

The Impact of Privatization on Earnings Management of State-owned Enterprises: Evidence from China

Yenpao Chen¹, Chien-Hsun Chen² and Po-Wei Haung³

¹Department of Accounting, Soochow University, 56, Sec. 1, Kuei Yang St., Taipei, Taiwan 10048
E-mail: yenpao@scu.edu.tw

²(Corresponding author), Chung-Hua Institution for Economic Research
75 Chang Hsing St., Taipei, Taiwan 10672, E-mail: chchen@cier.edu.tw

³Deloitte & Touche, 12th Floor, Hung-Tai Plaza, 156, Sec. 3, Min Sheng East Road,
Taipei, Taiwan 10596, E-mail: wiewie0930@yahoo.com.tw

Received: 22 January 2019; Revised: 3 March 2019; Accepted: 27 April 2019; Publication: 15 May 2019

Abstract: This paper seeks to compare the earnings management behavior of state-owned enterprises in China before and after privatization. The empirical results obtained in the study show that Chinese state-owned enterprises that had been privatized were significantly more aggressive in their earnings management activity after they were privatized. Furthermore, the smaller the stake that the state continued to hold in the company after privatization, the greater the intensity of earnings management is. The character of the largest shareholder in a privatized state-owned enterprise also affects the company's earnings management behavior.

Keywords: earnings management, privatization, ownership structure, corporate governance, China's state-own enterprises

JEL Classification Nos: D210, G340, P310

1. Introduction

Earnings management usually takes the form of “massaging” a company's financial statements, particularly those data related to earnings. Earnings are one of the most important indicators that investors rely on when appraising a company's value. If the earnings reported in a company's financial statements are not accurate, investors will be misled, and may make mistaken investment decisions as a result. Where enterprises engage in fraudulent accounting in order to make their earnings performance appear better than it really is (whether in response to pressure from an economic downturn or some other systemic factors), this type of behavior causes the investing public to lose faith in the reliability of financial statements, and can result in serious loss to investors.

State-owned enterprises can be found in almost all developing countries and some developed countries. These enterprises represent a source of revenue for the government; they also enable the state to exercise close

control over major industrial activities, and contribute to social stability.¹ In the 1980s, the developed countries began to privatize their state-owned enterprises, and this trend towards privatization also spread to the developing countries. With the opening up of international markets and the emphasis on economic liberalization, the development of state-owned enterprises has been constrained; relying on support from the government is no longer enough to enable a state-owned enterprise to remain competitive, in an era in which most enterprises are being forced to compete in a globalized marketplace. Privatization has come to be seen as the best means of enhancing the operational performance of state-owned enterprises and enabling them to achieve sustainable growth over the long term.

Most of the literature on privatization has focused on the goals that privatization is implemented to achieve, the timing, and the operational performance of privatized companies (e.g., Megginson & Netter, 2001; Sun & Tong, 2003; Gupta, 2005; Tian & Estrin, 2008; Chen *et al.*, 2009; Li *et al.*, 2009; Omran, 2009; Li *et al.*, 2011; Liu *et al.*, 2016). However, privatization also leads to changes in a company's operational strategy, internal organization, enterprise goals, and the overall form taken by the enterprise. For example, Shapiro and Willig (1990) suggested that, in most cases, the purpose for which state-owned enterprises were established was not to achieve maximization of profits, but rather to benefit society; there is thus no real need for state-owned enterprises to report their earnings in order to demonstrate their operational performance. Financial reporting for state-owned enterprises may involve the use of a table of operating activities rather than a balance sheet to emphasize this fact. A state-owned enterprise that has been privatized no longer belongs to the government solely, it belongs to various shareholders; a privatized state-owned enterprise thus does need to report its earnings, in line with the company's responsibilities to its shareholders. The change in the manner in which an enterprise operates after privatization can lead to a significant increase in the incentive for the enterprise to engage in earnings management.

Although China began its privatization of SOEs in the early 1990s, large-scale privatization emerged in late 1990s. In 1997, the policy of "strategic realignment of state-owned sectors of the economy" was adopted at the 15th National Congress of the Chinese Communist Party. China set out its privatization process with small and medium-size enterprises and further extended to large state-owned enterprises. The Chinese government began selling off shares in state-owned enterprises, leading to a transfer of control over listed companies away from the state; this trend has become even more pronounced since 1997. The privatization of state-owned enterprises is one of the boldest measures undertaken by the Chinese government in its effort

to reform the country's state-owned enterprises. The government's decision to allow private-sector enterprises to acquire shares in state-owned enterprises (and in some cases to take them over completely) has led to a reduction in the relative importance of state-owned enterprises within the structure of the Chinese economy; the government hoped that privatizing state-owned enterprises would help to enhance their operational performance and improve the quality of their corporate governance.

The main aim of the present study is therefore to compare the earnings management behavior of state-owned enterprises in China before and after privatization. The study divides privatized state-owned enterprises into those where the single largest shareholder after privatization is a private-sector company, and those where the state remains the single largest shareholder, to see whether companies in these two groups display different types of earnings management behavior; it also explores the question of whether differences in the nature of the largest shareholder affect operational performance and earnings management behavior.

Our empirical findings contribute to the existing literature on privatization and earnings management in several realms. First, the empirical results obtained in the study show that Chinese state-owned enterprises that had been privatized were significantly more aggressive in their earnings management activity after they were privatized. Furthermore, the smaller the stake that the state continued to hold in the company after privatization, the greater the intensity of earnings management is. The character of the largest shareholder in a privatized state-owned enterprise also affects the company's earnings management behavior; if the largest shareholder is a private-sector company, the company will be more aggressive in its earnings management than if the largest shareholder is the state.

Second, the study also found that, the worse the financial performance of a Chinese state-owned enterprise following privatization, the higher the intensity of earnings management by that company; whether the largest shareholder is a private-sector company or the state does not affect this significantly. Third, as regards market performance, the better the market performance of a privatized state-owned enterprise, the higher the intensity of earnings management activity; again, this does not vary significantly with the character of the company's largest shareholder. Fourth, the results in this research suggest, in evaluating the successfulness of the privatization policy, the governments are advised to take earnings management and the ownership structure post privatization into account.

Following this introduction, Section 2 comprises a review of the literature and the development of hypotheses. Section 3 outlines the research

methodology used. Section 4 describes the empirical results, and Section 5 presents the conclusions reached.

