The Impact of the Corporate Governance Code on Earnings Management: Evidence from Chinese Listed Companies

Abstract

This study examines the impact of the implementation of the *Code of Corporate Governance for Listed Companies in China* (the Code) in 2002 on constraining earnings management in Chinese listed firms. We find the magnitudes of both discretionary accruals and related-party transactions in Chinese listed firms decrease significantly after the promulgation of the 2002 Code, and moreover, the Code is effective in constraining earnings management in the listed firms. However, with regard to the ownership concentration, we find that when a firm has a controlling shareholder, especially the state, it utilises all possible means of earnings management to artificially dress-up the firm's apparent performance and the influence of the 2002 Code on reducing earnings management is minimal. However, we find that the privately-owned enterprises engage less in earnings management practices than the state-controlled firms do across the study period and the Code enhances this effect significantly. The impact of the Code on improving the institutional investors monitoring in mitigating earnings management is limited. However, the Code has a positive impact on curbing earnings management through the introduction of independent non-executive directors on the board and the audit committee and the accounting/financial experts sitting on the audit committee. In contrast to the existing literature on the Western markets, we find that international reputable audit firms (Big 4) does not contribute to the reduction in earnings management in Chinese listed firms.

1. Introduction

A central issue affecting the quality of financial information disclosed is the extent to which managers manipulate reported earnings to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. Given the recent accounting scandals and corporate governance failures around the world shaking the integrity of accounting information and resulted in a drop in investor confidence, the scale of such a problem has come under the spotlight. Recent accounting research has begun to turn to corporate governance aspects to explain the existence and determinants of earnings management practices, while most studies are based on the Western experiences.

Earnings management activities are also found to be prevalent in Chinese listed firms (Chung *et al.,* 2005; Jiang *et al.,* 2005; Liu and Lu, 2007). The ownership structure of Chinese listed companies is arguably the most determinant factor of such activities (Aharony *et al.,* 2001; Jian and Wong, 2004). Fuelled by a series of high-profile corporate scandals for violating provisions related to financial reporting, such as Guangxia Co. Ltd., Lantian Co. Ltd., and Sanjiu Co. Ltd., the reforms of corporate governance in China took place at the beginning of the 2000s with the aim of enhancing minority shareholders' protection against the expropriation by controlling shareholders. Among those reforms, the most notable one was the implementation of the *Code of Corporate Governance for Listed Companies in China* (the 2002 Code, thereafter). The 2002 Code, with the quality of financial reporting laid at its heart recommends, *inter alia,* that a listed company shall establish a corporate governance

structure sufficient for ensuring fair treatment towards all shareholders, especially minority shareholders. However, there is no research so far to examine the impact of this important Code on restraining earnings management in Chinese listed firms. This study attempts to fill this gap. We make contribution to accounting and corporate governance literature in this area from the Chinese perspective because the incentives of earnings management and the ownership structure of Chinese listed firms are largely different from the Western economies where most published research have focused on.

We address the motives for earnings management from an agency perspective through looking at earnings management structure as one sign of the agency problem faced by the modern corporations. We argue that the ownership structure of Chinese listed firms results in the agency problem being the conflict of interests between controlling shareholders and minority shareholders as the former may represent their own interests, which need not to coincide with the interests of the others. Since such a conflict in Chinese listed companies is the primary determinant of agency cost, we argue that it is the root cause of earnings management practices. Therefore, this study link corporate governance with earnings management largely from the agency theory perspective.

From the agency theory perspective, the separation of ownership and control in large corporations of the developed capital markets, such as the US and UK, is common and should be considered as the root of conflict of interests (Fama and Jensen, 1983b). Originated from such conflict of interests, earnings management is usually driven by the desire to bolster firm's stock price, as that price is often the key basis for the flexible components of managerial compensation, which may include stock options,

bonuses, and other long-term incentives (Baker *et al.,* 2003; Cohen *et al.,* 2008; Gao and Shrieves, 2002). In contrast, in the less developed markets, these incentives may no longer be relevant. It is mainly due to the fact that, in such markets, even the listed companies have a highly-concentrated ownership structure and top managers are (or directly represent the interest of) controlling shareholders (La Porta *et al.,* 1999, 200a, b). The minority shareholders face the risk of being expropriated by the controlling shareholders, who usually gain effective control of the firm's management (La Porta *et al.,* 1999). The Chinese stock market is a good example of such a context. Instead of negotiating better managerial compensation package with the firm, in China, meeting the regulatory thresholds is the primary incentive of conducting earnings management. In particular, research shows that Chinese firms manage their earnings dramatically in order to gain authorisation for Initial Public Offering (IPO) and issuing additional shares, and/or to avoid being de-listed, (Aharony et al., 2001; Chung *et al.,* 2005; Jian and Wong, 2004; Jiang *et al.,* 2005; Liu and Lu, 2007).

We use two measures of earnings management for the purpose of this study. The first is the "discretionary accruals" technique, which measures earnings management through non-cash operating transactions. The second is the "non-operating income/sales" ratio, which captures earnings management effects of non-operating related-party transactions.

The reminder of this study is organized as follows. Section 2 provides the background of ownership structure in China and reviews the literature of earnings management. Section 3 presents the hypotheses development and section 4 discusses the research design. Section 5 demonstrates the empirical results and section 6 concludes the study.

2. Institutional Setting and Literature Review

We will start with a brief review of the characteristics of Chinese listed firms from the agency perspective and the literature on earnings management and corporate governance respectively.

2.1. The Ownership Characteristics of Chinese Listed Companies

The past 20-plus years have witnessed China's miracle in rapid development of the economy: with average annual growth at around 9 per cent and GDP quadrupled, China has become the largest and fastest-growing emerging economy in the world. By the end of 2009, with a stock-market capitalization of US$3.21 trillion generated by over 1,500 listed companies on both the Shanghai and Shenzhen Stock Exchanges, China's stock market had overtaken Japan as the world's second-largest stock market by value (after the US) for the first time since its birth in the early 1990s (Bloomberg, 2009). It is commonly accepted that this economic success is the result of China's economic reform, which is progressively turning the central-command economic system into a market economy (Chen *et al.,* 2006; Firth *et al.,* 2007). During this transition period, one of the most significant phenomena has been the transformation of the State-owned Enterprises (SOEs) through carving out the operational units and re-organising them as limited liability companies with share capital and profit making objectives (Chen *et al.,* 2006; Liu and Lu, 2007). The stock market was designed as a place to raise much needed capital for the SOEs and improve their operating performance. Therefore, financing through the equity markets shows a tremendous bias in favour of the SOEs over non-SOEs. For this historical reason, the majority of current listed companies in China originated from the SOEs and are still under the control of the State and/or other non-listed SOEs. This leads to a unique feature of ownership structure in Chinese listed companies—the State's retention of a

controlling stake. In particular, typically over 50% of a firm's shares is held directly by the governments at the central and local levels and their associated ministries (e.g. the state asset management bureaus), and by the legal entities which are ultimately controlled by the State (Chen *et al.,* 2006). Thus, the State and legal entities are typically the largest block holders who often control the firms as they have substantially larger investment stakes than the other investors (Chen *et al.,* 2008).

From the agency theory perspective, this highly concentrated ownership in Chinese listed companies determines the nature of the agency problem in Chinese corporations. More generally, when ownership is in the hands of a single owner (or few owners) that have effective control of the firm, the nature of the agency problem turns into the conflict of interests between controlling shareholder(s) and minority shareholders. The agency cost is that insiders, through their control of the firm, pursue their private benefits at the costs of outsiders.

In the state-controlled companies, however, there is an extra agency relationship compared to privately-owned companies, as the controlling owners are themselves agents of the true owner: the State. The interests of these *de facto* controllers are very likely to be different from those of minority shareholders, and those of the State that they represent. When the controlling owners gain control of the listed companies through concentrated ownership, they are in a position to pursue their private interests at the expenses of both minority shareholders and the State. In addition, China's incomplete legal infrastructure and the lack of stock market discipline further entrench controlling shareholders' opportunistic behaviour. In fact, with the help hand of the government, for almost a decade the controlling shareholders, who usually gained effective control of the firm's management, were largely insulated against

pressure from minority shareholders, but enjoyed the benefit of a large stream of cheap direct capital (Zhang, 2004). The opportunistic activities of entrenched controlling owners may eventually harm the health of the company, but as the same owners also control the preparation of financial statements, which are the primary means of communicating corporate financial information, they will try to hide the company's real economic situation by managing reported earnings artificially (Leuz *et al.,* 2003).

2.2. Earnings Management

Broadly speaking, there are two types of earnings management indentified in the accounting literature: the accrual-based earnings management method and the real (operating) earnings management method (Aharony *et al.,* 2000; Jones, 1991; Kothari *et al.,* 2005; McNichols, 2000; Petroni, 1992). As a case of real earnings management, recent literature reveals that firms may structure transactions with their related parties as another source of earnings management, i.e. related party transactions (RPT)-based earnings management (Cheng *et al.,* 2010; Cohen and Zarowin, 2008; Roychowdury, 2006; Thomas *et al.,* 2004). Related parties may not undertake operating RPTs at market prices and the relationship between the two parties can influence the way that RPTs operate. Under such a circumstance, RPTs could shift profits between group members immediately and result in RPT-based earnings management. In practice, corporate management tends to choose between accrual-based and real methods to alter reported earnings (Ewart and Wagenhofer, 2005; Graham *et al.,* 2005; Nelson *et al.,* 2002).

The Chinese listed firms have a close economic relationship with their State-owned controlling shareholders. They rely on controlling shareholders' supply chains and

distribution and marketing channels to trade with a third party. Being a controlling shareholder, the parent or holding company can inject valuable assets into its listed subsidiary in order to boost earnings, the so-called 'propping'. The parent company or other group members may also absorb unprofitable units from the listed company prior to listing. In return, the holding company expects future payoffs by siphoning profits or cash back from the listed company.

A growing literature has yielded empirical findings that relate earnings management to controlling shareholders' activities in China. Aharony *et al.*, (2000) show that Chinese IPO firms manage their earnings through financial packaging (e.g. accruals-based methods like credit sales) in the pre-IPO period. Liu and Lu (2007) show that accrual-based earnings management are positively correlated with both the largest shareholder's, top executives' interests and the CEO duality while being negatively related to de-listing. Ding *et al.*, (2007) investigate the role played by a firm's ownership structure in earnings and find that Chinese listed firms manages their earnings through both operating-related accrual mechanisms and non-operating transactions with related parties, and the entrenchment effect of ownership concentration on earnings management is stronger in the State-owned listed firms than in privately-owned listed firms. Aharony *et al.,* (2001) and Jian and Wong (2004) examine RPTs between controlling shareholders and Chinese listed firms, and find that Chinese firms bolster earnings by using abnormal related sales to their controlling owners. Chen and Yuan (2004), Haw *et al.,* (2005) and Cheng, *et al.*, (2010) demonstrate that Chinese firms structure transactions involving non-operating items to meet regulatory Returns on Equity (ROE) targets for rights issues and to avoid being delisted compulsorily.

2.3. Corporate Governance and Earnings Management

Recent accounting research has begun to turn to corporate governance aspects to explain the existence and determinants of earnings management practices, while most studies are based on the Western experiences. Central to the argument is that whether corporate governance could effectively constrain companies from engaging in earnings management activities. At institutional level, Leuz *et al.,* (2003) examine the systematic differences in earnings management across 31 countries. They propose an explanation for the differences based on the notion that insiders, in an attempt to protect their private control benefits, use earnings management to conceal corporate performance from outsiders. Earnings management is thus expected to decrease as investor protection increases because strong protection limits insiders' ability to acquire private control benefits and reduces their incentives to mask firm's performance. At firm's level, based on the US sample, Agrawal and Chadha (2005) show that two corporate governance dimensions can reduce the probability of restatement: the incidence of independent directors with a background in accounting or finance on the board and/or audit committee, and the presence of the CFO on the audit committee. Using 110 listed companies on the S&P 500 index, Xie *et al.,* (2003) find that accrual-based earnings management is less likely to occur or occurs less often in the companies whose boards and audit committees include more independent non-executive directors with corporate or investment banking background. In a study of German firms, Tendeloo and Vanstraelen (2005) indicate that listed companies engage in less accrual-based earnings management when they are audited by a Big 4[1] audit firm. Chung *et al.,* (2002) investigate the effect of institutional ownership on the informativeness of earnings and on discretionary accruals. They argue that higher

institutional ownership reduces the agency cost of information asymmetry, and therefore reduce earnings management.

