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Earnings Benchmarks, Earnings Management and Future Stock Performance of Chinese Listed Companies reporting under ASBE-IFRS

Abstract

Purpose: *Prior literature has revealed three key earnings benchmarks: i) earnings level; ii) earnings change; and iii) analysts' expectations. The purpose of this study is twofold. First, we seek to establish which earnings benchmark induces the largest extent of earnings management. Secondly, we explore the implications of earnings management on firm future performance. Both of these purposes are investigated for Chinese listed companies during China's IFRS/ISA reporting era.*

Design/methodology/approach: *We rely upon the unique regulations and incentives for Chinese listed companies in order to develop four testable hypotheses. Next, we employ both logistic and ordinary least squares regressions to test the hypotheses.*

Findings: *Our results suggest that Chinese listed firms have the highest level of income increasing discretionary accruals around the earnings level benchmark, followed by the earnings change benchmark. We don't find any evidence of earnings management to beat analysts' expectation. In addition, we find evidence that Chinese listed firms with relatively high level of earnings management and low earnings exhibit relatively weak future stock performance.*

Originality/value: *Our findings are the first to document an earnings management benchmark hierarchy with respect to the extent of income increasing discretionary accruals, while simultaneously establishing a link between earnings management and firm future stock performance, for Chinese listed companies. Our findings are valuable for regulators and investors by suggesting that management intervention in the reporting process during China's IFRS/ISA reporting era may act to circumvent delisting regulations and cloud earnings signal for firms that beat certain earnings benchmarks.*

Key Words

Chinese listed companies; earnings management; earnings benchmarks; future stock performance.

JEL classification

G14; M41

Data: All data used in this research is publicly available. The data used in this study was obtained from the CSMAR database.

Earnings Benchmarks, Earnings Management and Future Stock Performance of Chinese Listed Companies reporting under ASBE-IFRS

1. Introduction

Meeting or beating earnings expectations (“MBE”) is a signal that is closely monitored by market participants. Benchmarks for earnings expectations can take various forms, including: i) earnings level (reporting positive earnings); ii) earnings change (reporting earnings growth); and iii) analysts’ expectations (reporting a positive surprise). There is a large body of prior literature, mostly in the U.S. setting, that investigates the relationship between earnings benchmarks, earnings management, and future stock performance.

The MBE signal based upon analysts’ expectation is the most dominant in U.S. capital markets. In the U.S., it has been shown that meeting or beating analysts’ expectations provides valuable insights about a firm’s future expected performance (Koh et al., 2008), allows firms to command higher price-earnings multiples (Lopez and Rees, 2002; Barth et al., 1999), and results in abnormal stock returns (Balsam et al., 2002). These significant market rewards, combined with the myopic perspective on quarterly and annual earnings, create a powerful incentive to manage earnings to ensure that analysts’ expectations are met or exceeded. The persistent use of earnings management to meet or beat analysts’ expectations in the U.S. has been called the “numbers game” (Levitt, 1998).

The rapid development of the Chinese stock markets provides fertile grounds for exploring earnings benchmarks, earnings management, and future stock performance in a different regulatory environment. Prior literature has mostly focused on the two most prominent accounting-based regulations facing Chinese listed companies - delisting policies (Green et al.,

2009; Li et al., 2014) and stock issuance rights (Chen and Yuan, 2004; Yu et al., 2006); however, most of this prior literature was conducted before China moved towards full convergence with both International Financial Reporting Standards (IFRS) and International Standards on Auditing (ISA), while concurrently adopting the Split-Share Reform (SSR) with the intent of reducing state ownership of Chinese listed shares by eliminating certain non-tradeable shares. These reforms were expected to benefit Chinese capital markets by improving reporting quality (Deloitte, 2006) and the role of owners in corporate governance (Jiang et al., 2008).

The purpose of this study is to extend the prior literature by investigating the following: (1) whether Chinese firms use earnings management strategies after the IFRS, ISA, and SSR reforms; (2) whether Chinese managers use more income increasing discretionary accruals to report positive earnings, an earnings increase, or to beat analysts' expectations; and (3) whether the use of discretionary accruals by Chinese listed companies is associated with poor future stock performance. Logistic and least-squares regressions are estimated with 4,189 firm-year observations from 2008 to 2012 of Chinese listed companies from the Chinese Securities Markets and Accounting Research Database (CSMAR) in order to explore four hypotheses. Consistent with prior literature in the U.S. setting, we measure discretionary accruals with the Modified Jones Model (Bartov et al., 2002) but include unique controls for the Chinese setting (e.g., audit quality (Chen et al., 2011), state-owned enterprise status (Jiang et al., 2008), and cross-listing (Chen and Yuan, 2004)).

We find significantly higher levels of income increasing discretionary accruals around the earnings level benchmark relative to the earnings surprises and earnings changes benchmark. We further document a negative and significant relationship between abnormal stock returns and

firms with low earnings and higher discretionary accruals. We show that our results are robust to the impacts of the credit crisis, and the method of estimating the abnormal returns.

Our study makes several significant contributions to the literature and has many practical implications for regulators and investors. Our first hypothesis reveals that even after the adoption of IFRS and ISA and the implementation of the SSR, managers of Chinese listed firms employ earnings management strategies in order to meet key earnings benchmarks which are consistently observed in the U.S. setting (DeFond and Park, 1997; Schuetze, 1999). These findings have significant implications for Chinese regulators. Specifically, our findings suggest that recent regulatory reforms implemented by Chinese regulators have not eliminated or mitigated management's use of discretionary accruals to avoid reporting losses, an activity that was prominent during the pre-IFRS/ISA reporting era (Chen and Yuan, 2004; Yu et al., 2006). These findings are also important for regulators across the globe who are contemplating the adoption of IFRS or ISA.

Our second and third hypotheses brings to light the hierarchy of earnings benchmarks with respect to the extent of income increasing discretionary accruals in the Chinese setting. Specifically, managers of Chinese listed firms are most concerned with the earnings level benchmark, followed by the earnings change benchmark while paying no attention to analysts' expectations. Our results add to the growing body of literature by suggesting that the recent shift in the earnings hierarchy documented in the U.S. towards meeting or beating analysts' expectations (Brown and Caylor, 2005) is not generalizable to all capital markets. Our results are consistent with similar studies outside of the U.S., such as Carvajal et al. (2017) in Australia, suggesting that the earnings hierarchy outside of the U.S. continues be dominated by the earnings

change and earnings level benchmarks as originally documented in the U.S. by Degeorge et al. (1999). As most Chinese listed firms report earnings that are below their analysts' expectations, our findings are also consistent with a growing body of literature suggesting that meeting or beating analysts' expectations is most pronounced in the U.S. setting (Brown and Higgins, 2002). In this regard, we show that the propensity of Chinese listed firms to report earnings surprises is more line with firms in Eurozone, Australia, and the United Kingdom (Brown and Higgins, 2002).

Our fourth hypothesis reveals a link between future stock performance, earnings, and earnings management. Specifically, our findings suggest that the MBE signal from the earnings level benchmark is more useful for firms with relatively low earnings when the firm also has relatively low levels of discretionary accruals. Overall, these findings have significant implications for Chinese regulators and investors as they suggest that management intervention in the financial reporting process may act to cloud the MBE signal for firms that report small profits. However, similar to the U.S. market (e.g., Balsam et al., 2002, Lento et al., 2016), the Chinese capital market is able to discern the impact of earnings management on the earnings level benchmark around the earnings announcement date.

The remainder of this paper is organized as follows: Section 2 presents the prior literature and hypotheses; Section 3 discusses the data; Section 4 discusses the variable measurement and methodology; Section 5 presents and discusses the results; and Section 6 sets out the conclusion.

2. Literature Review & Hypothesis Development

Institutional background

As of 2015, the Shanghai Stock Exchange and the Shenzhen Stock Exchange were among the top ten largest in the world based on market capitalization. This is a remarkable feat considering that they were formally re-established in the early 1990s. Initially, the Chinese stock markets emerged as a means for state-owned enterprises (SOEs) to raise capital and progress operating performance. Eventually, non-SOE firms were allowed to list and now the Chinese stock markets have over 2,700 listed companies with a combined market capitalization of approximately USD 6.20 trillion (as of January 3, 2015).

The Chinese stock markets have unique regulations, as issued by the China Securities Regulatory Commission (CSRC), which are based around accounting metrics. Two regulations in particular are rather unique to the Chinese setting. First, delisting rules were implemented in 2001 that focus around poor performance and/or violations of regulatory practice. A firm will earn the label of *Special Treatment* if it incurs accounting losses for two consecutive years, and will have one year to improve its financial performance. Reporting accounting losses for three consecutive years can lead to suspended stock trading and eventually delisting. Delisting is not common, but, does occur. Since the rules were implemented, approximately 78 companies have been delisted for reasons including poor performance.

The second regulation is based around issuing additional equity to existing shareholders. Among various requirements, a Chinese company must maintain a minimum average return on equity (ROE) of 6% over a three-year period.¹ This regulation has significant implications as Chinese listed companies rely heavily on equity financing relative to U.S. and other international

¹ Prior to March 15, 2001, the regulation required a minimum 10% average ROE over a three-year period with each of the previous three years reporting a minimum ROE of 6%.

companies due to the less efficient banking system in China and the relatively low cost of equity financing.

Three major reforms were announced and implemented from 2005 to 2007 with the intention of strengthening the corporate governance and financial reporting environment in China. First, Chinese regulators implemented the SSR in 2005, resulting in the reduction state-ownership of Chinese listed companies via non-tradable state shares (Jiang et al., 2008). Prior to this reform, only one third of the shares in Chinese listed companies were legally tradable. Therefore, this reform sought to change the ownership and governance structure of Chinese listed companies. The reform was largely completed by 2007.

