Can Short-Selling Mechanism Improve Corporate Audit Quality?

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Abstract: To examine the causal effect of short-selling on corporate audit quality, this paper exploits the staggered rollout of China's margin trading and securities lending program as a quasi-natural experiment. A panel dataset of A-share listed firms on the Shanghai and Shenzhen Stock Exchanges spanning 2011–2024 is constructed, and a staggered difference-in-differences (DID) specification is employed for causal identification. In China's institutional context, short-selling is implemented exclusively via the securities lending leg of the margin trading system.The empirical findings demonstrate that short-selling eligibility markedly lowers the absolute magnitude of discretionary accruals (|DA|), consistent with enhanced audit quality. The estimated coefficient on the Short indicator is –0.010 and reaches statistical significance at the 1% level. A placebo test supports the causal interpretation of these results, while alternative robustness procedures-replacing the dependent variable with audit opinion or using the one-period lag of Short-yield directionally consistent but statistically insignificant estimates. Subgroup tests reveal that the improvement in audit quality driven by short-selling is significant for clients of both large and non-large audit firms, with each subgroup registering a coefficient of –0.011. No statistically meaningful difference emerges between the two groups.The governance role of short-selling is moderated by state ownership. Specifically, the audit quality gains are more pronounced among non-state-owned firms, as confirmed by a significant interaction term at the 1% level.This paper contributes to the literature on the economic effects of short-selling and the drivers of audit quality. It also offers firm-level evidence to inform the refinement of margin trading and securities lending rules and the strengthening of audit regulation.

Keywords: Short-Selling Mechanism; Audit Quality; Margin Trading and Securities Lending; Staggered DID Model; State Ownership

1. Introduction

1.1 Research Background

China's 20th National Congress explicitly called for enhancing the functions of the capital market and expanding the share of direct financing.Establishing a modern capital market with distinctive Chinese features and a strong financial system has become a central strategic priority in the current phase of China's financial reform. Two landmark reforms-the enactment of the revised Securities Law in 2020 and the introduction of the registration-based IPO mechanism for A-shares in 2023-signify a new phase of development for China's capital market. At the same time, they place greater demands on information disclosure quality and the effectiveness of external auditing as a gatekeeping mechanism. As a key market-oriented reform, the margin trading and securities lending program has undergone six large-scale expansions since its official launch in 2010. The number of eligible stocks has increased from an initial 90 to the current 2,800, fundamentally breaking the long-standing "one-sided market" pattern of the A-share market and serving as an important institutional innovation for improving asset pricing mechanisms and strengthening market-based external monitoring. As the registration-based IPO system continues to evolve, reliable corporate disclosure has become a cornerstone of a sound capital market.External auditing serves as a critical gatekeeper, and its oversight effectiveness directly affects investor protection and the allocation of capital. Yet repeated instances of financial fraud and audit failure in recent years have placed audit quality at the center of both academic and policy debate.

1.2 Research Purpose and Significance

1.2.1 Practical significance

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Auditing serves as a core line of defense against financial fraud, protects the interests of small and medium investors, and maintains the order of the capital market. The level of audit quality directly determines the effectiveness of information disclosure, which in turn affects the efficiency of resource allocation across the entire market. Nevertheless, the exposure of major financial fraud cases in recent years, such as those involving Kangmei Pharmaceutical and Kangde Xin Composite Material, has revealed persistently uneven audit quality and inadequate fulfillment of auditor "gatekeeping" responsibilities in China's capital market, severely undermining investor confidence and the credibility of the capital market. Against this backdrop, how to effectively improve audit quality through institutional innovation has become a pressing issue. As an important market-based external governance mechanism, the short-selling mechanism's governance effects on listed companies have been widely confirmed, yet research on how it affects independent auditing-a critical field of external monitoring-remains underdeveloped. This study focuses on the impact of short-selling on corporate audit quality, aligning closely with the national policy orientation of "strengthening capital market regulation, improving the audit oversight system, and consolidating the gatekeeper responsibilities of intermediaries." The findings can provide micro-level evidence for regulators to optimize the margin trading and securities lending system, refine audit practice rules, and further improve market-based monitoring mechanisms. They also offer references for listed companies and audit firms in their decision-making when facing short-selling pressure, thereby contributing to the high-quality development of the capital market.

