Impacts of China Special Treatment Regulation of Security Market on Real and Accrual-Based Earnings Management

Yu-Shun Hung* **Cheng-Hung Chen**

Abstract

This paper examines the interaction between real and accrual-based earnings management of financially distressed Chinese firms under the special treatment system of capital market, especially the effect of 2003 regulatory revolution. This study focuses particularly on three time points of distress: first year of loss (warning of financial distress), labeled as 'special treatment' (period of financial distress), and removal of special treatment (end of financial distress) to investigate the impact on different corporate earnings management strategies.

The empirical results first show that firms that confronted the first year of losses use more real earnings management to increase earnings during the year of making losses, mainly through sales manipulation and excessive production. As the actual occurrence of the first year losses or the year labeled as 'special treatment', firms are likely to exploit discretionary accruals to take a big bath to obtain a profit in the near future. Furthermore, firms that successfully extract themselves from being recipients of special treatment employ upward accrued-based earnings management than do other firms. Finally, this study finds a trade-off impact on accrued and real earnings management tools associated with the 2003 modification of the special treatment regulation. This suggests that the accrual-based earnings management mode was easier to be manipulated by the company in order to achieve the goal of the earnings, but 2003 reform of regulations may constrain the motivation of firms to manipulate earnings through discretionary accruals, consistent with the conjecture of Graham *et al.* (2005).

Keywords: Financial distress, special treatment, discretionary accruals, real earnings management.

JEL classification codes: M41, M48.

I. Introduction

The economic turmoil of 2008 not only caused massive losses among enterprises but created concern regarding financial distress, which led to increased discussion of such matters (Van der Stede, 2011). Examination of mainland China revealed that its economic reforms have generated rapid growth and openness, and furthermore it has become a new global economic power; however, listed firms in China have also suffered financial setbacks, such as the management of Longtop Financial Technologies committed fraud, which was suspended by the New York Stock Exchange (NYSE) on May 22nd, 2011 on suspicion of concealing huge

liabilities and engaging in fictitious transactions. To date, many Chinese companies have been delisted and suspended from the NYSE, or were involved in auditor resignation owing to false financial statements. A series of frauds so alarmed the U.S. Securities and Exchange Commission (SEC) that it planned to visit China to gain an in-depth understanding. Investor confidence thus took yet another hit over financial statements.

As part of China's development, it has recently established relevant regulatory systems. In terms of security market regulations, the Shanghai Stock Exchange and Shenzhen Stock Exchange have just announced the 'Rules Governing the Listing of Stocks'. These rules were enacted in 1997 and amended a total of six times, in 2000, 2001, 2002, 2003[1], 2006, and 2008. Particularly, regulations regarding abnormal conditions within a company are specifically stated in a special chapter under the 'special treatment' category, and are primarily divided into *ST (referring to the special treatment to companies under the risk of termination of share listing) and ST (referring to other special treatments) in the 2003 regulation reform.

This aspect is frequently used to analyze the financial distress among researchers specialized in the special treatment regulations in China (Mahenthiran, Zhang and Huang, 2009; Chen, Chen, and Huang, 2010). Related studies focus on companies performing earnings management through discretionary accruals, extraordinary items or transactions among stakeholders and governmental subsides to avoid reported losses or delisting (Mahenthiran *et al.*, 2009; Chen *et al.*, 2010). Additionally, scholars have found that the government policies or regulations in China may impact corporate earnings management behavior (Chen, Wang, and Zhao, 2009; Hu, Li, and Liu, 2012). However, most such studies measure earnings management using only accounting-based earnings manipulation such as discretionary accruals (Hu *et al.*, 2012; Chen *et al.*, 2010).

Additionally, Chen and Yuan (2004) pointed out that to control the number of companies that can get listed the government set stringent initial public offering (IPO) regulations making the listing qualification a precious resource. This study thus would like to thoroughly focus on exploration of a series of earnings management behaviors before (i.e. the first year of losses), during (i.e. inclusion into the special treatment warning), and after (i.e. release from the special treatment system) financial distress involving enterprises in mainland China to avoid the likelihood of trading suspension or delisting.

[1] Amendments to the laws and regulations were scheduled for 2004, and were followed by the 'Notice on the Enhancement of Risk Warning in Terms of the Risk of Termination of Share Listing' launched by the Shanghai and Shenzhen stock exchanges in 2003. Amendments originally scheduled for 2004 were applied in 2003.

Sunder (1997) and Fields et al. (2001) pointed out that enterprises may simultaneously perform multi-tools of earnings management to clarify the complete impact of earnings management behavior. Based on the conjecture of Graham *et al.* (2005), Zhang (2012) found that firms desire various earnings management strategies depending on their operational and accounting environment. Thus, this study further analyzes how the above-mentioned enterprises facing different situations can vary from one another in terms of discretionary accruals and real earnings management behaviors to clarify holistic earnings management behavior including accrual and real activities manipulation. Furthermore, this research focuses on 'Notice on the Enhancement of Risk Warning in Terms of the Risk of Termination of Share Listing' announced in 2003 to explore whether the major amendment strongly influences the earnings management behavior of Chinese-listed firms.

The empirical results indicated that when a company experienced the risk of the first year losses, it was inclined to adjust upward earnings through the real earnings management, mainly using sales manipulation and excessive production. However, as a company was under the urgent situation such as the first year losses actually occurred or being included into/ released from the special treatment group, it then was inclined to manipulate earnings through discretionary accruals, showing the accrual-based earnings management mode was easier to be manipulated by the company in order to achieve the goal of the earnings. Particularly, companies actually occurred the first year of losses or received special treatment warning, they were highly motivated to engage in a downward manipulation of earnings through discretionary accruals, which implied an intention of 'taking a big bath (Healy, 1985)' in order to achieve the purpose of turning the future loss into surplus.

By observing the effect of 2003 reform of special treatment regulations, the results pointed out that the company faced with the first year of losses was more likely to engage in upward earnings manipulation using the real earnings management, mainly adopting excessive production and reduction in the discretionary expenses after the reform took place compared to prior to the reform. Additionally, compared to before the 2003 reform of regulations was launched, companies with the year of releasing from the special treatment system were inclined to decrease the usage of discretionary accruals after the 2003 reform of regulations was made. These results suggest that the 2003 reform of regulations may constrain the motivation of firms to manipulate earnings through discretionary accruals since accounting-based earnings management were to be stringently detected by the monitoring authority (Graham *et al.*, 2005).

This study makes the following contributions: first, unlike most prior related studies performing only the univariate analysis of accounting-based earnings management such as

individual accounts or discretionary accruals, this investigation focuses on cross-analysis of both accrual-based and real earnings management when an enterprise faces a time series of distress, which provides more complete evidences regarding corporate financial distress and earnings management strategies. Moreover, this study specifically examined the major amendments to the 2003 special treatment requirements on corporate earnings management behavior and the results demonstrate that the 2003 reform indeed influences the disclosure of financial reports among Chinese enterprises, particularly their decisions regarding earnings management strategies. Finally, By investigation of most related studies only examining a single time point of distress for analysis, this study however found that confronting the Chinese special treatment regulations, listed enterprises truly consider different earnings management strategies in time series of financial distress. These evidences suggest that although the purpose of government policies initiated by the Chinese authorities is to protect investors, regulatory policies impact on the quality of corporate financial reporting, and may disturb the healthy development of the securities market if control mechanism is not stringently effective.

Besides this introduction, which summarizes the research motivation and contributions, the second section focuses on the literature review and hypotheses development. While the third section investigates the sources of sample data and methodology, the fourth section outlines the empirical results, the fifth section presents the sensitivity analysis, and the last section includes conclusions.

II. Literature Review and Hypotheses Development

II.1. The evolution of special treatment regulation in China

The special treatment regulations in China are derived from Articles 157 and 158 of the Company Act, which states: 'listed companies facing consecutive three years of losses, do not meet the listing requirements if these losses cannot be eliminated within three years, and the Securities Management Department of the State Council may decide to terminate the listing of the shares of such a company.' In March 1998, the China Securities Regulatory Commission issued the 'Notice on the Implementation of Special Treatment for Listed Companies in Abnormal Situations' and requested that the Shanghai and Shenzhen stock exchanges implement the special treatment to listed companies with abnormal financial situations. The 'Shanghai Stock Exchange Listing Rules' (hereafter termed the Exchange) Provision 13.1.1 regarding the 'special treatment' indicated that listed companies facing abnormal financial or other situations that created a risk of having their listings terminated, or that faced difficult company prospects, were difficult for investors to make judgments about, and hence their investment rights and interests might easily be compromised. Consequently, the Exchange may subject these companies to 'special treatment'.

In April 2003, Shanghai and Shenzhen stock exchanges announced and enacted the 'Notice on the Enhancement of Risk Warning in Terms of the Risk of Termination of Share Listing'. 'Special treatment (ST)' is divided into the 'Special Treatment for Companies facing their Share Market Listings (hereafter termed risk of delisting, labeled *ST) and other special treatments (labeled ST). The next year, the 'Rules Governing the Listing of Stocks' were amended accordingly. Major reform and modification that highlighted matters related to financial abnormality accounted for the spirit of the system this time, such as errors and misrepresentations in financial statements, losses made after corrections, abnormal operation of the main business, or negative net profit following the deduction of extraordinary items, all of which were included in the *ST special treatment. The amendment was intended to draw attention to financial abnormalities, and companies displaying financial abnormalities were specially labeled as *ST. Thus, the special treatment label *ST designed for companies experiencing more severe financial abnormalities, and thus this amendment may cause the management to perform different earnings management behavior.