Second, the Ministry of Finance of the People's Republic of China (MoF) formally announced the issuance of the Accounting Standards for Business Enterprises (ASBE) for fiscal years commencing on or after January 1, 2007. The ASBE cover nearly all of the topics covered by IFRS.² The adoption of ASBE was a major change from the Generally Accepted Accounting Practices in China (PRC GAAP) leading to fundamental shifts in the way financial statements are prepared. The switch from PRC GAAP to ASBE was expected to lead to significant improvements in financial reporting quality (i.e., results of operations and the presentation of financial statements), along with changes to the measurement of key performance indicators, share prices, credit ratings, liquidity ratios, and volatility of measures (Deloitte, 2006). However, many Chinese listed companies encountered challenges in adopting ASBE since they

² ASBE are substantially in line with IFRS, but, have some slight modifications in order to reflect the unique operation and regulatory environment in China. For example, disclosure of related party transactions, business combinations of entities under common control and fair value measurement are standards which were deemed to not necessarily reflect the unique environment in China.

did not emerge from China's economic and cultural environment and were much more principal-based than the PRC GAAP (Deng and Macve, 2015).

Third, the MoF announced the adoption of 48 ISA for listed companies in a move that would commence the progression towards full convergence. The move in China towards convergence with ISA began in 2003, however, the 2007 announcement was seen as the major step towards full convergence. The adoption of IFRS and ISA was examples of how regulators sought to improve the financial reporting environment in China by improving the audit and accounting standards.

Earnings benchmarks, earnings management and market reactions in the U.S. setting

Earnings benchmarks are important targets for managers and investors. Most of the prior literature around earnings benchmarks has been conducted in the U.S. setting, and reveals discontinuities around three commonly observable targets: i) earnings level (reporting positive earnings); ii) earnings change (reporting earnings increases); and iii) analysts' expectations (reporting a positive surprise).

Both the earnings level and earnings change benchmarks have a long history of being a focus of managers and investors. Most of the research around earnings benchmark is based around incentives for earnings management strategies. For example, Degeorge et al. (1999) postulated that a firm may engage in an earnings management strategy when its earnings are slightly below zero in order to report a small profit. Management attempts to avoid reporting negative earnings in order to bypass any unfavourable effects on stock prices and/or compensation packages. Early

evidence of earnings management around the earnings level benchmark can be found in Burgstahler and Dichev (1997) and Hayn (1995).

The earnings change benchmark has also been shown to be of significant importance to investors. For example, firms that report consistent earnings increases are awarded higher price-earnings multiples (Barth et al., 1999). Again, it has been shown that these market rewards lead to significant incentives for managers to employ an earnings management strategy (Burgstahler and Dichev, 1997; Degeorge et al., 1999). Managers have also claimed that avoiding earnings decreases is the benchmark they most seek to achieve (Graham et al., 2004).

Analysts can play a vital role in a capital market by aiding in the aggregation and dissemination of information. Specifically, individual investors may have neither the time nor sophistication to analyze all available information in order to develop an earnings estimate. The analysts' earnings expectation has been shown to be a useful earnings benchmark in developed countries (Bartov et al., 2002; Koh et al., 2008). Firms that meet or beat their quarterly analysts' earnings expectations experience both abnormal stock returns (Lopez and Rees, 2002) and higher price-earnings multiples relative to firms that do not (Barth et al., 1999). There is also significant evidence to suggest that managers engage in earnings management strategies to meet or beat analyst's earnings expectations (Bartov et al., 2002). Recent research reveals that investors are able to incorporate both the nature and extent of earnings management into the premium awarded to firms that beat their analysts' earnings expectation (Lento et al., 2016).

Most of the research on the hierarchy of the three earnings benchmarks has been conducted in the U.S setting. Degeorge et al. (1999) originally show that earnings were managed to first avoid losses, then, to avoid earnings decreases, and lastly, to avoid missing analysts' forecasts. Brown

and Caylor (2005) use a sample period of 1985 to 2002 and reveal a change in the earnings benchmark hierarchy. Consistent with Degeorge et al. (1999), they show that managers focus more on avoiding earnings losses or earnings decreases during the years of 1985 to 1993, however, the hierarchy changes during the years of 1996 to 2002 whereby reporting an earnings surprise became the most important benchmark.

Brown and Caylor (2005) also analyze the incremental market consequences of meeting the three earnings benchmarks. They find that beating or missing analysts' expectations has resulted in the most significant and consistent market reaction since the mid-1990s, whereas, the market reaction to the earnings level and earnings change benchmarks have become much less consistent. As a result, they conclude that managers adjust and revise their earnings benchmark hierarchy to the one that is the most consistent with the market's reaction.

More recently, Hansen (2010) shows that managers may have incentives to achieve multiple benchmarks, while Barua et al. (2006) show that profitable firms are more likely to engage in earnings management to meet or beat analysts' earnings expectations or to avoid reporting an earnings decrease. Moreover, Herrmann et al. (2011) show that the market's reaction to the earnings level and earnings change benchmarks does not exist independently from the analysts' expectation benchmark.

The earnings level benchmark in the Chinese setting

Chinese regulators have recently made many significant moves to enhance their capital markets; however, Chinese regulators continue to rely extensively upon single accounting metrics to form the basis of key regulations. As discussed, the CSRC focuses on ROE when approving

permission for issuance of new shares and on net losses as part of the delisting process. Accordingly, Chinese managers have a strong incentive to manage earnings in order to obtain approval for new share issuances and/or to avoid delisting. Despite the widespread perception and anecdotal evidence suggesting that earnings management is rampant in China, empirical research detecting this practice is relatively new. Most of the prior literature on earnings management focuses on rights issuances and how managers change their earnings management behavior in response to changes in the regulatory environment (Chen and Yuan, 2004; Haw et al., 2005; Yu et al., 2006).

Some research has been conducted around the delisting regulation, which is essentially related to the earnings level benchmark. Wang et al. (2008) were among the first to document the practice of earnings management to avoid reporting losses as being commonplace among Chinese listed companies during 1997 to 2004, and that the frequency and magnitude of the earnings management increased during the post-2000 period. These findings were corroborated by Hu et al. (2012) who show that earnings management strategies are employed in order to avoid the negative consequences associated with reporting consecutive losses during the period of 2002 to 2009.

Managers have strong incentives to engage in earnings management in order to achieve the earnings level benchmark, as this threshold is linked the delisting regulation. However, prior research focuses on samples that rely heavily upon observations before the implementation of the significant governance, audit, and reporting reforms adopted by Chinese regulators in 2007 (Wang et al., 2008; Hu et al., 2012). Recall that regulators moved towards IFRS and full convergence with ISA in 2007, while simultaneously reducing the extent of state-ownership for

Chinese listed companies (collectively, these reforms are referred to as the “IFRS/ISA reporting era”). However, the literature has yet to determine if these regulations impacted the practice of managing earnings around the earnings level benchmark.

IFRS are seen to be very much principle-based standards and allow for the use of professional judgment when reporting transactions. As a result, managers of Chinese listed companies reporting under the new ASBE should have the flexibility to structure transactions in order to avoid the negative consequences associated with reporting losses. However, the additional flexibility afforded by IFRS could be offset by improvements in the external audit environment and corporate governance brought about by the adoption of ISA and reduction in state-ownership.

We rely upon Healy and Whalen (1999) in developing our hypothesis by postulating that earnings management occurs when managers are afforded judgment in the financial reporting process and use that judgment in order to structure transactions to alter financial reports so as to mislead stakeholders or to influence contractual outcomes that are based on accounting measures. Therefore, we expect that the improvements in the financial reporting environment provided by the move towards IFRS, ISA, and ownership reform have not eliminated the practice of managing earnings to meet the regulatory delisting requirements that are based on accounting measures (i.e., the earnings level benchmark). This led to our first hypothesis:

Hypothesis 1: Managers of Chinese listed firm will employ earnings management strategies to report positive earnings during the IFRS/ISA reporting era.

Earnings benchmarks hierarchy and earnings management in the Chinese setting

The rapid development of the Chinese stock markets provides fertile grounds for exploring earnings management and benchmark beating in a different regulatory environment. Evidence on earnings benchmarks in the Chinese setting tends to focus around a single benchmark based around regulations, while research on an earnings benchmark hierarchy is limited. As a result, we rely upon the experience of the U.S. market, combined with the unique Chinese regulatory environment, in order to establish our hypotheses related to the earnings benchmark hierarchy in the Chinese setting.

The earnings benchmark hierarchy in the U.S. setting has varied over time (Brown and Caylor, 2005). Changes in the hierarchy were a function of the rewards provided by the market for meeting different earnings benchmarks. This suggests that market-based rewards play the most prominent role in determining the earnings benchmark hierarchy in the U.S. setting (Brown and Caylor, 2005). However, the Chinese market includes various accounting-based regulatory penalties (e.g., delisting) that do not exist in the U.S. setting. These regulatory penalties provide managers with different and additional incentives for meeting certain earnings thresholds over others (Chen and Yuan, 2004; Haw et al., 2005; Yu et al., 2006). Therefore, we postulate that the earnings benchmark hierarchy in China will be function of both market-based rewards and regulatory-based penalties.