The 2002 Chinese Corporate Governance Code is different from the US's Sarbanes-Oxley Act (2002)[2] and UK's Combined Code (1998, 2003, 2006)[3] by focusing more on the shareholders protection, and especially the rights of minority shareholders. The 2002 Code recommends that companies shall adopt efficient measures to prevent their controlling shareholders and affiliates from misappropriating or transferring the capital, assets or other resources of the companies through various means. It also recommends that the institutional investors shall play an active role in the appointment of company directors, compensation and supervision of management and major decision-making processes.

The 2002 Code is voluntary, so as a result, firms remain free to choose their own corporate governance structure. In order to enforce the compliance, on the 30th of January 2007, the CSRC published the *Regulations on Information Disclosure of Listed Companies* to ensure that all listed companies comply with the 2002 Code (CSRC, 2007a). Furthermore, on the 28th of March 2007, the CSRC issued the *Notice on the Specific Activities of Strengthening Corporate Governance* (CSRC, 2007b) to particularly highlight the compliance of the 2002 Code by including a check-list for firms to see if they comply with the Code.

Although the 2002 Code aims to enhance the integrity of financial statements by curbing earnings management and accounting fraud through improving corporate governance, its effectiveness remains unknown. This study intends to fill this gap.

3. Hypotheses

To examine the impact of the 2002 Code on the earnings management of Chinese listed companies, we predict *ex ante* the relationships between earnings management and corporate governance dimensions, and find out whether the Code improves the efficiency of those corporate governance mechanisms on constraining earnings management. The corporate governance dimensions under investigation include the characteristics of controlling shareholders, including the concentration and the type (privately-owned vs. state-controlled firms) of their shareholdings, institutional shareholdings, board independence, audit committee and statutory audit.

3.1. The Trend in Earnings Management in the Post-Code Period

The 2002 Code acts as a catalyst for a wider debate on firm's accountability and the importance of effective corporate governance. It serves as a benchmark against which good governance can be assessed.

The quality of financial reporting lies at the heart of the Code. It recommends that a listed company shall establish sound financial and accounting system in accordance with laws and regulations and shall conduct independent business accounting. Controlling shareholders shall respect the financial independence of the company and shall not interfere the financial and accounting activities of the company. A listed company shall truthfully, accurately, completely and timely disclose information as required by laws, regulations, and the company's articles of association (CSRC, 2002). Furthermore, the 2002 Code also suggests that in addition to disclosing mandatory information, a company shall also voluntarily and timely disclose all other information that may have a material effect on the decisions of shareholders and stakeholders, and shall ensure equal access to information for all shareholders.

Because the Code is designed to improve investors' protection that limits insiders' ability to acquire private control benefits, and thus minimises the agency costs between controlling shareholders and minority shareholders, we expect that earnings management will decrease in the post-Code period.

Hypothesis 1. Chinese listed companies engage in less earnings management in the post-Code period.

3.2. The Impact of the 2002 Code upon Earnings Management

We now investigate the impact of corporate governance introduced by the Code upon the earnings management of Chinese listed companies. We predict *ex ante* the relationships between earnings management and corporate governance mechanisms.

3.2.1. Ownership Characteristics

Ownership Concentration

The highly concentrated state-ownership of Chinese listed companies determines the nature of the agency problem being the conflict of interests between controlling shareholders and minority shareholders. For example, in 2006, the average shareholdings of five largest shareholders in Chinese listed companies accounted for 58.5 per cent[4] of the firms' total equity, compared with 25.4 per cent in the US and 33.1 in Japan (Mallin, 2007). More strikingly, the largest shareholder held more than 42 per cent[5] of the total shares for an average Chinese listed company. When most of a firm's shares are concentrated in the hands of few investors, the probability of financial statements being managed to meet these investors' needs and expectations increases (Firth *et al.,* 2007; Liu and Lu, 2007). In order to mitigate the opportunistic behaviour, in particular the earnings management conducted by controlling

shareholders, one effective solution is to give minority investors protection and legal prohibition against the expropriation by controlling shareholders (La Porta *et al.,* 1999, 2000a,b; Leuz *et al.,* 2003; Shleifer and Vishny, 1997). The 2002 Code is designed to ensure fair treatment towards all shareholders, especially minority shareholders. We thus expect the magnitude of earnings management would be reduced after the implementation of the Code.

Hypothesis 2a. The 2002 Code is effective in constraining the controlling shareholders' earnings management practice.

Ownership Type – State-Controlled vs. Privately-Owned Listed Firms

Despite the state ownership concentration, 1998 saw the start of a boom in privately-owned listed companies. By the end of 2006, there were 157 privately-owned listed companies, which accounted for 11 per cent of the total listed companies on the Chinese markets (compile for the companies' annual reports).

Because both the state-owned and the privately-owned companies operate in the same institutional environment characterised by weak investors' protection, the conflict of interests between majority and minority shareholders exists in both of them when they are publicly listed. However, it is more difficult to address the agency problem in the state-owned companies than in the privately-owned companies because the extra agency relationship in state-owned companies. As discussed earlier, the controlling owners are themselves agents of the true owners: the state. Wang (2003) finds that government intervention is the key reason for the inefficiency of the state shareholdings from a political perspective. By comparing the informativeness of earnings in State-owned companies with that in the privately-controlled companies,

Firth *et al.,* (2007) provide evidence suggesting that the informativeness of earnings is much lower in the state-owned companies.

Since this additional type of agency problem resulted from the conflict of interests between the state and the controlling owner, which cannot be addressed simply by ownership concentration, we predict that the entrenchment effect of ownership concentration on earnings management is more serious in state-owned enterprises. The implementation of the Code may be effective in reducing the agency problem from ownership concentration, thus more effective in curbing the earnings management in privately-owned listed firms. But it has not addressed the additional type of agency problem in state-owned listed firms, thus may be less effective in reducing earnings management.

Hypothesis 2b. The 2002 Code is more effective in constraining earnings management in the privately-owned listed firms than in the state-owed listed firms.

3.2.2. Institutional Ownership

Institutional ownership of common stock has increased substantially over the past fifty years, especially in the US and UK. According to Chen *et al.* (2007), institutions owned approximately 7 per cent of US equities in 1950 and 51 per cent by the end of 2004. In the UK, the institutional shareholdings increased from 17 per cent in 1963 to 41.1 per cent in 2006, and the combined value of the institutional shareholdings was £763 billion (US$1,096 billion) (Clifford, 2008). The growth of institutional investment and a number of high-profile shareholder revolts led by institutional investors give rise to the expectation of change in traditional shareholder passivity. It is argued that institutional investors have the opportunity, resources, and ability to monitor, discipline and influence managers. However, the role of institutional

investors in safeguarding shareholders' welfare is not always effectively performed as some institutions may focus on information gathering and trading rather than expending effort on monitoring management (Chen *et al.,* 2007; Kahn and Winton, 1998; Maug, 1998; Shleifer and Vishny, 1986).

In relation to earnings management, empirical works show mixed results on the institutional investors' monitoring. On one hand, research based on the Western economies indicates that the effectiveness of external monitoring by institutional investors can constrain managers from manipulating reported earnings opportunistically. Chung *et al.,* (2002) argue that the large institutional shareholdings of the US listed companies inhibit managers from increasing or decreasing reported profits towards the managers' desired level or range of profits. Shang (2003) points out that the institutions in the US stock market prefer to hold stocks with lower magnitudes of earnings management, and sell shares to the market when they deal with the firms that inflate their earnings. On the other hand, research shows that institutional shareholder activism matters little in improving corporate governance (Black, 1995; Karpoff, 2001). Bainbridge (2005) argues that institutional activism tends to have little impact on the target companies in either improving performance or constraining opportunistically discretionary behaviours. Karpoff (2001) finds that institutional investors with high-turnover portfolios exert little influence on managers with regard to the accounting policy decisions. He further argues that institutional investors may prompt small changes in target firms' governance structures, which have negligible impacts on share value and performance.

The participation of institutional investors has emerged in Chinese listed companies since 1997. With an average of approximate 1per cent annual increase rate,

institutional shareholding in China reached 8.7 per cent of the equities by the end of 2006 compared with 2.4 per cent in 2000. However, the level of institutional shareholding in China is still very low compared with 55 per cent and 65 per cent of the equities in the US and the UK respectively (Mallin, 2007).

The Chinese government has aggressively promoted the institutional investors' activism in corporate governance. The 2002 Code highlights the importance of institutional shareholders activism in corporate governance and expects them actively monitoring firms' financial reporting. We thus expect the Code improves the monitoring role of institutional investors on earnings management.

Hypothesis 3. The institutional investors in Chinese listed companies can effectively mitigate earnings management in the post-Code period.

3.2.3. Independence of the Board

Existing research shows that independent non-executive directors are motivated to work in the best interests of the minority shareholders as they bear substantial reputation costs if they fail in their duties (Chen *et al.,* 2010b; Fama and Jensen, 1983a; Srinivasan, 2005). Using the US data, Beasley (1996) finds a negative relationship between the percentage of non-executive members on the board and the likelihood of financial fraud. Dechow *et al.*, (1995) find that firms with a large percentage of non-executive members are less likely to receive accounting enforcement actions by the US SEC for alleged GAAP violations. Peasnell *et al.,* (2000) and Klein (2002) indicate that there is a negative relationship between the proportion of non-executive board members and income-increasing earnings management in the UK and US firms. Karamanou and Vafeas (2005) conclude that US companies that have a high percentage of outside directors have higher financial

disclosure quality. Ajinkya *et al.,* (2005) show that the US companies that have a high percentage of outside directors are more likely to make earnings forecasts and these forecasts are more accurate and give useful information to investors.

The board's independence is the focus of concern for effective monitoring in China (Chen, 2005). The Chinese listed companies were not required to introduce independent non-executive directors into their board until the implementation of the 2002 Code. The 2002 Code requires that at least one third of board shall be independent directors, including one with professional accounting background. We expect the 2002 Code has a positive impact on curbing earnings management.

Hypothesis 4. The independent non-executive directors can effectively mitigate earnings management of Chinese listed companies in the post-Code period.

3.2.4. Audit Committee

An audit committee serves to safeguard and advance the interests of shareholders (Crutchley *et al.,* 2007; Davidson *et al.,* 2005; Klein, 2002; Pucheta-Martinez and Fuentes, 2007). The literature regards an audit committee as a monitoring mechanism intended to reduce information asymmetry between insider and outsider (Eichenseher and Shields, 1985; Pincus *et al.,* 1989) since its key functions are to review financial information and control management's opportunistic behaviour.

Apart from the existence of audit committee, the independence and technical competence of audit committee members are also very important for their effective monitoring. The New York Stock Exchange Standards and the UK Combined Code all require that companies listed on the New York Stock Exchange and London Stock Exchange must have an audit committee consisting of a minimum of three members

and all must be independent directors. The empirical evidence also supports the advantages of including only independent directors (Al-Mudhaki and Joshi, 2004; Carcello and Neal, 2000; Klein, 2002; McMullen and Raghundan, 1996; Pucheta-Martinezand Fuentes, 2007). For example, McMullen and Raghundan (1996) show that the US firms which have (1) an audit committee composed entirely of non-executive directors; (2) Certified Public Accountants (CPAs) on their audit committee; and (3) frequent audit committee meetings, are less likely to be subject to the US SEC enforcement actions or restating their quarterly reports because it would be likely to find less financial frauds in those firms. Klein (2002) finds that there is a negative relationship between abnormal accounting accruals and the percentage of independent directors on the audit committee in the US companies.

Regarding the competence of audit committee members, Xie *et al.,* (2003) find that firms that have financial experts served on the audit committee have lower level of earnings management. DeFond *et al.,* (2005) find that there is a significantly positive stock market reaction to the announcement of the appointment of accounting and financial experts to an audit committee but non significant reaction to the appointment of non-accounting and non-financial expert. These studies imply that accounting and finance experts play a significant role in improving companies' corporate governance and so investors value their appointments to audit committees.