2. Review of the literature and establishment of hypotheses

Earnings constitute an important source of information for information users both within and outside an enterprise. However, because of the impact of information asymmetry, an enterprise's managers have incentives to report the earnings data that they want to report, so as to ensure that previously anticipated results appear to have been achieved; it is this situation that gives rise to earnings management. Earnings management is commonplace among listed companies in China. Listed companies may exaggerate their earnings to secure approval for an IPO (Aharony *et al.*, 2010), in preparation for issuing new shares, or to avoid de-listing; past studies have demonstrated conclusively just how widespread this type of behavior is. The implicit assumption here is that an enterprise's motivation for engaging in earnings management is to ensure that regulatory or managerial expectations are met.

In the past few years, the Chinese government has begun to actively promote the privatization of state-owned enterprises, with the aim of freeing these enterprises from state interference and from the limitless burdens that the state may place on them; the idea is to enable state-owned enterprises to transform themselves in response to the changes in the external environment, and to operate independently like other for-profit entities (Chen *et al.*, 2005). This transformation is to change the operational goals of the state-owned enterprises concerned. Instead of working for the benefit of society, these enterprises are now expected to maximize profits. Once privatized state-owned enterprises are operating in a market with free competition, their reported earnings become an important indicator of the enterprise's operational performance, giving the enterprise a significantly greater incentive to manage its earnings. Healy and Wahlen (1999) defined earnings management as the situation where an enterprise's managers exploit their control over financial reporting to mislead interested parties regarding the company's performance, or to influence the contractual effects of the company's accounting basis. Based on the aforementioned discussion, we therefore formulate Hypothesis 1 as follows:

***Hypothesis 1:** Privatization will lead to changes in the extent to which an enterprise uses earnings management, its reported earnings, and its reported operational performance.*

There are basically two different arguments regarding the question of how privatization affects the earnings management behavior of state-owned enterprises in China:

- (1) State-owned enterprises are less likely to make use of earnings management after privatization.

Once a Chinese state-owned enterprise has been privatized, the share of the company's equity that is held by the state will gradually fall. This means that the degree of control that the state is able to exert over the company will become steadily smaller. The more autonomy an enterprise enjoys, the more incentive it will have to make use of earnings management. In the past, China was a planned economy, in which almost all enterprises were state-owned enterprises. More recently, the government has begun to privatize state-owned enterprises, and to permit the establishment of private-sector enterprises. However, the government has continued to channel the bulk of the nation's resources into the state-owned enterprise sector. In the struggle for survival within the challenging business environment that this situation creates, private-sector companies have an incentive to manipulate their reported earnings in order to attract investment. Ding *et al.* (2007) suggested that, because of political and historical factors, private-sector enterprises in China are in a relatively weak position. As a result of the heavy pressure they are under, private-sector firms are forced to exaggerate their earnings in order to maintain the market's confidence. They stress the distinctive nature of China's capital markets, which give private-sector listed companies more incentive than state-owned listed companies to make use of earnings management techniques.

- (2) Private-sector companies have stronger governance mechanisms, making it more difficult to engage in earnings management.

Diverse institutional investors are more likely to be able to implement effective monitoring of the behavior of a company in which they hold shares than the state would be. As a result, the higher the percentage of a company's equity that is held by institutional investors, the less likely it is that that company's managers will try to make use of earnings management. Li and Guan (2004) explore the special characteristics of the holdings of institutional investors as opposed to shares held by the state, to explain the effects that changes in the shareholding structure of a company may have:

State shares include two types of shares: ordinary state-owned shares and state-owned institutional shares. The state assigns government employees to monitor the activities of enterprises in which it holds shares; however, the authority of these personnel is limited to determining who controls the enterprise; they are not authorized to determine the compensation and incentive systems. As a result, they lack the power needed to implement effective monitoring and appraisal of enterprise managers, giving these managers greater opportunity to engage in earnings management.

Legal person (LP) shares include shares held by domestic and overseas institutional investors, and private placement shares. As institutional investors have their own interests to protect, and as much of the capital that institutional investors represent is privately or collectively owned, the holders of LP shares will normally be significantly more active than the state (i.e., the holder of state shares) in monitoring enterprise behavior. The sizeable shares that institutional investors often hold in a company help them to exercise more effective supervision over the company's managers; they are not just "along for the ride" as small shareholders usually are. In many cases, LP shares can not be freely traded; this encourages the holders of these shares to monitor the company's long-term development even more closely, so as to protect their own interests. Based on the above, we formulate Hypothesis 2 as follows:

***Hypothesis 2:** The extent of state shareholding in a state-owned enterprise prior to and after privatization will affect the use of earnings management by that enterprise.*

The requirements that business enterprises have to meet to secure a stock market listing in China are very strict. To ensure that China's limited capital is channeled towards high-performing listed companies, the China Securities Regulatory Commission (CSRC) also imposes rigorous controls on share allotment. However, these restrictions have actually served to encourage listed companies to engage in earnings management; already-listed companies often inflate their reported earnings in order to meet CSRC requirements, while large shareholders of unlisted companies which seek listing do their utmost to ensure that their companies can secure a stock market listing, so as to obtain the major benefits that IPOs and a stock market listing can provide. Aharony *et al.* (2000) noted that, when Chinese companies implement an IPO, it is common for them to use earnings management techniques to make their financial statements look as impressive as possible. After a company has been listed on the stock market, China's stock market regulations stipulate that, if a listed company makes a loss for two years in a row, that company will be placed on a watch list, while a company that makes a loss for three consecutive years will have its listing suspended. To protect their hard-won stock market listing, the large shareholders of a company will often seek to manipulate the company's reported earnings so that it can avoid the risk of de-listing. Wang and Gao (2008) showed that, because of the large leeway that the Chinese government's financial and accounting rules give to business enterprises' managers with respect to accounting policy and financial reporting formats, and because of the high importance that the investing public in China attaches to listed companies' reported earnings, there is a strong incentive for a company's larger shareholders to engage in earnings management.