With respect to the market-based rewards for meeting the three earnings benchmarks, prior research has shown that the Chinese stock market rewards firms that exceed the earnings level benchmark or the earnings change benchmark (Chen et al., 2001; Su, 2003). The earnings change benchmark is more value-relevant when positive earnings are reported, and both benchmarks explain up to 11% of the cross-sectional variation in stock returns (Chen et al.,

2001). The market reward to the earnings change benchmark has been shown to vary according to shareholder ownership whereby domestic Chinese investors, on average, did not correctly anticipate a change in earnings and did not reflect the new information into the stock price rapidly (Su, 2003). Unlike the U.S. setting, Chinese markets have not been shown to react to the analysts' expectation benchmark. The lack of market reaction is likely due to the low level of forecast accuracy for Chinese listed companies relative to several more developed Asia Pacific countries (Ang and Ma, 1999).

As discussed, there are significant regulatory penalties for missing the earnings level benchmark. The Chinese delisting regulation is structured around the earnings level benchmark whereby firms that miss the earnings level threshold risk delisting penalties. Prior literature has established that managers engage in earnings management around the earnings level benchmark (Wang et al., 2008; Hu et al., 2012). On the contrary, there are no specific regulatory penalties linked to missing either the earnings change benchmark or the analysts' expectations benchmark. Research on earnings management patterns around the earnings change benchmark suggests that managers do direct some attention to the earnings change benchmark (Wang et al., 2008), while, to the authors' best knowledge, research has yet to investigate the relationship between analysts' expectations and earnings management in the Chinese setting.

In summary, the earnings level benchmark is the only benchmark that is linked to both regulatory penalties and market incentives. The earnings change benchmark is linked to market based incentives, however, not directly linked to any regulatory penalties. Lastly, the analysts' expectations benchmark has not been directly linked to either regulatory penalties or market

incentives. We rely upon the combination of market rewards and regulatory penalties to form the basis of our second and third hypotheses:

Hypothesis 2a: Managers of Chinese listed firm will employ earnings management strategies to report positive earnings changes.

Hypothesis 2b: Managers of Chinese listed firm will not use discretionary accruals to beat analysts' expectations.

Hypothesis 3: The extent of income increasing discretionary accruals will be the largest around the earnings level benchmark, followed by the earnings change benchmark.

Earnings benchmarks, earnings management and market reactions in the Chinese setting

Regulators and investors are concerned with earnings management around benchmarks because it fosters a myopic view of corporate earnings as opposed to focusing on long-term value creating activities (Eccles et al., 2001; Brown and Higgins, 2002). Earnings management has also been associated with compromised audit quality, distorted corporate decision making, and weak capital markets (Collingwood, 2001).

In the U.S. setting, the market mechanism provides a monitoring function around the use of earnings management to meet earnings benchmarks. Balsam et al. (2002) were among the first to document a negative relationship between discretionary accruals and abnormal returns around the earnings announcement date for firms that meet or just barely beat their analysts' expectations. Lento et al. (2016) further show that the market differentiates between the nature and extent of earnings management for firms that meet or beat their analysts' expectations such

that the extent of discretionary accruals has a positive (negative) relationship with abnormal returns when the nature of the earnings management is informative (opportunistic).

Chinese regulators have been shown to be able to disentangle the impacts of earnings management around government regulations. For example, many firms that apply for issue rights are unsuccessful even though they meet the minimum 10% ROE criteria (Haw et al., 2005). It has been argued that the CSRC's ability to scrutinize the impact of earnings management has increased over time (Chen and Yuan, 2003). Denying the rights application from firms that engaged in what is perceived to be excessive earnings management allows the CSRC to mitigate any potential misallocation of capital. That is, only firms that truly meet the criteria will have a successful application thereby minimizing the impact of earnings management.

With respect to the delisting regulation, or the earnings level benchmark, the CSRC tends not to intervene and accepts the financial statements as prepared by the listed companies. The CSRC does not act as a force mitigating the impacts of earnings management with respect to delisting. Therefore, we expect that the Chinese market will act as a monitoring mechanism, similar to the U.S. market, because earnings management can have negative consequences on firm future performance (e.g., DuCharme et al., 2001) and the CSRC does not enforce against earnings management around earning level benchmark. This leads to our fourth hypothesis:

Hypothesis 4: Firms with low earnings will experience weaker (stronger) abnormal returns if they have high (low) discretionary accruals.

3. Sample Selection and Data

Table 1 outlines the sample selection process. Panel A summarizes the number of firms in our sample. Our analysis begins with all A-share Chinese listed companies on the Shanghai and Shenzhen Stock Exchanges from 2008 to 2012 that are included in the China Securities Markets and Accounting Research Database (CSMAR).^{3,4} Next, we remove all firms that are in the financial industry (Chen et al., 2011), scientific research and technical service industry, education industry, and health and social work industry, resulting in approximately 1,360 A-share Chinese listed firms per year with 6,782 firm-year observations⁵. Panel B summarizes the determination of the sample firm-year observations. Our analysis requires the calculation of discretionary accruals, resulting in a loss of 519 observations due to a lack of adequate data. In addition, 1,131 observations were lost as a result of the requirement to calculate year-over-year changes for certain variables and 943 observations were lost due to inadequate data related to the earnings benchmarks. Overall, we are left with 4,189 firm-year observations. Panel C details the distribution of our firm-year observations across industries. Overall, the distribution is consistent with that of the CSMAR population and prior literature with the manufacturing sector having the most representation (approximately 56% of sample observations), followed by real estate and retail industries.

³ We selected 2008 as the first year in our sample as the MoF required Chinese listed companies to adopt the ASBE from January 1, 2007. We did not include 2007 in our sample as it was the IFRS transition year, and began in 2008. We run robustness checks around our sample years to control for the impacts of the 2008 global financial crisis on our main findings.

⁴ The sample of firm-year observations is based on the A-share markets of Shanghai and Shenzhen Exchanges in each year; accordingly, the firms were not required to survive over the full sample period to be included in the sample.

⁵ There are approximately 78 firm year-observations that are classified as operating in the financial industry, 15 in the scientific research and technical services industry, 4 in the education industry, and 11 in the health and social work industry. These four industries combined represent 2.4% of the total firms in the CSMAR database. Industry groupings are based on the "Guidelines for the Industry Classification of Listed Companies" issued by the China Security Regulatory Commission in 2012. We removed the financial industry firms due to their unique reporting environment, and the remaining industries as they did not provide sufficient industry observations to run the required discretionary accrual models.

Insert Table 1 Here

4. Variable Measurement and Research Design

Measuring the earnings management proxy

Consistent with Chen et al. (2011), we define earnings management as the discretionary accruals (DACC) measured by the residual of the Modified Jones model, with controls for firm performance (Dechow et al., 1995; Kothari et al., 2005):

$$TACC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2\Delta REV_{it}/TA_{it-1} + \alpha_3PPE_{it}/TA_{it-1} + \alpha_4ROA_{it} + \varepsilon_{it} \quad (1)$$

where, TACC is total accruals, TA is total assets, ΔREV is the change in revenue, PPE is the gross property, plant and equipment, and ROA is the return on assets. The TACC are calculated as follows:

$$TACC_{it} = \Delta current\ assets + \Delta current\ maturities\ of\ long\ term\ debt - \Delta cash - \Delta current\ liabilities - \Delta income\ taxes\ payable - amortization\ expense \quad (2)$$

Next, we estimate (1) for each industry and year grouping. The estimates of α_1 , α_2 , and α_3 obtained from (1) are then used to estimate the DACC as follows:

$$DACC_{it} = TACC_{it}/TA_{it-1} - [\hat{\alpha}_1(1/TA_{it-1}) + \hat{\alpha}_2(\Delta REV_{it} - \Delta REC_{it})/TA_{it-1} + \hat{\alpha}_3PPE_{it}/TA_{it-1} + \hat{\alpha}_4ROA_{it}] \quad (3)$$

where ΔREC is the change in receivables. We match firm-year observations in the same industry grouping together in estimating (1) and calculating (2). The industry classification system utilized by Chinese listed companies is established by the CSRC and based upon the National Industry Classification Code of the National Bureau of Statistics. Accordingly, we

utilize the guideline established by the CSRC in grouping firm-year observations when estimating (1).

Measuring the benchmark beating categories

Our study investigates earnings management patterns of Chinese listed firms around three earnings benchmarks (earnings level, earnings change, and analysts' expectations). As our research hypotheses focus on earnings management to beat these earnings benchmark levels, it is important to define a small beat versus large beat. In the North American setting, a small beat has commonly been defined as firms that meet or beat expectations by one cent (Bhojraj et al., 2009; Balsam et al., 2002; Burgstahler and Dichev, 1997). Accordingly, we measure small beat (SB) firms based on the same definition (i.e., firms that meet or beat the benchmark by one cent or less). In addition to the definitions noted above, we measure small beat firms as firms that meet or beat expectations by five cents and big profit firms as firms that meet or beat expectations by five cents or more. This measure is utilized as a robustness check as it provides a larger number of firms defined as small profit.

Model specification

Earnings management around individual earnings benchmarks

Our first hypothesis postulates that managers of Chinese listed companies will engage in income increasing earnings management around the earnings level benchmark in order to report positive profits in the post-IFRS/ISA reporting era. We hypothesize that managers direct most of their earnings management effort to meet or beat the earnings level benchmark. Our second hypothesis postulates that managers will also exert some earnings management efforts to meet

the earnings change benchmark but no effort to meet analysts' expectations. In order to test these hypotheses, we extend Chen and Yuan (2004) by estimating the following logistic regressions for all three earnings benchmarks with standard errors clustered by year and industry (Lento et al., 2016; Petersen, 2009):

$$Prob(SB_{i,t} = 1) = 1 - F[-(\beta_0 + \beta_1 EM_{i,t} + \beta_2 EPSD_{i,t-1} + \beta_3 BIGA_{i,t} + \beta_4 AO_{i,t} + \beta_5 SOE_{i,t} + \beta_6 CL_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 ROA_{i,t} + \beta_9 \sum INDUSTRY + \beta_{10} \sum YEAR + \epsilon_{i,t})] \quad (4)$$

where $SB_{i,t}$ is dichotomous variables equal to 1 if the firm reports a "small beat", and 0 otherwise, for each of the three earnings benchmarks. In particular, for the earnings level benchmark, SB refers to small profits (SP). Similarly, SB is defined as small change (SC) in earnings over the previous year for the earnings change benchmark, and as small surprise (SS) for the analysts' expectation benchmark. $F[\cdot]$ represents a cumulative distribution function assumed from a logistic regression. The variables included in $F[\cdot]$ are as follows: $EM_{i,t}$ is the earnings management variable measured using equation (3), $EPSD_{i,t-1}$ is a dummy variable that equals 1 if the company reported a loss in the previous fiscal year and 0 otherwise, and $\sum INDUSTRY$ and $\sum YEAR$ are industry and year dummy variables to control for industry and year effects.

