Earnings Management and TSE Reform

Ritsuko Okada

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Abstract

This study provides evidence that the Tokyo Stock Exchange (TSE) reform has incentivized managers to pursue earnings management. More specifically, firms aiming to list on the newly created top-tier Prime Market are required to meet an earnings benchmark, and thus more likely to engage in earnings management. The old TSE First Section firms do not engage in earnings management as an earnings benchmark is not mandatory for them to be in the Prime Market. This study demonstrates that the managerial behavior of firms with a similar earnings level can differ depending on incentives.

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1. Introduction

In February 2020, the Tokyo Stock Exchange (TSE) announced that it would reform its existing four market segments—the First Section, Second Section, Mothers, and JASDAQ—into three segments, namely the Prime Market, Standard Market, and Growth Market. The transition to the new market was made in April 2022.

When the TSE announced its market reforms, particular attention was directed at which firms would secure a listing on the Prime Market, the top-tier segment. The advantages of listing on the Prime Market include a strong brand presence, high market liquidity, ease of fundraising, and ease of recruiting human resources. One important factor that significantly affects stock prices is the high likelihood of being included in the new Tokyo Stock Price Index (TOPIX) that is scheduled to be restructured[1]. Given these reasons, it is rational for managers to have strong incentives to seek and secure a listing on the Prime Market.

The TSE abolished the existing listing requirements and established new listing requirements for each new market. These are categorized as "initial listing standards" and "continued listing standards." When transitioning to the new market, the applicable standards depend on both the market segment to which the firm previously belonged and the new market segment they have chosen. If a First Section firm opts to list on the Prime Market, the firm is required to meet the continued listing standards of the Prime Market. Conversely, if a firm from the Second Section, Mothers, or JASDAQ chooses the Prime Market, it is mandated to comply with the initial listing standards set forth by the Prime Market.

[INSERT TABLE 1 HERE]

As shown in Table 1, the initial and continued listing standards for the Prime Market are relatively similar. However, the former specifies a criterion regarding business performance: total earnings of at least JPY 2.5 billion over the last two years[2]. The TSE defines the earnings as the consolidated ordinary income (or loss) adjusted by either adding or subtracting the net income (or loss) attributable to non-controlling interests[3]. Accordingly, firms from the Second Section, Mothers, and JASDAQ are required to meet the JPY 2.5 billion earnings benchmark to be listed on the Prime Market. In contrast, First Section firms can remain in the Prime Market even if their earnings level is below this benchmark[4]. In other words, there are dual standards set for business performance: the initial listing

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[1] The revision of the constituent stocks of TOPIX is being conducted separately from the market reforms implemented in April 2022, and has been transitioning in phases from October 2022 and will continue till January 2025. Details will be determined by considering the opinions of market participants.

[2] There is a difference between "continued listing standards" and "initial listing standards." See the TSE's "Overview of Market Restructuring" for more details. The TSE has established the criteria related to business performance in the initial listing standards, endeavoring to ascertain a stable and superior earnings base.

[3] For firms that voluntarily adopt IFRS, the TSE defines the amount of earnings as the amount equivalent to the amount of earnings calculated based on the consolidated statement of income (the amount before tax).

[4] As a criterion for business performance, there is a need to meet either total earnings of over JPY 2.5 billion over the last two years or both sales of over JPY 10 billion and a market capitalization of over JPY

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standards and the continued listing standards. Thus, managers near this threshold can be divided into two groups: those affected by the benchmark and those unaffected. A First Section firm's manager can concentrate on enhancing the firm value from a long-term perspective, as failure to meet the earnings benchmark does not immediately affect their market classification. In contrast, managers from the Second Section, Mothers, and JASDAQ have strong incentives to engage in earnings management[5] to manipulate earnings through discretionary actions, as meeting the benchmark in the short term is a condition for being classified in the Prime Market. In this study, I focus on these differing managerial incentives. As of the end of March 2021, approximately 700 firms in the First Section reported earnings below JPY 2.5 billion[6], which can remain in the Prime Market if they meet the continued listing standards. By comparing these firms with those of a similar earnings level that cannot list on the Prime Market unless they meet the initial listing standards, one can elucidate the managerial discretionary behavior in response to the TSE reform and its effects.

