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Article

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Corporate governance and firm value: Evidence from Chinese state-controlled listed firms

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ABSTRACT

The association between corporate governance and firm value has been extensively studied in Chinese listed firms. Based on the characteristics of their ultimate shareholders, Chinese listed firms can be categorised as (1) central state-controlled, (2) local state-controlled or (3) non-state-controlled. Some scholars have described Chinese government policy as ‘*zhuada fangxiao*’, thus suggesting that the corporate governance mechanisms (CGMs) of central state-controlled listed firms (SCLFs) are better than those of local state-controlled listed firms. Therefore, this paper specifically examines the influence of CGMs on the value of central SCLFs and local SCLFs. Analysis of 2006 firm-year observations from 2007 to 2009 suggests that the aggregate ownership of other large shareholders and the remuneration of top executives exhibit different effects on firm value in central and local SCLFs. The results also provide evidence that there is no endogenous effect of firm value on the ownership of the largest shareholder in central and local SCLFs.

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1. Introduction

1.1. Historical development

Since launching its open door policy in 1978, the Chinese government has continued to reform the corporate policies of state-owned enterprises (SOEs) and has improved connections between the state economy and the market economy. As SOEs are a substantial part of the national economy and of government revenue, the Chinese government has gradually privatized SOEs to raise funds for expansions and to increase efficiency. The history of this gradual transformation of Chinese SOEs is summarized in Table 1.

Most Chinese listed firms were established through the privatization of SOEs. To maintain their dominant position, equity in listed firms is divided into A-shares, B-shares, H-shares, state-owned shares, institutional shares, employee shares and other shares, but only A-, B- and H-shares can be freely traded. A- and B-shares are generally traded on two domestic stock exchanges whereas H-shares are traded on the Hong Kong Stock Exchange. Before the share reform¹ of 2005, state shares could not be traded on any stock exchange (i.e., they were non-tradable shares). Table 2 illustrates the percentage of state-owned shares from 2001 to 2007. The average percentage of state-owned shares between 2001 and 2005 (before the share reform) was approximately 46.5% of the total shares but the percentage of state-owned shares decreased to 26.9% in 2007.

1.2. Motivation of the study

Traditional SOEs were initially ideological organizations created as work units (*gongzuo danwei*) to serve social and political purposes rather than to meet economic objectives. The primary stakeholders of SOEs were public officials, government bureaucrats and top managers appointed to run the SOEs, who enjoyed the same privileges as state cadres (*guojia ganbu*). Secondary stakeholders were the SOEs' workers, who expected an 'iron rice bowl' (*tiefanwan*) with cradle-to-grave benefits (Hua et al., 2006).

State ownership is widely viewed as, and has been repeatedly demonstrated to be, inefficient (Boycko et al., 1995). Both the profit motives and the political motives of government officials have the potential to significantly distort objective policy (Trebilcock and Iacobucci, 2003). Recognizing these potential problems, the Chinese government has been gradually privatizing its SOEs, either through management buyouts or by going public (i.e., by listing them on the Chinese and Hong Kong stock markets).

1.2.1. Reform of state-owned enterprises (*zhuada fangxiao* policy)

The early economic reform that introduced the price system and profit incentives to SOEs did not significantly improve their performance. Consequently, President Jiang Zemin announced the *zhuada fangxiao* policy (grasp the large, release the small) at the Fifteenth Communist Party Congress in 1997. Under this policy, the central government retained ownership of SOEs that (1) produce defence goods and services, (2) are in industrial sectors targeted for economic development or (3) are insolvent, but employed millions of employees.² The central government decided that the state should withdraw from the competitive sectors of the national economy and only concentrate on strategic industries. The *zhuada fangxiao* strategy was therefore announced as the guiding principle for SOE reform, which after various experiments at local levels has been interpreted as privatizing all but the largest SOEs controlled by the central government or the central SOEs (Leng, 2009).

¹ Before the share reform, state-owned and legal person shares (normally including those shares held by the largest shareholders) were non-tradable on any stock exchange. The share reform involved a capital reorganization that converted non-tradable shares into tradable ones.

² Extracted from the report 'Five challenges that China must overcome to sustain economic growth', released by the Joint Economic Committee of the United States Congress in July 2006. Available from the website: <http://www3.nccu.edu.tw/~hmlie/social%20insurance%20in%20china/paper/FIVE%20CHALLENGES%20THAT%20CHINA%20MUST%20OVERCOME.pdf>, accessed 27 July 2012.

Table 1
The reform process and its results for Chinese SOEs.

Reformation time	1978–1985	1986–1991	1992–2002	2003–Present
Main content	Decision-making rights delegated to factory directors who make profits from the SOEs Expanded management autonomy	Management responsibility system Separation of ownership and management authority	Modern corporate system; ‘corporatization’ introduced, reform enacted and laws strengthened	Establishment of State-owned Assets Supervision and Administration Commission Enhanced supervision and service of state-owned assets
Results	Performance evaluation No corporate governance system in place; lack of external environment needed for reform.	Short-term performance focus Excessive government administration Increased corruption	Despite some achievements, ownership of state-owned assets is still an issue	Emphasis on the core political role of the Chinese Communist Party in the corporate governance system

Adopted from Cho and Huang (2010).

Table 2
Share ownership (2001–2007).

	2001	2002	2003	2004	2005	2006	2007
State-owned shares	241,061	277,343	304,653	334,420	343,334	458,821	603,388
Other non-tradable shares	99,423	106,512	111,423	122,805	128,140	350,773	610,441
Total non-tradable shares	340,484	383,855	416,076	457,25	471,474	809,594	1,213,829
Tradable shares	181,317	203,690	226,770	257,718	291,477	683,041	1,033,149
Total shares	521,801	587,545	642,846	714,943	762,951	1,492,635	2,246,978
Percentage of state-owned shares	46.2%	47.2%	47.4%	46.8%	45.0%	30.7%	26.9%

Unit: Million shares.

Extracted from the China Securities Regulatory Commission, 2008 *Almanac of Chinese Listed Companies*, Table 7 – Capital Structure Figures (1992–2007).

1.2.2. What is *zhuada fangxiao*?

Chinese scholars (e.g., Leng, 2009; Wang, 2010) have described the current policy as *zhuada fangxiao*, in which central SOEs are subject to a ‘grasp the large’ (*zhuada*) scheme in which the state owner retains control. Local SOEs are managed under the ‘release the small’ (*fangxiao*) scheme, aimed at introducing foreign and private capital and creating more complete privatization (Leng, 2009).

According to Leng (2009), in July 2007 there were 155 large SOEs owned and directly controlled by the central government, and these SOEs were generally in strategic sectors and industries such as oil, telecommunications, civil aviation, highway, steel and power. The State-owned Assets Supervision and Administration Commission (SASAC) took actions to implement a strategy of ‘grasping the large’ (*zhuada*) aimed at building the global competitiveness of the central SOEs. The major schemes adopted by the SASAC to implement the *zhuada* strategy include:

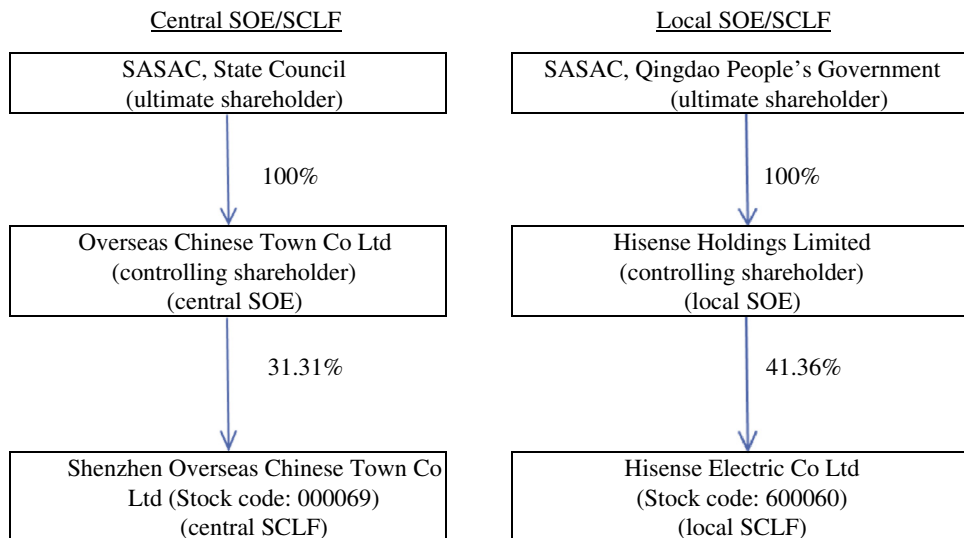
- encouraging industrial rationalization to achieve operational integration and capacity expansion;
- introducing competition to state monopolies in strategic sectors;
- consolidating ‘core business lines’ and decoupling ancillary operations; and

- “Going out”: overseas investment and expansion (Leng, 2009).

