

The Impact of the Negative List System for Market Access on Real Earnings Management: Evidence from a Multi-period DID Quasi-natural Experiment

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Abstract

This paper exploits the phased pilot implementation of the *Negative List System for Market Access* as a quasi-natural experiment. Using data on A-share listed firms in the Shanghai and Shenzhen stock exchanges from 2013 to 2019, we employ a multi-period difference-in-differences (DID) approach to examine the impact of this system on firms' real earnings management. The results show that the Negative List System for Market Access significantly reduces the level of real earnings management. This finding remains robust after a series of robustness checks, including propensity score matching (PSM) and entropy balancing. Heterogeneity analysis indicates that the policy effect is more pronounced in firms with larger board size, while it is relatively weakened in firms with CEO duality, abundant cash flows, and strong profitability. From the perspective of corporate financial behavior, this study reveals the micro-level governance effects of market access reform and provides empirical evidence for deepening the "streamlining administration, delegating power, strengthening regulation, and improving services" reform and optimizing the business environment.

Keywords

negative list system for market access, real earnings management, multi-period difference-in-differences, competition governance

1. Introduction

In the context of high-quality development, improving the information quality of the capital market has become an important prerequisite for promoting the efficient allocation of resources. The report of the 20th National Congress of the Communist Party of China explicitly proposes to "build a unified national market, deepen market-oriented reforms of factor markets, and develop a high-standard market system," which provides clear guidance for market-oriented reforms in the new era. As an important institutional innovation for deepening the reform of "streamlining administration, delegating power, strengthening regulation, and improving services" and optimizing the business environment, the Negative List System for Market Access establishes the principle of "entry unless prohibited," clearly specifying sectors that are prohibited or restricted, substantially reducing administrative approval items, lowering barriers to market entry, and promoting a fair and competitive market environment. Since 2015, this system has been implemented in batches across selected regions and was fully rolled out nationwide in 2018. Its gradual implementation process provides an ideal

quasi-natural experimental setting for evaluating the micro-level governance effects of market-oriented reforms.

Corporate earnings management behavior is a key factor affecting the information quality of the capital market. Compared with accrual-based earnings management, which relies on changes in accounting estimates, real earnings management influences accounting profits through adjustments in actual operating activities, such as altering production scale, manipulating sales policies, and cutting R&D expenditures. It is more concealed, harder to detect, and more detrimental to firms' long-term value. A large body of literature shows that real earnings management not only reduces financial reporting transparency and distorts resource allocation signals, but may also impair firms' core competitiveness, ultimately hindering high-quality economic development [1, 2]. Therefore, how to effectively constrain real earnings management from an institutional perspective has become an important issue in corporate governance and capital market research.

The implementation of the Negative List System for Market Access implies that industries previously subject to restrictions or implicit barriers are opened to more market participants. The entry of new firms enhances the adequacy and fairness of market competition. As an important external governance mechanism, whether market competition can be effectively transmitted to firm-level behavior and thereby constrain managerial incentives for earnings management remains an open question. Theoretically, the Negative List System for Market Access may influence corporate earnings management through the following channels: on the one hand, lowering entry barriers attracts more market participants, increases industry competition, and strengthens market discipline; on the other hand, improved institutional transparency helps regulate government behavior, optimize the business environment, and enhance external supervision. The combined effects of these channels are expected to restrain corporate earnings management behavior.

The literature related to this study mainly focuses on two strands. The first concerns the economic consequences of market access reform, where existing studies primarily examine firm investment [3], innovation activities [4], and resource allocation efficiency [5]. The second strand investigates the determinants of earnings management, with prior studies focusing on corporate governance characteristics [6] and external monitoring mechanisms [7]. However, few studies link market access reform with corporate earnings management or examine the impact of institutional changes on corporate financial behavior from the perspective of competition as an external governance mechanism. This paper attempts to fill this research gap.

Based on this, this paper uses the phased pilot implementation of the Negative List System for Market Access as a quasi-natural experiment. Using data on A-share listed firms from 2013 to 2019 and employing a multi-period DID approach, we systematically examine the impact of this system on real earnings management. The results indicate that the system significantly reduces firms' real earnings management, and this conclusion remains robust after a series of tests, including PSM-DID, entropy balancing, parallel trend tests, and placebo tests. Heterogeneity analysis shows that the policy effect is more pronounced in firms with larger boards, while it is relatively weaker in firms with CEO duality, abundant cash flows, and strong profitability.

The contributions of this paper are threefold. First, it extends the literature on the economic consequences of market access reform from the perspective of corporate financial behavior. Unlike existing studies that focus on investment and innovation, this paper examines earnings management as an important financial decision, revealing the micro-level governance effects of the Negative List System for Market Access. Second, it enriches the literature on the relationship between market competition and earnings management. By exploiting a quasi-natural experiment, this paper provides cleaner empirical evidence on how changes in the competitive environment affect corporate financial behavior. Third, it highlights the role of institutional environment in improving accounting information quality, offering policy implications for deepening market access reform, optimizing the business environment, and strengthening the foundational role of competition policy.

