

# The impact of corporate governance and ownership structure reforms on earnings quality in China

Earnings  
quality in  
China

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## Abstract

**Purpose** – The purpose of this paper is to investigate the effect of corporate governance and ownership structures on earnings quality in China both prior and subsequent to two important corporate reforms: the code of corporate governance (CCG) in 2002 and the split share structure reform (SSR) in 2005.

**Design/methodology/approach** – This study utilises informativeness of earnings (earnings response coefficient), conditional accounting conservatism and managerial discretionary accruals to assess earnings quality using 12,267 firm-year observations over 11 years from 2000 to 2010. Further, two dummy variables for measuring the changes of CCG and SSR are employed to estimate the effects of CCG and SSR reforms on earnings quality via OLS regression.

**Findings** – This study finds that the promulgation of the CCG in 2002 has had a positive impact, but the SSR reform in 2005 has had little effect on listed firms' earnings quality in China. These results hold good after controlling for a number of ownership, governance and other variables and estimating models with multiple measures of earnings' quality.

**Research limitations/implications** – Future research could focus on how western style corporate governance mechanisms have been constrained by the old management systems and governmental dominated ownership structures in Chinese listed firms. The conclusion is that simply coping Western corporate governance model is not suitable for every country.

**Practical implications** – The results will assist Chinese regulators in improving reporting quality, ownership structure and governance mechanisms in China. The results will help international investors better understand quality of financial information in China.

**Originality/value** – This is the first to our knowledge that addresses the effects of major governance and ownership reforms together on accounting earnings quality and, thus, makes a significant contribution on understanding the effect of regulatory reforms on improving earnings quality. In doing so, it also indirectly assesses the effectiveness of western-style corporate governance mechanisms introduced in China.

**Keywords** Accounting conservatism, Discretionary accruals, China, Earnings informativeness, Governance reforms, Ownership reforms, Governance reform, Split-share structure reform

**Paper type** Research paper



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## 1. Introduction

In this paper, we examine whether corporate earnings quality has improved following two major reforms on corporate governance and ownership structure in China. In 2002,

China implemented the code of corporate governance (CCG) for listed companies to protect investors' rights and interest, and to articulate behavioural rules and moral standards for directors, supervisors and other senior managers of listed companies (CSRC, 2002). This was followed by the split share structure reform (SSR) in 2005, which required all companies, including state-owned, to convert non-tradable shares into tradable shares, allowing them to be traded on the stock market in the same way as shares held by private shareholders and become more sensitive to share price movements. These two reforms were in response to criticisms that Chinese securities are too restrictive for investors and the country has a negligible market control mechanism, weak corporate governance structure, an inefficient managerial labour market and a lack of credibility of financial information (Firth *et al.*, 2011; Peng *et al.*, 2010). Prior to these reforms, boards of directors in Chinese state-owned and private companies were dominated by insiders, particularly Communist Party members, and ownership was highly concentrated (Aharony *et al.*, 2000). This situation created a serious problem whereby a lack of proper monitoring of firm operations allowed dominant shareholders to expropriate the wealth of other shareholders. Further, the high concentration of shareholding created entrenchment problems in Chinese firms, resulting in lower governance quality and financial transparencies (Gul *et al.*, 2010). For example, Peng *et al.* (2010) estimated that in some years, more than 80 per cent of firms were involved in related-party transactions. They found that controlling shareholders had manipulated earnings and assets in listed companies through tunnelling or propping mechanisms.

By implementing changes in board composition, such as appointing independent directors through the implementation of CCG and allowing shares owned by state enterprises to be floated on the market under SSR, it is expected that entrenchment problems embedded in Chinese firms would be mitigated and, thus, reduce agency conflicts among the parties involved. Prior research has established the positive effect of better governance and diversified ownership on financial reporting quality through mitigating agency conflicts (Morck *et al.*, 1988; Farinha, 2003; Brown and Caylor, 2006; Firth *et al.*, 2007; La Porta *et al.*, 1999, 2000). It has also been suggested that concentrated share ownership has implications for the level of information asymmetry between managers and investors, and that this influences the informativeness of accounting earnings and managers' accounting choices (Bhagat *et al.*, 1999; Fan and Wong, 2002; Firth *et al.*, 2007).

Firth *et al.* (2007) explored these unique ownership and corporate governance structures in Chinese firms and examined their effect on the earnings quality in China. They found that ownership concentration, the presence of foreign shareholders, the percentage of tradable shares, the type of dominant shareholders, the supervisory board and independent directors, all affected the earnings quality of listed firms. Later, Cho and Rui (2009) examined the effect of corporate governance quality on earnings informativeness and found that board independence was not significant, but such a relation improved one year (2003) after CGC implementation. With regard to ownership structure, Yuan *et al.* (2007), using data from 273 companies in 2002, found a higher level of earnings management in state-owned enterprises (SOEs) which they interpreted as being due to a greater entrenchment effect in these enterprises. Similarly, Chen *et al.* (2010) found SOEs in China practice less quality reporting (as measured by conservative accounting) compared with non-SOEs when they borrow funds from state-owned

banks. However, to date, very limited research has been undertaken on the effect of CCG and SSR on accounting earnings quality except for *Yeh et al. (2009)* and *Hou et al. (2012)*. *Yeh et al. (2009)* examined the role of governance structure in determining the compensation to be paid by non-tradable shareholders to tradable shareholders to gain access to liquidity in the first year subsequent to the SSR reform. They found that non-tradable shareholders have to pay more compensation when their governance mechanisms are weaker. *Hou et al. (2012)* examined the effect of the SSR reform on share price informativeness and found that firms which are more sensitive to the impact of the SSR reform experienced more price informativeness.

In this paper, we extend prior research by examining whether earnings quality has improved following these two major reforms on corporate governance in 2002 and ownership (SSR[1]) in 2005. Our study differs from previous studies in a number of ways: first, prior studies on the informativeness of earnings employ a much smaller data set and do not extend beyond 2003 and, as such, they cannot reliably examine the effect of CCG implementation. Since 2003, the growth of equity markets, both in terms of capitalization, volume and international investments, has been significant and equity markets have become more flexible (*Firth et al., 2007; Cho and Rui, 2009*). To this consideration, our work covers a large sample of 12,267 firm-year observations over 11 years from 2000 to 2010. Second, rather than focussing on the changes in share ownership and the informativeness of earnings in the Chinese market relative to the US market (for example, *Hou et al., 2012*), we treat the SSR reform as an event because the purpose of the SSR reform was not to change or reduce state ownership, but to improve the tradability of non-tradable shares. Even after the full implementation of the SSR reform, the state can still remain the controlling shareholder as it was before. Finally, we employ multiple measures of earnings quality to increase the reliability of inference, in addition to share price informativeness, to assess the effect of these reforms from both investor and managerial perspectives. Specifically, we measure earnings quality by using three proxies that take into account both managerial and market perspectives:

- (1) the absolute value of managerial discretionary accruals (ABSDAC);
- (2) conditional conservatism as measured by *Basu (1997)*; and
- (3) the extent of the earnings response coefficient (ERC) or informativeness of earnings.

Our results, based on 12,267 firm-year observations over a period of 11 years, show that, first, the promulgation of the CCG in 2002 had a positive impact on the listed firms' earnings quality in China, as reflected in the improvement of conservatism and earnings informativeness, and the reduction in DAC during the post-CCG period. Second, the earnings quality has not improved following the SSR. This can be explained by the fact that the ultimate goal of the SSR was not to change state ownership but to transform non-tradable shares into tradable shares. Therefore, even though the percentage of the tradability of shares had increased in Chinese listed firms following the SSR, the agency conflicts between the state and minority shareholders still exist because the state retains the effective decision-making authority.

The contribution of this paper is threefold. First, our study will add further empirical evidence to the vast accounting literature on the association between earnings quality and corporate governance reform, and ownership structure reform by using China as an

interesting and different institutional setting to investigate these issues. Second, in recent years, China has undergone many economic and regulatory reforms aimed at improving investors' confidence in its rapidly growing capital market and listed firms, and CCG and SSR are the two most important and significant of such reforms. However, the effectiveness of these reforms, in particular, in relation to the quality of financial statements, has been debated among scholars, regulators and practitioners. The result of this study will help regulators and professional bodies to comprehend the effect of these regulatory reforms and, hence, develop better corporate governance mechanisms and accounting regulations in China. Finally, our study is the first to investigate the joint effect of SSR and CCG on earnings quality. Prior literature concentrates only on either the effect of SSR or CCG. Our large sample over a long period, covering both pre- and post-periods of SSR and CCG, permits us to investigate the effect of both reforms.

The remainder of this paper is structured as follows. Following the introduction in Section 1, the institutional setting and background of the Chinese stock markets, and their unique features are provided in Section 2. Section 3 presents the development of hypotheses and research methods, followed by a discussion of data collection and empirical models in Section 4. The empirical results are discussed in the penultimate section. The summary and conclusions are presented in Section 6.

## 2. Institutional setting and background information

### 2.1 *Development of Chinese stock markets and listed corporations*

China moved its economy from a centrally planned economy to a socialist market economy by gradually corporatizing its SOEs and establishing stock exchanges to facilitate stock trading (Gary, 1996). To this end, the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE) were established in 1990 and 1991, respectively. Initially, companies were allowed to issue only A shares to domestic investors in the local currency RMB (Renminbi) (Ewing, 2004). Since 1992, however, some companies have been allowed to issue B shares which, being tradable shares, were sold to investors holding foreign currencies. B shares listed on the SSE are quoted in US dollars, while B shares listed on the SZSE are quoted in HK dollars. Since 1993, Chinese corporations can apply to be listed on other international markets such as the New York Stock Exchange (NYSE). Shares issued on the Hong Kong Stock Exchange (HKSE) are called H shares, and shares listed on the NYSE are called N shares. At the end of 2010, there were 1,955 domestic A share listed companies. The total market value of the listed companies was 26,542 billion RMB, which was about 70 per cent of the gross domestic product (GDP) (CSRC, 2008).

With respect to share ownership, three types of shares exist in the Chinese stock market: individual shares, state shares and legal entity shares (Bai *et al.*, 2004; Firth *et al.*, 2007). Only individual shares are tradable, and these shares were about one-third of the total shares outstanding on the market in 1999. It has always been a priority for the China Securities Regulatory Commission (CSRC), the main Chinese security regulator, to improve governance quality and the marketability of state-owned and legal entity-owned shares, which has given rise to two major regulatory reforms.

### 2.2 *Major regulatory reforms*

2.2.1 *Promulgation of the CCG reform.* In early 2000, the collapse of large corporations in Western countries decreased investors' confidence in listed companies. In an attempt

to reassure capital markets and restore investors' confidence, regulators around the world implemented a raft of legislative and administrative measures to improve the reliability and relevance of financial reporting through more rigorous corporate governance rules (Schipper and Vincent, 2003).