The mandate of the SASAC is to represent the state owner in China’s largest SOEs under central government control (central SOEs), with a primary responsibility for maintaining and increasing the value of state assets in these firms. In June 2003, local governments were granted the *de facto* ownership rights to local SOEs. This means that local governments now enjoy the status of owners of the state assets under their control and have the right to transfer or auction off these assets and to make personnel decisions in local SOEs without first having to obtain approval from central government (Leng, 2009), i.e., the *fangxiao* policy. For Chinese state-owned small and medium enterprises (SMEs), which are usually controlled by local governments, corporate governance reform has gradually been taking place and some meaningful results have been achieved (Leng, 2009). Through ownership restructuring guided by the *fangxiao* policy, the majority of Chinese state-owned SMEs have been privatized by insiders, including former managers and employees, and consequently some state-owned SMEs are now under the control of their respective local governments. Nevertheless, Wang and Xiao (2009) argue that local governments have a strong incentive to impose policies on the firms under their control, especially when they are experiencing fiscal difficulties.

1.2.3. Establishment of the state-assets management system

SOEs are considered to be owned by the Chinese people but managed by politicians, resulting in a typical agency problem, i.e., the separation of ownership and control. For administrative purposes, certain SOEs, particularly the largest ones (hereinafter central SOEs), are under the supervision of central government elements including the State Council, its ministries and the SASAC. In contrast, many smaller SOEs (hereinafter local SOEs) are under the supervision of local governments and their respective SASACs. Under current policy,³ both the central government and the various local governments are presumed to exercise investors’ rights on behalf of the state. Both central and local SOEs further spilt this structure when they undertake IPOs, i.e., by forming central state-controlled listed firms (hereinafter central SCLFs) and local state-controlled listed firms (hereinafter local SCLFs). Examples of the organizational structures of these two types of listed firms are set out in the following diagram.



³ See Provisional Regulations on the Supervision and Administration of Assets in State-owned Enterprises and Provisional Methods on the Transfer of Assets in State-owned Enterprises, promulgated by the State Council in 2003.

1.2.4. Corporate governance of SCLFs

Although both central government and relevant local governments play the role of shareholders in all SOEs, their actions and motivations are quite different. The Research Centre of the [Shanghai Stock Exchange \(2006\)](#) stated that the CGMs of central SOEs are better than those of local SOEs, because the largest shareholders of the former do not have strong incentives to expropriate profits and the central government, as the ultimate shareholder, has implemented restrictions on the activities of the largest shareholders. However, it has been reported that the largest shareholders of local SCLFs usually tunnel the listed firms to subsidise public expenditure or provide retirement benefits to ex-employees at the expense of other shareholders (e.g., see the case studies on Northeast Electrical and Jiugui in [Appendix A](#)). It is well established that some SOEs do not follow the rules and regulations.⁴ [Appendix A](#) presents the details of three Chinese listed firms with respect to propping, tunnelling and business dependence among the largest shareholders (controlling party). It is on this basis that the corporate performance of Chinese listed firms is materially manipulated.

Several scholars have investigated the association between CGMs and firm value in Chinese listed firms (e.g., [Chen, 2001](#); [Bai et al., 2004](#); [Wang and Xiao, 2009](#); [Xia, 2008](#)). However, these studies ignore the dominant influence of SOEs in the capital market and thus mainly investigate the full population of Chinese listed firms without deeply analysing the characteristics of the ultimate shareholders in these listed firms. [Table 3](#) presents the percentage of firms in which the state is the ultimate controller in China in comparison with seven other countries. It indicates that in most countries (except Singapore), SOEs amount to an insignificant proportion of their respective capital markets, and in China, the percentage of SCLFs and non-SCLFs amount to 63.15% and 36.85%, respectively.

The above discussion leads us to consider the potential heterogeneous associations between CGMs and the value of Chinese listed firms. However, [Wang and Xiao \(2009\)](#) claim that local governments have a strong incentive to impose policies on the firms under their control. [Chen and Zhu \(2007\)](#) and the [Shanghai Stock Exchange \(2006\)](#) further emphasise that central government and local governments manage their listed firms differently. [Hua and Liu \(2009\)](#) argue that the central government has exercised tight control over central SCLFs while local governments have higher motivation for both propping and tunnelling their listed firms for the respective purposes of placement of new shares and expropriation. [Chen and Zhu \(2007\)](#) study Zhengzhou Yutong Bus Co., Ltd. (stock code: 600066) from 2001 to 2004 and note that its senior management and local government (Zhengzhou City Government) cooperated to escape the control of central government and tunnelled the listed firm. They also study Jiuqui Liquor Co Ltd (stock code: 000799) and note that the local government (Xiangxi Autonomous Government) tunnelled the listed firm for social welfare in that region in 2003.

The [Shanghai Stock Exchange \(2006\)](#) also claims that the CGMs of central SCLFs are better than those of local SCLFs because central government, as the largest shareholder, does not have an incentive to expropriate profits, but imposes strict supervision on central SCLFs. In addition to Zhengzhou Yutong Bus, [Chen and Zhu \(2007\)](#) also study Hunan Dongting Aquaculture Co., Ltd. (hereafter Dongting Aquaculture) (currently known as Dahu Aquaculture Co., Ltd.; stock code: 600257) and explain that in the past, the number of IPOs in each region was highly regulated by the central government through the adoption of a quota system for raising funds in China. [Chen and Zhu \(2007\)](#) suspect that to obtain listing status in the Dongting Aquaculture case, the local government colluded with the second largest shareholder to reorganise their businesses for the IPO (*kunbang shangshi*⁵). After the IPO, the second large shareholder tunnelled about 17% of the IPO proceeds, totalling RMB57 million, from 2000 to 2002, but the largest and third largest shareholders did not.

⁴ In October 2005, the Ministry of Finance issued a notice concerning the quality of listed firms. This notice required that (1) all advances made by listed firms to their related parties had to be fully settled prior to 31 December 2006, and (2) RPTs must be fully disclosed to the public. However, on 7 January 2007 the Chinese Securities Regulatory Commission announced that 17 listed firms could not repay their debts by the deadline. Of the 17 listed firms, five were SOEs, including Sanjiu, mentioned in [Appendix A](#), with debt amounting to RMB 4.7 billion (51.4% of total outstanding debt).

⁵ [Chen and Zhu \(2007\)](#) describe bundled listing, or *kunbang shangshi*, as the merging of two or more businesses for the purpose of IPO, and these businesses may be either independent or engaged in different industries. The owners of these businesses, therefore, are the promoters of the listed firm. [Chen and Zhu \(2007\)](#) further identify two main reasons for *kunbang shangshi*: (1) the listed firm can enlarge its size before the IPO, thereby increasing the funds raised, and (2) local government can effectively utilise each unit of the listing quota (listed firms) that was assigned by the central government.

It is unclear from the response to professional advice from the Shanghai Stock Exchange (2006) as mentioned above, and from the case studies by Chen and Zhu (2007), whether the CGMs of these two types of firms are similar or different. The purpose of this paper is to investigate differences in the CGMs of central and local SCLFs and the effect of CGMs on firm value in these SCLFs. This paper examines financial information from 2007 to 2009, which reflects a more up-to-date situation in Chinese capital markets because in 2006 there was a significant change in the institutional framework (including amendments to the Company Law and Securities Law and a new Chinese Accounting System) and many Chinese listed firms completed the share reform.

2. Literature review

Jensen and Meckling (1976) examine the circumstances of contemporary listed firms and those with external financing and find strong evidence for the separation of control and ownership. Fama and Jensen (1983) also determine that efficient control of agency problems is strongly affected by the size and nature of the organization. In an empirical study, La Porta et al. (2002) find that strong investor protection is associated with effective corporate governance, as reflected in valuable and broad financial markets, the dispersed ownership of shares and the efficient allocation of capital across enterprises.

Further, Morey et al. (2009) show that improvement in corporate governance results in significantly higher valuations in emerging markets. A number of studies on Chinese listed firms also find a positive association between the levels of corporate governance and firm value (e.g., Chen et al., 2004a; Wei, 2007; Cheung et al., 2010).

2.1. Largest shareholder and corporate governance in China⁶

The presence of the largest shareholder can have both positive and negative effects on firm value. If shareholders are able to participate in corporate operations, they can monitor the actions of the directors and management of the firm – the monitoring effect (Shleifer and Vishny, 1997). However, in line with the increase in ownership percentage, the largest shareholder can control and dominate the firm to become the controlling shareholder, which results in the deviation of control rights from cash flow rights (La Porta et al., 2002). A number of studies have empirically demonstrated that large shareholders can extract private benefits through tunnelling (e.g., Johnson et al., 2000; Gao et al., 2006).

In SCLFs the government acts in two conflicting roles, as both the largest shareholder and as a regulator. Hence it is uncertain whether the state can effectively enforce the law and monitor the fraudulent acts of large shareholders, which are unfavourable to other shareholders (Bannerjee, 1997; Hart et al., 1997). Chen (2001) further demonstrates that shares held by the state play a negative role in corporate governance, whereas domestic institutional and managerial shareholdings improve the value of firms, based on firms in 1997.