2. Institutional Background and Theoretical Hypotheses

2.1 Institutional Background

The market access system is an important institutional arrangement that regulates the entry of market participants into specific industries. For a long time, some industries in China have been characterized by high administrative entry barriers, requiring firms to undergo complex approval procedures to enter the market,

which has objectively restricted market competition and affected resource allocation efficiency. To further stimulate market vitality and optimize the business environment, China began to explore and implement the Negative List System for Market Access in 2015. By explicitly specifying industries that are prohibited or restricted, the system allows all types of market participants to enter sectors outside the list on an equal and lawful basis, thereby establishing the principle of “entry unless prohibited.”

In December 2015, the first batch of pilot programs was launched in Shanghai, Guangdong, Tianjin, and Fujian. In 2016, the pilot scope was expanded to 11 additional provinces, including Liaoning, Jilin, Heilongjiang, Zhejiang, Henan, Hubei, Hunan, Chongqing, Sichuan, Guizhou, and Shaanxi. In 2017, the pilot program was further deepened. In December 2018, the National Development and Reform Commission and the Ministry of Commerce jointly issued the *Negative List for Market Access (2018 Edition)*, marking the full nationwide implementation of the system. Compared with the traditional approval system, the Negative List System for Market Access reduces administrative approval items and improves the transparency of market rules, thereby effectively lowering market entry barriers and promoting the entry of more market participants. This regionally and temporally staggered pilot process provides substantial institutional variation for identifying policy effects using a multi-period DID approach.

2.2 Literature Review

Corporate earnings management has long been a central topic in accounting and corporate governance research. Existing studies generally classify earnings management into accrual-based earnings management and real earnings management [1]. Compared with accrual-based earnings management, which relies on accounting estimates and policy adjustments, real earnings management affects accounting profits by altering firms’ actual operating decisions, such as abnormal production, price discounts, and reductions in R&D and advertising expenditures. It is more concealed and harder to detect. Prior studies show that real earnings management not only reduces financial reporting quality but may also damage firms’ long-term value and lead to inefficient resource allocation [2].

Regarding the determinants of earnings management, existing literature mainly examines corporate internal governance, external monitoring mechanisms, and institutional environment. In terms of internal governance, factors such as board structure, the proportion of independent directors, and managerial power have been shown to significantly affect earnings management [8, 9]. In terms of external monitoring, institutional investors, analyst coverage, media scrutiny, and audit quality have been found to effectively constrain earnings manipulation [7, 10]. In recent years, with the rise of institutional economics, increasing attention has been paid to the impact of institutional environment on corporate financial behavior. Relevant studies indicate that a sound institutional environment can effectively restrain opportunistic behavior by improving market rules, strengthening property rights protection, and enhancing market transparency.

As an important institutional arrangement for deepening market-oriented reform, the Negative List System for Market Access has attracted increasing academic attention in recent years. Existing studies mainly examine its economic effects at the macro and meso levels, finding that it promotes firm investment and innovation, improves resource allocation efficiency, and enhances the local business environment. For example, Wang Xiongyuan and Xu Jing (2022) [3] find that the system significantly improves investment efficiency, mainly through enhanced competition and fairness as well as reduced transaction costs. Zhang Han et al. (2021) [5] show that the relaxation of market access regulation helps promote supply-side capacity reduction and improve capacity utilization. However, studies examining the impact of the Negative List System for Market Access from the perspective of corporate financial behavior, especially real earnings management, remain limited. The mechanism through which market competition, as an external governance mechanism, affects corporate financial behavior has not been fully explored.

2.3 Research Hypothesis

Real earnings management refers to firms’ manipulation of accounting profits through changes in actual operating decisions, such as abnormal production, early revenue recognition, or reductions in R&D expenditures. Compared with accrual-based earnings management, real earnings management is more concealed but has more profound negative effects on firms’ long-term value.

The implementation of the Negative List System for Market Access improves firms' external operating environment by lowering industry entry barriers and enhancing the transparency of market rules. Theoretically, this system may influence real earnings management through two channels. First, lower entry barriers attract more market participants, intensify market competition, and strengthen market discipline. In a more competitive environment, firms face greater operational pressure and higher risks of market exit, making them more reliant on real operational performance to maintain their market position, thereby reducing the scope for manipulating profits through real earnings management [11]. Second, increased institutional transparency helps regulate government approval processes, reduce implicit barriers, and enhance supervision by investors and regulators. Stronger external monitoring increases the likelihood and cost of detecting earnings management, thereby suppressing managerial incentives for manipulation.

Based on the above analysis, this paper proposes the following hypothesis:

H1: The implementation of the Negative List System for Market Access significantly reduces firms' level of real earnings management.

