International Financial Reporting Standards (IFRS) and Earnings Management:

Evidence from China

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Abstract

We investigate the implications of IFRS on earnings management behavior by Chinese listed firms, and whether those implications vary by type of controlling shareholders. We find that the increased financial reporting flexibility under IFRS provides more earnings management opportunities for firms operating in emerging markets, where investor protection and corporate governance are deficient. We find that whereas the magnitude of discretionary accruals for firms owned by local governments (Local SOEs) and private investors (NSOEs) increased after IFRS adoption, it remained unchanged for firms owned by the central government (Central SOEs). More interestingly, firms changed the forms of earnings management to take advantage of the flexibility under IFRS: they switched from intentionally making accounting errors to changing accounting policies and estimates. Evidence on the value relevance of earnings following adoption of IFRS indicates that the informativeness of earnings decreased for local SOEs and for NSOEs, but remained unchanged for Central SOEs.

1. Introduction

Many countries in developed and in emerging markets have adopted International Financial Reporting Standards (IFRS) in recent years. Empirical research on the consequences of adopting IFRS generally documents positive capital market consequences from adopting IFRS such as lower cost of capital, decreased information asymmetry, and increased stock market liquidity (Daske et al. 2008; Li 2010; DeFond et al. 2011; Horton et al. 2013), which it attributes to increased financial reporting quality and comparability under IFRS. Notably, much of this research has focused on developed countries and regions, but has paid little attention to the implications of IFRS adoption in developing countries. Whether the findings of this research are generalizable to emerging economies, where institutional features such as weak law enforcement and investor protection may be incompatible with IFRS, is unclear. This clearly is of importance, especially given the growing prominence of emerging economies such as Brazil, China, India and Russia in the world economy. We attempt to shed light on the effect of IFRS in an emerging economy, by studying changes in earnings management behavior of Chinese listed firms after China adopted a new set of accounting standards in 2007 that are largely converged with IFRS.[1&2]

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[1] Beginning January 1, 2007 Chinese listed firms are required to adopt a new set of accounting standards, Accounting Standards for Business Enterprises (ASBE), which are substantially in line with IFRS, except for a few modifications to reflect their specific circumstances. For simplicity, we refer to the use of new ASBE as mandatory adoption of IFRS.

[2] As outlined in Ramanna et al. (2010), the new ASBE are similar to IFRS except in the following three areas. (i) Related party disclosure. Under the new ASBE, two firms are classified as related parties if they have an investment connection, but not if they only share state ownership in common. (ii) Fair

On February 15, 2006 China's Ministry of Finance issued new Chinese Accounting Standards that with but few exceptions are converged with IFRS. Beginning in 2007, Chinese firms whose shares are traded on the Shanghai and the Shenzhen stock exchanges are required to prepare their financial statements using the new standards. Two fundamental changes in the financial reporting practices of Chinese listed firms under IFRS are: (1) the prior largely rules-based accounting standards are replaced by more principles-based standards, and (2) the prevalent implementation of fair value accounting (Deloitte Touche Tohmatsu 2006). Although China's avowed intention in adopting IFRS is to improve the quality of financial information and promote comparability with global accounting practices, it is unclear whether these objectives are attainable because Chinese listed firms' incentives to manage earnings are particularly strong and the institutional environment may be incompatible with IFRS.

First, financial accounting in China plays a very powerful contracting role (He et al. 2012). Many securities regulations involve specific earnings targets that provide strong incentives for Chinese listed firms to manage earnings. For example, a firm is delisted if it experiences accounting losses in three consecutive years. Also, a firm must meet certain profitability targets such as return on assets before it can issue additional shares. Prior research highlights the importance of firms' reporting

value accounting. Financial instruments and financial innovations are relatively unsophisticated in China, which prevents China from adopting the fair value accounting of IFRS in its entirety. (iii) Asset impairments. Like IFRS, the new ASBE allows for reversal of impairment; however, unlike IFRS, the reversal of impairments is limited to certain long-term fixed assets, not short-term or intangible assets.

incentives in shaping observed financial reporting quality (Ball et al. 2003; Leuz et al. 2003; Ball and Shivakumar 2005; Burgstahler et al. 2006). Moreover, these incentives to manage earnings are unlikely to change following the adoption of IFRS. Even though IFRS may induce superior earnings quality in countries where financial reporting incentives are well aligned, more principles-based standards present more opportunities to manage earnings for Chinese firms. Second, investor protection, regulatory enforcement, and external monitoring are generally weak in China (Pistor and Xu 2005). Without strong investor protection and corporate governance in place, insiders and managers have greater opportunity to misuse the increased judgment required by more principles-based accounting standards in order to achieve private control benefits (Leuz et al. 2003; Hail et al. 2010a). And, given the strong incentives to manage earnings, this increased flexibility could exacerbate earnings management. Third, the accounting profession in China is still developing. Great variation exists in the skill levels and professional competence of corporate accountants and auditors, especially for small and medium-sized firms (Ramanna et al. 2010). Lastly, because the valuation arising from an-arm's-length transactions in an active market is generally lacking in China, implementing fair value measurement based on internal valuation and subjective assessments reduces the reliability of financial reporting.

Due to the strong incentives to manage earnings, and the lack of institutions to mitigate these incentives, adopting IFRS that involve a more principles-oriented approach and fair value accounting may actually provide more opportunities for earnings management in China. We first examine the level of discretionary accruals

5

as the indicator of earnings management. To rule out alternative explanations that observed changes in discretionary accruals may be a natural outcome of applying different accounting standards, or that firms use the discretion under IFRS to convey private information, we also further examine the value relevance of annual earnings announcements to assess their earnings quality post IFRS. Our findings indicate that adopting IFRS in China on average led to more earning management and less informative financial reporting.

We next investigate whether IFRS adoption altered the mechanisms that firms use to manage reported earnings. We examine two approaches that Chinese listed firms commonly use to manage earnings: (i) changing accounting policies and estimates[3], and (ii) intentionally making accounting errors to be corrected in subsequent periods (hereafter intentional accounting errors). Unlike in a developed financial system such as the U.S., changing accounting estimates voluntarily or announcing the discovery of accounting errors in China generates little negative market reactions or regulatory consequences. For example, Wei et al. (2009) and Wu and Wang (2008) report that the market reactions to accounting restatements by Chinese listed firms on average are insignificant, and generally no penalty is imposed on the restating firms, their managers, or their auditors following accounting restatements.[4] From a firm's perspective, however, the cost of accounting errors is higher than that of voluntary changes in accounting estimates. To make corrections of

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[3] Throughout the paper we use "changes in accounting policies and estimates", "changes in accounting policies", and "changes in accounting estimates" interchangeably.

[4] Except for financial reporting fraud, accounting restatements in China generally do not trigger management turnover or changes of auditors.

6

prior accounting errors, a firm needs to obtain approval from its Board of Directors, and have its auditor attest to the validity of the correction. In contrast, a firm is only required to disclose changes in accounting policies and estimates in the notes to financial statements and provide justifications for these changes. Our results indicate that the likelihood of voluntary changes in accounting estimates increased, while the likelihood of (intentional) accounting errors decreased after mandatory IFRS adoption. This evidence suggests that, after mandatory IFRS adoption, companies switched from the use of intentional accounting errors to making voluntary changes in estimates. This switch is probably due to the higher flexibility allowed under IFRS, which makes it more feasible for firms to use a less costly method of earnings management, i.e., changing accounting estimates.

To further understand the role of institutions in shaping firms' reporting incentives, we consider an important institutional factor, ownership structure, and its implications for earnings management behavior under IFRS. We classify firms into three groups: state-owned enterprises controlled by the central government or its agencies (Central SOEs), state-owned enterprises controlled by local governments or their agencies (Local SOEs), and firms owned by private entrepreneurs and investors (NSOEs). Central SOEs face tighter monitoring and stronger enforcement, and typically attract top quality employees. In contrast, Local SOEs are often subject to local governments' political objectives that sometimes create additional incentives for earnings management. We find that Local SOEs and NSOEs exhibit a greater magnitude of discretionary accruals after the mandatory adoption of IFRS, while

Central SOEs do not. Interestingly, we find that the earnings response coefficient

(ERC) remains unchanged for Central SOEs post-IFRS, but decreases significantly

for Local SOEs and NSOEs. Our results suggest that mandatory adoption of IFRS

allows more accounting discretion, leading to less informative earnings. However,

this effect is mitigated for Central SOEs that have stricter external monitoring and

scrutiny. In addition, we find that the frequency of voluntary changes in accounting

policies increased for all firms of different ownership types, whereas the frequency of

accounting errors decreased after the implementation of IFRS. Our evidence is

consistent with IFRS providing firms with more discretion in choices of accounting

policies. Consequently, after adoption of IFRS, firms switched from using more costly

methods of earnings management such as intentional accounting errors to less costly

methods such as changes in accounting policies/estimates.

Our study contributes to the literature in several ways. First, it provides

evidence on the association between accounting quality and mandatory adoption of

IFRS in China. Despite the extensive research on the consequences of IFRS adoption,

little is known regarding the effectiveness of IFRS in developing countries and

emerging markets. We select China as our empirical setting because it is the world's

largest emerging market and plays an increasingly significant role in the global

economy. Relative to the old Chinese standards, IFRS are more market-oriented

accounting standards aiming to provide more relevant information to the investors.