The China's 2002 Code encourages the establishment of an audit committee to facilitate improving the quality of Chinese financial reporting. With regard to the composition of the audit committee, the Code further requires that independent directors should be in majority, and at least one independent director should be an accounting/financial professional on the committee. Accordingly, we expect that the

Code enhances the monitoring power of the audit committee in mitigating earnings management in Chinese listed companies.

Hypothesis 5a. The audit committee can effectively mitigate earnings management of Chinese listed companies in the post-Code period.

Hypothesis 5b. The independent directors on the audit committee can effectively mitigate earnings management of Chinese listed companies in the post-Code period.
Hypothesis 5c. The accounting/financial experts on the audit committee can effectively mitigate earnings management of Chinese listed companies in the post-Code period.

3.2.5. Statutory Auditor

The quality of statutory audit can have a significant influence on the quality of reported earnings, and therefore, constitutes a constraint on earnings management. The large international reputable audit firms (normally, the Big 4 auditor) are reasonably and usually used as the proxy for quality auditing. As expressed by Krishnan (2003), not only do the large audit firms have more resources and expertise to detect earnings management, but also they have greater incentive to protect their reputation because of their large client base. A large number of studies provide support for the notion of large international reputable auditors constraining aggressive and potentially opportunistic reporting by firms (e.g. DeFond and Jiambalvo, 1991, 1994; Krishnan, 2003; Van Tendeloo and Vanstraelen, 2005).

The 2002 Code requires all listed companies in China to use an external auditor, in particular, when listed firms apply for new equity offerings (CSRC, 2001a). Since early 2000s, there has been a significant increase of international auditors'

participation in China, with strong support from the CSRC. Many local Chinese CPA firms have merged with an international audit firm hoping to improve the quality of their auditing. The total number of Chinese local CPA firms declined from 106 in 1999 to 71 in 2002 (CSRC, 2003) and remain at the same level for the rest of our investigation period. Furthermore, regarding the Big 4 auditor, the CR4 ratio increased from 18.42 per cent in 1999 to 37.32 per cent in 2002 (CSRC, 2003). We expect the 2002 Code has helped promoting the monitoring of external auditors, thus constraining earnings management.

Hypothesis 6. The international reputable audit firms (the Big 4 auditor) can effectively mitigate earnings management of Chinese listed companies in the post-Code period.

4. Research Design

4.1. Data and Sample

The population of our study is composed of the Chinese listed companies on both the Shanghai and Shenzhen stock exchanges during 2000 and 2006. We exclude the companies that only issued shares on foreign exchanges, including H-, N-, and S-shares. The reason is that the 2002 Code is exclusively applied for those companies listed in Chinese domestic stock exchanges. The Chinese companies listed on the overseas markets are required to following the listing rules of the foreign markets. The sample firms are segregated into 13 industrial groups arranging from the Agriculture, Forestry, & Fishing (A) to Miscellaneous products & services (M) industry (CSRC, 2001c)[7]. The manufacturing group (or group C) is further divided into 10 sub-groups as it includes over 60 per cent of the sample firms.

In order to calculate the discretionary accruals metrics that employed in the analysis, and to be consistent with the previous researchers (e.g., Cohen *et al.,* 2008; Van Tendeloo and Vanstraelen, 2005), the sample is restricted to non-financial firms. We exclude the financial institutions because their specific accounting requirements differ substantially from those of industrial and commercial companies. We require the sample firms in each industrial group or sub-group to have at least eight observations in each year (Cohen *et al.,* 2008; Larcker and Richardson, 2004). Therefore, Group C3 (the wood products and furniture manufacturing industry) is excluded because they did not have sufficient observations. Furthermore, we require the sample firms to have both financial and corporate governance data in each year over the study period. While this restriction facilitates the comparison of the results between the pre- and the post-Code periods, it also likely introduces a survivorship bias, biasing the sample towards larger and more successful firms. However, it is expected that this bias will reduce the variation in earnings management metrics, resulting in a more conservative test which may enhance the stability and reliability of the results provided.

As a result, our final sample consists of 447 firms from different industries representing 3,129 firm-year observations over the period of 2000 to 2006. Among these firms, 229 firms were listed on the Shanghai Stock Exchange and the remaining 218 firms were listed on the Shenzhen Stock Exchange.

The firms' financial data are obtained from the Shenzhen Securities Info Co., Ltd., while the data of corporate governance are collected from the China Centre for Economic Research (CCER) database and China Stock Market & Accounting Research Database (CSMAR). In order to ensure the reliability and accuracy of the

data that obtained from above database, we have constantly cross-checked the data with the published annual reports for each sample firm.

4.2. The Study Period

We focus our study across the pre-Code and post-Code years. We include 2000 and 2001 in the pre-Code period and 2003, 2004, 2005 and 2006 in the post-Code period. We use a longer post-Code period in order to control for the possible lagged effect of the Code reforms[8].

[Insert Figure 1 Here]

4.3. Variable Design and Measurement

4.3.1. Testing The Trend in Earnings Management in the Post-Code Period – Univariate Tests

We apply univariate statistical test to investigate the trend in earnings management in the post-code period (Hypothesis 1). We use two measurements for earnings management: discretionary accruals (*DAs*) as the measure for accrual-based earnings and non-operating income over sales as the measure for related-party transactions (RPTs). The reason for us to use these two measures is because they are highly correlated (see Table 5). It suggests that when a firm tries to manipulate its earnings, it will use all possible means to reach its goal. In particular, the firm will use non-cash accruals at the operating level, while uses certain non-market-based asset transfer transactions with related parties at non-operating level.

Accrual-Based Earnings

We use a cross-sectional model to calculate discretionary accruals. We estimate the model for every industry classified by the CSRC (CSRC, 2001c) for each year. Thus, our approach partially controls for industry-wide changes in the economic conditions that affect total accruals while allowing the coefficients to vary across time (e.g., DeFond and Jiambalvo, 1994; Kasznik, 1999).

Our primary model is the modified cross-sectional Jones model (Jones, 1991) as described in Dechow *et al.,* (1995). The modified Jones model is estimated for each industry across the study period as follows:

$$\frac{\mathrm{TAC}_{i,t}}{\mathrm{TA}_{i,t-1}} = a_0\left(\frac{1}{\mathrm{TA}_{i,t-1}}\right) + a_1\left(\frac{\Delta\mathrm{REV}_{i,t}}{\mathrm{TA}_{i,t-1}}\right) + a_2\left(\frac{\mathrm{PPE}_{i,t}}{\mathrm{TA}_{i,t-1}}\right) + \varepsilon_{i,t} \qquad (1)$$

where, for fiscal year *t* and firm *i*, *TAC* represents total accruals defined as:

$TAC_{i,t}$ = $EBXI_{i,t}$-$CFO_{i,t}$, where *EBXI* is the earnings before extraordinary items and discontinued operations and *CFO* is the operating cash flows takes from the statement of cash flows.
$TA_{i,t-1}$ =total assets from the previous fiscal year (*t-1*).
$\Delta REV_{i,t}$=the change in revenues from the preceding year.
$PPE_{i,t}$ =the gross value of property, plant and equipment.

The coefficient estimates from Equation (1) are used to estimate the firm-specific normal (or non-discretionary) accruals ($NA_{j,t}$) for our sample firms (*j*):

$$\mathrm{NA}_{j,t} = \hat{a}_0\left(\frac{1}{\mathrm{TA}_{j,t-1}}\right) + \hat{a}_1\left(\frac{\Delta\mathrm{REV}_{j,t} - \Delta\mathrm{REC}_{j,t}}{\mathrm{TA}_{j,t-1}}\right) + \hat{a}_2\left(\frac{\mathrm{PPE}_{j,t}}{\mathrm{TA}_{j,t-1}}\right) \qquad (2)$$

where $\Delta REC_{j,t}$ is the change in account receivables from the preceding year.

Have the non-discretionary accruals been estimated from Equation (2), the amount of discretionary accruals for sample firm *j* in year *t* is calculated as:

$DAs_{j,t}=(TAC_{j,t}/TA_{j,t})-NA_{j,t.}$.

The relevance and suitability of using discretionary accruals as an earnings management measure in the Chinese context is challenged in the literature (Jian and Wong, 2004; Srinidhi *et al.,* 2004). One of the main arguments is the exclusion of accounting conservatism in Chinese accounting principles prior to the reforms of Chinese GAAP in 1999 and 2001. For long time, the Chinese GAAP had been tax-oriented, e.g. using the same treatments for accounting and tax purposes. To ensure stable fiscal income, the Chinese authorities excluded almost all accounting choices from accounting conservatism, such as provisions and reversals, choice of depreciation method and the useful life of fixed assets. This old system made it difficult for Chinese firms to adjust their earnings via non-cash accruals (Chen *et al.,* 1999; Chen *et al.,* 2002; Chen and Zhang, 2010; Davidson *et al.,* 2005). However, since the reforms of Chinese GAAP in 1999 and 2001, the Chinese GAAP has changed towards the convergence with IFRS. This convergence has made the discretionary accruals measurement for earnings management being possible because of the full application of the conservatism principles in the revised Chinese GAAP in 2001. The Chinese capital markets watchdog requires listed firms to make provisions for various potential losses (Chen and Zhang, 2010; Leung, 1999). Baker and Barbu (2007) argue that this change has brought the Chinese accounting language closer to international standards, while also offering Chinese firms the opportunity to manage their earnings via more conventional discretionary accruals. Therefore, we can apply the modified Jones model in this study and this application makes our results compatible with the results in the existing literature.

Related Party Transactions

As discussed earlier, RPTs also prevail in China. Firms tend to take advantage of RPTs to adjust their earnings, such as classifying profits and losses as core or non-core items and using the non-core operating profit or loss as a means of earnings management. This measure is valid if RPTs prevail (Chen and Yuan, 2006). As argued earlier, the main feature of the Chinese capital market is the domination of unlisted SOEs. The listed companies controlled by the SOEs use RPTs to manipulate earnings in order to meet government requirements for new equity offerings or avoid being delisted. In such a circumstance, RPTs may be a better measure of earnings management than accruals, although discretionary accruals may be a relevant measure for earnings management on Chinese privately-owned which is usually smaller than the state-owned listed companies.

Therefore, we introduce a second earnings management measure to capture the impact on earnings of certain non-market-based non-operating related party transactions, like the disposal of fixed assets. The proxy we chose is

$RPTs_{j,t}$=*Non-operating income*$_{j,t}$/$Sales_{j,t}$.

This approach is consistent with the study carried out by Bertrand *et al.,* (2002) in examining Indian business groups as they report a significant amount of tunnelling, much of it occurring via non-operating components of profits, and the study conducted by Ding *et al.,* (2007) in investigating the role of ownership structure in earnings management of the Chinese listed firms.

4.3.2. Testing The Impact of the 2002 Code (Corporate Governance) upon Earnings Management - Multivariate Tests

The Impact of the 2002 Code

We conduct multivariate test in order to investigate how the 2002 Code influences earnings management in Chinese listed companies. We introduce a dummy variable (*CODE*) to differentiate the post-Code period from the pre-Code period. It takes the value of 1 in the post-Code years and 0 in the pre-code years.

In order to further examine the impact of the mechanisms of corporate governance on earnings management between the pre- and post-Code period, we explore the time-specific effects resulted from the Code on the correlations between earnings management proxies and a specific corporate governance mechanism. We thus introduce several interactive variables by multiplying the variable *Code* with a specific corporate governance variable including ownership characteristics, institutional shareholding, board independence, audit committee, independence of audit committee, expertise of audit committee members, and external audit or respectively.

Ownership Characteristics

To be consistent with the prior literature (Boubakri *et al.,* 2005; Firth *et al.,* 2007, Lo *et al.,* 2010), we examine both ownership concentration and type of ownership. We use percentage shareholding by the largest shareholder (*Top1*) to measure ownership concentration. It is worth mentioning that the argument of the distinction between controlling rights and cash flow rights should not be a concern of this study, since the Chinese Company Law (2006) does not allow the use of preferential shares or shares with double voting rights (Article 33, Chinese Company Law[9], 2006). To reflect the ownership concentration more precisely, we also use a second measurement of the percentage shareholding by the second to tenth largest shareholders (*Top2_10*). We further use the Herfindahl index (the sum of squared fraction of ownership by each of

the nine investors (excluding the largest shareholder) to capture such effect. As indicated in the literature, a high index shows a highly concentrated ownership structure and a low index value implies a more diversified ownership structure (Boubakri *et al.,* 2005; Robert and Yuan, 2009).

