

## Are Independent Directors and Supervisory Directors Effective in Constraining Earnings Management?

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### Abstract

**Manuscript Type:** Empirical

**Research Question/Issue:** The aim of this paper is to analyze the impact of corporate governance on earnings management in China. It focuses on two aspects from the perspective of board monitoring: the role of independent directors on the board and the supervisory directors in constraining earnings manipulation. This paper examines whether the independence, financial/accounting expertise and official background and a higher proportion of independent directors and supervisors are related to the absolute value of discretionary accruals or discretionary revenue.

**Research Findings/Insights:** By conducting the research on a large sample of Chinese listed companies from 2005 to 2010, the empirical results suggest that Chinese two-tier board structure comprising aboard of directors with at least one third independent directors and supervisory board fails to mitigate earnings management.

**Theoretical Implications:** This study adds to the corporate governance literature by linking the independent directors and supervisory directors and earnings management. It shows that the principal-principal agency conflict between the controlling shareholders (the State) and minority shareholders is the main cause of earnings management in China.

**Practical Implications:** The results support the evidence that the regulators should pay more attention to enhance the authentic independence of independent directors and supervisory directors in Chinese firms.

**Keywords:** Corporate Governance, Earnings Management, Agency Problem, Independent Directors, Supervisory Directors, Discretionary Accruals, Discretionary Revenue

## Introduction

Extant academic literatures on earnings management indicate that it has attracted considerable attention of scholars. With the eruption of Internet bubble in 2000, the ugly truth started to expose in front of the public. The financial scandal from Xerox shocked the capital market, disclosed by \$1.4 billion overstated profits over the past four years. However, it was merely a tip of an iceberg. Followed Xerox incident, more influential accounting frauds subsequently were revealed, including WorldCom<sup>1</sup>, Adelphia, Tyco and Global Crossing. The investors suffered huge losses in the corporate scandals, which undermined the investors' confidence in the integrity of the capital markets (Ronen and Yaari 2008).

The most influential definitions of earnings management in existing literature are from Schipper (1989) and Healy and Wahlen (1999). The former defines earnings management as a 'purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain'. The latter defines '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 numbers'.

More recently, studies of earning management in emerging countries have flourished, because there is a higher demand for capital in the emerging stock markets. Mainland China (excluding Hong Kong, Macau and Taiwan) is a special and interesting case to be studied with its unique political, social and economic environment. Chinese government led by the Chinese Communist Party. Since the Economic Reform<sup>2</sup> started in 1978, China has transferred from a centrally planned economy to a market economic system with socialist characteristics. The single form of the economic entity at that time was state-owned enterprise (SOE)<sup>3</sup>. China started demutualization in the early 1990s, because the government found that the ownership structure of SOEs hinders enterprises' economic efficiency (Tan and Wang 2004; Chen 2005). China is the largest developing country with startling economic growth (GDP quadrupled) which attracts considerable attention of researchers and potential investors all over the world (Ding, Zhang et al. 2007). Both institutional and individual investors are seeking investment opportunities in the Chinese capital market<sup>4</sup>. Meanwhile, the Chinese stock market has been criticized for high speculation and extensive insider dealings (Hu, Tam et al. 2010).

As stated by Chen *et al.* (2008), earnings management is an indicator of corporate governance quality and investor protection standard, suggesting the effectiveness of market regulation and policy enforcement. Previous studies have documented that rampant earnings management phenomenon does exist in China driven by stringent CSRC regulations (Aharony, Lee et al. 2000; Chen and Yuan 2004; Haw, Qi et al. 2005; Ding, Zhang et al. 2007; Chen, Wang et al. 2008). The incidents of accounting scandals in China, such as Yin Guang Xia, Lantian, and Zhengzhou Baiwen, in which the interests of minority shareholders are exploited by controlling shareholders via related party transactions and falsifications of financial reports (Hu, Tam et al. 2010). Ding *et al.* (2007) claim that 'the conflict of interests between controlling

shareholders (the State) and minority shareholders is the root cause of earnings management in China.' Even worse, the State is playing dual roles as both controlling shareholder and regulator (Clarke 2003; Chen, Firth et al. 2006; Liu and Lu 2007).

In order to help SOEs to raise capital and improve their economic efficiency, Chinese stock market was established with the opening of Shanghai Stock Exchange (SHSE) in 1990 and the Shenzhen Stock Exchange (SZSE) in 1991. With the development of Chinese capital market, Tricker (2009, p.193) classifies five types of shares: A-Shares, B-Shares, H-Shares, N-Shares and L-Shares. Foreigners are permitted to invest in A-shares via QFII<sup>5</sup> (qualified foreign institutional investors) regulated by China Securities Regulatory Commission (CSRC<sup>6</sup>) and the People's Bank of China. There has been a '10 percent price limit' on daily stock price fluctuation imposed by Chinese government since December of 1996 (Lin and Swanson 2008).

Initially, Chinese central government designed the regulatory structure through a stringent IPO quota system<sup>7</sup>, which was formally abolished in 2001 (Pistor and Xu 2005; Cheung, Ouyang et al. 2009). The quota was determined by the State Council and was allocated to local governments by the CSRC. Tan and Wang (2004) and Cheung *et al.* (2009) claim the quota system severely distorted the market mechanism and caused huge IPO under pricing. The cumulative price inquiry from institutional investor method<sup>8</sup> was introduced until 1<sup>st</sup> of January, 2005.

State-owned Assets Supervision and Administration Commission (SASAC<sup>9</sup>) has dominated power over SOEs in China, including the appointment and dismissal of directors and top executives of the supervised enterprises. SASAC holds the Chinese Government's shareholding<sup>10</sup> in all Chinese listed companies except the financial institutions. To better develop the securities market and protect investors, the *Securities Law* was introduced in 1999. It regulates the rules of corporate governance for listed companies and requires listed companies to disclose financial information (Lin and Swanson 2008). The *Securities Law* moved the IPO system towards a more market-oriented system under which the firms satisfying the demand for IPO can be approved to offer after verification without the regulatory examination (Cheung, Ouyang et al. 2009).

### **Corporate Governance and Earnings Management**

Leuz *et al.* (2003) suggest that firms in those countries with developed capital markets, dispersed ownership structures, strong investor protection and strong legal enforcement engage in less earnings management through comparison with 31 countries. Common-law countries, such as the US and UK, are characterized by 'arms-length' transactions, diversity of external investors, fairly frequent hostile takeovers and a relatively high risk of litigation. In code-law countries, such as Germany and China, the stock markets are less active and with comparatively low litigation rates (Maijor and Vanstraelen 2006). Highly concentrated ownership by the State, multiple goals of listed companies other than profit maximization, weak legal enforcement, inadequate financial disclosure, controlling shareholders' expropriation of minority

shareholders' interests and short-term speculative investments are the characteristics in China (Liu 2006; Cheung, Jiang et al. 2010; Chen, Li et al. 2011). Unlike the US and UK, an active corporate control market does not exist in China (Pistor and Xu 2005; Liu 2006). China's capital markets are underdeveloped with strong information asymmetry between investors and companies. Hence, the investors are engaged in market speculation and sensitive to short-term stock price volatility. To some extent, the stock prices may not reflect the firms' true performance (Peng 2004; Lin and Swanson 2008).

Tricker (2009) regards that two decades ago corporate governance in China virtually did not exist. However, recent developments of corporate governance in China have been remarkable (Liu 2006; Cheung, Jiang et al. 2010). China introduced the OECD corporate governance practices in 2001. The *Code of Corporate Governance for listed companies*<sup>11</sup> promulgated by CSRC and State Economic and Trade Commission, sets forth the basic principles for corporate governance of Chinese listed companies, protects investors' interests and rights, provides the basic behavior rules and moral standards for directors, supervisors and senior management. Since the enactment of the *1994 Company Law*, a two-tier board structure for Chinese companies was introduced and the supervisory board is mandatory for a joint stock limited company. The *2006 Company Law*<sup>12</sup> amended based on the *1994 Company Law*, influences the board monitoring in three aspects: (1) a significant enhancement of the effectiveness of the supervisory board; (2) a modest strengthening of participation by workers, and (3) the independent director system for listed companies is codified (Article 123.2) (Xi, 2006).

Shleifer and Vishny (1986) and Morck *et al.* (1989), as cited in Firth *et al.* (2007), suggest that different ownership structures imply distinct incentives to exercise their power over and monitor a firm's management. Their idea is supported by Tricker (2009). Warfield *et al.* (1995) argue that higher managerial ownership reduces the agency cost of information asymmetry, and therefore reduces earnings management. However, the management, employee and foreign shares account for exceptionally small proportion of Chinese firms' share capital (Firth *et al.*, 2002; 2007; Xu, 2004). According to Liu and Lu (2007), a typical characteristic of most listed firms' ownership structure in China is that a parent company usually does exist there. Chinese listed firms have a highly concentrated ownership structure because the government still retains a significant proportion (about two thirds) of shares when an SOE goes public. State shares and Legal Person Shares have been gradually allowed to be tradable on the stock exchanges since the start of the split share structure reform in April 2005 (Cheung, Jiang et al. 2008).

In terms of Fama and Jensen (1983), the board of directors was introduced as an imperative element of corporate governance to align the interests of shareholders and managers to reduce agency costs stemming from the separation of ownership and control. In a unitary board structure, a company's board of directors plays an administrative role and comprises executive and non-executive directors. In a two-tier board structure, a company's board of directors consists of the supervisory board and management board. Hu *et al.* (2010) state that the two-tier

board is a primary governance structure to safeguard the minority shareholders' interests. Though inspired by the German system, China does not simply copy it. The two boards are obliged to submit their reports to the shareholders' meeting for review and approval.

In 2001, the *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies*<sup>13</sup> set by CSRC requires qualified persons to be independent directors. The requirement for no less than one third of independent non-executive directors into the Boards of Directors by 30<sup>th</sup> of June, 2003 indicates that China's corporate governance practices move towards Anglo-American practices. 'Independent directors could be nominated by the board of directors, supervisory board or any shareholders holding five percent of the company's shares' (Tricker, 2009, p.194). From the definition of independent directors<sup>14</sup>, they are supposed to have the same function as non-executive directors in Anglo-American model. Independent directors in China are granted extraordinary powers as that 'major related party transactions should be approved by the independent director before being submitted to the board of directors for discussion' (Wang 2010).