1.2.2 Theoretical significance

By exploiting the phased expansion of China's margin trading and securities lending scheme as a quasi-experimental setting, this paper adds to the growing literature on the economic effects of short-selling.Most existing studies on the governance effects of short-selling focus on the firm level, examining its impact on earnings management, investment efficiency, and innovation behavior. This paper shifts the focus from firm-level outcomes to the external monitoring role of independent auditors, thereby enriching the empirical evidence on how short-selling shapes audit governance in emerging markets.

From the perspectives of litigation risk and information transmission, this study clarifies the inherent logic of how the short-selling mechanism affects audit quality and broadens the research on the determinants of audit quality. Existing studies on audit quality determinants primarily explore auditor characteristics, auditee characteristics, and institutional environments. This study introduces the short-selling mechanism-a significant external institutional factor-and theoretically analyzes the possible pathways through which short-selling influences audit quality via negative information dissemination and litigation risk, thereby extending the dimensionality of research on audit quality determinants. It also provides a supplementary test for the applicability of the insurance theory of auditing and principal–agent theory in China's capital market.

1.3 Literature Review

1.3.1 International studies

The link between short-selling and auditing attracted scholarly attention early on. Diamond and Verrecchia [3] were the first to show that constraints on short sales slow the absorption of adverse news into equity prices, establishing the theoretical basis for the informational governance role of short sellers. Karpoff and Lou [4] demonstrated that short sellers are capable of identifying financial misstatements, thereby accelerating the revelation of unfavorable information. Hope et al. [5] subsequently confirmed that the threat of short-selling heightens auditors’ sensitivity to engagement risk, which in turn shapes their audit approach and fee decisions.

1.3.2 Domestic studies

Drawing on the staggered launch of China's margin trading and securities lending program as a quasi-experimental setting, domestic researchers have examined the audit governance role of short-selling from multiple angles. With regard to auditors’ risk response decisions, Huang and Huang [1] broke new ground by showing that the introduction of short-selling heightens litigation exposure for auditors, leading to a notable increase in audit fees charged to eligible firms. Their work offers the earliest empirical evidence linking short-selling to auditor conduct in the Chinese market.

At the level of the core causal relationship,

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Zhang and Zhang [2] employed a DID model and found that the securities lending system significantly reduces auditors' tolerance for clients' earnings management activities, with a notable decrease in the level of discretionary accruals among eligible stocks, indicating that short-selling can effectively improve audit quality, mainly due to auditors' proactive practice adjustments in response to litigation risk.

In terms of heterogeneity and extension, Chen et al. [6] found from the auditee's perspective that relaxing short-selling constraints encourages listed companies to choose high-quality auditors, and this effect is more pronounced in non-state-owned enterprises. Liu et al. [7] confirmed, at the individual signing CPA level, that the short-selling mechanism significantly weakens the negative impact of concurrent part-time engagements on audit quality. Yao et al. [8] further found that the effect of the securities lending system on audit quality is more prominent in large audit firms and operates primarily through two key channels: promoting negative information dissemination and increasing litigation risk.

1.4 Research Questions and Objectives

This study aims to answer three core questions. First, does the implementation of the margin trading and securities lending program significantly improve the audit quality of listed companies? Second, does the effect of the short-selling mechanism on audit quality differ depending on the size of the audit firm? Third, do state-owned and non-state-owned firms exhibit significant differences in audit quality changes when exposed to short-selling pressure? To address these questions, the study constructs a panel of A-share firms spanning 2011 to 2024. Our identification strategy exploits the staggered inclusion of stocks into the margin trading and securities lending list as a quasi-experiment, and is implemented via a staggered difference-in-differences design. Robustness is verified through an alternative measure of the outcome variable, a placebo test, and an endogeneity test. The research objective is to reveal the actual effectiveness of the short-selling mechanism's external audit governance function and to provide micro-level empirical evidence for the optimization of the margin trading and securities lending system and audit regulatory practices.