Although standards under IFRS are considered of superior quality, institutional

factors such as adequate investor protection and effective corporate governance,

which are typically not satisfied in emerging markets, are an integral part for IFRS to be effective. The incompatibility of institutional environment with IFRS makes it interesting to investigate whether mandatory adoption of IFRS achieves its intended consequences in countries like China. We find that except for those firms controlled by the Chinese central government, Chinese listed firm experienced deterioration in earnings quality following the mandatory adoption of IFRS. Second, we examine whether the effect of IFRS adoption on financial reporting quality differs with the types of controlling shareholders, i.e., central government, local government, or private investors. Third and perhaps most interestingly, we investigate the impact of IFRS on the mechanisms used for earnings management. We find that IFRS provide more discretion on firms' choices of accounting policies and estimates, thereby enabling firms to switch from more costly forms of earnings management such as intentional accounting errors, to less costly forms such as changes of accounting policies.

The rest of this paper is organized as follows. We describe the institutional background and develop the hypotheses in section 2. We present the research design in section 3. We describe our sample and present the empirical results in section 4. We conclude in section 5.

2. Background and Hypothesis Development

2.1. Association between IFRS and earnings quality

The shift from the old Chinese accounting standards to IFRS has made fundamental changes in the financial reporting practices of Chinese listed firms. Two

9

primary changes are: (1) replacement of more rules-based standards with more principles-based standards, and (2) implementation of fair value accounting. The old Chinese accounting standards prior to IFRS include many specific rules and guidelines. For instance, before adopting IFRS, Chinese firms were given a guideline of 5% − 40% for taking the allowance for doubtful accounts, with additional disclosure and explanations required if a firm used a percentage outside the suggested range. The adoption of IFRS also requires fair value accounting in many transactions, which was prohibited under the old standards. For example, under the new Chinese accounting standards all derivatives must be measured at fair value with changes in fair value taken to net income.

Prior literature recognizes that there are a priori reasons that mandatory adoption of IFRS may improve or reduce earnings quality (Barth et. al. 2008). Being more principles-oriented, IFRS may reduce opportunistic behavior by eliminating bright-line tests and rule exceptions and forcing firms to comply with the intent of the standards. IFRS also allow higher flexibility in choosing alternative accounting methods and permits measurements such as fair value accounting. Such flexibility could result in financial reporting that better reflects firms' underlying economic transactions. On the other hand, the lower specificity embedded in principles-based standards evokes more judgment by managers, which may result in increased opportunities for financial reporting manipulations. Accounting quality may also be compromised by use of fair value accounting, especially when there is no objectively determinable fair value and management judgment or discretion is needed.

However, financial reporting quality is shaped not only by financial reporting standards, but also by reporting incentives and institutional factors (Hail et al. 2010a, 2010b, among others). Incentives to manage earnings are particularly strong for Chinese listed firms, partly because many securities regulations are based on bright-line earnings requirements. For example, a firm's daily stock price fluctuation is restricted to 5 percent if it reports two consecutive years of losses, compared with a 10 percent restriction for other firms. Or, a firm is delisted if it reports a loss in three consecutive years. Also, a firm must maintain an average ROE of at least 6 percent (10 percent prior to May 8, 2006) over three consecutive years in order to be qualified for seasoned equity offering. As pointed out by Piotroski and Wong (2012), these rules used by Chinese regulators create especially strong incentives for earnings management. In addition, weak legal enforcement and deficient investor protection in China intensify the effect of financial reporting incentives. Given the greater flexibility in the reporting choices allowed under IFRS, and the lack of an adequate legal infrastructure and governance system, Chinese listed firms are likely to have more opportunities to manage earnings after the mandatory adoption of IFRS.

2.2. IFRS and mechanisms of earnings management

We examine two specific mechanisms that Chinese listed firms use to manage earnings: voluntarily changing accounting policies (estimates) and making intentional accounting errors to be corrected subsequently. Although prior research reports that both forms of earnings management have little negative consequences, the cost of intentionally making accounting errors is higher because of the higher visibility and

11

more stringent disclosure requirements when the errors are discovered. To make

corrections of prior accounting errors, a firm needs to obtain approval from its Board

of Directors, and have its auditor attest to the validity of the corrections. In contrast, a

firm is only required to disclose a change in accounting policy (estimate) in its notes

to financial statements and provide justifications for the change. Prior to adopting

IFRS, the old Chinese accounting standards included bright-line rules that to some

extent limited firms' discretion in choosing alternative accounting policies (estimates).

Consequently a firm would have to intentionally make accounting errors to achieve its

earnings management objectives, when it could not do so solely with changes in

accounting policies (estimates). Those bright-line accounting rules and specific

guidelines no longer exist following adoption of the more principles-based IFRS.

Because firms now have more flexibility in choosing alternative accounting policies

(estimates), using changes in accounting policies (estimates) to manage earnings

becomes more feasible.

2.3. State-ownership and financial reporting incentives

A notable feature of the Chinese stock market is the dominance of state-owned

enterprises (SOEs)[5]. As the controlling shareholder, the government plays a

significant role in the reporting incentives by Chinese listed firms. First, the

ownership of SOEs is highly concentrated. Only until recently are the state shares and

state legal entity shares, which comprise about two thirds of total shares, permitted to

be publicly traded in the stock market. Such ownership structure reduces the demand

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[5]In our sample, 67 percent of listed firms are owned or controlled by the central and local governments
and their agencies, whose market value accounts for 84 percent of the Chinese stock market.

for and supply of pubic financial information. Second, the relationship between the controlling shareholders (central or local governments) and SOEs is strong and complicated. Controlling shareholders, especially local governments, consider listed SOEs as scarce and valuable assets. SOEs usually receive preferential treatment in terms of bank loans, tax, and other resources. SOEs also face less bankruptcy risks because the government subsidizes SOEs when they are in financial distress (Faccio et al. 2006). The CEOs and other executives of SOEs are usually appointed by the government and are often former or current government bureaucrats. As a result, SOE executives face multiple and often divergent objectives (Lin et al. 1998; Fan et al. 2007; Firth et al. 2011). Moreover, their promotion and compensation are affected by many factors other than financial performance, such as employment, social stability, and tax revenues (Firth et al. 2006). Therefore, CEOs of SOEs may have fewer direct incentives to manage reported earnings than CEOs of NSOEs.

In addition, we expect Central SOEs to have better accounting quality than Local SOEs for the following reasons. First, Central SOEs are under tight control and governance by the State Assets Supervision and Administration Commission (SASAC), which was established under the State Council in 2003. The SASAC conducts annual reviews of the financial statements and internal control systems of Central SOEs. Additionally, the National Audit Office regularly reviews and audits Central SOEs. In contrast, Local SOEs are more loosely monitored by the local agencies (Firth et al. 2006). Although they share the same regulatory objectives, local government agencies tend to apply less stringent enforcement than central

13

government agencies. Second, local government officers often view listed SOEs as an important political accomplishment. To promote local economic performance, local governments provide subsidies to help local firms boost their earnings above the regulatory thresholds of rights offering and delisting. This collusion between the government and listed firms in earnings management exists mainly in firms controlled by local governments (Chen et al. 2008).

Unlike SOEs, firms owned by private investors and entrepreneurs face substantial capital access barriers. For example, loan-granting decisions to these firms are made on a competitive basis and banks place more weight on the content and credibility of the information in the financial statements (Chen et al. 2010). The financing needs create demands for accounting quality, but also incentives to manage earnings. In addition, CEOs of NSOEs are evaluated mainly on firm performance and thus have private incentives to manage reported earnings. However, many CEOs of NSOEs are also large shareholders, or founders of the companies, hence their objectives may be well aligned.

In summary, we expect Central SOEs to have superior accounting quality to local SOEs or NSOEs. However it is not clear ex ante whether Local SOEs or NSOEs have higher accounting quality.

3. Research Design

3.1. Earnings management

We use the magnitude of discretionary accruals as our first earnings management metric. Following Kothari et al. (2005), we measure discretionary accruals, *DACC*, as

14

the residuals from the performance-adjusted cross-sectional modified Jones model. Specifically, we estimate the following cross-sectional regression for each industry and year for which we have a minimum of 10 observations.

$$\frac{TACC_{j,t}}{TA_{j,t-1}} = b_0 \frac{1}{TA_{j,t-1}} + b_1 \frac{\mathrm{D}SALE_{j,t} - \mathrm{D}REC_{j,t}}{TA_{j,t-1}} + b_2 \frac{PPE_{j,t}}{TA_{j,t-1}} + b_3 ROA_{j,t-1} + e_{j,t} \qquad (1)$$

where *TACC* is total accruals, calculated as net income less cash flow from operations, *TA* is total assets, D*SALE* is change in sales, D*REC* is change in accounts receivable, *PPE* is net property, plant, and equipment, and ROA is return on assets, calculated as net income divided by total assets.

