on Management Tone Manipulation

The short-selling mechanism notably diminishes the net optimistic communication patterns observed in corporate leadership by curbing excessive rhetoric within managerial disclosures. This regulatory tool serves as an effective constraint on linguistic manipulation through three prima-

ry channels: mitigating information disparities between stakeholders, restricting unethical executive conduct, and decreasing organizational agency expenses. The moderating effect proves particularly evident in three corporate contexts: large-cap entities, firms with limited financial analyst attention, and organizations demonstrating low institutional investor participation [3].

2.4 The impact of short-selling mechanisms on auditors' choice behavior

Empirical analysis reveals that deregulation of short-selling provisions induces targeted corporations to engage prestigious audit firms, potentially to mitigate vulnerability to short-selling attacks that might erode market valuation. Privately-held enterprises demonstrate heightened responsiveness to these regulatory changes compared to state-owned counterparts, actively pursuing top-tier accounting professionals following regulatory easing. Firms subjected to short-selling activities show greater propensity to transition their audit engagements to reputable service providers. Crucially, this market-driven selection of superior auditing standards primarily originates from the market forces driving bearish positions rather than equity financing motivations [4].

2.5 The impact of short selling mechanisms on food safety governance

Based on food safety inspection records published by China's national regulatory authority between 2015 and 2018, this study investigates how short-selling activities of food enterprises influence regional food quality standards. Research results demonstrate that the presence of short-selling mechanisms contributes to enhancing the compliance rate of local food products. Particularly in central and western provinces characterized by immature factor markets, less robust legal frameworks, and relatively lower economic development levels, short-selling exhibits more significant spillover effects in strengthening food safety oversight. This market-driven approach serves as an effective regulatory tool by imposing financial discipline on non-compliant producers while offering supplementary enforcement capabilities for food safety governance systems.[5]

2.6 Relaxing Sell Short Restrictions and Corporate Liquidation Value

The Relaxation of short-selling restrictions mechanisms amplifies Cash and cash equivalents valuation, particularly evident in cases where dominant shareholders maintain substantial equity stakes. Within privately held enterprises, given that falling share prices immediately impact controlling stakeholders' wealth positions, the cash value enhancement resulting from eased short-selling restrictions manifests greater prominence. This regulatory flexibility creates heightened financial accountability for majority shareholders while strengthening market-based incentives for optimal capital allocation in private sector entities.[6]

2.7 Short Selling Mechanism, Management Myopia Behavior, and Earnings Management

Following the implementation of short-selling mechanisms, corporate earnings management strategies have transitioned from accrual-based approaches to real activities manipulation. This shift can be ascribed to three Dominant influences: Primarily, the enhanced market visibility of negative corporate information through short-selling increases scrutiny risks for accrual manipulation, driving firms toward less detectable operational adjustments. Secondly, these mechanisms discourage managerial focus on immediate gains, effectively curbing artificial accounting practices while encouraging substantive operational modifications. Thirdly, the presence of institutional investors, particularly those maintaining long-term positions, amplifies the restraining effect on accrual-based manipulation while moderating the extent of real earnings management adoption. [7]

2.8 Short Selling Regulation and Merger Goodwill Bubble

Empirical findings demonstrate that easing restrictions on short-selling correlates with diminished overpriced goodwill assets in M&A transactions, reflecting the mechanism's effectiveness in curbing valuation inflation. This regulatory effect proves particularly significant within non-state-owned enterprises. Analytical investigations reveal that short-selling operates through dual channels: stimulating heightened analyst scrutiny and enhancing executive stock-based compensation alignment. Heteroge-

neity analysis indicates the mechanism's efficacy depends on mature market-oriented economic environments, while simultaneously demonstrating capacity to offset weak sectoral competition in governing goodwill inflation. [8]