3. Research Design

3.1 Sample Selection and Data Sources

This paper treats the gradual implementation of the Negative List System for Market Access from 2015 to 2019 as an exogenous event and employs a difference-in-differences (DID) model to test the baseline hypothesis. To avoid the impact of the financial crisis on corporate earnings management, this study uses A-share listed firms in the Shanghai and Shenzhen stock exchanges from 2013 to 2019 as the initial sample. The following observations are excluded: (1) ST firms and delisted firms; (2) firms in the financial industry; (3) observations with negative net assets; (4) firms established after 2015; and (5) observations with missing data. In addition, to avoid overstating or distorting the statistical significance of fixed-effects regression results, firms with only a single-period observation are removed. The final sample consists of 15,294 firm-year observations from 2,511 listed firms. The data used in this study are obtained from the China Stock Market and Accounting Research (CSMAR) database.

3.2 Model Specification and Variable Selection

To examine the impact of the multi-period implementation of the Negative List System for Market Access on firms' real earnings management, this paper follows Liang et al. (2021) [12] and Wang (2022) [3] to construct the following fixed-effects model:

$$REM_{i,t} = \beta_0 + \beta_1 Open_{i,t} + \sum Controls + \sum Year + \sum Firm + \varepsilon_{it} \quad (1)$$

The dependent variable, *RealEarningsManage* ($REM_{i,t}$), measures the level of real earnings management. The key independent variable, $Open_{i,t}$, captures whether a firm is affected by the Negative List System for Market Access. If the province where the firm is located is included in the pilot program in a given year, $Open_{i,t}$ equals 1 for that year and subsequent years; otherwise, it equals 0.

The control variables (Controls) include: firm size ($Size_{i,t}$), measured as the natural logarithm of total assets at year-end; leverage ($Lev_{i,t}$), measured as total liabilities divided by total assets at year-end; profitability ($ROE_{i,t}$), measured as net income divided by shareholders' equity; board size ($Board_{i,t}$), measured as the natural logarithm of the number of board members; operating cash flow ($Cfo_{i,t}$), measured as operating cash flow divided by total assets at year-end; proportion of independent directors ($Indep_{i,t}$), measured as the number of independent directors divided by total board size; market-to-book ratio ($MB_{i,t}$), measured as market value divided by book value at year-end; firm age ($Age_{i,t}$), measured as the logarithm of years since listing; earnings management flexibility ($Rev_{i,t}$), measured as the sum of net inventories and net accounts receivable divided by total assets at year-end; and agency cost ($Agency_{i,t}$), measured as administrative expenses divided by operating revenue. The model also controls for firm fixed effects (Firm) and year fixed effects (Year). To mitigate the influence of extreme values, all continuous variables are winsorized at the 1% level on both tails. This paper focuses on the coefficient β_1 of $Open_{i,t}$ in model (1). A significantly positive β_1 indicates that earnings management increases after policy implementation, whereas a significantly negative β_1 indicates that earnings management decreases.

Table 1: Variable Definitions

Variable Symbol	Variable Definition
$REM_{i,t}$	Real earnings management of firm i in year t
$Open_{i,t}$	Dummy variable for the Negative List System for Market Access; equals 1 if the firm's province is under pilot or full implementation in year t , and 0 otherwise
$Size_{i,t}$	Firm size, measured as the natural logarithm of total assets of firm i at the end of year t
$Lev_{i,t}$	Leverage, measured as total liabilities divided by total assets of firm i at the end of year t
$ROE_{i,t}$	Profitability, measured as net income divided by shareholders' equity of firm i in year t
$Board_{i,t}$	Board size, measured as the natural logarithm of the number of board members of firm i in year t
$Cfo_{i,t}$	Operating cash flow, measured as operating cash flow divided by total assets of firm i at the end of year t
$Indep_{i,t}$	Proportion of independent directors, measured as the number of independent directors divided by the total number of board members of firm i in year t
$MB_{i,t}$	Market-to-book ratio, measured as the market value divided by the book value of firm i at the end of year t
$Age_{i,t}$	Firm age, measured as the logarithm of the number of years since firm i was listed
$Rev_{i,t}$	Earnings management flexibility, measured as the sum of net inventories and net accounts receivable divided by total assets of firm i at the end of year t
$Agency_{i,t}$	Agency cost, measured as administrative expenses divided by operating revenue of firm i in year t

4. Empirical Results

4.1 Descriptive Statistics and Univariate Tests

Table 2 reports the descriptive statistics of the main variables. The mean of real earnings management ($REM_{i,t}$) is -0.004 , with a standard deviation of 0.216 , which is close to the results reported by Liang Shangkun. The mean of $Open_{i,t}$ is 0.389 , indicating that 38.9% of the sample experienced the policy shock. In addition, the average leverage ratio is 44.0% , the mean return on assets is 4.6% , the average proportion of independent directors is 37.5% , and the mean logarithm of firm age is 2.4 .