We estimate the following model to investigate whether mandatory adoption of IFRS by Chinese firms led to increased or decreased earnings management:

$$DACC = \beta_0 + \beta_1 IFRS + \beta_2 LEV + \beta_3 GROWTH + \beta_4 ROA + \beta_5 CFO$$

$$+ \beta_6 LOSS + \beta_7 SIZE + \beta_8 EISSUE + \beta_9 DISSUE + \beta_{10} BIG4$$

$$+ \beta_{11} BH + \beta_{12} OWNTOP5 + \varepsilon \qquad\qquad (2)$$

where the dependent variable is *|DACC|,* pos_*DACC*, or neg_ *DACC*.

|DACC|	=	absolute value of discretionary accruals, where the discretionary accruals are the residuals estimated using the performance-adjusted cross-sectional modified Jones model;
pos_DACC	=	positive values of discretionary accruals;
neg_DACC	=	negative values of discretionary accruals;
IFRS	=	an indicator variable equal to one if the observation is from 2008, 2009, or 2010, and zero otherwise;
LEV	=	end-of-year total liabilities divided by end-of-year total assets;
GROWTH	=	percentage change in total sales;
ROA	=	net income divided by end-of-year total assets;
CFO	=	annual net cash flow from operations divided by end-of-year total

assets;

LOSS	=	an indicator variable equal to one if current year's net income is negative, and zero otherwise;
SIZE	=	natural logarithm of end-of-year total assets;
EISSUE	=	an indicator variable equal to one if the firm issues equity in any of the current year, the next year, or the year after next;
DISSUE	=	percentage change in total liabilities;
BIG4	=	an indicator variable equal to one if the firm's auditor is PWC, KPMG, E&Y, or Deloitte, and zero otherwise;
BH	=	an indicator variable equal to one if the firm issues any shares traded exclusively among foreign investors at Shanghai or Shenzhen stock exchanges (B shares), or shares listed at Hong Kong stock exchange (H shares), and zero otherwise;
OWNTOP5	=	percentage of shares owned by the five largest shareholders.

Equation (2) relates |*DACC*|, the measure of earnings management to the indicator variable, *IFRS*, which equals one if the observation is from year 2008 to 2010 and zero otherwise. To mitigate the confounding effects of firm characteristics that may also influence the magnitude of discretionary accruals, we include variables identified in prior research as controls (e.g. Barth et al 2008, among others). Equation (2) also includes industry fixed effects, as do equations (3) and (4). We use the same notations for the coefficient estimates in equations (2) to (5) and omit firm and year subscripts.

We estimate equation (2) for all firms to examine the average effect of IFRS, and then separate the sample into Central SOEs, Local SOEs, and NSOEs to investigate whether the effect varies with the type of controlling shareholders. In addition, we investigate whether adopting IFRS affects firms' income-increasing accrual management and income-decreasing accrual management behaviors by

16

estimating the model with the dependent variables being the positive or negative discretionary accruals. To test whether the main coefficients are the same across different SOE types, we use the following Z-statistics:

$$Z = \frac{b_i - b_j}{\sqrt{s^2(b_i) + s^2(b_j)}}$$

where b_i and b_j are coefficient estimates from the two sub-samples, and $s^2(b)$ is the squared standard errors of the coefficients. The Z-statistic is appropriate for testing the difference in regression coefficients between large samples drawn independently (Clogg et al. 1995, Chen et al. 2010).[6]

3.2. Value relevance of earnings

We rely on the capital market reactions to earnings announcements to measure the information content of earnings. To investigate whether the value relevance of earnings increased or decreased following mandatory adoption of IFRS by Chinese listed firms, we estimate the following regression:

$$CAR = \beta_0 + \beta_1 UE + \beta_2 IFRS + \beta_3 IFRS \times UE + Controls + IFRS \times Controls + \varepsilon \quad (3)$$

where *CAR* is the cumulative abnormal market returns surrounding the annual earnings announcements, measured over a three-day window centering on the announcement date, where the abnormal return is the firm's return less the value-weighted market return. *UE* is the unexpected earnings scaled by the price at the

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[6] The differences in coefficients between the two samples can also be compared by pooling the samples and adding an indicator variable and interaction terms to the model. However, this requires the assumption that the error variance is the same between the samples. We choose to report the Z-statistics, but the conclusion remains the same if we use the pooling approach.

beginning of the year, where expected earnings are measured as the prior year's earnings.

Firm-level characteristics may systematically affect the relation between unexpected earnings and abnormal returns (Kothari 2001). Therefore we follow prior literature (e.g. Lim and Tan 2008) and include a vector of seven control variables in the regression to mitigate their influences on ERC. Control variables include *SIZE, LEV*, *GROWTH*, *LOSS*, *BH, VOL,* and *SPITEM*. *VOL* is the standard deviation of daily stock returns measured over a 90-day window ending seven days prior to the earnings announcement. *SPITEM* is an indicator variable equals to one if the special item[7] divided by total assets is less than or equal to negative 5 percent, and zero otherwise. All of the control variables are measured in the year corresponding to the earnings announcements.

3.3. Changes in accounting policies and estimates

Regulation and guidance on changing accounting policies and estimates are sparse in China except that companies are required to disclose and provide justification for such changes in the annual reports. In practice, auditors seldom question a firm's choices of changing accounting policies and estimates. To gather information on changes in accounting policies and estimates, we read annual reports of our sample firms from 2003 to 2010 and searched for key words such as "accounting policies", "change in accounting policies", "accounting estimates", and "change in accounting estimates". We exclude those mandatory changes in

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[7] Chinese listed firms do not report a line item as "special items". We use (extraordinary revenues – extraordinary expenses) as a measure of special items reported by Chinese firms.

accounting policies and estimates that were due to changes in regulation. We estimate

the following logit regression.

$$ACHANGE = \beta_0 + \beta_1 IFRS + \beta_2 LEV + \beta_3 GROWTH + \beta_4 ROA + \beta_5 CFO$$

$$+ \beta_6 LOSS + \beta_7 SIZE + \beta_8 EISSUE + \beta_9 DISSUE$$

$$+ \beta_{10} BIG4 + \beta_{11} BH + \beta_{12} OWNTOP5 + \beta_{13} REC$$

$$+ \beta_{14} INVT + \beta_{15} PPE + \varepsilon \qquad (4)$$

In addition to the control variables included in equation (2), we also include total

receivables (*REC*), total inventory (*INVT*), and the net value of property, plant, and

equipment (*PPE*), each scaled by end-of-year total assets.

3.4. Corrections of prior accounting errors

When accounting errors from prior years are discovered, Chinese listed firms

are usually not required to restate the financial statements, but are only required to

disclose the corrections in the financial statement footnotes. As a result, Chinese listed

firms tend to manage earnings through making accounting errors intentionally in one

period, and correcting them in subsequent periods. Jiang (2003) illustrated a case of a

Chinese pharmaceutical company intentionally making accounting errors in order to

meet the regulatory ROE threshold of 10 percent in issuing additional shares.[8] To

gather information on corrections of prior accounting errors, we read annual reports of

our sample firms from 2003 to 2010 and searched for key words such as "accounting

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[8] The company deducted RMB 690,000, a surplus in its employee benefit funds from its costs of goods sold, when the correct accounting treatment should be carrying over the surplus as a credit in the employee benefit account (a liability account). The company reported a ROE of 10.03 percent for the year, whereas the ROE would have been 9.85 percent if the correct accounting treatment was used. The company also intentionally excluded the auditor's statement regarding this inappropriate accounting treatment from its annual report.

error corrections" and "accounting mistake corrections". We exclude those minor

mistakes such as mathematical errors.

We estimate the following logit model to examine the effect of IFRS adoption

on incidence of corrections of prior accounting errors disclosed in financial statements.

The dependent variable, *RESTATE*, equals one if in the year a firm made an

accounting error that was uncovered in subsequent years, and zero otherwise. We use

similar control variables to those in equation (2).

$$RESTATE = \beta_0 + \beta_1 IFRS + \beta_2 LEV + \beta_3 GROWTH + \beta_4 ROA + \beta_5 CFO$$

$$+ \beta_6 LOSS + \beta_7 SIZE + \beta_8 EISSUE + \beta_9 DISSUE + \beta_{10} BIG4$$

$$+ \beta_{11} BH + \beta_{12} OWNTOP5 + \varepsilon \qquad (5)$$

3.5. Meeting accounting benchmarks used in security regulations

We consider three securities regulations involving specific accounting targets.

The first is the delisting regulation, which requires Chinese listed firm with negative

net income in three consecutive years to be delisted. This requirement suggests that a

firm that has reported "large losses" in two consecutive years but reports a profit in

the third year is likely to have engaged in earnings management in order to not be

delisted. We define "large losses" in two ways: (i) a firm's net income is lower than

the median of all losses reported by listed firms in the year, and (ii) a firm's net

income is lower than the first quartile of all losses reported by listed firms in the year.

Chinese securities regulations also require meeting earnings targets for issuing stock

dividends or additional shares of stock. Before May 8, 2006, firms were required to

report a three-year weighted average ROE of 6 percent or higher to issue stock

20

dividends, and a three-year weighted average ROE of 10 percent or higher to issue

additional shares. Starting from May 8, 2006, firms are required to report positive net

income in each of three consecutive years before they can issue stock dividends, and a

three-year weighted average ROE of 6 percent or higher before issuing additional

shares. To detect possible earnings management in meeting these targets, we identify

firms that have issued stock or stock dividends in a year while exceeding required

earnings targets by no more than 1 percent or no more than 2 percent. We compare

the proportion of these firms before and after IFRS adoption and attribute the change

to the potential effect of IFRS on firms' earnings management to meet issuing

requirements.

4. Data, Sample Selection, and Results

4.1. Sample and descriptive statistics

Our initial sample consists of all Chinese firms listed on Shanghai and

Shenzhen stock exchanges from 2003 to 2010.[9] We obtain the information on firms'

stock prices, company financials, industry classification, ownership structure, auditors,

and top shareholders from the Chinese Stock Market and Accounting Research

(CSMAR) database. We manually collected information on changes in accounting

estimates and corrections of prior accounting errors from companies' annual reports,

and obtain information on delisting, shares issuance, and stock dividends from

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[9]We exclude year 2007 from our analysis since it is the first year of IFRS adoption in China. We also exclude companies that are traded on the Growth Enterprises Market Board, a platform established in October 2009 and subject to different regulations than those of the Main Board and the Small / Medium Enterprises Board.