Several notable differences distinguish the supervisory boards in China from that in Germany and other European countries adopting two-tier board. Firstly, unlike the superior-subordinate relationship between the supervisory board and board of directors in Germany, it is a parallel relationship under the shareholders' meeting in China where the supervisory board deems to be inferior to the board of directors. Secondly, in Germany, the supervisory directors appoint and oversee the board members and have right to dismiss if they perform poorly, nonetheless, the supervisory directors in China do not have such power. Thirdly, Firth *et al.* (2006) describe that chairmen are full-time executives with more significant power than CEOs in China. Finally, top management typically started their careers as government bureaucrats and consequently may have different mindsets from those in the US and Europe (Xiao, Dahya et al. 2004). Wang and Liu (2006) and Liu *et al.* (2010) argue that most of the staff supervisors are representatives of government cadres or labor models, whose remuneration and position decided by the board of directors. Therefore, the supervision independence of workers representatives has been weakened. In order to strengthen the supervisory board's functions and rights, *2006 Company Law* adds Disposal Right, Proposal Right, Convening and Presiding Right of Shareholder Meeting, and Litigation Right.

### Theoretical Background

Agency theory addressing the question of the separation of ownership and control is identified by Berle and Means (1932). There are three remarkable articles about the agency theory discussed in Eisenhardt's paper (1989). Jensen and Meckling (1976) investigate how equity ownership by managers aligns the interest of managers with that of owners. Fama (1980) describes the role of efficient capital and labor markets as information mechanisms to control the self-serving behavior of top executives. Fama and Jensen (1983) discuss the role of board directors as an information system that the stockholders within the large companies monitoring

the opportunistic behavior of top executives.

Jensen and Meckling (1976) extended the risk-sharing literature by incorporating the so-called agency problem that occurs when co-operating parties have different attitudes towards risk. They define an agency relationship as a contract, in which one party (the principal) delegates work to another (the agent), who performs that work on behalf of the principal. Eisenhardt (1989) indicates that agency theory is mainly concerned about two problems. Firstly, agency problem arises when (a) the desires or goals of the principal and agent conflict and (b) it is difficult or expensive for the principal to inspect what the agent is actually doing and whether the agent has behaved appropriately. Secondly, agency problem occurs when the principal and agent have different risk preferences or risk aversion. Since the interest of the agents is not always in line with that of the principals, the agents may act for themselves even though their behavior will harm the interest of the principals. To ensure the agents act properly for the principal, the latter has to pay extra costs which are called 'agency costs'.

Ownership structure is the primary determinant of agency cost. Ding *et al.* (2007) put forward that highly concentrated ownership determines the nature of the agency problem in Chinese listed companies. It coincides with Shleifer and Vishny's view (1997) that one of the two most effective solutions to the agency problem is concentrated ownership (the other is legal protection). Johnson *et al.* (2000) bring forward that the controlling shareholders pursue their own benefits at the expense of minority shareholders called 'tunneling'.

### **Literature Review And Hypotheses Development**

High-quality corporate governance has been proved as an effective mechanism to mitigate the management's opportunistic behavior, to improve the quality of reported earnings and enhance firm value (Cheng and Warfield 2005; Chen, Firth *et al.* 2006; Ding, Zhang *et al.* 2007; Firth, Fung *et al.* 2007; Cornett, Marcus *et al.* 2008; Wang, Wang *et al.* 2008; Young, Peng *et al.* 2008; Hu, Tam *et al.* 2010; Lo, Wong *et al.* 2010; Conyon and He 2011). Several empirical studies address the importance of corporate governance in constraining earnings management in the US, the UK, and other European countries (Shleifer and Vishny 1997; Klein 2002; Goergen, Manjon Antolin *et al.* 2004; Hopt and Leyens 2004; Park and Shin 2004; Peasnell, Pope *et al.* 2005; Fauver and Fuerst 2006; Gillan 2006; Hillier and McColgan 2006; Osma and Noguer 2007; Cornett, Marcus *et al.* 2008; Jeanjean and Stolowy 2009; Bermig and Frick 2010), as well as in emerging markets (Klapper and Love 2004; Cheung, Jiang *et al.* 2008; McGee 2008; Young, Peng *et al.* 2008; Hu, Tam *et al.* 2010; Lo, Wong *et al.* 2010; Yuka 2010; Chen, Li *et al.* 2011). Klein (2002) shows a significantly negative relationship between abnormal accruals and the percentage of outside directors on the board and audit committees by testing a US sample with 692 publicly traded firm-years. Shleifer and Vishny (1997) and Gillan (2006) strongly support that effective corporate governance can alleviate the agency problems, especially the agency conflicts between the controlling shareholders and minority shareholders. Such a conclusion is also applicable to the Chinese market (Wong and Jian 2003; Ding, Zhang *et al.* 2007; Liu and Lu 2007; Young, Peng *et al.* 2008; Aharony, Wang *et al.* 2010).

In the developed capital markets, boosting the company's stock price is regarded as a primary motivation for earnings manipulation, since it is frequently deemed to be the benchmark for managerial compensation, stock options or other incentive schemes. However, it is not the case in China; the negotiable shares account for only a small proportion of listed firms' aggregate shares. From mid-2005, CSRC permitted listed companies to remunerate managers with stock options, which was prohibited before mid-2005 (Ding et al., 2007; Tricker, 2009; Conyon and He, 2011). In addition, based on Shleifer and Vishny's findings (1997), Liu and Lu (2007) and Ding et al. (2007) provide strong evidence that the conflict of interests between the controlling shareholders (the State) and minority shareholders is the root cause of earnings management phenomenon in China. 'Bonus Hypothesis'<sup>15</sup> and 'Debt Hypothesis'<sup>16</sup> proposed by Watts and Zimmerman (1990) have received strong support. For example, Dechow et al. (1996) obtain identical findings; they prove there is an essential incentive for earnings manipulation to attract external financing at minimal cost and avoid debt covenant restrictions by detecting those firms which have violated US GAAP. Nevertheless, they do not provide any systematic evidence that managers manipulate earnings to acquire a larger earnings-based bonus or to sell their shares at inflated stock prices. Healy and Wahlen (1999) summarize the incentives for earnings management as: (1) capital market motivation, (2) contracting motivation, and (3) regulatory motivation. In addition, Beneish (2001) adds insider trading as one incentive.

Meeting or exceeding the regulatory profitability threshold is also a strong motivation for Chinese listed companies to manipulate earnings, such as acquiring the authorization for IPO, rights issue and avoiding delisting due to CSRC's reliance on ROEs (Wong and Jian 2003; Chen and Yuan 2004; Yu, Du et al. 2006; Ding, Zhang et al. 2007; Liu and Lu 2007; Chen, Wang et al. 2008; Chen, Lee et al. 2008; Chen, Wang et al. 2010). Empirically, the 6 percent and 10 percent thresholds have been tested and proved to be the critical threshold in China by examining the frequency and magnitude of earnings management (Chen, Wang et al. 2008; Chen, Wang et al. 2010). Chen *et al.* (2008) argue that in China the incentives for meeting or beating analysts' forecast do not exist. Because the analysts merely play a primitive role in Chinese stock market and their forecasts usually have no impact on stock price. Chen *et al.* (2010) re-examine and discover that the incentive to meet analysts' forecasts becomes dominant after 2001 and the frequency and magnitude of earnings management are higher when firms attempt to avoid earnings decrease rather than to avoid negative earnings. Schipper (1989) suggest that managing earnings to obtain favorable treatment from regulators is a special case. Chen *et al.* (2008) present that Chinese local governments assist local listed SOEs in earnings management to meet the regulatory requirements set by the central government through offering subsidies and granting taxation preference or favoring listed firms in the project approval process.

Several prior literatures summarize how controlling shareholders expropriate the minority shareholders' interests (Young *et al.*, 2008; Chen *et al.*, 2011). Ding *et al.* (2007) examine the relationship between ownership concentration and earnings management. They show an

inverted U-shape pattern-beginning from a low level, increased ownership concentration induces upward earnings management (reflects the entrenchment effect); but once a turning point is reached (at approximately 55 per cent), a higher level of ownership concentration results in downward earnings management (reflects the alignment effect).

Monitoring managerial decisions has become imperative for safeguarding the shareholders' interests (Fama and Jensen 1983). There are many studies in the US and UK and other European countries have tested whether board size, the proportion of independent non-executive directors, frequency of board meetings, and duality of the CEO and Chairman and whether the board has an audit committee are related to a firm's performance and earnings informativeness. The results of these studies are mixed. The unique characteristics of internal governance in Chinese background will influence the earnings quality differently from that in the West.

Beasley(1996) supports that the incident of accounting fraud in those firms with higher proportion of outside directors is relatively lower. Dechow *et al.* (1996) provide similar findings for firms which are subject to SEC accounting enforcement actions. Peasnell *et al.* (2000) provide evidence of less income-increasing earnings management in the firms containing a higher proportion of outside directors to achieve target earnings. Klein (2002) concludes that boards with more outside directors are prone to monitor accounting quality, leading to lower absolute abnormal accruals. Chen *et al.*(2008) indicate that lack of an audit committee and outside directors on the board is regarded as the principal catalyst for earnings manipulation. Through empirical tests on the US companies, Agrawal and Chadha (2005) conclude only if the outside directors have accounting/financial expertise, the probability of earnings management will be decreased. It is consistent with Park and Shin's (2004) findings on the basis of the sample data from Canada. Peasnell *et al.*(2005) report that outside directors are effective in constraining earnings management in the UK after the release of the Cadbury Committee Report (1992). Likewise, There are findings from Taiwanese listed companies implying that the authentic independence and financial expertise of independent directors and supervisors lower the degree of earnings management(Chen, Elder et al. 2007).