In this study, I treat the TSE reform as a quasi-natural experiment to examine how this exogenous shock influences managers' decisions to engage in earnings management. The findings are as follows. First, firms in the Second Section, Mothers, and JASDAQ close to the earnings benchmark threshold of the Prime Market engage in earnings management after the announcement of the reform. Second, First Section firms, even if they are near the same threshold, do not engage in earnings management. The disparity in earnings management behaviors can be attributed to the application of two distinct listing standards: the initial listing standards and the continued listing standards.

Previous studies such as Burgstahler and Dichev [1997] have underscored the significance of specific earnings target (earnings benchmark)—zero earnings (avoiding losses), prior year's earnings, and analyst forecasts—in influencing managerial discretionary earnings management behavior. This study contributes to the literature by providing new evidence on the motivations underlying managers' earnings management behaviors, revealing that, in the context of the exogenous TSE reforms, firms with similar earnings levels adopt distinct earnings management behaviors.

The remainder of this paper is organized as follows. Section 2 describes the background of the TSE reform. Section 3 presents the research design. Section 4 provides the empirical results. Section 5 reports the additional results and concludes the paper.

2. Background of the TSE reform

Why did the TSE need to reorganize its existing market segment? The primary driver was the emergence of two discernible challenges within its existing market categorization. One challenge was the ambiguity in the concept of each market, resulting in reduced convenience for investors[7], leading

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100 billion.

[5] Earnings management refers to the managerial behavior to increase or decrease the actual earnings number through their discretion.

[6] As of the end of March 2021, based on Quick Astra Manager, the author calculated the number of firms in the First Section with consolidated (or, if not available, standalone) net earnings of JPY 2.5 billion or less.

[7] See https://www.jpx.co.jp/equities/improvements/market-structure/nlsgeu000003pd3t-

to the bloat among the First Section firms. Approximately 60% of listed firms were situated in the top-tier First Section, yet two-thirds of these had a market capitalization of less than JPY 100 billion[8]. Furthermore, half of them had a Price-to-Book (PBR) ratio below 1, and one-third had a Return on Equity (ROE) below 8%[9]. The previous top-tier market included firms that hardly seemed representative of Japan's best. This mix was believed to deter overseas investment funds from entering the market[10].

Second, the existing listing standards did not adequately motivate listed firms to continually enhance their firm value. In the previous market structure, firms that initially listed on either the Second Section or Mothers faced a more lenient set of criteria when transitioning to the First Section than those attempting to list directly on the First Section from the outset[11]. This system led to a lack of motivation for listed firms to persistently enhance their firm value.

In response to these challenges, the TSE reformed the existing market structure. The goal was to establish a market that appeals to a broad range of domestic and international investors and promotes sustainable growth.

3. Research Design
(1) *Hypothesis Development*

Based on the above TSE reform mechanism, I propose the following hypotheses:

HYPOTHESIS 1 (H1). *Firms from the Second Section, Mothers, and JASDAQ, near the earnings benchmark of the Prime Market (total earnings of JPY 2.5 billion over the last two years), are likely to engage in income-increasing earnings management.*

HYPOTHESIS 2 (H2). *Firms from the First Section, near the earnings benchmark of the Prime Market (total earnings of JPY 2.5 billion over the last two years), are unlikely to engage in income-increasing earnings management.*

(2) *Measurement of Earnings Management*

I use discretionary accruals as a proxy for earnings management. The discretionary accruals ($DA_{i,t}$) are calculated by subtracting the non-discretionary accruals, estimated using the performance-matched models (Kothari *et al*. [2005]), in Equation (1) from the total accruals ($TA_{i,t}$)[12]. To mitigate the issue of heteroscedasticity, each variable is standardized by the total assets at the end of period *t*-1, and I

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estimate the cross-sectional regression equation separately by each industry for each year[13].

$$TA_{i,t} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2(\Delta Rev_{i,t} - \Delta Rec_{i,t})$$
$$+ \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + \varepsilon_{i,t} \tag{1}$$

where $A_{i,t-1}$ is the total assets at the end of year t-1, $\Delta Rev_{i,t}$ is the change in revenue for year t, $\Delta Rec_{i,t}$ is the change in receivables for year t, $PPE_{i,t}$ refers to the depreciable fixed assets at the end of year t, and $ROA_{i,t}$ is the return on assets for year t, calculated by dividing the net income of year t by the total assets at the end of year t-1. A positive $DA_{i,t}$ implies income-increasing earnings management, whereas a negative $DA_{i,t}$ implies income-decreasing earnings management.