CSMAR. To mitigate the influence of extreme values, we winsorize all the continuous

variables at the top and bottom percentiles.[10]

Panel A of Table 1 presents the sample selection process. We start with 10,630

firm-year observations available on the Shanghai and the Shenzhen stock exchanges

from 2003 to 2006, and 2008 to 2010. After deleting firms in the financial industry,

and observations without necessary information to compute discretionary accruals and

control variables, we obtain a final sample of 9,334 firm-year observations. Panel B of

Table 1 provides the sample distribution by year. Over our sample period the number

of firms listed on the Shanghai and the Shenzhen stock exchanges has steadily

increased from 1,105 firms in 2003 to 1,581 firms in 2010. Panel B also shows the

number (percentage) of firms controlled by the Central government (Central SOEs),

Local governments (Local SOEs), and private investors (NSOEs) for each year of the

sample period. As shown in panel B, there is a decrease in the proportion of Local

SOEs and an increase in the proportion of NSOEs, while the proportion of central

SOEs remains relatively constant over the sample period. This trend is consistent with

the continuous movement toward privatization of state ownership.

Table 1, panel C shows the industry distribution, where industries are

classified based on CSRC industry classification indexes. About 55 percent of our

sample firms are in manufacturing. The rest of the sample is distributed evenly among

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[10] As a robustness check, we repeat all the analyses using two alternate samples. The first
alternate sample excludes observations from year 2007 and 2008, a period that could be affected
by the financial crisis. The second alternate sample includes a constant composition of firms over
the sample period (i.e. 2003 to 2006, and 2008 to 2010). We obtain similar results as those
reported in the tables.

the other ten industries. The statistics in panel C also suggest that state ownership

(both central and local SOEs) is concentrated in industries such as mining, utilities,

transportation and warehousing, where the share of NSOEs is less than 20 percent.

Table 2 reports the descriptive statistics of the regression variables. Panel A

shows the descriptive statistics for the full sample for the pre-IFRS (2003-2006) and

the post-IFRS (2008-2010) periods separately. The means (medians) of the absolute

and positive values of discretionary accruals increased significantly, while the means

(medians) of negative discretionary accruals decreased significantly after the

mandatory adoption of IFRS. These changes in discretionary accruals are indicative of

increased earnings management behaviors by Chinese listed firms following IFRS

adoption. In addition, the frequency of changes in accounting estimates increased

significantly, whereas the frequency of accounting error corrections after the

mandatory adoption of IFRS decreased, which suggests a switch from one method of

earnings management to the other. Panel B of table 2 shows the means and medians of

all variables for Central SOEs, Local SOEs, and NSOEs respectively. Central SOEs

are significantly larger in total assets (*SIZE*) and market capitalization (*MKTVAL*)

than Local SOEs and NSOEs. The average size of Central SOEs is almost two times

as large as that of Local SOEs, and four times as large as that of NSOEs. Central

SOEs are also more profitable. As for discretionary accruals, the magnitude of

absolute, positive, and negative values have increased for Local SOEs and NSOEs

after the adoption of IFRS, but remained almost unchanged for Central SOEs. The

frequency of changes in accounting estimates has increased for all three groups,

whereas the frequency of accounting error corrections decreased for all three groups after IFRS adoption.

4.2. Effect of IFRS on earnings management (discretionary accruals)

Figure 1&2 show the trend of the means of absolute, positive, and negative discretionary accruals over time. It is evident that the level of absolute, positive, and negative discretionary accruals significantly increased after the adoption of IFRS in year 2007.

Table 3 reports the regression results of discretionary accruals. When we pool all firms together, we find that the coefficient on IFRS is significantly positive, indicating an increase in absolute discretionary accruals following IFRS adoption. When we separate the sample by the nature of controlling shareholders, we find a similar increase for Local SOEs and NSOES, but not for Central SOEs. Although switching to IFRS from the old Chinese accounting standards may naturally result in changes in the distribution properties of earnings and components of earnings, these changes, if any, are expected for all firms. Because the increase in discretionary accruals is observed for Local SOEs (NSOES) but not for Central SOEs, it is more likely the result is indicative of increased earnings management in Local SOEs (NSOES) after IFRS adoption. The coefficient estimates on all the control variables except for BIG4 are consistent with our predictions. We obtain similar results to those of absolute discretionary accruals when we estimate the same model using positive or negative discretionary accruals as the dependent variable (not tabulated). Taken together, our evidence from Table 3 suggests that mandatory adoption of IFRS by

24

Chinese listed firms is associated with more earnings management, particularly for

Local SOEs and NSOEs, which are subject to weak external and internal monitoring

and scrutiny.

4.3. Effect of IFRS on the value relevance of earnings

The flexibility provided under IFRS could lead to more opportunistic

behaviors, but could also increase information relevance by allowing firms to convey

private information in a less costly way. To corroborate our findings on discretionary

accruals, we examine the value relevance of earnings. Table 4 reports the regression

results of the market reactions to news in earnings announcements. When we pool all

firms together, we find a significant decrease in the earnings response coefficient

(ERC) after the adoption of IFRS. The decrease in value relevance of earnings,

coupled with the increases in discretionary accruals, suggest that the discretion under

IFRS led to more earnings management, and less informative earnings. We find

similar decreases in value relevance for the sub-samples of Local SOEs and NSOEs,

but not for Central SOEs. Results on ERC are consistent with our results on

discretionary accruals in that Local SOEs and NSOEs "abuse" the discretion allowed

by IFRS for earnings management purpose and thus the earnings informativeness of

these firms suffers.

4.4. Effect of IFRS on mechanism of earnings management

Panel A of Table 5 reports the distribution of firms' voluntary changes in

accounting policies and estimates, and intentional accounting errors by year. The

occurrence of voluntary changes in accounting estimates increased after the adoption

of IFRS, while the occurrence of intentional accounting errors decreased. The regression results of equation (4) are presented in Panel B. The coefficient on IFRS is significantly positive in the full-sample regression and all three sub-sample regressions, i.e. Central SOEs, Local SOEs, and NSOEs. Our findings suggest that across all types of controlling shareholders, the adoption of IFRS is associated with a higher likelihood of voluntary changes in accounting policies and estimates. The intention of making voluntary changes in accounting policies and estimates, however, can be either benign or opportunistic: firms may switch between different alternatives permitted under IFRS to better present their underlying economic activities, or they may use the added discretion to achieve various financial reporting objectives. However, combined with the evidence on accruals management (Table 3) and informativeness of earnings (Table 4), these results suggest that Local SOEs and NSOEs exploit the flexibility provided by IFRS and engage more frequently in changing accounting policies and estimates.

Panel C of Table 5 reports results from the logit regressions on the likelihood of intentional accounting error corrections for the full sample and the three sub-samples. The coefficient estimates on IFRS are significantly negative, and are not statistically different among three sub-samples. This suggests that the adoption of IFRS is associated with a lower likelihood of intentional accounting errors. Combined with results from panel B, it appears that firms increased the use of voluntary changes in accounting estimates and at the same time, decreased the use of intentional accounting error after IFRS adoption. Given that the cost of intentional accounting

26

errors is higher, it seems that the adoption of IFRS creates incentives for firms to switch to the less costly changes in accounting policies/estimates to accomplish their earnings management.

4.5. Effect of IFRS on earnings management to meeting accounting benchmarks

Panel A of Table 6 reports the statistics of firms that experienced two large losses in the prior two years but report a profit in the third year. These firms are more likely to engage in earnings management to avoid being delisted. Before IFRS adoption (2003— 2006), out of 124 firms that reported losses in two consecutive years and their losses in each year were below the median of all losses reported by Chinese listed firms in the same year, 88 firms (71 percent) reported a positive net income in the third year. After the IFRS adoption (2009 and 2010), this percentage increased to 96 percent, i.e., out of 50 firms that reported losses in two consecutive years and their losses in each year were below the median of all losses reported by Chinese listed firms in the same year, 48 firms reported a positive net income in the third year. Similarly, before IFRS adoption (2003-2006), out of all the firms that reported losses in two consecutive years and their losses in each year were below first quartile of all losses reported by Chinese listed firms in the same year, 67 percent reported a positive net income in the third year prior to IFRS. After adoption of IFRS (2009 and 2010), this percentage increased to 95 percent. These results are consistent with increased earnings management to avoid delisting after IFRS adoption.

Panel B reports the statistics of firms that are likely to manage earnings to meet the requirement for issuing a stock dividend. There were 32 firms issued stock

dividends in 2003-2006, out of which 3 firms (9 percent) reported a weighted three-year average ROE of between 6 and 7 percent, and 12 firms (38 percent) reported a weighted three-year average ROE of between 6 and 8 percent, i.e., these firms just met or slightly beat the 6 percent ROE requirement. Over 2009 and 2010, the requirement changed to reporting positive net income for three consecutive years prior to issuing stock dividends. Out of 33 firms that issued stock dividends in 2009 and 2010, 9 firms (22 percent) just met or slightly beat the threshold by reporting a small positive net income (ROA of less than 1 percent) in at least one of the three prior years, and 20 firms (60 percent) reported a small positive ROA of less than 2 percent. Both the number and percentage of firms suspected of earnings management increased after IFRS, although only the result on firms beating the threshold by less than 2% is statistically significant. The lack of statistical significance may due to small sample size.