China experienced a similar corporate collapse during early 2000 (Shi and Weisert, 2002). Following the Sarbanes-Oxley Act (SOX) in the US and similar governance reforms in other Western countries, the CSRC issued the CCG for listed companies in China in 2002. The code emphasizes the importance of protecting the investors' interests and rights and articulates basic behavioural rules and moral standards for directors, supervisors and other senior managers of listed companies. It restricts an independent director from holding any other office within the company and recommends establishing various committees, such as a corporate strategy committee, an audit committee, a nomination committee and a remuneration and appraisal committee[2]. Under Chinese Company Law, companies are required to have dual boards: a board of directors and a supervisory board (Mallin and Rong, 1998; Dahya *et al.*, 2003). The supervisory board consists of employees and representatives of shareholders (Oi, 2005). The dual board structure derives from the history of the management of SOEs with the initial intention being to limit the power of directors through the presence of a supervisory board. The board of directors is set up in a similar way to boards in Western developed countries. Directors have contracts for three years that can be renewed after the expiry of the initial contract. Boards have both executive and non-executive directors and since the promulgation of CCG in 2002, at least one-third of the directors have to be independent. The board of directors is given full autonomy to make operational and strategic decisions to be approved by shareholders, but there are questions about the effectiveness of these decisions. Although minority shareholders have voting rights, the state, being the major shareholder in most listed companies, dominates the decisions by appointing many of the directors who may, in fact, have limited business understanding (Firth *et al.*, 2007).

In the SOEs, the role of political interests, such as the Chinese Communist Party (CCP) Committee, the workers' union, the youth league and the women's federation is still strongly emphasized, and they are represented on the supervisory board. However, the effectiveness of the dual board structure in China has been questioned by some researchers (Kato and Long, 2006; Shi, 2005). In China, incentive mechanisms such as share-based payments and bonuses have not been applied widely by listed companies. Managers are rewarded mainly through fixed salaries according to their seniority, age and position. A manager's performance is evaluated based on total profits rather than on the company's return on equity or the growth of earnings per share (Kato and Long, 2006). On average, management ownership in Chinese listed companies is less than one per cent.

*2.2.2 Split share structure reform (SSR).* Ownership in Chinese corporations is concentrated in the hands of state or quasi-state organizations with three types of shareholdings: individual shares, state shares and legal entity shares (Broadman, 1999; Bai *et al.*, 2004; Hovey and Naughton, 2003). Only about 40 per cent of the shares at the end of 2004 in Chinese companies are owned by individual shareholders who are not allowed to form a class and elect a representative on the board. Therefore, it is very difficult for individual shareholders to obtain information from companies and to be involved in the decision-making process (Lin, 2004). Also, there is a lack of civil



protection for minority shareholders. Under Company Law, minority shareholders can apply to courts to prevent the continuation of unlawful conduct by directors and major shareholders. However, Company Law does not have the provision to take civil action against directors and investment professionals for false or negligent disclosures that result in losses (Seung, 2006). Conflict of interest between controlling and minority shareholders in listed companies is a serious problem. It often leads to unfair related party transactions between the parent company and the listed company, a situation which is harmful to minority shareholders (Liu and Lu, 2007). Peng *et al.* (2010) estimated that in some years, more than 80 per cent of firms were involved in related party transactions. They found that controlling shareholders manipulated earnings and assets in listed companies through tunnelling or propping mechanisms to maintain their listing status.

The Chinese Government and regulators have long been aware of the problems caused by only a part of shares being allowed to be traded on stock markets and have attempted to deal with this issue. After a few failed experiments to convert non-tradable shares into tradable shares, the CSRC finally announced in 2005 the SSR which required all companies to convert non-tradable shares into tradable shares, gradually. The reform started initially with four companies, followed soon after by 42 companies (Inoue, 2005). The government also imposed a year-long moratorium on new share sales to ensure the market would not be inundated with new shares, thus diluting share value. In addition to compensating minority shareholders, the government allowed commercial banks to set up managed funds and to double the amount of money that foreign investors could invest in domestic equities (about US\$10 billion) to stabilise share prices. After the reform, the amount of tradable shares increased to more than 50 per cent of the total shares outstanding in 2008. However, it should be pointed out that even with more non-tradable shares becoming tradable shares, for most listed companies, the fundamental ownership structure is unchanged, i.e. the state remains the controlling shareholder in most listed companies. The SSR reform merely turned some non-tradable shares into tradable shares.

### 3. Literature review and hypotheses development

#### 3.1 *Corporate governance structure and earnings quality*

Empirical studies confirm the role of corporate governance in determining corporate financial reporting quality. Following Jensen and Meckling's (1976) seminal work, the traditional agency approach to corporate governance attempts to address the conflicts of interest between shareholders and management. This conflict of interest is reduced when the governance mechanisms are effective and directors are monitored appropriately and given verifiable information to perform their job. The accounting and financial reporting system is a critical source of verifiable information that is useful in monitoring and evaluating managers as well their decisions and strategies (Ahmed and Duellmann, 2007). Governance structure encompasses board composition (board independence), board size, board duality and other monitoring mechanisms such as the formation of specific sub-committees (Baysinger and Butler, 1985).

In relation to earnings and reporting quality, Beasley (1996) examined the monitoring role of outside directors on the decision-usefulness attributes of financial reporting. He found that the likelihood of financial statement fraud is inversely related to the fraction

of outside directors serving on the board. Dechow *et al.* (1996) showed that firms manipulating earnings are more likely to be those with less independent boards or with chief executive officer (CEO) and chairperson of the board duality. Klein (2002) found negative relations between board and audit committee independence and abnormal accruals. These findings imply that financial statement information is likely to be informative for firms that have more outside directors to supervise managers' actions. Peasnell *et al.* (2000) provided UK evidence of less income-increasing earnings management to achieve target earnings by firms whose boards comprise a higher proportion of outside directors. Chen *et al.* (2007) found that the independence of supervisors is associated with a lower likelihood of earnings management in Taiwanese listed companies. Bushman *et al.* (2004) reported that timeliness (a characteristic of decision usefulness) is improved with the use of outside directors on the board. In terms of earnings informativeness, Vafeas (2000) argued that a higher number of outside members on the board increase the likelihood that the quality of financial information will be monitored more effectively and that this will be reflected in higher informativeness of earnings, as measured by the relation between share returns and accounting earnings. However, Ahmed *et al.* (2006) found no significant association between outside directors and the informativeness of earnings in New Zealand. Yu (2011) found that analysts tend to issue favourable recommendations for firms with better corporate governance mechanisms. She also indicated that this evidence only exists in code laws countries where the protection of investors is relatively lower. Using the Thai corporate governance index issued by the Thai institute of Directors, Hodgson *et al.* (2011) found positive relationships between corporate governance levels, and accounting and market-based measures of performance.

The positive relationship between governance and earnings quality is also largely confirmed in China. For instance, Firth *et al.* (2007) found that earnings in Chinese firms with more independent directors are more informative, as measured by the ERC, and the percentage of independent directors on boards is negatively associated with DAC. Yuan *et al.* (2007) provided evidence of greater earnings management among Chinese state-controlled listed firms. They interpreted this as evidence of a greater entrenchment effect than incentive alignment effect from the large shareholders of state-controlled firms. Cho and Rui (2009) reported a significant association between the independence of the supervisory board and ERC in Chinese firms. Chen and Reezae (2012) examined the association between internal corporate governance and convergence with International Financial Reporting Standards (IFRS) in China during the period when IFRS is implemented. They found that effective corporate governance can assist firms to be more aligned with IFRS and, therefore, provided high earnings quality. Thus, we propose the following hypotheses:

- H1. The promulgation of the CCG has improved earnings quality in Chinese listed firms.
- H1a. The promulgation of the CCG has reduced discretionary accruals.
- H1b. The promulgation of the CCG has improved the ERC.
- H1c. The promulgation of the CCG has improved conservative practice in Chinese listed firms.

### 3.2 Ownership structure

Ownership structure has been a subject of intense debate with regard to its effect on earnings quality. Jensen and Meckling (1976) argued that agency costs are reduced as the manager's holding is increased. Therefore, the interests of the manager and outside shareholders become aligned. A positive relationship is expected between earnings informativeness and the concentration of ownership when "convergence of interest" or "alignment effect" exists. However, the management entrenchment effect may occur, as the manager's holding increases to the point when managers become controlling owners and potentially abuse their power to gain extra benefits at the expense of the minority shareholders. The agency problem could be shifted from the owner-manager relationship (Type 1) to the controlling owner-minority shareholders relationship (Type 2). However, Gomes (2000) suggested that a high degree of ownership concentration serves as a signal for reputation building by controlling shareholders because they would lose more if the firm value declines, but the outcome may not necessarily be adverse in all situations.

With respect to earnings quality (both ERC and DAC) and ownership structure, Warfield *et al.* (1995) found that the relationship between stock returns and accounting earnings is stronger for companies with higher managerial ownership. Further, they found that the incentives for earnings management motivated by self-interest are reduced when managerial ownership is high. Their findings support the alignment effect hypothesis. But contrasting results are provided by Gabrielsen *et al.* (2002) and Yeo *et al.* (2002), using data from Denmark and Singapore, respectively, which demonstrate that the influence of ownership differs across national jurisdictions. AL-Dhamari and Ismail (2014) found that earnings in Malaysian firms with high surplus free cash flow are more predictable when institutional investors hold a large percentage of shares and when a chairperson is independent.

As stated earlier, ownership in Chinese corporations is concentrated in the hands of state or quasi-state organizations with three types of shareholdings: individual shares, state shares and legal entity shares (Broadman, 1999; Bai *et al.*, 2004). It has been claimed that a high level of concentrated ownership leads to lower performance and lower reporting quality due to the dominance of insiders (Demsetz, 1983; Morck *et al.*, 1988; Jiang and Kim, 2000; DeFond *et al.*, 2007). Fan and Wong (2002) found that earnings informativeness, as measured by ERC, is significantly negatively related to the ultimate owner's control level due to the entrenchment effect. Similar findings were reported by Firth *et al.* (2007), who found that ownership concentration negatively affects ERC in China but foreign ownership is positively associated with earnings informativeness. Similarly, Cho and Rui (2009) reported a positive association between foreign ownership and share returns.

In this study, we control four types of ownership:

- (1) State ownership in non-tradable shares (OWNSTATE).
- (2) Legal entity ownership in non-tradable shares (OWNLEGAL).
- (3) Tradable A shares over total shares (OWNTRADE) (this was also used as the measure of public ownership until 2005, but from 2005 onwards, OWNTRADE also includes state and legal entity-owned tradable shares).
- (4) Shares owned by foreign investors (tradable B, H and N shares) (OWNFOREIGN)[3].