Fama and Jensen (1983) and Peasnell *et al.*(2005) claim that the outside directors tend to monitor the management more effective than inside directors, because they have greater incentives to maintain their reputation capital. Independent directors are more likely to take advantage of their wider experience and expertise to monitor management. Peasnell *et al.*(2000; 2005)investigate the influence of the Cadbury Committee Report emphasizing the board monitoring and non-executive directors, on the relationship between earnings management and board composition in the UK. They report a significant negative relationship between abnormal accruals and the proportion of outside directors after the enactment of the Cadbury Committee Report. However, Park and Shin (2004) obtain their findings that simply adding more outside directors to the board does not reduce earnings management by studying the board composition in Canada where the capital market is well developed but ownership is highly concentrated.



Xie *et al.*(2003) conduct a study on the US samples and report that board independence has a negative impact on discretionary accruals. In a Hong Kong-based study, Jaggi *et al.* (2009) find that a higher proportion of independent directors on the board is more effective to restrain earnings management.

Some literatures demonstrate the effectiveness of supervisory directors in China is undermined by incorporating political officers, close friends and allies of senior managers in the supervisory board(Dahya, Karbhari *et al.* 2003; Xiao, Dahya *et al.* 2004; Xi 2006; Hu, Tam *et al.* 2010). Nevertheless, Firth *et al.*(2007) protest that supervisory boards help to improve the integrity of earnings. There have been controversial arguments about the mandatory requirement of having both supervisory board and independent directors in China. For instance, there exist some overlapping responsibilities such as supervising the company's financial affairs. Consequently, overall monitoring efficiency will be destroyed (Xi 2006). Xiao *et al.*(2004) provide that when supervisors lacked accounting expertise, the secretary to the board of directors generally drafted the supervisory report for them. Wang and Liu (2006) compare the functions and rights of independent directors with supervisory directors in China and find they complement each other.

Beasley (1996) and Dechow *et al.* (1996) find that the proportion of independent directors on the board is negatively associated with financial statements fraud. Xie *et al.*(2003) and Liu and Lu (2007) indicate that earnings management is negatively correlated with more independent directors on the board. Lo *et al.*(2010)also claim that a board that has more independent directors or less directors representing the parent companies are effective to constrain management's opportunistic behavior (in the form of transfer pricing manipulations).By analyzing the quadratic curve determined by independent directors, Zhang and Li (2007) suggest that the optimal proportion is approximately 50%. However, they discover that the board size and board ownership are not substantially related to the earnings management. Setia-Atmaja *et al.* (2011) investigate the impact of board independence on earnings management by using panel data of family controlled firms listed on the Australian Securities Exchange (ASX) between 2000 and 2004. Their results support that a higher proportion of independent directors on the board is effective in reducing earnings management and mitigating agency problems in family controlled firms.

Based on prior studies and unique characteristics of Chinese capital market, our hypotheses can thus be stated as follows:

**Hypothesis 1a:** Firms with a greater number of independent directors will constrain earnings management.

**Hypothesis 1b:** Firms with a greater number of supervisors will constrain earnings management.

**Hypothesis 2a:**Firms with a greater number of independent directors with financial/accounting expertise will reduce their engagement in earnings management.

**Hypothesis 2b:** Firms with a greater number of supervisors with financial/accounting expertise will reduce their engagement in earnings management.

**Hypothesis 3a:** Firms with a greater number of independent directors with official background will be more likely to engage in earnings management.

**Hypothesis 3b:** Firms with a great number of supervisors with official background will be more likely to engage in earnings management.

### Data and Research Methodology

Total accruals can be divided into two components (Healy and Wahlen, 1999). One component is caused by the company's normal business activities, while the other is discretionary accruals, considered as abnormal. The normal portion of total accruals can be predicted by a cross-sectional regression model in which the changes in revenue from main operations and in gross fixed assets from year t-1 to year t (scaled by total assets of the company in year t-1) are explanatory variables. Consequently, the residual in the regression is discretionary accruals.

$$TA_t = (\Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - Dep_t) / (A_{t-1})$$

$$NDA_t = \alpha_1 (1/A_{t-1}) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_t)$$

$$DA_t = TA_t - NDA_t$$

This paper will utilize abnormal accruals (accounting accruals-cash flow from operations) as the proxy for earnings management based on the Modified-Jones Model (1991). In the past, the applicability and suitability of using discretionary accruals as an earnings management proxy in the Chinese context was repeatedly challenged, because it was difficult for the enterprises to manipulate their earnings via non-cash accruals. However, due to international accounting standardization in China (in particular, 2006 Chinese GAAP much closer in line with the IFRS), it provides the enterprises with the opportunity to manage reported earnings via conventional discretionary accruals.

### Measuring Earnings Management

#### Modified Jones Model with performance-matched estimates

$$AC_{it}/TA\_average = \beta_0 (1/TA\_average) + \beta_1 (\Delta SALES_{it} - \Delta AR_{it})/TA\_average + \beta_2 (PPE_{it}/TA\_average) + \beta_3 ROA_{it} + \epsilon_{it}$$

Where AC is accounting accruals,  $\Delta SALES$  is the change of sales from year t to t-1,  $\Delta AR$  is the change in net account receivables from year t to t-1. Variables are deflated by average total assets.

## Discretionary Revenue Model

Meanwhile, the discretionary revenue is employed as a measure of earnings management in this paper on the basis of Stubben (2010). The equation is as follows:

$$\Delta AR_{it} = \alpha + \beta_1 \Delta R1_{3it} + \beta_2 \Delta R4_{it} + \varepsilon_{it}$$

**Where:** Variables are deflated by average total assets.

AR=end of fiscal year net accounts receivable

R=total operating revenue(annual revenue)

R1\_3=revenues of the first three quarters

R4=revenues of the fourth quarter

$\Delta$ =annual change

PPE=end of fiscal year gross property, plant and equipment

CFO=cash from operations

AC=accounting accruals=earnings before extraordinary items-cash from operations

Revenues of the first three quarters are the difference between annual total operating revenues and fourth-quarter revenues. All revenue and accrual variables are deflated by average total assets. The accruals (dependent variable) are the residuals in the aforementioned equations.

**Table 1 Variables definition and measurement**

<b>Dependent Variables</b>	<b>Definition</b>
Accounting Accruals	Operating Profit-Cash Flows from Operations
Independent Variables	Definition
TOP1	percentage of shares owned by the largest shareholder
State-owned	If the company is state-owned, it is 1; otherwise, coded 0.
BOARD_MEET	the frequency of meetings of the board
SB_MEET	the frequency of meetings of the supervisory board
IND_Meet_Att	The meeting attendance rate of independent directors
Direct_No	The number of Directors on the board
IND_No	The number of independent directors on the board
SBM_No	The number of supervisory board Member
IND_expert_no	The number of independent Directors with financial or accounting expertise
IND_official_no	The number of independent Directors who have official background
SB_expert_no	The number of Supervisors with financial or accounting expertise
SB_official_no	The number of Supervisors with official background
IND_No.	If the number of independent directors exceeds 1/3, it is coded as 1; otherwise, coded 0.
ControlVariables	Definition
Firm Age	How long have the firm operated since its foundation
ROA (Return on Assets)	Return on assets=Net Profit/Total Assets
SIZE	Natural Logarithm of the average Total Assets
LEV	Total Debt/Total Assets
Time Effect	Year Dummy
Industry Effect	CRSC Industry Code

Table 1 shows the variables.

### Control Variables

Leverage represents the debt structure of a company and is widely used to proxy for the degree of closeness to a debt covenant restriction in numerous studies. For instance, Dechow et al. (1996) find that closeness to debt covenant violations stimulate earnings management. Efendi et al. (2007) suggest that when a firm is close to technical default on accounting-based debt covenants, top management may manipulate the accounting numbers to avoid the default. Dechow et al. (1996), Richardson, Tuna, and Wu (2002) and Person (2005) link leverage with

earnings management, financial restatements and fraud respectively. Following the previous studies, this study will consider leverage calculated as total debt divided by total assets as a control variable.

Firm size is measured as the natural logarithm of total assets at the year-end, which is regularly found to have a significant impact on internal governance mechanism in prior literatures (Wong and Jian 2003; Hu, Tam et al. 2010). The political cost hypothesis proposed by Watts and Zimmerman (1990), predicts that larger firms are prone to reduce reported earnings to reduce the potential political risk. Wong and Jian (2003) state that large Chinese listed firms have a more extensive network of related parties, which is easier for them to manipulate their earnings via non-operating transactions. Thus, in this study, firm size is included as a control variable to examine the relationship between corporate governance and earnings management.

Return on assets (ROA) is used in many studies on both corporate governance and earnings management to control the firm performance (e.g. (Kothari, Leone et al. 2005); Kiel and Nicholson, 2003; Carter *et al.*, 2003). Beneish (2001) demonstrates that earnings management is more likely to occur when a firm's performance is abnormal. In addition, Carter *et al.* (2003) find that ROA is highly significant in explaining Tobin's Q and firm's value. Hence, ROA can be considered as a robust measure of firm performance. In this study, ROA is calculated as net income divided by total assets at the beginning of the testing period. Owing to CSRC's stringent regulation on delisting, it is more likely that 'ST' and 'PT' companies will present a higher degree of earnings management to avoid delisting.

Evidence in prior literature has shown that young firms with high growth are prone to commit financial statement fraud because they have strong financing needs, in addition, young firms are prone to have weaker governance structures and internal controls lag behind operations and have greater risk of distress (Beneish 1999). However, other researchers argue that older firms would be benefited from their ability to secure resources and their industrial experience. Old Chinese enterprises are characterized by both resource advantage and social burden (Tian and Lau, 2001). Given the possible influences of firm age on firm performance, it is incorporated as a control variable.

### Sample Data

The sample data are all collected from CCER (SINOFIN) and CSMAR database from the fiscal year of 2005 to 2010. The financial/accounting expertise (hold the degree of Finance or Accounting, with the title as CPA/ACCA/CIMA/Senior Accountant etc. with the work experiences in Securities and Investment Bank and Future and Options field) and the official background (whether worked/working in the official department) of both independent directors and supervisors are manually selected from the SINA FINANCE<sup>17</sup>.