With respect to suspect firms that manage earnings to meet requirements of seasoned equity offering, we find similar evidence. From 2003 to 2006, out of 97 firms that issued additional shares, 43 percent of the firms reported a three-year weighted average ROE of between 10 and 11 percent, and 51 percent reported a three-year weighted average ROE of between 10 and 12 percent, just meeting or slightly beating the 10 percent ROE requirement. The percentages increased after firms adopted IFRS. From 2009 to 2010, out of 128 firms that issued stock, 50 percent reported a three-year weighted average ROE of between 6 and 7 percent, and 55 percent reported a three-year weighted average ROE of between 6 and 8 percent, just

meeting or slightly beating the 6 percent ROE requirement. Probably also due to small sample size, the increases in the number of suspect earnings management firms after IFRS are not statistically significant. Taken together, the results in Table 6 provide evidence of increased earnings management after the mandatory adoption of IFRS to meet or beat specific earnings targets used in securities regulations.

5. Conclusion

We investigate the impact of mandatory IFRS adoption by Chinese listed firms on earnings management behaviors, and whether the impact differs by type of controlling shareholders. Despite numerous studies on the impact of IFRS, little is known about the effectiveness of IFRS in emerging markets where the institutional factors may be incompatible with IFRS. Our evidence indicates that the higher flexibility under IFRS provides more earnings management opportunities for firms operating in emerging markets where investor protection and corporate governance are weak. We find that while the magnitude of discretionary accruals for firms owned by local governments (Local SOEs) and private investors (NSOEs) increased after IFRS adoption, it remained unchanged for firms owned by the central government (Central SOEs). Evidence on the value relevance of earnings suggests that the informativeness of earnings decreased for Local SOEs and NSOEs, but not for Central SOEs. More interestingly, we find that firms changed the forms of earnings management to take advantage of the flexibility under IFRS: they switched from intentionally making accounting errors to changing accounting policies and estimates.

Our paper contributes to the literature in several ways. First, evidence from our paper adds to the literature that financial reporting quality is shaped not only by financial reporting standards, but also reporting incentives and institutional factors (Ball et. al 2000, Ball et. al 2003, Ball 2006, Burgstahler et. al 2006, Lang et. al 2006). Absent strong investor protection and effective monitoring and governance systems, adopting superior quality accounting standards does not curb the reporting incentives by Chinese listed firms. Moreover, the higher flexibility afforded under IFRS creates more opportunities for Chinese firms to manage earnings. Second, our paper is among the first to provide evidence on the effect of IFRS on earnings quality in developing economies. Currently many developing countries and economies have either adopted IFRS or standards that are largely converged with IFRS, but very little evidence is provided in the literature regarding the effect of IFRS in a developing economy. Given the importance of China in the global economy, our evidence may be interesting and relevant to regulators and investors. Third, our paper adds to the literature on earnings management. We show that under IFRS, more principles-based standards than the old Chinese standards, Chinese firms change specific earnings management mechanism to take advantage of the higher flexibility allowed by IFRS. We document an increase in changing accounting policies and estimates by Chinese firms post IFRS adoption, accompanied by a decrease in intentionally making accounting errors.

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Appendix A: Examples of using accounting errors to manage earnings

Example 1: Shenzhen Shenxin Taifeng Group Co. Ltd. (Exchange code: 000034)

        The company reported losses in both 2004 and 2005. In 2006 the company reported a positive ROA of 0.27%. Had the company reported a loss again in 2006, it would have been delisted from Shenzhen stock exchange. However, the company reported correction of accounting errors of 2006 in its 2008 annual report. After the corrections, the ROA of 2006 was changed to negative 4.36%. Those accounting errors made in 2006 include understatement of contingent losses from lawsuits, early recognition of gains from pending lawsuits, and postponed recognition of inventory cost.

Example 2: E-food Group Co. Ltd. (Exchange code: 002200)

        The company issued corrections of various accounting errors for year 2005 in its 2006 annual report. The company corrected the valuation reserves estimated for fixed assets, and allowance estimated for uncollectible accounts receivable. These changes decreased the beginning retained earnings of 2006 by RMB 40,310,132.

Example 3: Datang International Power Generation Co. Ltd. (Exchange code: 601991)

        The company issued corrections of accounting errors for year 2009 in its 2010 annual report. In 2009, the company understated the valuation reserves for fixed asset and inventory, and understated the depreciation expenses. These accounting errors increased the net income of 2009 by RMB 65,187,152 (or 2.71 percent).

Example 4: Yunan Green-land Biological Technology Co. Ltd. (Exchange code: 002200)

        The company issued corrections of accounting errors for year 2008 in its 2009 annual report. The company did not account for sales returns in 2008, through which the company overstated its earnings of 2008 by RMB 11,537,832 (or 1.24 percent).

Appendix B: Examples of changing accounting policies and estimates to manage earnings

Example 1: Shenzhen Neptunus Bioengineering Co. Ltd. (Exchange code: 000078)

In 2003, the company changed its method of estimating bad debt expenses. It estimated a smaller percentage of doubtful accounts for each aging groups of accounts receivable. This change of bad debt estimation increased the year's net income by RMB 87,830,000. The company reported a net income of RMB 62,294,000. The company would have reported a loss of RMB 25,536,000, had it not changed its bad debt expense estimates.

Example 2: Shenzhen Energy Investment Co. Ltd. (Exchange code: 000027)

Starting January 1, 2005, the company changed its schedule of estimating depreciation expense for its PP&E, and used a smaller percentage for estimating depreciation. Because of this change of depreciation policy, the company's 2005 net income was increased by RMB 87,830,000. The company reported a net income of RMB 1,414,410,634 (11.7 percent).

Example 3: Zhongrun Resources Investment Corp. (Exchange code: 000506)

In 2008, the company underwent a structural change of its assets and shifted its main business to real estate from manufacturing. As claimed by the company, it changed its method of estimating bad debt expenses to better represent its business practices. It estimated a smaller percentage of allowance for doubtful accounts for each aging groups of accounts receivables. This change of bad debt estimation increased the year's net income by RMB 16,329,449 (or 9 percent).

Example 4: Hainan Airline Co. Ltd. (Exchange code: 600221)

In 2009, the company switched from historical cost accounting to fair value accounting for its real estate investments. As a result of applying the change of accounting policy retroactively, the company reported a profit of 334,670,000 in 2009. Had the company not changed this accounting method, it would have reported a loss of 113,897,000 in 2009.

Appendix C: Variable Definition

ACHANGE	An indicator variable equal to one if the firm voluntarily changes its accounting policy or estimates during the year, and zero otherwise
BH	An indicator variable equal to one if the firm issues any shares traded exclusively among foreign investors at Shanghai or Shenzhen Exchanges (B shares), or shares listed at Hong Kong Exchange (H shares), and zero otherwise
BIG4	An indicator variable equal to one if the firm's auditor is PWC, KPMG, E&Y, or Deloitte, and zero otherwise
CAR	Three-day cumulative abnormal returns around the [-1, +1] window of annual earnings announcement date, calculated as the firm's stock return minus the market return
CFO	Annual net cash flow from operations divided by end of year total assets
|DACC|	Absolute value of discretionary accruals, where the discretionary accruals are the residuals estimated using the performance-adjusted cross-sectional modified Jones model
DISSUE	Percentage change in total liabilities
EISSUE	An indicator variable equal to one if the firm issues equity in any of the current year, next year, or the year after next
GROWTH	Percentage change in total sales
IFRS	An indicator variable equal to one if the observation is from year 2008 to 2010, and zero otherwise
INVT	Total inventory deflated by end-of-year total assets
LEV	Total liabilities divided by end-of-year total assets
LOSS	An indicator variable equal to one if a firm's current year net income is negative, and zero otherwise
neg_DACC	Negative discretionary accruals
OWNTOP5	Percentage of shares owned by the five largest shareholders;
pos_DACC	Positive values of discretionary accruals
PPE	Value of property, plant, and equipment (net) at the end of the year, deflated by end of year total assets
REC	Total accounts receivables, deflated by end of year total assets
RESTATE	An indicator variable equal to one if a firm intentionally makes accounting errors in the year that are corrected in subsequent years, and zero otherwise
ROA	Net income divided by end-of-year total assets
SIZE	Natural logarithm of total assets at the end of the year
SPITEM	An indicator variable equal to one if the extraordinary revenues minus extraordinary expenses divided by end-of-year total assets is less than or equal to negative 5 percent, and zero otherwise
UE	Unexpected earnings, calculated as the actual EPS for the current fiscal year minus the actual EPS for the last year, scaled by the stock price at the beginning of the current year
VOL	Standard deviation of daily stock returns over a 90-day window ending seven days prior to the annual report announcement date