To examine the type of ownership that differentiates the state-owned listed firms from the privately-owned listed firms, we create a dummy variable (*PRIVATE*) which equals to 1 if a firm is privately-owned and 0 if it is state-owned. Our definition of a state-owned listed company has a two-fold meaning: firstly, if a listed company's largest shareholder is the state or a state's agency, this company is regard as a state-owned listed company; secondly, if a listed company's largest shareholder is a non-listed SOEs but ultimately controlled by the state, we also classify it as a state-owned listed company.

Institutional ownership

To examine the role played by the institutional investors on constraining earnings management, we use the amount of shares held by the top 10 institutional investors (*INSTITUTE*) because not only the top 10 institutional shareholdings were disclosed in the companies' annual reports, but also the companies held by more than 10 institutional investors were rare. Due to the small percentage of foreign shareholdings, we do not further distinguish them from the institutional shareholdings.

Board Independence

We measure the effectiveness of the board of directors in monitoring and controlling earnings management by the independence of the board. The variable *INDBOARD* is defined as the percentage of independent non-executive directors on the board.

Audit Committee

We use three variables to measure the efficiency of the audit committee on constraining earnings management. Firstly, we create a dummy variable (*AUDCOM*) to reflect the overall role of audit committee in controlling earnings management. It takes the value of 1 if a firm establishes an audit committee in compliance with the 2002 Code, and 0 if otherwise. Secondly, as discussed earlier, the literature shows that the independence and expertise of audit committee members may influence the effectiveness of their monitoring. In order to examine those characteristics of the audit committee, we also introduce two variables "*INDAUDCOM*", which is defined as the percentage of independent non-executive directors on the audit committee, and "*EXPERT*" that takes the value of 1 if at least one audit committee member is an accounting/financial expert, and 0 if otherwise.

Statutory audit

The notable change in the 2002 Code is the participation of international audit firms, represented by the Big 4. To reflect this trend in China and also be consistent with the exiting literature on the quality of external auditing, we use variable "*AUDITOR*" to assess the quality of external audit. It takes the value of 1 if a firm is audited by an international reputable audit firm (one of the Big 4), and 0 if otherwise.

Control Variables

When examining the impact of corporate governance upon earnings management, it is necessary to control for other factors that may also influence earnings management.

As we discussed earlier, the most important incentive of Chinese listed firms to manage earnings is to meet the regulatory requirements. It is either to meet seasonal

offering requirement or/and to avoid being delisted. We control for this effect of applying for a seasonal offering by creating a dummy variable (*ISSUING*), which takes the value of 1 if the firm makes such an application in a given year during the investigation period and 0 if otherwise. With regard to delisting a firm from the stock markets, the CSRC stipulates that if a listed company reports a net loss for three consecutive years it will be labelled as "ST" (special treatment) (CSRC, 2001b). ST stocks are traded with a 5 per cent price fluctuation limit each day compared with 10 per cent for normal stocks. If a ST firm cannot improve its performance over the next year, it will be labelled as "PT" (Particular Transfer). PT stocks are traded only on Fridays with a maximum 5 per cent upside limit to the last trading day's closing price, but no restriction on the downside. If the company cannot generate profit in the next two to three years, it will be delisted. It is thus likely that "ST" and "PT" companies will have stronger incentive of earnings management. We use a dummy variable (*ST_PT*) to measure whether a firm is a "ST" or "PT" one. It takes the value of 1 if a listed firm is labelled as either ST or PT in a given year during the investigation period, and 0 if otherwise.

Finally, we introduce three variables to control for firm specific factors in line with the existing literature on earnings management: *Ln_SALES* (the natural logarithm of the annual sales from main operations), *SIZE* (the natural logarithm of total assets), and *LEVERAGE* (total debt over total assets). These three variables are used to control for the influence of firm profitability, size, and capital structure respectively on earnings management.

Table 1 provides a summary of measurements for all the independent and control variables included in the regression model.

[Insert Table 1 here]

4.4. Regression Model

We use two different measures for the dependent variable of earnings management: discretionary accruals and non-operating income/sales. Due to the nature of panel analysis, we do not include industry dummies and area dummies in the models because most of them are time invariant and will be automatically dropped from the estimation.

In comparison with the Random Effects approach of panel data analysis that treats the individual-specific effects as random and uncorrelated with the included explanatory variables and considers them as the components of the error term, we use the OLS regression estimation method to capture the variations resulted from the time-specific effects (or the passage of the Code). The OLS estimation allows for the time-specific effects in the sense that earnings management and the impacts of governance mechanisms on earnings management may be different (or changed) across time with regard to the passage of the Code. In such a way, the hypotheses formulated can be explicitly tested. Similar model estimation methods are used by Peasnell *et al.,* (2000) and Cohen *et al.,* (2008) to investigate the impact of Cadbury Report (UK) and Sarbanes-Oxley Act (US) on earning management across time respectively.

The regression equation is as follows:

$$\begin{aligned}\text{Earnings\_managemet}= {} & \beta_0+\beta_1 CODE+\beta_2 Top1_j+\beta_3 Top1_j*CODE+\beta_4 Top2\_10_j \\ & +\beta_5 Top2\_10_j*CODE+\beta_6 PRIVATE_j+\beta_7 PRIVATE_j*CODE+\beta_8 INSTITUTE_j \\ & +\beta_9 NSTITUTE_j*CODE+\beta_{10} INDBOARD_j+\beta_{11} INDBOARD_j*CODE \\ & +\beta_{12} AUDCOM_j+\beta_{13} AUDCOM_j*CODE+\beta_{14} INDAUDCOM_j \\ & +\beta_{15} INDAUDCOM_j*CODE+\beta_{16} EXPERT_j+\beta_{17} EXPERT_j*CODE+\beta_{18} AUDITOR_j \\ & +\beta_{19} AUDITOR_j*CODE+\beta_{20} Ln\_SALES_j+\beta_{21} SIZE_j+\beta_{22} LEVERAGE_j+\beta_{23} ISSUING_j \\ & +\beta_{24} ST\_PT_j+\varepsilon\end{aligned}$$

5. Empirical Results

5.1. Results of the Trend of Earnings Management – Univariate Tests

The results of the univariate tests are shown in Panel A and B of Table 2. In particular, Panel A reports the summary statistics when we use the absolute value of discretionary accruals (*ABS_DAs*) and when we split discretionary accruals into positive accruals (*Positive_DAs*) and negative discretionary accruals (*Negaitive_DAs)*. The summary statistics is categorised into pre- and post-Code periods (2000-2001 vs. 2002-2006). We further classify the post-Code period into three sub-periods (Post-Code period A, B, and C). The post-Code period A is used to facilitate the comparison of earnings management in the post-Code period with the pre-Code period, since both of them are based on a two-year basis. It also addresses the possible imbalance issue between the shorter pre-Code period and the longer post-Code periods. Based on the post-Code period A, the other sub-periods are created by adding one year up to 2005 (post-Code period B and C). It can reflect the possible effect of a specific year over the whole post-Code period. P-values for the differences of mean and median earnings management between the pre- and post-Code periods are also provided. Panel B presents the results when we use RPTs for earnings management.

[Insert Table 2 here]

Generally, our results show a statistically significant reduction in both the accrual-based and RPT-based earnings management over the post-Code period compared with those in the pre-Code period.

With regard to the accrual-based earnings management, while the magnitude of the *ABS_DAs* is reduced approximately by 9 per cent in the post-Code period compared

with that in the pre-Code period, the magnitude of *Positive_DAs* and *Negative_DAs* are reduced roughly by 4 per cent and per cent respectively in the post-Code period. The p-values of the above differences in earnings management metrics are statistically significant at either 5% or 10% level. By further dividing the post-Code period into sub-periods, similar results are reported. For *ABS_DAs*, in the post-Code period A and B, while the mean reduction reduces to 0.083 (8.3%) and 0.080 (8.0%) respectively, the median reduction falls to 0.065 (6.5%) and 0.062 (6.2%). All these reductions are statistically significant. In the post-Code period C, the mean of *ABS_DAs* decreases to 8.3 per cent at 10% significant (p-value=0.066) in the post-Code period. The mean reduction of the *Positive_DAs* is significant in either the post-Code (A) or (C), for the *Negative_DAs*, it is significant in either the post-Code (A) or (B). In addition, by further comparing *Negative_Das* with *Positive_DAs* over the study period, it shows that the mean and median *Negative_DAs* have larger magnitude than those of *Positive_DAs*. These results reveal that larger earnings decreasing DAs in Chinese listed companies are followed by smaller positive reversals. These results also hold when we further divide the whole post-Code period into sub-periods. The rational behind this may be that the rampant use of income-increasing DAs to meet target earnings may easily attract attention from the regulators or other exterior institutions which eventually lead to additional monitoring mechanisms being imposed on those firms. As stated by Peasnell (2000), it may be either infeasible or prohibitively costly to manage earnings upwards to meet target earnings. This suggests a preference of listed companies to adopt a 'big bath' strategy through income decreasing choices to store up positive earnings for future periods (Degeorge *et al.,* 1999; Healy, 1985) as these choices are relatively hidden from other stakeholders.

With regard to RPTs, the mean of *RPTs* is reported as -0.017 in the post-Code period compared with -0.026 in the pre-Code period at 5% significance level. In the three sub-post-Code periods, the mean *RPTs* is reduced to -0.021, -0.020, and -0.015 correspondingly, and all are significantly different from the mean in the pre-Code period at 10% significance level.

Overall, our findings demonstrate that the magnitude of both accrual-based earnings management and RPT-based earnings management decreases significantly across the study period, and such effects are more profound in the post-Code period. The results provide support for Hypothesis 1.

5.2. Results of Testing The Impact of the 2002 Code upon Earnings Management - Multivariate Tests

5.2.1. Descriptive Statistics

We now investigate the impact of the 2002 Code on constraining earnings management using multivariate regressions (testing H2-6). Table 3 and 4 present descriptive statistics for the independent and control variables including frequency, mean, median, 25th percentile, 75th percentile, and standard deviation.

[Insert Table 3 and 4 here]

As we can see from Panel A of Table 3, there is a significant reduction in the largest investor's shareholding over the post-Code period. (all at 1% significant level). By the end of 2006, the mean shareholding of the largest shareholder was reduced by 4.4 per cent (the median reduction was by 6.6 per cent) and reached 40.5 per cent (the median was 37.8 per cent) from the pre-Code period. In contrast to this decreasing trend, both the shares held in the hands of second to tenth largest shareholders and the

institutional ownership increased significantly over the post-Code period. In particular, the mean of *Top2_10* increased by approximately 0.5% and the median grew by 1% in the post-Code period. All these increases were statistically significant at 1% level. The mean of institutional shareholdings increased to 6 per cent (median to 4.6 per cent) by the end of 2006 compared with in the pre-Code period at 1% level. In Panel B of Table 3, we see a significant increase in the number of privately-owned listed firms over the study period. Compared with 54 (11.2 per cent) sample firms which were privately-owned in the pre-Code period, the number increased to 99 (22.1 per cent) in the post-Code period. We also find that the proportion of independent non-executives on either the board or the audit committee increased significantly over the post-Code period. While the mean of percentage of independent directors on the board reached to 33.7 per cent (median was 33.3 per cent) in the post-Code period, the mean of percentage of independent directors on the audit committee increased to 14.7 per cent (median was 11.4 per cent) by the end of 2006. Compared with the pre-Code period, these increases are statistically significant at 1% level. Nearly symmetric results are found when we break down the post-Code period into the three sub-periods.

Panel B of Table 3 also shows that the number of companies that established an audit committee increased significantly to 209 (46.8%) by the end of 2006 from24 (5.4%) in 2001. The number of financial/accounting experts on the audit committee increased to 68 in 2006 from 18 in 2002.Although we find an increasing trend in the number of firms whose financial reports are audited by one of the Big 4 auditors over the post-Code period, such result remains statistically insignificant.