Table 2: Descriptive Statistics

Variable	N	Mean	SD	Min	p25	Median	p75	Max
$REM_{i,t}$	15294	-0.004	0.216	-0.787	-0.099	0.016	0.118	0.626
$Open_{i,t}$	15294	0.389	0.487	0.000	0.000	0.000	1.000	1.000
$Size_{i,t}$	15294	22.393	1.276	19.517	21.508	22.23	23.126	26.135
$Lev_{i,t}$	15294	0.440	0.207	0.049	0.276	0.430	0.594	0.973
$ROE_{i,t}$	15294	0.046	0.161	-1.000	0.024	0.062	0.106	0.436
$Board_{i,t}$	15294	2.136	0.198	1.609	1.946	2.197	2.197	2.708
$Cfo_{i,t}$	15294	0.045	0.068	-0.191	0.008	0.045	0.085	0.241
$Indep_{i,t}$	15294	0.375	0.054	0.333	0.333	0.357	0.429	0.571
$MB_{i,t}$	15294	4.161	3.112	1.251	2.416	3.312	4.716	21.905
$Age_{i,t}$	15294	2.429	0.593	0.959	1.963	2.496	2.970	3.291
$Rev_{i,t}$	15294	0.262	0.165	0.005	0.137	0.242	0.358	0.745
$Agency_{i,t}$	15294	0.095	0.083	0.009	0.045	0.076	0.117	0.617

Table 3 presents the T-test results for differences in means before and after the implementation of the Negative List System for Market Access. The mean of real earnings management ($REM_{i,t}$) is lower after policy implementation and is significant at the 1% level, indicating that real earnings management decreases following the policy. In addition, firm size ($Size_{i,t}$), leverage ($Lev_{i,t}$), board size ($Board_{i,t}$), proportion of independent directors ($Indep_{i,t}$), firm age ($Age_{i,t}$), agency cost ($Agency_{i,t}$), and earnings management flexibility ($Rev_{i,t}$) all exhibit significant differences before and after the policy.

4.2 Hypothesis Testing

Table 4 reports the multivariate regression results of the impact of the Negative List System for Market Access on firms' real earnings management. Column (1) controls only for year and firm fixed effects. The coefficient on the policy variable $Open_{i,t}$ is -0.0154 and statistically significant at the 1% level, indicating that

firms affected by the policy exhibit significantly lower real earnings management compared with unaffected firms. Column (2) further includes firm-level control variables. The coefficient on $Open_{i,t}$ (-0.0124) remains significantly negative at the 1% level, suggesting that the policy effect is robust after controlling for firm size, leverage, profitability, and other characteristics. Column (3) additionally controls for industry–province interaction fixed effects to mitigate potential heterogeneity across regions and industries. The coefficient on $Open_{i,t}$ is -0.0130 and remains highly significant at the 1% level. This indicates that even under a more stringent model specification, the inhibitory effect of the Negative List System for Market Access on real earnings management remains robust.

Table 3: Univariate Analysis

Variable	Before		After		Mean Difference
	Obs	Mean	Obs	Mean	
$REM_{i,t}$	9352	-0.007	1227	-0.025	0.019***
$Size_{i,t}$	9352	22.280	1227	22.446	-0.167***
$Lev_{i,t}$	9352	0.438	1227	0.427	0.012*
$ROE_{i,t}$	9352	0.053	1227	0.066	-0.013***
$Board_{i,t}$	9352	2.145	1227	2.109	0.036***
$Cfo_{i,t}$	9352	0.043	1227	0.041	0.001
$Indep_{i,t}$	9352	0.373	1227	0.380	-0.007***
$MB_{i,t}$	9352	4.525	1227	4.337	0.188*
$Age_{i,t}$	9352	2.355	1227	2.427	-0.072***
$Rev_{i,t}$	9352	0.261	1227	0.273	-0.012**
$Agency_{i,t}$	9352	0.104	1227	0.106	-0.002

Table 4: Baseline Regression Results

	(1)	(2)	(3)
$Open_{i,t}$	-0.0154***	-0.0124***	-0.0130***
	(-2.65)	(-2.60)	(-2.70)
$Size_{i,t}$		0.0010	0.0063
		(0.17)	(0.89)
$Lev_{i,t}$		0.0431**	0.0317
		(2.07)	(1.46)
$ROE_{i,t}$		-0.0404***	-0.0420***
		(-3.59)	(-3.74)
$Board_{i,t}$		0.0019	-0.0016
		(0.12)	(-0.10)
$Cfo_{i,t}$		-1.4735***	-1.4560***
		(-53.08)	(-51.35)
$Indep_{i,t}$		-0.0192	-0.0168
		(-0.44)	(-0.39)
$MB_{i,t}$		-0.0026***	-0.0026***
		(-2.98)	(-2.98)
$Age_{i,t}$		-0.0131	-0.0134
		(-1.12)	(-1.09)
$Rev_{i,t}$		0.1497***	0.1986***
		(5.67)	(6.73)
$Agency_{i,t}$		-0.0626	-0.0473
		(-1.52)	(-1.10)
$Cons$	0.0021	0.0405	-0.0798
	(0.93)	(0.29)	(-0.49)
$Year$	Yes	Yes	Yes
$Firm$	Yes	Yes	Yes
$Ind\#Province$	No	No	Yes
N	15294	15294	15269
$Adj. R^2$	0.58	0.72	0.73