II.2. Financial distress and earnings management

Recently, regarding the financial distress, the special treatment implemented in the Shanghai and Shenzhen Stock Exchanges is most widely discussed and explored among studies by Chinese scholars (Mahenthiran *et al.*, 2009; Chen *et al.*, 2010).

Prior literature investigated earnings management behavior of Chinese companies, such as Aharony et al. (2000) found Chinese enterprises engaging in earnings manipulation before the IPOs of corporate stocks selling to foreign investors. Similarly, Chen and Yuan (2004) indicated that since the central government strictly controls the listed number of firms making the listing qualification very precious, Chinese enterprises engaged in earnings management through non-operating items. Chen, Lee, and Li (2008) showed that Chinese local governments assisted state-owned listed firms to perform earnings manipulation for bypassing the regulation set by central government.

Mahenthiran *et al.* (2009) pointed out that as the company was included in the special treatment system, its agency problems seemed to become more serious, but in terms of corporate governance, it did not differ significantly compared to the paired sample. Additionally, such a company would engage in earnings management following the first year of loss to improve its financial performance. Their study also noted that the agency problem was a key influence on the financial performance; however, the delisting mechanism not only failed to improve the company's operation and performance, but further pushed the enterprise to move on to earnings management.

Chen *et al.* (2010) also adopted a special treatment company during 2002 to 2006 as the research object to examine the implementation of earnings management using discretionary accruals, and found that such a company would implement downward adjustment of discretionary accruals before the ST designation and upward adjustment after the ST designation to avoid temporary delisting. Chen, Wang, and Zhao (2009) indicated that for decreasing/ avoiding the likelihood of trading suspension or de-listing[2], listed companies in China engaged in earnings management through reversing asset impairments, which was motivated by regulatory incentives.

Hu, Li, Liu, and Tian (2012) found that Chinese-listed firms would engage in earnings management motivated by policies of the China Securities Regulatory Commission (CSRC) for avoiding delisting or meeting refinancing requirements. Their findings suggest that government policies may harm investors and disturb the healthy development of the securities market if control mechanism is not strictly effective.

International studies also have investigated non-Chinese enterprises facing financial distress conditions. For example, Dominic (1999) focused on companies with financial difficulties and studied 127 companies suffering three years of consecutive losses and reducing dividends adopted accruals to smooth their financial difficulties. The results of Dominic (1999) could not prove correlation among accrual earnings management and liability covenants, union negotiations or government lobbying, except for the fact that excessively low pay led managers to engage in earnings management.

Jaggi and Lee (2002) investigated whether the use of accruals to adjust revenue was correlated with the seriousness of the financial distress and the violation of creditor exemption of liability convention. Using companies that had violated debt covenants and/or faced debt restructuring served as the object, their results pointed out that the managers of these companies facing financial difficulties adjusted discretionary accruals upward before the violation of the creditor exemption of liability convention. Moreover, a downward adjustment of discretionary accruals occurred when financial difficulties were restored, supporting that the adjustment direction of discretionary accruals was influenced by the seriousness of the liability convention.

Rosner (2003) explored whether the company was inclined to manipulate earnings upward

[2] Chinese de-listing regulations state that if listed companies report consecutive losses over three years, they will face the possibility of de-listing.

before it went bankrupt, and whether the CPA detected the condition of overstated statements. The study found out that in the year before it went bankrupt (with no intention to continue operations), obvious intentions were found to engage in upward manipulation of receivables, inventory, fixed assets, revenue, net working capital, and current discretionary accruals; changes in the cash flow from operational activities and net cash were both found to be negative; and the difference between the accrual-based net income and cash flow from operational activities was higher than for the counterpart. Furthermore, during the year of the CPA issued a going-concern opinion, previous overstated financial conditions exhibited a reversal phenomenon.

Butler, Leone, and Willenborg (2004) investigated the correlation between enterprises receiving modified unqualified opinions and engaging in abnormal accruals, and found that these companies had highly negative abnormal accruals, mainly because of the financial distress they encountered, rather than the going-concern opinion they received. Overall, the evidence was insufficient to conclude that the company receiving a going-concern opinion was more likely to engage in earnings management than the control firm. Charitou, Lambertides, and Trigeorgis (2007) studied the earnings management behavior of 455 companies that filed for bankruptcy between 1986 and 2001. Their study found that earnings management occurred in the year before bankruptcy, which was consistent with previous results. Additionally, their study also showed that companies that received unqualified opinions four or five years before bankruptcy occurred would adjust their earnings upward, consistent with the results obtained by Rosner (2003); further, companies that received qualified opinions in the prior year performed more conservative earnings management.

By summarizing the above literature review, if Chinese-listed enterprises have already experienced a year of losses and the losses repeat the next year, they will be subjected to special treatment by the Chinese regulatory authority. Therefore, this study infers that a first year loss occurs within an enterprise in mainland China, it can be deemed a warning indicator before the outbreak of the financial distress. Companies facing their first annual loss in mainland China would engage in earnings management (Hu *et al.*, 2012; Chen *et al.*, 2010).

Rosner (2003) pointed out that in the year before companies started to suffer financial distress, these companies were more likely than other companies to adjust their earnings upward (Charitou *et al.*, 2007). Burgstahler and Dichev (1997) further observed that corporate losses were considered adverse news, and thus if such a loss lay in the zero earnings threshold, it might tend to transform the earnings into a surplus via earnings management to leap over the zero earnings threshold (Degeorge, Patel, and Zeckhauser, 1999). Meanwhile, Roychowdhury (2006) developed a real earnings management model and figured out that companies close to

the range of earnings threshold could manipulate the earnings through either excessive production costs or reduction of discretionary expenses.

In terms of enterprise behavior in relation to engaging in earnings management based on special treatment regulations in China, most such studies measure earnings management using discretionary accruals (Hu *et al.*, 2012; Chen *et al.*, 2010). However, Fields et al. (2001) pointed out that the observation of sole earnings management technique at a time cannot clarify the overall effect of earnings management activities. Similarly, Sunder (1997) noted that an enterprise might simultaneously adopt numerous earnings management tools. Zhang (2012) investigated how managers trade off real activities manipulation and accrual-based earnings management, and found that firms prefer different earnings management strategies depending on their operational and accounting environment.

This study thus would like to explore how Chinese-listed enterprises facing their first year of losses engage interactively in discretionary accruals and real activities manipulation relative to other companies. Since Chinese government stringently control the number of companies that can get listed, the listing qualification becomes a precious resource (Chen and Yuan, 2004). This study further predicts that to avoid being included in the special treatment warning mechanism, the degree to which companies experiencing their first year of losses engage in earnings management using discretionary accruals and real operational activities is much more severe than that for other companies. Thus this study hypothesis H1-1 the following:

H 1-1: For a company that is facing its first year of losses, the manager has strong incentive to engage in earnings management behavior (accrual versus real earnings management).

Further, based on the viewpoint of Zhang (2012), this study focuses on whether companies with the year of receiving special treatment differ in their behavior of engaging in earnings management through real operating activities and discretionary accruals. Since listing qualification is valuable (Chen and Yuan, 2004), this research expects that to avoid the possibility of trading suspension, Chinese-listed companies in the year of receiving special treatment would be more highly engaged in earnings management through accruals and real operational activities than control firms. Thus, the following hypothesis is proposed:

H 1-2: For a company that is receiving special treatment, the manager has strong incentive to engage in earnings management behavior (accrual versus real earnings management).

Past studies on special treatment found that to avoid of being delisted or included in the special treatment system, companies would manipulate earnings through discretionary

accruals (Mahenthiran *et al.*, 2009; Chen *et al.*, 2010). This study thus infers that manipulation of earnings management may remove companies from the scope of special treatment warning. Hence this investigation further focused on companies in the year of releasing from special treatment, and particularly explored the difference in firm behavior of engaging in earnings management (Zang, 2012). This study expects that to avoid the possibility of delisting, Chinese-listed companies being successfully released from the special treatment category would engage in more serious earnings management through discretionary accruals and real operational activities relative to other companies. The following hypothesis is proposed:

H 1-3: For a company that is releasing from special treatment, the manager has strong incentive to engage in earnings management behavior (accrual versus real earnings management).

In April 2003, the Shanghai and Shenzhen stock exchanges announced the 'Notice on the Enhancement of Risk Warning in Terms of the Risk of Termination of Share Listing,' which also divided the special treatment into 'delisting risk warning (*ST)' and 'other special treatment (ST)'. In the 2003 reform of the special treatment regulations in China, firms with financial abnormalities being particularly labeled *ST; besides, the inclusion of significant accounting errors or false reports in the financial statements were strictly included in the scope of the 2003 modification. This amendment kept enterprises in suspense regarding whether investors would have negative self-impressions due to abnormal alerts such as false financial statements. This study thus infers that the 2003 reform actually created strong incentives for enterprises with the first year of losses or the year of receiving *ST due to two annual consecutive losses to engage in earnings management.