In addition, we include commonly used control variables in equation (4) to capture the effects of other factors that may impact earnings management behavior. The control variables include: (1) $BIG4_{i,b}$, defined as 1 if the firm was audited by a Big 4 audit firm, and a 0 otherwise⁶; (2) $AO_{i,b}$

⁶ The Big 4 include KPMG, PwC, E&Y, and Deloitte.

defined as 1 if the audit opinion is unqualified, and a 0 otherwise⁷; (3) $SOE_{i,t}$, defined as a 1 if the firm is a SOE, and a 0 otherwise; (4) $CL_{i,t}$, defined as 1 if the firm is cross listed on the Hong Kong Stock Exchange and the Shanghai Stock Exchange or the Shenzhen Stock Exchange, and a 0 otherwise; (5) $SIZE_{i,t}$, the natural logarithm of total assets; and (6) $ROA_{i,t}$, the return on assets.

In equation (4), β_1 indicates the level of earnings management for firms that reported small beat for each respective earnings benchmark. Therefore, Hypothesis 1 posits that β_1 for the earnings level benchmark will be positive and significant which would reflect the use of income increasing discretionary accruals for firms that reported a small profit. Hypothesis 2a postulates that β_1 for the earnings change benchmark will also be positive and significant, while, Hypothesis 2b posits that β_1 for the analysts' expectation benchmark will be insignificant, as managers are not expected to direct any effort for the analysts' expectation benchmark.

Earnings management around multiple earnings benchmarks

A single earnings benchmark is used in each estimation of equation (4), and interactions with other earnings benchmarks are not considered. Hypothesis 3 explores the extent of income increasing discretionary accruals around the earnings level and earnings change benchmarks, and postulates that earnings level benchmark will take priority over the earnings change benchmark. To capture this relationship, we estimate the equation (5) to simultaneously capture the extent of discretionary accruals around all three earnings benchmarks:

$$EM = \delta_0 + \delta_1 SP_{i,t} + \delta_2 SC_{i,t} + \delta_3 SS_{i,t} + \delta_4 EPD_{i,t-1} + \delta_5 BIG4_{i,t} + \delta_6 AO_{i,t} + \delta_7 SOE_{i,t} + \delta_8 CL_{i,t} + \delta_9 SIZE_{i,t} + \delta_{10} ROA_{i,t} + \delta_{11} \sum INDUSTRY + \delta_{12} \sum YEAR + \epsilon_{i,t} \quad (5)$$

⁷ According to the China's Auditing Standard No. 7 (AS No. 7), a qualified audit opinion can be issued for (1) GAAP violations, (2) audit scope restrictions, and (3) inconsistency in applying accounting principles. AS No. 7 also allows for the use of an explanatory paragraph to provide additional disclosures regarding significant events.

where $EM_{i,t}$ is the earnings management variable measured using equation (3), $SP_{i,t}$ is a dichotomous variable that equals to 1 if the firm reports a “small profit”, and 0 otherwise, $SC_{i,t}$ is a dichotomous variable that equals to 1 if the firm reports a “small change”, and 0 otherwise, and $SS_{i,t}$ is a dichotomous variable that equals to 1 if the firm reports a “small surprise”, and 0 otherwise. All of the control and fixed-effect variables used in equation (5) are defined the same way as in equation (4). Hypothesis 3 posits that δ_1 will be positive and significant, and greater than both δ_2 and δ_3 . Therefore, we test whether the difference in the regression coefficients is significant with the two-sample t-test (e.g., we test whether $\delta_1 > \delta_2$ is statistically significant).

Earnings management and firm future performance

Our fourth hypothesis focuses on the future performance of firms with higher levels of earnings management. Prior literature around benchmark beating in the Chinese setting does not investigate the impacts of earnings management on firm future performance. Our study extends the prior literature by investigating the impact on earnings management on firm future performance, as measured by future abnormal returns, while controlling for audit quality and state-ownership. Accordingly, we estimate equation (6):

$$AR_{i,t} = \gamma_0 + \gamma_1 EPS_L_{i,t} + \gamma_2 EM_H_{i,t} + \gamma_3 EPS_L_{i,t} \times EM_H_{i,t} + \gamma_4 BIG4_{i,t} + \gamma_5 AO_{i,t} + \gamma_6 SOE_{i,t} + \gamma_7 SIZE_{i,t} + \epsilon_{i,t} \quad (6)$$

where AR is the abnormal return measured from the earnings announcement date for a future time period. We rely on three different dates to measure the abnormal return. First, we measure a short-window of 17-days around the earnings announcement date. We have selected a 17-day window based on Balsam et al. (2002) who reveal that U.S. investors can disentangle the impacts of earnings management around the earnings announcement date across this window. Given the short time period of the abnormal return measure, we utilize the cumulative abnormal returns

(CARs) methodology. Our second and third measures of abnormal returns focus around a longer time period. We measure the abnormal returns for six months and one year after the earnings announcement date. Given the long time period of the abnormal return measure we utilize the buy-and-hold abnormal return (BHARs) methodology. All BHARs and CARs are estimated using a value-weighted portfolio to proxy for the industry return.

In equation (6), $EPS_L_{i,t}$ is a dichotomous variable equal to 1 if the firm reports an earnings per share figure that is lower the median EPS level for the entire sample, and 0 otherwise, while $EM_H_{i,t}$ is a dichotomous variable equal to 1 if the firm reports discretionary accruals that is higher the median discretionary accruals levels for the entire sample, and 0 otherwise. Relying upon the median to differentiate between high and low levels of earnings management is consistent with prior literature in the Chinese reporting environment (Chen et al., 2011). Next, we calculate the interaction between firms with low EPS and high levels of earnings management ($EPS_L_{i,t} \times EM_H_{i,t}$). This interaction variable captures firms with relatively low EPS and high earnings management. Accordingly, Hypothesis 4 posits that the coefficient of the interaction term, γ_3 , will be negative and significant.

5. Results

Descriptive statistics

First, we report descriptive statistics for the variables of interest in Table 2. The mean (median) earnings management as a percentage of total assets is 1.012% (0.833%), suggesting that on average, Chinese listed firms tend to engage in income increasing discretionary accruals. Only 7.9% of the firms report negative earnings in the prior year. Big 4 audit 7.6% of our sample

firms, and 97% of the firms have received unqualified opinions from their auditors. A small percentage of the firms, 6.1% and 3%, are SOEs and cross-listed in both China and Hong Kong, respectively.

Insert Table 2 Here

Next, we present both Pearson (below the diagonal) and Spearman (above the diagonal) pairwise correlations across the variables of interest for our sample in Table 3. One of the most important variables in this paper, *EM*, has no significant Pearson correlations with the other variables; however, we do note a significant and negative correlation between *EM* and *ROA* with the Spearman correlation. Given that the Spearman correlation measures monotonic relationships, while the Pearson correlation measures linear relationships, Table 3 suggests that *EM* and *ROA* tend to change in opposite directions but not necessarily at a continuous rate. In addition, significantly positive correlations are found between *BIG4* and *CL*, as well as between *BIG4* and *TA*, suggesting that firms that are audited by Big 4 are more likely to be cross-listed in both China and Hong Kong and have higher amounts of total assets. Moreover, *TA* and *CL* are significantly positively correlated, meaning that firms with more total assets tend to have a higher chance of being cross-listed.

Insert Table 3 Here

Distributions around earnings benchmarks

We first explore the distribution of earnings around the three earnings benchmarks: i) earnings level; ii) earnings change; and iii) analysts' expectation. The distribution of earnings across these three benchmarks has been explored extensively in the U.S. setting, but it is relatively new

in the Chinese setting. In the U.S. setting, earnings distributions have been shown to have a ‘kink’ as the cross-sectional distributions of earnings changes and earnings levels reveal unusually low levels of small losses and small earnings decreases (Burgstahler and Dichev, 1997). Figure 1 displays the distributions of earnings for the three benchmarks in the Chinese setting.

Insert Figure 1 Here

The distribution around the earnings level benchmark (Panel A) reveals that the vast majority of firms report positive earnings; that is, the number of firms that report positive profits far exceeds those reporting negative profits (i.e., 1.2% of firms report negative EPS of five cents or less, while 14.8% of firms report positive EPS of five cents or less). This distribution presented in Panel A is a much more pronounced version of the ‘kink’ documented in the U.S. setting. These findings are likely a function of the CSRC regulation that focuses on accounting losses.

The distribution around the earnings change benchmark (Panel B) appears to be more normally distributed than the earnings level distribution (i.e., 12.1% of firms report negative EPS changes of five cents or less, while, 22.8% of firms report positive EPS changes of five cents or less). This suggests that Chinese firms report earnings increase as often as they report an earnings decrease. Lastly, the distribution around the analyst forecast benchmark (Panel C) reveals that the vast majority of firms do not meet their earnings expectations. This is consistent with prior studies suggesting that Chinese managers do not direct any attention to meeting or beating analysts’ expectations (Wang et al., 2008).