*Note: *t*-values are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level. The same applies below.

4.3 Robustness Checks

4.3.1 PSM + DID

To mitigate potential selection bias and sample self-selection issues and to ensure comparability between the treatment and control groups prior to policy implementation, this paper employs the PSM-DID approach for robustness testing. First, the treatment variable (*Treat*) is defined: firms located in provinces that implement the Negative List System for Market Access during the sample period are classified as the treatment group (*Treat=1*), while others serve as the control group (*Treat=0*). Following Liang Shangkun (2021) [12] and related literature on the determinants of earnings management, and based on the research design, the matching variables include firm size ($Size_{i,t}$), leverage ($Lev_{i,t}$), profitability ($ROE_{i,t}$), board size ($Board_{i,t}$), operating cash flow ($Cfo_{i,t}$), proportion of independent directors ($Indep_{i,t}$), market-to-book ratio ($MB_{i,t}$), firm age ($Age_{i,t}$), and earnings management flexibility ($Rev_{i,t}$). Based on these variables, a Logit model is used to estimate propensity scores, and a 1:1 nearest-neighbor matching with a caliper of 0.05 is employed to match treatment firms with similar control firms, ensuring balance in observable characteristics between the two groups.

Using the matched sample, a DID model is then estimated to further identify the net effect of the Negative List System for Market Access on real earnings management. Column (1) of Table 5 reports the PSM-DID regression results. Column (1), which controls for year and firm fixed effects, shows that the coefficient on the core explanatory variable $Open_{i,t}$ is -0.0218 and statistically significant at the 1% level. This indicates that after controlling for systematic differences in observable characteristics as well as time and individual heterogeneity, the Negative List System for Market Access still significantly reduces firms' real earnings management, confirming the robustness of the results.

Table 5: PSM-DID and Entropy Balancing Results

	(1)	(2)
$Open_{i,t}$	-0.0218^{***}	-0.0155^{***}
	(-2.88)	(-2.63)
$Size_{i,t}$	0.0028	-0.0025
	(0.35)	(-0.26)
$Lev_{i,t}$	0.1074^{***}	0.0207
	(4.19)	(0.76)
$ROE_{i,t}$	-0.0384^{***}	-0.0211
	(-2.68)	(-1.62)
$Board_{i,t}$	-0.0106	-0.0004
	(-0.51)	(-0.02)
$Cfo_{i,t}$	-1.4746^{***}	-1.4681^{***}
	(-37.65)	(-42.25)
$Indep_{i,t}$	-0.0471	-0.0484
	(-0.75)	(-0.76)
$MB_{i,t}$	-0.0032^{**}	-0.0015
	(-2.24)	(-1.28)
$Age_{i,t}$	-0.0298^*	-0.0265
	(-1.89)	(-1.39)
$Rev_{i,t}$	0.1026^{***}	0.1783^{***}
	(2.64)	(4.96)
$Agency_{i,t}$	-0.0854^*	-0.0515
	(-1.65)	(-0.94)
Cons	0.0712	0.1769
	(0.39)	(0.83)
Year	Yes	Yes
Firm	Yes	Yes
N	7793	15294
Adj. R^2	0.73	0.73

4.3.2 Entropy Balancing Test

To further enhance the credibility of the research findings and effectively mitigate potential selection bias arising from differences in the distribution of covariates between the treatment and control groups, this paper

employs the entropy balancing method for robustness testing. This approach reweights the control group sample to achieve exact balance with the treatment group in terms of the first three moments (mean, variance, and skewness) of the covariates. In doing so, it systematically reduces estimation bias caused by observable differences without imposing linear assumptions on the model specification.

In the empirical implementation, all firm-level characteristics used in the baseline regression are included as covariates, and the policy dummy variable $Open_{i,t}$ is used to define the treatment and control groups to generate balancing weights. These weights are then incorporated into a linear model with both firm and year fixed effects for re-estimation. The regression results are reported in Column (2) of Table 5. The results show that, after entropy balancing, the coefficient on the core explanatory variable $Open_{i,t}$ is -0.0155 and significantly negative at the 1% level. This indicates that even after strictly balancing the distributions of covariates across the treatment and control groups, the Negative List System for Market Access still exerts a significant inhibitory effect on firms' real earnings management.