Following the Shanghai and Shenzhen stock exchanges isolated the *ST and ST systems, interim effects should be disclosed among companies that were released from special treatment. If a company that faced two annual consecutive losses were included in *ST, in the next year when that company begin to achieve profits, it could apply to repel a decree. But if its main business operations were found to be operating abnormally, or the net profits obtained after deductions of non-recurring gains and losses were found to be negative via an external auditor, it still would remain in the special treatment group. Thus, this study infers that if a company receiving special treatment would like to be exempted from special treatment substantially, it could no longer manipulate earnings through non-recurring transactions following the launch of the 2003 reform, but could only do so through accruals and real activities manipulation.

Similarly, Graham *et al.* (2005) conjectured that following the Enron and WorldCom

accounting scandals, firms were inclined to engage in real activities manipulation rather than discretionary accruals owing to their reluctance to admit to accounting-based earnings management. Therefore, this study expects that for companies with first year losses or the year of including into/ releasing from special treatment, their motivation for engaging in earnings management through accruals and real operational activities manipulation could be increased to realize profits following the 2003 reform. Hence, the following hypotheses are proposed:

H 2-1: The behavior of earnings management for firms with first year losses tends to be different following the 2003 law revolution.

H 2-2: The behavior of earnings management for firms with the year of receiving special treatment tends to be different following the 2003 law revolution.

H 2-3: The behavior of earnings management for firms with the year of releasing from special treatment tends to be different following the 2003 law revolution.

III. Research Method

III.1. Sample selection

The study data were obtained from the database of disclosure information of A-share listed companies in China maintained by the Taiwan Economic Journal (TEJ) and CSMAR databases, supplemented by public information website of the SFC. First, a total of 29,750 financial data observations were gathered during 1998[3] – 2013, and were used to calculate discretionary accruals and real earnings management. The selection criteria are: (1) excluding financial services and insurance data (which were excluded due to their special characteristics); (2) deleting insufficient data in calculating earnings management and conservatism for each year and industry at least 15 observations; (3) considering related data on variables required for the regression. The final sample thus comprised 19,967 observations, and the research period ran from 1999 to 2013.

III.2. Variable definition and measurement

III.2.1. Dependent variables

1. Discretionary accruals (*DA* **)**

Estimation of discretionary accruals in this investigation was based on the performance adjustment model developed by Kothari, Leone, and Wasley (2005), used cross-sectional

[3] The sample period ran from 1998 to 2013 since information on the cash flow of listed companies was not given until 1998.

analysis and estimated the discretionary accruals of each firm using the per-year and per-industry methods, while the pre-ROA among the models used to estimate discretionary accruals served as the control item. To test the direction of firm earnings management, this study further divided discretionary accruals (*DA*) into upward discretionary accruals (*DA* +) and downward discretionary accruals (*DA* −).

2. Real earnings management (*REM*)

Estimation of the real earnings management conducted in this investigation was based on the model developed by Roychowdhury (2006), and adopted cross-sectional analysis to derive the abnormal cash flow (*DISCFO*), abnormal production cost (*DISPROD*), and abnormal discretionary expense (*DISPEXP*) respectively. This study further adopted the method designed by Cohen *et al.* (2008) as a reference of the comprehensive index of the real earnings management by using the abnormal cash flow and abnormal discretionary expense multiplied by -1 respectively and adding the abnormal production cost.

III.2.2. Independent variables

1. Before and following 2003 amendments of the regulations（*Time*）

In 2003, Shanghai Stock Exchange and Shenzhen Stock Exchange announced the 'Notice on the Enhancement of Risk Warning in Terms of the Risk of Termination of Share Listing', following that, special treatment (ST) was divided into under the risk of delisting (*ST) and other special treatment (ST). Hence, this study expected that such amendments would cause impacts on the behavior engaging in earnings management conducted by enterprises. This study used binary variables to measure it, 1 referred to after the 2003 reform took place and 0 referred to before the 2003 reform took place.

2. First year of losses（*Loss_D*）

Hu *et al.* (2012) indicated that Chinese listed companies facing losses during prior years would engage in earnings management using accruals. Roychowdhury (2006) indicated that companies that were close to the earnings threshold could manipulate earnings through excessive production costs or reduction of discretionary expenses. This study thus proposed that companies faced with a first year of losses would engage more severely in earnings management compared to companies not facing such losses. This study used binary variables to indicate whether companies were engaging in their first year of losses, where 1 denotes companies experiencing first year of losses, while 0 represented other companies.

3. Inclusion of firms in the special treatment system（*ST_D*）

Related Chinese studies found that companies facing stock suspension or consecutive losses would intensify their earnings management through discretionary accruals (Cheng *et al.*,

2010; Hu *et al.*, 2012). Therefore, this study expected that companies receiving special treatment due to two annual consecutive losses were found to be more severe in engaging in earnings management compared to those not undergoing special treatment. This study used binary variables to measure whether firms had been included in the special treatment group due to two annual consecutive losses, where 1 denote companies earmarked for special treatment, while 0 represented all other companies.

4. Release of firms from special treatment（*Clear_S_D*）

Chen *et al.* (2010) found that companies earmarked for special treatment would engage in accrual-based earnings management to avoid inclusion in the special treatment group or termination of listing. This study thus further expected that companies undergoing special treatment that were released from this system were found to engage more severely in earnings management relative to companies not released from the system. This investigation used binary variables to indicate whether companies had been released from special treatment: 1 denoted companies that had undergoing special treatment and already released from the system, or 0 otherwise.

III.2.3. Control variables

Companies would encounter with special treatment due to two annual consecutive losses; therefore, motives such company had of engaging in the earnings management might be different from other types of industries. Chen *et al.* (2010) pointed out that in the previous before an enterprise was included into special treatment, a reduction in discretionary accruals could be found. Therefore, in this study, two annual consecutive losses （*Loss_2_D*） were listed as the control variable and were measured by virtual variables, 1 referred to companies faced with two annual consecutive losses, or else 0. Becker, DeFond, Jiambalvo, and Subramanyam (1998) pointed out that the scale of a company represented the multi-levels of missing variables; therefore, by controlling the company scale could control the potential impact caused by missing variables on corresponding variables, thus this study used the natural logarithm of total assets in the beginning of period to measure the size of company (*SIZE*). DeAngelo, DeAngelo, and Skinner (1994) indicated that when companies with gearing ratio were in the face with financial distress, incentives were provided for them to adjust earnings in order to obtain beneficial negotiation contracts. Jaggi and Lee (2002) also discovered such aspect, but additionally pointed out that prior to the financial distress restricting, a company would make an upward adjustment of discretionary accruals to avoid defaulting. In this study, the liability ratio (*LEV*) was labeled as the control variable, measured as the ratio of debts to total assets, but direction was not expected.

Dechow, Kothari, and Watts (1998) pointed out that a negative correlation could be found

between operational cash flow and discretionary accruals. Therefore this study used the result derived from the operational cash flow, inflated by total assets of the initial period (*CFO_A*) as the control variable, and the direction was expected to be negative. Madhogarhai, Sutton, and Kohers (2009) found that managers in the growing enterprises would engage in an upward or a downward earnings management. Therefore, this study included the growing opportunity (*GROWTH*) as the control variable, used the change in the sales revenue, inflated by the sales revenue of the previous period, the direction was not expected. Furthermore, in order to avoid the reversal phenomenon of discretionary accruals which could affect empirical results, Kim, Chung, and Firth (2003) used the discretionary accruals of the sample company in the previous year as the control variable. Therefore, this study also included the dependent variable of the previous period as the control variable accordingly; further, because measuring the dependent variable of earnings management in each model was different, this study labeled them as *Y-LAG* in all the tables. Since correlations could be found among earnings management tools adopted by the company (Zang, 2012), this study included different tools of earnings management as the control variable. For example, if discretionary accruals were used as dependent variables, the real operational activities were included as the control variable. More important, this study performs the Seemingly Unrelated Regression model to have a full grasp of the correlation between accruals and real earnings managements.

IV. Empirical Results

IV.1. Descriptive statistics

Table 1 summarizes the descriptive statistics. The averages of discretionary accruals (*DA*) and real earnings management (*REM*) were -0.0022 and 0.0058, respectively. Among test variables, the average sample of companies faced with the first year of losses (*Loss_D*) was accounted for 10.67% of all the samples. The average of *ST_D* variable was 0.0162, showing that companies with the first year of being included into special treatment were accounted for 1.62% of all the samples. The average of *Clear_S_D* variable was 0.0193, showing among listed companies, 1.93% of them were released from the special treatment system.

Among control variables, companies faced with two annual consecutive losses (*Loss_2_D*) were accounted for 3.51% of all the samples; the average debt ratio (*LEV*) was approximately 48.1081% of total assets; the average cash flow from operational activities (*CFO_A*) was accounted for 5.07% of the total assets at the beginning period; the average growth rate of net sales was 23.5475 %. Among which, the maximum values of *LEV* and *Growth* were 161.38% and 373.38% with relatively wide range of variance.

IV.2. Correlation analysis

Table 2 shows the correlation coefficient among variables. Discretionary accruals (*DA*) was positively and significantly correlated with Real earnings management (*REM*), indicating that Chinese listed firms considered these two earnings management tools as complementary mechanisms. Additionally, Real earnings management (*REM*) was positively and significantly correlated with *Loss_D*, *ST_D*, and *Clear_S_D*, showing that when a company was faced with first year of losses, inclusion of special treatment, or release from special treatment, the scale of real earnings management showed a tendency of increasing. Furthermore, *DA* and *REM* were negatively and significantly correlated with firm size (*SIZE*) but positively related with liability ratio (*LEV*), showing that for firms with smaller firm size or higher liability ratio, the scale of discretionary accruals and real earnings management would be larger.

