

BOARDS CHARACTERISTICS, AUDIT COMMITTEE, EXTERNAL AUDITOR AND EARNINGS MANAGEMENT: CHINESE EVIDENCE

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Abstract

This study investigates the effect of two-tier board characteristics, audit committee, and external auditors on earnings management in China. This study contributes to the empirical literature of corporate governance in China that remarkably differs from the Anglo-Saxon structure in terms of boards' features and auditing. Using a sample of 622 listed Chinese company-years, this study finds that independent directors on the board of directors are negatively related to earnings management while employee supervisors on the supervisory board are not related to earnings management. The results of empirical analysis also show that the presence of audit committees and the brand auditors are negatively associated with earnings management. Finally, the relationship between qualified audit opinions and the level of earnings management are examined. The results show that qualified audit opinion is associated with a higher level of earnings management. Implications of these findings are discussed with regard to the characteristics of corporate governance and auditing settings in Chinese listed companies. In particular, higher proportion of independent directors on the board can improve the quality of reported earnings. However, it indicates that the role of supervisory board to restrain earnings management is limited with the increase of employee members. In addition, the existence of an audit committee improves the quality of reported earnings. Moreover, external audit play a monitoring role in mitigating earnings management in Chinese listed companies.

Keywords: Earnings management; Board characteristics; Supervisory Board; Audit committee; Auditor

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1. Introduction

China's economic reform has resulted in the corporatization and stock exchange listing of many enterprises that were previously state owned, making the Chinese capital market one of the largest capital markets in the world. This economic reform, along with the opening up of the capital market to foreign investors, has raised the demand for the establishment of an international corporate governance framework by both domestic and foreign investors. In response to this demand, in recent years, the Chinese government has strengthened the auditing profession and stipulated a new set of domestic accounting standards, which are compatible with International Financial Reporting Standards (IFRS). With the limitation to directly acquire company's information from other public sources, the reliability of accounting information provided by the Chinese capital market is becoming an interesting field.

Recently, both researchers and practitioners have realised the importance of effective monitor mechanism over management in ensuring the quality

of accounting earnings. The studies of corporate governance regimes in achieving higher earnings quality have triggered a growing interest in academic research by linking corporate governance measures with earnings quality (e.g. Firth et al., 2007; Peasnell, et al., 2005; Petra, 2007; Vafeas, 2005). Chinese listed companies have several unique governance characteristics which are distinct from Western counterparts in U.S. and U.K. Accordingly, the study of Chinese corporate governance regime and its role in monitoring earnings management has implications that cannot be drawn from studies of Western listed companies.

China's corporate governance presents a number of unique characteristics. According to Chinese Company Law, listed companies are required to have a two-tier board system: a board of directors and a supervisory board. The board of directors is selected by shareholders and set up in a similar way to those boards in U.S and U.K. The supervisory board is elected by shareholders in the general meeting or the labour union being consisted of shareholders, employees and representatives from the government

that this monitoring mechanism is vacant in Anglo internal governance systems. Secondly, according to the China Securities Regulatory Commission (CSRC), unlike in Western counterpart that audit committee is prevailing, it is voluntary to set up the audit committee in Chinese listed companies. Thirdly, auditor concentration in China is far lower than in U.S and many other countries as China's auditing market is a young professional market. In addition, Chinese domestic auditing firms tend to be small size and lack of professional auditors.

Using a sample of 158 publicly traded Chinese companies and abnormal accruals as proxy of earnings management, this paper examines whether the magnitude of abnormal accruals is related to such unique governance characteristics. In particular, this paper examines the role of boards, the existence of audit committees, and external auditors in monitoring earnings management. This study finds the independence of board can constrain the earnings management. However, contrary to the CSRC's intent, the presence of employee supervisors on the supervisory boards does not effectively exert their monitoring roles in constraining earnings management. In addition, this study explores whether the existence of an audit committee on a voluntary basis could mitigate the earnings management. The empirical results show a significantly negative association between abnormal accruals and the existence of an audit committee. This result indicates that the audit committee is preferred to be mandatory rather than optional for a better governance mechanism under Chinese reporting context.

Since the effectiveness of internal governance is embedded within the larger governance process, this study also examines whether external auditors have an effective influence on constraining earnings management. The results show that "brand" audit firms (Big 4 audit firms) are negatively associated with abnormal accruals. The qualified audit opinions are positively related to abnormal accruals. These findings support the hypotheses that large and more independent audit firms play a positive role in mitigating earnings management, while qualified audit reports are a powerful evidence of low quality of accounting earnings.