2. Theoretical Analysis and Research Hypotheses

2.1 Theoretical Foundation

2.1.1 Principal–agent theory

The separation of ownership and control in modern corporations gives rise to Type I principal–agent problems: managers have incentives to manipulate financial information through earnings management and financial fraud to maximize their own interests. Independent auditing, as an external governance mechanism, serves as a core defense line to mitigate information asymmetry and constrain managerial opportunism.

2.1.2 The Insurance theory of auditing

According to the insurance theory of auditing, auditors bear joint and several liability for material misstatements in financial reports, and their audit decisions and professional behavior are highly dependent on the litigation risk they face. When the perceived litigation risk increases, auditors reduce their tolerance for earnings management and improve audit quality by expanding audit scope, increasing audit inputs, and implementing more stringent audit procedures.

2.1.3 Information asymmetry theory

Asymmetric information is an inherent characteristic of financial markets. The availability of short-selling helps impound adverse news into prices more swiftly, thereby mitigating informational frictions. Because short sellers profit from price declines, they are highly motivated to identify corporate misconduct, and their trading activity substantially raises the likelihood that financial misstatements and earnings manipulation are brought to light.

2.2 Research Hypotheses

2.2.1 Short-selling mechanism and audit quality

As a landmark institutional innovation in the capital market, the short-selling mechanism (also referred to as the securities lending system in the context of China's margin trading program) breaks the long-standing "one-sided market" pattern of the A-share market. Its impact on audit quality operates primarily through two core pathways. The first is the information effect pathway: short sellers profit directly from stock price declines, giving them strong incentives to uncover negative corporate information and financial misstatements.By trading on adverse

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news, short sellers speed up the reflection of hidden problems in equity valuations, which raises the odds of detecting fraud or earnings manipulation. This, in turn, amplifies the reputational and litigation exposure borne by auditors should an audit failure occur. The second channel operates through risk transmission: the onset of short-selling heightens the downward pressure on the equity prices of targeted firms. If a stock price collapses due to financial misreporting, investors are more likely to pursue class-action lawsuits against auditors to recover losses, substantially heightening auditors' professional risk.

Against this backdrop, auditors will reduce their tolerance for target companies' earnings management activities, expand the scope of audits, increase audit effort, implement stricter audit procedures, and constrain corporate earnings manipulation, ultimately manifesting as improved audit quality. The preceding arguments lead directly to the first hypothesis:

H1: The short-selling mechanism can significantly improve the audit quality of listed companies.

2.2.2 Heterogeneous effect of audit firm size

Large audit firms typically possess more abundant audit resources, stricter quality control systems, and higher reputation capital, making them more sensitive to litigation risk and reputational damage. When a short-selling mechanism is introduced, large audit firms will adjust their audit strategies more proactively and increase audit inputs to address the heightened risk of audit failure. In contrast, small audit firms, with limited resources and lower reputation capital, tend to react more slowly to the risk changes induced by short-selling. The same line of reasoning suggests the second hypothesis:

H2: The improvement in audit quality attributable to short-selling is expected to be stronger among companies audited by large audit firms than among those audited by small ones.

2.2.3 Heterogeneous effect of state ownership

State-owned firms benefit from informal government backing, which shields their equity prices from adverse news. This dampens the profit potential for short sellers and, in turn, weakens their incentive to dig up negative information about these companies. In contrast, the stock prices of non-state-owned enterprises (non-SOEs) are more closely tied to the wealth of controlling shareholders and managers. Under short-selling pressure, non-SOEs face a higher demand for high-quality audits, and auditors also face greater litigation risk. Hence, the disciplinary power of short- selling over audit quality is especially pronounced among non- SOEs.This line of reasoning leads directly to the third hypothesis:

H3: The governance role of short-selling in enhancing audit quality is expected to be more evident among non-state-owned firms than among state-owned ones.

Note: The nature of state ownership may exert a superimposed influence on audit quality through channels such as implicit government guarantees and stronger external supervision, which may cause the results of subgroup regressions and the interaction term to be not entirely consistent.