(3) Research Model

In this study, drawing upon Chattopadhyay *et al.* [2020], I test the two hypotheses presented in Section 3.1 using a Difference-in-Difference (DID) analysis. The DID analysis measures the impact of an intervention by comparing the changes in dependent variables in the treatment group to the changes in the control group. In my analysis, I use Equation (2) with the dependent variable being a proxy of earnings management, where "treated" firms are those close to the threshold of earnings benchmark and "control" firms are those further from the threshold. To test H1, I consider firms from the Second Section, Mothers, and JASDAQ (which have incentives for earnings management) that are close to the earnings benchmark threshold of Prime Market as the treatment firms, whereas First Section firms (which lack incentives for earnings management) close to the earnings benchmark threshold are considered treatment firms to test H2.

$$EM_{i,t} = \alpha + \beta_1 Treat_{i,t} \times POST_t + \beta_2 Treat_{i,t}$$
$$+ \beta_3 POST_t + X_{i,t} + f_t + \varepsilon_{i,t} \tag{2}$$

where $EM_{i,t}$ is a proxy of earnings management, denoted by discretionary accruals ($DA_{i,t}$); $Treat_{i,t}$ is an indicator variable equal to one for firms with total earnings of year t-1 and pre-managed earnings of year t ranging from JPY 1.5 billion to JPY 2.5 billion, and equal to zero for those with sums between JPY 3.5 billion and JPY 6.0 billion[14]; $POST_{i,t}$ is an indicator for the period after the announcement of the TSE reform when managers could engage in earnings management, equaling one for the year 2021 and zero for years 2019–2020[15]; $X_{i,t}$ represents control variables that are related to firm

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[13] The regression is conducted using the TSE's 33 industrial sectors.

[14] To test H1, treatment firms are those close to the threshold of earnings benchmark, particularly, firms from the Second Section, Mothers, and JASDAQ with the total earnings of year t-1 and pre-adjustment earnings of year t ranging from JPY 1.5 billion to JPY 2.5 billion. To test H2, treatment firms are First Section firms within the same earnings range, which are less likely to engage in earnings management.

[15] Managers can engage in earnings management in the fiscal year ending March 2020 as the TSE reform announcement is made in February 2020, but this analysis assumes that the managers will shift their discretionary actions to the fiscal year ending March 2021, when they have sufficient time to act. Thus, I define the pre-period as the years 2019–2020 and the post-period as 2021. I perform the analysis and find

characteristics[16]; and f_t represents time-fixed effects.

The primary emphasis in Equation (2) is on $Treat \times Post$. A positive coefficient for $Treat \times Post$ suggests that the treatment firms are more likely to engage in earnings management compared to the control firms.

(4) *Sample selection*

My sample covers the 2019–2021 period and meets all of the following conditions: (1) listed on the Tokyo Stock Exchange, (2) 12-month fiscal year, (3) fiscal year-end in March, (4) does not fall under banks, securities, insurance, or other financial industries, (5) analysis data available from the database. In this paper, the definition of earnings aligns with that of the TSE, where pre-managed earnings are defined as earnings minus a proxy of earnings management.

4. Empirical Results

(1) *Testing H1*

Table 2 reports the results of my empirical tests. Column 1 estimates Equation (2) using treatment firms, specifically those from the Second Section, Mothers, and JASDAQ that are close to the earnings benchmark threshold of the Prime Market.

