Ownership Structure, Corporate Governance and Income Smoothing in China

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Ownership Structure, Corporate Governance and Income Smoothing – Evidence from China

Abstract

This study aims to examine empirically whether ownership structure and corporate governance mechanisms affect income-smoothing behavior in China. The sample comprises 1353 companies listed in the Shanghai Stock Exchange and the Shenzhen Stock Market during the period 1999 to 2006. By comparing the variability of income to the variability of sales, an income smoother can be identified if the income stream is less variable. Our empirical results show that the proportion of Chinese firms practicing income-smoothing is greater than those of Singaporean, Japanese and U.S. firms. Income smoothing in China is more severe when the state is the controlling shareholder of the listed firm. Firms with more independent directors are more likely to engage in income smoothing. This article presents the current development of China's corporate governance system and indicates that agency conflicts between controlling shareholders and minor investors account for a significant portion of earnings management in China.

Keywords: Corporate Governance, Income Smoothing, Earnings Management, China

1. INTRODUCTION

Since initiating the reforms and open policy in the late 1970s, China has achieved tremendous success by maintaining GDP growth rates of about 9.7 percent per annum from 1978 to 2006 (World Bank, 2007). In 2007, with a total GDP of US$ 3.38 trillion, China has surpassed Germany to become the world's third-largest economy, after the United States and Japan (Cha, 2009). Furthermore, measured on a purchasing power parity (PPP) basis, China in 2007 stood as the second-largest economy in the world after the US in terms of international dollars [1] (World Bank, 2008). These developments attract increased attention from international investors to China's equities to utilize the world's largest labor pool, as well as to penetrate the biggest and fastest growing market in the developing world. If the economy of China can manage to stay out of trouble, high growth rates will be generated for the short-to-medium term. However, disputes have been raised about whether China's economy, especially in the stock market, is overheating and developing a bubble like Japan in the 1980s. According to the 2006 ISS Global Institutional Investor Survey on the region's top investors, the development of China's capital market will trail its economic growth until there is a radical improvement in *corporate governance* (Tucker, 2006). A report issued by the US investment bank Goldman Sachs in 2007 also stated, "China now and Japan then share a few macro similarities, but a more open economy and markets, stricter forex controls and better developed *corporate governance* could prevent China from repeating Japan's boom-bust experience." [2]

While the Chinese government has made efforts to improve the corporate governance framework, it still lags behind that of the developed economies. For example, observable changes in financial disclosures and transparency are still not evident in China (CFA Institute, 2007), and there have been numerous scandals concerning manipulation of financial statements (Yu *et al*., 2006). Although earnings management by managers is considered an

universal phenomenon, the incentive and the ways to play the game in China can be different from those documented in other countries. Rules that are taken for granted in the Western business world may not apply in China. For example, Western business culture emphasizes profit maximization, shareholder protection, and transparency, Chinese business culture focuses on "guanxi", harmony, and seniority. In addition, the Chinese culture typically has a tolerance for information asymmetry between the firm's insiders and external investors (Pukthuanthong and Walker, 2007). Income smoothing is an active manipulation of earnings toward a predetermined target, which is one form of earnings management. This paper aims to investigate in the context of the Chinese transitional economy on whether corporate governance mechanisms play a different role in preventing income-smoothing earnings management.

Most of the related research carried out in China have so far focused on just one particular mechanism of corporate governance. For example, Lai and Tam (2007) only examined the effect of independent directors, Ding *et al*. (2007) mainly studied the impact of private vs. state ownership. Besides, most literature uses the conventional "discretionary accruals" technique to measure overall earnings management in China (e.g. Liu and Lu, 2007, and Ding *et al*., 2007). This paper differs from prior works in the following two ways. First, it is a comprehensive study that investigates not only ownership structure but also the other aspects of China's corporate governance system. Second, the coefficient of variation method is employed to identify the income smoother, which is a direct measure to capture the effect of artificial income smoothing.

There are five more sections following this introduction. The institutional background is briefly discussed in Section 2. Section 3 reviews the literature to develop research hypotheses. Section 4 describes the methodology and the sample. Subsequently, Section 5 presents the empirical results. Concluding remarks are provided in the last section.