Xu and Wang (1999) and Firth *et al.* (2007) suggested that state ownership and public ownership might exert differential pressure on firms that may have an effect on firm's accounting information quality.

Prior to the SSR of 2005, state ownership was maintained through restricted (or non-tradable) shares. This insulated state shareholders from the wealth implications of the stock return performance of their firms (Hou *et al.*, 2012). Following the SSR reform, a restrictive shareholder would lose this insulation and would be exposed to market sensitivity along with tradable shareholders. Chen *et al.* (2008) suggested that this reform would influence corporate performance by increasing the rights of non-controlling shareholders and placing top management under more public scrutiny. However, the SSR has not been designed to transfer shares substantially between different classes of shareholders or reduce state ownership, but to improve the tradability of non-tradable shares, so even after the SSR reform, the state still remains the controlling shareholder as it was before. Therefore, it is argued that the impact of the SSR subsequent to its implementation may not be reflected in the form of improved reporting quality in all of our measures because the beneficial effect of the alignment would not be ensured. Based on above discussion, our second hypothesis is formulated as:

H2. The SSR has improved earnings quality in Chinese listed firms.

H2a. The SSR has reduced discretionary accruals.

H2b. The SSR has improved the ERC.

H2c. The SSR has improved conservative practice in Chinese listed firms.

## 4. Research design

### 4.1 Models and variables

Dechow *et al.* (2010) summarised seven proxies that have been used by prior literature to measure earnings quality: earnings persistence, accruals, smoothness, conservatism, timeliness, ERC and external indicators of earnings misstatements. They further classify these seven measurements into three broad categories:

- (1) properties of earnings, including: earnings persistence and accruals; earnings smoothness; conservative reporting;
- (2) investor reaction to earnings, including the ERC; and
- (3) external indicators, including releases from regulators, restatements, and internal control weakness disclosed under the SOX.

In this study, we employ three proxies to measure earnings quality (Warfield *et al.*, 1995; Vafeas, 2000; Fan and Wong, 2002; Firth *et al.*, 2007). The first proxy is the absolute value of DAC. The second is the asymmetric timeliness of earnings, measured by Basu (1997), also known as conditional conservatism. The third is the informativeness of earnings, measured by the coefficient of earnings on share returns, also called ERC. These three proxies have long been used in academic literature to measure earnings quality and cover two broad categories identified by Dechow *et al.* (2010), i.e. properties of earnings and investor reaction to earnings. A measurement from the third broad category is not included because for the period of this study 2000-2010, these external indicators, such as internal weakness disclosure, are not available in China.

We test *H1* by using the following regression models (Models 1-3) to investigate the impact of the promulgation of the CCG in 2002 on DAC in Model 1, on conditional conservatism in Model 2 and on earnings informativeness in Model 3:

$$ABSTDA_{it} = \alpha_0 + \beta_1 CCG_{it} + \sum_{j=1}^4 \delta_j Ownerships_{it} + \sum_{\kappa=1}^5 \phi_{\kappa} Controls_{it} + \sum_{\rho=1}^{10} \varphi_{\rho} Industries_{it} + \sum_{\eta=1}^4 \gamma_{\eta} Years_{it} + \varepsilon_{it} \quad (1)$$

$$E/P_{it} = \alpha + \beta_1 DRET_{it} + \beta_2 RETURN_{it} + \beta_3 DRET_{it} * RETURN_{it} + \beta_4 CCG_{it} + \beta_5 CCG_{it} * DRET_{it} + \beta_6 CCG_{it} * RETURN_{it} + \beta_7 CCG_{it} * DRET_{it} * RETURN_{it} + \sum_{j=1}^4 \delta_j Ownerships_{it} + \sum_{k=1}^5 \phi_k Controls_{it} + \sum_{\rho=1}^{10} \varphi_{\rho} Industries_{it} + \sum_{\eta=1}^4 \gamma_{\eta} Years_{it} + \varepsilon_{it} \quad (2)$$

$$RETURN_{it} = \alpha_0 + \beta_1 EPS_{it} + \beta_2 EPS\_C_{it} + \beta_3 CCG_{it} + \beta_4 CCG_{it} * EPS_{it} + \sum_{j=1}^4 \delta_j Ownerships_{it} + \sum_{k=1}^5 \phi_k Controls_{it} + \sum_{\rho=1}^{10} \varphi_{\rho} Industries_{it} + \sum_{\eta=1}^4 \gamma_{\eta} Years_{it} + \varepsilon_{it} \quad (3)$$

In the above models (Models 1-3), the testing variable is the dummy variable of CCG. CCG equals 1 for the years 2002-2005, otherwise it equals zero. The pre-CCG period is from 2000-2001, while the post-CCG period is from 2002-2005. In Model 1, ABSTDA is the absolute value of DAC, which is computed by using the modified Jones model (Dechow *et al.*, 1995), with a lagged return on assets (ROA). In Model 2, E/P is defined as net income per share divided by the opening share prices. RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. DRET is a dummy variable, which equals 1 if RETURN is less than zero, otherwise, it equals to 0. In Model 3, RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. EPS is calculated as net income per share reported for the 12-month period scaled by the opening share prices and EPS\_C is calculated as changes of net income per share reported for the 12-month period scaled by the opening share prices[4].

To control the impact of ownership structure on the corporate governance reform (CCG), we add four ownership control variables (OWNERSHIPS) in which OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares.

We also add other firm characteristics control variables (CONTROLS), which include SIZE, LEVERAGE, GROWTH, ROA, CFO and AUDIT. SIZE is measured as the natural logarithm of end-of-year total assets (TA) and is used to control the size effect of firms.

LEVERAGE is the ration of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of TA at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is measured as operating profits after tax divided by average of TA. CFO is the cash flows from operating activities divided by TA at the beginning of the year. As large audit firms are expected to better monitor the client's financial reporting, we include a dummy variable AUDITOR where we assign one if the firm's external audit firm belongs to one of the Big-4 international firms (KPMG, Deloitte, PwC and Ernst & Young), otherwise zero. The name of the audit firm is hand-collected from the company annual reports. The industry dummies (INDUSTRIES) and year dummies (YEARS) are added in Models 1 to 3 to control the variations among different industries and over years.

The impact of the SSR in 2005 on earnings quality (*H2*) is investigated by utilizing the following models (Models 4-6). Model 4 is used for the test of change in absolute DAC between the pre- and post-SSR periods. Model 5 depicts the impact of SSR on conditional conservatism, while Model 6 is employed to investigate the change in earnings informativeness between the pre- and post-SSR periods:

$$\begin{aligned}
 ABSTDA_{it} = & \alpha_0 + \beta_1 SSR_{it} + \sum_{j=1}^4 \delta_j Goverances + \sum_{\kappa=1}^5 \phi_{\kappa} Controls_{it} \\
 & + \sum_{\rho=1}^{10} \varphi_{\rho} Industries + \sum_{\eta=1}^4 \gamma_{\eta} Years + \varepsilon_{it}
 \end{aligned} \quad (4)$$

$$\begin{aligned}
 E/P_{it} = & \alpha + \beta_1 DRET_{it} + \beta_2 RETURN_{it} + \beta_3 DRET_{it} * RETURN_{it} + \beta_4 SSR_{it} \\
 & + \beta_5 SSR_{it} * DRET_{it} + \beta_6 SSR_{it} * RETURN_{it} + \beta_7 SSR_{it} * DRET_{it} * RETURN_{it} \\
 & + \sum_{j=1}^4 \delta_j Goverances + \sum_{k=1}^5 \phi_k Controls_{it} + \sum_{\rho=1}^{10} \varphi_{\rho} Industries_{it} + \sum_{\eta=1}^4 \gamma_{\eta} Years_{it} + \varepsilon_{it}
 \end{aligned} \quad (5)$$

$$\begin{aligned}
 RETURN_{it} = & \alpha_0 + \beta_1 EPS_{it} + \beta_2 EPS\_C_{it} + \beta_3 SSR_{it} + \beta_4 SSR_{it} * EPS_{it} \\
 & + \sum_{j=1}^4 \delta_j Goverances_{it} + \sum_{k=1}^5 \phi_k Controls_{it} + \sum_{\rho=1}^{10} \varphi_{\rho} Industries \\
 & + \sum_{\eta=1}^4 \gamma_{\eta} Years + \varepsilon_{it}
 \end{aligned} \quad (6)$$

In the above models (Models 4-6), the testing variable is the dummy SSR. SSR equals 1 for the years 2006-2010, otherwise it equals zero. The pre-SSR period is from 2002-2005, while the post-SSR period is from 2006-2010. To control the impact of corporate governance on ownership structure reforms, we add five corporate governance variables (GOVERNANCES) in Models 4 to 6, including INDEPENDENT, NUMDIR, SUPERVISION, SUPERIND and DUALITY. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the

supervisory board. DUALITY equals one, if a CEO is also the chairperson of the board, otherwise it is zero. Other control variables are defined as before.

We chose the dummy variable approach because we assess whether or not subsequent to these two reforms earnings quality has improved rather than which components of the governance and ownership variables are associated with earnings quality measures. The main reason for selecting this approach is that both CCG and SSR reforms are carried out as a package; they do not only focus on a particular component, rather several changes in CCG (as well as in SSR) are intertwined. Therefore, if we only focus on each individual component in CCG or SSR separately, the results may be misleading. Further, this approach allows us to employ the full sample without splitting the data set into pre and post and test the difference between the coefficients.

In Models 1 and 4, we investigate the impacts of CCG and SSR reforms on ABSTDA. The coefficient of  $\beta_1$  in Model 1 measures the effectiveness of CCG on earnings quality, in respect of DAC. If corporate governance reform, through CCG, has an impact on discretionary accrual, then the amount of discretionary accrual should be reduced in the post-CCG period. Therefore, it is expected that  $\beta_1$  is negative in Model 1. Similarly, if SSR has an impact on earnings quality,  $\beta_1$  in model 4 is expected to be significant.

ABSTDA in Model 1 and 4 are estimated based on Models 7 and 8. The total accruals (ACCRUAL) in Model 7 are calculated as the difference between earnings (EARNINGS) and cash flows from operating activities (CFO). CFO represents net cash flows from operating activities. The ACCRUAL is decomposed into DAC and non-DAC (NDAC) via the modified Jones model (Jones, 1991; Dechow *et al.*, 1995) with the addition of the lagged average ROA as a controlling variable, as suggested by Kothari *et al.* (2005). DAC represents the unexplained portion of observations ( $\varepsilon_{it}$ ) based on Model 8. ABSTDA is the absolute value of DAC.

$$ACCRUAL_{it} = EARNINGS_{it} - CFO_{it} \quad (7)$$

$$ACCRUAL_{it} = \beta_0 + \beta_1(\Delta REV_{it} - \Delta REC_{it}) + \beta_2 PPE_{it} + \beta_3 ROA_{it-1} + \varepsilon_{it} \quad (8)$$

where:

- EARNINGS – operating profits divided by TA at the beginning of year t;
- CFO – cash flows from operating activities divided by TA at the beginning of year t
- ACCRUAL – total accruals divided by TA at the beginning of year t;
- $\Delta REV$  – change in revenue from year t-1 to year t, divided by TA at the beginning of year t;
- $\Delta RER$  – change in accounts receivable from year t-1 to year t, divided by TA at the beginning of year t;
- PPE – gross property, plant and equipment in year t, divided by TA at the beginning of year t; and
- ROA – operating profits after tax divided by average TA.