The DID estimate of 0.018 is statistically significantly positive at the 5% level in the analysis considering both control variables and industry effects. This result suggests that the treatment firms are more likely to use discretionary accruals to manage their earnings upward compared to control firms, which supports my hypothesis. Additionally, the coefficient of *POST* is not statistically significant, indicating that discretionary accruals are similar in both the pre-period (2019–2020) and the post-period (2021).

Based on the above results, the TSE reform is the event that induces the treatment firms (Second Section, Mothers, and JASDAQ firms close to the earnings benchmark threshold of Prime Market) to engage in earnings management. This indicates that the firms from the Second Section, Mothers, and JASDAQ temporarily manipulate their reported earnings to qualify for a listing on the Prime Market.

[INSERT TABLE 2 HERE]

(2) *Testing H2*

Column 2 in Table 2 repeats the estimation with the treatment firms: the First Section firms close

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no evidence of a difference in discretionary accruals between the fiscal year ending March 2019 (before the TSE reform announcement) and March 2020 (immediately after the announcement). However, I do find a variation in discretionary accruals between the fiscal year ending March 2020 and that ending March 2021 (after the announcement).

[16] Control variables include the natural logarithm of market capitalization (log(*MKT_CAP*)), the leverage (*LEVERAGE*), the market-to-book ratio (*MB*), an indicator variable equal to one in the event of a loss (*LOSS*), an indicator variable equal to one when audited by the Big4 firms (*BIG4*), the ratio of independent outside directors (*INDEPENDENT*) and industry fixed effects (*Industry FE*). All these variables utilize data from the end of year *t*.

to the earnings benchmark threshold. As shown in Column 2, the DID estimate is not statistically significant. This implies that there is no evidence for the treatment firms to increase their reported earnings compared to control firms after the announcement of TSE reform. Even if the firms are near the earnings benchmark threshold, First Section firms do not manipulate their earnings, as they have no incentive to do so with the threshold not being mandatory for them, supporting H2.

(3) *Parallel-trends assumption*

My empirical design assumes parallel trends, that is, any counterfactual differences in discretionary accruals between the treatment and control firms remain stable over time. Following Chattopadhyay *et al.* [2020], I investigate whether there are differential pre-treatment trends in discretionary accruals between the treatment firms and control firms. The coefficient of the interaction variables, namely $Treat \times (Year = 2019)$ and $Treat \times (Year = 2020)$—where $Year = 2019$ and $Year = 2020$ are indicators for the pre-period—are insignificant[17]. Moreover, the DID estimates remain both statistically significant and positive. Therefore, there is no evidence of differential pre-treatment trends in discretionary accruals, which aligns with the parallel-trends assumption.

5. Additional analysis
(1) *Robustness check*

To ensure robustness, I conduct the analysis with alternative specifications for both the treatment and control groups. I define a group of firms with incentives for earnings management (the treatment groups) and a comparison group of firms with no incentives (the control groups), each within two reasonable ranges, and then estimate Equation (2). Additionally, besides estimating discretionary accruals using the performance-matched models of Equation (1), I also present the results obtained using the modified CFO Jones model (Kasznik [1999]). Regardless of the definitions adopted, DID estimates remain statistically significant and positive, consistent with the findings for H1 presented in Table 2 (see Table 3, Columns 1–6). Together with the results, incentivized firms positioned on the earnings benchmark threshold of the Prime Market are more likely to manipulate their earnings upward than those unincentivized firms situated further from the threshold.

[INSERT TABLE 3 HERE]

(2) *Backing out problem*

In the research design of this study, discretionary accruals are used as the dependent variables to identify firms incentivized (or not) for earnings management through pre-managed earnings, derived by subtracting discretionary accruals from earnings. However, this approach is subject to a problem known as the "backing out method" as noted by Lim and Lustgarten [2002] and Ishikawa [2019]. The problem is that when errors are included in estimating discretionary accruals, then, the pre-managed

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[17] As with H1, the treatment firms are those from the Second Section, Mothers, and JASDAQ close to the earnings benchmark threshold.

earnings also include the equal error, which can undermine the credibility of the DID estimates. To mitigate this issue, I use cash flow from operating activities (*CFO*) as an independent measure for true pre-managed earnings to be added to the control variable following Peasnell *et al.* [2005][18]. Column 7 in Table 3 demonstrates that my main findings are robust because the DID estimates remain statistically significant and positive even after controlling for *CFO*. Note that the coefficient of *CFO* is significantly negative, consistent with previous studies[19].