2. CORPORATE GOVERNANCE IN CHINA

Jensen and Meckling (1976) argued that agency problems occur when corporate executives (the agents) pursue individual goals that are not in alignment with shareholders' (the principals') interests. Corporate governance is the set of mechanisms that induce the self-interested managers to make decisions that maximize the value of the company to its shareholders. Corporate governance mechanisms can be broadly characterized as being either internal or external to the firm. The internal mechanisms of primary interest are the board of directors, executive compensation, as well as managerial ownership. The external mechanisms include the threat of takeover, competition of products, institutional ownership, and the legal system.

Since China joined the WTO in 2001, significant steps have been taken to improve China's corporate governance framework, particularly through the amendments to the company and securities laws. Improvements have also been made to the position of minority shareholders, which have been given the rights to convene, make motions and preside over shareholders' meetings, as well as to bring derivative suits against directors and senior management of the company. Significant progress has been made in particular to improve governance structure in both the banking and equity markets. For example, foreign banks are now allowed to invest in Chinese banks and to bring with them their corporate governance concepts. Efforts have been made to decrease financial risk in China's banking system by reducing the large number of non-performing loans held by local banks. The People's Republic of China (PRC) government also introduced a state-share reform program in 2005, making it mandatory for non-tradable shares in state-owned enterprises (SOEs) to be converted into tradable shares [3].

Despite the positive improvements China has made to its corporate governance system in recent years, there is still a lot of work to do in order to raise the standards to an international level. Some of the remaining issues are discussed below.

2.1. Dominance of government ownership

The major characteristic of China's corporate governance structure is its highly concentrated equity structure. Most of the listed firms in China are transformed from SOEs and the state still holds a majority of the shares. In 2001, shareholding held by the state was estimated at 60% (CFA Institute, 2007). This resulted in the problem where central and local governments continue to impose their influence on listed companies' operation and management. Appointments to managerial positions in SOEs are mostly politically determined by the PRC government or even the Chinese Communist Party (Gao, 2007). Thus, top management of Chinese listed firms almost always align with the state (the controlling shareholder), to the detriment of minority shareholders.

2.2. Board governance structure

On the surface, the board governance structure for companies in China is designed similarly to the two-tier structure in Germany, in which a management board is responsible for running the company but is supervised by a supervisory board. In the PRC, the board of directors is the main decision-making authority in a company, with the supervisory board designated with legal powers to overturn decisions made by the board of directors. The Chinese Securities Regulation Commission (CSRC) also began requiring a third of the board of directors to be independent directors starting from 2003. However, in practice, both the supervisory board and the independent directors are appointed by the government and thus,

symbolic (Gao, 2007); any attempt to strengthen their roles is likely to create further ambiguity within the Chinese board structure.

2.3. Financial transparency

Financial disclosure in the PRC remains weak compared to many advanced jurisdictions. This results in a hampering of the growth of efficient equity markets. A common complaint among investors in China is that financial information on company performance is either unavailable or, if provided, lacks reliability. Xu (2007) reported that during the 2002-2006 period the CRSC has reprimanded more than 10% (186 out of 1421) listed companies for violating provisions relating to financial reporting. The PRC government is beginning to tackle this problem by establishing more transparent disclosure rules and adopting international financial reporting standards since 2007.

2.4. Slow-growing capital markets

In contrast to the US capital market, which is largely stock-market centered, the Chinese capital market is basically bank-centered (Pukthuanthong and Walker, 2007). Chinese firms rely on the banking system as the main source of external financing. However, with significant volumes of policy lending in the state-owned banks, the debt market can not be considered efficient. Equity market development in China started as a by-product of the SOE reform in the 1980s, mainly to support corporatization of SOEs [4]. The market for corporate control was virtually non-existent in China (McGunagle, 2007). The lack of both hostile takeover and proxy contests facilitates management entrenchment. International institutional investors, the important component of effective corporate governance, still have a negligible presence in China, though this is beginning to change. China opened its securities market to

Qualified Foreign Institutional Investor (QFII) in 2002 on a trial basis, and gradually raised the investment quota of QFII in 2005 and again in 2007.