5.2.2. Regression Results

Table 5 includes Pearson correlation coefficients and Variance Inflation Factors (VIF). As can be seen, all the VIFs are less than two suggesting the risk of bias due to strong correlations among covariates is minimal, thus giving little cause for concern about the problem of multicollinearity.

[Insert Table 5 here]

Table 6 reports the regression results of earnings management on corporate governance variables and control variables using discretionary accruals (Panel A) and RPTs (Panel B) respectively. All the models have F-values, arranging from 12.364 to 15.235, at 1% significance level. The adjusted R^2 are in the range of 10.6% and 17.4%.

[Insert Table 6 Here]

Consistent with the results from our univariate tests reported in Table 2, the dummy variable *CODE* is negative and significant for *ABS_DAs* and *Positive_DAs*, and positive and significant for negative discretionary accruals. Turing to the perspective of "tunnelling" through RPTs, the variable *CODE* has a significantly negative correlation with non-operating income over sales. The results show that the post-Code period is characterised by lower level of non-cash accruals at the operating level and fewer non-market-based asset transfer transactions at the non-operating level. Overall, the results provide further support for Hypothesis 1.

The impact of controlling shareholdings (*Top1*) on accrual-based earnings management is reported in the Panel A of Table 6. While the ownership concentration is positively related with *ABS_DAs* and *Positive_DAs*, it has a negative correlation with *Negative_DAs*. All these coefficients are significant at a 10% level cross the

whole study period. During the post-Code period (*Top1*CODE*), these correlations increased significantly. These results reflect the problem of ownership concentration in two-fold. Firstly, the more shares held by the controlling shareholders, the more likely that they will engage in DAs to dress up firms' performance towards the desired level. The use of income-increasing DAs may reflect that the controlling shareholders tend to maximise accounting earnings in order to boost firm's share price so that they could reap more benefits from other shareholders through inflated share price. While the use of income-decreasing DAs may indicate that the controlling shareholders store up positive earnings for firms' future growth – the 'big bath' strategy (Degeorge *et al.,* 1999; Healy, 1985). Secondly, since DAs increase significantly in the post-Code period, the 2002 Code is ineffective in mitigating the expropriation of controlling shareholders from minority shareholders through the means of earnings management. The results reflect that the Code has not improved the minority investors' protection in the Chinese stock markets in general. We replace DAs by RPTs to re-run the regression and obtain the similar results The coefficient of ownership in the hands of the second to the tenth largest investors (*Top2_10*) is positively related with the *ABS_DAs*, *Positive_DAs*, and negatively correlated with the *Negative_DAs* over the study period. However, none of the correlation is statistically significant. The results confirm that the effect of other large shareholders on constraining DA-based earnings management is insignificant. They may even tend to collude with the controlling shareholder to expropriate the benefits of other minority shareholders. When we replace DAS with RPTs, we find similar results. Overall, we do not find support for Hypothesis 2a.

Turning to the ownership type of controlling shareholders, the variable *PRIVATE* has a significantly negative correlation with both *ABS_DAs* and *Positive_DAs* and a

significantly positive correlation with the *Negative_DAs* across the whole study period. In the post-Code period, such effect increases significantly. Nearly symmetric results are documented, when we use RPTs as an alternative measure for earnings management. These results indicate that private ownership is more effective in constraining earnings management than the state ownership concentration, and the Code is effective in constraining earnings management in privately-owned listed firms. The results may imply that large shareholders in the private firms are inclined to act as if they were actual owners, which means their incentives to expropriate the minority shareholders may be comparatively low. The results may also imply that the privately-owned listed firms are under pressure to reassure the market of their compliance of the Code because they would like to send positive signals to the market about the quality of their financial performance in order to acquire funds. Therefore, our findings support Hypothesis 2b.

Regarding to the institutional shareholding (*INSTITUTE*), the coefficient is negatively and significantly related with the positive discretionary accruals, and, this effect has increased significantly in the post-Code period. This result indicates that institutional investors are more effective in reducing *positive_DAs*. However, we do not find any significant correlation on *ABS_DAs*, *Negative_DAs*, and *RPTs* either for the entire study period or the post-Code period. This might be due to the small shareholding by the institutional investors in Chinese listed companies. The institutional investors may find themselves in a disadvantageous position in the Chinese stock markets and concern about their welfare being expatriated by other controlling shareholders. Therefore, they tend to keep low shareholding and hold their shares for a short term which consequently constrain their motivation in monitoring. Moreover, detecting and effectively reducing the income-decreasing discretionary accruals and the related

party transactions, in which the controlling shareholder, such as the state, is normally involved, are much more difficult and require a large amount of resources (Carleton *et al.,* 1998; Chen *et al.,* 2007). The institutional investors who only hold a small fraction of shares in Chinese listed companies are not willingly to invest in such monitoring resources or challenge the dominating power of the controlling shareholder. Therefore, our findings partially support Hypothesis 3.

The proportion of independent non-executive directors on the board (*INDBOARD*) has an adverse relationship with both the accrual-based and related party transactions-based earnings management across the entire study period, and such effect has increased significantly in the post-Code period. The results show that independent non-executive directors effectively mitigate earnings management especially in the post-Code period. Accordingly, Hypothesis 4 is supported.

The establishment of audit committee on the board (*AUDCOM*) is negatively and significantly related with the positive discretionary accruals for the entire investigation period, and such effect increases significantly in the post-Code period. However, it is not significantly correlated with both *ABS_DAs* and *Negative_DAs* or *RPTs* over the study period. This might be that income-decreasing choices to store up positive earnings for future periods are relatively hidden comparing with aggressive income-increasing Das, and RPTs may normally involve the participation of the controlling shareholders which are difficult to detect. It requires high level of technical competence of audit committee members, and this is what has generally missed in Chinese listed companies (Ball *et al.,* 2000; Chen, 2005; Chen and Zhang, 2010a; Chen *et al.,* 2002; La Porta *et al.,* 2000b; Leuz *et al.,* 2003). With regard to the audit committee's independence and accounting expertise, the results show an

adversely correlation with both earnings management measurements overall, and such effect has increased significantly in the post-Code period. This suggests that the independent non-executives and accounting professionals on the audit committee are more effective in controlling earnings management and the Code has played a positive role in this aspect. Our results are consistent with the prior research (e.g., Carcello and Neal, 2000; DeFond *et al.,* 2005; Xie *et al.,* 2003) that audit committees that are composed of higher proportion of independent directors and have at least one member with accounting/finance background are discharging their financial reporting responsibility more effectively, and this is particularly true in the post-Code period. Overall, our findings support Hypotheses 5b and 5c and partially support Hypothesis 5a.

In contrast to the prior literature on supporting the notion that large audit firms have more resources, expertise and incentives to mitigate EM, our empirical results do not show any significance for this relationship for both the entire study period and the post-Code period. The results indicate that replacing a Chinese local CPA firm with an international reputable audit firm (Big 4) to audit financial statements does not contribute to the reduction in earnings management in the listed firms. It is argued that the quality of audit performed by the same auditor, even if the international reputable ones, such as the Big 4, may be different in China from it appears in a well-developed institutional system due the influence of institutional environment and cultural gap. Thus, the results do not support Hypothesis 6.

The results of our control variables are also interesting. Firms tend to manage their earnings through positive operating accruals for the rights issue, while firms in financial difficulty manage their earnings downward in order to take a 'big bath'.We

also find that poorly performed firms tend to have higher levels of earnings management over time through not only income-decreasing discretionary accruals but also related-party transactions. While the influence of firm's size on earnings management is minimal, debt financing significantly motivates the listed companies to manipulate reported earnings through all the means. The variable *LEVERAGE* has the positive and significant coefficients with *ABS_DAs*, *Positive_DAs*, and *RPTs*, and the negative and significant coefficients with *Negative_DAs*. In consistent with the literature, we provide evidence indicating that firms may manipulate reported earnings to avoid potential loss (such as a debt-covenant violation) from disclosing financial problem (e.g., DeFond and Jiambalvo, 1994; Richardson, 2000; Sweeny, 1994).

5.3. Robustness Tests

5.3.1. SUSPECT Firm Analysis

One concern in the above analysis is whether the proxies used are capturing earnings management activities of Chinese listed firms. To provide construct validity for the proxies, additional tests are provided using "suspect firms" (SUSPECT) that are likely to have managed earnings to meet other benchmarks instead of the regulatory requirement (Burgstahler and Dichev, 1997; Cohen *et al.,* 2008; Peasnell *et al.,* 2000; Roychowdhury, 2006). In the existing literature, Burgstahler and Dichev (1997), Peasnell *et al.,* (2000) examine two earnings targets: avoiding reporting losses and earnings declines and meeting analysts' earnings forecasts. Degeorge *et al.,* (1999) find that while companies appear to manipulate reported earnings upwards to meet analysts' forecasts, using earnings management to avoid losses and earnings declines proves predominant. Therefore, based on the analysis of Burgstahler and Dichev

(1997), we perform robustness tests by using avoidance of losses and earnings declines as the benchmarks to divide the sample firms. The main objective of using this sub-sampling method is to empirically examine whether the Code has impacted firms' earnings management strategy (i.e., the values of discretionary accruals, *DAs*, and related-party transactions, *RPTs*).

As Cohen *et al.,* (2008) and Roychowdhury (2006) described, we indentify firm-year observation with net income before extraordinary items scaled by total assets that lies in the interval [0, 0.005) (these are labeled as SUSPECT firm-years), since it is likely that these firms manage their earnings to report income marginally above zero during these years (Peasnell *et al.,* 2000). Panel A of Table 7 reports the earnings management before and after Code for the firms that "just" manage to avoid reporting a loss.

Further, a second measure of SUSPECT firm-years is calculated as the change in net income before extraordinary items from the previous year scaled by total assets lies in the interval [0, 0.005). This latter definition is consistent with the evidence provided by the prior research that firms are more likely to manage earnings in order to meet prior years' earnings numbers (e.g., Degeorge *et al.,* 1999; Graham *et al.,* 2005; Peasnell *et al.,* 2000). The results are reported in Panel B of Table 7.

[Insert Table 7 Here]

Overall, the findings of these robustness tests propose similar arguments as those obtained from the main regressions. Firstly, income-decreasing *DAs* and/or negative *RPTs* are used by both 'SUSPECT' sub-groups before and after the Code. This suggests a preference of Chinese listed companies to adopt a 'big bath' strategy through income decreasing choices to store up positive earnings for future periods

(Degeorge *et al.,* 1999; Healy, 1985) as it may be either infeasible or prohibitively costly to manage earnings upwards to meet target earnings (Peasnell, 2000). Secondly, all firms that just avoided a loss (Panel A), and that just managed to meat-or-beat last year's earnings (Panel B) engage significantly less income-decreasing earning management after the Code when compared to firms in the same bin-intervals before the Code. This result provides us with greater confidence of the earlier results and strengthens our arguments for both the accrual-based and related party transactions-based earnings management practices.

5.3.2. Privately-Owned Listed Firms

Our main regression results show that the privately-owned enterprises engage less in earnings management practices than the state-controlled firms across the study period and the Code enhances this trend significantly. It thus would be interesting to find whether the impact of the Code is more significant on the earnings management in privately-owned listed firms. Limiting the sample firms to privately-owned only reduces our sample to 528 observations. We re-run the regression tests on these reduced sample firms only. Table 8 reports the regression results. In general, the results are qualitatively similar to the main results as reported in Table 6 where the holdings of the controlling shareholders in the private-owned listed companies (*Top1*) are negatively significant over the study period as well as in the post-Code period. For the corporate governance mechanisms, *INSTITUTE*, *INDBOARD*, *INDAUDCOM*, and *EXPERT* remain to be adversely correlated with the two measurements of earnings management significantly. Overall, the results confirm that a higher proportion of shares held by institutional investors, a higher proportion of independent directors on both the board and a higher proportion of accounting/financial experts on the audit

committee can help constraining the earnings management in privately-owned listed companies.

5.3.3. The Effect of Share-Splitting Programme

We exclude 2005 and 2006 from the post-Code period to control for the possible effect of a program of converting non-tradable shares into A shares in China (know as the split share reform). The share-splitting programme was carried out by the State-owned Assets Supervision and Administration Commission at the beginning of 2005 (CSRC, 2005). Overall, the results remain largely unchanged.