(3) *Real earnings management*

Finally, to determine whether managers tend to engage in real earnings management beyond accrual-based earnings management using discretionary accruals in order to get listed on the Prime Market. This study generates three types of measures: temporarily increase sales (*abCFO*), reduction of discretionary expenditures (*abDE*), overproduction (*abPD*) based on the model implemented in Roychowdhury [2006]. Columns 8–10 in Table 3 indicate that the treatment firms do not tend to engage in real earnings management through mechanisms such as a temporary increase in sales (*abCFO*), reduction of discretionary expenditures (*abDE*), overproduction (*abPD*) in comparison to the control firms[20]. To summarize, while firms near the earnings benchmark threshold tend to engage in accrual-earnings management, they do not appear to have a tendency to undertake real earnings management that involves change in cash flows through actual business activities.

6. Conclusion

This study examines whether the TSE market restructuring influences managers to engage in earnings management. The findings indicate that firms near the earnings benchmark of the Prime Market—specifically, those with total earnings of JPY 2.5 billion over the last two years—in the Second Section, Mothers, and JASDAQ (where initial listing standards apply) are more inclined to engage in income-increasing earnings management compared to firms further from this benchmark. While these managers do utilize accounting discretionary actions through discretionary accruals to increase their earnings, they refrain from using real discretionary actions that might alter actual business operations to manipulate earnings. In contrast, First Section firms that are subject to continued listing standards do not engage in income-increasing earnings management.

My findings suggest that the TSE reform induces earnings management only for corporate managers subject to initial listing standards, implying the possibility that they temporarily inflate earnings through accounting estimate changes and similar measures. Rangan [1998] and DuCharme *et al.* [2001] have noted that managers' earnings management actions have the potential to mislead market participants and may also have a negative relationship with a firm's future performance. If such a

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[18] Cash flow from operating activities is standardized by the total assets at the end of period *t*-1. The treatment firms and control firms are the same for H1.

[19] Previous studies have identified a negative relationship between discretionary accruals and CFO, suggesting a corresponding negative association between CFO and errors. My findings are consistent with this observed trend. See Dechow *et al.* [1995] and Guay *et al.* [1996] for details.

[20] Treatment and control firms are the same for H1.

trend is observed in the future for the group of firms examined in this study, the Prime Market may end up being composed of firms with low levels of earnings that have been granted a grace period by the continued listing standards, and newly listed firms with poor future performance. If this happens, the TSE's reform of reviewing market segmentation may not achieve its intended purpose.

While this study focuses on analyzing whether the TSE's reform induced earnings management, it is also important to examine the intent behind managers' earnings adjustments. Holthausen *et al*. [1995] report that managers engage in opportunistic earnings management, whereas Healy and Palepu [1993] suggest that managers adjust earnings to signal information externally. Understanding the motivations behind the managers to manipulate earnings for listing on the Prime Market is an important area for future research.

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Table 1

Listing Standards of the Prime Market

Criteria	Initial Listing Standards	Continued Listing Standards
Liquidity		
No. of shareholders	At least 800	At least 800
No. of tradable shares (units)	At least 20,000	At least 20,000
Market capitalization of tradable shares (JPY bn)	At least 10	At least 10
Trading value (JPY bn)	At least 25 of market cap	At least the daily avg. of 0.2
Governance		
Tradable share ratio (%)	At least 35	At least 35
Business performance / Financial status		
Shareholder equity	At least JPY 5 bn.[1]	Positive[2]
Business performance	Total earnings of at least JPY 2.5 bn over the last 2 years[3] or sales of at least JPY 10 bn & market cap of at least JPY 100 bn[4]	—

Source: Prepared by the author based on the TSE's "Overview of Market Restructuring."

[1] Refers to the consolidated basis of shareholders' equity.

[2] This criterion is established as a replacement for the delisting standard related to insolvency that existed prior to the market reforms.