Figure 1: Trend of absolute discretionary accruals (|DACC|)
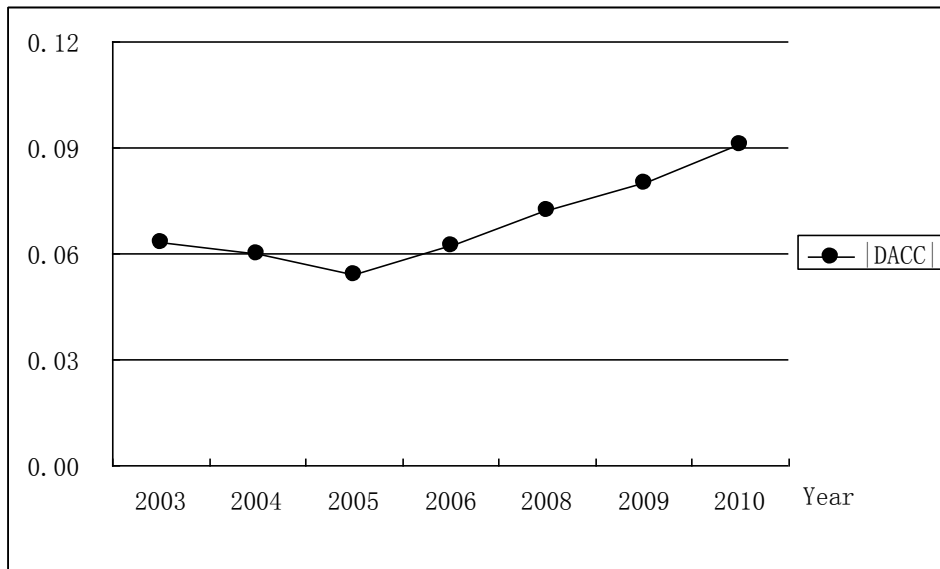
Figure 2: Trend of positive discretionary accruals (pos_DACC) and negative discretionary accruals (neg_DACC)
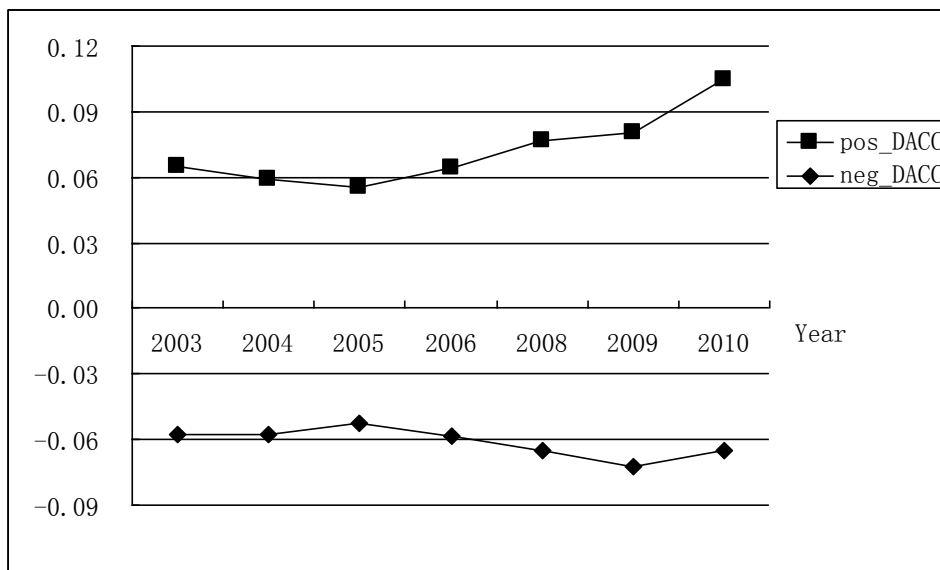
Figure 3: Trend of change in accounting policies and estimates (*ACHANGE)* and indigence of accounting errors (*RESTATE)* by year
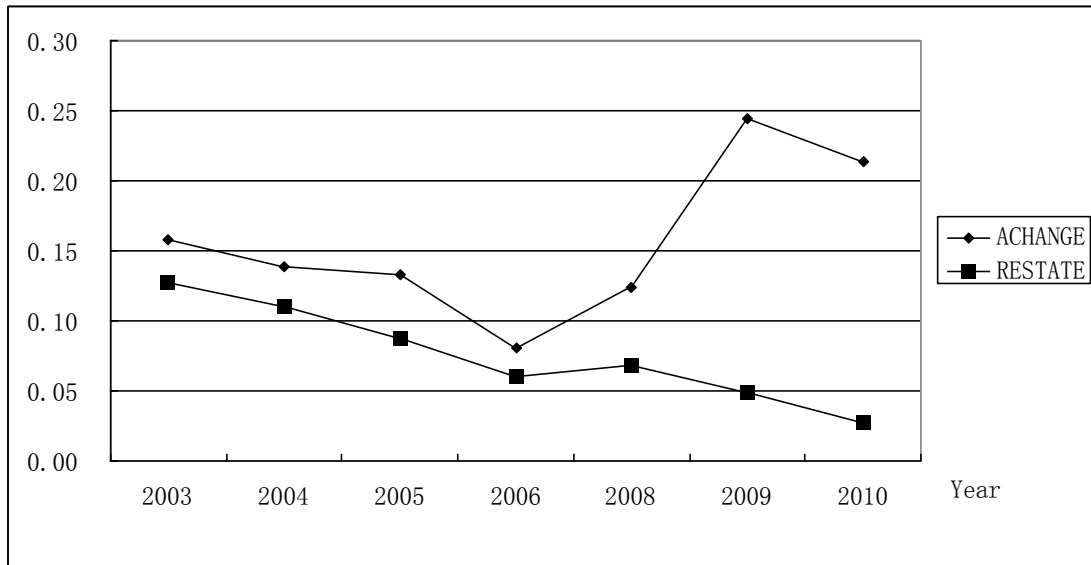
Table 1 Sample selection

Panel A: Sample Selection

	Num. of observations
Initial Sample for 2003-2006, 2008-2010	10,630
Less: Financial firms	172
Less: firm-years without necessary data for DA calculations	658
Less: no information for control variables	466
Total	9,334

Panel B: Distribution by Year

	All		Central SOE		Local SOE		NSOE	
	N	%	N	%	N	%	N	%
2003	1,105	11.84	200	18.10	639	57.83	266	24.07
2004	1,166	12.49	220	18.87	618	53.00	328	28.13
2005	1,261	13.51	237	18.79	633	50.20	391	31.01
2006	1,284	13.76	245	19.08	600	46.73	439	34.19
2008	1,431	15.33	286	19.99	616	43.05	529	36.97
2009	1,506	16.13	299	19.85	614	40.77	593	39.38
2010	1,581	16.94	314	19.86	613	38.77	654	41.37
Total	9,334	100	1,801		4,333		3,200	

Panel C: Distribution by Industry

Industry	All		Central SOE		Local SOE		NSOE	
Agriculture, forestry and fishing	176	1.9%	27	15.3%	82	46.6%	67	38.1%
Mining	279	3.0%	78	28.0%	155	55.6%	46	16.5%
Manufacturing	5,166	55.3%	932	18.0%	2,360	45.7%	1,874	36.3%
Utilities	433	4.6%	130	30.0%	251	58.0%	52	12.0%
Construction	173	1.9%	48	27.7%	72	41.6%	53	30.6%
Transportation and warehousing	382	4.1%	104	27.2%	244	63.9%	34	8.9%
Information technology	493	5.3%	191	38.7%	80	16.2%	222	45.0%
Distribution and retail	657	7.0%	86	13.1%	380	57.8%	191	29.1%
Real estate	801	8.6%	73	9.1%	354	44.2%	374	46.7%
Service	314	3.4%	49	15.6%	133	42.4%	132	42.0%
Communication and mass media	120	1.3%	31	25.8%	64	53.3%	25	20.8%
Other Industries	340	3.6%	52	15.3%	158	46.5%	130	38.2%
Total	9,334	100	1,801		4,333		3,200	

Table 2 Panel A: Summary statistics of all sample firms

	Before IFRS (2003-2006)					After IFRS (2008-2010)					After − Before	
	Mean	Median	S.D	P25	P75	Mean	Median	S.D	P25	P75	Mean	Median
|DACC|	0.060	0.041	0.068	0.018	0.077	0.081	0.049	0.105	0.021	0.098	0.021***	0.008***
pos_DACC	0.061	0.040	0.070	0.018	0.077	0.088	0.049	0.110	0.020	0.104	0.027***	0.009***
neg_DACC	-0.057	-0.041	0.055	-0.076	-0.018	-0.067	-0.048	0.064	-0.092	-0.022	-0.010***	-0.007***
ACHANGE	0.126	0.000	0.332	0.000	0.000	0.195	0.000	0.396	0.000	0.000	0.069***	0.000***
RESTATE	0.095	0.000	0.293	0.000	0.000	0.048	0.000	0.213	0.000	0.000	-0.047***	0.000***
SIZE	21.24	21.17	1.02	20.58	21.86	21.67	21.54	1.29	20.81	22.42	0.429***	0.368***
LEV	0.501	0.440	0.396	0.305	0.588	0.487	0.439	0.393	0.294	0.588	-0.014*	-0.001
GROWTH	0.232	0.156	0.593	-0.002	0.343	0.221	0.133	0.623	-0.038	0.326	-0.011	-0.023***
ROA	0.011	0.024	0.095	0.007	0.049	0.031	0.034	0.082	0.011	0.065	0.020***	0.010***
CFO	0.052	0.051	0.081	0.010	0.095	0.052	0.051	0.087	0.006	0.102	0.000	0.000
LOSS	0.150	0.000	0.357	0.000	0.000	0.122	0.000	0.327	0.000	0.000	-0.028***	0.000***
EISSUE	0.133	0.000	0.340	0.000	0.000	0.258	0.000	0.438	0.000	1.000	0.125***	0.000***
DISSUE	0.230	0.113	0.547	-0.045	0.342	0.248	0.126	0.583	-0.037	0.359	0.018	0.013
BIG4	0.068	0.000	0.252	0.000	0.000	0.062	0.000	0.240	0.000	0.000	-0.006	0.000
BH	0.088	0.000	0.283	0.000	0.000	0.086	0.000	0.280	0.000	0.000	-0.002	0.000
OWNTOP5	0.565	0.575	0.138	0.470	0.665	0.509	0.509	0.160	0.390	0.619	-0.056***	-0.066***
CAR	0.001	-0.006	0.070	-0.038	0.029	-0.001	-0.007	0.062	-0.034	0.023	-0.002	-0.001
UE	0.005	0.000	0.088	-0.011	0.012	0.006	0.000	0.064	-0.010	0.012	0.001	0.000
VOL	0.027	0.025	0.008	0.021	0.032	0.031	0.030	0.008	0.025	0.037	0.004	0.005
SPITEM	0.057	0.000	0.232	0.000	0.000	0.008	0.000	0.090	0.000	0.000	-0.049	0.000
REC	0.140	0.115	0.110	0.053	0.196	0.083	0.055	0.085	0.017	0.125	-0.057***	-0.060***
INVT	0.159	0.127	0.137	0.064	0.211	0.178	0.139	0.159	0.067	0.231	0.019***	0.012***
PPE	0.320	0.296	0.183	0.179	0.447	0.273	0.241	0.186	0.127	0.396	-0.047***	-0.055***