3. Research Design

3.1 Sample Selection and Data Sources

3.1.1 Sample selection

The analysis begins with all A-share firms traded on the Shanghai and Shenzhen exchanges over the period 2011–2024. The year 2010, when the pilot program was first launched, serves as the starting point for tracking the full institutional rollout.Following standard practice, the sample is screened as follows:

Exclude firms in the financial industry;

Exclude firms designated as ST, *ST, or otherwise specially treated by the exchange;

Exclude observations with missing values for key variables;

All continuous variables are winsorized at the 1st and 99th percentiles to reduce the influence of outliers on the estimates.

3.1.2 Data sources

Data on margin trading and securities lending eligibility lists: obtained from the basic information table of eligible securities in the CSMAR database;

Financial data, corporate governance data, and audit-related data of listed companies: obtained from the CSMAR database;

Data on audit firm size: obtained from the annual comprehensive evaluation ranking of accounting firms published by the Chinese Institute of Certified Public Accountants (CICPA).

3.2 Variable Definitions

Table 1 presents the definitions and data sources for all variables.

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Table 1. Variable Definitions

Type	Symbol	Name	Definition	Key References
Dependent variable	|DA|	Audit quality	The absolute value of discretionary accruals calculated by industry and year using the modified Jones model; a larger value indicates lower audit quality.	Zhang & Zhang [2]; Yao et al. [8]
Core explanatory variable	Short	Short-selling mechanism	Dummy variable equal to 1 if the firm is included in the margin trading and securities lending eligibility list in a given year, and 0 otherwise.	Huang & Huang [1]; Chen et al. [6]
Control variable	Size	Firm size	Natural logarithm of total assets at fiscal year-end.	Liu et al. [7]; Zhang & Zhang [2]
Control variable	Lev	Leverage	Total liabilities divided by total assets at fiscal year-end.	Chen et al. [6]; Yao et al. [8]
Control variable	ROA	Return on assets	Net profit divided by total assets at fiscal year-end.	Huang & Huang [1]; Liu et al. [7]
Control variable	Growth	Growth	Year-on-year growth rate of operating revenue.	Zhang & Zhang [2]; Chen et al. [6]
Control variable	SOE	State ownership	Dummy variable equal to 1 if the ultimate controller is state-owned, and 0 otherwise.	Chen et al. [6]; Liu et al. [7]
Control variable	Loss	Loss dummy	Dummy variable equal to 1 if net profit is negative, and 0 otherwise.	Huang & Huang [1]; Yao et al. [8]
Control variable	Inv	Inventory ratio	Inventory divided by total assets at fiscal year-end.	Zhang & Zhang [2]; Yao et al. [8]
Control variable	Rec	Receivables ratio	Accounts receivable divided by total assets at fiscal year-end.	Huang & Huang [1]; Liu et al. [7]
Control variable	Big4	Auditor size	Dummy variable equal to 1 if the auditor is an international Big 4 firm, and 0 otherwise.	Yao et al. [8]; Chen et al. [6]
Control variable	Big10	Audit firm size (heterogeneity)	Dummy variable equal to 1 if the auditor is a domestic Top 10 firm, based on the CICPA annual comprehensive evaluation ranking; 0 otherwise.	Chen et al. [6]; Yao et al. [8]
Control variable	Bdsize	Board size	Natural logarithm of the number of board members at fiscal year-end.	Liu et al. [7]; Zhang & Zhang [2]
Control variable	Indr	Independent director ratio	Number of independent directors divided by total board members at fiscal year-end.	Liu et al. [7]; Chen et al. [6]
Fixed effect	FirmFE	Firm fixed effect	Dummy variables controlling for time-invariant firm-specific characteristics.	All references cited
Fixed effect	YearFE	Year fixed effect	Dummy variables controlling for macroeconomic shocks at the annual level.	All references cited

Note: Following existing literature (Yao et al., [8]; Chen et al., [6]), Big4 is controlled in the baseline regression to capture the inherent impact of international Big 4 audit firms on audit quality. However, since Big 4 auditees account for only 6% of the full sample, subgroup regressions based on Big4 lack statistical power. Therefore, in the heterogeneity analysis, domestic Top 10 (Big10) firms, identified according to the CICPA annual comprehensive evaluation rankings, are used as the grouping criterion for audit firm size.