Many Chinese companies have great ambitions to become multinational corporations. For example, Lenovo, which has taken over IBM's personal computer business is a classic show case. However, the poor corporate governance structure of PRC companies is halting the progress of their internationalization, especially during the bidding process of merger and acquisition deals. It is therefore rewarding for Chinese companies to improve their corporate governance systems. Thus, the PRC government should encourage companies to take an active role in implementing internationally-accepted governance standards in order to facilitate the transition to the next phase of development in the international arena. If China is to improve the healthy growth of the local equity markets, the government should take extra measures to educate both the public and company executives on the importance of corporate governance.

3. THEORETICAL BACKGROUND AND HYPOTHESES

The research question of this study is to examine whether the specific type of corporate governance mechanism has an impact on income-smoothing behavior in China. Since China's corporate reforms are aimed at emulating global business practices, both international literature and China's institutional background are considered in formulating the hypotheses.

3.1. Income smoothing

Schipper (1989) defined earnings management as purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain. Healy and Wahlen

(1999, P. 368) also provided a good definition of earnings management by stating:

"*Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers*."

The literature review identified three basic incentives for managing earnings: (1) capital market expectation and stock price; (2) accounting based contracts; (3) anti-monopoly and other government regulations. Income smoothing is one form of earnings management. When income is deliberately and artificially smoothed, inadequate or misleading earnings disclosure may result. Consequently, investors may not get sufficiently accurate information about earnings to evaluate the returns and risks of their portfolios. Ronen and Sadan (1981) also suggest that earnings smoothing was consistent with management's desire to maximize its compensation. In China, listed firms have strong incentives to smooth earnings for the purpose of meeting regulatory thresholds of initial public offering (Aharony *et al*., 2000), rights issue (Chen and Yuan, 2004; Yu *et al*., 2006), or avoiding being delisted (Liu and Lu, 2007).

Ronen and Sadan (1981) argued that income smoothing can be accomplished in three ways. First, management can plan the occurrence of certain events over which it has discretion (e.g. research and development) or time the recognition of such events. Second, management can allocate certain revenues and expenses over different accounting periods. For example, management can choose either the straight-line or the accelerated method of depreciation. Third, management may have the discretion to classify certain income items into different categories (e.g. between ordinary items and extraordinary items). Through a questionnaire survey, Noronha *et al*. (2008) identified the most frequently used Chinese techniques to manage earnings as: related party transaction, postponing or advancing the time

of recognizing operating revenue, and adjusting accounts receivable or bad debt allowance.

3.2. Hypothesis development

In this section, we identify a set of corporate governance factors to explain income smoothing behavior in firms. The other variables (ST/PT firm, right issue, leverage and firm size) are included as control variables in Section 4.

3.2.1. Ownership structure and income smoothing

Discussions in prior literature suggest that managers of firms with widely dispersed stock ownership are in a better position to adopt discretionary accounting practices that serve their interests (Schiff, 1966). In order to verify this contention, we include a measure of ownership concentration – Herfindahl index of top five shareholders (HF5) and predict that the probability of a firm being an income smoother decreases with the concentration of stock ownership.

As managerial ownership increases there is a concurrent increase in the alignment of manager and shareholder interests (Jensen and Meckling, 1976). We define INSOWN as the proportion of stock ownership held by insiders (officers and directors) and expect a negative relationship between insider ownership and income smoothing.

The specific type of controlling shareholder may have an impact on financial reporting although the direction of influence is unclear. Economists generally view government ownership as being detrimental to corporate performance. For example, Shleifer and Vishny (1998) showed that private ownership is preferable to state ownership because the government has a “grabbing hand” that extorts firms for the benefit of politicians and bureaucrats at the expense of corporate wealth. However, Ding *et al*. (2007) found that

privately-owned firms in China tend to report a better-than-real financial performance through discretionary accruals and non-operating income. We define STATE as a dichotomous variable that takes the value of 1 when the controlling shareholder of a firm is the PRC government and 0 otherwise.

Some researchers argue that the position of CEO should be separated from the position of the board chairman because the duality leads to lower board independence, reduction in board monitoring effectiveness, and CEO entrenchment (Rechner and Dalton, 1991). On the other hand, proponents note that CEO-board chairman duality will strengthen definite leadership, achieve unity of command, and avoid conflict between CEO and board chairman (Davis *et al*., 1997). The foregoing arguments suggest the possibility of either a positive or a negative association between CEO duality and income smoothing. The dummy variable DUAL is defined to take the value of 1 where there is CEO duality and 0 otherwise.