As for the control variables, many of them were also correlated. For example, companies faced with two annual consecutive losses (*Loss_2_D*) and firm size (*SIZE*) were significantly and negatively correlated. Therefore, diverse regression models should incorporate these control variables. Based on our initial judgment, no serious multi-collinearity problem exists in the independent variables since their correlation is below 0.7. Additionally, this study subsequently devised a formal multi-collinearity test for detecting the existence of serious multi-collinearity.

IV.3. Multivariate regression analysis

First, this study examined corporate earnings management behavior when companies faced with financial distress in three stages: whether the first year of losses occurred, whether inclusion of special treatment took place, and whether released from special treatment, to understand the correlation between discretionary accruals and real earnings management among companies. Next, this study explored the behavior of engaging in the earnings management of companies in three stages before and after the 2003 reform of regulations was launched.

IV.3.1. The real and accrual-based earnings management behavior of firms with the first year of losses

Table 3 shows that compared to companies not faced with the first year of losses, the intention of using discretionary accruals to manipulate upward earnings management was reduced among companies faced with the first year of losses (the dependent variable was *DA*, and the coefficient of *Loss_D* was -0.0716, which reached a significant level of 1%). However, for real earnings management, the result shows that compared to companies not faced with the first year of losses, companies faced with the first year of losses were likely to

make an upward adjustment of earnings (the dependent variable was *REM*, and the coefficient of *Loss_D* was 0.0627, which reached a significant level of 1%).

Additionally, earnings management behavior among sample firms was divided into upward earnings management (namely upward EM) and downward earnings management (namely downward EM). For upward EM sample groups, firms with the first year of losses adjusted upward earnings mainly through real operating activities (the dependent variable was *REM+*, and the coefficient of *Loss_D* was 0.0305, which reached a significant level of 5%). However, for downward EM sample groups, firms with the first year of losses mainly adopted discretionary accruals to decrease corporate earnings (the dependent variable was *DA–*, and the coefficient of *Loss_D* was -0.0491, which reached a significant level of 1%).

By summarizing the above-mentioned, companies faced with the first year of losses would make an upward adjustment of earnings mainly through real earnings management during the year (such as, manipulations of sale price and condition, excessive production, and reduction in the discretionary expense) to avoid or delay the formation of loss. Additionally, if the loss has occurred at the end of the period, a downward adjustment of earnings could be found through discretionary accruals to try to change the future loss into surplus in order to avoid of being included into special treatment, which is consistent with the decision of real earnings management preceding the decision of discretionary accruals (Zang, 2012).

As for control variables, if a company was faced with two annual consecutive losses by the end of the period, the intention of using the accrual-based earnings management would decrease (the dependent variable was *DA*, and the coefficient of *Loss_2_D* was -0.0318, which reached a significant level of 1%), and making a downward adjustment of the real earnings management could be found as well (the dependent variable was *REM*, and the coefficient of *Loss_2_D* was -0.0485, which reached a significant level of 1%). A positive correlation was found between discretionary accruals (*DA*) and real earnings management (*REM*), implying firms mutually adopted accrual-based and real earnings management. The smaller the company size and the higher the liability ratio, the higher the scale of earnings management. A positive tendency could be found between current earnings management and previous earnings management an enterprise engaged in.

IV.3.2. The real and accrual-based earnings management behavior of firms included into the special treatment

According to Table 4, during the year of receiving special treatment, companies were inclined to decrease corporate earnings through discretionary accruals (the dependent variable was *DA*, and the coefficient of *ST_D* was -0.0498, which reached a significant level of 1%). In terms

of the real earnings management, compared to companies not under the first year of special treatment, the *REM* comprehensive indicator did not show a significant difference among companies under the first year of receiving special treatment. Particularly, from observing the companies in the sample group of downward earnings management, the scale of engaging in a downward adjustment of discretionary accruals would be more negative with ST firms under the first year (the dependent variables was *DA*–, coefficients of *ST_D* was -0.0432, which reached a significant level of 5%); however, the downward *REM* comprehensive indicator would be more positive with the first year of ST firms (the dependent variables was *REM*–, coefficients of *ST_D* was 0.0861, which reached a significant level of 1%).

This result indicated that compared to companies not under the first year of special treatment, companies under the first year of special treatment had higher intentions of manipulating earnings through discretionary accruals. By looking at companies in the sample group of downward earnings management, companies under the first year of special treatment tended to engage in a downward manipulation of earnings through discretionary accruals, which implied an intention of 'taking a big bath (Healy, 1985)' in order to achieve the purpose of turning the future loss into surplus. In addition, from the results above, as a company actually occurred the first year of losses, it would be inclined to manipulate earnings downward through discretionary accruals directly, indicating that the accrual-based earnings management mode was easier to be manipulated.

IV.3.3. The real and accrual-based earnings management behavior of firms released from the special treatment

According to Table 5, for companies that were subsequently released from special treatment relative to others, no significant difference was found in the scale of discretionary accruals and real earnings management (the dependent variable was *DA*, and the coefficient of *Clear_S_D* was -0.0101, which did not reach a significant level; additionally, the dependent variable was *REM*, and the coefficient of *Clear_S_D* was 0.005, which also did not reach a significant level). By looking at companies in the sample group of upward earnings management, the scale of engaging in a upward adjustment of discretionary accruals would be more positive with firms successfully released from special treatment (the dependent variables was *DA*+, coefficients of *Clear_S_D* was 0.053, which reached a significant level of 1%).

By summarizing the above-mentioned, compared to others, companies under special treatment that were successfully released from the system might use accrual-based earnings management as the main manipulation approach to adjust upward corporate earnings.

IV.3.4. Impacts of 2003 revolution on the earnings management behavior of firms with the first year of losses

In terms of the 2003 reform of regulation, Table 6 shows that during the period before the 2003 reform of regulations took place, companies faced with the first year of losses were likely to adopt discretionary accruals to decrease corporate earnings (the dependent variable was *DA*, and the coefficient of *Loss_D* was -0.063, which reached a significant level of 1%). However, compared to the period before the 2003 reform, the scale of using discretionary accruals for companies faced with the first year of losses did not differ from the period after the 2003 reform of regulations was launched (the dependent variable was *DA*, and the coefficient of *Time*×*Loss_D* was -0.0096, which did not reach a significant level).

In terms of the real earnings management, compared to before the 2003 reform took place, companies faced with the first year of losses were inclined to make an upward adjustment of earnings using real operating activities after the 2003 reform of regulations took place (the dependent variable was *REM* and the coefficient of *Time*×*Loss_D* was 0.0659, which reached a significant level of 1%).

By summarizing the above-mentioned, the results showed that companies faced with the first year of losses after the 2003 reform of regulations took place compared to before it took place would more incline to engage in an upward earnings manipulation through the real earnings management instead of through discretionary accruals. Due to regulations modified in 2003, manipulations via non-recurring gains and losses were strictly monitored, and thus companies had higher intentions of making an upward adjustment of earnings through real earnings management. The effect of the 2003 reform of regulations in fact pushed enterprises to manipulate earnings through real earnings management model that was hard to detect by the monitoring authority.

IV.3.5. Impacts of 2003 revolution on the earnings management behavior of firms included into the special treatment

In terms of impacts caused by the 2003 reform of regulations, according to Table 7, during the period before the 2003 reform of regulations took place, companies with the first year of receiving special treatment were likely to decrease corporate earnings through discretionary accruals (the dependent variable was *DA*, and the coefficient of *ST_D* was -0.0548, which reached a significant level of 10%). The possible reason is that companies with the first year of receiving special treatment tried to make the future loss into surplus. Further, compared to before the 2003 reform was made, no significant difference in discretionary accruals was found between companies with the first year of receiving special treatment and others after the 2003 reform of regulations was introduced (the dependent variable was *DA*, and the

coefficient of *Time*×*ST_D* was 0.0055, which did not reach a significant level). Additionally, in terms of the real earnings management, compared to before the 2003 reform was made, no significant difference was found among the two types of company after the 2003 reform of regulations was introduced (the dependent variable was *REM*, and the coefficient of *Time*×*ST_D* was -0.0421, which did not reach a significant level). In short, the result indicated that as a company was faced with an urgent special treatment condition, even though regulations became stricter in 2003, these regulations still could not restrain the company from engaging in earnings management.

IV.3.6. Impacts of 2003 revolution on the earnings management behavior of firms released from the special treatment

According to Table 8, compared to before the 2003 reform of regulation was made, companies were inclined to decrease the scale of using discretionary accruals in the year of releasing from the special treatment system after the 2003 reform of regulations was made (the dependent variable was *DA*, and the coefficient of *Time*×*Clear_S_D* was -0.0765, which reached a significant level of 5%). In terms of the real earnings management, compared to before the 2003 reform of regulations was made, no significant difference was found among companies with the year of releasing from the special treatment system compared to others after the 2003 reform of regulations was made (the dependent variable was *REM*, and the coefficient of *Time*×*Clear_S_D* was -0.0186, which did not reach a significant level).