2.9 Short Selling Mechanism and Listed Company Innovation

Research has demonstrated that short-selling frameworks elevate the innovative capacity of firms engaged in securities lending and borrowing via dual mechanisms of regulatory influence and informational dynamics. Enterprises operating in sectors characterized by diminished market rivalry exhibit particularly notable improvements in inventive output when exposed to such financial instruments. Furthermore, the informational dimension of short-selling exerts a pronounced beneficial influence on organizations with limited financial analyst scrutiny, effectively stimulating their innovation trajectories. These findings underscore the necessity for policymakers to reinforce institutional backing for technological advancement through capital market reforms, particularly by expanding the implementation of securities lending mechanisms.[9]

2.10 Securities lending and shorting system, Informational efficiency of equity pricing, and Tail risk of precipitous decline

Studies demonstrate that stocks included in margin trading programs adjust their prices more swiftly to market fluctuations, reducing disparities in reaction times while absorbing unfavorable market information more effectively. Moreover, these securities show significantly lower vulnerability to sudden price declines, highlighting the system's ability to counteract the accumulation of detrimental information and reduce the potential for abrupt market downturns. The results emphasize improvements in market pricing accuracy stemming from short-selling mechanisms since the introduction of margin trading mechanisms in China's stock markets.[10]

2.11 Short selling mechanism, dual governance, and corporate violations

Research findings demonstrate that easing short-selling restrictions mitigates corporate misconduct by enhancing regulatory oversight likelihood and accelerating investi-

gation timelines for violations. Short sellers proactively detect corporate wrongdoing, leveraging their informational edge through continuous market monitoring. The mechanism operates via dual channels: strengthening internal governance frameworks and simultaneously improving external capital market transparency. Regulatory environments and firm-specific attributes significantly influence the efficacy of these governance measures. These findings persist even after implementing Propensity Score Matching methodology and rigorous sensitivity analyses, confirming result reliability.[11]

3. Research Methodology

3.1 Model settings

To examine the effects of short-selling mechanisms on corporate financial risk exposure, we formulated a regression framework drawing upon methodologies documented in prior scholarly investigations. This analytical approach integrates established econometric techniques with novel variable configurations to capture multifaceted risk dynamics.

$$FR_{i,t} = \alpha_0 + \alpha_1 SSP_{i,t} + \gamma Controls_{i,t} + IndustryFE + YearFE + \varepsilon_{i,t} \quad (1)$$

In equation (1), the subscript i denotes individual firms while t corresponds to the time period. $FR_{i,t}$ captures corporate financial risk levels, with the Z-score metric serving as a key indicator. $SSP_{i,t}$ quantifies the implementation of short-selling mechanisms within enterprises. $Control_{i,t}$ encompasses organizational financial attributes and governance structural features as previously outlined. Industry fixed effects (IndustryFE) and temporal fixed effects (YearFE) are incorporated, with $\varepsilon_{i,t}$ representing stochastic disturbances. Additionally, the study implements clustered standard error corrections at the firm level to address potential endogeneity concerns.

3.2 Data source and sample selection

The research sample comprises Chinese A-share listed enterprises with four exclusion criteria: (1) omission of financial industry entities; (2) elimination of firms designated with special treatment status (ST/ST*) during corresponding fiscal years; (3) exclusion of companies exhibiting incomplete financial records or insolvency con-

ditions; (4) application of 1% Winsorization to continuous variables in regression analysis to mitigate extreme value distortion. The remaining observations constitute the final dataset after implementing these rigorous screening protocols.

The datasets employed in this analysis were obtained from the CSMAR repository, spanning a fifteen-year observation window from 2009 through 2023 to guarantee temporal consistency across all examined cases.

3.3 Variable definition

The dependent variable, Short Selling Pressure (SSP), was operationalized through calculating the proportion between short interest balance (obtained by subtracting covered positions from borrowed shares) and the free-floating stock's market value to quantify speculative trading intensity.

Financial Risk (z-score) serves as the independent variable in this analysis, functioning as a quantitative indicator to evaluate fiscal vulnerability within publicly traded enterprises.