At the same time, the interests of a company's large shareholders may conflict with the interests of small shareholders; large shareholders may sacrifice the welfare of small shareholders for their own benefit. Johnson *et al.* (2000) indicated that there is a tendency for a company's controlling shareholders to try to siphon off the company's assets and property, and the large shareholders will often make use of earnings management techniques to accomplish this without the small shareholders' awareness. Bertrand *et al.* (2002) pointed out that "tunneling" by large shareholders can reduce the level of transparency in the economy as a whole and lead to the distortion of reported earnings, while making it difficult for investors to gain an accurate picture of an enterprise's financial situation. Shleifer and Vishny (1986) suggested that, where control over a company is concentrated in the hands of a small number of large shareholders, these major shareholders will be able to exercise a high level of control over the company's managers, getting them to inflate the company's reported operational performance so as to enhance the firm's value. They also pointed out that, when large shareholders are in a situation where the degree of control that they exercise over a company is disproportionately high compared to their shareholdings, they will often engage in insider trading, to the detriment of small shareholders. Firth *et al.* (2007) indicated that China's listed firms with highly concentrated share ownership have lower earnings informativeness. Nevertheless, Chen *et al.* (2008) pointed out that when China's local governments held majority ownership, government subsidy can be utilized to manage earnings for listed firms. Based on the above, we formulate Hypothesis 3 as follows:

***Hypothesis 3:** The nature of a formerly state-owned enterprise's largest shareholder following privatization will affect the enterprise's use of earnings management.*

In theory, privatization should involve the government transferring its entire holdings in state-owned enterprises to the private sector. In practice, however, privatization drives have generally sought to only reduce the state's stake in a company to below the 50% level; this is sometimes referred to as "partial privatization".² There is considerable disagreement among scholars as to whether partial privatization reduces the benefits of privatization (in terms of enhanced operational performance) and as to what effect the status of the largest shareholder – whether it is the government or a private-sector company – has on the company's performance.

A case study on the Chinese company Hunan Guoguang Ceramic Group by Zhu *et al.* (2007) found that, where the state is the controlling shareholder of a Chinese company, that company is likely to pursue a diverse range of operational objectives in line with government policy needs; this goes

completely against the idea that a business enterprise should be oriented towards profit-making. On the other hand, where the controlling shareholder is a private-sector company, the subsidiary company is likely to be exploited by its parent company, for example through direct guarantees, capital misappropriation, etc. For this reason, they suggested that having a private-sector company become the controlling shareholder of a privatized state-owned enterprise can be even more damaging to the enterprise than state control.

Moreover, Xu and Chen (2003) found that differences in the nature of the largest shareholder of a listed company were associated with differences in company performance and governance. Where the largest shareholder was a non-state-controlled company, the listed company displayed higher value, higher earning ability, more flexibility, and better corporate governance; the level of supervision that senior managers were under – both internally and from the market – was noticeably higher than where the largest shareholder was a state-owned company. Based on the above, we formulate Hypothesis 4 as follows:

***Hypothesis 4:** After a state-owned enterprise has been privatized, its operational performance will be affected by the nature of the company's largest shareholder, and there will be a positive correlation between the nature of the private sector as the largest shareholder and the use of earnings management.*

3. Variables used and the empirical model

3.1. Sample selection

The present study seeks to compare the earnings management behavior of state-owned enterprises in China before and after privatization. The data used in the study were obtained mainly from the China Stock Market Financial Database (CSMAR), supplemented by data from the Taiwan Economic Journal (TEJ) database. State-owned enterprises were considered to have been privatized at the point of time when the state's holding in the company fell below 50%; data were obtained for the three years prior to privatization and the three years after privatization. As the data on the sale and transfer of state shares in the CSMAR database covers the time period from 1998, while financial data for listed companies are usually only available for the period from 1992 onwards, the period covered by the study was restricted to the years 1998–2008 due to global financial crisis, with a sample size of 178 already privatized state-owned enterprises.

Banks and insurance companies were excluded from the sample, as they are required to abide by accounting standards significantly different from those applying to companies in other industries. Listed companies on

the ST (Special Treatment) list were also excluded, as trading in the shares of these companies is subject to various restrictions that do not apply to other listed companies.

3.2. Definition of variables

(1) Earnings management

Accrual items in financial statements of a company can be divided into two broad categories: those that a company's managers cannot manipulate (hereafter referred to as "non-discretionary accruals"), and those that managers may, under certain circumstances, be able to manipulate (hereafter referred to as "discretionary accruals"). Discretionary accruals are those items where generally accepted accounting principles (GAAP) and International Financial Reporting Standards (IFRS) grant companies some latitude in which accounting method they use. As the company's managers enjoy large discretion as to how these items are handled, discretionary accruals are used in the present study as a proxy for earnings management as in many other studies. In the present study, the Kothari Model is used to calculate discretionary accruals (DA), which in turn are used to measure the extent of earnings management. The Kothari Model is the model presented in Kothari *et al.* (2005), based on the Modified Jones Model.

Using the figures that have been obtained for total accruals, net sales, depreciated gross fixed assets and the return on assets, the values of the coefficients $\hat{\alpha}_1$, $\hat{\alpha}_2$, $\hat{\alpha}_3$, and $\hat{\alpha}_4$ in the cross-sectional regression model shown below (Equation 1) can be estimated:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \alpha_2 \left(\frac{\Delta Sales_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}} \right) + \alpha_4 ROA_{i,t} + \varepsilon_{i,t} \quad (1)$$

where

$TA_{i,t}$: Total accruals for company i in period t

$\Delta Sales_{i,t}$: Change in net sales for company i in period t

$PPE_{i,t}$: Depreciated gross fixed assets for company i in period t

$ROA_{i,t}$: Return on assets for company i in period t , and

$A_{i,t-1}$: Total assets of company i in period $t-1$.

If we use the above equation to estimate the values of $\hat{\alpha}_1$, $\hat{\alpha}_2$, $\hat{\alpha}_3$, and $\hat{\alpha}_4$ for each year covered by the sample, substituting the actual data for each company included in the sample, we can obtain an estimated value for non-discretionary accruals (Equation 2).

$$NDA_{i,t} = \hat{\alpha}_1 \left(\frac{1}{A_{i,t-1}} \right) + \hat{\alpha}_2 \left(\frac{\Delta Sales_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}} \right) + \hat{\alpha}_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}} \right) + \hat{\alpha}_4 ROA_{i,t} \quad (2)$$

where

$NDA_{i,t}$: Non-discretionary accruals for company i in period t

$\Delta AR_{i,t}$: Accounts receivable and notes receivable for company i in period t minus accounts receivable and notes receivable for company i in period $t-1$.

Finally, we subtract the estimated value of non-discretionary accruals from total accruals to obtain a value for discretionary accruals.

$$DA_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - NDA_{i,t} \quad (3)$$

where

$DA_{i,t}$: Discretionary accruals for company i in period t .