Wang and Xiao (2009) find that firm value increases when some control rights are decentralised from the government to the SOE, and decentralization significantly improves the performance of local government-controlled firms but not central government-controlled firms, indicating that firm value is negatively related to the extent of government control. Nevertheless, Xu and Wang (2006) demonstrate a significant M-shaped relationship between ownership of the largest shareholder and firm value. Li et al. (2004) and Chen et al. (2004a) further demonstrate an inverse U-shaped relationship between the percentage of shares held by the largest shareholders and the magnitude of tunnelling⁷ in Chinese listed firms. Bai et al. (2004) find that the higher the degree of concentration among other large shareholders, the higher the firm value, because

⁶ It is commonly believed that the terms largest shareholder and controlling shareholder can be used interchangeably. However, Chinese Law (2005) states that a controlling shareholder is one who holds more than 50% of the equity interests and/or voting rights of a company (Article 217(2)). Similarly, a large shareholder who holds a very small amount of the voting rights cannot control the company (e.g., Minseng Bank). The authors cautiously consider the use of these two terms in this paper.

⁷ Tunnelling is defined as the transfer of assets and/or profits out of a firm for the benefit of controlling shareholders (Johnson et al., 2000). Many scholars have asserted that controlling shareholders treat listed firms as ‘sources of finance’ or ‘vehicles’ to obtain funds from the public (e.g., Friedman et al., 2003; Bai et al., 2005).

potential competition for corporate control and the constraints imposed by other shareholders on the largest shareholder's aspiration to tunnel are important determinants of firm value. However, Gao et al. (2006) demonstrate that other major shareholders cannot prohibit tunnelling, whereas management and institutional investors can.

2.2. Internal management structure

Internal management structure refers to the board of directors and top executives of listed firms. Jensen and Meckling (1976) and Shleifer and Vishny (1997) describe the agency relationship between the board of directors (agent) and shareholders (principal). Internal management structure has been found to have several effects on corporate performance as follows.

Board structure – The relationship between board size and firm value remains inconclusive. Peng and Luo (2000) argue that Chinese firms with large boards are likely to benefit from a wider range of views and external connections, whereas Cho and Rui (2009) find a negative relationship between board size and firm value. Further, from an agency perspective, independent directors are expected to play a more active and effective monitoring role than executive directors (Fama and Jensen, 1983). Cho and Rui (2009) find a positive relationship between the proportion of independent directors on the board and firm value, whereas Bai et al. (2004) find no significant association.

Separate role of CEO and chairman – Professional recommendations and some scholars (e.g., Bai et al., 2004; Gao et al., 2006) consider that separation of the CEO and chairman of the board results in greater transparency of corporate information, and therefore the improvement of internal CGMs.

Management incentives – The motivation and reward of top-level management seems to be a crucial factor in the commercial success of firms and is something that is seen to be impeding the privatization of SOEs in China. However, Gao et al. (2006) conclude that management shareholders could restrict the tunnelling of the largest shareholders in Chinese listed firms. Buck et al. (2008) find that in China, executive pay and firm performance mutually affect one another through reward and motivation. Typically, reward systems based on economic performance are small in magnitude in China (Firth et al., 2008) and it is believed that such systems do not motivate managers. However, Yang et al. (2009) point out that management remuneration is positively associated with the corporate performance of Chinese listed firms from 2005 to 2007.

2.3. Corporate governance monitoring mechanisms

Corporate governance monitoring mechanisms (CGMMs) are an external form of CGMs, including the legal and market environment. Zhang and Wang (2007) empirically demonstrate that the transparency of corporations has a significant effect on investors' actions and on stock prices.

Audit quality – Several studies (e.g., Chen et al., 2001; Gul et al., 2010) find that bigger audit firms with higher reputations provide better audit quality, which results in improved corporate transparency and corporate governance.

Marketization – Gao et al. (2006) demonstrate that an increase in the transparency of corporate information and the operation of listed firms in an open commodity market can restrict tunnelling. Enterprises in developed regions⁸ have better corporate governance. Furthermore, Chan, Liu and Wang (2010) find that companies in institutionally weak regions that switch to a local auditor after receiving a qualified opinion succeed in opinion shopping. In developed regions, the government's influence is lower than in other regions and commodity and senior personnel markets are quite open (Fan et al., 2007). In contrast, Gao and Kling (2008) find no significant association between marketization and the magnitude of tunnelling. Nevertheless, several case studies have shown that local governments use political issues to actively influence listed firms (see the Wuliangye case in Appendix A).

⁸ Gao and Kling (2008) consider Beijing, Tianjin, Shanghai, Jiangsu, Zhejiang, Fujian and Guangdong as the developed eastern coastal region, which exhibits better governance structures.

Bank borrowings – It is believed that banks, being sophisticated lenders, can closely monitor the operations of their borrowers. However, Perotti and Thadden (2000) find that lenders prefer less information dissemination, whereas shareholder-run firms prefer greater transparency. Therefore, it is uncertain whether investors would perceive the increase in the magnitude of bank borrowings of Chinese listed firms as having a positive or negative effect on firm value.

Dual listing – Dual-listed firms are expected to exhibit higher corporate governance. Choi and Kim (2002) state that the Korean Stock Exchange may supplement the enforcement of foreign exchange listing provisions within Korea to increase the value to Korean investors of having a Korean firm select the protection provided in foreign jurisdictions. Chen (2008) indicates that firms listed in a capital market with fuller information disclosure and stringent investor protection laws leads to more effective corporate governance. As Chinese firms can also be dual-listed as B-shares (listed in China for foreign investors) and H-shares (listed in Hong Kong), these dual listing arrangements are assumed to improve the transparency of corporate information (Bai et al., 2004).

2.4. Institutional isomorphism

Section 1.4 describes the Chinese government policy of *zhuada fangxia* on the governance of central and local SCLFs. DiMaggio and Powell (1983) mention that rational actors make their organizations increasingly similar as they try to change them. They further suggest three mechanisms of institutional isomorphic change: (1) *coercive* isomorphism that stems from political influence and the problem of legitimacy, (2) *mimetic* isomorphism resulting from standard responses to uncertainty and (3) *normative* isomorphism, associated with professionalization. Therefore, it is suggested that the CGMs of central and local SCLFs are not similar to each other because the effect of the government's *zhuada fangxiao* policy on their governance structures may be different.

3. Hypothesis development

3.1. Corporate governance mechanisms

Section 2 describes the potential effect of CGMs on firm value. From the results of certain cases, together with the *zhuada fangxiao* policy described in Section 1.4 and the principle of institutional isomorphism in Section 2.4, it seems that the CGMs of central and local SCLFs are dissimilar, possibly because the same CGM may have different effects on central and local SCLFs (e.g., ownership of the largest shareholder), and/or the nature of the particular CGMs of these two categories differ (e.g., the largest shareholder of a local SCLF may tunnel the listed firm whereas central government may not). Accordingly, it is expected that there will be a significant difference in the effect of CGMs on firm value in central and local SCLFs.

This paper classifies ownership structure and internal management structure as internal CGMs, and corporate governance monitoring mechanisms as external CGMs. Therefore, Hypothesis 1 is proposed:

H1. Central and local SCLFs differ in their internal and external CGMs.

Further, some previous studies (e.g., Morey et al., 2009; Chen et al., 2004a; Wei, 2007; Cheung et al., 2010) find a positive association between the level of corporate governance and firm value. As the CGMs of central SCLFs may be different from those of local ones (see Hypothesis 1 above), Hypothesis 2 is proposed:

H2. CGMs have different effects on firm value in central and local SCLFs.

Table 3
Percentage of firms with the state as the ultimate controller.

	China	HK	UK	Germany	Japan	France	Singapore
State (%)	63.15	1.40	0.08	6.30	0.80	5.11	23.50
Non-state (%)	36.85	96.80	99.20	93.70	99.20	84.89	76.50

Extracted from Li and Zhang (2010).

Table 4
Variable descriptions.

TQ	Tobin-Q value as a ratio of the market value of equity of a firm to the book value of its assets
TQ70	TQ x 70%
TQ80	TQ x 80%
<i>Internal CGMs</i>	
TOPSHARE	Percentage of shares held by the largest shareholder
TOPSHARE ²	Square of TOPSHARE
SHARE2_5	Aggregate percentage of shares held by the second to fifth large shareholders
TOPEXE_SHARE	Percentage of shares held by top executives (including directors)
TOPEXE_REMUN	Percentage of total emoluments of top executives to total sales of the listed firm
lnBOD	Natural logarithm of the number of directors on the board
SEP_CAP	Dummy variable that takes the value of 1 if the chairperson of the board and the CEO are two separate persons, and 0 otherwise
<i>External CGMs</i>	
BIG12	Dummy variable that takes the value of 1 if the engaged auditor is one of the Big 12 audit firms ^a , and 0 otherwise
DUAL_LIST	Dummy variable that takes the value of 1 if the listed firm is also has B-shares or H-shares, and 0 otherwise
MI	Dummy variable that takes the value of 1 if the listed firm is registered in the eastern coastal area (as defined by Gao and Kling, 2008), and 0 otherwise
GEARING	Percentage of total bank and other loans to the total assets of the listed firm
<i>Control variables</i>	
lnTA	Natural logarithm of the total assets of the listed firm
ROA	Profit(loss) for the year/total assets at year end
FIXED_EFFECTS	Dummy variables controlling for the fixed effects of calendar years and industries

^a Previous foreign scholars have adopted Big 4 and non-Big 4 auditors to proxy for high and low quality, respectively (e.g., Chen et al., 2001; Simunic and Wu, 2009). Some domestic scholars have adopted Big 10 and non-Big 10 auditors (e.g., Lin et al., 2009; Lin and Liu, 2009). In this paper, the authors adopt the ‘Big 12’ auditors as these are the firms that are eligible to act as reporting accountants and auditors for Chinese incorporated firms listed in Hong Kong. The Big 12 auditors are BDO China Shu Lun Pan, Tian Jian (Pan-China), BDO Guangdong Dahua Delu (Shenzhen), Shine Wing, Ernst & Young, Crowe Horwath, Grant Thornton Jingdu Tianhua, PricewaterhouseCoopers, Deloitte, KPMG, RSM China and Daxin. They have been allowed by the Ministry of Finance and the Chinese Securities Regulatory Commission to conduct statutory audits on H-share listed firms since December 2010. Other than Grant Thornton Jingdu Tianhua and Daxin, the remaining 10 audit firms are those which are regarded by domestic scholars as a proxy for good audit quality.

