Ultimate Government Control Structures and Firm Value: Evidence from Chinese Listed Companies*

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Abstract

We show that 70% of Chinese listed companies are ultimately controlled by government agencies, thereby indicating that state ownership remains widespread in China's stock markets. Three questions are considered that are related to government control structures and their impact on firm value: (1) how do government agencies maintain their control of listed companies; (2) what are the impacts of different government control structures on firm value; and (3) are these impacts different in local government and central government-controlled firms? We find that the Chinese government controls listed companies directly or indirectly through solely state-owned enterprises (SSOEs). Taking into account the trade-off between political and agency costs, we show that firm value increases when some control rights are decentralized from the government to state-owned enterprises (SOEs). Moreover, decentralization improves significantly the performance of local government- controlled, but not central government-controlled firms.

JEL classification: G32; G34; G15

Keywords: Government control structures; Firm value; Agency costs; Political costs; Decentralization

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1. Introduction

The paper investigates the nature of ultimate government control structures and their impact on firm value. The study uses a large dataset that includes all state-owned listed companies in China in 2004. The relationship between state ownership and firm performance is the focus of a considerable body of academic research. A number of studies which examine the government's impact on firm performance show that government intervention reduces firm value (Shleifer and Vishny, 1993; Shleifer, 1998; Hellman *et al.*, 2000). Another stream of research focuses on the agency problems that arise between firm management and the State (Alchian, 1965; Qian, 1995; La Porta *et al.*, 1999). In our study, we consider both agency problems and the political problems that arise from government control and examine the impact of ultimate state control structures on firm value.

According to the "grabbing hand" hypothesis, state-owned enterprises (SOEs) suffer from political costs when the government and individual politicians use SOEs to serve political objectives that deviate from economic efficiency (Sappington and Stiglitz, 1987; Boycko *et al.*, 1996; Shleifer and Vishny, 1994). The first stage of China's enterprise reforms (between 1978 and 1993) decentralized certain control rights from the government to SOEs to improve firm efficiency. A number of studies have found evidence of subsequently increased productivity and performance (Chen *et al.*, 1988; Groves *et al.*, 1994).[1] However, many SOEs continued to suffer from severe political costs due to direct government control. Such control allows politicians to intervene in a firm's operations for political benefit by vesting them formal authority over key personnel, investment and labor deployment decisions.

To reduce these political costs, in the second stage of enterprise reform, the State shifted its focus from the decentralization of operating rights to that of ownership and control.[2] The main strategy for accomplishing the latter type of decentralization was to establish a modern market system and incorporate SOEs into limited liability companies. The government sold a certain proportion of its shares to non-state investors, thus separating its role as owner from its role as regulator. Consequently, SOEs suffered less from political costs. However, agency costs increase when corporate insiders (ie, the controlling shareholders or managers who have effective control) obtain more effective control rights from the government and pursue private benefits, such as abnormal perks, at the expense of firm value (Qian, 1995). Moreover, the development of private business provided these insiders with the opportunity to divert state assets for their own private benefit (Qian, 1996).

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[1] The 14 control rights decentralized were: 1) production; 2) prices of products and services; 3) independent sale of products; 4) selection of suppliers; 5) foreign trade; 6) investment; 7) use of reserve funds; 8) disposal of assets; 9) decision to operate jointly or merge with other units; 10) hiring and firing workers; 11) personnel management decisions; 12) distribution of wages and bonuses; 13) organization of international divisions; and 14) refusal of prorations.

[2] Privatization is one way to reform SOEs, but is primarily applied to small firms in China.

This setting allows us to examine the trade-off relationship between agency costs and political costs. On the one hand, the separation of SOEs from government reduces political influence over operating decisions; on the other hand, it may increase agency costs due to weaker corporate governance mechanisms. Therefore, what is the appropriate level of decentralization remains an open question. Should the Chinese government further relax its control of listed companies? Do the resulting increased agency costs outweigh the benefits of reduced political control, thus indicating that the government should maintain (or reduce) the current level of decentralization? In this paper we seek to respond to these questions by examining the relationship between the level of decentralization and firm value using data on the ultimate government control structures of Chinese listed companies.