6. Conclusion

The reforms of corporate governance in China took place at the beginning of the 2000s with the aim of enhancing minority shareholders' protection against the expropriation by controlling shareholders. Among those reforms, the most notable one was the implementation of the *Code of Corporate Governance for Listed Companies in China*. This study examines the impact of this important Code on restraining earnings management in Chinese listed firms. We make contribution to accounting and corporate governance literature in this area from the Chinese perspective because the incentives of earnings management and the ownership structure of Chinese listed firms are largely different from the Western economies where most published research have focused on.

We find the magnitudes of both discretionary accruals and related-party transactions in Chinese listed firms decrease significantly after the promulgation of the 2002 Code, and moreover, the Code is effective in constraining earnings management in the listed firms. However, with regard to the ownership concentration, we find that when a firm

has a controlling shareholder, especially the state, it utilises all possible means of earnings management to artificially dress-up the firm's apparent performance and the influence of the 2002 Code on reducing earnings management is minimal. However, we find that the privately-owned enterprises engage less in earnings management practices than the state-controlled firms do across the study period and the Code enhances this effect significantly. The impact of the Code on improving the institutional investors monitoring in mitigating earnings management is limited. However, the Code has a positive impact on curbing earnings management through the introduction of independent non-executive directors on the board and the audit committee and the accounting/financial experts sitting on the audit committee. In contrast to the existing literature on the Western markets, we find that international reputable audit firms (Big 4) does not contribute to the reduction in earnings management in Chinese listed firms.

Notes

[1] For convenience we use the term Big 4 auditor to identify the large international audit firm networks. Some of the studies we refer to were conducted before the mergers resulted into a reduction to four international audit networks.

[2] Following the financial scandals of Enron, WorldCom, Global Grossing, and so on, the US Congress issued the Sarbanes-Oxley Act in July 2002.

[3] The UK's Combined Code was originally issued in 1998 by drawing together the recommendations of the Cadbury (1992), Greenbury (1995), and Hampel (1998) reports together. The Combined Code (2003), published in July 2003, incorporated the substance of the Higgs (2003) and Smith (2003) reviews. And, after the publication of the revised Turnbull Guidance in 2005, the Combined Code was further revised and published in June 2006.

[4] Source: Chinese stock market database of Wind.net (www.wind.com.cn).

[5] Source: Chinese stock market database of Wind.net (www.wind.com.cn).

[6] CR4 ratio (CRN denotes top N firms concentration ratio) represents the percentage taken by the Big 4 auditors in terms of clients' total sales.

[7] We follow the China Securities Regulatory Commission's industry classification.

[8] We repeat all analyses by defining the Post-Code period as the years 2003 through 2006 and this did not materially alter any of our reported results. Our main conclusions remain unchanged.

[9] The Company Law of the People's Republic of China has been amended and adopted at the 18th session of the Standing Committee of the Tenth National People's Congress of the People's Republic of China on October 27, 2005. The amended Company Law of the People's Republic of China shall go into effect as of January 1, 2006.

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Table 1. Variable Measurements in Multivariate Tests

Independent Variables	Descriptions
CODE	=1 if the observation is from the post-Code period (2003-2006), and 0 if otherwise.
Top1	=TOPSHARE/TSHARE, where TOPSHARE is the total shares held by the largest shareholder of the firm and TSHARE is the total ordinary shares outstanding.
Top2_10	= $\sum_{n=2}^{10}\left(\frac{S_n}{S}\right)^2$ where S_n is the number of shares held by the *n*th largest stockholder, and *S* is the number of total outstanding shares.
PRIVATE	=1 if the firm is privately owned, and 0 if otherwise.
INSTITUTE	=ISSHARE/TSHARE, where ISHARE is the total shares held by the top 10 institutional investors of the firm and TSHARE is the total ordinary shares outstanding.
INDBOARD	=IND/TOTAL, where IND is the number of independent directors on the board and TOTAL is the total directors on the board (or the board size).
AUDCOM	=1 if the firm establishes an audit committee on the board, and 0 if otherwise.
INDAUDCOM	=IND_AUDCOM/TOTAL_AUDCOM, where IND_AUDCOM is the number of independent directors on the audit committee and TOTAL_AUDCOM is the total directors on the audit committee (or the audit committee size).
EXPERT	=1 if there is an accounting expert on the audit committee, and 0 if otherwise.
AUDITOR	=1 if the firm is audited by one of the international reputable audit firms (Big 4), and 0 if otherwise.
Control Variables	**Descriptions**
ISSUING	=1 if the firm issues additional shares to its existing investors in a given year, and 0 if otherwise.
ST_PT	=1 if the firm is labelled as either ST or PT in a given year, and 0 if otherwise.
Ln_SALES	It is the natural logarithm of the annual sales from main operations of the sample firms in a given year, or Ln(SALES).
SIZE	It is the natural logarithm of total assets of the sample firms in a given year, or Ln(Assest).
LEVERAGE	=(LTD+STD)/ASSETS, where LTD is the long-term debts and STD is the short-term debts, ASSETS is the total assets of the sample firms in a given year.

Table 2. Univariate Analysis for Hypothesis 1

Panel A: Discretionary Accruals (DAs) calculated from the Modified Jones Model

Variables	Statistics Summary	Pre-Code (2000-01)	Post-Code (2002-06)	p-value for Pre-Code and Post-Code difference	Post-Code (A) (2002-03)	p-value for Pre-Code and Post-Code (A) difference[a]	Post-Code (B) (2002-04)	p-value for Pre-Code and Post-Code (B) difference[a]	Post-Code (C) (2002-05)	p-value for Pre-Code and Post-Code (C) difference[a]
ABS_DAs	25th Percentile	0.046	0.047		0.043		0.040		0.044	
	Mean	0.091	0.082	0.021**	0.083	0.042**	0.080	0.033**	0.083	0.066*
	Median	0.072	0.071	0.336	0.065	0.081*	0.062	0.060*	0.071	0.327
	75th Percentile	0.110	0.101		0.107		0.101		0.105	
	S.D.	0.072	0.052		0.070		0.065		0.056	
Positive_DAs	25th Percentile	0.000	0.000		0.000		0.000		0.000	
	Mean	0.029	0.025	0.104*	0.023	0.064*	0.027	0.496	0.024	0.068*
	Median	0.018	0.016	0.721	0.017	0.151	0.019	0.710	0.019	0.212
	75th Percentile	0.038	0.034		0.033		0.037		0.033	
	S.D.	0.052	0.035		0.044		0.041		0.036	
Negative_DAs	25th Percentile	-0.089	-0.079		-0.079		-0.079		-0.081	
	Mean	-0.062	-0.050	0.040**	-0.053	0.054**	-0.052	0.044**	-0.055	0.151
	Median	-0.044	-0.041	0.753	-0.038	0.120	-0.038	0.119	-0.050	0.679
	75th Percentile	-0.012	-0.025		-0.017		-0.012		-0.019	
	S.D.	0.068	0.049		0.070		0.070		0.055	

Panel B: Related-Party Transactions calculated from non-operating income over sales

Variables	Statistics Summary	Pre-Code (2000-01)	Post-Code (2002-06)	p-value for Pre-Code and Post-Code difference	Post-Code (A) (2002-03)	p-value for Pre-Code and Post-Code (A) difference[a]	Post-Code (B) (2002-04)	p-value for Pre-Code and Post-Code (B) difference[a]	Post-Code (C) (2002-05)	p-value for Pre-Code and Post-Code (C) difference[a]
RPTs	25th Percentile	-0.003	-0.006		-0.003-		-0.004		-0.006	
	Mean	-0.026	-0.017	0.044**	-0.021	0.100*	-0.020	0.095*	-0.015	0.035*
	Median	-0.014	-0.011	0.420	-0.012	0.614	-0.011	0.551	-0.013	0.330
	75th Percentile	0.002	0.000		0.001		0.000		0.000	
	S.D.	0.218	0.106		0.113		0.096		0.089	

[a]: The *p*-value for the difference in mean (median) is for a t- (z-) test.

* ** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.

ABS_DAs=the absolute value of discretionary accruals calculated from the modified Jones model;

Positive_DAs=the positive value of discretionary accruals calculated from the modified Jones model;

Negative_DAs=the negative value of discretionary accruals calculated from the modified Jones model;

RPTs=Non-operating income over sales.

Table 3. Descriptive Statistics for Explanatory Variables

Panel A: Continuously Explanatory Variables

Variables	Statistics Summary	Pre-Code (2000-01)	Post-Code (2002-06)	p-value for Pre-Code and Post-Code difference	Post-Code (A) (2002-03)	p-value for Pre-Code and Post-Code (A) difference[a]	Post-Code (B) (2002-04)	p-value for Pre-Code and Post-Code (B) difference[a]	Post-Code (C) (2002-05)	p-value for Pre-Code and Post-Code (C) difference[a]
Top1	25th Percentile	0.300	0.276		0.290		0.286		0.284	
	Mean	0.449	0.405	0.000***	0.428	0.000***	0.424	0.000***	0.419	0.000***
	Median	0.444	0.378	0.000***	0.409	0.000***	0.402	0.000***	0.399	0.000***
	75th Percentile	0.596	0.534		0.585		0.574		0.556	
	S.D.	0.177	0.163		0.180		0.174		0.170	
Top2_10	25th Percentile	0.002	0.007		0.005		0.004		0.005	
	Mean	0.050	0.055	0.008***	0.056	0.001***	0.055	0.002***	0.056	0.001***
	Median	0.025	0.035	0.000***	0.034	0.034***	0.035	0.000***	0.035	0.000***
	75th Percentile	0.081	0.083		0.084		0.084		0.086	
	S.D.	0.061	0.060		0.64		0.063		0.062	
INSTITUTE	25th Percentile	0.0001	0.0008		0.0001		0.0000		0.0004	
	Mean	0.026	0.060	0.000***	0.044	0.000***	0.044	0.000***	0.051	0.000***
	Median	0.015	0.046	0.000***	0.037	0.020**	0.038	0.013**	0.039	0.000***
	75th Percentile	0.030	0.078		0.047		0.049		0.060	
	S.D.	0.046	0.095		0.077		0.079		0.089	
INDBOARD	25th Percentile	0.000	0.322		0.315		0.317		0.321	
	Mean	0.034	0.337	0.000***	0.326	0.000***	0.329	0.000***	0.333	0.000***
	Median	0.000	0.333	0.000***	0.333	0.000***	0.333	0.000***	0.333	0.000***
	75th Percentile	0.056	0.357		0.353		0.354		0.354	
	S.D.	0.061	0.049		0.055		0.058		0.052	
INDAUDCOM	25th Percentile	0.000	0.090		0.055		0.079		0.95	
	Mean	0.023	0.147	0.000***	0.091	0.015**	0.125	0.000***	0.150	0.000***
	Median	0.000	0.114	0.000***	0.088	0.000***	0.109	0.000***	0.138	0.000***
	75th Percentile	0.041	0.176		0.106		0.139		0.177	
	S.D.	0.077	0.105		0.089		0.101		0.099	

Table 3. Descriptive Statistics for Explanatory Variables (continued)

Panel B: Categorically Explanatory Variables

Variables		Pre-Code (2000-01)	Post-Code (2002-06)	p-value for Pre-Code and Post-Code difference	Post-Code (A) (2002-03)	p-value for Pre-Code and Post-Code (A) difference[a]	Post-Code (B) (2002-04)	p-value for Pre-Code and Post-Code (B) difference[a]	Post-Code (C) (2002-05)	p-value for Pre-Code and Post-Code (C) difference[a]
PRIVATE	YES	54 (11.2%)	99 (22.1%)	0.000***	74(16.6%)	0.101*	81 (18.1%)	0.012**	95 (21.3%)	0.000***
	NO	393 (87.9%)	348 (77.9%)		373 (83.4%)		366 (81.9%)		352 (78.7%)	
	TOTAL	447 (100%)	447 (100%)		447 (100%)		447 (100%)		447 (100%)	
AUDCOM	YES	24 (5.4%)	209 (46.8%)	0.000***	195 (43.6%)	0.000***	203 (45.4%)	0.000***	210 (47%)	0.000***
	NO	423 (94.6%)	238 (53.2%)		252 (56.4%)		244 (54.6%)		237 (53%)	
	TOTAL	447 (100%)	447 (100%)		447 (100%)		447 (100%)		447 (100%)	
EXPERT	YES	18 (4%)	68 (15.2%)	0.000***	46 (10.3%)	0.000***	67 (15.0%)	0.000***	70 (15.7%)	
	NO	429 (96%)	379 (84.8%)		401 (89.7%)		380 (85.0%)		377 (84.3%)	
	TOTAL	477(100%)	477(100%)		477(100%)		477(100%)		477(100%)	
AUDITOR	YES	28 (6.3%)	38 (8.5%)	0.201	31 (6.9%)	0.686	33 (7.4%)	0.400	35 (7.8%)	0.360
	NO	419 (93.7%)	409 (91.5%)		416 (93.1%)		414 (92.6%)		412 (92.2%)	
	TOTAL	447 (100%)	447 (100%)		447 (100%)		447 (100%)		447 (100%)	

[a]For the continuous variables, the *p*-value for the difference in mean (median) is for a t- (z-) test. For the indicator variables, the *p*-value is for a chi-square test.
* ** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.
Top1= shareholding percentage of the largest shareholder;
Top2_10= sum of squares of the percentage of shares held by the second to the tenth largest shareholders;
INSTITUTE= shareholding percentage of the top 10 institutional investors;
INDBOARD=the proportional of independent non-executive directors on the board;
INDAUDCOM=the proportional of independent non-executive directors on the audit committee;
PRIVATE=1 if the company is privately owned, and 0 if otherwise;
AUDCOM=1 if the firm establishes an audit committee on the board, and 0 if otherwise;
EXPERT=1 if there is an accounting expert on the audit committee, and 0 if otherwise;
AUDITOR=1 if the firm's financial statements are audited by one of the Big 4 auditor, and 0 if otherwise.