Furthermore, from observing the companies in the sample group of upward earnings management, compared to before the 2003 reform of regulation was made, the scale of engaging in upward adjustment of discretionary accruals decrease after the 2003 reform of regulations was made (the dependent variables was *DA*+, the coefficient of *Time*×*Clear_S_D* was -0.1865, which reached a significant level of 1%). On the other hand, for downward EM sample groups, the downward discretionary accruals would be more positive with the year of firms released from special treatment (the dependent variables was *DA*−, the coefficient of *Time*×*Clear_S_D* was 0.2457, which reached a significant level of 5%).

By summarizing the above-mentioned, the result indicated that compared to before the 2003 reform of regulations was made, companies with the year of releasing from the special treatment system tended to decrease the usage of discretionary accruals to manipulate corporate earnings after the 2003 reform of regulations was made. This suggests that the 2003 reform of regulations constrain the motivation of firms that were released from ST to manipulate earnings through discretionary accruals since accounting-based earnings management were to be stringently detected by the monitoring authority (Graham *et al.*, 2005).

V. Sensitivity Analysis

V.1. Three individual indicators of real earnings management

Based on the method of Roychowdhury (2006), this study further observes three components of the *REM* comprehensive index, i.e. the abnormal cash flow (*DISCFO*), abnormal production cost (*DISPROD*), and abnormal discretionary expense (*DISPEXP*) respectively.

First, with regard to the first year of losses, the results of Table 9 combined with Table 3 show that compared to companies not faced with the first year of losses, companies faced with the first year of losses were inclined to engage in real activities manipulation to make an upward adjustment of earnings through sales manipulation and excessive production (the dependent variables were *DISCFO* and *DISPROD* respectively, and the coefficients of *Loss_D* were -0.0333 and 0.0462, which both reached a significant level of 1%).

With regard to the first year of receiving the special treatment system, the results of Table 10 combined with Table 4 indicate that in the downward EM group, companies with the first year of receiving special treatment were less likely to adopt real activities manipulation for a downward adjustment of earnings, particularly through a reduction in the discretionary expenses (the dependent variables was *DISEXP*, coefficients of *ST_D* was -0.0246, which reached a significant level of 1%).

According to Table 11, for companies with the year of releasing from special treatment relative to others, no significant difference was found in the scale of sales manipulation, excessive production, and discretionary expenses, consistent with the result of Table 5 that no significant difference was found in the scale of the *REM* comprehensive indicator.

Further, with regard to the impact of the 2003 reform of regulation, the results of Table 12 combined with Table 6 show that compared to before the 2003 reform took place, companies faced with the first year of losses were inclined to make an upward adjustment of earnings through the real activities manipulation, and main approaches included the excessive production costs and reduction in the discretionary expenses (dependent variables were *DISPROD* and *DISEXP* respectively, and coefficients of *Time×Loss_D* were 0.0325 and -0.0242, which both reached a significant level of 1%).

Additionally, the result of Table 13 shows that compared to before the 2003 reform was made, no significant difference was found in the scale of sales manipulation, excessive production, and discretionary expenses among companies with the first year of receiving special treatment relative to others after the 2003 reform of regulations was introduced. Similarly, compared to before the 2003 reform was made, no significant difference was found in the

scale of real activities manipulation through sales manipulation, excessive production, and discretionary expenses among companies with the year of releasing from special treatment relative to others after the 2003 reform of regulations was introduced.

V.2. Another comprehensive indicators of real earnings management

Regarding the aforementioned real earnings management, this study uses the comprehensive indicator developed by Cohen et al. (2008). For robustness, this study used the measurement method developed by Cohen and Zarowin (2010) to proxy for real earnings management. First, REM_1 considered that abnormal product costs minus abnormal discretionary expenses. Second, REM_2 is defined as abnormal cash flows multiplied by -1 minus abnormal discretionary expenses.

The results[4] of *REM1* and *REM2* were similar to that of the *REM* comprehensive indicator, except that *REM1* indicator became significantly positive for companies with the first year of receiving special treatment.

VI. Conclusion

This study aimed to explore behaviors of enterprises with financial distress of engaging in discretionary accruals and real earnings management under the special treatment system in China, and were divided into three stages including before the financial distress took place (with or without the first year of losses), whether there was financial distress (listed as the special treatment or not), and whether got released from the financial distress (released from the special treatment or not).

Another focus of this study lied in whether the reform of special treatment regulations enacted in 2003 could affect the earnings management model the enterprise adopted in the aforementioned different points of time (the first year of losses, included into the special treatment, released from the special treatment). In addition to clearer labeling, the purpose of the 2003 amendment was to highlight the financial abnormality alert. Therefore, in order to avoid of being labeled as financial abnormality, an enterprise might engage in a different model of earnings management behavior after the 2003 reform of special treatment regulations took place.

The empirical results indicated that companies experiencing the risk of their first annual loss were likely to engage in upward adjustment of real earnings management mainly through

[4] The results are not displayed, but can be provided on request.

sales manipulation and excessive production during the year compared to companies not experiencing their first annual loss. As the first year losses actually occurred in the end of the period, downward adjustment of earnings raised in terms of accrual-based earnings management for firms whose intention to 'take a big financial bath (Healy, 1985)' is obvious, so that loss aversion can be expected to avoid classification in the special treatment category. Subsequently, once a company was included in the special treatment category due to two consecutive years of losses, the scale of its downward earnings manipulation through discretionary accruals was found to be much higher than other companies, which implied an intention of 'taking a big bath' in order to achieve the purpose of turning the future loss into surplus. Meanwhile, as the company prepared for release from the special treatment, it would be inclined towards upward earnings manipulation through accruals to avoid delisting. This demonstrates that a company that faces an urgent situation involving special treatment will be more inclined to adopt the easier approach, namely using discretionary accruals to manipulate earnings.

In terms of the effect of the 2003 regulatory reform, the results showed that due to the 2003 regulation modification that manipulations via non-recurring gains and losses were strictly monitored, companies with the first year of losses had higher intentions of making an upward real earnings management mainly through excessive production and reduction in the discretionary expenses after the 2003 reform of regulations took place compared to before it took place. This indicated that effect of the 2003 reform of regulations in fact pushed enterprises with the first year losses to manipulate earnings through real earnings management model that was hard to detect by the monitoring authority. Moreover, companies with the year of releasing from the special treatment system tended to decrease the usage of discretionary accruals to manipulate corporate earnings after the 2003 reform of regulations was made compared to before the 2003 reform of regulations was made. This suggested that the 2003 reform of regulations constrain the motivation of firms to manipulate earnings through discretionary accruals since accounting-based earnings management were to be stringently detected by the monitoring authority (Graham *et al.*, 2005).

The implication of this study is that the existence of special treatment system is due to the intention of the monitoring authority in China of trying to remind investors about enterprises under risks, and thus clauses and special labels have been established accordingly. However, these regulations have indeed driven enterprises to engage in earnings management behavior in order to avoid of being included into the special treatment or escape from the regulations. Investors have actually been drowned into a more severe of information asymmetry crisis that they no longer wholly trust financial statements provided by enterprises, and thus doubts concerning the quality of financial statements. The monitoring authority in China made

amendments to special treatment regulations in 2003 to avoid the reporting of false financial statements, and regulations placed importance on highlighting the financial abnormality alert. However, enterprises are likely to engage in a series of different earnings management models as well as to strengthen the intensity in order to get rid of such adverse perception.

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Table 1 Descriptive Statistics (N=19,967) [ab]

	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
DA	-0.0022	0.1886	-0.589	-0.093	-0.0068	0.0779	0.739
RM	0.0058	0.2728	-1.108	-0.0982	0.0272	0.1386	0.8615
Loss_D	0.1067	0.3088	0	0	0	0	1
ST_D	0.0162	0.1262	0	0	0	0	1
Clear_S_D	0.0193	0.3045	0	1	1	1	1
Loss_2_D	0.0351	0.1839	0	0	0	0	1
SIZE	14.4345	1.2188	11.9038	13.6201	14.2855	15.107	18.2215
LEV	48.1081	24.1699	4.88	31.78	47.83	62.32	161.38
CFO_A	0.0507	0.0851	-0.2091	0.005	0.0484	0.0978	0.2993
Growth	23.5475	54.2022	-72.04	0.39	15.3	33.54	373.38

[a.] *DA*: discretionary accruals; *RM*: the integrated indicator of real earnings management, derived from the abnormal production cost minus the abnormal cash flow, and minus the abnormal discretionary accruals. *Loss_D*: binary variable, 1 referred to the first year of loss, or else 0. *ST_D*: binary variable, 1 referred to the year that companies were included in special treatment due to two successive year losses, or else 0. *Clear_S_D*: binary variable, 1 referred to the year that companies were released from the special treatment system, or else 0. *Loss_2_D*: binary variable, 1 referred to companies faced with two annual consecutive losses, or else 0. *SIZE*: the natural logarithm of total assets in the beginning of period. *LEV* (units: %): the ratio of debts to total assets, both at the beginning of period. *CFO_A*: operating cash flow inflated by total assets in the beginning of period. *Growth* (units: %): the change in net sales, inflated by net sales in the beginning of period.

[b.] Research period is from 1999 to 2013.