Three proxies are used for the level of SOE decentralization: (i) the length of the control chain as measured by the number of layers between government agencies and the listed company; (ii) the identity of the direct controlling shareholder (the shareholder in the control chain that directly controls the listed company; and (iii) the divergence between cash flow rights and the control rights ultimately held by government agencies. Divergence is measured in three ways: ultimate control rights divided by cash flow rights, the difference between control rights and cash flow rights, and a dummy variable that equals one if cash flow rights are smaller than control rights and zero if they are equal. If further decentralization increases operating efficiency, then we expect our decentralization measures to be positively related to firm value and our direct controlling shareholder dummy to be negatively related to that value.

We find that 942 of the listed companies (more than 70%) in China are ultimately owned by the State.[3] Of these State-owned listed firms, 219 (23%) are ultimately controlled by the central government, 674 (72%) by local governments, and the remaining 36 (4%) by research institutions or universities. Complete data were obtained for the ultimate government control structures of 889 State-owned firms under control of central or local government agencies. We find that 88% of these firms are controlled by the government through two or three layers and that 64% are directly controlled by SSOEs. Government agencies hold an average of 43% of cash flow rights and 46% of control rights. Divergence between ultimate control rights and cash flow rights is found in 250 (28%) of the sample firms and is not significant. Both the length of the control chain and the divergence between control rights and cash flow rights are found to be positively related to firm value, and the firms that are directly controlled by an SSOE are found to perform worse than those that are not. These findings indicate that firm value increases with further decentralization.

Finally, based on the intensity of political costs, we separate the entire sample into firms that are ultimately controlled by local governments and those that are ultimately

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[3] According to our data, 1,340 firms disclosed their ultimate control chain in their 2004 annual reports, but 96 of them failed to provide complete disclosure.

controlled by the central government. Due to the conflict of interest between local governments and the central government, local governments worry about the possible future reallocation of assets by the central government (Qian, 1996). This implies that local governments are more likely to intervene in SOEs for short-term goals. Moreover, as central government-controlled firms are usually large and often internationally recognized, government intervention attracts greater public attention. In addition to central State-asset management bureaus that hold shares for the State, these firms are also supervised by a number of central government departments, such as the National Audit Office, the Ministry of Finance and the Ministry of Commerce. This multi-supervision makes it more difficult for politicians from one department to intervene in their operations. In comparison with the central government, local governments have stronger control over SOEs. With the exception of national laws and regulations, they are able to set their own policies. As Fan *et al.* (2007) show, local governments have a strong incentive to impose policies on the firms under their control, especially when they are in fiscal difficulties.

As a result, the political costs in local government-controlled firms may be higher than those in their central government-controlled counterparts. Decentralization that reduces such costs therefore works better in the former than in the latter. Consistent with this argument, our regression results for the local government and central government-controlled subsamples show that the firm value of the former improved significantly with further decentralization, whereas those that were central government controlled did not. This finding implies that local government-controlled firms should be further decentralized to enhance their performance.

This study contributes to the literature in the following ways. First, we apply the methodology used in La Porta *et al.* (1999) and Claessens *et al.* (2000) and extend the existing research on ultimate control by the State. We describe the complete control chain from government agencies to listed firms from several perspectives, including the length of the chain, the identities of the direct shareholders, and the divergence between the cash flow rights and control rights held by the ultimate government agencies.

Second, we consider both the political and agency costs of ultimate government control, whereas most of the previous empirical studies of such control focus on political costs alone (Hellman *et al.*, 2000; Xu and Wang, 1999; Alchian, 1965; La Porta *et al.*, 1999). For example, Fan *et al.* (2007) apply political intervention theory to explain the incentives for local governments to decentralize control over listed companies and argue that they do so because of a commitment to less political intervention. In addition to political costs, we also consider the changes in the moral hazard problems of management under decentralization. Our framework focuses on the economic consequences of decentralization. In addition, and unlike prior research, our inclusion of all State-owned listed companies controlled by both the central and local governments in China allows us to compare the impacts of decentralization between the two.