There are two main reasons why the sample period starts from 2005: (1) *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies* set by CSRC

requires no less than one third of independent non-executive directors into the Boards of Directors by 30th of June 2003; (2) The data about the independent directors in the database even in 2004 is incomplete. *2006 Company Law* influences the board monitoring in three aspects: (1) a significant enhancement of the effectiveness of supervisory board<sup>18</sup>; (2) a modest strengthening of participation by employees, and (3) the independent director system codified. Hence, the impact of independent directors and supervisory directors on earnings management will be investigated in Chinese listed companies through employing data before and after the new Company Law effective in 2006.

During the period of 2005 and 2010, there are 9370 firm-year observations in total. To keep the consistency of the research observations, this paper excludes the new entrances of listed companies during the period and deletes the missing values of some observations. At the same time, some outliers of observations have been removed from the sample data. Therefore, there are 6882 firm-year observations for Discretionary Accruals Model and 6486 firm-year observations for the Discretionary Revenues Model.

### Results

Since this paper does not focus on the direction of the discretionary accruals or discretionary revenues, but concentrate on the magnitude of the discretionary accruals and revenues (ie. level of earnings management). Negatively signed accrual values are reversed to positive signs more intuitively capturing the magnitude of earnings management. The absolute effect of discretionary accruals is likewise employed by Setia-Atmaja et al.(2011), Firth et al. (2007) and Chung et al. (2002)and Warfield et al. (1995).According to the prior literature, the absolute effect of discretionary accruals and discretionary revenues will be investigated and regarded as the proxy of earnings management regardless of its directions in this paper (income-increasing or income-decreasing earnings management).

Table 2 presents the descriptive statistics for each of the variables used in the two models. The mean (median) value of discretionary accruals (DAC) is 0.000 (0.003) respectively. It ranges from -0.486 (minimum) to 0.499 (maximum).

**Table 2 Descriptive Statistics**

Variables	Mean (Median)	SD (Variance)	Min (Max)	Skewness (Kurtosis)	First Quartile (Third Quartile)
<b>Accruals</b>					
AC/TA	-0.062	0.098	-0.539	0.166	-0.114
	-0.061	0.010	0.467	5.320	-0.014
DAC_Modified Jones	0.000	0.092	-0.486	-0.071	-0.047
	0.003	0.008	0.499	5.634	0.050
DAC_abs	0.066	0.063	0.000	2.008	0.022
	0.048	0.004	0.499	8.630	0.090
Residuals_Rev	0.000	0.054	-0.395	-1.066	-0.016
	0.004	0.003	0.329	11.930	0.020
Residuals_Abs	0.033	0.043	0.000	3.137	0.008
	0.018	0.002	0.395	16.484	0.039
<b>Ownership Structure</b>					
Top1 Shareholding	0.360	0.153	0.035	0.405	0.238
	0.335	0.024	0.852	2.413	0.479
State-owned	0.347	0.476	0.000	0.641	0.000
	0.000	0.227	1.000	1.411	1.000
SO shares Percentage	0.218	0.233	0.000	0.576	0.000
	0.144	0.054	0.971	1.929	0.423
<b>Board Structure</b>					
Board Meeting	8.832	3.663	3.000	1.931	6.000
	8.000	13.418	38.000	10.368	10.000
IND_Meet_Attend Rate	0.990	0.034	0.542	-5.411	1.000
	1.000	0.001	1.000	40.753	1.000
No.of Directors	9.260	1.888	4.000	0.862	9.000
	9.000	3.563	25.000	5.517	10.000
No.of IND	3.286	0.699	1.000	1.020	3.000
	3.000	0.488	7.000	4.916	4.000
No. of IND_expertise	1.406	0.728	0.000	0.453	1.000
	1.000	0.530	5.000	3.436	2.000
No. of IND_official	0.333	0.608	0.000	1.966	0.000
	0.000	0.370	5.000	7.341	1.000

For absolute effect of discretionary accruals (DAC\_abs), the mean (median) value is 0.066 (0.048) respectively. The mean (median) value of discretionary revenue (Rev) is 0.000 (0.004) respectively. It ranges from -0.395 (minimum) to 0.329 (maximum), smaller than the

range of discretionary accruals. For absolute effect of discretionary revenues (Rev\_abs), the mean (median) value is 0.033 (0.018) respectively.

Variables	Mean (Median)	SD (Variance)	Min (Max)	Skewness (Kurtosis)	First Quartile (Third Quartile)
<b>Supervisory Board</b>					
Supervisor Meeting	4.377	1.722	0.000	0.992	3.000
	4.000	2.964	17.000	6.619	5.000
No. of Supervisors	4.031	1.312	2.000	1.248	3.000
	3.000	1.721	13.000	5.376	5.000
No. of SBM_expertise	0.965	0.777	0.000	0.497	0.000
	1.000	0.603	5.000	3.114	1.000
No. of SBM_official	0.144	0.421	0.000	3.509	0.000
	0.000	0.178	4.000	18.662	0.000
<b>Performance</b>					
1/TA	0.000	0.000	0.000	3.229	0.000
	0.000	0.000	0.000	18.981	0.000
(Sales-AR) change/TA	0.094	0.213	-0.887	1.116	-0.003
	0.073	0.046	1.879	11.035	0.173
PPE/TA	0.342	0.219	0.000	0.741	0.182
	0.306	0.048	1.510	3.480	0.481
<b>Control Variables</b>					
Firm Age	12.304	3.982	3.000	0.326	9.000
	12.000	15.858	30.000	2.883	15.000
ROA	0.033	0.072	-0.543	-0.760	0.009
	0.031	0.005	0.524	11.360	0.060
Ln assets(SIZE)	21.477	1.018	18.665	0.324	20.746
	21.414	1.036	24.846	3.030	22.136
Leverage	0.552	0.224	0.021	0.507	0.401
	0.549	0.050	1.984	4.548	0.697



**Table 3 Number of Independent Directors 2005-2010**

No. of Independent Directors	2005	2006	2007	2008	2009	2010
Greater than (Equals to)1/3	1053	1067	1092	1111	1119	1120
Less than 1/3	94	80	55	36	28	27
<b>Total</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>	<b>1147</b>

Since *the Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies* set by CSRC requires no less than one third of independent non-executive directors into the Boards of Directors by 30th of June 2003, an increasing number of companies have converged with the guidelines with more than one third independent directors according to Table 3.

In terms of the background of independent directors in Chinese quoted companies, they are classified into several groups: (1) independent directors with financial or Accounting Expertise; (2) independent directors with Law expertise; (3) independent directors with management expertise; (4) independent directors who are technician or engineer and (5) Others.

**Table 4a Correlation and Covariance Matrix (Discretionary Accruals)**

	Resid_~s	stateown	Top1	Board_~t	IND_Me~d	Direct~o	IND_ex~o	IND_of~o	SB_Meet	SB_exp~o	SB_off~o
Resid_abs	1.0000										
stateown	0.0656	1.0000									
Top1	0.0280	-0.2486	1.0000								
Board_Meet	0.0666	0.0618	-0.0437	1.0000							
IND_Meet~d	-0.0277	-0.0117	0.0192	-0.0419	1.0000						
Director_No	-0.0396	-0.1774	0.0353	-0.0207	-0.0118	1.0000					
IND_expert~o	0.0147	-0.0237	-0.0183	0.0783	0.0312	0.1993	1.0000				
IND_offici~o	0.0185	-0.0464	-0.0274	-0.0009	-0.0015	0.0714	0.0652	1.0000			
SB_Meet	0.0667	0.0252	-0.0074	0.3172	0.0453	-0.0222	0.0868	0.0387	1.0000		
SB_experti~o	-0.0099	-0.0811	0.0479	-0.0001	0.0247	0.1531	0.0690	-0.0440	0.0227	1.0000	
SB_officia~o	-0.0044	-0.0691	0.0461	0.0021	0.0243	0.0698	0.0066	0.0418	0.0217	0.1452	1.0000
firmage	0.0766	0.0695	-0.2879	0.1064	0.0240	-0.0925	0.1367	0.1079	0.1723	-0.0070	-0.0347
ROA	0.0793	0.0103	0.1262	0.0114	0.0715	0.0582	0.0047	-0.0068	0.0680	0.0742	0.0512
SIZE	-0.0034	-0.2290	0.2623	0.1590	0.0481	0.2432	0.1296	0.0159	0.1138	0.1162	0.0786
LEV	0.1192	-0.0070	0.0303	0.1476	-0.0495	0.0437	0.0309	0.0610	0.0375	0.0221	0.0032
	firmage	ROA	SIZE	LEV							
firmage	1.0000										
ROA	-0.0559	1.0000									
SIZE	0.0389	0.1793	1.0000								
LEV	0.1008	-0.1756	0.2037	1.0000							

**Table 4b Correlation and Covariance Matrix (Discretionary Revenue)**

	Resid_~s	stateown	Top1	Board_~t	IND_Me~d	Direct~o	IND_ex~o	IND_of~o	SB_Meet	SB_exp~o	SB_off~o
Resid_abs	1.0000										
stateown	0.0587	1.0000									
Top1	-0.0209	-0.2355	1.0000								
Board_Meet	0.0295	0.0647	-0.0496	1.0000							
IND_Meetat~d	-0.0979	-0.0073	0.0148	-0.0365	1.0000						
Director_No	-0.0602	-0.1720	0.0324	-0.0013	-0.0026	1.0000					
IND_expert~o	-0.0283	-0.0299	-0.0213	0.0729	0.0250	0.2060	1.0000				
IND_offici~o	-0.0313	-0.0471	-0.0403	0.0107	0.0023	0.0774	0.0702	1.0000			
SB_Meet	-0.0278	0.0317	-0.0121	0.3200	0.0536	-0.0111	0.0889	0.0430	1.0000		
SB_experti~o	-0.0251	-0.0783	0.0570	0.0037	0.0189	0.1452	0.0788	-0.0373	0.0229	1.0000	
SB_officia~o	-0.0290	-0.0666	0.0460	-0.0005	0.0142	0.0679	-0.0021	0.0359	0.0121	0.1273	1.0000
firmage	-0.0343	0.0669	-0.2756	0.1014	0.0251	-0.0921	0.1368	0.1122	0.1760	-0.0085	-0.0431
ROA	-0.1212	0.0083	0.1226	0.0137	0.0642	0.0579	0.0310	0.0013	0.0606	0.0593	0.0366
SIZE	-0.1969	-0.2205	0.2531	0.1632	0.0469	0.2497	0.1175	0.0277	0.1185	0.1151	0.0708
LEV	0.1030	-0.0198	0.0550	0.1375	-0.0609	0.0516	0.0188	0.0497	0.0344	0.0301	0.0155
	firmage	ROA	SIZE	LEV							
firmage	1.0000										
ROA	-0.0511	1.0000									
SIZE	0.0348	0.1891	1.0000								
LEV	0.1037	-0.1829	0.2269	1.0000							

Regression Results are listed in Table 5-6. Panel data is tested with fixed effects as well as the random effects for both two measures. Meanwhile, Pooled OLS Regression and Tobit Regression (since the absolute value of discretionary accruals and discretionary revenues are employed, greater than 0) are tested for both two models. There are no differences between the results of Tobit Regression and Pooled OLS Regression in both two models. Both industry and year dummies are included in this research to control for industry and time effect on earnings management in China. The T-statistics use robust standard errors (clustered by company) that account for potential heteroskedasticity and time series autocorrelation within each company. \*\*\*(\*\*, \*) indicates statistical significance at the 0.01 (0.05, 0.1) level (two tail tests).