3.2.2. Board characteristics and income smoothing

According to China's Company Law in 1994, shareholders are considered the ultimate source of authority. Thus we expect the annual shareholder meeting can carry out its statutory powers and shareholders' participation (SHPRESEN) can reduce the opportunistic behavior of income smoothing.

Some corporate boards may be more active and vigilant than others. The number of board meetings per year may indicate the activity level of the directors. More activity has been shown to be positively associated with firm performance (Vafeas, 1999). It is possible that increased activity leads to greater oversight of accounting matters. We therefore expect the incidence of income smoothing to be inversely related to the number of board meetings (BDMEET).

According to China's company law, the supervisory board has the responsibility to

monitor the firm's accounting system and financial statements. Firth *et al*. (2007) found that large and active supervisory boards will help improve the informativeness of earnings for Chinese firms. The number of supervisory board meetings per year (SBMEET) can be used as a proxy for the activity of the supervisory board. We thus expect a negative relation between SBMEET and income smoothing.

Sever papers present evidence suggesting that firms with greater proportion of independent directors will be less likely to engage in earnings management than those whose boards are staffed primary with inside directors (Klein, 2002; Xie *et al*., 2003). INDBD is defined as the number of independent directors divided by total number of directors on the board. We thus expect a negative relation between INDBD and income smoothing.

3.2.3. Other monitoring mechanisms and income smoothing

The audit committee meets regularly with the firm's external auditors and internal financial managers to review the corporation's financial statements, audit process, and internal controls. Therefore, audit committee is often regarded as the solution to quality financial reporting. However, Spira (1999) concluded that the audit committees are largely ceremonial and are ineffective in improving financial reporting. In this study AUDCOM is a dichotomous variable that is set to 1 if the firm has set up an audit committee and 0 otherwise.

Auditor firms have a direct influence on the quality of accounting and they restrict the accounting choices available to managers. The large CPA firms (e.g. the Big 4) are sometimes found to enhance the credibility of financial statements to a large extent than the non-Big 4 (Kim *et al*., 2003). BIG4 is defined as an indicator of auditor quality, which is set to 1 if the firm has a Big-4 auditor and 0 otherwise. We therefore expect a negative relation between BIG4 and income smoothing.

4. METHODOLOGY AND SAMPLE

4.1. Smoother identification

To determine the presence of income smoothing, this study employs the coefficient of variation method developed by Eckel (1981). An intentionally smoothed income stream can be the result of real smoothing or artificial smoothing techniques. Real smoothing represents management actions undertaken to control actual economic events/transactions. Artificial smoothing represents accounting manipulations undertaken by management to smooth income. Eckel's method focuses on identifying artificial smoothing as opposed to real smoothing since the former distorts the representation of economic reality (Eckel, 1981, pp. 32-33). If, as is generally assumed, changes in sales are the results of real smoothing while changes in income are the results of artificial smoothing, a firm is classified as an income smoother if

$$\text{Income smoothing index} = \frac{CV_{\Delta I}}{CV_{\Delta S}} < 1 \qquad (1)$$

where ΔI = one period change in income,

ΔS = one period change in sales,

CV = coefficient of variation = $\dfrac{\sqrt{\text{variance}}}{\text{expected value}}$.

The basic logic is that if the variability of sales is greater than the variability of income, then the firm is considered to artificially smooth income. Several recent studies (Ashari et al., 1994; Michelson et al., 1995; Carlson & Bathala, 1997; Kusuma, 2005) have used this coefficient of variation model to determine the presence of income smoothing.

Two measures of income are examined in this study. They are income from operations and net income after tax. That is, income smoothing indices are computed and tested separately for the two possible instruments of smoothing. As in Carlson and Bathala (1997), income from operations is defined as operating income less depreciation and amortization.