This paper makes several contributions to the governance setting in Chinese reporting environment. This study performs a unique experimental analysis of Chinese listed companies. While previous studies examine either companies committing egregious financial fraud (e.g. Dechow et al., 1996; Beasley, 1996) or companies with incentives to overstate earnings (e.g. Teoh et al., 1998; Parker, 2000), this study conducts analysis on a sample of large, publicly traded Chinese companies with unique governance characteristics that cannot be observed in most Anglo-Saxon developed countries. Thus the results of this study can be used as empirical evidence to provide suggestions to regulatory body about aspects of

governance mechanisms which can improve China's corporate governance practices. Moreover, this paper also contributes to the growing literature on discussing China's auditing practices. The empirical results show that China's domestic auditing profession with limited size and expertise do not effectively oversee listed companies' financial status whilst international and brand name auditors are more skilful and play a role in constraining earnings management. These findings also have policy implications for improving the efficiency of China's professional training and practices by auditing professional body. Government enforcement alone is not sufficient to improve corporate governance practices. Instead, features typically found in developed countries such as higher proportion of independent directors on the board, highly self-regulated external auditing services, and efficient monitoring ability of audit committee are playing a crucial role in mitigating earnings management and more importantly in constructing the best corporate governance practices in Chinese reporting environment.

The structure of this paper is as follows: section 2 reviews the previous studies on corporate governance and develops the research hypotheses. Section 3 details methodology and research model used in this study. The sample and data are provided in section 4. Section 5 reports the empirical results. Section 6 provides the conclusions of this paper.

2. Literature review and hypothesis

Previous studies have investigated the role of corporate governance in restraining or mitigating earnings management. Not only do a number of studies examine why and how managers manipulate earnings, but also is there a large body of literatures that identify factors which may help to mitigate earnings management. Among of these studies some focus on the roles of independent directors, audit committee, and external auditors on corporate governance.

The effective monitoring role by outside directors in managerial behaviour originates from the design of incentive contracts for executives undertaken in the study by Fama and Jensen (1983). The study has pointed out that outside directors are motivated to work in the best interests of the minority shareholders as they bear substantial reputation costs if they fail in their duties. Karamanou and Vafeas (2005) have found that U.S. companies which have a high proportion of outside directors have higher financial disclosure quality. The study by Ajinkya et al. (2005) has shown that U.S. companies that have a high percentage of outside directors are more likely to make earnings forecasts and these forecasts are more accurate and give useful information to investors. Using data of Canadian companies, Park and Shin (2004) have found that independent directors are able

to prevent earnings management if these directors have accounting or financial expertise. In China, enterprise reforms have required companies to adopt Western-style boardroom structures to improve the companies' governance capacity. In 2001, the Guideline for Corporate Governance of Listed Firms issued by CSRC requires all listed companies to have at least two independent directors and this number increased to one-third of the boards in 2003. The apparent premise under such a movement is that independent directors can, in fact, effectively serve their monitoring role in Chinese companies' decision making as shown from the experience of Western counterparts. Hence, it is suggested boards which are structured to be more independent of the management are more effective in monitoring the corporate financial reporting process. Thus the proposed hypothesis 1a is:

Hypothesis 1a: The proportion of independent directors on the board of directors is negatively related to earnings management.

Given that very few countries have two-tier boards which include the board of directors and supervisory board, their impact on governing earnings management has not been extensively examined in previous studies. One view, perhaps the majority view, argues that the settings of supervisory board can reduce agency costs and allow shareholders to monitor managers more effectively (Lipton & Rosenblum, 1991). According to Lipton and Rosenblum (1991), companies with two-tier boards are less concerned with or affected by current earnings and are therefore better able to oversee management's behaviour than unitary boards. Kaplan (1994) supports the claim that supervisors in Germany companies might be more independent than U.S. outside directors, especially when the supervisory board has employee supervisors. Roe (1993) also supports such argument and has pointed out that, unlike U.S. board members, employee supervisors are not appointed or dominated by CEOs. In contrast, opponents argue that the two-tier boardroom structure would entrench managers and employees at the expense of shareholders. Employee supervisors, allied with senior managers, may utilize their relationship to secure the short-term interests and keep dumbness even the company report overstated profits to the public investors (Edwards et al., 2000). Others point out that the supervision of the supervisory board is a mere formality. For example, in a Chinese setting, Tam (1995) has surveyed China's governance system and the results show that supervisory boards in Chinese companies are the nominal structure and unable to perform their duties.

According to China's Company Law (1993), the supervisory board of listed companies should have at least three members and all of them are elected by the general meeting or labour union. Among these

members, at least one third of them should be employees of the company, and at least one represents the minority shareholders. Directors and managers of the company are illegal to become members of the supervisory board. This legal setting suggests that more employee supervisors on the board would serve better governance function. Consistent with majority view and Chinese corporate settings, this study deems that employee supervisors are more likely to perform their monitoring role compared with shareholder supervisors. Since the employee supervisors have a similar role to that of the independent directors played in U.S. companies, this study formulates hypothesis 1b:

Hypothesis 1b: The proportion of employee supervisors on the supervisory board is negatively associated with earnings management.

Generally, an effective audit committee improves the quality of accounting information from two aspects. First, by coordinating external and internal audits, the committee can ease external auditors' pressure and protect external auditors' independence (McMullen, 1996). Second, by monitoring companies' accounting activities, it can constrain the manipulation of earnings and maximise the possibility of discovering financial fraud. Many studies tend to highlight a negative relation between the independence or expertise of the audit committee and the magnitude of earnings manipulation. Klein (2002) finds that there is a negative association between audit committee independence and earnings management. The study also suggests that reductions in board or audit committee independence are accompanied by large increases in earnings management. Choi et al. (2004) find that if members of the audit committee hold shares in the company, they have less incentive to prevent earnings manipulation. Therefore, the results of their study demonstrate that the independence of committee members is a significant factor in performing the duties of the audit committee. Similarly, Collier and Gregory (1999) also show that an independent and well-structured audit committee is able to restrict earnings management more effectively. Bedard et al. (2004) suggest that the U.S. companies with 100% independent audit committee and with at least one financial expert on the audit committee are negatively associated with earnings management.