(2) Operational performance variables (Dependent variables)

Return on assets (ROA) is used to measure the rate of return that a firm obtains on the assets in which it has invested. A high ROA indicates that assets are being used effectively to create profits; a low ROA indicates that the enterprise is not making effective use of its assets. The method used to calculate ROA is given below:

$$ROA_{i,t} = \frac{NI_{i,t}}{AVG_A_{i,t}} \times 100\%$$

where

$AVG_A_{i,t}$: Average total assets of company i in period t

$NI_{i,t}$: Net profit after tax for company i in period t .

Tobin's Q is used to measure a company's market performance; it is a ratio that compares the market value of a company's stock with the value of the company's equity book value. In the present study, we follow Jian and Wong (2004) in using a version of Tobin's Q in which the market value per share is multiplied by the number of outstanding shares, plus the book value of liabilities and then dividing the result by the book value of total assets. This variable is used to measure a company's market performance; the calculation formula used is as follows:

$$Tobin's Q_{i,t} = \frac{Adj_PRC_{i,t} \times OutShasre_{i,t} + DEBT_BV_{i,t}}{A_BV_{i,t}}$$

where

$Tobin's Q_{i,t}$: Market performance of company i in period t

$Adj_PRC_{i,t}$: Adjusted closing price of company i in period t

$OutShare_{i,t}$: Number of outstanding shares of company i in period t

$DEBT_BV_{i,t}$: Book value of the debt of company i in period t

$A_BV_{i,t}$: Book value of the assets of company i in period t

(3) Earnings per share (EPS)

The earnings per share (EPS) value given in a company's financial statements is often used to measure corporate earning ability. EPS is calculated by taking net profit after tax for the current year and dividing it by the weighted average number of shares of common stock outstanding. The EPS data used in the present study are taken from the CSMAR database.

(4) Independent variables

Privatization dummy variable (PRIV): This is a dummy variable. If the state's holding in the company is less than 50%, the company is deemed to have been privatized; PRIV is set at 1 if the company has been privatized, otherwise it is set at 0.

Government shareholding (GOV): Government shareholding ratio = (No. of state shares + No. of state-held LP shares) / total number of shares outstanding.

Largest shareholder (TOP1): This is a dummy variable; if the largest shareholder following privatization is a private-sector company, TOP1 is set at 1, otherwise it is set at 0.

Largest shareholder's holding (TOP1_HOLD): The largest shareholder's holding in the company is derived from the CSMAR database. If the largest shareholder is the state, then the holding is calculated by adding together state shares and state-held LP shares.

(5) Control independent variables

Company size (SIZE): DeFond and Park (1997) suggested that the larger the company, the more discretionary accruals it has. The present study follows Watts and Zimmerman (1978) by using a listed company's total assets as a proxy for company size.

Debt ratio (DEBT): To protect their own interests, creditors normally make the maintenance of a reasonable level of profitability a condition of debt covenants; if the enterprise violates the terms of the covenant, its right to issue new bonds or dividends may be restricted. DeFond and Park (1997) pointed out that the higher the level of leverage a company has, the greater the risk of its violating a debt covenant; this situation creates an incentive for earnings management. The debt ratio is calculated as follows:

$$DEBT_{i,t} = \text{Total debt} \div \text{total assets}$$

Cash flow (CFO): Dechow *et al.* (1995) point out that where cash flow is abnormally high, there may be errors in discretionary accruals. To control for this latent measurement error, the present study uses cash flow based on deflated initial total assets as a control variable. The calculation formula is as follows:

CFO: Cash flow in the current period divided by initial total assets

Share price in the previous period (PRC_1): As the share price in the previous period may affect the share price in the following period, thereby affecting the company's market value, the present study employs the share price in the previous period as a control variable, using the adjusted closing price to measure it.

Combined holdings of the second to tenth largest shareholders (Share2_10): A company's largest shareholder may engage in earnings management to benefit itself, to the detriment of the company's long-term development. Other large shareholders may, however, be able to exert a restraining force on the largest shareholder, so the combined holdings of the second to tenth largest shareholders are used as a control variable.

3.3. Empirical model

For the purposes of the present study, a state-owned enterprise is considered to have become privatized at the point where the state's holding in the company falls below 50%. The t test is used to gauge whether there is any significant variation in earnings management, earning ability and operational performance before and after privatization (Hypothesis 1).

Model 1 (Equation 4) tests whether privatization affects that company's earnings management (Hypothesis 2). This model therefore uses the privatization dummy variable and the government shareholding ratio as the main explanatory variable, with earnings management as the dependent variable, while adding other control variables.

$$DA_{i,t} = \alpha + \beta_1 PRIV_{i,t} + \beta_2 PRIV_{i,t} \times GOV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 DEBT_{i,t} + \beta_5 CFO_{i,t} + \varepsilon_{i,t} \quad (4)$$

The identity of a company's largest shareholder following privatization will affect the use that the company makes of earnings management. Model 2 (Equation 5) tests whether shareholding concentration affects companies' earnings management behavior. As the extent of earnings management can be expected to vary depending on whether the largest shareholder is the government or a private-sector company (Hypothesis 3), this model uses the dummy variable TOP1 as the main explanatory variable, with earnings management as the dependent variable, while adding other control variables.

$$DA_{i,t} = \alpha + \beta_1 TOP1_{i,t} + \beta_2 TOP1_HOLD_{i,t} + \beta_3 Share2_10_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 DEBT_{i,t} + \beta_6 CFO_{i,t} + \varepsilon_{i,t} \quad (5)$$

Recently, a considerable number of studies have appeared claiming that privatization has a positive impact on a company's operational performance. However, if the state continues to constitute the largest shareholder in a nominally privatized company, then it can be anticipated that the government will continue to intervene in the company's operations to at least some extent. A further point is that the level of shareholding concentration in China tends to be very high; the largest shareholder will normally have a large enough share in the company to be able to exert considerable influence over its operations. For this reason, Model 3 (Equations 6 and 7) uses a dummy variable for the nature of the largest shareholder and the shareholding ratio of the largest shareholder, to determine whether the nature of the largest shareholder and the relative size of the largest shareholder's holding in the company have a significant impact on the company's operational performance – measured by financial performance, ROA, and market performance (Tobin's Q) – after privatization (Hypothesis 4). Discretionary accruals are also added to the model to analyze the relationship between operational performance and earnings management.