4.2. The logit model

Logit analysis is used in a multivariate setting to investigate the corporate governance characteristics of Chinese listed firms that smooth income. The logit model used in this study is:

$$\mathrm{SMOOTH_i} = \beta_0 + \beta_1 \mathrm{STPT_i} + \beta_2 RIGHT_i + \beta_3 \mathrm{DE_i} + \beta_4 \mathrm{LNTA_i} + \sum_{j=5} \beta_j \cdot \mathrm{CG_{ji}} + \sum_k \delta_k \qquad (2)$$

SMOOTH, the dependent variable, is a dichotomous variable with the value equal to 1 if the firm is identified as an income smoother. CG_{ji} represents the corporate governance variables of firm *i* as defined in Section 3.2. If the *j*th corporate governance mechanism is effective in reducing the propensity for firms to smooth income, we would expect the coefficient β_j to be negative.

In terms of control variables, we have controlled for the factors of "ST/PT"firm, right issues, leverage, firm size, and industry effect. According to the guideline introduced by CSRC in 1999, a listed company will be designated an "ST" (Special Treatment) firm if it reports a net loss for two consecutive years and a "PT" (Particular Transfer) firm if it suffers a net loss for three consecutive years. If a PT firm can not become profitable in one year, it will

be completely de-listed. Since 1999, to obtain the rights to issue new equity, a listed company must maintain, at minimum, an ROE (return on equity) of 6% for three consecutive years; meanwhile, the average ROE over these three years must be no less than 10%. Therefore, Chinese listed firms have strong incentives to manage earnings either in order to avoid de-listing or to meet the ROE thresholds for right issues (Liu and Lu, 2007). STPT is defined as a dummy variable equal to 1 if the company is labeled "ST/PT" and 0 otherwise. RIGHT is defined as a dummy variable equal to 1 if the company issued right during the study period and 0 otherwise. Leverage is defined as the debt-to-equity ratio (DE). A more levered firm has stronger incentive to smooth income in order to satisfy some covenants in their debt contracts (Lai and Tam, 2007). Firm size is defined as the natural logarithm of total assets (LNTA). Carlson and Bathala (1997) expect that larger firms have a wide array of discretionary expenditures (e.g. research and development) and non-recurring items and larger firms are mature and have synchronized revenues and earnings. Thus larger firms are more likely to be income smoothers than smaller firms. Industry effect (SIC) is incorporated as δ_K in our logit models.

4.3. The sample

The population of interest comprises A-share firms listed on the Shanghai Stock Exchange and the Shenzhen Stock Market for the period 1999 to 2006. Financial firm are excluded since they are highly regulated. The final sample of 1353 companies corresponds to 95.21% of the population of 1421 companies. The data are taken from the China Center for Economic Research (CCER) database. In order to have a representative distribution of earnings and sales variables, we follow the approach of Carlson and Bathala (1997) and use the data covering an eight-year period (1999 through 2006) for computing the coefficients of variation of the income streams. The explanatory variables are calculated as averages or

modes for the middle four years (2001 through 2004) of the eight-year period in order to smooth out the short-run fluctuations in the income statement and balance sheet data items.

5. EMPIRICAL RESULTS

5.1. Descriptive statistics

Table 1 shows the number and the proportion of firms identified as smoothers in this study as well as in the literature. When income from operations is examined, there are 52% smoothers and 48% non-smoothers among Chinese listed firms. The corresponding numbers for net income after tax are 51% and 49%. These results indicate the practice of income smoothing is prevalent in China. As also can be seen in Table 1, Chinese firms have higher income smoothing intensity than their counterparts in Japan (Kusuma, 2005), Singapore (Ashari et al., 1994), and probably USA (Michelson et al., 1995).

Please insert Table 1 here.

Table 2 presents the sample size as well as the mean statistics by year. With regard to the number of meeting per year, both the board of director and the supervisory board meet more frequently throughout the study period. In 2006 the mean meeting frequency for board of director (BDMEET) is 8.10 times, and for supervisory board (SBMEET) is 4.07 times per year. The proportion of independent directors in the board (INDBD) has increased

significantly since 2002, in which year CSRC announced its new policy regarding independent directors. The fraction that the PRC government is the controlling shareholder (STATE) remains at a surprisingly high level, though declining from 83% to 66% among the sample firms. The fraction of firms which have set up the audit committee (AUDCOM) has increased substantially from 0.6% in 1999 to 47% in 2006.

Please insert Table 2 here.