Table 1 Control variables

Variable type	Variable name	Variable symbols	Variable definition
Explained variable	Financial risk	Zscore	Measuring Financial Risk of Listed Companies
Explanatory variable	Short selling	SSP	(Short selling borrowing amount - Short selling repayment amount) / Market capitalization of circulating stocks
Moderating variable	Equity concentration	Shrc_High	The top three shareholders of the company hold a greater than average industry annual shareholding ratio, which is 1; otherwise, it is 0.
	Property ownership nature	SOE	National - owned enterprises are 1, private enterprises are 0.
Control variables	Asset size	Size	The natural logarithm of the total assets of the enterprise at the end of the year plus 1.
	Debt-to-asset ratio	Lev	The ratio of the company's total liabilities to total assets at the end of the year
	Profitability	ROA	Return on Assets
	Free Cash Flow	Cashflow	Operating cash flow to total assets ratio
	Is there a loss?	Loss	The value is either 1 when the company incurs a loss for the year or 0 when it doesn't.
	Company growth potential	Growth	This company's main business revenue growth rate
	Company age	FirmAge	The years' figure since the setting - up of the company is taken as the natural logarithm.
	Dual-roles combined	Dual	If the chairman and general manager positions are combined, take 1, otherwise take 0.
	Board size	Board	The natural logarithm of the number of members on the company's board of directors
	Independent director ratio	Indep	the ratio of independent directors to board size
	Major shareholder's shareholding ratio	Top1	The proportion of shares held by the largest shareholder at the end of the year to the total number of shares.
	Institutional Ownership	Inst	The proportion of shares held by institutional investors compared to the overall share count at the conclusion of the firm's financial year.
	Annual dummy variable	Year	Control for the effect of annual fixed effects
	Industry dummy variable	Industry	Control industry fixed effects impact

3.4 Summary statistics

Table 2 presents the Summary statistics of core variables. The mean (4.894) and median (3.154) values of financial risk (Zscore) align closely with established research findings, while its standard deviation (5.516) suggests substantial variation in fiscal stability across sampled Chinese

listed firms. The short-selling mechanism (SSP) exhibits a mean value of 0.238, mirroring prior studies though minor discrepancies might stem from temporal variations in sample selection. Control variables demonstrate distribution patterns similar to existing academic literature, confirming the methodological soundness and credibility of this study's dataset.

Table 2 Summary statistics of the primary variables

Predictor	Number of observations	Sample average	dispersion	Smallest observation	Median	Largest observation
Zscore	44727	4.894	5.516	0.046	3.154	35.195
SSP	44727	0.238	1.770	-4.183	0.000	13.665
Size	44727	22.167	1.300	19.858	21.962	26.249
Lev	44727	0.414	0.207	0.050	0.405	0.886
ROA	44727	0.042	0.064	-0.213	0.040	0.221
Cashflow	44727	0.047	0.069	-0.159	0.046	0.244
Loss	44727	0.120	0.325	0.000	0.000	1.000
Growth	44727	0.153	0.372	-0.557	0.099	2.184
Top1	44727	0.341	0.149	0.084	0.319	0.743
Inst	44727	0.436	0.249	0.004	0.449	0.912
Board	44727	2.117	0.198	1.609	2.197	2.639
Indep	44727	0.377	0.053	0.333	0.364	0.571
Dual	44727	0.297	0.457	0.000	0.000	1.000
FirmAge	44727	2.911	0.349	1.792	2.944	3.555
Shrc_High	44727	0.498	0.500	0.000	0.000	1.000
SOE	44727	0.354	0.478	0.000	0.000	1.000

4. Interpretation of Observational Results

4.1 Regression Modeling

4.1.1 Margin Trading and Financing and Financial Risk of Listed Companies

Table 3 presents the primary empirical findings of this study. Columns (1) through (3) display outcomes derived from Ordinary Least Squares (OLS) regression analyses. The initial specification in column (1) excludes previously discussed control variables, yet demonstrates that the short-selling mechanism (SSP) exerts a statistically signif-

icant negative effect (1% significance level) on corporate financial risk as measured by Zscore. Column (2) incorporates both industry-specific and temporal fixed effects, revealing a strongly negative association ($p < 0.01$) between SSP implementation and Zscore values. The comprehensive model in column (3) integrates all specified control variables, yielding a coefficient of -0.057 ($p < 0.01$) for the SSP-Zscore relationship. This magnitude confirms not only statistical significance but also substantial economic implications of short-selling mechanisms in risk mitigation. These cumulative results substantiate the mitigating effect of short-selling mechanisms on listed firms financial stability.