Audit committee have been established in China's listed companies after 2002 following the issuing of the Code of Corporate Governance for Listed Companies in China by CSRC. Although they now tend to be present in the large companies, their creation still remains as a voluntary decision of the companies, and no explicit legislation exists regarding the existence of the audit committee. However, CSRC has defined missions and the role of audit committees as a parallel to the U.S. model. The Code of Corporate Governance for Listed Companies in China (2002)

states that the audit committee should: (1) monitor the company's internal control system; (2) inspect the company's financial information and its disclosure; (3) review the internal audit system and its execution; (4) recommend the engagement or replacement of the company's external auditors; and (5) coordinate the internal and external audits. Since there is no previous studies examine the role of Chinese audit committees in earnings information, the effectiveness of the committee on monitoring earnings manipulation is thereby expected to be examined by this study. The hypothesis 1c is then developed:

Hypothesis 1c: The existence of an audit committee is expected to be associated with less magnitude of earnings management.

The quality of the external audit, unobservable to the public, is generally proxied by auditors' reputation or their size. In contrast with the scandals that challenge the credibility of famous audit firms, many studies tend to assert that the brand audit firms (e.g. Big 4) are more conservative in issuing their opinions, and are more likely to restrict opportunistic accounting activities. Earlier study conducted by DeAngelo (1981) has found that auditors with more clients have greater incentives to monitor and inspect their clients' financial reports. The reason is that if auditors cannot act independently and find out material earnings manipulation or other financial fraud, they would have a high risk to loss their reputation and licences or even get a heavy punishment. Kim et al. (2003) in their recent study also find that the large accounting firms (e.g. Big 4) are likely to enhance the credibility of financial reports to a greater extent than non-Big 4. However, some other researchers argue that not all types of earnings management receive the same scrutiny by different size auditors. In a survey of auditors at large international accounting firms, Nelson et al. (2002) find that auditors are less likely to require adjustments to structured accounting transactions that they believe represent attempts at earnings management when the accounting for those transactions is regulated by precise accounting standards. It is also reported in this survey that auditors are more likely to require adjustments to transactions which they believe are material. Therefore Nelson et al. (2002) argue that even though the external audit function serves to mitigate earnings management, its effectiveness varies with the characteristic of the transaction.

In China, the auditing professions are markedly different. After the revolution in 1949 the role of external auditing in the Chinese planned economy diminished significantly and was completely abolished when the economy was fully nationalized in 1962 (Gensler & Yang, 1996). Therefore, in time of planned economy auditing bodies became one of the Government agencies and played a role as an internal auditor of the Government. Until 1978, after the

economic reforms, the state-owned enterprises were decentralized and foreign investment grown rapidly that created demands for external audits for decision making and tax collection purposes. Partially in response to the needs for external auditing services the Ministry of Finance created the Chinese Institute of Certified Public Accountants (CICPA) in 1988 and granted permission to select some governments' accounting organizations to audit public companies after opening the stock exchanges in Shanghai and Shenzhen. However, due to lack of capital, new auditing firms have to affiliate with former existing institutions. Such generation process gives the Chinese auditing professions three distinctive features: government ownership of audit firms; limited size of audit firms; and the lack of experienced and independent auditors.

This study investigates the implication of characters on Chinese auditing professions compliance with studies undertaken in Western counterparts and thereby assumes that compared with smaller and previously government owned audit firms, larger and brand name audit firms can provide higher quality audit services and have lower tolerance towards earnings management in general. Using Chinese data, DeFond et al. (2000) in their study have found that managers are more likely to prefer smaller auditors because they consider that small auditors allows them to have more flexibility reporting their earnings. Firth et al. (2007) also point out that audit concentration in China is far lower than that in U.S. and that directly results in compromised level of auditing qualities. To summarize the above analysis, this study adopts international brand name firms - Big 4 as the large audit firms and expects that there shall be negatively relationship between the level of earnings management and Big 4 audit firms.¹ Hence, the following hypothesis 2a is developed:

Hypothesis 2a: Big 4 audited companies are negatively associated with the level of earnings management.