5.2. Logit analysis results - income from operations

Next, we investigate the factors that prompt or deter Chinese managers to smooth earnings. Table 3 reports the logit regression results of Equation (2), using income from operations as the instrument of smoothing. Model 1a tests the effects of board characteristics, Model 2a ownership variables, Model 3a other monitoring mechanisms, and Model 4a all explanatory variables.

The estimated coefficients for Model 1a indicate that only INDBD is significantly positive (*Chi*-square = 4.41, *p*-value<0.05). For Model 2a INSOWN is significantly positive (*Chi*-square = 3.03, *p*-value<0.10) an STATE is significantly positive (*Chi*-square = 3.85, *p*-value<0.05). For Model 3a none of the explanatory variables is statistically significant. After incorporating all corporate governance mechanisms, the estimated coefficients for Model 4a concur with the findings in Model 1a to 3a except that in this full model INSOWN becomes statistically insignificant. The positive sign for the INDBD variable indicates that as a firm's percentage of independent directors increases, there is a corresponding increase in the

probability of the firm being an income smoother. This result is consistent with the finding of Gao (2007) that the independent directors are appointed by the government and any attempt to strengthen their roles is likely to create further ambiguity within the Chinese board structure. The positive sign for the STATE variable suggests that firms with the PRC government as the controlling shareholder incline to smooth earnings, in accordance with Shleifer and Vishny (1998). However, none of the coefficients on the independent variables of SHPRESEN, BDMEET, SBMEET, HF5, INSOWN, DUAL, AUDCOM, BIG4 is significant, indicating no relationship exists between the other corporate governance mechanisms and earnings manipulation. The results of our control variables are also interesting. The coefficient on right issue (RIGHT) is significantly negative, suggesting that Chinese firms tend to maximize their short-term (i.e. 3-year) earnings before their rights issue with the trade-off that they are less likely to engage in long-term income smoothing. The coefficient on leverage (DE) is not statistically significant. However, the coefficient on firm size (LNTA) is significantly negative, meaning larger firms experience less income smoothing.

For robustness check, since RIGHT is the only variable significant at the 0.01 level we dropped it out from Model 4a and re-estimated the full model in Model 5a. The results in Model 5a concur with those in Model 4a.

Please insert Table 3 here.

Table 4 reports the logit regression results of Equation (2), using net income after tax as the instrument of smoothing. Model 1b tests the effects of board characteristics, Model 2b

ownership variables, Model 3b other monitoring mechanisms, and Model 4b all explanatory variables. The variable of RIGHT was dropped out from Model 4b and the full model was re-estimated in Model 5b. The results in Table 4 completely concur with our findings in Table 3.

There, the empirical results can be seen to support the argument that the practice of long-term income smoothing is prevalent among China's listed firms and the problem is more severe when the PRC government is the controlling shareholder or when the firms have more independent directors in the board.

Please insert Table 4 here.

6. CONCLUSION

As the Chinese economy is experiencing a period of unparalleled growth opportunities, corporate governance reform has become a top priority for the Chinese national agenda. This study examines the relationship between ownership structure, corporate governance mechanisms and the quality of financial reporting, attempting to provide insights for a sound corporate governance framework in China.

Our evidence suggests that in addition to the traditional determinants such as right issue and firm size, income smoothing of Chinese firms also largely depends on the corporate governance mechanisms, particularly in the form of state ownership and independent directors. Firms with the government as the controlling shareholder may have higher propensity to

smooth income. Moreover, in a country like China where institutional and legal environment is drastically different from the US and UK, independent directors could not curtail the practice of income smoothing at all. The empirical results also demonstrate that the other governance mechanisms – meeting of board of directors or supervisory board, audit committee and external auditors - are not effective in monitoring earnings management.

The present study could be extended by examining alternative measures of earnings quality or even tunneling techniques. For example, large shareholders in China's listed companies frequently conduct related party transactions at an unfair price to appropriate company funds, or hold company assets in pledge for loans. Further research could be devoted to the effect of corporate governance mechanisms on the potential expropriation behaviors.

NOTES

1. An international dollar has the same purchasing power over GDP as a U.S. dollar has in the United States. See World Development Indicators database, World Bank, 1 July 2008.

2. See Xinhua News Agency, "Goldman Sachs Allays Fears of China Bubble Economy" on 7 March 2007, which quotes Goldman Sachs research report by T. Deng and K. Lau on 26 February 2007.