4.3.3 Parallel Trend Test

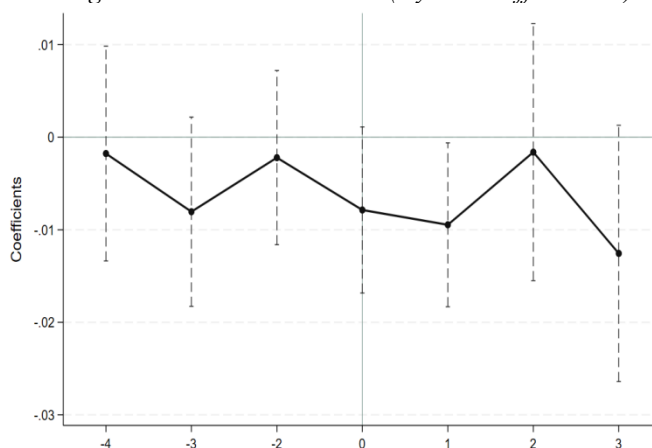
The parallel trend assumption is a key prerequisite for the validity of the difference-in-differences (DID) approach. It requires that, prior to the policy shock, there be no systematic differences in the trends of the outcome variable between the treatment and control groups. To test whether this assumption holds in this study, we follow the existing literature and specify the following event study model:

$$REM_{it} = \alpha + \sum \beta_m Dt-m\ it + \theta X_{it} + \gamma_i + \lambda_t + \varepsilon_{it} \tag{2}$$

where $Dt-m\ it$ denotes a series of event-time dummy variables. The variable m represents the difference between the observation year and the year in which the Negative List System for Market Access is implemented in the province where firm i is located (i.e., the policy shock year). When $m < 0$, it indicates the $|m|$ -th year before the policy shock; when $m = 0$, it denotes the year of the policy shock; and when $m > 0$, it represents the m -th year after the policy shock. The study window is set from four years before to three years after the policy shock, and the period one year prior to the policy shock ($m = -1$) is used as the reference group. The model also controls for firm-level characteristics (X_{it}), firm fixed effects (γ_i), and year fixed effects (λ_t).

Figure 1 reports the estimated coefficients β_m for each event-time dummy variable along with their 90% confidence intervals. The results show that, prior to the policy shock ($m = -4, -3, -2, -1$), all estimated coefficients are close to zero and statistically insignificant, and their confidence intervals include zero. This indicates that there is no significant difference in the trends of real earnings management between the treatment and control groups before the implementation of the Negative List System, thus supporting the parallel trend assumption. Examining the dynamic effects from the year of the policy shock onward, the level of real earnings management in the treatment group shows a downward trend relative to the control group. Specifically, the coefficient for the first period after the policy shock ($m = 1$) is significantly negative at the 10% level, indicating that the policy effect begins to emerge in the short term. Overall, the Negative List System for Market Access exhibits a certain inhibitory effect on firms' real earnings management.

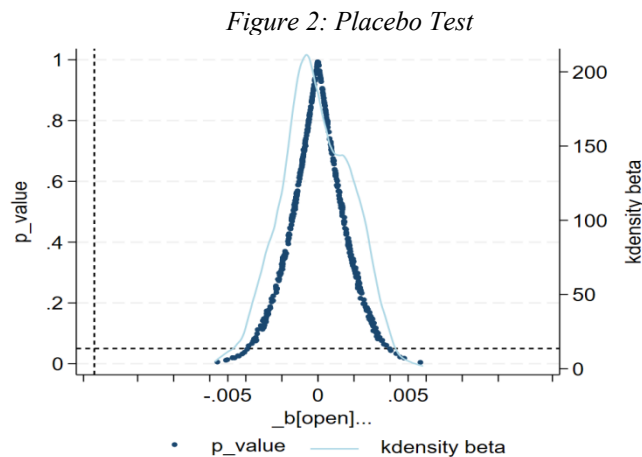
Figure 1: Parallel Trend Test (Dynamic Effects Plot)



4.3.4 Placebo Test

To rule out the influence of unobservable factors or randomness on the estimation results and to further verify the robustness of the baseline regression findings, this paper follows the existing literature and conducts a placebo test. Specifically, in each year, firms equal in number to the actual treatment group (i.e., firms affected by the Negative List System for Market Access) are randomly selected as a pseudo-treatment group, while the remaining firms serve as a pseudo-control group. A randomly assigned policy dummy variable is then constructed. This process is repeated 500 times, and in each iteration, the same model specification as in the baseline regression is estimated. The estimated coefficients of the policy variable ($Open_{i,t}$) and their significance levels are recorded.