$$ROA_{i,t} = \alpha + \beta_1 DA_{i,t} + \beta_2 TOP1_{i,t} + \beta_3 TOP1_HOLD_{i,t} + \beta_4 Share2_10_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 DEBT_{i,t} + \beta_7 CFO_{i,t} + \varepsilon_{i,t} \quad (6)$$

$$TQ_{i,t} = \alpha + \beta_1 DA_{i,t} + \beta_2 TOP1_{i,t} + \beta_3 TOP1_HOLD_{i,t} + \beta_4 Share2_10_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 DEBT_{i,t} + \beta_7 CFO_{i,t} + \beta_8 PRC_1 + \varepsilon_{i,t} \quad (7)$$

4. Empirical results

The present study uses the t test to determine whether privatization has a significant impact on the discretionary items (DA), EPS and operational performance of state-owned enterprises in China. In addition, operational performance is broken down into financial performance (ROA) and market performance (Tobin's Q). In the present study, a state-owned enterprise is defined to have been privatized at the point where the state's holding in the company falls below 50%; however, the question of whether the largest shareholder after privatization is the state or a private-sector company is of considerable importance, so the sample used in the present study has been sub-divided into three panels: companies where (after privatization) the largest shareholder is a private-sector company, companies where the largest shareholder continues to be the state, and the whole sample.

The results of the paired-sample t test for pre- and post-privatization in Panel A of Table 1 show that, where the largest shareholder after privatization is a private-sector company, privatization significantly alters

discretionary accruals at a level of significance of 1% (P value=0.000365), indicating that privatization affects a state-owned enterprise's earnings management behavior. Privatization significantly changes EPS at a level of significance of 1% (P value=0.002761), indicating that privatization affects a state-owned enterprise's earning ability. As regards operational performance, while ROA is related to privatization at a level of significance of 5% (P value=0.046044), indicating that privatization affects a state-owned enterprise's financial performance, Tobin's Q is not significantly altered by privatization (P value=0.141967), indicating that, for state-owned enterprises where the largest shareholder after privatization is a private-sector company, privatization does not significantly affect market performance. For the privatized companies where the largest shareholder after privatization is a private-sector company, the results obtained for discretionary accruals, EPS and financial performance all support Hypothesis 1, while only the results obtained for market performance do not support the hypothesis.

Table 1: Results of paired-sample T test for comparing earnings management, earning ability and operational performance before and after privatization

Panel A – Enterprises where the largest shareholder after privatization is a private-sector company					
<i>Variable</i>	<i>Average</i>	<i>Standard Deviation</i>	<i>Standard Error</i>	<i>t Value</i>	<i>P Value (2-tailed)</i>
DAafter -DAbefore	0.064895	0.222415	0.017807	3.644255	0.000365 ***
ROAafter -ROAbefore	1.566652	9.72954	0.778987	2.011141	0.046044 **
TQafter -TQbefore	0.108059	0.914387	0.073210	1.476022	0.141967
EPSafter -EPSbefore	0.107115	0.439809	0.035213	3.041933	0.002761 ***
Panel B – Enterprises where the largest shareholder after privatization is the state					
<i>Variable</i>	<i>Average</i>	<i>Standard Deviation</i>	<i>Standard Error</i>	<i>t Value</i>	<i>P Value (2-tailed)</i>
DAafter -DAbefore	0.010079	0.172582	0.008877	1.13542	0.256921
ROAafter -ROAbefore	-0.55617	6.152909	0.316472	-1.75742	0.079658 *
TQafter -TQbefore	0.264849	0.733469	0.037726	7.020399	<0.0001 ***
EPSafter -EPSbefore	-0.00778	0.374917	0.019284	-0.40334	0.68693
Panel C – Whole sample					
<i>Variable</i>	<i>Average</i>	<i>Standard Deviation</i>	<i>Standard Error</i>	<i>t Value</i>	<i>P Value (2-tailed)</i>
DAafter -DAbefore	0.026092	0.189935	0.008219	3.17453	0.001587 ***
ROAafter -ROAbefore	0.063978	7.432387	0.321631	0.198916	0.842404
TQafter -TQbefore	0.219045	0.792943	0.034314	6.383546	<0.0001 ***
EPSafter -EPSbefore	0.025787	0.398006	0.017223	1.497179	0.134939

Notes: ***Indicates significance at 1% level. **Indicates significance at 5% level. *Indicates significance at 10% level. DA: Discretionary accruals. EPS: Earnings per share. ROA: financial performance. TQ: market performance. "After" and "before" indicate the variables of interest after and before privatization. Statistical software used: SPSS (Paired t test).

The results of Panel B in Table 1 show that, when the largest shareholder after privatization is the state, privatization does not significantly change discretionary accruals (P value=0.256921); this may reflect the fact that the state, as the largest shareholder, is still able to exert considerable influence over the company's operations, and will prevent any other (private-sector) shareholders that seek to use earnings management to benefit themselves. EPS is neither significantly related to privatization in Panel B (P value=0.68693). As regards operational performance, ROA and Tobin's Q are both related to privatization, at the 10% significance level and 1% significance level, respectively, (with P values of 0.079658 and <0.0001, respectively), indicating that a situation where the state is the largest shareholder after privatization can have a significant impact on operational performance. For this group of listed companies, the results obtained for operational performance therefore support Hypothesis 1, while the results obtained for discretionary accruals and EPS do not support Hypothesis 1.

The pre- and post-privatization t test results in Panel C (the entire privatized sample) show that, for this group, privatization significantly changes discretionary accruals at the 1% significance level (P value=0.001587). Privatization is also significantly related to Tobin's Q at the 1% significance level (P value <0.0001). Privatization is not significantly related to EPS or financial performance for this group (P values of 0.134939 and 0.842404, respectively). For the entire privatized sample, therefore, the results obtained for discretionary accruals and market performance support Hypothesis 1, while the results obtained for EPS and financial performance do not support Hypothesis 1.

Panel data regressions used in this research involve model selection. To obtain the most suitable models, we have employed the F-test, Hausman test and LM test. The F-test is used to choose between the fixed effects model and the pooled regression model, the Hausman test is used to choose between the fixed effects model and the random effects model, and the LM test is performed to choose between the random effects model and the pooled regression model. Only the robust results of the empirical model are presented in the research.