MKTVAL is the end of year market value of equity in millions of RMB. All other variables are defined in the Appendix.

There are 2,432 observations of pos_DACC, 2,384 of neg_DACC, and 4,816 observations for all other variables in 2003-2006; there are 2,233 observations of pos_DACC, 2,285 neg_DACC, and 4,518 observations for all other variables in 2008-2010.

Table2 Panel B: Summary statistics for Central SOEs, Local SOEs, and NSOEs

| | Before IFRS | | | | | | After IFRS | | | | | |
| | Central SOE | | Local SOE | | NSOE | | Central SOE | | Local SOE | | NSOE | |
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
|DACC|	0.063	0.042	0.056	0.038	0.065	0.043	0.063	0.041	0.079	0.048	0.092	0.055
pos_DACC	0.061	0.039	0.057	0.038	0.067	0.043	0.065	0.039	0.081	0.044	0.106	0.064
neg_DACC	-0.062	-0.046	-0.052	-0.038	-0.061	-0.043	-0.059	-0.043	-0.071	-0.051	-0.068	-0.047
ACHANGE	0.145	0.000	0.125	0.000	0.117	0.000	0.264	0.000	0.206	0.000	0.149	0.000
RESTATE	0.099	0.000	0.094	0.000	0.094	0.000	0.048	0.000	0.046	0.000	0.050	0.000
SIZE	21.49	21.29	21.36	21.34	20.88	20.87	22.19	21.89	21.93	21.79	21.15	21.08
LEV	0.442	0.409	0.473	0.434	0.588	0.470	0.482	0.453	0.479	0.459	0.498	0.409
GROWTH	0.238	0.184	0.219	0.159	0.250	0.127	0.211	0.155	0.221	0.122	0.226	0.133
ROA	0.027	0.027	0.018	0.025	-0.010	0.022	0.025	0.029	0.028	0.030	0.037	0.041
CFO	0.059	0.052	0.056	0.055	0.039	0.040	0.049	0.046	0.058	0.054	0.048	0.049
LOSS	0.121	0.000	0.127	0.000	0.207	0.000	0.138	0.000	0.113	0.000	0.122	0.000
EISSUE	0.141	0.000	0.127	0.000	0.140	0.000	0.258	0.000	0.232	0.000	0.285	0.000
DISSUE	0.246	0.118	0.223	0.106	0.231	0.120	0.242	0.133	0.254	0.133	0.245	0.117
BIG4	0.133	0.000	0.061	0.000	0.039	0.000	0.128	0.000	0.061	0.000	0.028	0.000
BH	0.120	0.000	0.097	0.000	0.052	0.000	0.136	0.000	0.105	0.000	0.041	0.000
OWNTOP5	0.601	0.608	0.573	0.586	0.530	0.532	0.542	0.537	0.509	0.512	0.491	0.488
CAR	0.004	-0.003	0.001	-0.006	-0.001	-0.006	-0.003	-0.007	-0.002	-0.006	0.000	-0.007
UE	0.006	0.001	0.006	0.001	0.002	-0.001	0.005	0.001	0.007	0.001	0.005	0.000
VOL	0.027	0.026	0.026	0.025	0.028	0.027	0.031	0.030	0.031	0.030	0.031	0.030
SPITEM	0.031	0.000	0.040	0.000	0.104	0.000	0.003	0.000	0.004	0.000	0.015	0.000
REC	0.150	0.128	0.122	0.099	0.164	0.141	0.094	0.067	0.063	0.039	0.098	0.077
INVT	0.156	0.145	0.155	0.122	0.168	0.123	0.163	0.141	0.173	0.129	0.191	0.145
PPE	0.305	0.267	0.348	0.331	0.279	0.262	0.291	0.253	0.300	0.276	0.234	0.203

Table 3：Mandatory adoption of IFRS and accrual earnings management

Dependent variable: |DACC|

		All	Central SOE	Local SOE	NSOE
IFRS	?	0.025***	0.006	0.027***	0.035***
		(0.000)	(0.178)	(0.000)	(0.000)
LEV	+	0.031***	0.031**	0.043***	0.027***
		(0.000)	(0.019)	(0.000)	(0.000)
GROWTH	+	0.009***	0.018***	0.011***	0.004
		(0.001)	(0.002)	(0.006)	(0.345)
ROA	?	0.067***	0.038	0.052*	0.063*
		(0.002)	(0.449)	(0.086)	(0.070)
CFO	−	-0.078***	0.004	-0.025	-0.165***
		(0.001)	(0.937)	(0.435)	(0.000)
LOSS	+	0.006*	0.013*	0.005	-0.000
		(0.069)	(0.066)	(0.261)	(0.964)
SIZE	−	-0.005***	-0.001	-0.006***	-0.003*
		(0.000)	(0.671)	(0.000)	(0.097)
EISSUE	+	0.000	-0.002	-0.002	0.003
		(0.835)	(0.617)	(0.585)	(0.504)
DISSUE	+	0.036***	0.036***	0.039***	0.033***
		(0.000)	(0.000)	(0.000)	(0.000)
BIG4	−	-0.001	-0.014*	0.007	-0.003
		(0.811)	(0.055)	(0.174)	(0.682)
BH	−	-0.001	0.005	-0.002	-0.008
		(0.873)	(0.575)	(0.756)	(0.267)
OWNTOP5	+	0.015**	0.037***	0.004	0.015
		(0.035)	(0.005)	(0.691)	(0.299)
Constant		0.106***	0.009	0.142***	0.087*
		(0.000)	(0.834)	(0.000)	(0.053)
Industry effect		Included	Included	Included	Included
Observations		9,334	1,801	4,333	3,200
Adj.R^2		0.177	0.172	0.202	0.170

Test of difference in coefficients

	Central vs. Local SOE		Central SOE vs. NSOE		Local SOE vs. NSOE	
		Z-stat		Z-stat		Z-stat
IFRS	-0.021	-4.107***	-0.029	-5.038***	-0.008	-1.687*

P-values are calculated based on robust standard errors corrected for clustering by firm; *, **, ***
denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
All variables are defined in the Appendix.

Table 4: Capital market reactions to earnings announcements

Dependent variable: *CAR.*

		All	Central SOE	Local SOE	Non SOE
UE	+	0.766***	-0.105	0.861**	1.279**
		(0.002)	(0.794)	(0.034)	(0.015)
IFRS	?	-0.003	-0.007*	-0.005**	0.002
		(0.105)	(0.052)	(0.031)	(0.550)
UE×IFRS	?	-0.078***	0.116	-0.100***	-0.173***
		(0.006)	(0.123)	(0.006)	(0.007)
SIZE	+	0.002**	0.001	0.003***	0.001
		(0.016)	(0.330)	(0.005)	(0.332)
LEV	−	-0.000	0.001	-0.001	-0.000
		(0.769)	(0.313)	(0.449)	(0.961)
GROWTH	+	-0.000	0.008***	-0.000	-0.002
		(0.589)	(0.005)	(0.929)	(0.212)
VOL	+	-0.004	-0.133	0.208	-0.239
		(0.966)	(0.480)	(0.139)	(0.154)
LOSS	−	0.004	0.013	0.013**	-0.007
		(0.222)	(0.230)	(0.023)	(0.204)
SPITEM	−	0.004	0.025	-0.006	0.007
		(0.549)	(0.128)	(0.496)	(0.410)
BH	+	0.001	-0.003	0.003	-0.000
		(0.539)	(0.541)	(0.260)	(0.950)
UE×SIZE	+	-0.028**	-0.008	-0.032*	-0.044*
		(0.015)	(0.660)	(0.090)	(0.082)
UE×LEV	+	0.007*	0.009*	0.002	0.008
		(0.080)	(0.064)	(0.777)	(0.143)
UE×GROWTH	+	0.023***	-0.003	-0.001	0.032***
		(0.001)	(0.944)	(0.984)	(0.001)
UE×VOL	−	-3.252**	6.791	-2.201	-8.419***
		(0.024)	(0.112)	(0.229)	(0.001)
UE×LOSS	−	0.012	0.106	0.025	-0.058
		(0.755)	(0.221)	(0.684)	(0.341)
UE×SPITEM	−	-0.046	0.192*	-0.085	-0.038
		(0.430)	(0.083)	(0.425)	(0.624)
UE×BH	+	-0.041	0.043	-0.063	-0.248**
		(0.392)	(0.497)	(0.296)	(0.027)
Constant		-0.038*	-0.041	-0.103***	-0.036
		(0.073)	(0.159)	(0.003)	(0.229)
Industry		Included	Included	Included	Included
Observations		9,334	1,801	4,333	3,200
Adj.R^2		0.027	0.009	0.011	0.068

Test of difference in coefficients

	Central vs. Local SOE		Central SOE vs. NSOE		Local SOE vs. NSOE	
		Z-stat		Z-stat		Z-stat
UE×IFRS	0.201	2.441**	0.246	2.391**	0.044	0.532

P-values are calculated based on robust standard errors corrected for clustering by firm; *, **, ***
denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
All variables are defined in the Appendix.