Table 3: Short Selling Mechanism and Corporate Financial Risk

	(1)	(2)	(3)
	Zscore	Zscore	Zscore
SSP	-0.074***	-0.059***	-0.057***
	(-4.66)	(-3.94)	(-4.50)
Size			-0.479***
			(-9.92)
Lev			-14.108***
			(-37.15)
ROA			14.386***
			(12.48)
Cashflow			2.998***
			(6.81)
Loss			1.803***
			(12.94)
Growth			0.148**
			(2.11)
Top1			-3.103***
			(-8.39)
Inst			2.558***
			(10.55)
Board			-0.668**
			(-2.48)
Indep			1.830**
			(2.06)
Dual			-0.005
			(-0.05)
FirmAge			0.822***
			(5.21)
_cons	4.876***	4.295***	18.873***
	(71.10)	(7.03)	(16.06)
Industry	No	Yes	Yes
Year	No	Yes	Yes
N	44727	44727	44727
adj. R ²	0.001	0.080	0.419

Note: *t* statistics in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, The same as below.

4.1.2 Margin Trading, Moderating Variables, and Financial Risk of Listed Companies

Table 4 presents empirical findings across distinct corporate governance structures. Specification(1) demonstrates that enterprises with concentrated ownership exhibit a statistically significant negative coefficient (-0.080) between

short-selling mechanisms (SSP) and financial stability (Zscore) Statistically significant at the 1% level. Conversely, Specification (2) reveals no statistically meaningful relationship for firms with dispersed ownership structures. The analysis in Specification (3) indicates state-owned enterprises show insignificant association between SSP implementation and financial risk metrics. Specification (4) documents a pronounced negative correlation (-0.087)

with 1% significance for non-state-owned entities. These differential effects suggest SSP mechanisms effectively mitigate financial risks in corporations characterized by

concentrated ownership structures and private enterprise status, contrasting with their counterparts exhibiting dif- fused ownership or state-controlled governance models.

Table 4: Short Selling Mechanism and Corporate Financial Risk - Moderating Effect Test

	(1)	(2)	(3)	(4)
	High degree of ownership concen- tration	Low degree of ownership concen- tration	State-owned enterprises	Non-state-owned enterprises
	Zscore	Zscore	Zscore	Zscore
SSP	-0.080*** (-4.92)	-0.025 (-1.35)	-0.021 (-1.08)	-0.087*** (-5.31)
Size	-0.188*** (-2.93)	-0.891*** (-13.17)	-0.539*** (-8.11)	-0.509*** (-7.42)
Lev	-14.412*** (-29.75)	-14.023*** (-27.99)	-11.621*** (-18.33)	-15.634*** (-32.14)
ROA	14.653*** (8.59)	15.437*** (11.04)	15.028*** (6.80)	14.391*** (10.57)
Cashflow	3.601*** (6.21)	2.562*** (4.02)	0.512 (0.80)	4.490*** (7.77)
Loss	2.047*** (9.47)	1.639*** (10.23)	1.305*** (6.22)	2.063*** (11.27)
Growth	0.208** (1.97)	0.034 (0.36)	-0.050 (-0.57)	0.281*** (2.88)
Top1	-1.881*** (-3.86)	-2.641*** (-4.52)	-0.778 (-1.63)	-4.264*** (-8.46)
Inst	1.605*** (5.70)	4.527*** (11.52)	0.915** (2.22)	2.834*** (9.76)
Board	-0.091 (-0.26)	-1.265*** (-3.41)	0.107 (0.31)	-1.285*** (-3.32)
Indep	2.146* (1.85)	1.404 (1.17)	2.835*** (2.74)	0.182 (0.14)
Dual	-0.104 (-0.86)	0.219 (1.62)	-0.339** (-2.18)	0.140 (1.27)
FirmAge	0.732*** (3.94)	0.561** (2.33)	0.432* (1.89)	0.980*** (4.73)
_cons	11.064*** (7.56)	29.298*** (16.12)	18.670*** (10.88)	21.112*** (12.40)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	22290	22437	15826	28901
adj. R ²	0.401	0.455	0.456	0.404