Table 2 Correlation Coefficients Matrix (n=19,967)[abcd]

	DA	*RM*	*Loss_D*	*ST_D*	*Clear_S_D*	*Law_ D*	*Loss_2_D*	*SIZE*	*LEV*	*CFO_A*	*Growth*
DA	1	0.12***	-0.12***	-0.03***	0.006	-0.002	-0.09***	-0.04***	0.06***	0.14***	0.03***
RM	0.07***	1	0.12***	0.06***	0.03***	-0.003	0.55***	-0.07***	0.18***	-0.15***	-0.08***
Loss_D	-0.12***	0.15***	1	0.06***	0.03***	-0.003	0.55***	-0.07***	0.18***	-0.15***	-0.08***
ST_D	-0.02***	0.02***	0.06***	1	-0.006	0.02**	-0.02**	-0.04***	0.06***	-0.006	0.14***
Clear_S_D	0.01	0.02***	0.03***	-0.006	1	0.02**	-0.02**	-0.04***	0.06***	-0.006	0.14***
Law_ D	-0.02**	0.02***	-0.003	0.003	0.02**	1	-0.01	0.14***	0.07***	0.01*	0.02***
Loss_2_D	-0.08***	0.05***	0.55***	0.15***	-0.02**	-0.01	1	-0.07***	0.18***	-0.12***	-0.11***
SIZE	-0.002	-0.04***	-0.07***	-0.05***	-0.04***	0.15***	-0.07***	1	0.15***	-0.007	0.04***
LEV	0.04***	0.13***	0.16***	0.12***	0.08***	0.08***	0.15***	0.26***	1	-0.14***	0.04***
CFO_A	0.15***	-0.29***	-0.16***	-0.07***	-0.009	0.02**	-0.13***	0.01*	-0.13***	1	0.06***
Growth	0.06***	-0.04***	-0.15***	-0.11***	0.04***	0.04***	-0.16***	0.07***	0.007	0.12***	1

[a.] Definition of each variable in this table refers to table 1. [b.] *** represents 1% level of significance; ** represents 5% level of significance; and * represents 10% level of significance. [c.] Lower-left side is Spearman rank correlation coefficient; upper-right side is Pearson correlation coefficient. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers, in which the outliers are winsorized from the original data.

Table 3 The earnings management of the firms faced with the first year of losses[abcde] (H1-1) (n=19,967)

	All samples		*Upward EM*		*Downward EM*	
	DA	*REM*	*DA+*	*REM+*	*DA−*	*REM−*
Loss_D	-0.0716***	0.0627***	-0.0191*	0.0305**	-0.0491***	0.0763***
	(<.0001)	(<.0001)	(0.07)	(0.017)	(<.0001)	(0.002)
Loss_2_D	-0.0318***	-0.0485***	0.002	-0.0218	0.007	-0.0114
	(<.0001)	(<.0001)	(0.921)	(0.376)	(0.728)	(0.745)
RM	0.0861***		0.3868***		0.1769***	
	(<.0001)		(<.0001)		(<.0001)	
ABS_DA		0.0033		0.5755***		-0.6327***
		(0.781)		(<.0001)		(<.0001)
SIZE	-0.0099***	-0.0073***	-0.0236***	0.0002	0.0123***	0.0000811
	(<.0001)	(<.0001)	(<.0001)	(0.96)	(<.0001)	(0.986)
LEV	0.0009***	0.0007***	0.0014***	-0.0006***	-0.0004***	-0.0004
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.001)	(0.117)
CFO_A	0.39***	-0.0253	0.1923***	0.1536***	0.1385***	-0.2523***
	(<.0001)	(0.295)	(<.0001)	(0.005)	(<.0001)	(<.0001)
Growth	-0.00000377	0.0001***	-0.0000387	0.0000372	0.0001**	0.0001
	(0.877)	(0.001)	(0.439)	(0.536)	(0.042)	(0.241)
Y_LAG	0.0448***	0.4653***	0.0449**	0.3676***	0.0771***	0.4253***
	(<.0001)	(<.0001)	(0.018)	(<.0001)	(0.001)	(<.0001)
Intercept	Included	Included	Included	Included	Included	Included
Industry_FE	Included	Included	Included	Included	Included	Included
Year_FE	Included	Included	Included	Included	Included	Included
χ^2 statistics	1327.69***	7458.46***	3408.77***	5380.51***	589.55***	1440.01***
R^2	0.0706	0.2696	0.2677	0.3513	0.1862	0.4124
B-P test	41.482***		145.306***		52.812***	

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DA+* refers to upward discretionary accruals; *DA−* refers to downward discretionary accruals; *REM+* refers to upward real earnings managment; *REM−* refers to downward real earnings managment; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Seemingly Unrelated regression models are employed with a Breusch-Pagan test for independent equations. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 4 The earnings management of the firms included into the special treatment[abcde] (H1-2)

(n=19,967)

	All samples		*Upward EM*		*Downward EM*	
	DA	*REM*	*DA+*	*REM+*	*DA−*	*REM−*
ST_D	-0.0498***	0.0077	0.0297	-0.0236	-0.0432**	0.0861***
	(<.0001)	(0.565)	(0.273)	(0.473)	(0.019)	(0.008)
RM	0.0805***		0.3873***		0.1735***	
	(<.0001)		(<.0001)		(<.0001)	
ABS_DA		0.0039		0.5749***		-0.6251***
		(0.743)		(<.0001)		(<.0001)
SIZE	-0.0083***	-0.008***	-0.0232***	-0.0004	0.0134***	-0.001
	(<.0001)	(<.0001)	(<.0001)	(0.903)	(<.0001)	(0.813)
LEV	0.0008***	0.0007***	0.0014***	-0.0005***	-0.0005***	-0.0003
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.182)
CFO_A	0.42***	-0.0381	0.1952***	0.1477***	0.1534***	-0.2727***
	(<.0001)	(0.115)	(<.0001)	(0.007)	(<.0001)	(<.0001)
Growth	0.0000337	0.0000965***	-0.0000342	0.0000358	0.0001**	0.0001
	(0.167)	(0.002)	(0.494)	(0.553)	(0.048)	(0.195)
Y_LAG	0.0481***	0.4679***	0.0454**	0.3653***	0.0744***	0.4291***
	(<.0001)	(<.0001)	(0.017)	(<.0001)	(0.001)	(<.0001)
Intercept	Included	Included	Included	Included	Included	Included
Industry_FE	Included	Included	Included	Included	Included	Included
Year_FE	Included	Included	Included	Included	Included	Included
χ^2 statistics	966.27***	7331.20***	3402.89***	5366.34***	571.07***	1426.32***
R^2	0.0541	0.2662	0.2666	0.3498	0.1819	0.4112
B-P test	41.262***		145.716***		51.016***	

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DA+* refers to upward discretionary accruals; *DA−* refers to downward discretionary accruals; *REM+* refers to upward real earnings managment; *REM−* refers to downward real earnings managment; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Seemingly Unrelated regression models are employed with a Breusch-Pagan test for independent equations. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 5 The earnings management of the firms released from the special treatment [abcde] (H1-3)

(n=19,967)

	All samples		*Upward EM*		*Downward EM*	
	DA	*REM*	*DA+*	*REM+*	*DA−*	*REM−*
Clear_S_D	-0.0101	0.005	0.053***	-0.0213	-0.0076	-0.0373
	(0.295)	(0.682)	(0.005)	(0.351)	(0.726)	(0.329)
RM	0.0811***		0.3877***		0.172***	
	(<.0001)		(<.0001)		(<.0001)	
ABS_DA		0.0041		0.5764***		-0.6196***
		(0.731)		(<.0001)		(<.0001)
SIZE	-0.008***	-0.008***	-0.0228***	-0.0005	0.0138***	-0.0022
	(<.0001)	(<.0001)	(<.0001)	(0.857)	(<.0001)	(0.616)
LEV	0.0007***	0.0007***	0.0013***	-0.0005***	-0.0006***	-0.0002
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.365)
CFO_A	0.4245***	-0.0391	0.1937***	0.1474***	0.1592***	-0.2859***
	(<.0001)	(0.105)	(<.0001)	(0.007)	(<.0001)	(<.0001)
Growth	0.0000439*	0.0000936***	-0.0000634	0.0000496	0.0001**	0.0001
	(0.074)	(0.003)	(0.212)	(0.419)	(0.024)	(0.264)
Y_LAG	0.0498***	0.4677***	0.041**	0.3651***	0.0775***	0.4296***
	(<.0001)	(<.0001)	(0.031)	(<.0001)	(0.001)	(<.0001)
Intercept	Included	Included	Included	Included	Included	Included
Industry_FE	Included	Included	Included	Included	Included	Included
Year_FE	Included	Included	Included	Included	Included	Included
χ^2 statistics	945.36***	7329.53***	1298.92***	1682.78***	2794.43***	4280.80***
R^2	0.0531	0.2662	0.2686	0.3495	0.1802	0.4099
B-P test	40.456***		146.691***		50.007***	

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DA+* refers to upward discretionary accruals; *DA−* refers to downward discretionary accruals; *REM+* refers to upward real earnings managment; *REM−* refers to downward real earnings managment; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Seemingly Unrelated regression models are employed with a Breusch-Pagan test for independent equations. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 6 The earnings management of the firms with the first year of loss under the 2003 reform of regulation [abcde] (H2-1) (n=19,967)