Table 4. Descriptive Statistics for Control Variables

Panel A: Continuously Control Variables

Variables	Statistics Summary	Pre-Code (2000-01)	Post-Code (2002-06)	p-value for Pre-Code and Post-Code difference	Post-Code (A) (2002-03)	p-value for Pre-Code and Post-Code (A) difference[a]	Post-Code (B) (2002-04)	p-value for Pre-Code and Post-Code (B) difference[a]	Post-Code (C) (2002-05)	p-value for Pre-Code and Post-Code (C) difference[a]
Ln_Size	25th Percentile	19.856	20.163		19.944		19.950		19.955	
	Mean	20.098	21.152	0.000***	20.719	0.000***	20.828	0.000***	20.939	0.000***
	Median	19.054	20.513	0.000***	20.177	0.000***	20.286	0.000***	20.443	0.000***
	75th Percentile	20.309	21.918		21.385		21.497		21.515	
	S.D.	0.371	0.440		0.424		0.422		0.431	
Ln_SALES	25th Percentile	18.395	18.577		18.530		18.537		18.539	
	Mean	18.698	18.952	0.000***	18.879	0.000***	18.898	0.000***	18.924	0.000***
	Median	18.676	18.943	0.000***	18.870	0.000***	18.891	0.000***	18.914	0.000***
	75th Percentile	19.001	19.326		19.240		19.253		19.291	
	S.D.	0.573	0.603		0.600		0.595		0.602	
LEVERAGE	25th Percentile	0.300	0.394		0.348		0.365		0.378	
	Mean	0.442	0.559	0.000***	0.533	0.000***	0.537	0.000***	0.550	0.000***
	Median	0.423	0.531	0.000***	0.500	0.000***	0.505	0.000***	0.518	0.000***
	75th Percentile	0.560	0.640		0.628		0.635		0.641	
	S.D.	0.205	0.513		0.540		0.543		0.627	

Panel B: Categorically Control Variables

Variables		Pre-Code (2000-01)	Post-Code (2002-06)	p-value for Pre-Code and Post-Code difference	Post-Code (A) (2002-03)	p-value for Pre-Code and Post-Code (A) difference[a]	Post-Code (B) (2002-04)	p-value for Pre-Code and Post-Code (B) difference[a]	Post-Code (C) (2002-05)	p-value for Pre-Code and Post-Code (C) difference[a]
ISSUING	YES	318 (71.1%)	130 (29.1%)	0.000***	77 (17.2%)	0.000***	53 (11.9%)	0.000***	61 (13.6%)	0.000***
	NO	129 (28.9%)	317 (70.9%)		370 (82.8%)		394 (88.1%)		386 (86.4%)	
	TOTAL	447 (100%)	447 (100%)		447 (100%)		447 (100%)		447 (100%)	
ST_PT	YES	19 (4.3%)	48 (10.7%)	0.000***	44 (9.8%)	0.001***	46 (10.3%)	0.001***	39 (8.7%)	0.007***
	NO	428 (95.7%)	399 (89.3%)		403 (90.2%)		401 (89.7%)		408 (91.3%)	
	TOTAL	447 (100%)	447 (100%)		447 (100%)		447 (100%)		447 (100%)	

[a]For the continuous variables, the *p*-value for the difference in mean (median) is for a t- (z-) test. For the indicator variables, the *p*-value is for a chi-square test.

* ** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.

Ln_SALES=the natural logarithm of the annual sales from main operations;

Ln_Size=the natural logarithm of total assets;

LEVERAGE=total debt over total assets;

AUDCOM=1 if the firm establishes an audit committee on the board, and 0 otherwise;

ISSUING=1 if the firm issues additional shares, and 0 otherwise;

ST_PT=1 if the firm is labelled as either ST or PT, and 0 otherwise.

Table 5. Pearson Correlation Matrix and Variation Inflation Factors

Variables	*RPTs*	*DAs*	*Top1*	*Top2_10*	*PRIVATE*	*INSTITUTE*	*INDBOARD*	*AUDCOM*	*INDAUDCOM*	*EXPERT*	*AUDITOR*	*Ln_SALES*	*SIZE*	*LEVERAGE*	*ISSUING*	*ST_PT*	*VIF*
RPTs	1																1.55
DAs	0.240**	1															1.69
Top1	0.029*	0.004	1														1.08
Top2_10	-0.025	-0.003	-0.558**	1													1.50
PRIVATE	-0.056**	-0.010	-0.301**	-0.188**	1												1.14
INSTITUTE	-0.012	-0.059**	0.121**	-0.011	-0.078**	1											1.15
INDBOARD	-0.003	-0.015	-0.128**	0.039*	0.117**	0.137**	1										1.34
AUDCOM	0.004	0.008	-0.030	0.061**	0.036	0.103**	0.389**	1									1.19
INDAUDCOM	-0.066**	-0.041*	-0.023	0.020	0.033	0.077**	0.230**	0.331**	1								1.24
EXPERT	-0.040*	-0.021	-0.043*	0.011	0.044**	0.070**	0.039*	0.404**	0.226**	1							1.20
AUDITOR	0.004	0.003	0.024	0.084**	0.014	0.027	0.044*	0.033	0.001	0.010	1						1.14
Ln_SALES	0.243**	0.246**	0.129**	-0.059**	-0.081**	0.118**	0.048*	0.013	0.106**	0.041*	0.046*	1					1.15
SIZE	0.090**	0.043*	0.234**	-0.180**	-0.168**	0.263**	0.180**	0.116**	0.110**	0.004	0.242**	0.170**	1				1.32
LEVERAGE	-0.203**	-0.139**	-0.135**	0.052**	0.148**	-0.046*	0.092**	0.038*	-0.006	0.011	-0.042	-0.205**	-0.112*	1			1.13
ISSUING	0.019	0.104**	-0.065**	-0.046*	0.017	0.194**	-0.090**	-0.013	0.015	0.043*	0.001	0.129**	0.158**	-0.075**	1		1.13
ST_PT	-0.118**	-0.126**	-0.136**	0.074**	0.127**	-0.114**	-0.114**	-0.018	-0.133**	-0.026	-0.033	-0.151**	-0.297**	0.302**	-0.151**	1	1.25

*,** Significantly different from zero at the α=0.05 and 0.01 level, respectively (two-tailed).

Notes: *RPTs* is non-operating income over sales. *DAs* is discretionary accruals calculated using the modified Jones model.*Top1* is the shareholding percentage of the largest shareholder. *Top2_10* is the sum of squares of the percentage of shares held by the second to the tenth largest shareholders. *STATE* is a dummy variable, equal to 1 if the company is ultimately state-owned and 0 otherwise. *INSTITUTE* is the shareholder percentage of the top 10 institutional investors. *INDBOARD* is the number of independent non-executives over the total directors on the board. *AUDCOM* is a dummy variable, equal to 1 if the company establishes an audit committee on its board. *INDAUDCOM* is the number of independent non-executives over the total directors on the audit committee; *EXPERT* is a dummy variable takes the value of 1 if there is accounting expert on the audit committee, and 0 otherwise; *AUDITOR* is a dummy variable takes the value of 1 if the company's financial reports are audited by one of the Big 4 auditor, and 0 otherwise. *Ln_SALES* is the natural logarithm of the annual sales from main operations. *SIZE* is the natural logarithm of total assets. *LEVERAGE* is total debt over total assets. *ISSUING* is a dummy variable, takes the value of 1 if the company issues additional shares and 0 otherwise. *ST_PT* is a dummy variable, equal to 1 if the company is labelled as either ST or PT and 0 otherwise.

Table 6. Multivariate Regression Analysis
Panel A.: Discretionary Accruals and Corporate Governance Mechanisms

Earnings_managemet$_{ModifiedJonesModel}$=β_0+β_1CODE+β_2Top1+β_3Top1*CODE+β_4Top2_10+β_5Top2_10*CODE +β_6PRIVATE+β_7PRIVATE*CODE+β_8INSTITUTE+β_9INSTITUTE*CODE+β_{10}INDBOARD+β_{11}INDBOARD*CODE +β_{12}AUDCOM+β_{13}AUDCOM*CODE+ β_{14}INDAUDCOM+ β_{15}INDAUDCOM*CODE+ β_{16}EXPERT +β_{17}EXPERT*CODE+ β_{18}AUDITOR+ β_{19}AUDITOR*CODE+ β_{20}Ln_SALES+β_{21}SIZE+β_{22}LEVERAGE+β_{23}ISSUING +β_{24}ST_PT+ε

Variables (Expected Signs)		ABS_DAs		Positive_DAs		Negative_DAs	
		Coefficient (*t*-stat)		Coefficient (*t*-stat)		Coefficient (*t*-stat)	
CODE	**(-)**	-0.275***	-2.666	-0.548***	-2.962	0.226***	2.758
Top1	**(?)**	0.174*	1.750	0.109*	1.665	-0.147*	-1.939
Top1*CODE	**(-)**	0.197***	2.927	0.172***	3.177	-0.193**	-2.113
Top2_10	**(?)**	0.037	0.908	0.019	0.256	-0.051	-1.025
Top2_10*CODE	**(?)**	0.055	1.210	0.118	1.460	-0.016	-0.293
PRIVATE	**(-)**	-0.155*	-1.659	-0.122*	1.705	0.128*	1.738
PRIVATE*CODE	**(-)**	-0.170*	-1.771	-0.133**	1.956	0.131**	1.892
***INSTITUTE*(-)**	**(-)**	0.047	0.795	-0.281***	-2.511	0.041	0.601
INSTITUTE*CODE	**(-)**	-0.050	-0.829	-0.308***	-2.685	0.048	0.679
INDBOARD	**(-)**	-0.099	-1.450	-0.127*	-1.766	0.065	0.853
INDBOARD*CODE	**(-)**	-0.173**	-1.922	-0.160**	-1.995	0.177*	1.649
AUDCOM	**(-)**	-0.056	-0.730	-0.106*	-1.751	0.047	0.511
AUDCOM*CODE	**(-)**	-0.069	-0.889	-0.134**	-1.936	0.054	0.572
INDAUDCOM	**(-)**	-0.088*	-1.699	-0.080*	-1.770	0.050	1.554
INDAUDCOM*CODE	**(-)**	-0.100**	-1.932	-0.095**	-2.010	0.113**	2.025
EXPERT	**(-)**	-0.045	-0.957	-0.110*	-1.806	0.060	0.661
EXPERT*CODE	**(-)**	-0.098*	-1.755	-0.121**	-1.973	0.107*	1.808
AUDITOR	**(-)**	0.046	(0.484)	0.078	(0.499)	-0.032	(-0.876)
AUDITOR*CODE	**(-)**	-0.076	(-0.943)	-0.084	(-0.191)	0.057	(0.392)
Ln_SALES	**(?)**	-0.178***	-9.139	-0.028	-0.858	0.200***	8.198
SIZE	**(?)**	0.004	0.171	0.010	0.257	0.004	0.139
LEVERAGE	**(?)**	0.132***	6.609	0.085***	2.404	-0.140***	-5.732
ISSUING	**(+)**	0.028	1.427	0.072**	2.099	-0.006	-0.229
ST_PT	**(+)**	0.088***	4.220	-0.004	-0.098	-0.127***	-4.991
Intercept		0.121***	2.954	0.081	1.152	-0.128***	-2.537
R^2		0.291		0.208		0.340	
Adjusted R^2		0.129		0.106		0.174	
F-value (Pr>F)		13.647 (<0.0001)		12.400 (<0.0001)		12.364 (<0.0001)	

** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.

Table 6. Multivariate Regression Analysis (Continued)
Panel B.: Related-Party Transactions and Corporate Governance Mechanisms

$\textbf{Earnings_managemet}_{RPTs}=\beta_0+\beta_1$CODE$+\beta_2$Top1$+\beta_3$Top1*CODE$+\beta_4$Top2_10 $+\beta_5$Top2_10*CODE$+\beta_6$PRIVATE$+\beta_7$PRIVATE*CODE$+\beta_8$INSTITUTE$+\beta_9$INSTITUTE*CODE $+\beta_{10}$INDBOARD$+\beta_{11}$INDBOARD*CODE$+\beta_{12}$AUDCOM$+\beta_{13}$AUDCOM*CODE $+\beta_{14}$INDAUDCOM$+\beta_{15}$INDAUDCOM*CODE$+\beta_{16}$EXPERT$+\beta_{17}$EXPERT*CODE$+\beta_{18}$AUDITOR $+\beta_{19}$AUDITOR*CODE$+\beta_{20}$Ln_SALES$+\beta_{21}$SIZE$+\beta_{22}$LEVERAGE$+\beta_{23}$ISSUING$+\beta_{24}$ST_PT$+\varepsilon$			
Variables (Expected Sign)		**RPTs**	
		Coefficient (*t*-stat)	
CODE	**(-)**	-0.277***	-2.706
Top1	**(?)**	0.107*	1.892
Top1*CODE	**(-)**	0.132**	1.973
Top2_10	**(?)**	0.020	0.483
Top2_10*CODE	**(?)**	0.009	0.191
PRIVATE	**(-)**	-0.127*	-1.691
PRIVATE*CODE	**(-)**	-0.132*	-1.839
***INSTITUTE*(-)**	**(-)**	-0.016	-0.264
INSTITUTE*CODE	**(-)**	-0.013	-0.744
INDBOARD	**(-)**	-0.052	-0.580
INDBOARD*CODE	**(-)**	-0.128**	-2.016
AUDCOM	**(-)**	-0.083	-1.089
AUDCOM*CODE	**(-)**	-0.089	-1.322
INDAUDCOM	**(-)**	-0.088*	-1.707
INDAUDCOM*CODE	**(-)**	-0.106**	-1.992
EXPERT	**(-)**	-0.086*	-1.779
EXPERT*CODE	**(-)**	-0.120**	-2.019
AUDITOR	**(-)**	-0.077	-1.114
AUDITOR*CODE	**(-)**	-0.088	-1.214
Ln_SALES	**(?)**	-0.207***	-10.674
SIZE	**(?)**	0.019	1.515
LEVERAGE	**(?)**	0.155***	7.810
ISSUING	**(+)**	-0.016	-0.812
ST_PT	**(+)**	-0.029	-1.408
Intercept		-0.372***	-3.166
R^2		0.306	
***Adjusted* R^2**		0.154	
F-value (Pr>F)		15.235 (<0.0001)	

** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.

Table 7. Earnings Management Activities of SUSPECT Firms in the Pre- and Post-Code periods
Panel A:

Mean Comparison of Accrual-Based Earnings Management Firms that "Just" Avoid Reporting Losses									
EM Metrics	**Pre-Code (2000-01) (1)**	**Post-Code (2002-06) (2)**	**Difference (1-2)**	**Post-Code(A) (2002-03) (3)**	**Difference (1-3)**	**Post-Code (B) (2002-04) (4)**	**Difference (1-4)**	**Post-Code (C) (2002-05) (5)**	**Difference (1-5)**
$DAs_{Modified\ Jones\ Model}$	-0.034	-0.016	-0.018**	-0.017	-0.017**	-0.014	-0.020**	-0.019	-0.015*
DAs_{RPTs}	-0.036	-0.021	-0.015*	-0.022	-0.014	-0.015	-0.020*	-0.022	-0.014

Panel B:

Mean Comparison of Accrual-Based Earnings Management Firms that Manage to Meet or Beat Last Year's Net Income									
EM Metrics	**Pre-Code (2000-01) (1)**	**Post-Code (2002-06) (2)**	**Difference (1-2)**	**Post-Code (A) (2002-03) (3)**	**Difference (1-3)**	**Post-Code (B) (2002-04) (4)**	**Difference (1-4)**	**Post-Code (C) (2002-05) (5)**	**Difference (1-5)**
$DAs_{Modified\ Jones\ Model}$	-0.030	-0.013	-0.017**	-0.018	-0.013*	-0.015	0.015*	-0.020	-0.010
DAs_{RPTs}	-0.033	-0.012	-0.021**	-0.020	-0.013	-0.021	-0.012	-0.014	-0.019*

** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.
Panel A: Firm-years "Just" avoiding reporting a loss are defined as firm-year observations where net income before extraordinary items scaled by total assets lies in the interval (0, 0.005] ;
Panel B: Firm-years that "Meet-or-Beat" last year's net income are defined as firm-year observations where the change in net income before extraordinary items scaled by total assets lies in the interval (0, 0.005] ;
$DAs_{Modified\ Jones\ Model}$ = discretionary accruals computed using the modified Jones model;
RPTs= non-operating income over sales.

Table 8. Multivariate Regression Analysis for Privately-Owned Listed Firms
Panel A.: Discretionary Accruals and Corporate Governance Mechanisms

Earnings_managemet$_{ModifiedJonesModel}$=β_0+β_1CODE+β_2Top1+β_3Top1*CODE+β_4Top2_10+β_5Top2_10*CODE +β_6INSTITUTE+β_7INSTITUTE*CODE+β_8INDBOARD+β_9INDBOARD*CODE+β_{10}AUDCOM+β_{11}AUDCOM*CODE + β_{12}INDAUDCOM+ β_{13}INDAUDCOM*CODE+ β_{14}EXPERT+β_{15}EXPERT*CODE+ β_{16}AUDITOR +β_{17}AUDITOR*CODE+ β_{18}Ln_SALES+β_{19}SIZE+β_{20}LEVERAGE+β_{21}ISSUING+β_{22}ST_PT+ε

Variables (Expected Signs)		ABS_DAs		Positive_DAs		Negative_DAs	
		Coefficient (*t*-stat)		Coefficient (*t*-stat)		Coefficient (*t*-stat)	
CODE	**(-)**	-0.365***	-3.106	-0.626***	-3.702	0.326***	2.775
Top1	**(-)**	-0.114*	1.697	-0.121*	1.775	0.107*	-1.830
Top1*CODE	**(-)**	-0.157**	1.926	-0.141**	1.871	0.133**	-2.113
Top2_10	**(?)**	0.017	0.308	0.086	0.056	-0.081	-0.025
Top2_10*CODE	**(?)**	0.015	1.010	0.077	0.160	-0.076	-0.193
***INSTITUTE*(-)**	**(-)**	0.107	1.195	-0.311***	-2.436	0.097	1.101
INSTITUTE*CODE	**(-)**	-0.150	-1.320	-0.347***	-2.619	0.110	1.079
INDBOARD	**(-)**	-0.100	-1.440	-0.115*	-1.781	0.090	1.053
INDBOARD*CODE	**(-)**	-0.189**	-2.011	-0.170**	-2.215	0.169*	1.787
AUDCOM	**(-)**	-0.070	-0.887	-0.119*	-1.755	0.055	0.660
AUDCOM*CODE	**(-)**	-0.069	-1.009	-0.176**	-2.007	0.066	0.507
INDAUDCOM	**(-)**	-0.088*	-1.701	-0.091*	-1.774	0.056	1.404
INDAUDCOM*CODE	**(-)**	-0.112**	-1.977	-0.120**	-2.211	0.124**	1.997
EXPERT	**(-)**	-0.066	-1.057	-0.097*	-1.736	0.047	0.785
EXPERT*CODE	**(-)**	-0.109*	-1.839	-0.129**	-2.007	0.098*	1.799
AUDITOR	**(-)**	-0.036	-0.384	0.066	0.499	0.042	0.859
AUDITOR*CODE	**(-)**	-0.096	-1.033	-0.079	-0.391	0.050	1.022
Ln_SALES	**(?)**	-0.208***	-10.137	-0.128*	-1.850	0.200***	9.117
SIZE	**(?)**	0.010	0.171	0.025	0.366	0.004	0.354
LEVERAGE	**(?)**	0.097***	6.677	0.085***	2.547	-0.109***	-4.557
ISSUING	**(+)**	0.061	1.499	0.080**	2.117	-0.009	-0.276
ST_PT	**(+)**	0.077***	4.214	-0.004	-0.110	-0.101***	-5.017
Intercept		0.133***	3.547	0.097**	1.899	-0.147***	-2.907
R^2		0.221		0.187		0.230	
Adjusted R^2		0.097		0.088		0.106	
F-value (Pr>F)		12.774 (<0.0001)		11.897 (<0.0001)		12.711 (<0.0001)	

** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively.

Table 8. Multivariate Regression Analysis for Privately-Owned Listed Firms (Continued)
Panel B.: Related-Party Transactions and Corporate Governance Mechanisms

Earnings_managemet$_{RPTs}$=β_0+β_1CODE+β_2Top1+β_3Top1*CODE+β_4Top2_10 +β_5Top2_10*CODE+β_6INSTITUTE+β_7INSTITUTE*CODE+β_8INDBOARD+β_9INDBOARD*CODE +β_{10}AUDCOM+β_{11}AUDCOM*CODE+β_{12}INDAUDCOM+β_{13}INDAUDCOM*CODE + β_{14}EXPERT+β_{15}EXPERT*CODE+ β_{16}AUDITOR+ β_{17}AUDITOR*CODE+β_{18}Ln_SALES+β_{19}SIZE +β_{20}LEVERAGE+β_{21}ISSUING+β_{22}ST_PT+ε

Variables (Expected Sign)		RPTs	
		Coefficient (*t*-stat)	
CODE	**(-)**	-0.331***	-2.850
Top1	**(-)**	-0.098**	1.992
Top1*CODE	**(-)**	-0.152***	2.473
Top2_10	**(?)**	0.010	0.379
Top2_10*CODE	**(?)**	0.009	0.431
***INSTITUTE*(-)**	**(-)**	-0.044	-0.914
INSTITUTE*CODE	**(-)**	-0.050	-1.582
INDBOARD	**(-)**	-0.061	-1.466
INDBOARD*CODE	**(-)**	-0.135**	-2.117
AUDCOM	**(-)**	-0.066	-0.089
AUDCOM*CODE	**(-)**	-0.087	-1.452
INDAUDCOM	**(-)**	-0.100*	-1.719
INDAUDCOM*CODE	**(-)**	-0.107**	-2.342
EXPERT	**(-)**	-0.080*	-1.769
EXPERT*CODE	**(-)**	-0.110**	-1.977
AUDITOR	**(-)**	-0.040	-0.799
AUDITOR*CODE	**(-)**	-0.050	-1.014
Ln_SALES	**(?)**	-0.207***	-9.774
SIZE	**(?)**	0.011	0.799
LEVERAGE	**(?)**	0.107***	6.810
ISSUING	**(+)**	-0.015	-0.767
ST_PT	**(+)**	-0.014	-0.808
Intercept		-0.365***	-2.166
R^2		0.201	
Adjusted R^2		0.089	
F-value (Pr>F)		12.761 (<0.0001)	

** *** Denote significance (2-tailed) at 0.100, 0.050 and 0.010 level, respectively