3. The state-share reform, also known as split share structure reform, plus legislative reforms for listed firms and corporate governance, are among the measures the PRC government has taken in 2005 to revive the capital market to improve its financial security. The split share structure refers to the existence of both tradable shares and non-tradable shares owned by the state. To make all their shares tradable, listed

companies undergoing reform have to offer additional shares or funds to private investors as compensation for potential losses in the value of their portfolios when the publicly-owned shares hit the market. According to Xinhua News Agency on 4 July 2006, more than 80 percent of Chinese firms listed domestically (a total of 1,092) have completed or are in the process of state-shareholding reform.

4. China's first stock exchange – the Shanghai Stock Exchange was set up in 1990. The Shenzhen Stock Exchange was then set up in 1991. As of year-end 2006, there are 842 companies listed on the Shanghai Stock Exchange and 579 listed on the Shenzhen Stock Exchange, totaling 1421.

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Table 1. Income Smoothing Intensity Comparison

	Total samples	Income from operations		Net income after tax	
		Smoothers	Non-smoothers	Smoothers	Non-smoothers
This study (China, 1999-2006)	1353	702 (52%)	651 (48%)	693 (51%)	660 (49%)
Ashari et al., 1994 (Singapore, 1980-1990)	153	75 (49%)	78 (51%)	54 (35%)	99 (65%)
Michelson et al., 1995 (USA, 1980-1991)	256	–	–	102 (40%)	154 (60%)
Carlson & Bathala, 1997 (USA, 1982-1988)	265	–	–	172 (65%)	93 (35%)
Kusuma, 2005 (Japan, 1991-1995) (USA, 1991-1995)	 432 546	 (23.6%) (10%)	 (76.4%) (90%)	 (11.5%) (6.3%)	 (88.5%) (93.7%)

Table 2. Descriptive Statistics – Mean and Percentage

Year	1999	2000	2001	2002	2003	2004	2005	2006
# of firm	817	916	1050	1122	1184	1248	1328	1336
SHPRESEN	33.39%	29.28%	25.01%	23.45%	23.52%	22.77%	22.81%	51.54%
BDMEET	4.96	5.52	6.37	8.73	7.76	7.38	7.47	8.10
SBMEET	2.45	3.04	3.50	4.33	3.53	3.20	3.11	4.07
INDBD	0.39%	0.91%	5.7%	23.7%	32.23%	33.72%	34.34%	34.77%
HF5	24.85%	24.34%	23.98%	23.71%	23.11%	22.70%	21.11%	16.79%
INSOWN	0.13%	0.10%	0.11%	0.17%	0.54%	1.42%	2.59%	2.37%
STATE	680	748	853	867	875	881	922	878
% of firms	(83%)	(82%)	(81%)	(77%)	(74%)	(71%)	(69%)	(66%)
DUAL	131	107	109	105	118	127	133	93
% of firms	(16%)	(12%)	(10%)	(9%)	(10%)	(10%)	(10%)	(7%)
AUDCOM	5	11	63	293	460	563	627	631
% of firms	(0.6%)	(1.2%)	(6.0%)	(26%)	(39%)	(45%)	(47%)	(47%)
BIG4	21	21	34	97	98	86	93	80
% of firms	(2.6%)	(2.3%)	(3.2%)	(8.7%)	(8.3%)	(7.0%)	(7.0%)	(6.0%)
STPT	46	55	61	82	120	124	106	147
% of firms	(5.6%)	(6.0%)	(5.8%)	(7.3%)	(10%)	(10%)	(8.0%)	(11%)