	All samples		*Upward EM*		*Downward EM*	
	DA	*REM*	*DA+*	*REM+*	*DA−*	*REM−*
Time	-0.0141	0.0594*	-0.0526	0.1832	-0.2158***	-0.0494
	(0.588)	(0.057)	(0.193)	(0.109)	(<.0001)	(0.613)
Loss_D	-0.063***	0.0034	0.003	-0.0186	-0.0589*	0.0645
	(<.0001)	(0.841)	(0.916)	(0.584)	(0.073)	(0.264)
Time×Loss_D	-0.0096	0.0659***	-0.0248	0.0551	0.0108	0.013
	(0.482)	(<.0001)	(0.396)	(0.118)	(0.74)	(0.821)
Loss_2_D	-0.032***	-0.0473***	0.0016	-0.0208	0.0074	-0.0109
	(<.0001)	(<.0001)	(0.938)	(0.399)	(0.713)	(0.757)
RM	0.0862***(<.0001)		0.387***(<.0001)		0.1769***(<.0001)	
ABS_DA		0.003 (0.798)		0.5756***(<.0001)		-0.6323*** (<.0001)
SIZE	-0.0099***	-0.0073***	-0.0236***	0.0000861	0.0123***	0.0001
	(<.0001)	(<.0001)	(<.0001)	(0.977)	(<.0001)	(0.982)
LEV	0.0009***	0.0007***	0.0014***	-0.0006***	-0.0004***	-0.0004
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.001)	(0.115)
CFO_A	0.3902***	-0.0265	0.1918***	0.1553***	0.1388***	-0.2517***
	(<.0001)	(0.273)	(<.0001)	(0.004)	(<.0001)	(<.0001)
Growth	-0.00000358	0.0001***	-0.0000379	0.0000352	0.0001**	0.0001
	(0.883)	(0.001)	(0.448)	(0.558)	(0.042)	(0.242)
Y_LAG	0.0447***	0.4648***	0.0447**	0.3681***	0.0771***	0.4254***
	(<.0001)	(<.0001)	(0.018)	(<.0001)	(0.001)	(<.0001)
Intercept	Included	Included	Included	Included	Included	Included
Industry_FE	Included	Included	Included	Included	Included	Included
Year_FE	Included	Included	Included	Included	Included	Included
χ^2 statistics	1331.29***	7477.91***	3409.95***	5389.04***	2840.04***	4321.84***
R^2	0.0707	0.2701	0.2678	0.3521	0.1863	0.4125
B-P test	41.428***		145.388***		52.751***	

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DA+* refers to upward discretionary accruals; *DA−* refers to downward discretionary accruals; *REM+* refers to upward real earnings managment; *REM−* refers to downward real earnings managment; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Seemingly Unrelated regression models are employed with a Breusch-Pagan test for independent equations. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 7 The earnings management of the firms included into the special treatment under the 2003 reform of regulation[abcde] (H2-2) (n=19,967)

	All samples		*Upward EM*		*Downward EM*	
	DA	*REM*	*DA+*	*REM+*	*DA−*	*REM−*
Time	-0.0218	0.0271	0.417***	0.0658	-0.2342***	-0.0462
	(0.405)	(0.416)	(<.0001)	(0.179)	(<.0001)	(0.637)
ST_D	-0.0548*	0.0457	0.0189	-0.0666	0.0075	0.0123
	(0.1)	(0.282)	(0.83)	(0.532)	(0.869)	(0.878)
Time×ST_D	0.0055	-0.0421	0.0119	0.0475	-0.0602	0.0876
	(0.874)	(0.346)	(0.898)	(0.671)	(0.223)	(0.313)
RM	0.0805***		0.3871***		0.1735***	
	(<.0001)		(<.0001)		(<.0001)	
ABS_DA		0.004		0.5746***		-0.6263***
		(0.732)		(<.0001)		(<.0001)
SIZE	-0.0083***	-0.008***	-0.0233***	-0.0004	0.0134***	-0.0011
	(<.0001)	(<.0001)	(<.0001)	(0.894)	(<.0001)	(0.806)
LEV	0.0008***	0.0007***	0.0014***	-0.0005***	-0.0005***	-0.0003
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.175)
CFO_A	0.42***	-0.0384	0.1953***	0.1481***	0.1535***	-0.2726***
	(<.0001)	(0.112)	(<.0001)	(0.007)	(<.0001)	(<.0001)
Growth	0.0000337	0.0000964***	-0.0000342	0.0000359	0.0001**	0.0001
	(0.167)	(0.002)	(0.495)	(0.551)	(0.048)	(0.196)
Y_LAG	0.0481***	0.4679***	0.0454**	0.3651***	0.0738***	0.4295***
	(<.0001)	(<.0001)	(0.017)	(<.0001)	(0.001)	(<.0001)
Intercept	Included	Included	Included	Included	Included	Included
Industry_FE	Included	Included	Included	Included	Included	Included
Year_FE	Included	Included	Included	Included	Included	Included
χ^2 statistics	969.13***	7320.19***	3402.73***	1680.43***	2811.70***	1427.68***
R^2	0.0541	0.2662	0.2666	0.3499	0.1825	0.4114
B-P test	41.251***		145.539***		51.073***	

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DA+* refers to upward discretionary accruals; *DA−* refers to downward discretionary accruals; *REM+* refers to upward real earnings managment; *REM−* refers to downward real earnings managment; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Seemingly Unrelated regression models are employed with a Breusch-Pagan test for independent equations. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 8 The earnings management of the firms released from the special treatment under the 2003 reform of regulation [abcde] (H2-3) (n=19,967)

	All samples		*Upward EM*		*Downward EM*	
	DA	*REM*	*DA+*	*REM+*	*DA−*	*REM−*
Time	0.0598**	0.0265	0.4226***	0.1826	-0.0355	-0.0424
	(0.013)	(0.427)	(<.0001)	(0.111)	(0.524)	(0.665)
Clear_S_D	0.061*	0.0223	0.222***	-0.0582	-0.2438**	0.2485
	(0.086)	(0.623)	(<.0001)	(0.438)	(0.026)	(0.197)
Time×	-0.0765**	-0.0186	-0.1865***	0.0407	0.2457**	-0.2972
Clear_S_D	(0.038)	(0.692)	(0.004)	(0.606)	(0.028)	(0.13)
RM	0.0811***		0.3862***		0.1729***	
	(<.0001)		(<.0001)		(<.0001)	
ABS_DA		0.0041		0.5762***		-0.6218***
		(0.73)		(<.0001)		(<.0001)
SIZE	-0.008***	-0.008***	-0.0227***	-0.0006	0.0137***	-0.0022
	(<.0001)	(<.0001)	(<.0001)	(0.855)	(<.0001)	(0.619)
LEV	0.0007***	0.0007***	0.0013***	-0.0005***	-0.0006***	-0.0002
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.362)
CFO_A	0.4243***	-0.0391	0.1903***	0.1484***	0.1616***	-0.2886***
	(<.0001)	(0.105)	(<.0001)	(0.007)	(<.0001)	(<.0001)
Growth	0.000045*	0.0000939***	-0.0000528	0.0000471	0.0001**	0.0001
	(0.068)	(0.003)	(0.298)	(0.445)	(0.025)	(0.258)
Y_LAG	0.0496***	0.4677***	0.0434**	0.3652***	0.0796***	0.4287***
	(<.0001)	(<.0001)	(0.022)	(<.0001)	(<.0001)	(<.0001)
Intercept	Included	Included	Included	Included	Included	Included
Industry_FE	Included	Included	Included	Included	Included	Included
Year_FE	Included	Included	Included	Included	Included	Included
χ^2 statistics	952.79***	7317.43***	3443.00***	5366.60***	2806.51***	1419.51***
R^2	0.0533	0.2662	0.2721	0.3496	0.1821	0.4103
B-P test	40.411***		146.137***		50.453***	

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DA+* refers to upward discretionary accruals; *DA−* refers to downward discretionary accruals; *REM+* refers to upward real earnings managment; *REM−* refers to downward real earnings managment; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Seemingly Unrelated regression models are employed with a Breusch-Pagan test for independent equations. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 9 Sensitivity test: The real earnings management of the firms faced with the first year of losses[abcde] (H1-1) (n=19,967)

	All samples		
	DISCFO	*DISPROD*	*DISEXP*
Loss_D	-0.0333***	0.0462***	0.0175***
	(<.0001)	(<.0001)	(<.0001)
Loss_2_D	0.0196***	-0.0272***	-0.0043
	(<.0001)	(<.0001)	(0.127)
ABS_DA	-0.0214*	0.0065	0.0166***
	(0.087)	(0.434)	(<.0001)
SIZE	0.0083***	-0.0021	-0.0013**
	(<.0001)	(0.434)	(0.028)
LEV	-0.0003***	0.0003	-0.0001***
	(<.0001)	(0.136)	(<.0001)
CFO_A	0.1632***	-0.234***	0.0573***
	(<.0001)	(<.0001)	(<.0001)
Growth	-0.00000339	0.0001**	-0.0000293***
	(0.847)	(0.028)	(<.0001)
Y_LAG	0.1292**	0.3302**	0.7643***
	(0.018)	(0.036)	(<.0001)
Intercept	-0.0898***	0.0105	0.0265***
	(0.001)	(0.762)	(<.0001)
Industry_FE	Included	Included	Included
Year_FE	Included	Included	Included
F statistics	810.21***	799.18***	2342.20***
R^2	0.1036	0.1968	0.6541