The robust results of Model 1 (Equation 4) are shown in Table 2. The test results showed that the optimal panel data model for this model was the fixed effects model. As can be seen from the empirical results presented in Table 2, the dummy variable for privatization (PRIV; set at 1 if the company has been privatized, and at 0 if it has not) is significantly positively correlated at the 1% level of significance (coefficient: 0.076609; P value=<0.0001), indicating that state-owned enterprises engage in more earnings management after privatization than they do before privatization.

An examination of the history of China's state-owned enterprises shows that the purpose for which these state-owned enterprises were originally established was not to maximize earnings, but rather to comply with government policy in the promotion of different stages of national development. By contrast, private-sector enterprises are established to create maximum value for the enterprise. Put more simply, a private-sector enterprise exists to make money; its managers want to increase their compensation, and its shareholders wish to increase their wealth. If the company does not reach its expected earning, then the managers and shareholders can use earnings management to serve their own interests, or to make it appear that the company is in better financial shape than it really is. The interaction term PRIV*GOV for the dummy variable for privatization and government shareholding is significantly positively correlated with earnings management at a level of significance of 1% (coefficient: -0.00114 ; P value= 0.0032), indicating that, following privatization, the lower the level of government shareholding, the more likely it is that the company will make use of earnings management. In other words, if the state holds a large enough shareholding after privatization, the state will impose constraints on the private-sector shareholders. The lower the level of government shareholding, the weaker these constraints are, making it easier for private-sector shareholders to use earnings management for their own benefit. In this empirical model, the results obtained for the privatization dummy variable and for the government shareholding both support Hypothesis 2.

Table 2: The impact of privatized versus non-privatized status on earnings management, earning ability and operational performance (equation 4)

<i>Variable</i>	<i>Coefficient</i>	<i>t Value</i>	<i>P Value</i>
Constant term	0.186085	0.381899	0.7026
PRIV	0.076609	4.831083	<0.0001 ***
PRIV*GOV	-0.00114	-2.95667	0.0032 ***
SIZE	-0.00161	-0.06929	0.9448
DEBT	-0.35286	-7.36795	<0.0001 ***
CFO	-0.52625	-8.967	<0.0001 ***
R-squared	0.35204	Optimal Model Tests	
Adjusted R-squared	0.218788	F Test	0.0449
F-statistic	2.641899	LM Test	0.9039
No. of observations	1068	Hausman Test	<0.0001

Notes: ***Indicates significance at 1% level. PRIV: Dummy variable for privatization (set at 1 if privatized, at 0 otherwise). PRIV*GOV: Interaction variable for the privatization dummy variable and the government shareholding ratio. SIZE: Company size. DEBT: Debt ratio. CFO: Cash flow. Statistical software used: Eviews 6.0 (Panel data regression analysis). The t value is the White adjusted t value. The optimal panel data model was found to be the fixed effects model.

The results of model selection showed that the optimal panel data model for Model 2 (Equation 5) was the ordinary least squares (OLS) model. As can be seen from the empirical results presented in Table 3, the TOP1 dummy variable for the largest shareholder (set at 1 if the largest shareholder is a private-sector company, and at 0 if the largest shareholder is the state) is significantly positively correlated with earnings management at the 1% level of significance (coefficient: 0.039544; P value=0.0044), indicating that if, after a state-owned enterprise has been privatized, the largest shareholder is a private-sector company, it will be more likely to engage in earnings management than if the largest shareholder is the state. As indicated in Table 2 (which shows that state-owned enterprises are more likely to engage in earnings management after privatization than before), this supports Hypothesis 2. Even if a state-owned enterprise has been privatized, if the state still holds the largest single share in that company, then “privatization” will actually have little effect on the enterprise. If, on the other hand, the largest shareholder after privatization is a private-sector company, then, given that (as noted above) private-sector enterprises seek to maximize their earnings, earnings management behavior will naturally tend to be widespread.

Further examination shows that the variable for the largest shareholder’s holding (TOP1_HOLD) does not display a statistically significant correlation in this empirical model. A company’s larger shareholders tend to use earnings management to trample on the rights of small shareholders for their own benefit. The largest shareholder in any given company usually enjoys considerable power, and this is even truer in China, where there is usually only one large shareholder in a company, with the other shareholders all having relatively small holdings, and making it very difficult for the smaller shareholders to put up effective opposition to the self-interested actions of the largest shareholder. However, in this empirical model no significant correlation is seen between the holding of the largest shareholder and earnings management. This may be related to the fact that, in over 75% of privatized state-owned enterprises, the state is still the largest single shareholder, and the state has less incentive than a private-sector shareholder to engage in earnings management. In the present study, any attempt to break the sample down further into sub-categories for separate testing would have been rendered difficult by the small size of the sample. As it is, with this empirical model, the results obtained for the dummy variable for the largest shareholder support Hypothesis 3, but the results obtained for the holding of the largest shareholder do not support Hypothesis 3.

Table 3: The impact of the nature of the largest shareholder after privatization on earnings management (equation 5)

<i>Variable</i>	<i>Coefficient</i>	<i>t Value</i>	<i>P Value</i>
Constant term	0.126084	0.926066	0.3548
TOP1	0.039544	2.863796	0.0044 ***
TOP1_HOLD	-0.00082	-1.21809	0.2237
SHARE2_10	3.45E-04	0.607865	0.5435
SIZE	-0.00229	-0.36194	0.7175
DEBT	-0.09982	-2.7778	0.0057 ***
CFO	-0.53803	-9.51702	<0.0001 ***
R-squared	0.189257	Optimal Model Tests	
Adjusted R-squared	0.180026	F test	0.3314
F-statistic	20.50345	LM test	0.7662
No. of observations	534	Hausman Test	0.0189

Notes: ***Indicates significance at 1% level. TOP1: Dummy variable for the nature of the largest shareholder (set at 1 if the largest shareholder is a private-sector company, at 0 otherwise). TOP1_HOLD: Holding of largest shareholder. SHAR2_10: Combined holdings of the second to tenth largest shareholders. SIZE: Company size. DEBT: Debt ratio. CFO: Cash flow. Statistical software used: Eviews 6.0 (OLS regression analysis). No heteroskedasticity was observed. The optimal panel data model was found to be the OLS model.