According to the test results from Table 5a and Table 5b in the Tobit and Pooled OLS regressions, the Discretionary Accrual model with performance-matched estimates has more explanatory power than Discretionary Revenues Model. In both two measurements, Top 1 shareholding, Board meeting frequencies and firm age and leverage are all positively correlated with earnings management level, and firm size is negatively correlated with earnings management at the 1% significant level. Independent directors' meeting attendance rate is negatively correlated with earnings manipulation level, indicating that the more frequent the independent directors meet, the higher probability the earnings is manipulated. There are several different findings between discretionary accruals model and discretionary revenue model. Firstly, discretionary accruals model provides that state-owned firms are prone to manipulate earnings. However, discretionary revenue model shows that state-owned firms are not correlated with earnings management at all. Secondly, the Discretionary Revenues model finds a greater number of board members and independent directors with official background

will constrain earnings management in China. Thirdly, the more frequent the supervisors meet indicates higher probability of earnings manipulation in the discretionary accruals model only. Lastly, there is a positive relationship between the variable of Return on Assets (ROA) and earnings management level in Discretionary Accruals model at 1% significant level, illustrating the firms with higher ROA are more likely to engage in earnings manipulation. However, the Discretionary Revenue model tells the opposite result, firms with lower ROA are more likely to participate in earnings management.

**Table 5a Tobit Regression and Pooled OLS Regression  
(Discretionary Accruals Model)**

Dependent Variable	Tobit Regression		Pooled OLS Regression	
	Coefficient	Robust SE	Coefficient	Robust SE
<b>Residuals_abs (DAC)</b>				
Constant	0.160***	0.031	0.160***	0.031
State-owned	0.006***	0.002	0.006***	0.002
Top1 (%)	0.024***	0.005	0.024***	0.005
Board_Meet(times)	0.0004**	0.000	0.0004**	0.000
IND_Meet Attendance	-0.056**	0.026	-0.056**	0.026
Number of Directors	-0.0002	0.000	-0.0002	0.000
No. of IND_expertise	-0.0003	0.001	-0.0003	0.001
No. of IND_official	0.0008	0.001	0.0008	0.001
SB_Meet(times)	0.001**	0.000	0.001**	0.000
No. of SBM_expertise	-0.0004	0.001	-0.001	0.001
No. of SBM_official	-0.001	0.002	-0.001	0.002
Firm Age	0.0005**	0.000	0.0005**	0.000
ROA	0.084***	0.016	0.084***	0.016
SIZE	-0.004***	0.001	-0.004***	0.001
Leverage	0.028***	0.004	0.028***	0.004
Year	√		√	
Industry	√		√	
F	10.82		10.69	
Pseudo R-square	-0.03			
R-square			0.07	
Adjusted R-square			0.07	
Number of Observations	6882		6882	

\* p&lt;0.1

\*\* p&lt;0.05

\*\*\* p&lt;0.01

**Table 5b Tobit Regression and Pooled OLS Regression  
(Discretionary Revenue Model)**

Dependent Variable	Tobit Regression		Pooled OLS Regression	
	Coefficient	Robust SE	Coefficient	Robust SE
<b>Residuals_abs (REV)</b>				
Constant	0.251***	0.028	0.251***	0.029
State-owned	0.0020	0.001	0.002	0.001
Top1 (%)	0.012***	0.004	0.012***	0.004
Board_Meet(times)	0.001***	0.000	0.000***	0.001
IND_Meet Attendance	-0.078***	0.025	-0.078***	0.026
Number of Directors	-0.001**	0.000	-0.001**	0.000
No. of IND_expertise	0.001*	0.001	0.001*	0.001
No. of IND_official	-0.002***	0.001	-0.002***	0.001
SB_Meet(times)	0.000	0.000	0.000	0.000
No. of SBM_expertise	0.000	0.001	0.000	0.001
No. of SBM_official	0.000	0.001	0.000	0.001
Firm Age	0.000*	0.000	0.000*	0.000
ROA	-0.035***	0.013	-0.035***	0.013
SIZE	-0.008***	0.001	-0.008***	0.001
Leverage	0.024***	0.004	0.024***	0.004
Year	√		√	
Industry	√		√	
<b>F</b>	20.12		19.88	
<b>Pseudo R-square</b>	-0.04			
<b>R-square</b>			0.12	
<b>Adjusted R-square</b>			0.11	
<b>Number of Observations</b>	6486		6486	

\* p&lt;0.1

\*\* p&lt;0.05

\*\*\* p&lt;0.01

To keep consistency and better examine the time effect on earnings management, each company has 6-year observations (2005-2010). Hence, it is strong-balanced panel data for both two measures. According to Hausman test results from the panel data in Table 6a and 6b, Discretionary Accruals model and Discretionary Revenue model present different stories respectively. Under the Discretionary Accruals model, the Hausman test result of Chi square (probability) with industry effect is 20.68 (0.2960). The probability (0.296) is greater than 0.05, indicating that the Discretionary Accruals model with fixed effects may be inconsistent. Hence, the random effects should be applied to this model. Nevertheless, from Hausman test results of

Chi Square (probability) with industry effect is 50.68 (0.0001) in Table 6b. The probability (0.0001) is smaller than 0.05, proving that the random effects are inconsistent, therefore the fixed effects should be applied in Discretionary Revenues model.

Under the Modified Jones Model with random effects by controlling time and industry effects, the test results are consistent with Tobit regression results. Board meeting frequencies, Top1 shareholdings (ownership concentration) and state-owned firms and firm age and return on assets (ROA) and leverage are all positively correlated with the level earnings management. Moreover, the independent directors' meeting attendance rate and firm size are negatively correlated with earnings management level.

The significantly positive relationship between Top1 shareholdings (ownership concentration) and earnings management at the 1% significance level consists with prior literature. Ding *et al.* (2007) put forward that highly concentrated ownership determines the nature of the agency problem in Chinese listed companies. Followed Ding *et al.*'s (2007) work, Hu *et al.* (2010) specify that highly concentrated ownership structure in China cause the major problems called one-dominant controlling shareholder phenomenon with large proportion of shares, with extensive insider dealings and market manipulations often by controlling shareholders. It also coincides Shleifer and Vishny's view (1997) that one of the two most effective solutions to the agency problem is concentrated ownership (the other is legal protection). Johnson *et al.* (2000) bring forward that the controlling shareholders are more likely to pursue their private benefits at the expense of minority shareholders called 'tunneling'. State-owned is positively correlated with discretionary accruals at 5% significant level. It means the state-owned enterprises are more likely to manipulate earnings than the private companies. It consists with the evidence provided by Ding *et al.* (2007) that the earnings management activities of Chinese listed firms are affected by their ownership concentration measured by the largest shareholder. They find alignment effect does exist when the ownership concentration reaches a high level, large shareholders become the ultimate owners of the firm, and are more likely to preserve its future growth through decreasing accounting earnings; large shareholders perhaps incline to adopt accounting policies that represent their own interests rather than the economic substance of the business transactions due to an entrenchment effect.

There are numerous studies in the US and UK and other European countries have tested whether board size, the percentage of independent non-executive directors, and frequency of board meetings are related to a firm's earnings quality. The results of these studies are mixed. The unique characteristics of internal governance in Chinese background will influence the earnings quality differently from that in the West. According to the test results, board meeting is positively significant with the earnings management, the more frequently the board meetings are held, the earnings are prone to be manipulated under the modified Jones model with random effects when the year and industry factors controlled. There are no findings providing that the greater number of independent directors (exceeding 1/3 of board director) can constrain earnings manipulation activities. However, the test results show that the higher the attendance

rate the independent directors attend meetings, the lower the earnings is manipulated.

As expected, firm age and leverage are positively correlated with earnings management level under modified Jones models with performance matched. It shows that firms with higher leverage level are easier to manipulate earnings to avoid the debt covenants violation, which complies with 'debt hypothesis' supported by Watts and Zimmerman (1990). In China, firms with a longer history are normally state-owned enterprises or transformed or controlled by the State. They have more incentives to engage in earnings management activities.

Discretionary Accruals model provides evidence that the firm size is positively correlated with earnings manipulation activities at 1% significant level in China. It means that firms with larger size incline to participate in the activities of earnings manipulation. This is possibly because the large-sized companies are owned or controlled by the State. They stand in the monopoly position in their industries with higher profitability without any pressures to acquire rights issue or to prevent delisting from the capital market. Hence, it is unnecessary for large-sized firms to manipulate earnings. There is an interesting result worth mentioning here. In the model of discretionary accruals, ROA (return on assets) is positively correlated with the level of earnings management at 1% significance level. It is probably due to tax purposes or income smoothing. Different from Discretionary Accruals model, the Discretionary Revenues model shows that return on assets (ROA) is negatively correlated with earnings manipulation magnitude at 10% significance level. It reflects that listed firms in China with poor financial performance are more likely to inflate earnings to beat the very restrict profit benchmarks for rights issue and avoid delisting regulated by CSRC.