In Models 2, we test the impact of the CCG reform on conditional conservatism. According to the definition of conservatism by Basu (1997), firms recognise bad news quicker than good news, so we expect  $\beta_3$  for  $DRET \times RETURN$  to be positive. As we control the ownership variables: OWNSTATE, OWNLEGAL, OWNTRADE, OWNFOREIGN, and other firm characteristic variables that include SIZE,

LEVERAGE, GROWTH, ROA, CFO and AUDIT in Model 2, then the variable CCG will catch the synergetic effect of corporate governance reform of CCG. If CCG reform can make firms more conservative, we expect the coefficient on  $\beta_7$  for the interacting term  $CCG \times DRET \times RETURN$  in Model 2 to be positive and statistically significant. We do not offer predictions for the control variables, as well as for  $\alpha$  or the “dummy” intercepts.

On the other hand, in Model 5, in order to test the impact of the SSR reform on conditional conservatism, we control corporate governance variables: INDEPENDENT, NUMDIR, SUPERVISION, SUPERIND and DUALITY and other firm characteristic variables. If the SSR reform make firms more conservative on financial reporting, we expect the coefficient on  $\beta_7$  for the interactive term  $SSR \times DRET \times RETURN$  in Model 5 to be positive and statistically significant.

The impact of the reforms on the informativeness of earnings is investigated in Model 3 and Model 6. We use the interactive terms of  $CCG \times EPS$  in Model 3 and  $SSR \times EPS$  in Model 4 to measure the overall effects of the reforms on the effectiveness of earnings. If the CCG and SSR reforms can make firms' earnings more informative, we expect the coefficient on  $\beta_4$  for the interactive term  $CCG \times EPS$  in Model 3 and the coefficient on  $\beta_4$  for the interactive term  $SSR \times EPS$  in Model 6 to be positive and statistically significant.

#### 4.2 Sample selection

The corporate governance structure and ownership structure data are collected from the China Corporate Governance Research Database, designed and developed by Shenzhen GTA Information Technology Limited. Companies' market value and earnings information data are collected and calculated from the China Annual Report Database and the China Stock Price Database. A total of 12,267 firm-year observations, including all industrial sectors except finance, covering the years 2000 to 2010 are finally selected for this study based on the available information for all variables. The firms included in this final sample represent about 80 per cent of total listed firms over 11 years. The finance sector is excluded because it has its own unique features and is governed by different regulatory provisions. During the research period (2000-2010), China carried out significant stock market reforms whereby state-ownership in listed companies reduced and public ownership increased and became more popular as an investment avenue. Second, during the period, two major reforms (the CCG in 2002 and the SSR in 2005) were implemented and, thus, a sufficient number of observations before and after the reforms were available to examine their effects on listed companies' governance, ownership structure and earnings quality. Tables I and II show the distribution of sample firms with the proportion to total listed firms in China.

## 5. Empirical results

### 5.1 Descriptive statistics

The descriptive statistics for the variables used in the models are shown in Table III. The mean (median) of absolute DAC is 0.1990 (0.097). On average (median), the return on stock (RETURN) is 18.34 per cent (6.76 per cent), while the EPS (E/P) is 2.26 per cent (2.09) and the average EPS\_C is 0.37 per cent. The standard deviation of 0.56 for RETURN suggests that the dispersion is high. We thus checked all returns observations and did not find extreme outliers that would affect the reliability of coefficients.



Firm-year observations available from the CSMAR® Database (2000-2010), excluding the finance sector	13,621
<i>Less:</i>	
Companies that are double-counted under B share code	219
Observations in insolvent firms	408
Companies with incomplete information	<u>727</u>
<i>Final sample:</i>	12,267
<i>Panel A: distribution of firms in sample by year</i>	
Year	No. of companies % of sample firms over the total listed firms for that year
2000	955 81.13
2001	1,015 88.79
2002	1,069 85.62
2003	1,133 86.24
2004	1,180 85.25
2005	1,108 87.76
2006	1,113 80.24
2007	1,074 78.77
2008	1,130 82.15
2009	1,239 80.88
2010	<u>1,251</u> 82.45
Total	12,267

**Table I.**  
Summary of sample selections

Industries	No. of companies	(%)
Agriculture, forestry, livestock farming, fishery	303	2.47
Mining	269	2.19
Manufacturing	7,087	57.77
Utilities	622	5.07
Construction	278	2.27
Transportation	761	6.20
Information technology	64	0.52
Wholesale and retail trade	578	4.71
Real estate	402	3.28
Social services	925	7.54
Communication and cultural industry and others	978	7.97
Total	12,267	100

**Table II.**  
Summary of sample selections: distribution of firms among industries

The mean (median) of the percentage of state ownership is 33.05 per cent (35.81 per cent), and the mean (median) of the percentage of legal entity ownership is 17.92 per cent (6.52 per cent), while the percentage of domestic individual (public) ownership is 43.61 per cent (41.52 per cent). The mean percentage of foreign ownership in Chinese firms is only 4.35 per cent. This indicates that foreign investors have little stake in the Chinese stock market, thus they could have limited impact on corporate performance and earnings

Variables	Mean	Median	Maximum	Minimum	SD	Observations
ABSTDA	0.1990	0.0970	4.6970	0.0000	0.4113	12267
RETURN	0.1834	0.0676	2.3508	-0.8467	0.5634	12267
EPS	0.0226	0.0209	0.2885	-0.3318	0.0602	11429
EPS_C	0.0037	0.0000	0.4065	-0.2941	0.0629	11429
OWNSTATE	0.3305	0.3581	0.8858	0.0000	0.2478	11984
OWNLEGAL	0.1792	0.0652	0.9132	0.0000	0.2195	11984
OWNTRADE	0.4361	0.4152	1.0000	0.0164	0.1770	11984
OWNFOREIGN	0.0435	0.0000	0.9616	0.0000	0.1133	11984
INDEPENDENT	0.2925	0.3333	0.8000	0.0000	0.1316	12157
BRDSIZE	2.2273	2.1972	2.9957	0.0000	0.2295	12157
SUPERSIZE	1.3784	1.3863	2.5649	0.0000	0.3181	12155
SUPERIND	0.3905	0.4000	1.0000	0.0000	0.2960	12155
DUALITY	0.1161	0.0000	1.0000	0.0000	0.3204	12082
SIZE	8.9585	8.9204	10.7915	7.5012	0.4801	12009
LEVERAGE	0.4905	0.4956	0.9500	0.0430	0.1869	12267
GROWTH	0.2160	0.1258	4.7991	-0.7775	0.5631	11390
ROA	0.0311	0.0322	0.2003	-0.2138	0.0623	11429
CFO	0.0593	0.0527	0.6158	-0.3736	0.1071	12013
AUDITOR	0.0609	0.0000	1.0000	0.0000	0.2391	12267

**Notes:** RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. EPS is calculated as net income per share reported for the 12-month period scaled by the opening share prices and EPS\_C is calculated as changes of net income per share reported for the 12-month period scaled by the opening share prices. Discretionary accruals (DAC) are computed by using the modified Jones model (Dechow *et al.*, 1995), with a lagged ROA. ABSTDA is the absolute value of DAC. OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the supervisory board. DUALITY equals one, if a CEO is also the chairperson of the board, otherwise it is zero. SIZE is measured as the natural logarithm of end-of-year total assets (TA) and is used to control the size effect of firms. LEVERAGE is the ration of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of total assets at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is measured as operating profits after tax divided by average of total assets. CFO is the cash flows from operating activities divided by total assets at the beginning of the year. AUDITOR equals one, if the firm's external audit firm belongs to one of the Big Four international firms, otherwise it is zero

**Table III.**  
Descriptive statistics  
for variables used in  
regression analysis

quality[5]. Other shareholders are employees, executives and investment funds. As the percentages of these types of owners are less than 1 per cent, their influence on earnings quality is not investigated in the paper. About 40 per cent of total shares in Chinese companies is publicly owned and can be circulated or traded, while most state-owned shares and legal entity-owned shares cannot be circulated or traded on the markets before SSR reform in 2005. The mean percentage of independent directors over total directors is 29.25 per cent, suggesting that about 70 per cent are executive directors. This

means the boards in Chinese companies in the sample are insider-dominated. The average (median) log value of the number of boards of directors is 2.23 (2.19). The average (median) size of supervisory boards in the logarithm is 1.38 (1.39). The mean (median) of independent (non-paid) supervisors on the supervisory boards is 39.04 (40 per cent). The percentage of independent members on the supervisory board is greater than that on the boards of directors. Some members on the boards of directors and the supervisory boards are drawn from internal political organs, such as the CCP Committee and the trade unions. The mean (median) of firm size in terms of natural logarithmic is roughly 20.59 (median 20.54). The mean (median) debt ratio is 49.05 per cent (49.56 per cent), suggesting that Chinese firms are highly geared. Most companies experienced increases in operating revenue over the years 2000-2010, and the average growth rate was 21.60 per cent. The ROA, a measure of firm profitability, was 3.11 per cent, and only 6 per cent of Chinese firms were audited by the Big Four auditing firms as external auditors.

The year-wise means of all these variables (not presented) over the years 2000-2010 show that returns fluctuated significantly during the period from  $-0.40$  in 2004 to  $1.44$  in 2006, which suggests that the Chinese stock market had experienced high volatility. The E/P ratio on average is  $0.026$  and reached a peak of  $0.048$  in 2007 and dropped to a low of  $0.009$  in 2008. State ownership in non-tradable shares was about 36 per cent in 2005 before the SSR, and then declined gradually towards 27.3 per cent in 2010. Legal entity ownership in non-tradable shares followed a similar pattern. Meanwhile, the percentage of tradable A shares has increased significantly since 2005. In 2010, the average percentage of tradable A shares in Chinese listed firms reached 54.6 per cent. Foreign ownership has kept steady and is about 4 per cent within our sample period.