3.2. Regression model

The regression model of this paper is shown in Eq. (1) and the variables are defined in Table 4.^{9,10}

$$\begin{aligned}
 \text{TQ(or TQ70, TQ80)}_{i,t} = & \beta_0 + \beta_1 \text{TOPSHARE}_{i,t} + \beta_2 \text{TOPSHARE}_{i,t}^2 + \beta_3 \text{SHARE2}_5_{i,t} \\
 & + \beta_4 \text{TOPEXE_SHARE}_{i,t} + \beta_5 \text{TOPEXE_REMUN}_{i,t} + \beta_6 \text{lnBOD}_{i,t} \\
 & + \beta_7 \text{SEP_CAP}_{i,t} + \beta_8 \text{BIG12}_{i,t} + \beta_9 \text{DUAL_LIST}_{i,t} + \beta_{10} \text{MI}_{i,t} \\
 & + \beta_{11} \text{GEARING}_{i,t} + \beta_{12} \text{lnTA}_{i,t} + \beta_{13} \text{ROA}_{i,t} + \varepsilon_{i,t}
 \end{aligned} \quad (1)$$

where ε is the random error term of the model; i is the i th firm and t is the year.

⁹ The authors follow the approach of Bai et al. (2004) in using three different measures of firm value, namely TQ, TQ70 and TQ80, as the dependent variables because previously the non-tradable portion of Chinese listed firms had an average illiquidity discount of between 70% and 80% when they were traded in the informal market. TQ70 and TQ80 are used in the sensitivity tests.

¹⁰ Some previous studies (e.g., Bai et al., 2004; Cho and Rui, 2009) include the proportion of outside (independent) directors as one of the measures of the effectiveness of the board structure. The authors carefully considered that in current practice, there should be at least two independent directors on the board and at least one third of the board should be filled by independent directors in accordance with Article 3 of the Code of Corporate Governance for Listed Companies in China (2001). In the pre-test, the proportion of independent directors on the board showed a positive but non-significant association with firm value, hence it is meaningless to merely include such a proportion as one of the independent variables in this regression equation. The authors alternatively considered including a dummy variable to represent firms with a majority (at least half) of independent directors on the board, but note that only 13 (3%) and 53 (3.3%) firm-year observations in central and local SCLFs, respectively, have a majority of independent directors on their board, representing an insignificant proportion of the sample. Therefore, the authors concluded that in current practice, the proportion of independent directors on the board reflects compliance with the listing rules and is not a key corporate governance mechanism, and accordingly, this paper excludes it.

Table 5
Details of the sample.

				Number of firm-year observations	
Raw sample				4,913	
Less:	Firms engaged in financial sector			85	
	Firms under ST status			186	
	Firms that announced their annual results after 30 April the following year			18	
	Firms with missing variables			1201	
Total available firm-year observations				3423	
Less:	Non-SCLFs			1417	
Total number of state-controlled listed firms				2006	
Represented by:					
Central SCLFs (Panel A)				423	
Local SCLFs (Panel B)				1583	
Total number of state-controlled listed firms				2006	
Distribution by year:					
		Central SCLFs (Panel A)	Local SCLFs (Panel B)	Total	
Number of firm-year observations					
2007		138	500	638	
2008		149	486	635	
2009		136	597	733	
Total		423	1583	2006	
Distribution by listing status:					
Number of firm-year observations	2007	2008	2009	Total	%
<u>Central SCLFs (Panel A)</u>					
Dual-listed as A- and B-shares	12	12	6	30	7
Dual-listed as A- and H-shares	5	8	5	18	4
Total of dual-listed firms	17	20	11	48	11
Listed as A-shares only	121	129	125	375	89
Total number of central SCLFs	138	149	136	423	100
<u>Local SCLFs (Panel B)</u>					
Dual-listed as A- and B-shares	32	29	28	89	6
Dual-listed as A- and H-shares	12	12	13	37	2
Total of dual-listed firms	44	41	41	126	8
Listed as A-shares only	456	445	556	1457	92
Total number of local SCLFs	500	486	597	1583	100

Distribution by industry:

Number of firm-year observations	2007	2008	2009	Total	%
<u>Central SCLFs (Panel A)</u>					
A - agricultural	2	1	1	4	1
B - mining	1	3	4	8	2
C - manufacturing	79	83	73	235	56
D - production and supply of electricity and gas	3	4	5	12	3
E - construction	3	3	4	10	2
F - transportation and storage	5	7	6	18	4
G - information technology	10	7	12	29	7
H - wholesale and retail	10	14	10	34	8
J - property developer	8	8	9	25	6
K - social services	9	10	3	22	5
L - media	-	1	1	2	-
M- others	8	8	8	24	6
Total number of central SCLFs	138	149	136	423	100
<u>Local SCLFs (Panel B)</u>					
A - agricultural	15	11	15	41	3
B - mining	12	15	16	43	3
C - manufacturing	288	291	346	925	58
D - production and supply of electricity and gas	32	17	19	68	4
E - construction	12	11	12	35	2
F - transportation and storage	23	21	26	70	4
G - information technology	27	28	45	100	6
H - wholesale and retail	30	26	35	91	6
J - property developer	24	24	30	78	5
K - social services	9	15	19	43	3
L - media	5	3	4	12	1
M- others	23	24	30	77	5
Total number of local SCLFs	500	486	597	1583	100

4. Research method, results and interpretation

4.1. Data source and sample selection

Table 5 presents the details of the sample. Our sample period covers 3 years, from 2007 to 2009, and the data was obtained from the China Stock Market and Accounting Research Data Base (CSMAR). There

Table 6.1
Descriptive statistics.

	Number	Minimum	Maximum	Mean	Std. Dev.
<i>Central SCLFs (Panel A)</i>					
TQ	423	0.170	10.854	2.090	1.524
TQ70	423	0.120	7.590	1.463	1.067
TQ80	423	0.140	8.670	1.672	1.219
TOPSHARE	423	0.080	0.860	0.374	0.158
TOPSHARE ²	423	0.010	0.740	0.164	0.131
SHARE2_5	423	0.010	0.610	0.148	0.116
TOPEXE_SHARE	423	0.000	0.190	0.002	0.016
TOPEXE_REMUN	423	0.000	0.520	0.047	0.073
lnBOD	423	1.610	2.710	2.189	0.212
SEP_CAP	423	0.000	1.000	0.305	0.461
BIG12	423	0.000	1.000	0.416	0.493
DUAL_LIST	423	0.000	1.000	0.104	0.306
MI	423	0.000	1.000	0.584	0.493
GEARING	423	0.000	0.660	0.193	0.143
lnTA	423	18.830	28.000	21.790	1.372
ROA	423	0.000	0.390	0.053	0.050
<i>Local SCLFs (Panel B)</i>					
TQ	1583	0.180	252.910	2.401	6.879
TQ70	1583	0.130	177.040	1.681	4.816
TQ80	1583	0.140	202.330	1.921	5.504
TOPSHARE	1583	0.010	0.850	0.364	0.151
TOPSHARE ²	1583	0.000	0.720	0.156	0.122
SHARE2_5	1583	0.010	0.560	0.149	0.112
TOPEXE_SHARE	1583	0.000	0.540	0.006	0.036
TOPEXE_REMUN	1583	0.000	0.780	0.049	0.079
lnBOD	1583	0.690	2.890	2.210	0.210
SEP_CAP	1583	0.000	1.000	0.370	0.483
BIG12	1583	0.000	1.000	0.447	0.497
DUAL_LIST	1583	0.000	1.000	0.079	0.270
MI	1583	0.000	1.000	0.557	0.497
GEARING	1583	0.000	1.310	0.203	0.148
lnTA	1583	15.420	27.490	21.677	1.173
ROA	1583	0.000	2.340	0.055	0.090

Table 6.2
Descriptive statistics – Frequency of dummy variables.