Table 5: Effect of IFRS on voluntary change in accounting policies/estimates and accounting restatements

Panel A: Distribution by year

	Num. of sample firms	Num. of firms with changes in accounting estimates	percentage	Num. of firms with accounting errors	percentage
2003	1,105	175	15.84	141	12.76
2004	1,166	161	13.81	128	10.98
2005	1,261	168	13.32	111	8.80
2006	1,284	104	8.10	77	6.00
2008	1,431	177	12.37	97	6.78
2009	1,506	368	24.44	74	4.91
2010	1,581	337	21.32	44	2.78
Total	9,334	1,490	15.96	672	7.20

Panel B: Voluntary change in accounting policies/estimates

Dependent variable: *ACHANGE*.

		All	Central SOE	Local SOE	NSOE
IFRS	?	0.425***	0.456***	0.475***	0.366***
		(0.000)	(0.001)	(0.000)	(0.002)
LEV	+	0.282***	0.320	0.355**	0.307**
		(0.001)	(0.172)	(0.035)	(0.011)
GROWTH	+	0.097*	-0.047	0.080	0.144**
		(0.058)	(0.730)	(0.339)	(0.046)
ROA	?	-0.825	0.499	-0.198	-1.549*
		(0.147)	(0.736)	(0.838)	(0.065)
CFO	−	0.817**	0.151	1.028*	0.947
		(0.036)	(0.872)	(0.080)	(0.133)
LOSS	+	0.235**	0.531**	0.243	0.093
		(0.040)	(0.039)	(0.163)	(0.649)
SIZE	?	0.267***	0.261***	0.193***	0.298***
		(0.000)	(0.000)	(0.000)	(0.000)
EISSUE	+	-0.073	-0.086	-0.096	-0.013
		(0.336)	(0.579)	(0.406)	(0.922)
DISSUE	+	0.014	-0.167	0.032	0.168*
		(0.808)	(0.201)	(0.718)	(0.098)
BIG4	−	0.154	-0.003	0.158	0.439
		(0.249)	(0.991)	(0.432)	(0.135)
BH	−	0.117	0.005	0.119	0.259
		(0.293)	(0.983)	(0.445)	(0.185)
OWNTOP5	+	0.527***	0.421	0.507*	0.425
		(0.010)	(0.341)	(0.092)	(0.279)
RECE	?	-0.394	-1.970**	-0.577	0.498
		(0.277)	(0.018)	(0.312)	(0.401)
INVT	?	-1.193***	-0.759	-1.253***	-1.291***
		(0.000)	(0.237)	(0.003)	(0.004)
PPE	?	-0.856***	-0.873*	-0.676**	-1.188***
		(0.000)	(0.093)	(0.020)	(0.002)
Constant		-6.839***	-7.816***	-5.332***	-7.886***
		(0.000)	(0.000)	(0.000)	(0.000)
Industry		Included	Included	Included	Included
Observations		9,334	1,801	4,333	3,200
Pseudo R^2		0.047	0.082	0.044	0.041

Table 5, panel B continued

Test of difference in coefficients

	Central vs. Local SOE		Central SOE vs. NSOE		Local SOE vs. NSOE	
		Z-stat		Z-stat		Z-stat
IFRS	-0.019	-0.112	0.090	0.491	0.108	0.710

Panel C: Intentional accounting errors

Dependent variable: *RESTATE*

		All	Central SOE	Local SOE	Non SOE
IFRS	?	-0.699***	-1.051***	-0.739***	-0.525***
		(0.000)	(0.000)	(0.000)	(0.002)
LEV	+	0.267***	0.517**	0.119	0.300**
		(0.008)	(0.027)	(0.565)	(0.027)
GROWTH	+	0.015	0.015	-0.082	0.074
		(0.826)	(0.941)	(0.502)	(0.421)
ROA	?	-0.967*	-3.133**	-1.101	-0.828
		(0.092)	(0.034)	(0.203)	(0.330)
CFO	−	-0.684	0.487	-0.546	-0.917
		(0.212)	(0.695)	(0.520)	(0.331)
LOSS	+	0.298**	0.018	0.368*	0.206
		(0.034)	(0.954)	(0.100)	(0.367)
SIZE	?	0.017	0.115	-0.023	-0.042
		(0.757)	(0.308)	(0.781)	(0.651)
EISSUE	?	-0.494***	-0.174	-0.569**	-0.621***
		(0.000)	(0.536)	(0.017)	(0.007)
DISSUE	?	-0.044	0.007	-0.079	0.038
		(0.625)	(0.973)	(0.581)	(0.760)
BIG4	−	-0.394	-1.070	-0.669	0.550
		(0.210)	(0.184)	(0.137)	(0.190)
BH	−	-0.271	0.025	-0.328	-0.327
		(0.244)	(0.964)	(0.275)	(0.474)
OWNTOP5	−	-0.811**	-1.948***	-0.561	-0.869
		(0.019)	(0.009)	(0.270)	(0.182)
Constant		-0.349	-2.181	-1.864	-1.724
		(0.759)	(0.373)	(0.356)	(0.394)
Industry		Included	Included	Included	Included
Observations		9,334	1,801	4,333	3,200
Pseudo R^2		0.051	0.091	0.059	0.063

Test of difference in coefficients

	Central vs. Local SOE		Central SOE vs. NSOE		Local SOE vs. NSOE	
		Z-stat		Z-stat		Z-stat
IFRS	-0.311	-1.120	-0.526	-1.791*	-0.215	-0.954

P-values are calculated based on robust standard errors corrected for clustering by firm; *, **, ***
denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
All variables are defined in the Appendix.

Table 6: Earnings management to avoid security regulations

Panel A：Earnings management to avoid delisting

The following table includes firms that may engage in earnings management to avoid delisting by avoid reporting losses in three consecutive years.

LOSS50 represent firms that reported losses in two consecutive years and that the loss in each year was below the median of all losses reported in the same year; LOSS50 – profit is a subset of LOSS50 firms that reported a profit following two consecutive years of losses. LOSS25 represent firms that reported losses in two consecutive years and that the loss in each year was below the first quartile of all losses reported in the same year; LOSS25 – profit is a subset of LOSS25 firms that reported a profit following two consecutive years of losses.

	Before IFRS （2003-2006）	After IFRS （2009-2010）	After - Before
LOSS50	124	50	
LOSS50 - profit	88	48	
	71.0%	96.0%	25.0%***
LOSS25	45	21	
LOSS25 - profit	30	20	
	66.7%	95.2%	29.5%**

*, **, *** denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B: Earnings management to meet requirements of issuing stock dividends

The earnings requirement to obtain the right of issuing stock dividends was a three-year weighted average ROE of 6% or higher before May 8, 2006. Since May 8, 2006, the requirement is to report positive net income in three consecutive years.

For firms issuing stock dividends before May 8, 2006, EM1% represents firms reported a three-year weighted average ROE between 6% and 7%, and EM2% represents firms reported a three-year weighted average ROE between 6% and 8%. For firms issuing stock dividends after May 8, 2006, EM1% represents firms reported a ROA greater than zero but less than 1% in any of the three years prior to the issuing year, and EM2% represents firms reporting a ROA greater than zero but less than 2% in any of the three years prior to the issuing year.

	Before IFRS （2003-2006）	After IFRS （2009-2010）	After - Before
Firms that issued stock dividends	32	33	
Issuing share with EM1%	3	7	
	9.4%	22.1%	1.27%
Issuing share with EM2%	12	20	
	37.5%	60.6%	2.31%*

*, **, *** denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 6 (continued)

Panel C: Earnings management to meet requirements of issuing additional stock

The earnings requirement for seasoned equity offering was a three-year weighted average ROE of 10% or higher before May 8, 2006. Since May 8, 2006, the requirement is the three-year weighted average ROE of 6% or higher.

For firms issuing shares before May 8, 2006, EM1% represents firms reporting a three-year weighted average ROE between 10% and 11%, and EM2% represents firms reporting three-year weighted average ROE between 10% and 12%. For firms issuing shares after May 8, 2006, EM1% represents firms reporting a three-year weighted average ROE between 6% and 7%, and EM2% represents firms reporting a three-year weighted average ROE between 6% and 8%.

	Before IFRS （2003-2006）	After IFRS （2009-2010）	After - Before
Firms that issued shares	97	128	
Issuing share with EM1%	42	64	
	43.3%	50.0%	6.70%
Issuing share with EM2%	49	70	
	50.5%	54.7%	4.20%

*, **, *** denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.