The Pearson pair-wise correlations (not reported) show that there is a higher negative correlation between state ownership and legal entity ownership ( $-0.746$ ). This negative relationship reflects the fact that most legal entities in China have been established by various state agencies and SOEs. These legal entities are ultimately owned by the governments at different levels, and there is a trade-off between state ownership and legal entity ownership. As the correlation between these two variables is not over 80 per cent, we keep both of them in our main test. We also carried out robust testing by deleting one of them (legal entity ownership) from the multivariate tests to reduce multicollinearity and did not find material differences in the results. The other high correlations are between BRDSIZE and GROWTH ( $0.675$ ), SIZE and GROWTH ( $0.691$ ) and EPS and SIZE ( $0.392$ ). With these few exceptions, the pair-wise correlations are all generally less than  $\pm 0.20$ .

## 5.2 The effects of the CCG and the SSR on earnings quality

*5.2.1 Comparative descriptive statistics.* As the main objective of this study is to assess the effect of the implementation of the CCG and the SSR on earnings quality in Chinese firms, we compare average changes in ownership and governance structures before and after the reforms. First, we define 2000-2001 as the pre-CCG period, 2002-2005 as the post-CCG period, 2002-2005 as the pre-SSR period and 2006-2010 as the post-SSR period to mitigate the double effect of the reforms. Panel A (CCG) and Panel B (SSR) of Tables IV and V present comparative descriptive statistics of the variables. Panel A shows that the average return has decreased from a positive 0.2 per cent in the pre-CCG period to a negative 8.7 per cent in the post-CCG period. This change is statistically

Variables	MEAN		SD		<i>p</i> -value ( <i>t</i> -test)
	Pre-CCG	Post-CCG	Pre-CCG	Post-CCG	
ABSTDA	0.2618	0.2201	0.5199	0.4455	0.0010
RETURN	0.0029	-0.0865	0.3002	0.3864	0.0000
EPS	0.0136	0.0141	0.0309	0.0612	0.7694
EPS_C	-0.0045	-0.0031	0.0181	0.0618	0.3553
OWNSTATE	0.3733	0.3686	0.2594	0.2565	0.5051
OWNLEGAL	0.2231	0.2128	0.2436	0.2351	0.1062
OWNTRADE	0.3484	0.3670	0.1281	0.1256	0.0000
OWNFOREIGN	0.0418	0.0414	0.1109	0.1104	0.9022
INDEPENDENT	0.0398	0.3160	0.0909	0.0741	0.0000
BRDSIZE	2.2025	2.2544	0.2717	0.2223	0.0000
SUPERSIZE	1.4172	1.3891	0.3169	0.3218	0.0012
SUPERIND	0.3945	0.3953	0.3096	0.2968	0.9236
DUALITY	0.1349	0.1073	0.3417	0.3095	0.0016
SIZE	8.9635	8.9610	0.5020	0.4731	0.8476
LEVERAGE	0.4263	0.4800	0.1746	0.1832	0.0000
GROWTH	0.1053	0.2381	0.4815	0.5435	0.0000
ROA	0.0351	0.0221	0.0597	0.0641	0.0000
CFO	0.0484	0.0561	0.0956	0.0983	0.0038
AUDITOR	0.0234	0.0584	0.1511	0.2344	0.0000

**Notes:** RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. EPS is calculated as net income per share reported for the 12-month period scaled by the opening share prices and EPS\_C is calculated as changes of net income per share reported for the 12-month period scaled by the opening share prices. Discretionary accruals (DAC) are computed by using the modified Jones model (Dechow *et al.*, 1995), with a lagged ROA. ABSTDA is the absolute value of DAC. OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the supervisory board. DUALITY equals one if a CEO is also the chairperson of the board, otherwise it equals zero. SIZE is measured as the natural logarithm of end-of-year total assets (TA) and is used to control the size effect of firms. LEVERAGE is the ratio of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of total assets at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is the return on assets to proxy the profitability. CFO is the cash flows from operating activities divided by total assets at the beginning of year. AUDITOR equals one if the firm's external audit firm belongs to one of the Big Four international firms, otherwise zero. The pre-CCG period is from 2000-2001 while the post-CCG period is from 2002-2005

**Table IV.**  
Comparison of means  
of variables between  
pre and post-CCG  
periods

significant at the 1 per cent level. The EPS was hardly changed. The means of EPS was 0.014 in the pre-CCG period and 0.014 in the post-CCG period (the change is not statistically significant), while changes in earnings over the years were also similar. This result suggests that Chinese market returns may have been influenced by external factors other than accounting earnings, or firms' earnings capacity. One important

Variables	MEAN		SD		P-value (t-test)
	Pre-SSR	Post-SSR	Pre-SSR	Post-SSR	
ABSTDA	0.2201	0.1614	0.4455	0.3303	0.0000
RETURN	-0.0865	0.4533	0.3864	0.6199	0.0000
EPS	0.0141	0.0321	0.0612	0.0649	0.0000
EPS_C	-0.0031	0.0116	0.0618	0.0716	0.0000
OWNSTATE	0.3686	0.2843	0.2565	0.2276	0.0000
OWNLEGAL	0.2128	0.1363	0.2351	0.1869	0.0000
OWNTRADE	0.3670	0.5236	0.1256	0.1871	0.0000
OWNFOREIGN	0.0414	0.0458	0.1104	0.1165	0.0524
INDEPENDENT	0.3160	0.3607	0.0741	0.0518	0.0000
BRDSIZE	2.2544	2.2146	0.2223	0.2167	0.0000
SUPERSIZE	1.3891	1.3567	0.3218	0.3139	0.0000
SUPERIND	0.3953	0.3854	0.2968	0.2905	0.0916
DUALITY	0.1073	0.1166	0.3095	0.3209	0.1431
SIZE	8.9610	8.9548	0.4731	0.4777	0.5174
LEVERAGE	0.4800	0.5203	0.1832	0.1875	0.0000
GROWTH	0.2381	0.2344	0.5435	0.5978	0.7526
ROA	0.0221	0.0369	0.0641	0.0609	0.0000
CFO	0.0561	0.0657	0.0983	0.1167	0.0000
AUDITOR	0.0584	0.0756	0.2344	0.2644	0.0006

**Notes:** RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. EPS is calculated as net income per share reported for the 12-month period scaled by the opening share prices and EPS\_C is calculated as changes of net income per share reported for the 12-month period scaled by the opening share prices. Discretionary accruals (DAC) are computed by using the modified Jones model (Dechow *et al.*, 1995), with a lagged ROA. ABSTDA is the absolute value of DAC. OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the supervisory board. DUALITY equals one if a CEO is also the chairperson of the board, otherwise it equals zero. SIZE is measured as the natural logarithm of total assets (TA) and is used to control the size effect of firms. LEVERAGE is the ratio of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of total assets at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is the return on assets to proxy the profitability. CFO is the cash flows from operating activities divided by total assets at the beginning of year. AUDITOR equals one if the firm's external audit firm belongs to one of the big four international firms, otherwise zero. The pre-SSR period is from 2002-2005 while the post-SSR period is from 2006-2010

**Table V.**  
Comparison of means  
of variables between  
pre and post-SSR  
periods

explanation for negative returns subsequent to the CCG was the economic downturn experienced by China in 2003.

Panel A of Tables IV and V also shows that the ownership structures in Chinese listed firms had not changed substantially in the post-CCG period of 2002-2005, as compared to the pre-CCG period of 2000-2001, except that public ownership increased slightly by 1.86 per cent. Average state-ownership reduced from 37.33 to 36.86 per cent,



and average legal entity ownership slipped from 22.31 to 21.28 per cent. These changes are not statistically significant at the 10 per cent level. Average public ownership increased from 34.84 to 36.60 per cent. The increment in public ownership is only 1.86 per cent, but it is statistically significant. In the same periods, average foreign investor ownership in Chinese listed firms reduced slightly from 4.18 to 4.14 per cent (not significant). This reduction is due to further liberalization whereby the restriction of domestic investors to the B share market was lifted following the CCG. This dilution might have dampened foreigners' enthusiasm in investing in Chinese securities market.

On the other hand, corporate governance structures in Chinese listed firms have gone through noticeable changes. The boards have become more independent with the average percentage of independent directors on the board increasing from 3.98 per cent in the pre-CCG period to 31.6 per cent in the post-CCG period which is statistically significant at the 1 per cent level. The separation of the roles of chairperson of the board and CEO has also improved from 0.1349 to 0.1073 ( $p < 0.01$ ). The logarithm of size of the board has slightly increased from an average of 2.2025 in the pre-CCG period to 2.2544 ( $p = 0.09$ ) in the post-CCG period. However, the size of the supervisory board has reduced significantly. The independence of the supervisory board remains the same at the 39 per cent level. For control variables, the average size of the sample has not changed significantly, but the leverage ratio has increased from 42.63 to 48 per cent. The growth rate in Chinese firms has increased from 10.53 per cent in the pre-CCG period to 23.81 per cent in the post-CCG period in terms of operating revenues. Firm profitability reduced from 3.51 per cent in the pre-CCG period to 2.21 per cent in the post-CCG period. However, cash flows (deflated by TA) have increased slightly. These changes are all statistically significant. Only 2.34 per cent of Chinese firms hired one of the Big Four audit firms as their external auditors in the pre-CCG period. This ratio has increased substantially in the post-CCG period to 5.84 per cent.

Panel B of Tables IV and V shows the mean differences in performance, ownership and corporate governance variables between the pre-SSR (2002-2005) and the post-SSR (2006-2010) periods. Returns increased from a negative 8.65 per cent in the pre-reform period to a positive 45.33 per cent in the post-SSR period, while the E/P ratio also improved from 0.014 to 0.032. These changes are also statistically significant at the 1 per cent level. The firms' earnings management behaviours were also constrained significantly in terms of ABSTDA in the post-SSR period.

There has been significant change in non-tradable share ownership structures between the pre- and post-SSR periods. State ownership in non-tradable shares reduced from 36.86 to 28.43 per cent, legal entity ownership in non-tradable shares declined from 21.28 to 13.63 per cent, and on other hand, the percentage of tradable shares jumped by 15.66 per cent from 36.7 to 52.36 per cent. These changes are all statistically significant at the 1 per cent level. However, we cannot jump to the conclusion that state and legal entity ownerships in listed firm have been substantially reduced since the SSR reform. The reason is that through the SSR reform, the state and legal entity ownership in non-tradable shares are reduced but in the meantime, state and legal entity ownerships in tradable shares are increased. The state and legal entities simply convert their non-tradable shares into tradable shares. Due to the unavailability of data, the exact percentages of state and legal entity ownerships in tradable shares after 2005 remain unclear. After the SSR reform, state and legal entity ownerships have been diluted to a certain degree because of the compensation package offered to minority

shareholders (most of them held tradable shares before SSR reform), but the state still remains the controlling shareholder in most listed firms. The positive effect of the SSR reform is that it has not only improved market liquidity and corrected distorted share prices, but has also opened up Chinese listed companies to more public scrutiny and minimized the possibility of related party transactions. From a political perspective, the key element in the SSR in 2005 is the acknowledgement of the rights of minority shareholders (public shareholders). To carry out the reform, listed companies were required to offer compensations (e.g. cash, bonus shares, options) to the tradable shareholders to make up the losses suffered by them from the floating of non-tradable shares. Listed companies also need to negotiate compensation plans with the owners of tradable shares and to call for an extraordinary shareholder meeting (Inoue, 2005).