Frequency of dummy variables	Central SCLFs (Panel A)		Local SCLFs (Panel B)		Total	
	No.	%	No.	%	No.	%
SEP_CAP (equal to 1)	131	30.5	998	37.0	1290	35.7
BIG12 (equal to 1)	176	41.6	708	44.7	884	44.1
DUAL_LIST (equal to 1)	44	10.4	125	7.9	169	8.4
MI (equal to 1)	247	58.4	882	55.7	1129	56.3

are 4913 firm-year observations for these 3 years, of which 85 observations from the financial sector¹¹ and 1201 observations with missing variables are excluded. A further 186 observations under ST status¹² and 18 observations that failed to announce their annual reports by the following 30 April are also excluded. Our final sample contains 3423 firm-year observations, representing 423 central SCLFs, 1583 local SCLFs and 1417 non-SCLFs, respectively.

¹¹ The authors adopted the general academic practice of eliminating financial sector firms (Industry Code I).

¹² Firms that failed to comply with the relevant law and regulations to release their annual reports on time and those under special treatment (ST) are removed to reduce bias.

4.2. Descriptive statistics

Table 6.1 presents the descriptive statistics of the variables. The means of TQ, the dependent variable, are 2.09 in Panel A and 2.40 in Panel B, respectively, indicating that firm value for central SCLFs (Panel A) is, in general, lower than that of local SCLFs (Panel B) during these 3 years. The means of TOPSHARE are approximately 37.4% in Panel A and 36.4% in Panel B, while those of SHARE2_5 are approximately 14.8% and 14.9% in Panels A and B. The ownership structures of these two panels are similar to those of Chinese listed firms before the share reform and it is likely that the largest shareholders are rarely challenged by other shareholders on important issues (La Porta et al., 2002). The mean of TOPEXE_SHARE in Panel B is 0.6%, higher than the 0.2% in Panel A, indicating that the top executives of local SCLFs are more motivated than those of central SCLFs. TOPEXE_SHARE in local SCLFs is higher than that in central SCLFs, possibly because ownership by the top executives of large SOEs (mostly central SCLFs) was not previously permitted.¹³ Overall, however, the average percentages of shares held by directors is still very low in both groups. TOPEXE_REMUN in Panel B is 4.9%, slightly higher than the 4.7% in Panel A, indicating that in both central and local SCLFs, the remuneration of top executives is related to firm size (turnover). The means of lnTA are 21.790 in Panel A and 21.677 in Panel B, indicating that in our sample the firm size of central SCLFs is generally higher than that of local SCLFs. There are no significant differences between the means of the other variables in these two panels.

Table 6.2 reports the frequencies of the dummy variables. For SEP_CAP, the frequency is 30.5% in Panel A and 37.0% in Panel B, indicating that the chairperson of the board and the CEO are separate people in less than 40% of the SCLFs, even though it is professionally recommended that these two roles should be held by different people. For BIG12, the frequency is 41.6% in Panel A and 44.7% in Panel B, indicating that less than half of the listed SCLFs engage Big 12 auditors, possibly because non-Big 12 auditors are more familiar with Chinese listed firms. For DUAL_LIST, the frequency is 10.4% in Panel A and 7.9% in Panel B, indicating that central SCLFs also intend to raise funds from foreign investors and, from the records of the Stock Exchange of Hong Kong, the giant H-share companies are also listed as A-shares in China (e.g., Big 4 banks and the giant telecommunication service providers). For MI, the frequency is 58.4% in Panel A and 55.7% in Panel B, indicating that slightly more than half of the listed SCLFs are registered in the eastern coastal (more developed) region.

Table 7 reports correlation coefficients. The statistics in Panel A show significant positive correlations between TQ and TOPEXE_SHARE and ROA, but negative correlations between TQ and lnBOD, GEARING and lnTA. The statistics in Panel B show significant positive correlations between TQ and TOPEXE_REMUN and ROA, but significant negative correlations between TQ and TOPSHARE and lnTA. The correlation coefficients between the independent variables are generally low, indicating that multicollinearity is unlikely to be a serious problem in the interpretation of the results.¹⁴

4.3. Comparison of firm value and corporate governance mechanisms

Tables 6.1 and 6.2 provide some preliminary signs that firm value and CGMs do differ between central and local SCLFs. A one-way ANOVA was run to investigate whether the above mean results for firm value and CGMs are significantly different among central, local and non-SCLFs. The ANOVA results presented in Table 8 suggest that TOPSHARE, TOPEXE_SHARE, lnBOD, SEP_CAP and GEARING are the key differences between the CGMs of central, local and non-SCLFs. These results provide further support to our initial claim that the CGMs of central and local SCLFs differ.

¹³ The ownership of top executives in large SOEs has been permitted in accordance with 'Provisional Regulations on state-owned property rights transfer to management', promulgated by SASAC of State Council on 11 April 2005.

¹⁴ The natural logarithm of the total sales of Chinese listed firms (lnSALES) was also considered as a control variable for the firm size of these listed firms. As the correlation coefficient between lnSALES and lnTA is extremely high (0.856 at the 1% significance level) in pre-testing, we selected lnTA only as a control variable for business size.

Table 7
Correlations.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Central SCLFs (Panel A)															
TQ (1)	1														
TQ70 (2)	1.000**	1													
TQ80 (3)	1.000**	1.000**	1												
TOPSHARE (4)	-0.460	-0.046	-0.046	1											
TOPSHARE ² (5)	-0.045	-0.045	-0.045	0.972**	1										
SHARE2_5 (6)	0.083	0.083	0.083	-0.337**	-0.339**	1									
TOPEXE_SHARE (7)	0.128**	0.128**	0.128	-0.084	-0.770	0.100*	1								
TOPEXE_REMUN (8)	0.045	0.045	0.045	-0.077	-0.950	-0.075	-0.030	1							
lnBOD (9)	-0.164**	-0.164**	-0.164**	0.000	0.003	0.187**	-0.060	-0.105*	1						
SEP_CAP (10)	0.091	0.091	0.091	-0.107*	-0.087	0.027	-0.090	-0.068	-0.125*	1					
BIG12 (11)	-0.060	-0.060	-0.060	0.081	0.109*	0.104*	0.058	-0.079	0.190**	-0.028	1				
DUAL_LIST (12)	-0.044	-0.044	-0.044	0.099*	0.142**	0.131**	-0.460	-0.106*	0.197**	-0.091	0.199**	1			
MI (13)	0.018	0.018	0.018	0.094	0.106*	0.066	0.115*	0.008	-0.010	0.111*	0.148**	0.146**	1		
GEARING (14)	-0.338**	-0.338**	-0.338**	-0.045	-0.039	-0.049	-0.059	0.070	0.098*	0.009	0.057	0.020	-0.044	1	
lnTA (15)	-0.449**	-0.449**	-0.449**	0.283**	0.343**	0.063	-0.094	-0.347**	0.323**	-0.081	0.312**	0.412**	0.104*	0.205**	1
ROA	0.464**	0.464**	0.464**	0.051	0.070	0.101*	0.189**	-0.352**	0.016	0.006	0.101*	-0.052	-0.058	-0.356**	-0.0038
Local SCLFs (Panel B)															
TQ (1)	1														
TQ70 (2)	1.000**	1													
TQ80 (3)	1.000**	1.000**	1												
TOPSHARE (4)	-0.074**	-0.074**	-0.074**	1											
TOPSHARE ² (5)	-0.043	0.043	-0.043	0.975**	1										
SHARE2_5 (6)	0.012	0.012	0.012	-0.334**	-0.349**	1									
TOPEXE_SHARE (7)	0.026	0.026	0.026	-0.071**	-0.074**	0.197**	1								
TOPEXE_REMUN (8)	0.075**	0.075**	0.075**	-0.179**	-0.182**	-0.013	-0.002	1							
lnBOD (9)	-0.033	-0.033	-0.033	-0.021	-0.016	0.045	-0.049	-0.039	1						
SEP_CAP (10)	0.042	0.042	0.042	-0.082**	-0.071**	-0.056*	-0.137**	-0.002	-0.100**	1					
BIG12 (11)	0.032	0.032	0.032	0.117**	0.121**	0.027	0.011	-0.029	0.044	-0.017	1				
DUAL_LIST (12)	-0.015	-0.015	-0.015	0.034	0.039	0.146**	-0.049	-0.030	0.113**	-0.074**	0.118**	1			
MI (13)	0.041	0.041	0.041	-0.025	-0.027	0.119**	0.036	0.057*	-0.078**	0.058*	0.116**	0.110**	1		
GEARING (14)	-0.026	-0.026	-0.026	-0.041	-0.043	-0.088**	-0.083**	0.029	0.087**	0.006	0.012	-0.004	-0.093**	1	
lnTA (15)	-0.261**	-0.261**	-0.261**	0.277**	0.300**	-0.105**	-0.084**	-0.315**	0.285**	-0.065**	0.146**	0.282**	-0.034	0.171**	1
ROA	0.455**	0.455**	0.455**	-0.023	0.017	0.067**	0.057*	-0.190**	0.000	0.046	0.074**	0.000	0.068**	-0.035	-0.132**

* Correlation is significant at the 5% level (two-tailed);

** Correlation is significant at the 1% level (two-tailed).

Table 8
ANOVA of variables by central, local and non-SCLFs.