4.2 Robustness Test

4.2.1 PSM Test

To address potential endogeneity concerns arising from sample selection bias, this study implements Propensity Score Matching (PSM) methodology following established research protocols. Given SSP's continuous nature, we implement an industry-year stratified ranking approach where enterprises are categorized into terciles. The validation process designates top-tercile SSP entities within each industry-year cohort as the treatment group, while assigning the bottom-tercile counterparts to the control group for comparative analysis.

Second, the study employs the pre-selected control variables as matching criteria, implementing a pairwise nearest neighbor matching approach unique assignment and conducting regression analysis on the resultant matched dataset. As demonstrated in Table 3, the regression coefficients for the short-selling mechanism (SSP) exhibit a significant negative association with corporate financial risk (Zscore) at the 1% significance level, aligning with the primary findings. This consistency across analytical methods reinforces the reliability of the initial conclusions, thereby confirming the validity of the earlier outcomes.

4.2.2 Instrumental Variable analysis

To address potential endogeneity concerns, this study applies the Two-Stage Least Squares (2SLS) methodology for empirical analysis. Drawing upon established academic practices, we designate the corresponding municipal and annual short-selling mechanism (m_SSP) as the instrumental variable for the primary short-selling mechanism (SSP). This chosen instrument fulfills both relevance criteria and exogeneity conditions required for valid statistical inference.

The findings from the instrumental variable analysis are detailed in Table 3. As shown in Specification (1), the first-stage estimation analysis demonstrates that the coefficient for the instrumental variable m_SSP statistically significant at the 1% level. This outcome is consistent with theoretical predictions, confirming that the selected instrument satisfies the relevance criterion. Specification (2) displays the results from the second-stage regression, where the calculated coefficients associated with the short-selling mechanism (SSP) maintain their statistically negative relationship. These findings substantiate the study's primary hypothesis regarding SSP's risk-mitigation effects on corporate finances, even when controlling for possible endogeneity through instrumental variable methodology.

Table 5 Propensity Score Matching Test and Instrumental Variable (IV) Test

	(1)	(2)		(3)	(4)
	Zscore	Zscore		SSP	Zscore
SSP	-0.046*** (-3.06)	-0.085*** (-6.65)	m_SSP	0.970*** (22.53)	
Size		-0.434*** (-8.68)	Size	0.003 (0.33)	-0.480*** (-9.95)
Lev		-14.547*** (-33.59)	Lev	-0.521*** (-9.23)	-14.056*** (-37.12)
ROA		16.285*** (12.02)	ROA	0.833*** (4.11)	14.314*** (12.47)
Cashflow		3.565*** (7.06)	Cashflow	-1.186*** (-8.99)	3.114*** (6.98)
Loss		1.937*** (11.84)	Loss	0.065*** (2.00)	1.798*** (12.94)
Growth		0.251*** (2.78)	Growth	0.070*** (2.79)	0.141*** (2.01)
Top1		-3.234***		-0.750***	-3.036***

		(-7.55)		(-10.90)	(-8.32)
Inst		2.724***	Inst	0.644***	2.496***
		(9.77)		(12.73)	(10.39)
Board		-0.801***	Board	0.144***	-0.680**
		(-2.60)		(2.93)	(-2.52)
Indep		1.345	Indep	-0.311**	1.859**
		(1.42)		(-2.10)	(2.10)
Dual		0.131	Dual	0.093***	-0.015
		(1.17)		(4.66)	(-0.15)
FirmAge		0.737***	FirmAge	-0.458***	0.869***
		(4.12)		(-12.27)	(5.42)
_cons	4.166***	18.426***	SSP		-0.033***
	(7.89)	(15.03)			(-3.66)
Industry	Yes	Yes	_cons	1.111***	18.775***
Year	Yes	Yes		(5.41)	(15.97)
<i>N</i>	29586	29586	Industry	Yes	Yes
adj. <i>R</i> ²	0.079	0.432	Year	Yes	Yes
			<i>N</i>	44727	44727
			adj. <i>R</i> ²	0.101	0.418