Audit opinion, which is the main outcome of their work by external auditors, shall reflect the actual financial situation of a company. However, the evidence on the association between earnings management and audit opinions is rare. The most closely related studies are Francis and Krishnan (1999) and Bradshaw et al. (2001) who examine the association between total accruals and audit opinions. Francis and Krishnan (1999) find that other factors being equal, auditors are more likely to issue qualified audit reports for companies with high-accruals. They argue that because accounting accruals are the estimates of future outcomes and have relatively high uncertainty, audits of high-accrual companies' exhibit greater risk than audits of low-accrual companies. Conservatively, auditors would rather issue qualified audit opinions to their clients. With a slightly different

rationale, Bradshaw et al. (2001) find that companies with high accruals are associated with lower possibility of qualified opinion. The reason is that auditors are poor users of accruals information and usually fail to communicate to investors' problems arising from high-accruals reporting with respect to future earnings. In China, listed companies fear to report poor performance to the public and receive qualified audit opinions. That is because bad performance and qualified opinions might result in costly penalties by CSRC (e.g. delisted). And more importantly, those results are associated with stock price declines (Chen et al., 2000). If companies make consecutive losses, there is high possibility that managers might make great efforts to overstate the earnings and makeup their performance. External auditors as independent bodies, have the responsibilities to restrict and detect such behaviour. And as the effort of restriction, they would issue qualified audit opinions as a caution for public investors. Chen et al. (2001) have found that earnings management in Chinese companies increases the frequency of receiving qualified audit opinions. DeFond et al. (2000) using Chinese data has indirectly proved this point of view. They find that after issuing more rigid auditing standards, qualified audit opinions are more frequently issued by Chinese auditors. Linking the governing role of external auditors to their audit opinions, this study believes that qualified audit opinions will be positively correlated with abnormal accruals. This study then formulates the following hypothesis 2b:

Hypothesis 2b: Qualified audit opinions is positively associated with the level of earnings management

3. Measurement of earnings management and the model

The proxy for earnings management in this study is abnormal accruals. Although companies might have some other ways to manipulate earnings, such as cutting maintenance costs on equipment, selling idle assets, or reducing expenses on research and development, these alternative actions are costly and have negative effects on companies' future cash flows (Peasnell et al., 2005). With Western countries' experience, this study assumes that in China manipulation of accruals is likely to be the most popular instrument for opportunistic earnings management.

To maximize the sample size and avoid the survivorship bias problem inherent in the time-series approach (Becker et al., 1998), this study estimates abnormal accruals using the cross-sectional Jones (1991) model.² Industries are classified according to the ANZSIC codes (Australia codification roughly similar to the U.S. SIC one). The Jones model coefficients are estimated using the following OLS regression:

$$\frac{TA_{ik,t}}{A_{ik,t-1}} = \beta_{1k,t} \frac{1}{A_{ik,t-1}} + \beta_{2k,t} \frac{\Delta REV_{ik,t}}{A_{ik,t-1}} + \beta_{3k,t} \frac{PPE_{ik,t}}{A_{ik,t-1}} + e_{ik,t} \quad (1)$$

where $TA_{ik,t}$ is total accruals for company i in industry k in year t , $A_{ik,t-1}$ is total asset in the year $t-1$, $\Delta REV_{ik,t}$ is the change in revenue, $PPE_{ik,t}$ is the gross property, plant and equipment, $\beta_{1k,t}$, $\beta_{2k,t}$, and $\beta_{3k,t}$ are regression coefficients, and $e_{ik,t}$ (assumed i.i.d.) is the regression residual.

For each industry-year ik, t in the Chinese sample, abnormal accruals ($AA_{ik,t}$) is calculated with the following formula:

$$AA_{ik,t} = \frac{TA_{ik,t}}{A_{ik,t-1}} - (\hat{\beta}_{1k,t} \frac{1}{A_{ik,t-1}} + \hat{\beta}_{2k,t} \frac{\Delta REV_{ik,t}}{A_{ik,t-1}} + \hat{\beta}_{3k,t} \frac{PPE_{ik,t}}{A_{ik,t-1}}) \quad (2)$$

where $\hat{\beta}_{1k,t}$, $\hat{\beta}_{2k,t}$, and $\hat{\beta}_{3k,t}$ are OLS regression

estimates of $\beta_{1k,t}$, $\beta_{2k,t}$, and $\beta_{3k,t}$ respectively, and

obtained from equation (1). Since the analysis does not depend on the direction of the accruals but on the magnitude of the accruals, this study therefore uses absolute value of abnormal accruals as the proxy for the combined effect of income-increasing and income-decreasing earnings management. Other studies using this measure are Bartov et al., 2000, Becker et al., 1998, Firth et al., 2007, Klein, 2002, and Warfield et al., 1995.

Table 1 reports descriptive statistics for total and abnormal accruals. Of the 800 company-years initially targeted, this study obtains 622 usable observations. Abnormal accruals range from -2.1911 to 0.949 with a median of 0.0082. The average abnormal accrual is 0.0041. Testing for whether the mean abnormal accrual is different from zero outputs a p-value of 0.4737 and a sign test yields 56% of abnormal accruals are positive. This means that there is no evidence showing that the earnings management behaviour has a systematically increasing or decreasing trend. This finding reflects that the selected sample is a relatively random sample with respect to earnings management incentives. Because of this quality, using the absolute value of abnormal accruals as the proxy of earnings management is appropriate in China's context and is also supported by other literature (e.g. Bartov et al., 2000; Becker et al., 1998; Firth et al., 2007; Warfield et al, 1995).