[3] The amount of earnings is determined based on the consolidated ordinary income (or loss) adjusted by either adding or subtracting the net income (or loss) attributable to non-controlling interests.

[4] Refers to the consolidated basis of sales.

Table 2

Testing H1, H2, and Parallel Trend Assumption

	H1	H2	Parallel Trend	
	DA	*DA*	*DA*	*DA*
Treat × Post	0.018**	0.004	0.016*	0.020**
	(0.009)	(0.008)	(0.009)	(0.010)
Treat	0.003	0.010*	0.005	0.001
	(0.005)	(0.005)	(0.006)	(0.007)
Post	-0.004	-0.005	-0.004	-0.004
	(0.004)	(0.004)	(0.004)	(0.004)
Treat × (Year = 2019)			-0.004	
			(0.007)	
Treat × (Year = 2020)				0.004
				(0.007)
Industry FE	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Observations	739	742	739	739
R^2	0.098	0.094	0.099	0.099

Source: Prepared by the author.

Note: *DA* refers to the discretionary accruals estimated by the performance-matched model in Equation (1). Control variables include the natural logarithm of market capitalization (log(*MKT_CAP*)), the leverage (*LEVERAGE*), growth opportunity measured by the market-to-book ratio (*MB*), an indicator variable equal to one in the event of a loss (*LOSS*), an indicator variable equal to one when audited by the Big4 firms (*BIG4*), the size of the board (*BOARD_SIZE*), the ratio of independent outside directors (*INDEPENDENT*) and industry fixed effects (*Industry FE*). Standard errors are in parentheses. *, **, ***, indicate p-values of 0.10, 0.05, and 0.01, respectively.

Table 3

Additional Analysis

	Treat: 15-25 *Control*: 35-50		*Treat*: 10-25 *Control*: 35-50		*Treat*: 20-25 *Control*: 35-40		Backing out	Real earnings management		
	DA	*CF_DA*	*DA*	*CF_DA*	*DA*	*CF_DA*	*DA*	*abCFO*	*abDE*	*abPD*
Treat × *Post*	0.020** (0.009)	0.018*** (0.007)	0.013* (0.008)	0.012** (0.005)	0.028* (0.015)	0.040*** (0.013)	0.008* (0.005)	-0.003 (0.005)	-0.014 (0.012)	0.013 (0.021)
Treat	0.001 (0.006)	0.002 (0.004)	0.002 (0.005)	0.006 (0.004)	0.000 (0.010)	-0.002 (0.008)	-0.008* (0.003)	0.003 (0.003)	-0.001 (0.008)	0.013 (0.014)
Post	-0.006 (0.005)	-0.008** (0.004)	-0.005 (0.005)	-0.007** (0.004)	-0.017* (0.009)	-0.023*** (0.007)	0.010*** (0.002)	-0.008*** (0.002)	0.003 (0.006)	-0.009 (0.011)
CFO							-0.768*** (0.025)			
DA								1.001*** (0.023)	0.070 (0.062)	0.633*** (0.119)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ROA	No	Yes	No	Yes	No	Yes	No	No	No	No
Observations	571	570	715	714	234	234	739	678	679	679
R²	0.089	0.207	0.077	0.190	0.139	0.189	0.750	0.808	0.082	0.223

Source: Prepared by the author.

Note: DA refers to the discretionary accruals estimated by the performance-matched model in Equation (1), whereas *CF_DA* refers to the discretionary accruals estimated by the modified CFO Jones model implemented by Kasznik [1999]. Control variables include the natural logarithm of market capitalization (log(*MKT_CAP*)), the leverage (*LEVERAGE*), growth opportunity measured by the market-to-book ratio (*MB*), an indicator variable equal to one in the event of a loss (*LOSS*), an indicator variable equal to one when audited by the Big4 firms (*BIG4*), the size of the board (*BOARD_SIZE*), the ratio of independent outside directors (*INDEPENDENT*) and industry fixed effects (*Industry FE*). Cash flow from operating activities (*CFO*) is included for the backing-out problem. Standard errors are in parentheses. *, **, ***, indicate p-values of 0.10, 0.05, and 0.01, respectively.