In the U.S. setting, earnings management is suggested as the main reason for the ‘kink’ in the distribution; however, alternative explanations, such as real earnings management or exchange listing preference for profitable firms, have also been offered (Degeorge et al., 1999; Dechow et al., 2003; Durtschi and Easton, 2005). As a result, we explore the impact of earnings management on the shape of the distributions presented in Figure 1. We adjust a firm’s EPS by removing the discretionary accruals estimated by equation (3), scaled by total shares outstanding. Figure 2 displays the distributions around the earnings level and earnings change benchmarks after adjusting for the impacts of earnings management.

Insert Figure 2 Here

Figure 2 reveals that the distributions around both the earnings level and change benchmarks are vastly different after considering the impact of earnings management. After adjusting for earnings management, 5.3% of firms report negative EPS of five cents or less, while 9.8% of firms report positive EPS of five cents or less. Similar results are found around the earnings change benchmark where 7.1% of firms report negative EPS changes of five cents or less, while 7.2% of firms report positive EPS changes of five cents or less. The results reveal that the number of firms meeting (missing) either benchmark decreased (increased) after considering the impact of earnings management. These results are consistent with Hypotheses 1 and 2 by suggesting that managers are employing earnings management strategies to meet the earnings level and earnings change benchmarks.

Earnings management around a single earnings benchmarks

To further investigate whether the distributions presented in Figure 1 are associated with earnings management, we undertake between groups' analyses across all three earnings benchmarks.⁸ For the earnings level benchmark, we present the analysis for firms with negative profits (NP), small profit (SP), and big profit (BP). For the earnings change benchmark, we present the analysis for firms with negative change (NC), small change (SC), and big change (BC). Lastly, for the analysts' expectation benchmark, we present the analysis for firms that report a negative surprise (NS), small surprise (SS), and big surprise (BS). Table 4 presents the results from a between groups analysis around the three earnings benchmarks.

Insert Table 4 Here

Panel A presents the between groups analysis around the earnings level benchmark. The results suggest that SP firms have significantly greater levels of earnings management than NP firms and BP firms. The results suggest that discretionary accruals are utilized by managers of Chinese firms in order to avoid reporting negative earnings. A significant difference is also documented between NP and BP firms. These results may suggest that NP firms are using less income increasing accruals in order to save them for future periods. These findings are consistent with Hypothesis 1, and the prior literature in the Chinese setting (Wang et al., 2008; Hu et al., 2012).

Panel B presents the between groups analysis around the earnings change benchmark. The only statistically significant difference emerges between the NC and SC firms. That is, firms with small increases in earnings are more likely to report a larger extent of income increasing

⁸ Note that we present the analysis with the five cent threshold for differentiating between small and big beats as opposed to the one cent threshold in order to generate larger sub-samples to be used for statistical testing. Regardless, the untabulated results for the one cent threshold are consistent with the findings presented in Table 4.

discretionary accruals than are firms with negative changes in earnings. These findings are consistent with Hypothesis 2a, and the prior literature in the Chinese setting, but, also offer new insights from similar studies. Where the prior literature has explored the earnings change benchmark by grouping all earnings change firms together regardless of the extent of the earnings change (e.g., Wang et al., 2008), our analysis of small versus big earnings change firms reveals that managers that reported a small change are the ones associated with higher levels of discretionary accruals.

Panel C presents the between groups analysis around the analysts' expectation benchmark. The results reveal that there are no statistically significant differences across any of the groups. That is, the extent of earnings management does not differ among firms that miss analysts' expectations, just barely meet or beat expectations, or clearly beat expectations. Such results suggest that, consistent with Hypothesis 2b, managers do not focus on the analysts' expectations benchmark when engaging in earnings management. This is also the first known study to formally investigate and provide evidence of managers in Chinese listed firms not directing any attention to analysts' expectations. Many prior studies have discounted the role of the analysts' expectations benchmark based on the rationale that analysts have historically played a primitive role in China (e.g., Wang et al., 2008).

Insert Table 5 Here

Table 5 summarizes the logistic regression estimates of the extent of earnings management for the three earnings benchmark, as modeled in equation (4). The first and second columns present the coefficients for SP firms based on the one-cent and five-cent thresholds, respectively, and reveal a statistically significant, positive relationship between the extent of earnings management

and SP firms after controlling for audit quality, SOE status, cross listing, size and performance. The results are robust across the two measures of small profit (i.e., $\beta_1 = 0.024$, $t = 3.44$ when small profit measure is $0 \leq \text{EPS} \leq 0.01$ and $\beta_1 = 0.009$, $t = 2.64$ when small profit measure is $0 \leq \text{EPS} \leq 0.05$). These results are also consistent with our univariate analysis in Table 4 and reveal that SP firms exhibit higher level of earnings management than NP or BP firms. Overall, these results provide support for Hypothesis 1.

The third and fourth columns of Table 5 present the results for SC firms based on the one-cent and five-cent thresholds, respectively, and provide some evidence of a positive relationship between the extent of earnings management and SC firms. The results are statistically insignificant when small change is measured as $0 \leq \Delta\text{EPS} \leq 0.01$ ($\beta_1 = 0.005$, $t = 1.11$) and only statistically significant at the 10% level when small change measure is $0 \leq \Delta\text{EPS} \leq 0.05$ ($\beta_1 = 0.007$, $t = 1.92$). These results are also consistent with our univariate analysis in Table 4 and provide some support for SC firms exhibiting higher level of earnings management than NC or BC firms. Overall, these results provide support for Hypothesis 2a. The fifth and sixth columns of Table 5 present the results for SS firms based on the one-cent and five-cent thresholds, respectively. The coefficients for the SS firms do not suggest a robust relationship between the extent of earnings management and SS firms. Overall, these findings are consistent with our univariate analysis in Table 4, and provide support for Hypothesis 2b.

Earnings management around multiple earnings benchmarks

Table 6 summarizes the regression estimates of the extent of earnings management around multiple benchmarks, as modeled in equation (5).

Insert Table 6 Here

The first and second columns presents the coefficients for SP, SC, and SS as measured with the one-cent and five-cent thresholds, respectively. The results reveal a statistically significant, positive relationship between the extent of earnings management and SP firms. Again, the results are robust across the two measures of small profit (i.e., $\delta_1 = 2.175$, $t = 3.93$ when small profit measure is $0 \leq \text{EPS} \leq 0.01$ and $\delta_1 = 0.784$, $t = 2.15$ when small profit measure is $0 \leq \text{EPS} \leq 0.05$). The results also provide some evidence of a positive relationship between the extent of earnings management and SC firms (i.e., $\delta_2 = 0.787$, $t = 2.30$ when small profit measure is $0 \leq \Delta\text{EPS} \leq 0.05$), and no evidence of a relationship between earnings management and SS firms. Overall, these results provide additional support for our first two hypotheses.

We also present the statistical significance of the mean difference in coefficients of equation (5) in order to test Hypothesis 3. Our results reveal that SP firms use a much larger extent of earnings management than SC firms when the one-cent threshold is used; however, no significant difference is evident with the five-cent threshold. As a result, we provide evidence that firms reporting a small profit of one-cent or less (i.e., SP firms) do employ much larger levels of earnings management than firms that report small changes of one-cent or less (i.e., SC firms). These findings are consistent with a large body of literature in the U.S. setting which conclude that most opportunistic earnings management is evident for firms that meet or just barely beat earnings thresholds (e.g., Burgstahler and Dichev, 1997; Balsam et al., 2002; Bhojraj et al, 2009). Specifically, we show that firms reporting small profits of one-cent or less use discretionary accruals of 1.670 of total assets more than firms that report a small change of one-cent or less. Firms reporting small profits of five-cent or less display a similar extent of

earnings management as firms reporting a small change of five-cent or less. Overall, these findings provide support for Hypothesis 3.

Earnings management and firm future performance

Table 7 summarizes the ordinary least squares regression estimates of the interaction between firms with low EPS and high earnings management on abnormal market returns, as modeled in equation (6).

Insert Table 7 Here

We find a statistically significant, negative relationship between firms with low EPS and high earnings management and future abnormal returns in both a short-window (i.e., CAR[2,18]) and long-window around the earnings announcement date (i.e., one-year and six-month BHARs). Specifically, firms with low EPS and high earnings experience negative abnormal returns relative to firms with low EPS and low levels of earnings management. For example, the regression results from equation (6) with the CAR[2,18] reveal that firms with low levels of EPS earn average abnormal market returns of 0.7% ($\gamma_2 = 0.007$, $t = 2.045$); however, the incremental effect of firms with low levels of EPS and high levels of earnings management is a negative abnormal returns of -1.1% ($\gamma_4 = -0.011$, $t = -2.263$). This difference in abnormal returns continues over six months and one year after the earnings announcement date. The regression results with the BHARs from 6-months after the earnings announcement date suggest that firms with low EPS earn an abnormal return of 3.1% ($\gamma_2 = 0.031$, $t = 3.309$) while the incremental effect of firms with low EPS and high earnings management is a negative abnormal return of 4.9% ($\gamma_4 = -0.049$, $t = -3.783$). The difference widens after one year whereby firms with low

EPS earn an abnormal return of 2.9% ($\gamma_2 = 0.029$, $t = 2.005$) while the incremental effect of firms with low EPS and high earnings management is a negative abnormal return of -5.7% ($\gamma_4 = -0.057$, $t = -3.027$).