Insert Table 1 about here

After calculating the abnormal accruals, the effect of board structure and external auditor on earnings manipulation could be examined by regression

models. This study adopts the cross-sectional pooled regression method to examine whether boards independence and auditor independence reduces earnings management. The regression model is as follows:

$$AA_{it} = \alpha_0 + \delta_1 BOARD_{it} + \delta_2 SUPERVISORY_{it} + \delta_3 AUDITCOMMITTEE_{it} + \delta_4 BIG4_{it} + \delta_5 QUALIFIED_{it} + \gamma_1 LSIZE_{it} + \gamma_2 LEVERAGE_{it} + u_{it} \quad (3)$$

where **BOARD**_{it} represents the proportion of independent directors on the board of directors; **SUPERVISORY**_{it} denotes the proportion of employee supervisors on supervisory board; **AUDITCOMMITTEE**_{it} is an indicator variable taking the value of one if the company has an audit committee, zero otherwise; **BIG4**_{it} is an indicator variable taking the value of one if the company is audited by Big 4 accounting firms during the observation period and zero otherwise. **QUALIFIED** is another indicator variable taking the value of one if the company received a qualified audit opinion, zero otherwise.

In addition to the experimental variables, it is necessary to control for other factors that have been shown to affect the earnings-returns relation. Consistent with other studies (e.g. Firth et al., 2007; Klein, 2002; Xie et al., 2003), this study uses the natural logarithm of the net sales (**LSIZE**) and leverage ratio (**LEVERAGE**) to control for the influence of company size and capital structure respectively. China's larger companies are usually followed actively by the external capital markets. Therefore, larger listed Chinese companies are less likely to be able to hide abnormal accruals than smaller companies. Accordingly, this study expects that the company size has a negative association with abnormal accruals. The intensity of conflicted interests between debtors and shareholders increase when financial leverage rises. Generally, the higher the leverage ratio, the greater the risk that some debt covenants would be breached and the higher cost of debt financing. Similarly, in China, as debt increases, listed companies may tend to adjust earnings upwards in order to avoid debt-covenant violation and an increase in financing cost. DeAngelo et al. (1994) using the U.S. sample has reported that companies manipulate earnings when they face binding debt covenants. This study using Chinese data to expect that a positive relation should be observed between abnormal accruals and leverage ratio.

4. Sample and Data

The analysis is based on the information from Chinese listed companies over a four-year period from 2004 to 2007. Board data, audit committee data, and external auditor data are collected from annual reports issued by companies to the Shanghai or Shenzhen Stock Exchange. The final observation has a total of 622 company-years. The minimum number

of observations for any given industry-year combination is 8. The sample company-year is selected only when detailed information on directors, supervisors, and auditors are available in the annual reports. In line with other studies (e.g. Firth et al., 2007; Klein, 2002; Park & Shin, 2004; Peasnell et al., 2005) this study excludes companies in the financial sector because of the difficulties of defining accruals and abnormal accruals for financial services. Table 2 summarizes how the final sample is constructed.

Insert Table 2 about here

Consistent with prior research (e.g. Chen et al., 2006; Firth et al., 2007; Peasnell et al., 2005), this study classifies directors as independent or non-independent directors.³ Independent directors have no ties to the company beyond being a board member. Non-independent directors are the current employees of the company or the directors of non-executive but having significant transaction or business relationships with the company. According to the Code of Corporate Governance for Listed Companies in China, supervisors in this study are classified into employee supervisors and shareholder supervisors. Because foreign accounting firms can not directly provide auditing services for Chinese domestic companies, this study recognizes the Chinese accounting firms that have joint venture with the international Big 4 as the brand name audit firms. Audit opinions in China can be classified into four categories: unqualified, qualified, disclaimer, and adverse (similar with U.S.). Because this study investigates the effect of qualified or unqualified audit opinions on earnings managements, disclaimer or adverse opinions are thereby excluded from the sample. Companies that receive disclaimer or adverse opinions have been removed from the samples (see table 2).

Panel A of Table 3 shows governance characteristic of the sample companies. On average, 35% of board members are independent. In addition, employee supervisors have average 37% of total supervisory board seats, and the rest are shareholder supervisors. Although compositions vary from company to company in the sample, these percentages are consistent with CSRC's requirements that at least one third of directors should be independent and at least one third of supervisors should be employees. The total number of audit committees increases from 68 in 2004 to 144 in 2007. This trend indicates that more Chinese listed companies have a motivation to constitute an audit committee voluntarily. Nevertheless, only 37% of financial statements are audited by Big 4. This figure proves that audit concentration is still low in China. Moreover, there are 25 sample received qualified audit opinions during the sample periods. This number indicates that the number of Chinese companies who received qualified

opinions is relatively low. Panel B of table 3 reports the descriptive statistics of experimental variables.

Insert Table 3 about here

5. Empirical Results

5.1 Univariate models

Table 4 provides the univariate least square regression results with abnormal accruals as the dependent variable and overall governance characteristic variables as the independent variables. As expected, this study finds that the percentage of independent directors is negatively related to the abnormal accruals at the 5% level and the presence of an audit committee also has a negative association with abnormal accruals at the 1% level. The coefficient on employee supervisors exhibits positive but insignificant. This result is contrary to the hypothesis that employee supervisors could constrain the earnings management. Considering outside auditors, abnormal accruals are negatively associated with Big 4-audited companies ($p < 1\%$) and positively associated with those companies who receive the qualified audit opinions ($p < 1\%$). These findings are consistent with the hypotheses and confirm that external auditors could serve to mitigate earnings management in Chinese context. In the following section, this study adds some multivariate analyses to further testify these findings.