The results of the model selection showed that the optimal panel data model for Model 3 (Equation 6) was the fixed effects model. As can be seen from the empirical results for ROA presented in Table 4, ROA is negatively correlated with earnings management at the 5% significance level (coefficient: -2.96043 ; P value=0.023). However, no statistically significant correlation is seen in the case of the largest shareholder dummy variable or the largest shareholder's holding. The existence of a negative correlation between earnings management and financial performance is probably related to China's privatization policy, which is based on "keeping control of the big companies while letting the small companies go"; privatization of large state-owned enterprises is usually limited to partial privatization, while small state-owned enterprises may be fully privatized. In other words, the first targets for privatization have been those state-owned enterprises with unimpressive operational performance. Such enterprises have a strong incentive to engage in earnings management, hence the fact that enterprises with poor financial performance appear more likely to engage in earnings management. These empirical results therefore do not support Hypothesis 4.

The results of the Hausman, F and LM tests of model selection showed that the optimal panel data model for Model 3 (Equation 7) was the fixed effects model. As can be seen from the empirical results for Tobin's Q presented in Table 5, discretionary accruals are significantly positively correlated with Tobin's Q at a level of significance of 0.01 (coefficient:

Table 4: The relationship between improved operational performance after privatization and earnings management – ROA (equation 6)

<i>Variable</i>	<i>Coefficient</i>	<i>t Value</i>	<i>P Value</i>
Constant term	-80.9479	-3.87578	0.0001 ***
DA	-2.96043	-2.28362	0.023 **
TOP1	0.135656	0.155681	0.8764
TOP1_HOLD	0.074576	1.564339	0.1186
SHARE2_10	0.097177	2.504939	0.0127 **
SIZE	4.296356	4.309348	<0.0001 ***
DEBT	-26.0739	-7.55109	<0.0001 ***
CFO	5.743999	2.430838	0.0156 **
F-statistic	5.12029	Optimal Model Tests	
R-squared	0.729695	F test	<0.0001
Adjusted R-squared	0.587184	LM test	<0.0001
No. of observations	534	Hausman Test	<0.0001

Notes: ***Indicates significance at 1% level. **Indicates significance at 5% level. DA: Discretionary accruals. TOP1: Dummy variable for the nature of the largest shareholder (set at 1 if the largest shareholder is a private-sector company, at 0 otherwise). TOP1_HOLD: Holding of largest shareholder. SHAR2_10: Combined holdings of the second to tenth largest shareholders. SIZE: Company size. DEBT: Debt ratio. CFO: Cash flow. Statistical software used: Eviews 6.0 (Panel data regression analysis). The t value is the White adjusted t value. The optimal panel data model was found to be the fixed effects model.

Table 5: The relationship between improved operational performance after privatization and earnings management – Tobin's Q (equation 7)

<i>Variable</i>	<i>Coefficient</i>	<i>t Value</i>	<i>P Value</i>
Constant term	-12.7262	-5.25544	<0.0001 ***
DA	0.505411	2.600847	0.0097 ***
TOP1	-0.06393	-0.72207	0.4707
TOP1_HOLD	-0.02127	-4.02356	0.0001 ***
SHARE2_10	-0.01811	-2.68279	0.0076 ***
SIZE	0.719924	6.027755	<0.0001 ***
DEBT	-2.40651	-6.72581	<0.0001 ***
CFO	-0.15008	-0.35395	0.7236
PRC_1	-0.0265	-4.85776	<0.0001 ***
F-statistic	2.975284	Optimal Model Tests	
R-squared	0.612657	F test	<0.0001
Adjusted R-squared	0.406741	LM test	0.5429
No. of observations	534	Hausman Test	<0.0001

Notes: ***Indicates significance at 1% level. DA: Discretionary accruals. TOP1: Dummy variable for the nature of the largest shareholder (set at 1 if the largest shareholder is a private-sector company, at 0 otherwise). TOP1_HOLD: Holding of largest shareholder. SHAR2_10: Combined holdings of the second to tenth largest shareholders. SIZE: Company size. DEBT: Debt ratio. CFO: Cash flow. PRC_1: Final share price in the previous period. Statistical software used: Eviews 6.0 (Panel data regression analysis). The t value is the White adjusted t value. The optimal panel data model was found to be the fixed effects model.

0.505411; P value=0.0097). The results obtained for the largest shareholder dummy variable were not statistically significant; the largest shareholder's holding was negatively correlated with Tobin's Q at a level of significance of 0.01 (coefficient: -0.02127 ; P value=0.0001). The results obtained with this regression model indicate that a privatized company has poor market performance, so that it is likely to engage in earnings management to improve its market performance. The regression model also shows that the nature of the largest shareholder does affect market performance; at the same time, the lower the level of shareholder concentration, the better the market performance. However, no significant correlation was found between the nature of the largest shareholder and market performance. These empirical results therefore do not support Hypothesis 4.

5. Conclusions

In the vast majority of cases, earnings management takes place within the scope permitted by generally accepted accounting principles (GAAP) and International Financial Reporting Standards (IFRS), and as such is not illegal. However, earnings management distorts a company's reported operational performance; the company's accounts lose their objectivity and neutrality, which can mislead related parties and cause them to make ill-advised decisions. Earnings management can also have harmful effects on a company's long-term development; for example, managers may cut back on R&D spending, and so on. It is therefore very important that measures be taken to bring earnings management under control. The present study compares the earnings management behavior of state-owned enterprises in China before and after privatization. The main conclusions reached are outlined below.

The empirical results obtained in the present study provide some degree of support for Hypothesis 1, according to which privatization will lead to an increase in earnings management and improved market performance. The empirical results support Hypothesis 2, which proposes that the earnings management behavior of state-owned enterprises before and after privatization will differ. After privatization, formerly state-owned enterprises have more incentive to engage in earnings management to achieve corporate goals. It was found that, if the state's holding of a company continues to fall after privatization, earnings management becomes more pronounced. The empirical results also support Hypothesis 3, according to which the nature of the company's largest shareholder after privatization will affect the company's earnings management behavior.

As regards financial performance, the empirical results obtained in the study do not support Hypothesis 4; the nature of the largest shareholder and the largest shareholder's holding in the company did not appear to

have a significant effect on financial performance. Regarding the relationship between earnings management and financial performance, the test results showed that the worse a company's financial performance, the stronger the tendency for engaging in earnings management. With respect to market performance, the empirical results obtained for earnings management supported Hypothesis 4. However, the results obtained regarding the nature of the largest shareholder did not support Hypothesis 4. The empirical results showed that, after privatization, formerly state-owned enterprises use earnings management to enhance their market performance; strong market performance is associated with extensive use of earnings management. The results obtained did not support the idea that the nature of the largest shareholder affects market performance.