Most importantly, none of the independent directors and Supervisors variables is significant under both the discretionary accruals model with random effects and the discretionary revenue model with fixed effects. It provides the evidence that the independent directors and supervisor system are dysfunctional in monitoring the board activities in China. Wang (2008) argues that the independent directors have made a definite but limited contribution to corporate governance in China, compared with the supervisory board which is perceived as merely a decoration to the boardroom. Some literatures demonstrate the effectiveness of supervisory directors in China is undermined by incorporating political officers, close friends and allies of senior managers (Dahya, Karbhari et al. 2003; Xiao, Dahya et al. 2004; Xi 2006; Hu, Tam et al. 2010). Consequently, overall monitoring efficiency is destroyed (Xi 2006).

**Table 6a Panel Data Analysis for Discretionary Accruals Model**

Dependent Variable	Fixed Effect		Random Effect	
	Coefficient	Robust SE	Coefficient	Robust SE
<b>Residuals_abs (DAC)</b>				
Constant	0.148**	0.072	0.155***	0.033
Board_Meet(times)	0.001**	0.000	0.001**	0.0002
IND_Meet Attendance	-0.049**	0.026	-0.051**	0.023
SB_Meet(times)	0.0003	0.001	0.0008	0.0005
Top1 (%)	0.041***	0.016	0.027***	0.007
State-owned			0.0047**	0.002
Number of Directors	-0.0001	0.001	-0.0002	0.001
No. of IND_expertise	-0.003***	0.001	-0.002	0.001
No. of IND_official	-0.002	0.002	-0.0001	0.002
No. of SBM_expertise	0.0014	0.002	0.0000	0.0011
No. of SBM_official	-0.001	0.003	-0.0010	0.002
Firm Age			0.0005**	0.0003
ROA	0.065***	0.021	0.0764***	0.0183
SIZE	-0.004	0.003	-0.0039***	0.0011
Leverage	0.040***	0.007	0.0319***	0.0049
Trend (Year)	Yes***		Yes***	
Industry Effect	No		Yes***	
Wald chi2			238.25	
F	5.68			
R-square	0.03		0.07	
Hausman Test (chi2)	20.68 (0.2960)			
Number of Observations	6882		6882	

\* p&lt;0.1

\*\* p&lt;0.05

\*\*\* p&lt;0.01

**Table 6b Panel Data Analysis for Discretionary Revenue Model**

Dependent Variable	Fixed Effects		Random Effects	
	Coefficient	Robust RE	Coefficient	Robust SE
<b>Residuals_abs (REV)</b>				
Constant	0.0663	0.061	0.241***	0.032
Board_Meet(times)	0.001***	0.000	0.001***	0.000
IND_Meet Attendance	-0.086***	0.030	-0.083***	0.028
SB_Meet(times)	0.000	0.000	0.000	0.000
Top1 (%)	0.003	0.012	0.011**	0.005
State-owned			0.001	0.002
Number of Directors	0.001	0.001	0.000	0.000
No. of IND_expertise	0.000	0.001	0.001	0.001
No. of IND_official	-0.002	0.001	-0.002**	0.001
No. of SBM_expertise	0.001	0.001	0.000	0.001
No. of SBM_official	-0.003	0.002	-0.001	0.001
Firm Age			0.000	0.000
ROA	-0.026*	0.016	-0.035***	0.014
SIZE	0.002	0.002	-0.007***	0.001
Leverage	0.015***	0.006	0.022***	0.004
Trend (Year)	Yes***		Yes***	
Industry Effect	No		Yes***	
Wald chi2			431.12	
F	14.44			
R-square	0.07		0.12	
Hausman Test (chi2)	50.68 (0.0001)			
Number of Observations	6486		6486	

\* p&lt;0.1

\*\* p&lt;0.05

\*\*\* p&lt;0.01

Chinese Guanxi (relationship) culture environment leads to the independence of the independent directors questioned. Peng (2004) and Wang (2008) indicate independent directors may affiliate themselves with the controlling shareholders even if they hold no further posts in the company. Such independent directors will not play their roles in reducing the controlling shareholders' expropriation from minority shareholders. Moreover, many companies seek to invite current or former politicians to serve as independent directors to bridge close relationship with the government, severely weaken the function of supervisory board (Tian and Lau 2001; Peng 2004; Xiao, Dahya et al. 2004; Chen, Li et al. 2011). In addition, CSRC clearly stipulates the number of concurrent posts for each independent director in the *Guidelines for Introducing*



*Independent Directors to the Board of Directors of Listed Companies.* 'In principle, independent directors can only hold concurrently the post of independent directors in five listed companies at maximum. They shall have adequate time and energy to perform the duties of the independent directors effectively. 'However, some independent directors hold concurrent posts more than five listed companies. Their performance and independence have questioned and compromised.

The sample distributions by industry for Discretionary Accruals and Discretionary Revenue Model are presented in Tables 7. The table indicates that Chinese listed companies are mainly concentrated in the manufacturing sector. Both industry and year dummies are included in this research to control for industry and time factors. In light of Industry Classifying Guidelines of Listed Companies (2001) released by the CSRC, there are 13 industry categories: (a) Farming, forestry, animal husbandry; (b) Mining; (c) Manufacturing; (d) Utilities; (e) Construction; (f) Transportation and warehousing; (g) Information Technology; (h) Wholesale and Retail Trade; (i) Financial, banking and Insurance; (j) Real Estate; (k) Social Service; (l) Communication and Cultural Industries; and (m) Conglomerates. In line with Peasnell et al.(2000) and Stubben (2010), the firms in the regulated industries of financial, insurance and banks and utilities are excluded because their revenues and accruals are different from those of other firms. Hence, there are 11 industries will be included in this paper to examine the industry effect on earnings management.

Through pooled OLS regressions and panel data analysis for both two models comprising industry effects, some industries are found to be significantly correlated with earnings

**Table 7 Distribution by Industry for Discretionary Accruals Model**

Industry Name	Industry Code	Frequency		Percent	
Farming, Forestry, Animal husbandry	A	162	156	2.35	2.41
Mining	B	156	138	2.27	2.13
Manufacturing	C	4,074	3,816	59.20	58.83
Construction	E	150	144	2.18	2.22
Transportation And Warehousing	F	300	276	4.36	4.26
Information Technology	G	396	360	5.75	5.55
Wholesale and Retail Trade	H	528	486	7.67	7.49
Real Estate	J	474	486	6.89	7.49
Social Service	K	222	222	3.23	3.42
Communication and Cultural	L	54	42	0.78	0.65
Conglomerates	M	366	360	5.32	5.55
<b>Total</b>		<b>6,882</b>	<b>6,486</b>	<b>100</b>	<b>100</b>

### Conclusion

This study examines the ability of revenue and accrual models to detect opportunistic behavior in China from 2005 to 2010. This research will extend the existing literature linking board monitoring from the perspective of Chinese unique two-tier boards (board of directors with independent directors and supervisory directors including employee representatives) with earnings management by examining the changes of regulation on listed companies in China with weak corporate governance.

In terms of the background of independent directors in Chinese quoted companies, they will be classified into several groups: (1) independent directors with financial or Accounting Expertise; (2) independent directors with Law expertise; (3) independent directors with management expertise; (4) independent directors who are technician or engineer and (5) Others. This paper

investigates whether (1) firms with more independent directors and supervisors will be less likely to engage in earnings management; (2) firms with more independent directors and supervisors having financial/accounting expertise will be less likely to manipulate earnings; (3) firms with a greater number of independent directors and supervisors with government official background will be more likely to participate in earnings management.

All hypotheses have been rejected in this paper. Our findings suggest that a greater number of independent directors or supervisors with financial/accounting expertise do slight help for constraining earnings manipulation. Therefore, the independent directors system and supervisory board have malfunctioned and failed to monitor and restrain earnings management. Although the *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies* has been applicable in mainland China since 2001, the true independence of independent directors and supervisors have been compromised, not mention the supervisors' function in controlling earnings manipulation activities. Their performances are questioned and challenged. On the contrary, independent directors and supervisors are prone to participate in manipulating earnings because of alignment effect or entrenchment effect.

Theoretically, the outside directors will be best placed to effectively monitor the financial statements produced by the board if two conditions are satisfied. Firstly, outside directors must have sufficient incentives (eg. economic, social and legal incentives) to monitor the board. Secondly, the outside directors should have adequate expertise to understand the financial reporting process (eg. earnings manipulation techniques) and the firm's operating activities (Beeks, Pope and Young, 2004). However, this is not the applicable situation within Chinese firms, generally started from the Bureau positions, not familiar with the industry and management. In current listed companies in China, there is a prevalent phenomenon that both independent directors and supervisors consist of complex personnel structure; generally started their positions from Bureaus. Compared with outside directors, inside directors may incline to boost earnings for opportunistic behavior to obtain their own private gains. When these two crucial conditions fail to be satisfied, independent directors are more likely to align themselves with the board. Hence, the function of independent directors is considerably weakened.

The results of this research paper explicitly support the attention paid by regulators in mainland China to improve the authentic independence and functions of independent directors and supervisory board.

## Notes

- 1 The largest collapse was WorldCom's meltdown with estimated losses approximating \$180 billion in 2002.
- 2 It is commonly accepted that one of the main goals of China's market-oriented reforms is to establish a corporate governance system that could provide incentives for investment, adequately restrain and monitor management, and promote the optimal use of resources for wealth creation.