Insert Table 4 about here

5.2 Multivariate models

Table 5 reports multivariate least square regression results on internal governance. Column (i) and (iv) of table 5 contains combined variables intended to capture the characteristics of director independence. The estimated coefficients on the percentages of independent directors on the board are significantly negative at the 5% and 10% levels, respectively. These findings are consistent with univariate testing result. Thus, in Chinese context, board composition is related to abnormal accruals and indicates the setting in which a large proportion of independent directors is associated with better monitoring. However, contrary to the expectation of the role of employee supervisors in earnings management, there appears to be no meaningful relations between abnormal accruals and the proportion of employee supervisors on supervisory board. Combining the results of univariate and multivariate analyses, this study argues that employee supervisors cannot serve to mitigate earnings management in China's governance system. This finding might reflect the situation that in China, employee supervisors may have a lack of

independence and affiliated with companies' management or local government. As explained by Dahya et al. (2003), Chinese supervisors usually play the role of honoured guests or friendly advisors, while few of them can play the role of independent directors. In addition, the association between abnormal accruals and the existence of an audit committee is highly significant according to column (iii) and column (iv) of Table 5. These results confirm the result of univariate result that the presence of an audit committee can mitigate earnings management. It can be seen that since China adopted a voluntary-based audit committee policy in 2002, Chinese shareholders have realized the importance of sub-committees and utilized their monitoring role to constrain manager's financial fraud or earning manipulation. More recent information releases from CSRC also confirms such cognition. In July 2009, CSRC abandoned the voluntary policy and required all listed companies must set up the audit committee.⁴

Insert Table 5 about here

Regarding the audit quality variables, table 6 reports the multivariate results. As predicted, this study obtains significantly negative coefficients for big auditor definition ($p < 10\%$) and significantly positive coefficients for qualified opinion definition ($p < 5\%$). These results are consistent with univariate analysis. Thus, the overall tests on external auditors supports that international Big 4 audit firms in China are statistically able to constrain opportunistic accounting practises and could maintain the audited companies to have a lower level of abnormal accruals. Moreover, these results also demonstrate that Chinese companies with qualified audit opinions maintain a high level of earnings management. This finding indicates that audit firms (both Big 4 and non-Big 4) are conservative in their opinions if they find unexpected earnings management occurred with the audited companies. Due to the rigorous and complex legal environment, they are more likely to resist managerial pressure and issue prudential opinion. Consistently, this finding supports Chen et al.'s (2001) standpoint which is that qualified audit opinion were the evidence of low quality earnings while contrary to Bradshaw et al.'s (2001) point of view who argue that external auditors are the poor users of accrual information.

Insert Table 6 about here

Finally, both table 5 and table 6 report the results for control variables. The overall sign of control variables are consistent with the expectation. The estimated coefficients on company size are negative and significant ($p < 1\%$) in all the regressions, consistent with the notion that larger Chinese companies are more closely scrutinized than smaller companies. However, the coefficients on capital

structures are only significant in column (i) of table 5 and table 6 ($p < 5\%$), indicating Chinese companies tend to increase their earnings when they face a high debt-to-equity ratio but due to the lenders' monitoring, the intensity has been controlled.

5.3 Additional tests

To check the sensitivity of findings, this study re-estimates abnormal accruals using modified-Jones model (Dechow et al., 1995). This 'modified' Jones model is deemed to be more powerful at detecting sale-based accruals than the Jones model. Many previous studies adopt this methodology (e.g. Bartov et al., 2000; Firth et al., 2007; Kothari et al., 2001; Xie et al., 2003). The abnormal accruals are calculated using the following regression:

$$AA_{i,k,t} = \frac{TA_{i,k,t}}{A_{i,k,t-1}} - (\hat{\beta}_{1k,t} \frac{1}{A_{i,k,t-1}} + \hat{\beta}_{2k,t} \frac{\Delta REV_{i,k,t} - \Delta REC_{i,k,t}}{A_{i,k,t-1}} + \hat{\beta}_{3k,t} \frac{PPE_{i,k,t}}{A_{i,k,t-1}}) \quad (4)$$

Compared with the equation (2), the revenue changes ($\Delta REV_{i,k,t}$) in equation (4) are adjusted by the changes of receivables ($\Delta REC_{i,k,t}$). This modification is designed to eliminate the conjecture tendency of the Jones Model to measure abnormal accruals with error when managers exercise discretion in manipulating earnings through revenue recognition (Dechow et al., 1995). Using equation (4) as the measure of abnormal accruals, this study follows the same methodology described in Section 3 and calculates an AA for every company-year. The univariate and multivariate results with specification are almost identical to those reported in the table (4), table (5), and table (6). Table 7 contains the estimated coefficients and p-values for both tests.