Figure 2 reports the results of the placebo test. Across the 500 random simulations, the distribution of the coefficients on the policy variable ($Open_{i,t}$) is highly concentrated around zero, with a mean approximately equal to 0.000. Compared with the baseline regression coefficient of $Open_{i,t}$ (-0.0114), these estimates are clearly closer to zero. This indicates that the inhibitory effect of the Negative List System for Market Access on real earnings management observed in the baseline regression is not driven by unobservable random factors or omitted variables. Therefore, the placebo test further supports the reliability of the findings in this paper, suggesting that the governance effect of the Negative List System for Market Access on firms' real earnings management is genuine rather than arising from randomness or unobserved confounding factors.



5. Further Analysis: Heterogeneity Analysis

To further explore the heterogeneous effects of the Negative List System for Market Access on firms' real earnings management, this paper examines two dimensions: corporate internal governance characteristics and financial conditions. Four moderating variables are selected for interaction analysis, including CEO duality ($ConcurrentPosition_{i,t}$), board size ($Board_{i,t}$), operating cash flow ($Cfo_{i,t}$), and profitability ($ROE_{i,t}$). In terms of model specification, each moderating variable and its interaction term with the policy variable ($Open_{i,t}$) are introduced into the baseline regression separately, while controlling for firm, year, and province fixed effects. The regression results are reported in Table 6.

From the perspective of corporate internal governance, CEO duality reflects the degree of managerial power concentration. The results in Column (1) of Table 6 show that the coefficient on the interaction term $ConcurrentPosition_{i,t} \times Open_{i,t}$ is 0.009 and significantly positive at the 10% level, indicating that CEO duality weakens the inhibitory effect of the Negative List System for Market Access on real earnings management. This may be because when the roles of chairman and CEO are held by the same individual, internal checks and balances are weakened, allowing management to better circumvent external institutional constraints, thereby reducing the governance effectiveness of the policy. In contrast, board size reflects the strength of collective oversight. In Column (2) of Table 6, the coefficient on the interaction term $Board_{i,t} \times Open_{i,t}$ is -0.036 and significantly negative at the 1% level, suggesting that the larger the board size, the stronger the inhibitory effect of the policy on real earnings management. A larger board typically implies stronger monitoring capacity and richer decision-making experience, enabling firms to better respond to policy incentives and reduce earnings management behavior.

From the perspective of firms' financial conditions, operating cash flow and profitability capture liquidity pressure and performance pressure, respectively. Column (3) of Table 6 shows that the coefficient on the interaction term $Cfo_{i,t} \times Open_{i,t}$ is 0.012 and significantly positive at the 1% level. As an important indicator of liquidity, firms with abundant cash flows have relatively weaker incentives to engage in real earnings management; therefore, the marginal constraining effect of the policy is smaller, leading to a partial offset of the policy effect. Similarly, in Column (4) of Table 6, the coefficient on the interaction term $ROE_{i,t} \times Open_{i,t}$ is 0.046 and significantly positive at the 5% level. Firms with stronger profitability face less performance pressure and have lower incentives to smooth earnings through real earnings management; thus, the constraining effect of the Negative List System for Market Access is relatively limited for such firms.

Overall, the heterogeneity analysis indicates that the inhibitory effect of the Negative List System for Market Access on firms' real earnings management varies significantly across firms with different governance characteristics and financial conditions. Specifically, the effect is more pronounced in firms with larger boards, while it is relatively weaker in firms with CEO duality, abundant cash flows, and strong profitability. These findings enrich the understanding of the boundary conditions of policy effects and provide useful implications for regulators to implement differentiated policies for different types of firms.

Table 6: Heterogeneity Analysis Results

	(1)	(2)	(3)	(4)
$Open_{i,t}$	-0.016***	0.065**	-0.018***	-0.016**
	(-3.06)	(2.48)	(-3.41)	(-3.08)
$ConcurrentPosition_{i,t} \times Open_{i,t}$	0.009*			
	(1.66)			
$ConcurrentPosition_{i,t}$	-0.009			
	(-1.61)			
$Board_{i,t} \times Open_{i,t}$		-0.036***		
		(-3.00)		
$Board_{i,t}$		0.017		
		(1.02)		
$Cfo_{i,t} \times Open_{i,t}$			0.012***	
			(2.71)	
$Cfo_{i,t}$			-0.009**	
			(-2.34)	
$ROE_{i,t} \times Open_{i,t}$				0.046**
				(2.08)
$ROE_{i,t}$				-0.068***
				(-3.71)
Other Controls	Yes	Yes	Yes	Yes
Cons	0.034	0.018	0.053	0.075
	(0.25)	(0.13)	(0.38)	(0.53)
Yesr	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes
N	14861	15294	15294	15294
Adj. R ²	0.725	0.725	0.725	0.725