		Sum of Squares	df	Mean Square	F	Sig.
TQ	Between Groups	110.386	2	55.193	2.397	0.091*
	Within Groups	78734.255	3420	23.022		
	Total	78844.642	3422			
TOPSHARE	Between Groups	0.137	2	0.068	2.889	0.056*
	Within Groups	80.992	3420	0.024		
	Total	81.129	3422			
TOPSHARE ²	Between Groups	0.098	2	0.049	3.114	0.045**
	Within Groups	53.860	3420	0.016		
	Total	53.959	3422			
SHARE2_5	Between Groups	0.002	2	0.001	0.070	0.933
	Within Groups	43.373	3420	0.013		
	Total	43.375	3422			
TOPEXE_SHARE	Between Groups	0.025	2	0.012	6.608	0.001***
	Within Groups	6.341	3420	0.002		
	Total	6.366	3422			
TOPEXE-REMUN	Between Groups	0.008	2	0.004	0.619	0.538
	Within Groups	22.729	3420	0.007		
	Total	22.737	3422			
lnBOD	Between Groups	0.323	2	0.162	3.758	0.023**
	Within Groups	147.024	3420	0.043		
	Total	147.347	3422			
SEP_CAP	Between Groups	7.088	2	3.544	16.385	0.000***
	Within Groups	739.778	3420	0.216		
	Total	746.866	3422			
BIG12	Between Groups	0.467	2	0.233	0.944	0.389
	Within Groups	845.339	3420	0.247		
	Total	845.805	3422			
DUAL_LIST	Between Groups	0.232	2	0.116	1.540	0.215
	Within Groups	257.700	3420	0.075		
	Total	257.932	3422			
MI	Between Groups	0.575	2	0.287	1.164	0.313
	Within Groups	845.014	3420	0.247		
	Total	845.589	3422			
GEARING	Between Groups	0.102	2	0.051	2.347	0.096*
	Within Groups	74.226	3420	0.022		
	Total	74.328	3422			
lnTA	Between Groups	5.990	2	2.995	2.079	0.125
	Within Groups	4926.209	3420	1.440		
	Total	4932.199	3422			
ROA	Between Groups	0.024	2	0.012	2.432	0.088*
	Within Groups	16.616	3420	0.005		
	Total	16.639	3422			

Sample firms are classified into three groups: (1) central SCLFs, (2) local SCLFs and (3) non-SCLFs.

* Indicate significance at the 10% level (two tailed).

** Indicate significance at the 5% level (two tailed).

*** Indicate significance at the 1% level (two tailed).

Table 9
Regression results: corporate governance mechanisms and firm value in central SCLFs.

	Expected sign	Sensitivity Tests			
		TQ	TQ	TQ70	TQ80
TOPSHARE	?	−2.390 (0.120)		−1.673 (0.120)	−1.912 (0.120)
TOPSHARE ²	?	3.911** (0.041)		2.737** (0.041)	3.128** (0.041)
SHARE2_5	?	1.613*** (0.003)		1.129*** (0.003)	1.291*** (0.003)
TOPEXE_SHARE	+	−0.517 (0.879)	0.090 (0.979)	−0.362 (0.879)	−0.414 (0.879)
TOPEXE_REMUN	+	0.885 (0.306)	1.105 (0.203)	0.619 (0.306)	0.708 (0.306)
lnBOD	+	−0.359 (0.203)	−0.330 (0.241)	−0.252 (0.203)	−0.287 (0.203)
SEP_CAP	+	0.111 (0.369)	0.141 (0.252)	0.078 (0.369)	0.089 (0.369)
BIG12	+	0.060 (0.609)	0.085 (0.475)	0.042 (0.609)	0.048 (0.609)
DUAL_LIST	+	0.853*** (0.000)	0.956*** (0.000)	0.597*** (0.000)	0.682*** (0.000)
MI	+	−0.076 (0.518)	−0.047 (0.693)	−0.054 (0.518)	−0.061 (0.518)
GEARING	?	−0.533 (0.226)	−0.701 (0.113)	−0.373 (0.226)	−0.427 (0.226)
lnTA	−	−0.580*** (0.000)	−0.523*** (0.000)	−0.406*** (0.000)	−0.464*** (0.000)
ROA	+	12.616*** (0.000)	13.298*** (0.000)	8.831*** (0.000)	10.093*** (0.000)
FIXED_EFFECTS		Yes	Yes	Yes	Yes
Constant	?	14.597*** (0.000)	13.137*** (0.000)	10.218*** (0.000)	11.678*** (0.000)
Adj- <i>R</i> ²		0.499	0.487	0.499	0.499
<i>F</i> -stat.		17.172	18.439	17.172	17.172
OBS		423	423	423	423

Note: *P*-values are in parentheses.

* Indicate significance at the 10% level.

** Indicate significance at the 5% level.

*** Indicate significance at the 1% level.

4.4. Multiple regression analysis

This section reports the results of the multiple regression analysis with respect to the two hypotheses. The results are shown in Tables 9–11.

According to Berman (2007), the variance inflation factor (VIF) values of variables that do not exhibit multicollinearity are usually between 1.0 and 2.0.¹⁵ The collinearity test results show that none of the independent variables in this paper have a VIF of over 2 (not tabulated). According to these results and the correlation analysis of these variables shown in Table 7, multicollinearity is not considered to be a problem for either model.

4.4.1. Central SCLFs

Table 9 reports the regression results for central SCLFs. TOPSHARE is negatively related to TQ, but the association is not significant. However, TOPSHARE² is positively related to TQ at the 1% significance level,

¹⁵ Only TOPSHARE and TOPSHARE² exhibit high correlations with one another in all regressions.

Table 10
Regression results: corporate governance mechanisms and firm value in local SCLFs.

	Expected sign	Sensitivity Tests			
		TQ	TQ	TQ70	TQ80
TOPSHARE	?	−15.308*** (0.001)		−10.716*** (0.001)	−12.246*** (0.001)
TOPSHARE ²	?	18.910*** (0.000)		13.237*** (0.001)	15.128*** (0.001)
SHARE2_5	?	−2.214 (0.000)		−1.550 (0.140)	−1.771 (0.140)
TOPEXE_SHARE	+	−2.463 (0.571)	−3.886 (0.364)	−1.724 (0.571)	−1.970 (0.571)
TOPEXE_REMUN	+	7.218*** (0.001)	7.874*** (0.000)	5.053*** (0.001)	5.775*** (0.001)
lnBOD	+	1.099 (0.151)	0.970 (0.201)	0.770 (0.151)	0.880 (0.151)
SEP_CAP	+	−0.470 (0.886)	−0.002 (0.994)	−0.033 (0.886)	−0.038 (0.886)
BIG12	+	0.326 (0.295)	0.299 (0.337)	0.228 (0.295)	0.261 (0.295)
DUAL_LIST	+	1.243** (0.038)	1.098* (0.064)	0.870** (0.038)	0.994** (0.038)
MI	+	0.009 (0.978)	−0.088 (0.782)	0.006 (0.978)	0.007 (0.978)
GEARING	?	0.927 (0.396)	0.940 (0.388)	0.649 (0.396)	0.742 (0.396)
lnTA	−	1.341*** (0.000)	−1.246*** (0.000)	−0.939*** (0.000)	−1.073*** (0.000)
ROA	+	32.129*** (0.000)	33.252*** (0.000)	22.490*** (0.000)	25.703*** (0.000)
FIXED_EFFECTS		Yes	Yes	Yes	Yes
Constant	?	29.840*** (0.000)	25.039*** (0.000)	20.888*** (0.000)	23.872*** (0.000)
Adj- <i>R</i> ²		0.266	0.260	0.266	0.266
<i>F</i> -stat.		23.002	25.201	23.002	23.002
OBS		1583	1583	1583	1583

Note: *P*-values are in parentheses.

* Indicate significance at the 10% level.

** Indicate significance at the 5% level.

*** Indicate significance at the 1% level.

implying that the effect of ownership of the largest shareholder is non-linear and that there may be a U-shaped relationship between firm value and ownership, as expected. SHARE2_5 is positively related to TQ at the 1% significance level, indicating that the higher the degree of ownership concentration among other large shareholders, the higher the firm value. These two associations are consistent with Bai et al. (2004). DUAL_LIST is also positively related to TQ at the 1% significance level, implying that investors prefer dual-listed firms, possibly because these firms are required to provide detailed information to foreign investors and/or foreign stock exchanges. This positive association is also consistent with the findings of Bai et al. (2004). lnTA is negatively related to TQ, indicating that the value of larger central SCLFs decreases as firm size increases, and this negative association is consistent with the findings of Bai et al. (2004) and Wang and Xiao (2009). ROA is positively related to TQ at the 1% significance level, indicating that firm value increases in line with profitability. Overall, the effect of other CGMs on firm value is not significant.

Sensitivity tests were performed using Eq. (1). The regression equation was rerun by (1) eliminating TOPSHARE and TOPSHARE² and (2) replacing TQ with TQ70 and TQ80, respectively. The results show that the directions and significance of the associations between other tested variables remain the same.

Table 11
Comparison of regression results: corporate governance mechanisms and firm value in four types of Chinese listed firms.