Insert Table 7 about here

6. Conclusion

This paper examines whether board characteristics, audit committee, and external auditors are related to earnings management by Chinese listed companies. The motivation behind this paper is the implicit assertion by the CSRC that best corporate governance practices would mitigate earnings management. As China's listed companies have distinctive governance structures and China has an embryonic auditing market, this paper, in particular, analyses whether independent directors, employee supervisors, the presence of audit committee, brand name auditors, and auditing reports are associated with earnings management.

Empirical tests use data in the annual report of Chinese listed companies from 2004 to 2007. Abnormal accruals are considered in absolute value as the proxy for the magnitude of earnings management. This study finds that abnormal accruals are negatively associated with board independence. The employee

supervisors have negative effect on accruals measurements. However, this influence is not significant. Also, the presence of an audit committee is found to contribute to a lower level of abnormal accruals. Big 4-audited companies are observed to be associated with a lower level of earnings management. Finally, this study finds that companies received qualified audit opinions have a high possibility to manipulate reported earnings.

These findings contribute to the debates on financial reporting quality regarding the role of independent directors, employee supervisors, audit committees, and the status of external auditors in China. A greater proportion of independent directors on board can improve the earnings quality. Nevertheless, the findings challenge the monitoring role of employee supervisors on the supervisory board. Are they competent to monitor earnings management? Do they have incentives monitoring management's decision about reported earnings in the annual report? These questions need to be further addressed. Audit committees servicing as the part of monitoring mechanism, in China's governance environment, seem to function quite well in terms of their roles to improve the quality of accounting information. Therefore, CSRC has recently announced that listed companies should have audit committees. However, the duties and responsibilities of committees' members need to be further specified. Otherwise, any future recommendations on audit committee are likely to be sterile. Furthermore, Big 4 auditors provide quality-differentiated auditing services with respect to accounting earnings. This is also an indication that in China, brand name auditors are exposed to deep pockets incentive and they have to deal with the threat by adopting more prudential activities with respect to earnings management. Finally, the positive relation between abnormal accruals and qualified opinions illuminates that overall Chinese auditors are quite conservative when they find unexpected earnings management. Another implication derived from this finding is that for the purpose of improving auditing quality, Chinese policy-makers should adopt more rigorous auditing standards and continuous professional training.

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Notes

¹ Some other studies (e.g. Chen et al., 2001; Qiu, 2004) use Big 10 classification (auditors with the 10 highest markets shares) as the proxy of large and high quality auditors in China.

² Other papers using this model include Becker et al., 1998; Defond & Jianbalvo, 1994; DuCharme et al., 2001; Peasnell et al., 1998; Teoh et al., 1998.

³ According to the NYSE listing requirements, directors are classified into three categories: insiders, outsiders, or affiliated with the company. Papers for example, using this classification include Brickley et al., 1994; Byrd & Hickman, 1992; Klein, 2002; and Xie et al., 2003.

⁴ In July 2009, China Securities Regulatory Commission released the Basic Internal Control Norms for Enterprises. And according to it all the listed Chinese companies must establish an audit committee and non-listed companies are still maintain a voluntary base.

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Appendices

Tables

Table 1.

Descriptive statistics on accruals, and abnormal accruals

Variable	Mean (P-value)	Median	Min	Max	Std. dev.	Obs.
Abnormal accruals (AA)	0.004(0.474)	0.0082	-2.1911	0.949	0.1427	622
Abs^a(AA)	0.0694	0.0414	0.0000	2.1911	0.1247	622
Total accruals (TA)	-0.046	-0.0431	-2.3668	0.9939	0.1554	622
Abs^a(TA)	0.0858	0.0569	0.0002	2.3668	0.1375	622
Net profits^b	0.0531	0.0428	-0.4067	0.479	0.08	622
Operating cash flows^c	0.0991	0.0858	-0.963	2.2291	0.1604	622

^a Abs is the absolute value.

^b Net profits are from the income statements deflated by lagged total assets.

^c Operating cash flows are from the cash flows statements deflated by lagged total assets.

Table 2

Sample used in analyses

	Company-years
Initial sample for 2004-2007	800
Insufficient industry-year observations	(64)
Banking companies	(36)
Insurance companies	(28)
Missing financial reports	(32)
Missing data on boards' characters	(10)
Companies received disclaimer or adverse audit opinions	(8)
Final sample	622

Table 3

Descriptive corporate governance data

Panel A: Sample characteristics						
	2004	2005	2006	2007	Total	%
Independent directors	547	557	554	560	2218	0.35
Non-independent directors	1065	1062	1046	1034	4207	0.65
Employee supervisors	240	243	246	249	978	0.37
Shareholder supervisors	425	424	417	420	1686	0.63
Audit committee	68	68	75	144	355	0.57
Audit by international Big 4	59	57	56	55	227	0.37
Unqualified audit opinions	145	150	149	153	597	0.96
Qualified audit opinions	8	5	7	5	25	0.04
Obs.	153	155	156	158	622	-
Panel B: Descriptive statistics on experimental variables						
	Mean	Median	Min	Max	Std. dev.	Obs.
BOARD^a	0.3482	0.3333	0.13	0.556	0.0469	622
SUPERVISORY^b	0.3691	0.3333	0	0.667	0.0796	622
AUDITCOMMITTEE^c	0.5707	1	0	1	0.4954	622
BIG 4^d	0.365	0	0	1	0.4818	622
QUALIFIED^e	0.0402	0	0	1	0.1966	622

^a BOARD is the proportion of independent board members.