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DISCFO* refers to abnormal operating cash flows; *DISPROD* refers to abnormal production costs; *DISEXP* refers to abnormal discretionary expenses; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Ordinary Least Squares regression models are employed with Robust standard errors clustered by industries and years. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 10 Sensitivity test: The real earnings management of the firms included into the special treatment[abcde] (H1-2) (n=19,967)

	All samples		
	DISCFO	*DISPROD*	*DISEXP*
ST_D	0.0191***	0.006	-0.0246***
	(0.007)	(0.597)	(<.0001)
ABS_DA	-0.0223*	0.0072	0.0175***
	(0.09)	(0.411)	(<.0001)
SIZE	0.0089***	-0.0027	-0.0018***
	(<.0001)	(0.358)	(<.0001)
LEV	-0.0004***	0.0003*	-0.0000634***
	(<.0001)	(0.076)	(<.0001)
CFO_A	0.1783***	-0.2466***	0.0487***
	(<.0001)	(<.0001)	(<.0001)
Growth	0.00000735	0.0001**	-0.0000394***
	(0.704)	(0.032)	(<.0001)
Y_LAG	0.1265**	0.3335**	0.7652***
	(0.017)	(0.036)	(<.0001)
Intercept	-0.0981***	0.0166	0.0342***
	(<.0001)	(0.668)	(<.0001)
Industry_FE	Included	Included	Included
Year_FE	Included	Included	Included
F statistics	466.07***	358.10***	1716.36***
R^2	0.0974	0.1910	0.6513

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DISCFO* refers to abnormal operating cash flows; *DISPROD* refers to abnormal production costs; *DISEXP* refers to abnormal discretionary expenses; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Ordinary Least Squares regression models are employed with Robust standard errors clustered by industries and years. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 11 Sensitivity test: The real earnings management of the firms released from the special treatment [abcde] (H1-3) (n=19,967)

	All samples		
	DISCFO	*DISPROD*	*DISEXP*
Clear_S_D	0.0003	0.004	-0.0004
	(0.981)	(0.558)	(0.866)
ABS_DA	-0.022*	0.0073	0.0171***
	(0.091)	(0.407)	(<.0001)
SIZE	0.0088***	-0.0027	-0.0017***
	(<.0001)	(0.366)	(0.002)
LEV	-0.0004***	0.0003*	-0.0000793***
	(<.0001)	(0.078)	(<.0001)
CFO_A	0.1758***	-0.2471***	0.0506***
	(<.0001)	(<.0001)	(<.0001)
Growth	0.0000046	0.0001**	-0.0000357***
	(0.847)	(0.031)	(<.0001)
Y_LAG	0.1276**	0.3333**	0.7628***
	(0.019)	(0.036)	(<.0001)
Intercept	-0.0951***	0.017	0.0306***
	(<.0001)	(0.667)	(<.0001)
Industry_FE	Included	Included	Included
Year_FE	Included	Included	Included
F statistics	393.47***	331.94***	1871.30***
R^2	0.0969	0.1910	0.6495

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DISCFO* refers to abnormal operating cash flows; *DISPROD* refers to abnormal production costs; *DISEXP* refers to abnormal discretionary expenses; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Ordinary Least Squares regression models are employed with Robust standard errors clustered by industries and years. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 12 Sensitivity test: The real earnings management of the firms with the first year of loss under the 2003 reform of regulation [abcde] (H2-1) (n=19,967)

	All samples		
	DISCFO	*DISPROD*	*DISEXP*
Time	-0.0107***	0.0119**	-0.002
	(<.0001)	(0.017)	(0.53)
Loss_D	-0.0312***	0.017***	0.0392***
	(<.0001)	(<.0001)	(<.0001)
Time×Loss_D	-0.0024	0.0325***	-0.0242***
	(0.702)	(0.003)	(<.0001)
Loss_2_D	0.0196***	-0.0266***	-0.0048*
	(<.0001)	(<.0001)	(0.095)
ABS_DA	-0.0214*	0.0064	0.0167***
	(0.088)	(0.448)	(<.0001)
SIZE	0.0083***	-0.002	-0.0014**
	(<.0001)	(0.436)	(0.025)
LEV	-0.0003***	0.0003	-0.0001***
	(<.0001)	(0.138)	(<.0001)
CFO_A	0.1632***	-0.2344***	0.0575***
	(<.0001)	(<.0001)	(<.0001)
Growth	-0.00000334	0.0001**	-0.0000288***
	(0.849)	(0.028)	(<.0001)
Y_LAG	0.1292**	0.3298**	0.7634***
	(0.018)	(0.037)	(<.0001)
Intercept	-0.0899***	0.012	0.0254***
	(0.001)	(0.733)	(<.0001)
Industry_FE	Included	Included	Included
Year_FE	Included	Included	Included
F statistics	830.77***	705.08***	2023.94***
R^2	0.1036	0.1971	0.6551

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DISCFO* refers to abnormal operating cash flows; *DISPROD* refers to abnormal production costs; *DISEXP* refers to abnormal discretionary expenses; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Ordinary Least Squares regression models are employed with Robust standard errors clustered by industries and years. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 13 Sensitivity test: The real earnings management of the firms included into the special treatment under the 2003 reform of regulation[abcde] (H2-2) (n=19,967)

	All samples		
	DISCFO	*DISPROD*	*DISEXP*
Time	-0.0133***	0.0189**	-0.0044
	(<.0001)	(0.015)	(0.475)
ST_D	0.0058	0.0267	-0.0365**
	(0.789)	(0.213)	(0.012)
Time×ST_D	0.0147	-0.0229	0.0131
	(0.52)	(0.353)	(0.381)
ABS_DA	-0.0223*	0.0073	0.0174***
	(0.089)	(0.406)	(<.0001)
SIZE	0.0089***	-0.0027	-0.0018***
	(<.0001)	(0.359)	(<.0001)
LEV	-0.0004***	0.0003*	-0.0000635***
	(<.0001)	(0.076)	(<.0001)
CFO_A	0.1785***	-0.2467***	0.0488***
	(<.0001)	(<.0001)	(<.0001)
Growth	0.00000738	0.0001**	-0.0000393***
	(0.702)	(0.032)	(<.0001)
Y_LAG	0.1265**	0.3334**	0.7653***
	(0.017)	(0.036)	(<.0001)
Intercept	-0.0971***	0.015	0.0351***
	(<.0001)	(0.698)	(<.0001)
Industry_FE	Included	Included	Included
Year_FE	Included	Included	Included
F statistics	428.60***	467.88***	1779.52***
R^2	0.0974	0.1910	0.6514

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DISCFO* refers to abnormal operating cash flows; *DISPROD* refers to abnormal production costs; *DISEXP* refers to abnormal discretionary expenses; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Ordinary Least Squares regression models are employed with Robust standard errors clustered by industries and years. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Table 14 Sensitivity test: The real earnings management of the firms released from the special treatment under the 2003 reform of regulation [abcde] (H2-3) (n=19,967)

	All samples		
	DISCFO	*DISPROD*	*DISEXP*
Time	-0.013***	0.017***	-0.0024
	(<.0001)	(0.005)	(0.484)
Clear_S_D	0.0043	0.015	-0.0078
	(0.794)	(0.551)	(0.146)
Time×Clear_S_D	-0.0043	-0.0118	0.008
	(0.692)	(0.714)	(0.144)
ABS_DA	-0.022*	0.0073	0.0171***
	(0.091)	(0.406)	(<.0001)
SIZE	0.0088***	-0.0027	-0.0017***
	(<.0001)	(0.366)	(0.002)
LEV	-0.0004***	0.0003*	-0.0000793***
	(<.0001)	(0.078)	(<.0001)
CFO_A	0.1758***	-0.2471***	0.0506***
	(<.0001)	(<.0001)	(<.0001)
Growth	0.00000466	0.0001**	-0.0000358***
	(0.845)	(0.03)	(<.0001)
Y_LAG	0.1276**	0.3333**	0.7628***
	(0.019)	(0.036)	(<.0001)
Intercept	-0.0951***	0.017	0.0306***
	(<.0001)	(0.667)	(<.0001)
Industry_FE	Included	Included	Included
Year_FE	Included	Included	Included
F statistics	423.74***	687.65***	2884.42***
R^2	0.0969	0.1910	0.6495

[a]. *** represents 1% level of significance; ** represents 5% level of significance; * represents 10% level of significance. [b.] Definition of each variable in this table refers to table 1. In addition, *DISCFO* refers to abnormal operating cash flows; *DISPROD* refers to abnormal production costs; *DISEXP* refers to abnormal discretionary expenses; *Y_LAG* refers to the previous period of each column's dependent variable. [c.] The Ordinary Least Squares regression models are employed with Robust standard errors clustered by industries and years. [d.] Variables in the top or the bottom 1% of their respective distributions are designated as outliers and are winsorized from the regression. [e.] The number in the parenthesis represents *p*-value of each estimated coefficient in a two-tailed test.

Authors

Yu-Shun Hung*

Department of Accounting, Fu Jen Catholic University**,** 216 Loyola Building, Xinzhuang Dist., New Taipei City 242, Taiwan (R.O.C) hung@mail.fju.edu.tw

Cheng-Hung Chen

Department of Accounting, Fu Jen Catholic University, New Taipei City 242, Taiwan (R.O.C)

*Corresponding Author

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