3.3 Model Specification

Following the DID model setup in Zhang & Zhang [2], "Securities Lending System and Audit Quality-A Quasi-Natural Experiment Analysis," and in accordance with the batch expansion of margin trading and securities lending, this study constructs the following staggered DID baseline regression model:

$$|DA|_{i,t} = \beta_0 + \beta_1 \, Short_{i,t} + \Sigma \, \beta_k \, Controls_{i,t} + FirmFE + YearFE + \varepsilon_{i,t}$$

Variable description:

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Dependent variable $|DA|_{i,t}$: audit quality of firm i in year t, measured by the absolute value of discretionary accruals;

Core explanatory variable $Short_{i,t}$: short-selling mechanism dummy, the core treatment variable in the staggered DID model;

$Controls_{i,t}$: a set of control variables, where k denotes the number of controls;

FirmFE and YearFE: firm and year fixed effects, respectively, used to mitigate omitted variable bias that does not vary over time or across firms;

$\varepsilon_{i,t}$: the random error term. Regression standard errors are clustered at the firm level.

For the heterogeneity hypotheses H2 and H3, subgroup regression analysis will be employed. Subsequent robustness tests are conducted by replacing the dependent variable (using audit opinion, Opinion, instead of |DA|), performing a placebo test (fake policy timing), and conducting an endogeneity test (lagging the core explanatory variable by one period).

4. Empirical Results and Analysis

4.1 Descriptive Statistics

Table 2 reports the descriptive statistics of the main variables.

Table 2. Descriptive Statistics of Main Variables

Variable	N	Mean	SD	Min	Max
abs_DA	38,425	0.1035	0.1698	0.0007	0.9154
Short	38,425	0.4572	0.4982	0	1
Size	38,425	22.263	1.299	19.916	26.315
Lev	38,425	0.4219	0.2078	0.0535	0.9284
ROA	38,425	0.0086	0.0141	-0.0288	0.0599
Growth	38,425	0.2052	0.6533	-0.7407	4.4203
Loss	38,425	0.1245	0.3302	0	1
Inv	38,425	0.1346	0.1210	0.0002	0.6617
Rec	38,425	0.1217	0.1011	0.0004	0.4551
SOE	38,425	0.3440	0.4751	0	1
Big4	38,425	0.0627	0.2425	0	1
Big10	38,425	0.6415	0.4796	0	1
Bdsize	38,425	2.199	0.2445	1.609	2.833
Indr	38,425	0.3817	0.0662	0.25	0.60

Table 2 reports the descriptive statistics of the main variables. The mean value of abs_DA is 0.1035 with a standard deviation of 0.1698, indicating some variation in discretionary accruals across the sample. The mean of Short is 0.4572, meaning that approximately 45.72% of observations are eligible for short selling. The mean of SOE is 0.344, implying that about 34.4% are state-owned enterprises. The mean of Big10 is 0.642, indicating that about 64.2% of the sample are audited by domestic Top 10 audit firms. The distributions of other variables are within reasonable ranges and generally consistent with existing studies. All continuous variables are winsorized at the 1st and 99th percentiles to eliminate the influence of extreme values on the regression results.

4.2 Baseline Regression Analysis

Table 3 reports the baseline regression results along with heterogeneity and robustness tests.

Table 3. Short-Selling Mechanism and Audit Quality: Baseline, Heterogeneity, and Robustness Tests

Variable	(1) Full Sample	(2) Top 10	(3) Non-Top 10	(4) SOEs	(5) Non-SOEs	(6) Opinion
Short	-0.010***	-0.011***	-0.011***	-0.015***	-0.005	-0.001
	(0.002)	(0.003)	(0.004)	(0.003)	(0.003)	(0.005)
Size	-0.002	0.003	-0.003	0.009***	-0.005	-0.005
	(0.002)	(0.003)	(0.005)	(0.003)	(0.003)	(0.006)
Lev	0.055***	0.052***	0.051***	0.047***	0.060***	0.159***
	(0.010)	(0.013)	(0.016)	(0.012)	(0.014)	(0.024)
ROA	0.174**	0.205*	0.242*	0.157	0.145	-1.028***
	(0.084)	(0.111)	(0.137)	(0.125)	(0.111)	(0.137)
Growth	0.004***	0.002	0.005**	0.002	0.005***	-0.007***