^b SUPERVISORY is the proportion of employee supervisors.

^c AUDITCOMMITTEE is a dummy variable equal to one if the company has an audit committee and zero if otherwise.

^d BIG 4 is a dummy variable equal to one if the company is audited by a Big 4 auditor and zero if otherwise.
^e QUALIFIED is a dummy variable equal to one if the company receives a qualified audit opinion and zero if otherwise.

Table 4

Univariate models of absolute values of abnormal accruals (AA) on overall corporate governance variables

Variable	Expected sign	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)
BOARD	-	-0.086 (0.0416)**				
SUPERVISORY	-		0.0961 (0.1917)			
AUDITCOMMITTEE	-			-0.0097 (0.0078)***		
BIG 4	-				-0.02289 (0.00)***	
QUALIFIED	+					0.0441 (0.0001)***
INTERCEPT		0.0993 (0.00)***	0.0358 (0.178)	0.07493 (0.00)***	0.0777 (0.00)***	0.0676 (0.00)***

The pooled sample provides 632 observations with 10 missing data, representing 158 companies or clusters. The White Cross-section or Cross-section SUR (PCSE) method is used to correct cross-sectional heteroskedasticity and correlated period effect.

* Significant at a level of 10%; ** Significant at a level of 5%; *** Significant at a level of 1%

Table 5

Multivariate tests of absolute values of abnormal accruals (AA) on internal governance variables

Variable	Expected sign	(i)	(ii)	(iii)	(iv)
		Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)
BOARD	-	-0.0929 (0.0213)**			-0.1043 (0.0741)*
SUPERVISORY	-		-0.0024 (0.9263)		0.0042 (0.8812)
AUDITCOMMITTEE	-			-0.0086 (0.0016)***	-0.0089 (0.0005)***
LSIZE	-	-0.0091 (0.00)***	-0.0091 (0.00)***	-0.0091 (0.00)***	-0.009 (0.00)***
LERVERAGE	+	0.0229 (0.0181)**	0.0217 (0.1813)	0.0192 (0.2367)	0.0206 (0.2201)
INTERCEPT		0.2245 (0.00)***	0.1947 (0.00)***	0.0641 (0.00)***	0.0982 (0.00)***

The pooled sample provides 632 observations with 10 missing data, representing 158 companies or clusters. The White Cross-section or Cross-section SUR (PCSE) method is used to correct cross-sectional heteroskedasticity and correlated period effect.

* Significant at a level of 10%; ** Significant at a level of 5%; *** Significant at a level of 1%

Table 6
Multivariate tests of absolute values of abnormal accruals (AA) on external auditing variables

Variable	Expected sign	(i)	(ii)	(iii)
		Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)
BIG 4	-	- 0.0098 (0.0799)*		-0.011 (0.0832)*
QUALIFIED	+		0.0222 (0.0346)**	0.0238 (0.04)**
LSIZE	-	-0.0079 (0.001)***	-0.0085 (0.00)***	-0.0067 (0.0017)***
LERVERAGE	+	0.0209 (0.024)**	0.0199 (0.1981)	0.0204 (0.2159)
INTERCEPT		0.1789 (0.00)***	0.1845 (0.00)***	0.1616 (0.00)***

The pooled sample provides 632 observations with 10 missing data, representing 158 companies or clusters. The White Cross-section or Cross-section SUR (PCSE) method is used to correct cross section heteroskedasticity and correlated period effect.

* Significant at a level of 10%; ** Significant at a level of 5%; *** Significant at a level of 1%

Table 7
Estimate coefficients and p-values for univariate and multivariate models in which the AA is calculated by modified-Jones model

Variable	Expected sign	Univariate test ^a	Multivariate test ^b
		Coefficient (P-value)	Coefficient (P-value)
BOARD	-	-0.0345 (0.0497)**	-0.0368 (0.0939)*
SUPERVIOSRY	-	0.0877 (0.2375)	-0.0049 (0.8281)
AUDITCOMMITTEE	-	-0.0106(0.0051)***	-0.0099(0.0013)***
BIG4	-	-0.0208 (0.000)***	-0.0107 (0.0585)*
QUALIFIED	+	0.0352 (0.0131)**	0.0327 (0.0078)***

^a Univariate test is the max possibility estimates of the absolute value of abnormal accruals on the independent variable.

^b Multivariate test is the max possibility estimates of the absolute value of abnormal accruals on the independent variable and other variables in Table 5 and Table 6.

The pooled sample provides 632 observations with 10 missing data, representing 158 companies or clusters. The White Cross-section or Cross-section SUR (PCSE) method is used to correct cross section heteroskedasticity and correlated period effect.

* Significant at a level of 10%; ** Significant at a level of 5%; *** Significant at a level of 1%