The corporate governance structures in Chinese listed firms have also undergone several changes. Some of these changes are statistically significant but in different directions. The percentage of independent directors on boards of directors has increased from 31.6 to 36.07 per cent. On the other hand, both the size of the board of directors and the size of the supervisory board have become smaller. The percentage of independent (non-paid) supervisors on the supervisory boards has reduced slightly from 39.53 to 38.54 per cent. Duality has decreased but it is not statistically significant. For the control variables, the size of the listed firms has not changed significantly but firms have become more profitable. The leverage has increased from 48 per cent in the pre-SSR period to 52.03 per cent in the post-SSR period. The growth rate has remained at about 24 per cent per year.

*5.2.2 Regression results.* We measure earnings quality by three proxies:

- (1) the absolute value of DAC (ABSTDA);
- (2) conditional conservatism as measured by Basu (1997); and
- (3) the ERC or informativeness of earnings.

The results of changes of DAC (in absolute value) over both the pre-/post-CCG period and pre-/post-SSR period are reported in Table VI. It shows that the coefficient of CCG is  $-0.1508$  in Model 1 (statistically significant at 1 per cent level), which captures the overall aggregated effect of CCG reform. This means the CCG reform (including making the board of directors more independent, establishing more specialized committees and separating the roles of CEO and the chairperson of board of directors, etc.) is effective after controlling for ownership structures and firm characteristics. Hence, the *H1a* is supported. The coefficient on SSR which is designed to capture the overall aggregated effect of SSR reform is  $-0.0161$  in Model 4 and is as we expected. This result means SSR reform can constrain firms' managerial discretionary behaviours, even though the result is not statistically significant. Therefore, the *H2a* is not rejected.

The second proxy used in our paper for measuring earnings quality is Basu (1997)'s conditional conservatism. In Model 2 of Table VII, we use a dummy variable CCG which is 1 for the period of 2002-2005, 0 otherwise, and interact with RETURN and DRET, and the coefficient is positive and significant (coefficient of  $CCG \times RETURN \times DRET = 0.0383$   $p$ -value = 0.0115). The results show that CCG reform has made Chinese firms more conservative. Therefore, the *H1b* is valid. In Model 5 of Table VIII, we use another dummy variable SSR where 1 is for the period of 2006-2010, 0 otherwise, and interact

Dependent variable:	CCG (Model 1) ABSTDA		SSR (Model 4) ABSTDA	
Independent variables	Coefficient	Probability	Coefficient	Probability
C	-3.2284	0.000	-2.3614	0.0000
CCG	-0.1508	0.000		
SSR			-0.0161	0.3120
OWNSTATE	0.1718	0.109		
OWNLEGAL	0.2719	0.013		
OWNTRADE	0.2345	0.041		
OWNFOREIGN	0.0549	0.648		
INDEPENDENT			-0.1705	0.0210
BRDSIZE			-0.1122	0.0000
SUPERSIZE			0.0224	0.0836
SUPERIND			-0.0080	0.5410
DUALITY			0.0322	0.0074
SIZE	0.4048	0.000	0.3192	0.0000
LEVERAGE	-0.0591	0.095	-0.0543	0.0203
GROWTH1	0.0055	0.622	0.0096	0.1689
ROA	-0.5500	0.000	-0.4553	0.0000
CFO1	0.2877	0.000	0.2191	0.0000
AUDITOR	-0.0624	0.030	-0.0546	0.0008
INDUSTRIES	Yes		Yes	
YEARS WITH IN PERIODS	Yes		Yes	
R-squared	0.2162		0.1795	
Adjusted R-squared	0.2120		0.1763	
F-statistic	51.2673		65.0120	
Prob(F-statistic)	0.0000		0.0000	
Durbin-Watson stat	0.9103		0.9107	
Observation	5,980		9,252	

**Notes:** Discretionary accruals (DAC) are computed by using the modified Jones model (Dechow *et al.*, 1995), with a lagged ROA. ABSTDA is the absolute value of DAC. OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the supervisory board. DUALITY equals one if a CEO is also the chairperson of the board, otherwise it equals zero. SIZE is measured as the natural logarithm of total assets (TA) and is used to control the size effect of firms. LEVERAGE is the ratio of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of total assets at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is the return on assets to proxy the profitability. CFO is the cash flows from operating activities divided by total assets at the beginning of year. AUDITOR equals one if the firm's external audit firm belongs to one of the big four international firms, otherwise zero. CCG equals 0 if the period is from 2000-2001 and CCG equals 1 if period is from 2002-2005. SSR equals 0 if the period is from 2002-2005 and SSR equals 1 if period is from 2006-2010

**Table VI.**  
Regression results of  
DAC over pre/post  
CCG and pre-post  
SSR periods

Dependent variable Independent variables	CCG (Model 2) EARN		SSR (Model 5) EARN	
	Coefficient	Probability	Coefficient	Probability
C	0.0068	0.6919	-0.0657	0.0000
DRET	0.0007	0.8753	-0.0024	0.4172
RETURN	0.0117	0.1369	0.0424	0.0000
RETURN * DRET	0.0084	0.5366	0.0438	0.0000
CCG	-0.0147	0.0001		
CCG * DRET	-0.0029	0.5583		
CCG * RETURN	0.0328	0.0003		
CCG * RETURN * DRET	0.0383	0.0115		
SSR			0.0234	0.0000
SSR*DRET			-0.0021	0.6298
SSR*RETURN			-0.0383	0.0000
SSR*RETURN *DRET			-0.0101	0.4983
OWNSTATE	0.0143	0.2236		
OWNLEGAL	0.0079	0.5061		
OWNTRADE	0.0067	0.595		
OWNFOREIGN	0.0258	0.0498		
INDEPENDENT			0.0213	0.0665
BRDSIZE			0.0187	0.0000
SUPERSIZE			0.0051	0.0131
SUPERIND			-0.0005	0.8059
DUALITY			-0.0038	0.0448
SIZE	0.0015	0.2207	0.0013	0.3124
LEVERAGE	-0.0737	0.0000	-0.0670	0.0000
GROWTH1	0.0168	0.0000	0.0206	0.0000
AUDITOR	0.0168	0.0000	0.0283	0.0000
INDUSTRIES	Yes		Yes	
YEARS WITH IN PERIODS	Yes		Yes	
R-squared	0.2528		0.2107	
Adjusted R-squared	0.2482		0.2071	
F-statistic	54.3411		59.9479	
Prob(F-statistic)	0.0000		0.0000	
Durbin-Watson stat	1.3360		1.4483	
Observations	5,989		9,252	

**Notes:** RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. DRET is a dummy variable and equals to 1 if RETURN is less than zero, otherwise it equals to 0. EARN is the same value of EPS, it is calculated as net income per share reported for the 12-month period scaled by the opening share prices. OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the supervisory board. DUALITY equals one if a CEO is also the chairperson of the board, otherwise it equals zero. SIZE is measured as the natural logarithm of total assets (TA) and is used to control the size effect of firms. LEVERAGE is the ratio of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of total assets at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is the return on assets to proxy the profitability. CFO is the cash flows from operating activities divided by total assets at the beginning of year. AUDITOR equals one if the firm's external audit firm belongs to one of the big four international firms, otherwise zero. CCG equals 0 if the period is from 2000-2001 and CCG equals 1 if period is from 2002-2005. SSR equals 0 if the period is from 2002-2005 and SSR equals 1 if period is from 2006-2010

**Table VII.**  
Regression results of  
conditional  
conservatism over  
pre-/post-CCG and  
pre-/post-SSR periods

Dependent variable Independent variables	CCG (Model 3)		SSR (Model 6)	
	Coefficient	Probability	Coefficient	Probability
C	-0.2290	0.0131	0.2081	0.0143
EPS	0.6958	0.0010	1.3079	0.0000
EPS_C	0.2916	0.0003	0.6614	0.0000
CCG	0.4555	0.0000		
EPS*CCG	0.6783	0.0018		
SSR			-0.0909	0.0000
EPS*SSR			-1.4865	0.0000
OWNSTATE	-0.0272	0.6694		
OWNLEGAL	-0.0714	0.2698		
OWNTRADE	-0.0716	0.2925		
OWNFOREIGN	-0.0620	0.3856		
INDEPENDENT			-0.0975	0.1224
BRDSIZE			-0.0085	0.6159
SUPERSIZE			0.0027	0.8095
SUPERIND			-0.0115	0.3048
DUALITY			0.0108	0.2940
SIZE	0.0058	0.3960	0.0088	0.1969
LEVERAGE_A	0.0278	0.1698	0.0530	0.0058
GROWTH1	0.0309	0.0000	0.0360	0.0000
CFO1	0.3328	0.0000	0.2070	0.0000
AUDITOR	0.0315	0.0651	-0.0417	0.0027
INDUSTRIES	Yes		Yes	
YEARS WITH IN	Yes		Yes	
PERIODS				
R-squared	0.5211		0.7279	
Adjusted R-squared	0.5183		0.7268	
F-statistic	184.7803		631.9794	
Prob(F-statistic)	0.0000		0.0000	
Durbin-Watson stat	1.8088		2.4073	
Observations	5,980		9,252	

**Notes:** RETURN is measured as the returns of firm *i* for the 12-month period ending four months after the fiscal year. EPS is calculated as net income per share reported for the 12-month period and EPS\_C is calculated as changes of net income per share reported for the 12-month period. Both EPS and EPS\_C are scaled by the opening share prices. OWNSTATE is the percentage of state ownership in non-tradable shares in firm *i*, OWNLEGAL is the percentage of legal entity ownership in non-tradable shares in firm *i*, OWNTRADE is the percentage of tradable A shares over total shares in firm *i*, OWNFOREIGN is the percentage of shares owned by foreign investors through B shares, H shares and N shares. INDEPENDENT represents the percentage of external directors on the board. NUMDIR is the number of directors to proxy for board size. SUPERVISION is the number of supervisors on the supervisory board. SUPERIND is the percentage of the number of independent supervisors on the supervisory board. DUALITY equals one if a CEO is also the chairperson of the board, otherwise it equals zero. SIZE is measured as the natural logarithm of total assets (TA) and is used to control the size effect of firms. LEVERAGE is the ratio of the book value of interest-bearing debts (both short-term and long-term debts) to the book value of total assets at year-end. GROWTH is computed as increase/decrease of sales revenue over one year divided by current period sales. ROA is the return on assets to proxy the profitability. CFO is the cash flows from operating activities divided by total assets at the beginning of year. AUDITOR equals one if the firm's external audit firm belongs to one of the big four international firms, otherwise zero. CCG equals 0 if the period is from 2000-2001 and CCG equals 1 if period is from 2002-2005. SSR equals 0 if the period is from 2002-2005 and SSR equals 1 if period is from 2006-2010

**Table VIII.**  
Regression results of  
stock return on  
earnings over pre-/  
post-CCG and pre-/  
post-SSR period



with RETURN and DRET, and the coefficient is negative and insignificant. The results show that SSR reform has not had a significant impact in term of Chinese firms' conservative accounting practices and the *H2b* is rejected.