6. Conclusions, Implications, and Limitations

This paper exploits the phased pilot implementation of the Negative List System for Market Access as a quasi-natural experiment. Using data on A-share listed firms in the Shanghai and Shenzhen stock exchanges from 2013 to 2019 and employing a multi-period difference-in-differences approach, it systematically examines the impact of this system on firms' real earnings management. The results show that the Negative List System for Market Access significantly reduces the level of real earnings management. This conclusion remains robust after a series of robustness checks, including PSM-DID, entropy balancing, parallel trend tests, and placebo tests. Heterogeneity analysis indicates that the policy effect is more pronounced in firms with larger board size, while it is relatively weakened in firms with CEO duality, abundant cash flows, and strong profitability. These findings verify the micro-level governance effects of market-oriented reform from the

perspective of corporate financial behavior, suggesting that lowering entry barriers and strengthening market competition can effectively constrain managerial earnings manipulation.

The above findings yield the following policy implications. First, the reform of the Negative List System for Market Access should be further deepened to fully leverage its role in competition governance. This study confirms that the system can effectively constrain corporate earnings management and improve the quality of financial information. In the future, the dynamic adjustment mechanism of the list should be further improved, and implicit barriers and discriminatory conditions in market entry should be continuously eliminated to create a more fair and transparent competitive environment. Second, greater attention should be paid to firm heterogeneity, and differentiated regulatory strategies should be implemented. Regulatory authorities may focus on firms with smaller boards, CEO duality, abundant cash flows, and strong profitability, as the policy effect is relatively weaker for these firms and complementary regulatory measures are needed. Third, the foundational role of competition policy should be strengthened to give full play to the governance function of market mechanisms. In advancing the reform of “streamlining administration, delegating power, strengthening regulation, and improving services,” fostering a fair competitive environment should be regarded as a key priority, so that market competition can serve as an effective force in constraining opportunistic corporate behavior.

This study has several limitations that warrant further research. First, this paper mainly focuses on identifying the overall policy effect, while the underlying mechanisms require further investigation. Second, due to the limitation of the sample period, this study primarily examines the short-term dynamic effects after policy implementation; future research could employ a longer time horizon to explore the long-term effects. Third, the dimensions of heterogeneity analysis could be further expanded. Factors such as industry characteristics and regional institutional environments may play important moderating roles and deserve more in-depth examination in future studies.

References

- [1] Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335–370.
- [2] Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes–Oxley periods. *The Accounting Review*, 83(3), 757–787.
- [3] Wang, X., & Xu, J. (2022). Does the relaxation of market entry regulation improve firms’ investment efficiency? Evidence from a quasi-natural experiment based on the “negative list” for market access. *Journal of Financial Research*, (9), 169–187.
- [4] Wang, L., Wu, Q., & Luo, D. (2020). Market barriers, administrative approval, and firm price markups. *China Industrial Economics*, (6), 100–117. <https://doi.org/10.19581/j.cnki.ciejournal.2020.06.006>
- [5] Zhang, H., Wang, X., & Zhang, L. (2021). Relaxation of market entry regulation and supply-side capacity reduction: Evidence from a quasi-natural experiment based on the negative list system. *Journal of Finance and Economics*, 47(7), 93–107. <https://doi.org/10.16538/j.cnki.jfe.20210416.403>
- [6] Li, C., Song, M., & Zhang, X. (2014). Analyst coverage and corporate earnings management: Evidence from Chinese listed firms. *Journal of Financial Research*, (7), 124–139.
- [7] Chen, K. (2018). Exit threats and corporate governance: A perspective based on earnings management. *Journal of Finance and Economics*, 44(11), 18–32. <https://doi.org/10.16538/j.cnki.jfe.2018.11.002>
- [8] Li, C., Zhao, Y., Xu, X., & Li, Q. (2016). “Press one spot and another pops up”: Analyst coverage and the choice of earnings management methods. *Journal of Financial Research*, (4), 144–157.
- [9] Xie, D., & Liao, K. (2018). Controlling shareholders’ equity pledges and real earnings management in listed companies. *Accounting Research*, (8), 21–27.
- [10] He, Y., Lin, H., & Wang, M. (2015). Product market competition, executive incentives, and corporate innovation: Evidence from Chinese listed firms. *Finance & Trade Economics*, (2), 125–135. <https://doi.org/10.19795/j.cnki.cn11-1166/f.2015.02.010>

- [11] Chattopadhyay, A., Shaffer, M., & Wang, C. C. (2018). Governance through shame and aspiration: Index creation and corporate behavior. *Journal of Financial Economics* (Forthcoming; European Corporate Governance Institute Working Paper No. 567/2018).
- [12] Liang, S., Cui, H., & Yuan, C. (2021). Stock index constituent adjustments and corporate earnings management: Evidence from a quasi-natural experiment. *Journal of Finance and Economics*, 47(7), 124–138. <https://doi.org/10.16538/j.cnki.jfe.20200616.102>

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Conflicts of Interest

The authors declare no conflict of interest.

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