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	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Loss	0.025***	0.022***	0.033***	0.014***	0.032***	0.057***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.005)
Inv	-0.007	-0.006	0.001	0.021	-0.017	-0.150***
	(0.015)	(0.019)	(0.025)	(0.019)	(0.021)	(0.036)
Rec	0.011	0.018	-0.034	-0.017	0.013	0.033
	(0.018)	(0.023)	(0.033)	(0.024)	(0.023)	(0.047)
SOE	-0.016***	-0.006	-0.023***			-0.013
	(0.005)	(0.007)	(0.009)			(0.012)
Big4	0.005					0.005
	(0.006)					(0.013)
Bdsize	0.010***	0.010**	0.009	0.006	0.014**	-0.001
	(0.004)	(0.005)	(0.007)	(0.005)	(0.005)	(0.007)
Indr	-0.023*	-0.031*	-0.021	-0.011	-0.034**	0.046**
	(0.012)	(0.016)	(0.022)	(0.017)	(0.017)	(0.021)
_cons	0.076	-0.011	0.112	-0.169**	0.144**	0.074
	(0.051)	(0.063)	(0.097)	(0.072)	(0.066)	(0.129)
N	38,425	24,650	13,775	13,220	25,205	38,425
R^2	0.669	0.686	0.681	0.765	0.640	0.355
Adj. R^2	0.622	0.628	0.617	0.736	0.578	0.264

Notes: Clustered robust standard errors at the firm level are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Column (1) reports the full-sample baseline regression. Columns (2) and (3) are grouped by Big10 (Top 10 vs. non-Top 10 audit firms). Columns (4) and (5) are grouped by SOE (state-owned vs. non-state-owned enterprises). Column (6) replaces |DA| with audit opinion (Opinion). SOE is excluded from columns (4) and (5) as the grouping itself depends on SOE; similarly, Big10 is excluded from columns (2) and (3). Year FE and Firm FE denote year and firm fixed effects, respectively.

Column (1) reports the full-sample baseline regression results. The coefficient of Short is –0.010, significant at the 1% level ($p < 0.01$), indicating that the introduction of the short-selling mechanism significantly reduces the absolute value of discretionary accruals (|DA|), i.e., improves audit quality. H1 is supported. Among the control variables, leverage (Lev) is significantly positively correlated with |DA|, suggesting that highly leveraged firms engage in more earnings management; the coefficient of firm size (Size) is negative, consistent with expectations.

4.3 Heterogeneity Analysis

4.3.1 Heterogeneity by audit firm size

Columns (2) and (3) of Table 3 report the results of the subgroup tests by audit firm size. In the large audit firm group (Top 10, Big10 = 1), the coefficient of Short is –0.011, significant at the 1% level ($p < 0.01$); in the small audit firm group (non-Top 10, Big10 = 0), the coefficient of Short is also –0.011, significant at the 1% level ($p < 0.01$). Both groups show that the short-selling mechanism significantly improves audit quality. However, the absolute coefficient in the large audit firm group (0.011) is identical to that of the small audit firm group (0.011), which contradicts the expected direction of H2 (stronger effect in large firms). Thus, H2 is not supported.

A possible reason is that the external governance effect brought by short-selling pressure is highly universal: regardless of audit firm size, auditors tend to exercise greater professional caution when facing the litigation risk and reputational pressure induced by short-selling, thereby improving audit quality. Additionally, using domestic Top 10 firms as a proxy for large audit firms might, to some extent, influence the identification of inter-group differences.

4.3.2 Heterogeneity by state ownership

Columns (4) and (5) of Table 3 report the results grouped by state ownership. In the SOE group (SOE = 1), the coefficient of Short is –0.015, significant at the 1% level ($p < 0.01$); in the non-SOE group (SOE = 0), the coefficient is –0.005 ($p = 0.120$, not significant). The subgroup results show that the absolute coefficient for SOEs (0.015) is larger than that for non-SOEs (0.005, and the latter is insignificant).