Finally, the effectiveness of the CCG on earnings quality, as measured by the informativeness of earnings, is reported in Table VIII. According to the results for Model 3 reported in Table VIII, the coefficient on the CCG interacting with EPS ( $CCG \times EPS$ ) is positive and significant. This suggests that in the post-CCG period, the informativeness of earnings has further improved (the *H1c* is validated). However, when we investigate whether the informativeness of earnings has also improved in the post-SSR period by interacting SSR with EPS, the results (Model 6) are negative and significant. This is an interesting result and means the informativeness of earnings has deteriorated in the post-SSR period (the *H2c* is rejected). This may be due to more shares flowing into the markets which dilutes the rights of existing shareholders and in turn, depresses investors' confidence. Also, our results are different from those of Hou *et al.* (2012) who found the effect of the SSR on earnings informativeness is positive and significant. This difference could be explained by the fact that we employed earnings informativeness using Warfield *et al.* (1995), while they estimate firm-specific return variation using both the local and US market index returns following Fernandes and Ferreira (2008), as they assumed that Chinese market returns are linked with the US market because of their export dependency. Second, Hou *et al.* (2012) calculate the ratio of state-to-total shares, and exclude state ownership held via legal person shares. Previous studies show a highly correlated complementary relationship between state and legal person ownership (Bai *et al.*, 2004; Firth *et al.*, 2007) because the state can exercise control rights via either direct state shares or indirect legal person shares. Third, the SSR reform also causes the calculation of state ownership more difficult because after the reform, the state can own not only non-tradable shares but also tradable shares, and the exact percentage of state-owned tradable shares has not been clearly disclosed.

### 5.3 Additional analysis

The estimation of DAC is a difficult task for accounting academics. Since the Jones's (1991) model, there have been many alternative models suggested based on her model. Among them, the modified Jones model (Dechow *et al.*, 1995), the Dechow and Dicheve (2002) model in which current accruals are regressed on cash flows, and the Kothari *et al.* (2005) model are the most popular. The Kothari model is chosen as the estimation model of DAC in our study. We also use the Jones model and the Modified Jones model to re-estimate DAC, and then test them against CCG and SSR. The results are similar to those obtained by using the Kothari *et al.* (2005) model, as reported in the previous section.

Because firm performance affects the returns-earnings relationship and accrual behaviour, we control for this by eliminating Special Treatment (ST) and Particular Transfer (PT) firms from our sample and run Models 1 to 6 again. The results from the sub-sample are consistent with the original outcome. ST and PT firms are classified by the two Chinese stock exchanges as distressed firms[6]. The similar results indicate that a firm's profitability has less impact on the relationship between CCG and SSR reforms and earnings quality within our sample.

Also, the results could be affected due to the classification of the pre-CCG and post-CCG periods because in 2002, many firms would not necessarily implement the

changes required by the code promulgated that same year. So, we put 2002 in the pre-CCG period and re-estimated both models. Our results, not reported, show no material changes, so our conclusions are robust for classification and profitability. Further, due to the 2008-2009 global financial crisis, the ERC has been affected, so we re-estimated the models by eliminating the observations for 2008. Our results do not change much, as the significant negative informativeness of earnings for the post-SSR period remained the same. We also estimate fixed effects regressions models to allow for the examination of the existence of a dynamic relationship between earnings quality measures and the ownership and governance variables. We do not find substantially different results that would alter our main findings[7].

## 6. Summary and conclusions

Over the past three decades, China has witnessed rapid and significant economic growth, with an average growth rate above 10 per cent and a GDP of US\$5.93 trillion at the end of 2010. The country has restructured its economy by gradually opening it to outsiders and divesting government ownership of SOEs to foreign and domestic investors. However, it has been claimed that corporate governance and ownership structure are not as effective as they should be, given the size and complexities of listed corporations in China. Its financial market still suffers from a weak legal system, a negligible market control mechanism and an inefficient managerial labour market. There is a lack of credibility and transparency of financial information, as many listed companies do not fully disclose vital information and directors engage in abusive related party transactions. These, along with other institutional factors and highly concentrated insider ownership, lead to agency conflicts which render accounting earnings less useful. To improve the quality of corporate governance and financial reporting, the Chinese Government initiated and implemented several reforms including the promulgation of the CCG in 2002, SSR in 2005 to float state-owned shares to the general public. Although most SOEs have been corporatized over the years along Western models and major reforms have taken place, it is not known if these reforms have achieved their intended results, in particular, in improving the quality of financial reporting in China.

In this paper, we examine whether or not corporate governance and ownership structure reforms have improved the earnings quality of Chinese firms as intended by the regulatory bodies. We measure earnings quality by three proxies: DAC, conditional conservatism and ERC or earnings informativeness.

Using a large cross-section of listed firms over a period of 11 years from 2000 to 2010, comprising 12,267 firm-year observations, we find that the promulgation of CCG reform in 2002 has had some positive impact on listed firms' earnings quality in China. However, SSR reform has little impact on earnings quality because the SSR reform mainly focusses on how to improve the liquidity or the tradability of state-owned non-tradable shares rather than changing the ownership structure substantially. The state remains the controlling shareholder in most listed firms, even though the percentage of state-owned shares has reduced since the SSR reform. Our study thus contributes to the debate on the effectiveness of the reforms on earnings quality in China by operationalizing quality using multiple measures to mitigate the concerns associated with using a single measure. Our study is timely because it provides empirical evidence to regulators about the effectiveness of their governance and ownership reforms on the

Chinese corporate sector and, hence, to develop better corporate governance mechanisms in the future. The results also suggest that for improving financial reporting quality targeted reforms should be undertaken such as governance reform which emphasised improving board monitoring.

## Notes

1. SSR and ownership reform are used interchangeably in this paper.
2. From 2000 to 2001, Chinese stocks in both the SSE and SZSE experienced extreme volatility due to the uncertainty caused by controversy in government policies, which focussed on issues such as whether or not to float state-owned shares. Therefore, the promulgation of the CCG in 2002 for listed companies in China was also used as a vehicle to restore investor confidence.
3. As mentioned before, there are three types of shares in Chinese listed firms: individual shares, state shares and legal entity shares. Therefore, there are three types of ownership. Previous studies found that the legal entity ownership (OWNLEGAL) is complementary to and highly correlated with state ownership (OWNSTATE), but the correlation between state ownership (OWNSTATE) and legal entity ownership (OWNLEGAL) does not exceed 80 per cent in our sample. Therefore, we keep both of them in our study. OWNSTATE and OWNLEGAL are calculated as the percentage of state and legal entity owned non-tradable shares over total shares. We also divide individual ownership into two types: OWNTRADE for domestic investors (A shares) and OWNFOREIGN for foreign investors (B, H, and N shares). OWNTRADE is also used as the measure for public ownership until 2005. However, OWNTRADE is only used as the percentage of tradable shares over total shares from 2005 onwards.
4. Opening share price refers to the opening share price at Day 1 of the current fiscal financial year.
5. Most foreign investors can obtain ownership in Chinese firms through B shares on the Shanghai and Shenzhen Stock Exchanges or H shares on the HKSE or N shares in Chinese firms listed also on the NYSE.
6. A firm is classified as ST if it satisfies one of the following conditions: it has negative net profits for two consecutive fiscal years; the shareholders' equity is lower than the registered capital (par value); its operations have been stopped and cannot be resumed within three months due to natural disasters or lawsuits; it is subjected to other abnormal events specified by the CSRC. ST firms are subject to a 5 per cent daily price limit movement. If an ST firm cannot improve its performance within three years, it will be classified as a PT firm and may be delisted from the stock exchanges.
7. Results can be obtained from the authors upon request.

## References

- Aharony, J., Lee, C.J. and Wong, T.J. (2000), "Financial packaging of IPO firms in China", *Journal of Accounting Research*, Vol. 38 No. 1, pp. 103-126.
- Ahmed, A.S. and Duellman, S. (2007), "Accounting conservatism and board of director characteristics: an empirical analysis", *Journal of Accounting and Economics*, Vol. 43 Nos 2/3, pp. 411-437.

- Ahmed, K., Hossain, M. and Adams, M. (2006), "The effects of board composition and board size on the informativeness of annual accounting earnings", *Corporate Governance*, Vol. 14 No. 5, pp. 418-431.
- AL-Dhamar, R. and Ismail, K. (2014), "An investigation into the effect of surplus free cash flow, corporate governance and firm size on earnings predictability", *International Journal of Accounting and Information Management*, Vol. 22 No. 2, pp. 118-133.
- Bai, C., Liu, Q., Lu, J., Song, F.M. and Zhang, J. (2004), "Corporate governance and market valuation in China", *Journal of Comparative Economics*, Vol. 32 No. 4, pp. 599-616.
- Basu, S. (1997), "The conservatism principle and the asymmetric timeliness of earnings", *Journal of Accounting and Economics*, Vol. 24 No. 1, pp. 3-37.
- Baysinger, B.D. and Butler, H.D. (1985), "Corporate governance and the board of directors: performance effects of changes in board composition", *Journal of Law, Economics and Organizations*, Vol. 1 No. 1, pp. 101-124.
- Beasley, M.S. (1996), "An empirical analysis of the relation between board of director composition and financial statement fraud", *Accounting Review*, Vol. 71 No. 4, pp. 443-446.
- Bhagat, S., Carey, D. and Elson, C. (1999), "Director ownership, corporate performance, and management turnover", *Business Lawyer*, Vol. 145 No. 3, pp. 885-916.
- Broadman, H.G. (1999), "The Chinese state as corporate shareholder", *Finance & Development*, Vol. 36 No. 3, pp. 52-55.
- Brown, L.D. and Caylor, M.L. (2006), "Corporate governance and firm valuation", *Journal of Accounting and Public Policy*, Vol. 25 No. 4, pp. 409-434.
- Bushman, R.M., Chen, Q., Engel, E. and Smith, A.J. (2004), "The sensitivity of corporate governance systems to the timeliness of accounting earnings", *Journal of Accounting and Economics*, Vol. 37 No. 2, pp. 195-221.
- Chen, H., Chen, J., Lobo, G. and Wang, Y. (2010), "Association between borrower and lender state ownership and accounting conservatism", *Journal of Accounting Research*, Vol. 48 No. 5, pp. 973-1014.
- Chen, K.Y., Randal, J.E. 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 and Economics*, Vol. 3 No. 2, pp. 73-105.
- Chen, X., Lee, C.J. and Li, J. (2008), "Government assisted earnings management in China", *Journal of Accounting and Public Policy*, Vol. 27 No. 1, pp. 264-274.
- Chen, Y. and Rezaee, Z. (2012), "The role of corporate governance in convergence with IFRS: evidence from China", *International Journal of Accounting and Information Management*, Vol. 20 No. 2, pp. 171-188.
- China Security and Regulatory Commission (CSRC) (2002), *Code of Corporate Governance for Listed Companies in China*.
- China Security and Regulatory Commission (CSRC) (2008), *China Statistical Yearbook of Stocks and Futures*, China Statistics Press, Beijing.
- Cho, S. and Rui, O. (2009), "Exploring the effects of China's two-tiered board system and ownership structure on firm performance and earnings informativeness", *Asia-Pacific Journal of Accounting and Economics*, Vol. 16 No. 1, pp. 95-118.
- Dahya, J., Karbhari, Y., Xiao, Z. and Yang, M. (2003), "The usefulness of the supervisory board report in China", *Corporate Governance: An International Review*, Vol. 11 No. 4, pp. 308-321.
- Dechow, P.M. and Dicheve, I.D. (2002), "The quality of accruals and earnings: the role of accrual estimation errors", *Accounting Review*, Vol. 77 No. 1, pp. 35-59.