We estimate additional analyses in order to assess the robustness of our main findings presented in Table 7. First, we find that our main results, which were estimated with value-weighted industry benchmarks, are robust to the use of equally-weighted industry benchmarks for estimating the abnormal returns. Second, our main results hold when we eliminate the observations from the 2008 and 2009 credit crises. That is, our findings are robust and reflect normal conditions and are not the result of the 2008 and 2009 credit crisis. The results from these robustness tests are presented in Table 8.

Insert Table 8 Here

Overall, the findings presented in Table 7 and Table 8 suggest that the market does monitor the extent of earnings management for firms with relatively lower levels of earnings per share, and discount the market premium for meeting the earnings level benchmark. As a result, these findings provide support for Hypothesis 4.

6. Conclusion

In this paper, we investigate the relationship between earnings benchmarks, earnings management, and future stock performance for Chinese listed firms. Our results highlight the importance of a well-developed regulatory framework, the economic consequences of having regulations linked to accounting-based measures (Jiang and Wang, 2008), and the market's ability to make rationale adjustments for earnings management (Haw et al., 2005). Specifically,

we show that during the IFRS/ISA reporting era, Chinese listed firms direct more earnings management efforts to report positive earnings, than to report earnings increases. In addition, we find evidence that Chinese listed firms with relatively high level of earnings management and low earnings exhibit relatively weak future stock performance. The results of this paper have implications for regulators and investors. As our findings reveal the existence of earnings management to meet or beat the earnings level benchmark, as well as the earnings change benchmark to a lesser extent, regulators should take the above into consideration when revising existing regulations and/or designing and implementing new regulations. Even though the current accounting standards cannot control the use of discretionary accruals to manage earnings, the financial market does make rational adjustment for earnings management through weaker future stock performance. Such results are important to the investors when making investment decisions.

Future researchers should continue to build upon the results presented in this paper to better understand the earnings management dynamic in the Chinese setting. First, future researchers could seek to better understand whether managers of Chinese listed companies employ earnings management strategies other than discretionary accruals in order to achieve benchmarks. For example, managers could employ real earnings management strategies or complicated strategies with related parties in order to meet key benchmarks. Secondly, this paper does not take into consideration the fact that listing on a stock exchange may be exogenously determined. Therefore, future researchers may be able to obtain data on Chinese firms which are not listed in order to provide a control group to determine if our results are culturally driven or market driven. Third, future researchers could seek to better understand the dynamics between the adoption of IFRS and ISA and the reporting environment for Chinese listed companies. Researchers could

seek to understand the implications of these financial reporting reforms for the reporting landscape in China, and whether the benefits of their adoption outweigh their costs. A better understanding of the earnings management dynamic in China would provide regulators with a more complete understanding of the regulatory reforms required to control against such behavior.

Additionally, future researchers may consider employing more complicated research designs in order to better understand complexities of modelling a manager's incentives and rewards to employ earnings management strategies to meet or exceed multiple earnings benchmarks simultaneously. In doing so, researchers may be able to highlight a dynamic relationship between multiple earnings benchmarks in a single fiscal year, and over consecutive years. Again, this could provide regulators with additional information with which to use in developing regulations to circumvent earnings management practices.

7. References

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Tables

Table 1

Descriptive Information on Sample Selection, Industry Distribution, and Earnings Management

Panel A – Shanghai and Shenzhen listing

Year	Companies in Shanghai Stock Exchange	Companies in Shenzhen Stock Exchange	Total
2008	794	562	1,356
2009	795	562	1,357
2010	795	561	1,356
2011	794	562	1,356
2012	795	562	1,357
Total	3,973	2,809	6,782

Panel B – Sample Selection

Total firm year observations in CSMAR database 2008-2012	6,782
Less:	
Observations lost due to insufficient data for the discretionary accruals calculation	(519)
Total observations available for univariate analysis	6,263
Less:	
Observations lost due to prior year data requirement	(1,131)
Observations lost due to inadequate earnings benchmark data	(943)
Final sample available for regression analysis	4,189

Panel C – Industry Grouping

Industry group	Number of Observations in CSMAR	Number of Observations in our Sample	% of firm- years in sample
Agriculture, Forestry, Animal husbandry and Fishery	110	75	1.8%
Mining	240	137	3.3%
Manufacturing	3,828	2,369	56.6%
Utilities	360	223	5.3%
Construction	160	98	2.3%
Retail	610	361	8.6%
Transportation	305	224	5.3%
Accommodation and Catering Services	45	23	0.5%
Information and technology	170	107	2.6%
Real Estate	635	378	9.0%
Leasing and commercial services	60	42	1.0%
Public services	80	52	1.2%
Culture, Sports and Entertainment	64	34	0.8%
Conglomerates	115	66	1.6%
Total	6,782	4,189	

Table 2
Sample Descriptive Statistics^a

Variable	N	Mean	Median	Standard Deviation	Q1	Q3	Skewness	Kurtosis
<i>EM</i>	4,189	1.012	0.833	10.336	-0.777	2.227	1.011	11.268
<i>EPD_{t-1}</i>	4,189	0.079	0.000	0.270	0.000	0.000	3.122	7.752
<i>BIG4</i>	4,189	0.076	0.000	0.265	0.000	0.000	3.204	8.266
<i>AO</i>	4,189	0.970	1.000	0.171	1.000	1.000	-5.504	28.312
<i>SOE</i>	4,189	0.061	0.000	0.239	0.000	0.000	3.674	11.507
<i>CL</i>	4,189	0.030	0.000	0.171	0.000	0.000	5.481	28.050
<i>SIZE</i>	4,189	22.006	21.883	1.268	21.165	22.738	0.131	3.012
<i>ROA</i>	4,189	0.066	0.059	0.127	0.035	0.094	-26.627	1,166.243

^a Variable definitions:

- EM* = Discretionary accruals as a percentage of total assets as measured with the Modified Jones Model based on industry-grouping cross-sectional regressions;
EPD_{t-1} = 1 if EPS in the prior year was negative, and 0 otherwise;
BIG4 = 1 if the company was audited by a Big Four audit firm, and 0 otherwise;
AO = 1 if the company had an unqualified audit opinion, and 0 otherwise;
SOE = 1 if the company is a state-owned enterprise, and 0 otherwise;
CL = 1 if the company is cross-listed, and 0 otherwise;
SIZE = ln(total assets); and
ROA = Return on assets (net income/total assets).

Table 3
Correlation Matrix^{a,b,c}

Variable	EM (1)	EPD _{t-1} (2)	BIG4 (3)	AO (4)	SOE (5)	CL (6)	TA (7)	ROA (8)
EM	(1)							
EPD _{t-1}	0.01	(2)						
BIG4	0.02	-0.03	(3)					
AO	0.01	-0.25	0.02	(4)				
SOE	0.03	0.02	0.03	0.03	(5)			
CL	-0.01	0.00	0.37	-0.00	0.04	(6)		
SIZE	0.02	-0.15	0.35	0.17	0.10	0.28	(7)	
ROA	0.00	-0.14	0.03	0.22	0.02	-0.00	0.11	(8)

^a Variable definitions:

- EM = Discretionary accruals as a percentage of total assets as measured with the Modified Jones Model based on industry-grouping cross-sectional regressions;
 EPD_{t-1} = 1 if EPS in the prior year was negative, and 0 otherwise;
 BIG4 = 1 if the company was audited by a Big Four audit firm, and 0 otherwise;
 AO = 1 if the company had an unqualified audit opinion, and 0 otherwise;
 SOE = 1 if the company is a state-owned enterprise, and 0 otherwise;
 CL = 1 if the company is cross-listed, and 0 otherwise;
 SIZE = ln(total assets); and
 ROA = Return on assets (net income/total assets).

^b Pearson correlations are presented below the diagonal, while Spearman correlations are presented above the diagonal. Those statistically significant at the 5% level are highlighted in bold.

^c Sample size (N) = 4,189.

Table 4

Between Groups Analysis for Earnings Management around Individual Earnings Benchmarks^a

Panel A – Earnings Management and Earnings Level Benchmark

	Negative Profit (NP) EPS < 0	Small Profit (SP) 0 ≤ EPS ≤ 0.01	Big Profit (BP) EPS > 0.01	T-Test ^b
μ_{EM}	0.541	3.112		1.71**
μ_{EM}	0.541		1.000	0.81
μ_{EM}		3.112	1.000	1.92**
N	316	92	3,781	

	Negative Profit (NP) EPS < 0	Small Profit (SP) 0 ≤ EPS ≤ 0.05	Big Profit (BP) EPS > 0.05	T-Test ^b
μ_{EM}	0.541	1.605		1.51*
μ_{EM}	0.541		0.969	0.75
μ_{EM}		1.605	0.969	1.31*
N	316	492	3,381	

Panel B – Earnings Management and Prior Year Earnings Level Benchmark

	Negative Change (NC) Δ EPS < 0	Small Change (SC) 0 ≤ Δ EPS ≤ 0.01	Big Change (BC) Δ EPS > 0.01	T-Test ^b
μ_{EM}	0.856	1.444		0.84
μ_{EM}	0.856		1.100	0.74
μ_{EM}		1.444	1.100	0.48
N	1,872	252	2,065	

	Negative Change (NC) Δ EPS < 0	Small Change (SC) 0 ≤ Δ EPS ≤ 0.05	Big Change (BC) Δ EPS > 0.05	T-Test ^b
μ_{EM}	0.856	1.600		1.71**
μ_{EM}	0.856		0.918	0.17
μ_{EM}		1.600	0.918	1.47*
N	1,872	745	1,572	

Panel C – Earnings Management and Analysts' Earnings Expectation Benchmark

	Negative Surprise (NS) EPS Surprise < 0	Small Surprise (SS) 0 ≤ EPS Surprise ≤ 0.01	Big Surprise (BS) EPS Surprise > 0.01	T-Test ^b
μ_{EM}	1.068	1.497		0.34
μ_{EM}	1.068		0.633	-0.96
μ_{EM}		1.497	0.633	0.67
N	3,454	94	641	

	Negative Surprise (NS) EPS Surprise < 0	Small Surprise (SS) 0 ≤ EPS Surprise ≤ 0.05	Big Surprise (BS) EPS Surprise > 0.05	T-Test ^b
μ_{EM}	1.068	0.533		-0.86
μ_{EM}	1.068		0.907	-0.29
μ_{EM}		0.533	0.907	-0.47
N	3,454	321	414	

***, ** and * significant at the levels of 0.01, 0.05 and 0.10, respectively, (2-tailed).

^a Variable definitions:

μ_{EM} = Sample mean of the discretionary accruals as a percentage of total assets as measured with the Modified Jones Model based on industry-grouping cross-sectional regressions for the group;

^b t-stat from the between groups analysis for difference in means assuming unequal variances for $H_0 = 0$.