	Expected sign	TQ			
		Central SCLFs (Panel A)	Local SCLFs (Panel B)	Non-SCLFs (Panel C)	Whole sample (Panel D)
TOPSHARE	?	-2.390 (0.120)	-15.308 ^{***} (0.001)	-1.896 ^{**} (0.018)	-8.702 ^{***} (0.000)
TOPSHARE ²	?	3.911 ^{**} (0.041)	18.910 ^{***} (0.000)	2.900 ^{***} (0.003)	10.840 ^{***} (0.000)
SHARE2_5	?	1.613 ^{***} (0.003)	-2.214 (0.140)	0.610 ^{**} (0.025)	-0.880 (0.215)
TOPEXE_SHARE	+	-0.517 (0.879)	-2.463 (0.571)	0.306 (0.553)	-1.077 (0.529)
TOPEXE_REMUN	+	0.885 (0.306)	7.218 ^{***} (0.001)	1.010 ^{***} (0.005)	5.244 ^{***} (0.000)
lnBOD	+	-0.359 (0.203)	1.099 (0.151)	-0.049 (0.724)	0.388 (0.286)
SEP_CAP	+	0.111 (0.369)	-0.470 (0.886)	-0.055 (0.384)	-0.490 (0.760)
BIG12	+	0.060 (0.609)	0.326 (0.295)	0.086 (0.243)	0.193 (0.196)
DUAL_LIST	+	0.853 ^{***} (0.000)	1.243 ^{**} (0.038)	0.391 ^{***} (0.000)	0.974 ^{***} (0.000)
MI	+	-0.076 (0.518)	0.009 (0.978)	-0.028 (0.630)	0.022 (0.882)
GEARING	?	-0.533 (0.226)	0.927 (0.396)	-1.244 ^{***} (0.000)	0.794 (0.131)
lnTA	-	-0.580 ^{***} (0.000)	1.341 ^{***} (0.000)	-0.508 ^{***} (0.000)	-0.918 ^{***} (0.000)
ROA	+	12.616 ^{***} (0.000)	32.129 ^{***} (0.000)	15.131 ^{***} (0.000)	30.331 ^{***} (0.000)
FIXED_EFFECTS		Yes	Yes	Yes	Yes
Constant	?	14.597 ^{***} (0.000)	29.840 ^{***} (0.000)	12.971 ^{***} (0.000)	21.024 ^{***} (0.000)
Adj- <i>R</i> ²		0.499	0.266	0.510	0.259
<i>F</i> -stat.		17.172	23.002	57.654	46.901
OBS		423	1583	1417	3423

Note: *P*-values are in parentheses.

* Indicate significance at the 10% level.

** Indicate significance at the 5% level.

*** Indicate significance at the 1% level.

4.4.2. Local SCLFs

Table 10 reports the regression results for local SCLFs. TOPSHARE is negatively related to TQ, whereas TOPSHARE² is positively related to TQ, at the 1% significance level, consistent with Bai et al. (2004), Chen et al. (2004a) and Li et al. (2004) and also consistent with the results for central SCLFs. SHARE2_5 is positively related to TQ, but not significantly, indicating that unlike in central SCLFs, the aggregate of other large shareholders cannot countercheck the acts of the largest shareholder, possibly because there is a potential threat that the second or even the third largest shareholder can collude with the largest shareholder for their own benefit, at the expense of other shareholders (see the Hunan Dongting Aquaculture case study in Section 1.2.4). TOPEXE_REMUN is positively related to TQ at the 1% significance level, indicating that the remuneration of top executives increases in line with firm value, consistent with Buck et al. (2008) and Yang et al. (2009). DUAL_LIST is positively related to TQ at the 5% significance level, consistent with the results for central SCLFs. lnTA and ROA, respectively, are negatively and positively related to TQ at the 1% significance level, consistent with the results for central SCLFs. The effect of other CGMs on firm value is not significant.

Sensitivity tests were also performed using Eq. (1). The regression equation was rerun by (1) eliminating TOPSHARE and TOPSHARE² and (2) replacing TQ with TQ70 and TQ80. The results show that the directions and significance of the associations between other tested variables remain the same.

4.5. Additional tests

4.5.1. Comparison with non-SCLFs and full sample

Eq. (1) was also rerun for (1) non-SCLFs (Panel C) and (2) the full sample (Panel D). Table 11 summarises the regression results of these four panels. TOPSHARE is negatively related to TQ in all panels, but is significant only in Panels B, C and D. In contrast, TOPSHARE² is positively related to TQ in all panels at the 1–5% significance levels, implying that there is a non-linear relationship between TOPSHARE and TQ in the full sample and in particular panels, consistent with the findings of Bai et al. (2004), Chen et al. (2004a,b) and Li et al. (2004). SHARE2_5 is positively related to TQ in central and non-SCLFs at the 1–5% significance levels, but not in local SCLFs. TOPEXE_REMUN is positively related to TQ in all panels, and at the 1% significance level in Panels B, C and D, consistent with the findings of Buck et al. (2008) and Yang et al. (2009), possibly because the remuneration of top executives of local and non-SCLFs is linked to corporate performance, whereas the top executives of central SCLFs are politically appointed and thus their remuneration is not linked to corporate performance. DUAL_LIST is positively related to TQ in all panels at the 1–5% significance levels, consistent with the findings of Bai et al. (2004). In general, TQ is not significantly related to any CGMM except DUAL_LIST, in all panels, possibly because Chinese listed firms are strongly affected by their largest shareholders and top executives and these insiders are rarely challenged by auditors (BIG10) or money lenders (GEARING). The directions and significance of the associations between TQ and lnTA and ROA remain unchanged in all panels.

4.5.2. Sensitivity tests: Elimination of company data in 2008, dual-listed firms and separation of manufacturing and non-manufacturing firms

Two sensitivity tests were performed. First, because of the unusual drop in the share prices of Chinese listed firms in 2008 caused by the financial tsunami,¹⁶ the Tobin-Q value might include the effect of market volatility. The authors considered this non-corporate governance effect on firm value by including year dummies and lnTA and ROA as control variables in the regression equations (Eqs. (1) and (2)). Eq. (1) was also rerun after excluding the 2008 company data.

Second, because the CGMs of dual-listed firms (especially those listed in Hong Kong) are better than those of non-dual-listed firms (e.g., Bai et al., 2004), the inclusion of dual-listed firms in the sample may provide a biased association between CGMs and firm value. Furthermore, as shown in Table 5, manufacturing firms (Sector C) amounted to over 50% of the full sample. Most of these firms were spun off from their largest shareholders before their IPOs and their businesses are still closely connected to their largest shareholders (or controlling party), as mentioned in the Wuliangye case, and their CGMs are likely to differ from those of non-manufacturing firms. Accordingly, additional tests were conducted on (1) the sample without dual-listed firms, (2) the sample without manufacturing firms and (3) the sample with manufacturing firms only.

The results of these two sensitivity tests (not tabulated) further support that SHARE2_5 and TOPEXE_REMUN exhibit different effects in central and local SCLFs. The directions and significance of other associations with CGMs remain unchanged.

4.6. Endogenous effect of firm value on ownership of the largest shareholder

Chen et al. (2004b) suggest that ownership structure is determined by the trade-off of many factors, including firm value, and firm value is likely to affect ownership structure. To examine the potential endogenous

¹⁶ The market index, HuShen 300, on 30 April 2007, 2008, 2009 and 2010 was 3478.93, 3793.87, 2604.45 and 3014.07, respectively.

effects between TQ and TOPSHARE, Eq. (1) was modified so that TOPSHARE and TOPSHARE² are the dependent variables and TQ the independent variable. Eq. (2) is formulated as follows:

$$\begin{aligned} \text{TOPSHARE(or TOPSHARE}^2\text{)}_{i,t} = & \beta_0 + \beta_1 \text{TQ}_{i,t} + \beta_2 \text{TOPEXE_SHARE}_{i,t} \\ & + \beta_3 \text{TOPEXE_REMUN}_{i,t} + \beta_4 \ln \text{BOD}_{i,t} + \beta_5 \text{SEP_CAP}_{i,t} \\ & + \beta_6 \text{BIG12}_{i,t} + \beta_7 \text{DUAL_LIST}_{i,t} + \beta_8 \text{MI}_{i,t} + \beta_9 \text{GEARING}_{i,t} \\ & + \beta_{10} \ln \text{TA}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

The results of this regression for both central and local SCLFs (not tabulated) confirm that there is no significant endogenous effect of firm performance on ownership of the largest shareholder, as both TQ and ROA are insignificantly associated with TOPSHARE in all panels. This result is consistent with Hess et al. (2010), who find no endogenous effect of firm value on the aggregate of ownership of the largest five shareholders. Eq. (2) was rerun by using TOPSHARE² as the dependent variable, and the regression results again show that there is no endogenous effect of firm value on ownership of the largest shareholder in central and local SCLFs.

4.7. Summary of regression results

Overall, SHARE2_5 and TOPEXE_REMUN are different CGMs in central and local SCLFs. SHARE2_5 is significantly and positively related to TQ in central SCLFs, but not in local SCLFs. This result may help to explain the inconsistent findings of Bai et al. (2004) and Gao et al. (2006) mentioned in Section 2.1, possibly because in central SCLFs other large shareholders can effectively monitor the largest shareholders, whereas in local SCLFs the largest shareholder is likely to collude with the second largest shareholder to extract funds from Chinese listed firms, as proposed by Chen and Zhu (2007). TOPEXE_REMUN is significantly and positively related to TQ in local SCLFs, but not in central SCLFs, implying that local SCLFs employ professional managers to operate their businesses, and their compensation and tenure is strongly linked to firm performance (value), in contrast to the politically employed managers in central SCLFs. Another indicator of management incentive, TOPEXE_SHARE is insignificantly related to TQ, possibly because it is very low in both central and local SCLFs, as mentioned in Section 4.2. Accordingly, both H1 and H2 are supported.