- Dechow, P.M., Sloan, R.G. and Sweeney, A.P. (1995), "Detecting earnings management", *The Accounting Review*, Vol. 70 No. 2, pp. 193-225.
- Dechow, P., Ge, W. and Schrand, C. (2010), "Understanding earnings quality: a review of the proxies, their determinants and their consequences", *Journal of Accounting and Economics*, Vol. 50 No. 2, pp. 344-401.
- Dechow, P.M., Sloan, R.G. and Hutton, A.P. (1996), "Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC", *Contemporary Accounting Research*, Vol. 13 No. 2, pp. 1-20.
- DeFond, M., Hung, M. and Trezevant, R. (2007), "Investor protection and the information content of annual earnings announcements: international evidence", *Journal of Accounting and Economics*, Vol. 43 No. 1, pp. 37-67.
- Demsetz, H. (1983), "The structure of equity ownership and the theory of the firm", *Journal of Law and Economics*, Vol. 26 No. 1, pp. 375-390.
- Ewing, R.D. (2004), "Corporate governance and enterprise reform in China: building the institutions of modern markets", *The China Business Review*, Vol. 31 No. 1, p. 49.
- Fan, J. and Wong, T.J. (2002), "Corporate ownership structure and the informativeness of accounting earnings", *Journal of Accounting and Economics*, Vol. 33 No. 3, pp. 401-425.
- Farinha, J. (2003), "Corporate governance: a survey of the literature", *Universidade de Porto Economia Discussion Paper No. 2003-06*, available at <http://SSRN:ssrn.com/abstract=470801> or DOI: 10.2139/ssrn.470801.
- Fernandes, N. and Ferreira, M. (2008), "Does international cross-listing improve the information environment?", *Journal of Financial Economics*, Vol. 88 No. 2, pp. 216-244.
- 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*, Vol. 26 No. 4, pp. 463-496.
- Firth, M., Rui, O.M. and Wu, W. (2011), "Cooking the book: recipes and cost of falsified financial statements in China", *Journal of Corporate Finance*, Vol. 17 No. 1, pp. 371-390.
- Gabrielsen, G., Gramlich, J.D. and Plenborg, T. (2002), "Managerial ownership, information content of earnings, and discretionary accruals in a non-US setting", *Journal of Business Finance & Accounting*, Vol. 29 Nos 7/8, pp. 967-988.
- Gary, C.W. (1996), "In search of owners: privatization and corporate governance in transition economies", *The World Bank Research Observer*, Vol. 11 No. 2, pp. 179-197.
- Gomes, A. (2000), "Going public without governance: managerial reputation effects", *Journal of Finance*, Vol. 55 No. 2, pp. 615-646.
- Gul, K., Kim, J. and Qiu, A. (2010), "Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: evidence from China", *Journal of Financial Economics*, Vol. 95 No. 3, pp. 425-442.
- Hodgson, A., Lhaopadchan, S. and Buakes, S. (2011), "How informative is the Thai corporate governance index? A financial approach", *International Journal of Accounting and Information Management*, Vol. 19 No. 1, pp. 53-79.
- Hou, W., Kuo, J.M. and Lee, E. (2012), "The impact of state ownership on share price informativeness: the case of the split share structure reform in China", *The British Accounting Review*, Vol. 44 No. 4, pp. 248-261.
- Hovey, M., Li, L. and Naughton, T. (2003), "The relationship between valuation and ownership of listed firms in China", *Corporate Governance*, Vol. 11 No. 2, pp. 112-122.



- Inoue, T. (2005), "Reform of China's split-share structure takes shape", *Nomura Capital Market Review*, Vol. 8 No. 3, pp. 2-21.
- Jensen, M.C. and Meckling, W.H. (1976), "Theory of the firm: managerial behaviour, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 5 No. 3, pp. 305-360.
- Jiang, L. and Kim, J. (2000), "Cross-corporate ownership, information asymmetry and the usefulness of accounting performance measures in Japan", *The International Journal of Accounting*, Vol. 35 No. 1, pp. 85-98.
- Jones, J. (1991), "Earnings management during import relief investigations", *Journal of Accounting Research*, Vol. 29 No. 2, pp. 193-228.
- Kato, T. and Long, C. (2006), "Executive compensation, firm performance, and corporate governance in China: evidence from firms listed in the Shanghai and Shenzhen stock exchanges", *Economic Development and Cultural Change*, Vol. 54 No. 4, pp. 945-983.
- Klein, A. (2002), "Audit committee, board of director characteristics, and earnings management", *Journal of Accounting and Economics*, Vol. 33 No. 3, pp. 375-400.
- Kothari, S.P., Leone, A.J. and Wasley, C.E. (2005), "Performance matched discretionary accrual measures", *Journal of Accounting and Economics*, Vol. 39 No. 1, pp. 163-197.
- La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (1999), "Corporate ownership around the world", *Journal of Finance*, Vol. 54 No. 2, pp. 471-518.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (2000), "Investors protection and corporate governance", *Journal of Financial Economics*, Vol. 58 Nos 1/2, pp. 3-27.
- Lin, T. (2004), "Corporate governance in China: recent development, key problems, and solution", *Journal of Accounting and Corporate Governance*, Vol. 1 No. 1, pp. 1-23.
- Liu, Q. and Lu, Z. (2007b), "Corporate governance and earnings management in the Chinese listed firms: a tunnelling perspective", *Journal of Corporate Finance*, Vol. 13 No. 5, pp. 881-906.
- Mallin, C. and Rong, X. (1998), "The development of corporate governance in China", *Journal of Contemporary China*, Vol. 7 No. 17, pp. 33-42.
- Morck, R., Shleifer, A. and Vishny, R.W. (1988), "Management ownership and market valuation: an empirical analysis", *Journal of Financial Economics*, Vol. 20 Nos 1/2, pp. 293-315.
- Oi, J.C. (2005), "Patterns of corporate restructuring in China: political constraints on privatization", *The China Journal*, Vol. 53 No. 1, pp. 115-136.
- 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*, Vol. 32 No. 4, pp. 415-445.
- Peng, W.Q., Wei, K.C. and Yang, Z. (2010), "Tunneling or propping: evidence from connected transactions in China", *Journal of Corporate Finance*, Vol. 17 No. 1, pp. 306-325.
- Schipper, K. and Vincent, L. (2003), "Earnings quality", *Accounting Horizons*, Vol. 17 No. 1, pp. 97-110.
- Seung, C. (2006), "The A to Z guide to Chinese company law", *International Financial Law Review*, Vol. 24 No. 1.
- Shi, C. (2005), "International corporate governance developments: The path for China", *The Australian Journal of Asian Law*, Vol. 7 No. 1, pp. 60-94.
- Shi, S. and Weisert, D. (2002), "Corporate governance with Chinese characteristics", *The China Business Review*, Vol. 29 No. 5, pp. 40-44.
- Vafeas, N. (2000), "Board structure and informativeness of earnings", *Journal of Accounting and Public Policy*, Vol. 19 No. 2, pp. 139-160.



- Warfield, T., Wild, J. and Wild, K. (1995), "Managerial ownership, accounting choices, and informativeness of earnings", *Journal of Accounting and Economics*, Vol. 20 No. 1, pp. 61-91.
- Xu, X. and Wang, Y. (1999), "Ownership structure and corporate governance in China: stock companies", *China Economic Review*, Vol. 10 No. 1, pp. 75-98.
- Yeh, Y.H., Shu, P.G., Lee, T.S. and Su, Y.H. (2009), "Non-tradable share reform and corporate governance in the Chinese stock market", *Corporate Governance: An International Review*, Vol. 17 No. 4, pp. 457-475.
- Yeo, G.H.H., Tan, P.M.S., Ho, K.W. and Chen, S.S. (2002), "Corporate ownership structure and the informativeness of earnings", *Journal of Business Finance & Accounting*, Vol. 29 No. 7, pp. 1023-1046.
- Yu, M. (2011), "Analyst recommendations and corporate governance in emerging markets", *International Journal of Accounting and Information Management*, Vol. 19 No. 1, pp. 34-52.
- Yuan, D., Zhang, H. and Zhang, J. (2007), "Private vs state ownership and earnings management: evidence from Chinese listed companies", *Corporate Governance: An International Review*, Vol. 15 No. 1, pp. 223-238.

### Further reading

- Booth, J.R. and Deli, D.N. (1996), "Factors affecting the number of outside directorships held by CEOs", *Journal of Financial Economics*, Vol. 40 No. 1, pp. 81-104.
- Lipton, M. and Lorsch, J.W. (1992), "A modest proposal for improved corporate governance", *The Business Lawyer*, Vol. 48 No. 1, pp. 59-77.
- Liu, J. and Liu, C. (2007a), "Value relevance of accounting information in different stock market segments: The case of Chinese A-, B-, and H-Shares", *Journal of International Accounting Research*, Vol. 6 No. 2, pp. 55-81.
- Neter, J., Wasserman, W. and Kunter, M. (1983), *Applied Regression Models*, Richard D. Irwin, Homewood, IL.

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