Table 3. Logit Analysis Results - Income from Operations

Independent variable	Predicted sign	Model 1a	Model 2a	Model 3a	Model 4a	Model 5a
		Estimate (Chi-square)	Estimate (Chi-square)	Estimate (Chi-square)	Estimate (Chi-square)	Estimate (Chi-square)
Intercept		2.6190 (3.30)*	3.0142 (4.45)**	3.7728 (6.34)**	3.0163 (3.62)*	4.0567 (7.74)***
SHPRESEN	–	0.0690 (0.13)			0.0581 (0.09)	0.0616 (0.10)
BDMEET	–	-0.0126 (0.27)			-0.0066 (0.07)	-0.0124 (0.26)
SBMEET	–	0.0275 (0.30)			0.0316 (0.39)	0.0358 (0.51)
INDBD	–	1.8174 (4.41)**			1.9011 (4.24)**	1.6028 (3.11)*
HF5	–		-0.5146 (1.36)		-0.5697 (1.64)	-0.6002 (1.87)
INSOWN	–		0.7188 (3.03)*		0.4978 (1.37)	0.3673 (0.78)
STATE	?		0.2675 (3.85)**		0.3086 (4.90)**	0.3387 (6.05)**
DUAL	?			0.3203 (1.47)	0.3404 (1.61)	0.3473 (1.72)
AUDCOM	?			-0.0091 (0.01)	-0.0594 (0.24)	-0.0588 (0.24)
BIG4	–			0.0726 (0.14)	0.0467 (0.06)	0.0352 (0.03)
STPT	+			-0.4721 (2.02)	-0.3963 (1.39)	-0.3307 (0.98)
RIGHT	+	-0.8141 (31.8)***	-0.7974 (30.5)***	-0.8023 (31.2)***	-0.8168 (31.6)***	
DE	+	0.0020 (0.02)	0.0041 (0.08)	0.0054 (0.14)	0.0039 (0.07)	0.0035 (0.06)
LNTA	+	-0.1030 (2.66)	-0.1034 (2.42)	-0.1373 (4.00)**	-0.1290 (3.20)*	-0.1890 (7.15)***
SIC		YES	YES	YES	YES	YES
Likelihood Ratio Test		$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$

The dependent variable is SMOOTH, identified by using *income from operations* as the measure of income.

***, **, *: Significant at the 1%, 5%, and 10% level, respectively.

YES: The SIC industry effects are estimated, but not reported.

Table 4. Logit Analysis Results - Net income after tax

Independent variable	Predicted sign	Model 1b	Model 2b	Model 3b	Model 4b	Model 5b
		Estimate (Chi-square)	Estimate (Chi-square)	Estimate (Chi-square)	Estimate (Chi-square)	Estimate (Chi-square)
Intercept		3.6116 (6.15)**	4.1309 (8.17)***	3.9984 (6.99)***	3.7510 (5.50)**	4.6011 (8.45)***
SHPRESEN	–	-0.1595 (0.71)			-0.1873 (0.94)	-0.1819 (0.90)
BDMEET	–	-0.0270 (1.24)			-0.0211 (0.74)	-0.0256 (1.11)
SBMEET	–	0.0495 (0.97)			0.0513 (1.02)	0.0543 (1.16)
INDBD	–	1.5079 (3.06)*			2.1012 (5.18)**	1.8567 (4.14)**
HF5	–		-0.3506 (0.64)		-0.4332 (0.95)	-0.4636 (1.11)
INSOWN	–		0.0784 (0.04)		-0.1602 (0.16)	-0.2412 (0.37)
STATE	?		0.2499 (3.38)*		0.3040 (4.76)**	0.3294 (5.68)**
DUAL	?			0.2709 (1.06)	0.3010 (1.28)	0.3079 (1.36)
AUDCOM	?			-0.0927 (0.60)	-0.1421 (1.36)	-0.1404 (1.35)
BIG4	–			-0.1523 (0.63)	-0.1396 (0.52)	-0.1442 (0.56)
STPT	+			-0.4088 (1.51)	-0.3433 (1.03)	-0.2932 (0.76)
RIGHT	+	-0.6694 (21.7)***	-0.6394 (19.9)***	-0.6590 (21.2)***	-0.6554 (20.6)***	
DE	+	-0.0098 (0.46)	-0.0091 (0.39)	-0.0074 (0.26)	-0.0086 (0.36)	-0.0089 (0.38)
LNTA	+	-0.1205 (3.65)*	-0.1366 (4.22)**	-0.1247 (3.31)*	-0.1393 (3.73)*	-0.1882 (7.03)***
SIC		YES	YES	YES	YES	YES
Likelihood Ratio Test		p<0.01	p<0.01	p<0.01	p<0.01	p<0.01

The dependent variable is SMOOTH, identified by using *net income after tax* as the measure of income.

***, **, *: Significant at the 1%, 5%, and 10% level, respectively.

YES: The SIC industry effects are estimated, but not reported.