5. Conclusion

Some scholars describe the current government policy as *zhuada fangxiao*, in which central SOEs are subject to a ‘grasp the large’ (*zhuada*) scheme and local SOEs to a ‘release the small’ (*fangxiao*) scheme, whereby the state owner retains control. Based on company data from 2007 to 2009, this paper provides empirical evidence that the different characteristics of ultimate shareholders may lead to heterogeneous effects of CGMs on firm value. The results suggest that the aggregate ownership of other large shareholders and the remuneration of top executives exhibit different effects on the value of central and local SCLFs. The findings also suggest a possible non-linear relationship between the ownership of the largest shareholder and firm value in all SCLFs, perhaps because the ultimate shareholder has a strong incentive to support and tunnel the listed firm for its own political benefits, and the largest shareholder seeks benefits at the expense of other shareholders. Furthermore, in many cases the local government may even collude with other large shareholders. This paper also provides evidence that there is no endogenous effect between the ownership of the largest shareholder and firm value in central and local SCLFs.

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Appendix A

A.1. Case studies on state-controlled listed firms

In China, there are statutory regulations and recommendations to regulate and restrict related-party transactions between the largest shareholders and their listed firms (e.g., Article 21 of Company Law (2005), Paragraphs 12–21 of the Code of Best Practice and Certain Opinions on Regulating the Behaviour of State-owned Shareholders of Listed Firms (2009)). However, in some state-controlled listed firms, the largest shareholders tunnel and use the funds to pay for the pensions and welfare of past employees (e.g., Northeast Electrical from 1999 to 2001, H-share Stock code: 0042, A-share Stock code: 000585), to support the expenditure of local governments (e.g., Jiugui Liquor from 1998 to 2005, Stock code: 000799) and to support their own business expansion (e.g., Sanjiu).

Cases One and Two illustrate the common practice in China of the largest shareholders propping up the listed firms before the IPO, and then tunnelling them after the IPO. Case Three presents another common example of the integration of the controlling party and the listed firm into a single economic entity.

A.1.1. Case One – Agricultural Bank of China (central SCLF): a case of propping up before the IPO

The Agricultural Bank of China Limited (hereafter ‘ABC’) is one of the big four commercial banks in China. Its shares have been listed on the Shanghai Stock Exchange (A-share Stock code 601288) and the Hong Kong Stock Exchange (H-share Stock code 1288) since 2010. The percentage of state-owned shares has changed from 100% ownership by the Ministry of Finance and Central Huijin Investment Co Ltd, both under the State Council, to 96.3% (before the IPO) and to 82.7% at the end of 2010 (after the IPO). Its prospectus (H shares) shows that in 2008, before its corporate restructuring, ABC disposed of certain non-performing assets worth RMB815695 million, including non-performing loans of RMB766768 million and other impaired assets of RMB48927 million. From the total of RMB815695 million, the People’s Bank of China and the Ministry of Finance carried RMB150602 million and RMB665093 million, respectively. If those transactions had not been undertaken in 2008, the total equity of ABC as at 31 December 2009 would have been reduced to RMB760665 by the reporting accountants and auditors, and its financial position over the period, including the corporate restructuring, would have been as follows.

	2007 RMB Million	2008 RMB Million	2009 RMB Million	2010 RMB Million	Total RMB Million
Reported comprehensive income (after non-controlling interest) (‘CI’)*	35,146	76,400	52,374	87,762	251,682
<i>Pro-forma CI without corporate restructure</i>	<i>35,146</i>	<i>(684,265)</i>	<i>52,374</i>	<i>87,762</i>	<i>(508,983)</i>
Reported total equity (after non-controlling interest) (‘TE’)	(727,605)	290,445	342,819	542,071	
<i>Pro-forma TE without corporate restructure*</i>	<i>(727,605)</i>	<i>(470,220)</i>	<i>(417,846)</i>	<i>(218,594)</i>	

Source: H-share prospectus and 2010 annual report of ABC.

* It is assumed that in 2008 the reversal of impairment loss on the loan receivables of RMB 43.1 billion would have not been made and the additional balance of doubtful loan receivables of RMB 717.6 billion would have been made, resulting in the decrease of profit for that year and a reduction in the accumulated equity by a total of RMB 760.7 billion.

With the above pro-forma adjustments, ABC would not have met the listing qualifications in Hong Kong and China, as it had incurred a loss in recent years and had negative equity. The above corporate restructuring was, in fact, propping from the central government (the ultimate shareholder) to ABC to enable it to meet the listing qualifications.

The issue of non-performing loans is an extremely important problem in the Chinese financial system. Previously, due to political pressure, the state-owned banks always granted loans and advances to other inefficient state-owned enterprises (SOEs), even when they were unprofitable and insolvent, resulting in an accumulation of non-performing loans. Although the central government got rid of a material part of the non-performing loans from ABC's books in 2008, it is uncertain whether political influence would make ABC support other SOEs in future economic slowdowns.

A.1.2. Case Two – Sanjiu (central SCLF): a case of tunnelling

The China Resources Sanjiu Medical and Pharmaceutical Co Ltd (formerly known as Sanjiu Medical and Pharmaceutical Co Ltd (Sanjiu)) has been listed on the Shenzhen Stock Exchange (Stock code: 000999) since 2000 and is engaged in the production and sale of pharmaceutical products in China. On 31 December 2007, Sanjiu Enterprise Group Co Ltd was the controlling shareholder of Sanjiu with a total of 71.4% of the shares.

After the IPO in 2000, the controlling shareholder embezzled funds from Sanjiu, and this was reported in the mass media as an attempt by the controlling shareholder to raise funds for the repayment of existing loans.¹⁷ As a result, in October 2005 the Ministry of Finance issued a notice concerning the quality of listed firms, the '**Notice of the State Council on Approving and Forwarding the Opinions of China Securities Regulatory Commission on Improving the Quality of Listed Companies**'. This notice required that all advances made by listed firms to their related parties had to be settled in full before 31 December 2006. The controlling shareholder did not comply with this notice, and on 31 December 2007 it owed RMB 3.7 billion to Sanjiu, representing 48.2% of the net assets of the firm. The mass media reported that the controlling shareholder extracted funds from Sanjiu to acquire new businesses that were unrelated to Sanjiu.¹⁸ In 2008, the controlling shareholder transferred the shares of Sanjiu to New Sanjiu Holdings Co Ltd (wholly owned by China Resources (Group) Co Ltd, which is supervised by the State Council) and fully repaid the amount due to Sanjiu.¹⁹

A.1.3. Case Three – Wuliangye (local SCLF): a case of the integration of business operations with its controlling party

Wuliangye Yibin Company Limited is listed on the Shenzhen Stock Exchange (Stock code: 000858). Wuliangye and its subsidiaries are engaged in the sale and manufacture of wine under the name of 'Wuliangye', in Yibin, Sichuan, China. Although it is held under the name of the local government agency, Yibin State-owned Assets Management Co Ltd (the controlling shareholder), the firm is actually under the control of another state-owned enterprise, the Wuliangye Group Co Ltd (the controlling party) as evidenced by

1. the official website, www.wuliangye.com.cn, where the firm appears to be part of the controlling party; and
2. the firm's financial statements, which disclose a series of related party transactions (RPTs) between the firm and the controlling party.

Although a series of regular and irregular RPTs were conducted between the firm and the Wuliangye Group, Wuliangye is a profitable business, unlike other firms that were bankrupted, delisted or taken over after being tunnelled by their controlling shareholders. Liu et al. (2004) estimate that the Wuliangye Group yielded private benefits of RMB9.7 billion between 1998 and 2003. Nevertheless, its financial statements and official website show that

1. the firm has rarely paid a cash dividend, even though it has been profitable since the IPO in 1998 and it possesses a huge amount of cash and cash equivalents; and
2. the firm and the Wuliangye Group are integral parts of the same supply chain, as evidenced by the RPTs; both Wuliangye and the Wuliangye Group sell products with the same brand name.

¹⁷ For example, see the news from Sina Finance, <http://finance.sina.com.cn/roll/20040811/0607939595.shtml>, accessed on 20 October 2011.

¹⁸ See '999 Group', <http://wiki.mbalib.com/>, accessed on 29 September 2011.

¹⁹ It is thought that the controlling shareholder sold the Sanjiu shares for cash and used the same funds to repay the debt due to Sanjiu.

Most new mainland Chinese listed firms reorganised their corporate structure before their IPOs to reduce the magnitude of the RPTs (i.e., the possibility of tunnelling and earnings management) and to ensure the independence of their management hierarchy and business models from their related parties. Following this professional practice, in 2009 Wuliangye announced its proposal for corporate reorganization to separate the core business from the Wuliangye Group and dispose of the non-business related investments to its controlling shareholder to improve investors' perceptions of corporate governance.

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