5. Conclusion

Empirical findings reveal a statistically inverse relationship between short-selling mechanisms (SSP) and corporate financial vulnerability (Z-score), demonstrating that SSP implementation effectively curtails financial risks through disciplining market forces. The operational dynamics primarily manifest through three channels: resolving principal-agent dilemmas, decreasing administrative cost ratios (Mfee), and elevating corporate transparency standards. Notably, SSP implementation substantially strengthens information disclosure quality (Information), thereby enhancing the market's ability to assess corporate financial health. Equity concentration emerges as a critical moderating variable, with analysis showing that heightened ownership consolidation progressively diminishes SSP's financial risk mitigation capacity. This inverse correlation suggests stronger regulatory impacts of SSP in firms characterized by dispersed equity structures. Comprehensive sensitivity analyses across manufacturing sub-sectors and temporal variations (including pandemic-era data exclusion) confirm the persistent risk-suppressing effects of SSP across diverse samples and chronological

frameworks, substantiating the research outcomes' validity and consistency.

References

- [1] Huang Jun, Huang Chao, Wei Haoqiang, & Wang Min. (2018). Does short selling mechanism improve the quality of analysts' earnings forecasts? Empirical evidence based on margin trading system. *Nankai Business Review*, 21(02), 135-148.
- [2] Zhu Yan & Wang Yudan. (2019). Short Selling Mechanism and Corporate Social Responsibility - A Quasi-Natural Experiment Study Based on China's Margin Trading System. *Accounting Research*, (12), 58-64.
- [3] Zhang Xuan, Hu Jing & Li Chuntao. (2022). Short Selling Mechanism and Management Tone Manipulation - Evidence from Text Analysis of Earnings Conference Calls. *Economic Science*, (04), 138-153.
- [4] Chen Guanting, Zhu Song & Wang Simin. (2019). Short selling mechanism and auditor choose —— based on the evidence of margin trading system. *Audit study*, (05), 68-76.
- [5] Zhang Xuan, Sun Xueli, Xue Yuan & Li Chuntao. (2022). Short Selling Mechanism and Food Safety - From the Perspective of Spillover Effects. *Financial Research*, (03), 152-170.
- [6] Hou Qingchuan, Jin Qinglu, & Liu Yang. (2016). Relaxing Short Selling Constraints and Corporate Cash Value - A Quasi-

Natural Experiment Based on the Chinese Capital Market. Financial Research, (11), 112-127..

[7] Zhu Rong, Sun Man & Rao Jing. (2024). Short Selling Mechanism, Management Myopia, and Earnings Management - Based on the Moderating Effect of Institutional Investors. Friends of Accounting, (14), 98-107..

[8] Sun Shilu, Zhang Feiyan, Zheng Jianming & Liu Yanxia. (2021). Can the deregulation of short sales curb the merger goodwill bubble?. Financial research, (11), 189-206.

[9] Chen Yixin, Zhang Junrui & Wang Fangjun. (2018). Research on the influence of short selling mechanism on the innovation of listed companies —— Based on the natural experiment of

margin trading system in China. Nankai Management Review, 21 (02), 62-74.

[10] Tang Song, Wu Qiujun, Wendell & Yang Siqu. (2016). Short selling mechanism, stock price information content and crash risk —— Based on the empirical evidence of margin trading. Financial Research, 42(08),74-84.doi:10.16538/j.cnki.jfe.2016.08.007.

[11] Xu Xixiong, Zhan Heng & Li Wanli. (2021). Short selling mechanism, dual governance and corporate violations —— based on the perspective of market governance. Financial Research, (10), 190-206.