Table 5

Logistic Regression to Explain Earnings Management to Meet or Beat Earnings Benchmarks^a

Equation (4)							
Variable	Predicted Sign	SP =	SP =	SC =	SC =	SS =	SS =
		0.00 ≤ EPS ≤ 0.01	0.00 ≤ EPS ≤ 0.05	0.00 ≤ ΔEPS ≤ 0.01	0.00 ≤ ΔEPS ≤ 0.05	0.00 ≤ EPS Surprise ≤ 0.01	0.00 ≤ EPS Surprise ≤ 0.05
		Coefficient (t-stat)	Coefficient (t-stat)	Coefficient (t-stat)	Coefficient (t-stat)	Coefficient (t-stat)	Coefficient (t-stat)
<i>Intercept</i>	?	-5.741 (-2.28)**	4.188 (3.15)***	5.015 (3.01)***	3.902 (3.96)***	0.422 (0.12)	-3.083 (-1.87)*
<i>EM</i>	+	0.024 (3.44)***	0.009 (2.64)**	0.005 (1.11)	0.007 (1.92)*	0.006 (0.40)	-0.007 (-1.02)
<i>EPSD_{t-1}</i>	+	1.003 (3.21)***	1.351 (10.61)***	-1.999 (-3.06)***	-2.174 (-6.69)***	0.416 (0.97)	0.181 (0.57)
<i>BIG4</i>	-	-0.233 (-0.75)	-0.454 (-1.58)	0.125 (0.58)	-0.126 (-0.58)	0.108 (0.15)	0.375 (1.42)
<i>AO</i>	-	-0.323 (-1.12)	0.077 (0.63)	-0.140 (-1.25)	-0.238 (-2.65)**	0.278 (1.69)*	0.196 (1.70)*
<i>SOE</i>	?	0.216 (0.55)	-0.611 (-2.30)**	-0.196 (-0.59)	-0.156 (-0.67)	0.301 (0.51)	-0.032 (-0.09)
<i>CL</i>	?	0.559 (0.89)	0.281 (0.93)	-0.077 (-0.13)	-0.008 (-0.02)	1.137 (1.31)	0.430 (1.37)
<i>SIZE</i>	-	-0.420 (-4.26)***	-0.260 (-4.35)***	-0.334 (-4.59)***	-0.214 (-4.89)***	-0.264 (-1.71)*	-0.045 (-0.64)
<i>ROA</i>	-	-0.218 (-0.39)	-3.072 (-0.86)***	-1.459 (-2.34)**	-1.540 (-1.89)**	3.396 (2.27)**	4.950 (4.54)***
$\sum INDUSTRY$		<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
$\sum YEAR$		<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
N		4,189	4,189	4,189	4,189	4,189	4,189
<i>Adjusted R²</i>		7.44%	10.8%	5.9%	6.6%	6.4%	6.5%

***, ** and * significant at the levels of 0.01, 0.05 and 0.10, respectively, (2-tailed).

^a Variable definitions:

- EM* = Discretionary accruals as a percentage of total assets as measured with the Modified Jones Model based on industry-grouping cross-sectional regressions;
- EPSD_{t-1}* = 1 if EPS in the prior year was negative, and 0 otherwise;
- BIG4* = 1 if the firm-year observation was audited by a Big Four audit firm, and 0 otherwise;
- AO* = 1 if the firm-year observation had an unqualified audit opinion, and 0 otherwise;
- SOE* = 1 if the firm-year observation is a state-owned enterprise, and 0 otherwise;
- CL* = 1 if the firm-year observation is cross-listed.
- SIZE* = ln(total assets);
- ROA* = return on assets (net income/total assets);
- $\sum INDUSTRY$ = Fixed effects dummy variable for industry groups; and
- $\sum YEAR$ = Fixed effects dummy variable for year groups.

Table 6

OLS Regression to test Earnings Management levels around all three Earnings Benchmarks^a

Equation (5)					
Variable	Predicted Sign	SB = 0.00 ≤ EPS Benchmark ≤ 0.01		SB = 0.00 ≤ EPS Benchmark ≤ 0.05	
		Coefficient (t-stat)	Mean Difference in Coefficients SP vs.	Coefficient (t-stat)	Mean Difference in Coefficients SP vs.
<i>Intercept</i>	?	-3.755 (-1.56)		-3.971 (-1.60)	
<i>SP</i>	+	2.175 (3.93)***		0.784 (2.15)**	
<i>SC</i>	+	0.505 (0.75)	1.670 (1.87)*	0.787 (2.30)**	-0.003 (-0.01)
<i>SS</i>	+	0.534 (0.55)	1.641 (2.40)**	-0.492 (-1.04)	1.276 (2.35)**
<i>EPSD_{t-1}</i>	+	0.482 (0.99)		0.539 (1.20)	
<i>BIG4</i>	-	0.633 (1.02)		0.672 (1.07)	
<i>AO</i>	-	-0.044 (-0.22)		-0.047 (-0.23)	
<i>SOE</i>	?	0.879 (2.47)**		0.947 (2.61)**	
<i>CL</i>	?	-1.626 (-1.71)		-1.577 (-1.64)	
<i>SIZE</i>	-	0.145 (1.23)		0.145 (1.22)	
<i>ROA</i>	-	0.153 (0.13)		0.339 (0.30)	
$\sum INDUSTRY$		Yes		Yes	
$\sum YEAR$		Yes		Yes	
N		4,189		4,189	
<i>Adjusted R²</i>		0.67%		0.71%	

***, ** and * significant at the levels of 0.01, 0.05 and 0.10, respectively, (2-tailed).

^a Variable definitions:

- SP* = 1 if the firm-year observation represents a small beat of the earnings level benchmark (small profit);
- SC* = 1 if the firm-year observation represents a small beat of the earnings change benchmark (small change);
- SS* = 1 if the firm-year observation represents a small beat of the analysts' expectation benchmark (small surprise);
- EPSD_{t-1}* = 1 if EPS in the prior year was negative, and 0 otherwise;
- BIG4* = 1 if the firm-year observation was audited by a Big Four audit firm, and 0 otherwise;
- AO* = 1 if the firm-year observation had an unqualified audit opinion, and 0 otherwise;
- SOE* = 1 if the firm-year observation is a state-owned enterprise, and 0 otherwise;
- CL* = 1 if the firm-year observation is cross-listed.
- SIZE* = ln(total assets);
- ROA* = return on assets (net income/total assets);
- $\sum INDUSTRY$ = Fixed effects dummy variable for industry groups; and
- $\sum YEAR$ = Fixed effects dummy variable for year groups.

Table 7

OLS Regression to Explain Impact of Earnings Management around Benchmark Beating on Future Performance^a

Variable	Predicted Sign	Equation (6)		
		BHARs 1 Year	BHARs 6 Months	CARs [2, 18]
		Coefficient t-stat	Coefficient t-stat	Coefficient t-stat
<i>Intercept</i>	?	-0.948 (9.486)***	0.413 (5.665)***	0.070 (2.662)***
<i>EPS_L</i>	?	0.029 (2.005)**	0.031 (3.309)***	0.007 (2.045)**
<i>EM_H</i>	?	-0.013 (0.992)	0.021 (2.217)**	0.001 (0.236)
<i>EPS_L x EM_H</i>	-	-0.057 (-3.027)***	-0.049 (-3.783)***	-0.011 (-2.263)**
<i>BIG4</i>	+	0.039 (2.153)**	0.030 (2.312)**	-0.002 (-0.465)
<i>AO</i>	+	-0.004 (-0.171)	-0.006 (-0.416)	-0.007 (-1.065)
<i>SOE</i>	?	0.005 (0.285)	0.012 (0.951)	0.001 (0.274)
<i>SIZE</i>	+	-0.041 (-8.974)***	-0.019 (-5.950)***	-0.003 (-2.724)***
$\sum INDUSTRY$		<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
$\sum YEAR$		<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
N		6,149 ^b	6,149 ^b	6,149 ^b
<i>F-Sig</i>		8.924***	5.443***	4.174***
<i>R</i> ²		3.6%	2.6%	1.7%

***, **, and * significant at the levels of 0.01, 0.05 and 0.10, respectively, (2-tailed).

^a Variable definitions:

- BHARs* = Buy-and-hold Abnormal Returns, value-weighted, for 1-year and 6-month from the earnings announcement date;
- CARs* = Cumulative Abnormal Returns, value-weighted, for 18 days after the earnings announcement data;
- EPS_L* = 1 if the firm-year observation reported EPS < sample median;
- EM_H* = 1 if the firm-year observation reported DACC > sample median;
- EPS_L x EM_H* = 1 if the firm-year observation reported EPS < sample median AND DACC > sample median;
- BIG4* = 1 if the firm-year observation was audited by a Big Four audit firm, and 0 otherwise;
- AO* = 1 if the firm-year observation had an unqualified audit opinion, and 0 otherwise;
- SOE* = 1 if the firm-year observation is a state-owned enterprise, and 0 otherwise; and
- SIZE* = ln(total assets).
- $\sum INDUSTRY$ = Fixed effects dummy variable for industry groups.
- $\sum YEAR$ = Fixed effects dummy variable for year groups.