Strong corporate governance can bring earnings management under control. The boards of directors of state-owned companies in China should work to improve the accuracy of their companies' operational and financial reporting; effective monitoring in this area should help to reduce the opportunities for earnings management to take place. The establishment of sound accounting systems can also help to prevent earnings management; the Chinese government should try to strengthen the provisions of China's laws and accounting principles relating to disclosure, so as to improve the overall transparency of accounting information, thereby reducing information asymmetry and giving corporate managers less incentive to engage in earnings management. The results in this research further indicate that, in evaluating the successfulness of the privatization policy, the governments are advised to take earnings management and the ownership structure of post privatization into account.

Notes

1. Alchian (1965) pointed out that the state-owned firms do have inherent inefficiency since the dispersed owners have poor incentives to monitor state-owned firms activities.
2. In privatization practice, partial state ownership is widespread in both transition economies and non-transition economies. Partial state ownership as a policy tool was also developed in a number of papers including those of Bennett and Maw (2000, 2003), and Gouret (2007).

References

- Aharony, J., Lee, C. J., & Wong, T. J. (2000). Financial packaging of IPO firms in China. *Journal of Accounting Research*, 38(1), 103–126.
- Aharony, J., Wang, J., & Yuan, H. (2010). Tunneling as an incentive for earnings management during the IPO process in China. *Journal of Accounting and Public Policy*, 29(1), 1–26.

- Alchian, A. (1965). Some economics of property rights. *Politico*, 30, 816–829.
- Bennett, J., & Maw, J. (2000). Privatization and market structure in a transition economy. *Journal of Public Economics*, 77(3), 357–382.
- Bennett, J., & Maw, J. (2003). Privatization, partial state ownership, and competition. *Journal of Comparative Economics*, 31(1), 58–74.
- Bertrand, M., Mehta, P., & Mullainathan, S. (2002). Ferreting out tunneling: An application to Indian business groups. *Quarterly Journal of Economics*, 117(1), 121–148.
- Chen, G., Firth, M., & Xu, L. (2009). Does the type of ownership control matter? Evidence from China's listed companies. *Journal of Banking & Finance*, 33(1) 171–181.
- Chen, G., Firth, M., Gao, D. M., & Rui, O. M. (2005). Is China's securities regulatory agency a toothless tiger? Evidence from enforcement action. *Journal of Accounting and Public Policy*, 24(6), 451–488.
- Chen, X., Lee, C. J., & Li, J. (2008). Government assisted earnings management in China. *Journal of Accounting and Public Policy*, 27(3), 262–274.
- Dechow, P. M., Sloan, R. G., & Sweeney, A.P. (1995). Detecting earnings management. *The Accounting Review*, 70(2), 193–225.
- DeFond, M. L., & Park, C. W. (1997). Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics*, 23(2), 115–139.
- Ding, Y., Zhang, H. H., & Zhang, J. X. (2007). Earnings management – A comparison of private-sector and state-owned listed companies in China. *Corporate Governance*, 15(2), 223–238.
- Firth, M., Fung, P. M. Y., & Rui, O. M. (2007). Ownership, two-tier board structure, and the informativeness of earnings – Evidence from China. *Journal of Accounting and Public Policy*, 26(4), 463–496.
- Gouret, F. (2007). Privatization and output behavior during the transition: Methods matter!. *Journal of Comparative Economics*, 35(1), 3–34.
- Gupta, N. (2005). Partial privatization and firm performance. *Journal of Finance*, 60(2), 987–1015.
- Healy, P. M., & Wahlen, J. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365–83.
- Jian, M., & Wong, T. J. (2004). Earnings management and tunneling through related party transactions: Evidence from Chinese corporate groups. *Working Paper*, The Hong Kong University of Science and Technology.
- Johnson, S., Boone, P., Breach, A., & Friedman, E. (2000). Corporate governance in the Asian financial crisis. *Journal of Financial Economics*, 58(1–2), 141–186.
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163–197.
- Li, C. Q., & Guan, L. Y. (2004). An empirical study of the relationship between equity structure and earnings management. *Shangye Yanjiu (Business Research)* 303, 48–53.
- Li, K., Wang, T., Cheung, Y. L., & Jiang, P. (2011). Privatization and risk sharing: Evidence from the split share structure reform in China. *Review of Financial Studies*, 20(4), 703–716.

- Li, T., Sun, L., & Zou, L. (2009). State ownership and corporate performance: A quantile regression analysis of Chinese listed companies. *China Economic Review*, 20(4), 703–716.
- Liu, Y., Li, X., & Lahiri, S. (2016). Determinants of privatization in China: The role of the presence of foreign firms. *China Economic Review*, 41, 196–221.
- Meggison, W. L., & Netter, J. M. (2001). From state to market: A survey of empirical studies on privatization. *Journal of Economic Literature*, 39(2), 321–389.
- Omran, M. (2009). Post-privatization corporate governance and firm performance: The role of private ownership concentration, identity and board composition. *Journal of Comparative Economics*, 37(4), 658–673.
- Shapiro, C., & Willig, R. (1990). Economic rationales for the scope of privatization. *Olin Program Discussion Paper*, Woodrow Wilson School, Princeton University.
- Shleifer, A., & Vishny, R. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(3), 461–487.
- Sun, Q., & Tong, W. (2003). China share issue privatization: The extent of its success. *Journal of Financial Economics*, 70(1), 183–222.
- Tian, L., & Estrin, S. (2008). Retained state shareholding in Chinese PLCs: Does government ownership reduce corporate value?. *Journal of Comparative Economics*, 36(1), 74–89.
- Wang, L. L., & Gao, Q. (2008). Earnings management under circumstances where large shareholders exert a high level of control over the company. *Jingji yu Guanli (Journal of Economics and Management)*, 22(5), 37–39.
- Watts, L. W., & Zimmerman, J. L. (1978). Toward a positive accounting theory of determination of accounting standards. *Accounting Review*, 53(1), 112–134.
- Xu, X. D., & Chen, X. R. (2003). An analysis of the impact of the largest shareholder on corporate governance and enterprise performance. *Jingji Yanjiu (Economic Research Journal)*, 2, 64–93.
- Zhu, H. J., Wang, B., & Tian, Z. H. (2007). Why does privatization not lead to improvement in companies' operational performance – A case study of the privatization of the Hunan Guoguang Ceramic Group. *Zhongguo Gongye Jingji (China Industrial Economics)*, 1, 121–128.