3 'SOE employees benefited from housing, medical care, and schooling for their children, with the government providing benefits for maternity, injury, disability, and old age. Many SOEs were heavily subsidized and the government gave them access to bank financing, partly to pay for the social welfare needs of the workers.' (Tricker, 2009, p.192)

4 The ratio of China's stock market capitalization to GDP rose from 4% in 1992 to about 100% in 2007.

5 The first approved QFII traded in A-shares on 9<sup>th</sup> July, 2003.

6 The China Securities Regulatory Commission (CSRC) is the capital market regulator in China playing the similar role as the Securities and Exchange Commission (SEC) in the USA, with the prime objective of protecting investors' rights and interests. CSRC issues the corporate governance code and other corporate governance regulations, and publishes regular reports on corporate governance reform and performance in China. CSRC maintains an orderly securities and futures market order, and ensure a legal operation of the capital market. CSRC revises its disclosure requirement to continuously improve the quality of information disclosure of listed companies with the ultimate goal being to improve corporate governance. Furthermore, CSRC sets rigid regulations for the profitability requirements for rights issue and delisting.

7 Under the quota system, local governments were delegated to select which firms should go public for equity financing (Tan and Wang, 2004; Chen and Lee et al., 2008). CSRC predetermined the issue prices of an IPO based on a fixed price earnings (P/E) ratio method, in which a pre-set P/E ratio between 13 and 15 multiplied the company's average earnings over the past three years.

8 The offering price is based on results from a book building process oriented to institutional investors. Brokerage houses use the final negotiated price for the retail offering.

9 The State Assets Management Bureau (SAMB) was elevated to ministerial level as the State-owned Assets Supervision and Administration Commission (SASAC) in 2003. It is authorized by the State Council in accordance with the Company Law and other administrative regulations, performs investor's responsibilities, supervises and manages the State-owned assets of the enterprises under the supervision of the Central Government (excluding financial enterprises), and enhances the management of the State-owned assets. SASAC guides and pushes forward the reform and restructuring of state-owned enterprises, advances the establishment of modern enterprise system in SOEs, improves corporate governance.'

10 At the end of 2008, the total assets held by SASAC amounted to RMB5.56 trillion.

<http://xxgk.sasac.gov.cn/gips/contentSearch?id=7379976>

11 See [http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/200708/t20070810\\_69223.htm](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/200708/t20070810_69223.htm)

12 See [http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content\\_1383787.htm](http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content_1383787.htm)

13 See [http://www.csrc.gov.cn/pub/csrc\\_en/newsfacts/release/200708/t20070810\\_69191.htm](http://www.csrc.gov.cn/pub/csrc_en/newsfacts/release/200708/t20070810_69191.htm)

14 Independent directors of the listed company refer to the directors who hold no posts in the company other than the position of director, and who maintain no relations with the listed company and its major shareholder that might prevent them from making objective judgment independently. The qualified independent directors should have 'more than five years' work experience in law, economics or other fields. Independent directors should ensure financial decisions represent the best interests of all shareholders and should not result in biased earnings or cash flows towards the managers, controlling shareholders, or the minority shareholders

(CSRC, 2002).

15 'Bonus Hypothesis' assumes that managers alter reported earnings to increase their compensation.

16 'Debt Hypothesis' assumes that managers of firms with high level of leverage tend to choose accounting methods and policies that increase reported earnings to avoid technical default of debt covenants or to reduce the restrictiveness of accounting based constraints in debt agreements.

17 <http://finance.sina.com.cn/stock/index.shtml>

18 For instance, firstly, *2006 Company Law* gives the Supervisory Directors a specific power to propose dismissal of directors and senior managers who violate laws, regulations, articles of association, or resolutions of shareholders' meetings. Secondly, the supervisory board now may have the power to convene and preside over the shareholders' meeting instead of the board of directors, when the latter fails to act in a prescribed manner. Thirdly, the amendments enable Supervisory Directors to inspect the company's business operations, if they detect any signs of abnormality.

### References

Agrawal, A. and Chadha, S. (2005). 'Corporate Governance and Accounting Scandals', *Journal of Law and Economics*, 48(2): 371-406.

Aharony, J., Lee, C.-W. J. and Wong, T. J. (2000). 'Financial Packaging of IPO Firms in China', *Journal of Accounting Research*, 38(1): 103-126.

Aharony, J., Wang, J. and Yuan, H. (2010). 'Tunneling as an incentive for earnings management during the IPO process in China', *Journal of Accounting and Public Policy*, 29(1): 1-26.

Beneish, M. D. (1999). 'Incentives and Penalties Related to Earnings Overstatements That Violate GAAP', *The Accounting Review*, 74(4): 425-457.

Beneish, M. D. (2001). 'Earnings Management: A Perspective', SSRN [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=269625](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=269625).

Bermig, A. and Frick, B. (2010). 'Board Size, Board Composition, and Firm Performance: Empirical Evidence from Germany', SSRN eLibrary.

Burgstahler, D. and Dichev, I. (1997). 'Earnings management to avoid earnings decreases and losses', *Journal of Accounting and Economics*, 24(1): 99-126.

Chen, G., Firth, M., Gao, D. N. and Rui, O. M. (2006). 'Ownership structure, corporate governance, and fraud: Evidence from China', *Journal of Corporate Finance*, 12(3): 424-448.

Chen, J. (2005). *Corporate governance in China*. London, New York, RoutledgeCurzon.

- Chen, J. J. and Cheng, P. (2007). 'Corporate Governance and the Harmonisation of Chinese Accounting Practices with IFRS Practices', *Corporate Governance: An International Review*, 15(2): 284-293.
- Chen, K. C. W. and Yuan, H. (2004). 'Earnings Management and Capital Resource Allocation: Evidence from China's Accounting-Based Regulation of Rights Issues', *The Accounting Review*, 79(3): 645-665.
- Chen, K. Y., Elder, R. J. and Hsieh, Y.-M. (2007). 'Corporate Governance and Earnings Management: The Implications of Corporate Governance Best-Practice Principles for Taiwanese Listed Companies', *Journal of Contemporary Accounting & Economics*, 3(2): 73-105.
- Chen, S. K., Wang, Y. P., Lin, B. X. and Wu, L. S. (2008). 'The frequency and magnitude of earnings management in China', *Applied Economics*, 40(24): 3213-3225.
- Chen, S. K., Wang, Y. P., Lin, B. X. and Wu, L. S. (2010). 'The frequency and magnitude of earnings management: Time-series and multi-threshold comparisons', *International Review of Economics & Finance*, 19(4): 671-685.
- Chen, V. Z., Li, J. and Shapiro, D. (2011). 'Are OECD-Prescribed 'Good Corporate Governance Practices' Really Good in an Emerging Economy?', *Asia Pacific Journal of Management*, Vol. 28, No. 1, 2011.
- Chen, X., Lee, C. W. J. and Li, J. (2008). 'Government assisted earnings management in China', *Journal of Accounting and Public Policy*, 27(3): 262-274.
- Cheng, Q. and Warfield, T. D. (2005). 'Equity Incentives and Earnings Management', *The Accounting Review*, 80(2): 441-476.
- Cheung, Y.-L., Jiang, P., Limpaphayom, P. and Lu, T. (2008). 'Does corporate governance matter in China?', *China Economic Review*, 19(3): 460-479.
- Cheung, Y.-L., Jiang, P., Limpaphayom, P. and Lu, T. (2010). 'Corporate Governance in China: a Step Forward', *European Financial Management*, 16(1): 94-123.
- Cheung, Y.-L., Ouyang, Z. and Tan, W. (2009). 'How regulatory changes affect IPO underpricing in China', *China Economic Review*, 20(4): 692-702.
- Clarke, D. C. (2003). 'Corporate governance in China: An overview', *China Economic Review*, 14(4): 494-507.

Conyon, M. J. and He, L. (2011). 'Executive compensation and corporate governance in China', *Journal of Corporate Finance*, In Press, Accepted Manuscript.

Cornett, M. M., Marcus, A. J. and Tehranian, H. (2008). 'Corporate governance and pay-for-performance: The impact of earnings management', *Journal of Financial Economics*, 87(2): 357-373.

Dahya, J., Karbhari, Y., Xiao, J. Z. and Yang, M. (2003). 'The Usefulness of the Supervisory Board Report in China', *Corporate Governance: An International Review*, 11(4): 308-321.

Dechow, P. M., Sloan, R. G. and Sweeney, A. P. (1995). 'Detecting Earnings Management', *The Accounting Review*, 70(2): 193-225.

Dechow, P. M., Sloan, R. G. and Sweeney, A. P. (1996). 'Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC\*', *Contemporary Accounting Research*, 13(1): 1-36.

Dechow, P. M., Sloan, R. G. and Sweeney, A. P. (1996). 'Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC', *Contemporary Accounting Research*, 13(1(Spring 1996)): p. 1-36.

Dechow, P. and Schrand, C., 2004. *Earnings Quality*. The Research Foundation of CFA Institute, p.1-152

DeGeorge, F., Patel, J. and Zeckhauser, R. (1999). 'Earnings Management to Exceed Thresholds', *The Journal of Business*, 72(1): 1-33.

Ding, Y., Zhang, H. and Zhang, J. X. (2007). 'Private vs state ownership and earnings management: Evidence from Chinese listed companies', *Corporate Governance-an International Review*, 15(2): 223-238.

Eisenhardt, K. M. (1989). 'Agency Theory: An Assessment and Review', *The Academy of Management Review*, 14(1): 57-74.

Ewert, R. and Wagenhofer, A. (2005). 'Economic Effects of Tightening Accounting Standards to Restrict Earnings Management', *The Accounting Review*, 80(4): 1101-1124.

Fama, E. F. and Jensen, M. C. (1983). 'Separation of Ownership and Control', *Journal of Law and Economics*, XXVI.

Fauver, L. and Fuerst, M. E. (2006). 'Does good corporate governance include employee

representation? Evidence from German corporate boards', *Journal of Financial Economics*, 82(3): 673-710.

Firth, M., Fung, P. M. Y. and Rui, O. M. (2007). 'Ownership, two-tier board structure, and the informativeness of earnings - Evidence from China', *Journal of Accounting and Public Policy*, 26(4): 463-496.

Gillan, S. L. (2006). 'Recent Developments in Corporate Governance: An Overview', *Journal of Corporate Finance*, 12(3): 381-402.

Goergen, M., Manjon Antolin, M. C. and Renneboog, L. (2004). 'Recent Developments in German Corporate Governance', SSRN eLibrary.