^b The sample of 6,149 observations is greater than the sample sizes presented in Table 1 – Panel B as no observations were lost due to any prior year data requirement and/or earnings benchmark requirement.

Table 8

Robustness Tests for OLS Regression to Explain Impact of Earnings Management around Benchmark Beating on Future Performance^a

		Equation (6)			
		Excluding Credit Crisis		With Equally Weighted Returns	
		CARs	BHARs	CARs	BHARs
		[2, 18]	6 Months	[2, 18]	6 Months
Variable	Predicted Sign	Coefficient t-stat	Coefficient t-stat	Coefficient t-stat	Coefficient t-stat
<i>Intercept</i>	?	0.076 (2.332)**	0.391 (4.850)***	0.046 (1.922)*	0.323 (5.150)***
<i>EPS_L</i>	?	0.012 (2.657)***	0.018 (1.589)	0.007 (2.103)**	0.032 (3.591)***
<i>EM_H</i>	?	0.004 (0.990)	0.018 (1.589)	-0.001 (0.227)	0.0213 (2.253)**
<i>EPS_L x EM_H</i>	-	-0.013 (-2.023)**	-0.039 (-2.406)***	-0.011 (-2.149)**	-0.047 (-3.659)***
<i>BIG4</i>	+	-0.005 (-0.791)	0.029 (1.615)	-0.002 (-0.423)	-0.029 (2.090)
<i>AO</i>	+	-0.009 (-1.185)	-0.019 (-1.039)	-0.001 (-1.504)	-0.018 (-1.285)
<i>SOE</i>	?	0.001 (-0.281)	0.011 (0.668)	-0.001 (0.374)	-0.003 (-0.268)
<i>SIZE</i>	+	-0.003 (-2.200)**	-0.017 (-4.886)***	-0.002 (-2.217)**	-0.017 (-6.341)***
Σ INDUSTRY		Yes	Yes	Yes	Yes
Σ YEAR		Yes	Yes	Yes	Yes
N		3,831	3,831	6,149 ^b	6,149 ^b
<i>F-Sig</i>		5.081***	6.695***	4.683***	6.755***
<i>R</i> ²		2.3%	3.7%	1.8%	2.5%

***, **, and * significant at the levels of 0.01, 0.05 and 0.10, respectively, (2-tailed).

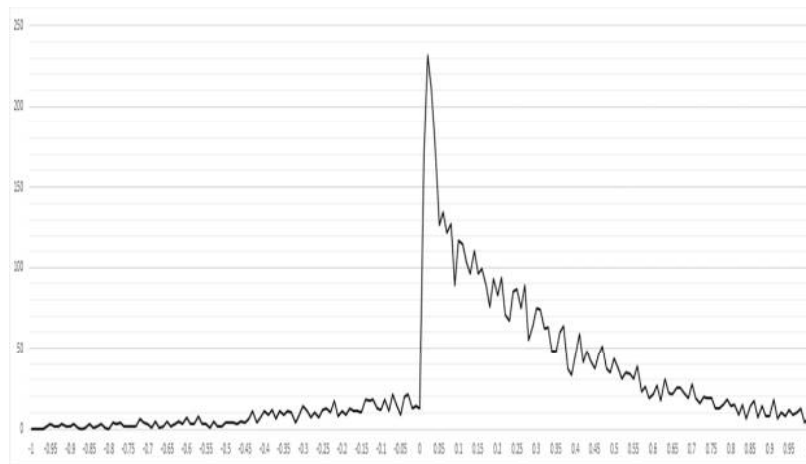
^a Variable definitions:

- BHARs* = Buy-and-hold Abnormal Returns, value-weighted, for 6-month from the earnings announcement date;
- CARs* = Cumulative Abnormal Returns, value-weighted, for 18 days after the earnings announcement data;
- EPS_L* = 1 if the firm-year observation reported EPS < sample median;
- EM_H* = 1 if the firm-year observation reported DACC > sample median;
- EPS_L x EM_H* = 1 if the firm-year observation reported EPS < sample median AND DACC > sample median;
- BIG4* = 1 if the firm-year observation was audited by a Big Four audit firm, and 0 otherwise;
- AO* = 1 if the firm-year observation had an unqualified audit opinion, and 0 otherwise;
- SOE* = 1 if the firm-year observation is a state-owned enterprise, and 0 otherwise; and
- SIZE* = ln(total assets).
- Σ INDUSTRY = Fixed effects dummy variable for industry groups.
- Σ YEAR = Fixed effects dummy variable for year groups.

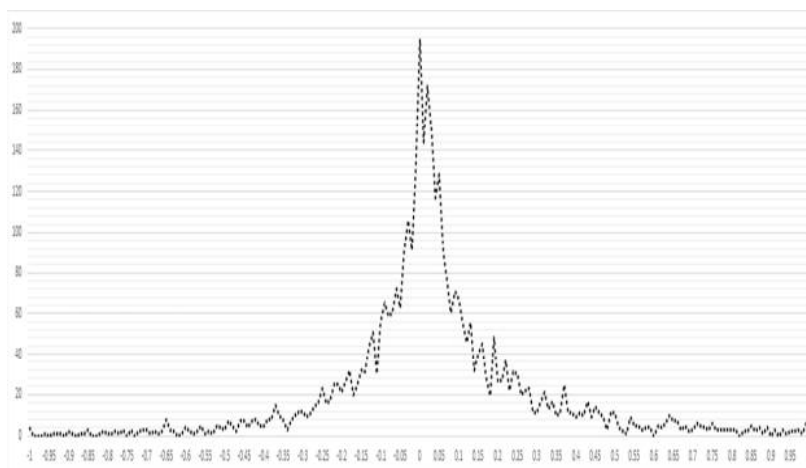
^b The sample of 6,149 observations is greater than the sample sizes presented in Table 1 Panel B as no observations were lost due to any prior year data requirement and/or earnings benchmark requirement.

Figure 1 - Distribution around Earnings Benchmarks

Panel A – Distribution of EPS (Earnings Level Benchmark)



Panel B – Change in EPS from Prior Year (Earnings Change Benchmark)

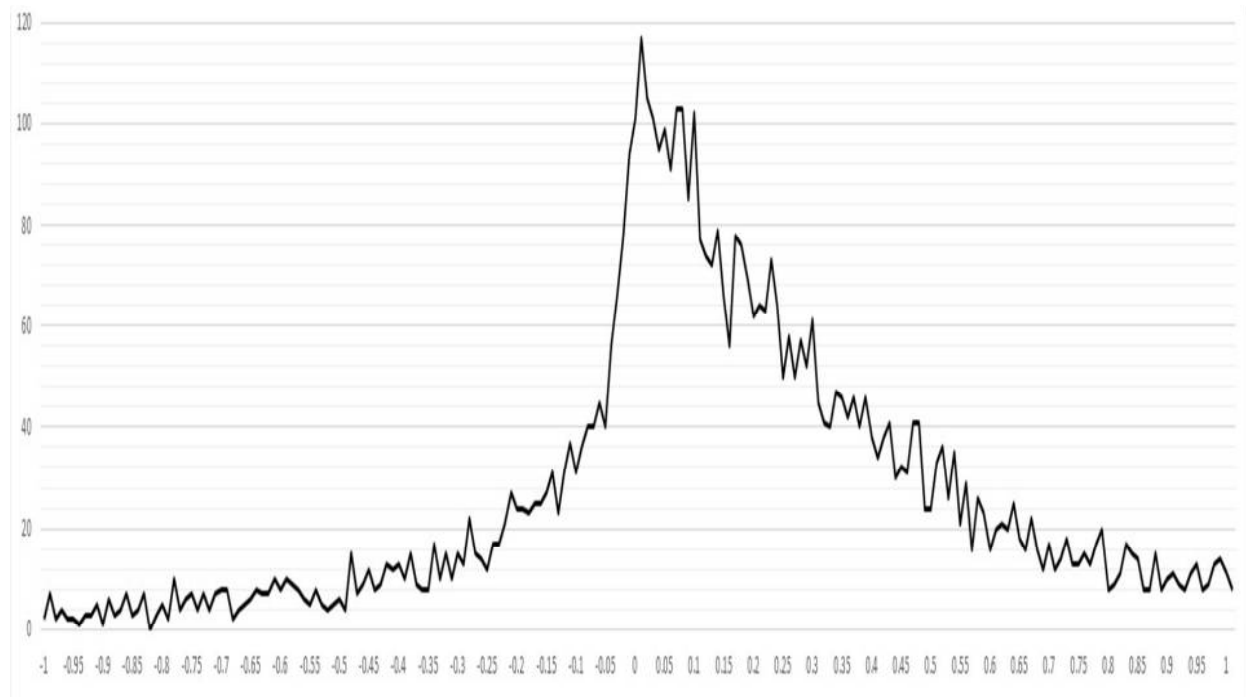


Panel C – Analysts' Forecast Error (Analysts' Expectation Benchmark)



Figure 2 - Distribution around Earnings Benchmarks after Earnings Management Adjustment

Panel A – Distribution of EPS (Earnings Level Benchmark)



Panel B – Change in EPS from Prior Year (Earnings Change Benchmark)