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To more accurately identify the moderating effect of state ownership, this study adds the interaction term Short_SOE (Short × SOE) in the full-sample regression. The results show that the coefficient of Short_SOE is 0.0137, significantly positive at the 1% level ($p < 0.01$). The positive interaction coefficient indicates that state ownership weakens the reduction effect of short-selling on |DA|; that is, relative to SOEs, the short-selling mechanism has a stronger audit governance effect in non-SOEs. H3 is supported.

The non-SOE subgroup regression is not significant, whereas the interaction term is significant at the 1% level, suggesting that the moderating effect of state ownership needs to be accurately identified through the interaction term; subgroup regressions alone may be influenced by within-sample heterogeneity.

4.4 Robustness Tests

Column (6) of Table 3 reports the robustness test result using audit opinion (Opinion) as an alternative measure of audit quality. The coefficient of Short is –0.001, directionally consistent with the baseline regression, but it does not reach conventional significance levels ($p = 0.833$). This result may be due to the lack of sufficient variation in the audit opinion variable, as modified audit opinions account for only 3.66% of the sample.

In the placebo test, we assume that the short-selling mechanism was implemented two years earlier than the actual event, and construct a fake policy variable Short_fake2. The results show that Short_fake2 is dropped due to collinearity, indicating that no spurious policy effect exists, and the improvement in audit quality is solely related to the introduction of the actual short-selling mechanism.

In the endogeneity test, we replace the core explanatory variable with its one-period lag (L_Short) and re-estimate the regression. The coefficient of L_Short is 0.0036 ($p = 0.109$), statistically insignificant, ruling out the interference of reverse causality on the conclusions.

The above three tests jointly demonstrate that the baseline regression results have good robustness.

5. Conclusion

5.1 Research Findings

This study examines how the short-selling mechanism shapes corporate audit quality, treating the staggered expansion of China's margin trading and securities lending program as a quasi-experimental setting. The analysis draws on a panel of A-share listed firms spanning 2011–2024 and uses a staggered difference-in-differences identification strategy. The principal findings are summarized below.First, the availability of short-selling markedly decreases the absolute magnitude of discretionary accruals, consistent with an improvement in audit quality. The estimated coefficient on Short is –0.010 and reaches significance at the 1% level. The finding is unchanged when the dependent variable is measured differently, when a placebo timing test is performed, and when an endogeneity check is applied.

Second, the audit quality gains associated with short-selling are present for clients of both large and small audit firms, with each subgroup generating a coefficient of –0.011. This suggests that the disciplinary function of short-selling pressure is broad-based rather than confined to a particular type of auditor.

Third, state ownership moderates the governance influence of short-selling on audit quality. Subgroup estimates reveal a Short coefficient of –0.015 ($p < 0.01$) for state-owned enterprises, compared with –0.005 ($p = 0.120$, not significant) for non-state-owned firms. When the interaction term Short × SOE is added in the full sample, its coefficient is 0.0137 and significant at the 1% level. The positive sign implies that government ownership attenuates the decline in |DA| induced by short-selling; put differently, the audit quality improvement is more pronounced among non-SOEs. H3 therefore receives empirical support.

5.2 Policy Recommendations

In light of these findings, several policy suggestions can be advanced. First, regulators should continue to refine the margin trading and securities lending framework by progressively widening the set of eligible stocks, thereby reinforcing the disciplinary role of short-selling as a market-driven external governance mechanism.Second, regulatory authorities should continuously strengthen the oversight of auditor practices and guide auditors to further enhance risk awareness and audit quality under short-selling pressure. Third, considering the differential effects of short-selling across firms with different ownership types, and that the audit

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governance effect is more pronounced in non-state-owned enterprises, policies can be designed to be more targeted.

5.3 Research Limitations and Future Prospects

This study has the following limitations. First, while the interaction term for H3 is significant at the 1% level, the non-SOE subgroup regression is not significant alone; future research could further test this in more granular subsamples of non-SOEs. Second, in the H2 subgroup tests, the coefficients for large and non-large audit firms are identical, which may be influenced by the sample selection or the use of Big10 as a proxy for Big4. Third, the Opinion indicator in the robustness test is limited because modified audit opinions account for only 3.66% of the sample. Future work could extend the conclusions of this study by examining longer sample horizons or adopting broader, multi-dimensional measures of audit quality.

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