Green, S. (2003). 'China's Stock Market: eight myths and some reasons to be optimistic', Haw, I.-M., Qi, D., Wu, D. and Wu, W. (2005). 'Market Consequences of Earnings Management in Response to Security Regulations in China\*', *Contemporary Accounting Research*, 22(1): 95-140.

Healy, P. M. and Wahlen, J. M. (1999). 'A Review of the Earnings Management Literature and its Implications for Standard Setting', *Accounting Horizons*, 13(4): 365-383.

Hillier, D. and McColgan, P. (2006). 'An Analysis of Changes in Board Structure during Corporate Governance Reforms', *European Financial Management*, 12(4): 575-607.

Holland, D. (2004). 'Earnings Management: A Methodological Review of the Distribution of Reported Earnings Approach', SSRN eLibrary.

Hopt, K. J. and Leyens, P. C. (2004). 'Board Models in Europe - Recent Developments of Internal Corporate Governance Structures in Germany, the United Kingdom, France, and Italy', ECGI - Law Working Paper No. 18/2004.

Hribar and Nichols, 2007, The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management, *Journal of Accounting Research*, Vol. 45 No. 5 December 2007

Hu, H., Tam, O. and Tan, M. (2010). 'Internal governance mechanisms and firm performance in China', *Asia Pacific Journal of Management*, 27(4): 727-749-749.

Jeanjean, T. and Stolowy, H. (2009). 'Determinants of board members' financial expertise -- Empirical evidence from France', *The International Journal of Accounting*, 44(4): 378-402.



Jensen, M. C. and Meckling, W. H. (1976). 'Theory of the firm: Managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, 3(4): 305-360.

Johnson, S.,Rafael, L. P.,Lopez-de-Silanes, F. and Andrei, S. (2000). 'Tunneling', *The American Economic Review*, 90(2): 22-27.

Klapper, L. F. and Love, I. (2004). 'Corporate governance, investor protection, and performance in emerging markets', *Journal of Corporate Finance*, 10(5): 703-728.

Klein, A. (2002). 'Audit committee, board of director characteristics, and earnings management', *Journal of Accounting and Economics*, 33(3): 375-400.

Kothari, S. P., Leone, A. J. and Wasley, C. E. (2005). 'Performance matched discretionary accrual measures', *Journal of Accounting and Economics*, 39(1): 163-197.

<http://www.chathamhouse.org.uk/publications/papers/view/-/id/89/>.

Lee, Y. S., Rosenstein, S. and Wyatt, J. G. (1999). 'The value of financial outside directors on corporate boards', *International Review of Economics & Finance*, 8(4): 421-431.

Leuz, C., Nanda, D. and Wysocki, P. D. (2003). 'Earnings management and investor protection: an international comparison', *Journal of Financial Economics*, 69(3): 505-527.

Lin, A. Y. and Swanson, P. E. (2008). 'The Effect of China's Reform Policies on Stock Market Information Transmission', *Quarterly Journal of Finance & Accounting*, 47(3): 49-76.

Liu, J.,Tu, Q.,Liu, M. and Xiao, Y. (2010). An Empirical Study on the Independence of Supervisory Board of Chinese Listed Company: A PLS Approach. *Artificial Intelligence and Computational Intelligence (AICI)*, 2010 International Conference on.

Liu, Q. (2006). 'Corporate Governance in China: Current Practices, Economic Effects and Institutional Determinants', *CESifo Economic Studies*, 52(2): 415-453.

Liu, Q. and Lu, Z. (2007). 'Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective', *Journal of Corporate Finance*, 13(5): 881-906.

Lo, A. W. Y., Wong, R. M. K. and Firth, M. (2010). 'Can corporate governance deter management from manipulating earnings? Evidence from related-party sales transactions in China', *Journal of Corporate Finance*, 16(2): 225-235.

Maijoor, S. J. and Vanstraelen, A. (2006). 'Earnings management within Europe: the effects of member state audit environment, audit firm quality and international capital markets', *Accounting & Business Research*, 36(1): 33-52.

- McGee, R. W. (2008). 'Corporate Governance in Asia: Eight Case Studies', SSRN eLibrary.
- McNichols, M. F. (2000). 'Research design issues in earnings management studies', *Journal of Accounting and Public Policy*, 19(4-5): 313-345.
- Osma, B. G. and Noguer, B. G.-d.-A. (2007). 'The Effect of the Board Composition and its Monitoring Committees on Earnings Management: evidence from Spain', *Corporate Governance: An International Review*, 15(6): 1413-1428.
- Park, Y. W. and Shin, H.-H. (2004). 'Board composition and earnings management in Canada', *Journal of Corporate Finance*, 10(3): 431-457.
- Peasnell, K. V., Pope, P. F. and Young, S. (2000). 'ACCRUAL MANAGEMENT TO MEET EARNINGS TARGETS: UK EVIDENCE PRE- AND POST-CADBURY', *The British Accounting Review*, 32(4): 415-445.
- Peasnell, K. V., Pope, P. F. and Young, S. (2005). 'Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals?', *Journal of Business Finance & Accounting*, 32(7-8): 1311-1346.
- Peasnell, K. V., Pope, R. F. and Young, S. (2005). 'Board monitoring and earnings management: Do outside directors influence abnormal accruals?', *Journal of Business Finance & Accounting*, 32(7-8): 1311-1346.
- Peng, W. M. (2004). Outside directors and firm performance during institutional transitions.
- Pistor, K. and Xu, C. (2005). 'Governing Stock Markets in Transition Economies: Lessons from China', *American Law and Economics Review*, 7(1): 184-210.
- Ronen, J. and Yaari, V. (2008). *Earnings management : emerging insights in theory, practice, and research*. New York, Springer.
- Roychowdhury, S. (2006). 'Earnings management through real activities manipulation', *Journal of Accounting and Economics*, 42(3): 335-370.
- Schipper, K. (1989). 'COMMENTARY on Earnings Management', *Accounting Horizons*, 3(4): 91-102.
- Shleifer, A. and Vishny, R. W. (1997). 'A Survey of Corporate Governance', *The Journal of Finance*, 52(2): 737-783.

Sloan, R. G., Dechow, P. M., Hutton, A. P. and Kim, J. H. (2010). 'Detecting Earnings Management: A New Approach', SSRN: <http://ssrn.com/abstract=1735168>.

Tan, J. and Zhou, F. (2009). Background of Independent Directors and Risk Aversion: Empirical Evidence Based on Resignation of Independent Directors. Fourth International Conference on Cooperation and Promotion of Information Resources in Science and Technology, 2009.

Tan, L. H. and Wang, J. (2004). 'Proposing a Model for Corporate Governance in China's Listed Companies: Problems and Prospects', SSRN eLibrary.

Tian, J. and Lau, C. M. (2001). 'Board Composition, Leadership Structure and Performance in Chinese Shareholding Companies', *Asia Pacific Journal of Management*, 18(2): 245-263-263.

Wang, J. (2008). 'The Strange Role of Independent Directors in a Two-Tier Board Structure of China's Listed Companies', *Compliance and Regulatory Journal*, Vol. 3, pp. 47-55, 2008.

Wang, J. (2010). 'A comparison of shareholder identity and governance mechanisms in the monitoring of CEOs of listed companies in China', *China Economic Review*, 21(1): 24-37.

Wang, P. X., Wang, Z. Y. and Xiang, T. X. (2008). Empirical analysis of relations between earnings management of the listed company and the corporate governance structure. 2008 International Conference on Management Science and Engineering (15th), Long Beach, USA.

Wang, S. q. and Liu, J. y. (2006). The Market for Controlling Rights, Independent Directors System and Supervisory Board Governance - A New View Based on Comparative Institutional Analysis. International Conference on Management Science and Engineering, 2006.

Warfield, T. D., Wild, J. J. and Wild, K. L. (1995). 'Managerial ownership, accounting choices, and informativeness of earnings', *Journal of Accounting and Economics*, 20(1): 61-91.

Watts, R. L. and Zimmerman, J. L. (1990). 'Positive Accounting Theory - a 10 Year Perspective', *Accounting Review*, 65(1): 131-156.

Watts, R. L. and Zimmerman, J. L. (1990). 'Positive Accounting Theory: A Ten Year Perspective', *The Accounting Review*, 65(1): 131-156.

Wong, T. J. and Jian, M. (2003). 'Earnings Management and Tunneling through Related Party Transactions: Evidence from Chinese Corporate Groups', SSRN eLibrary.

- Xi, C. (2006). 'In Search of an Effective Monitoring Board Model: Board Reforms and the Political Economy of Corporate Law in China', *Connecticut Journal of International Law*, Vol. 22, pp. 1-46, 2006.
- Xiao, J. Z., Dahya, J. and Lin, Z. J. (2004). 'A grounded theory exposition of the role of the supervisory board in China', *British Journal of Management*, 15(1): 39-55.
- Xie, B., Davidson Iii, W. N. and DaDalt, P. J. (2003). 'Earnings management and corporate governance: the role of the board and the audit committee', *Journal of Corporate Finance*, 9(3): 295-316.
- Young, M. N., Peng, M. W., Ahlstrom, D., Bruton, G. D. and Jiang, Y. (2008). 'Corporate Governance in Emerging Economies: A Review of the Principal-Principal Perspective', *Journal of Management Studies*, 45(1): 196-220.
- Yu, Q., Du, B. and Sun, Q. (2006). 'Earnings management at rights issues thresholds--Evidence from China', *Journal of Banking & Finance*, 30(12): 3453-3468.
- Yuka, K. (2010). 'Theories and Realities of Asian Corporate Governance: From 'Transplantation' to the Asian Best Practices', *Procedia - Social and Behavioral Sciences*, 2(5): 6883-6895.
- Zhang, Y. and Li, Y. (2007). The Effect of the Directorate Characteristics on Earnings Management Based on Chinese Market Data. *International Conference on Wireless Communications and Networking and Mobile Computing*, 2007.
- Setia-Atmaja, L., J. Haman, et al. (2011). "The role of board independence in mitigating agency problem II in Australian family firms." *The British Accounting Review* 43(3): 230-246.

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