Finally, this paper contributes to the literature on SOE reform, particularly those in developing countries. In China, the government has generally been hesitant about

giving up its control of SOEs, which explains why we found that more than 70% of the country's listed companies are still ultimately controlled by the State. In a market with such a substantial degree of State ownership, the way in which firm efficiency can be improved within government control is an important question for SOE reform. Our findings show that decentralization improves firm performance, especially when more non-State investors share ownership.

The remainder of this paper is organized as follows. Section 2 provides a short history of SOE reform and the development of the stock market in China. Section 3 reviews the relevant literature and analyzes the relationship between ultimate ownership structures and firm value. Section 4 describes the construction of the data, as well as the various ultimate government control structures of Chinese listed companies. Section 5 presents our empirical findings on the relationship between these ultimate control structures and firm value, and Section 6 concludes the paper.

2. SOE Reform and Development of the Stock Market in China

China's SOEs were controlled by the central or local governments before the country initiated economic reforms in 1978. These reforms aimed at stimulating economic development by transforming from a planned economy to a market economy. Before the reform, all firm decisions, including those about employment and production, were made by government institutions. Managers and employees had very few operational incentives, and politically motivated objectives served to lower firm efficiency.

The economic reforms began with an expansion of enterprise autonomy and allowed 3% retainable profits, although the basic central planning institutional framework remained. Although the country's SOEs were now motivated to improve productivity and efficiency, their managers had the incentive to hide profits from the government or transfer them to other companies under their ownership (Qian, 1995). At the same time, government control was of limited use in mitigating agency costs, as politicians have less information and operational capabilities than do firm managers. As they are not residual claimants, they lack the incentive to monitor managers to ensure that firm profits are maximized. Instead, they may pursue political benefits, such as employing an excess labor force to maintain social stability.

Therefore, in the second stage of the economic reforms, the government retreated from direct enterprise control by combining a socialist market economy with a modern corporate system. As in other economies, making the transition from a planned system to a market economy, the major task for Chinese enterprise reform is to separate SOEs from the government. To facilitate this separation, two Stock Exchanges were set up in 1990 and 1991, and many large and medium-sized SOEs were then transformed into publicly listed firms.[4] According to data on ownership structures in 2004, more than

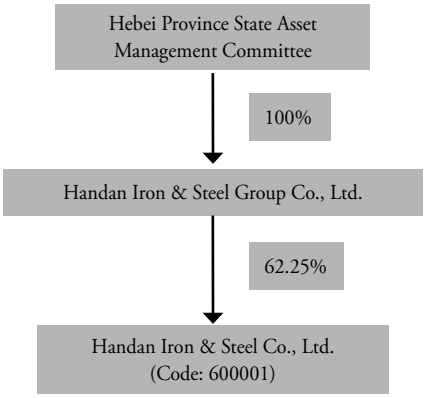
[4] The Shanghai Stock Exchange (SHSE) opened in December 1990 and the Shenzhen Stock Exchange (SZSE) in April 1991.

70% of China's listed companies remained ultimately owned by the State and controlled by the central or local governments through the shareholding chain.

Two typical ultimate control structures for listed firms are illustrated in Figures 1 and 2. Although State-owned listed companies remain ultimately controlled by the government with the authorization of the State Council, rather than being involved in day-to-day affairs as it was previously, the State now serves as the owner. State Asset Management Bureaus (SAMBs) at the central and local levels were founded to supervise firm operation and represent the State's interests. SAMBs control the shares of listed companies directly or indirectly through SOEs.[5]

Figure 1. Ultimate Control Structure of Handan Iron & Steel Co., Ltd. (600001)

Handan Iron & Steel Co., Ltd. (600001) is a state-owned listed company that is ultimately controlled by the Hebei Province State Asset Management Committee. This SAMB controls the listed company through an SSOE, Handan Iron & Steel Group Co., Ltd.

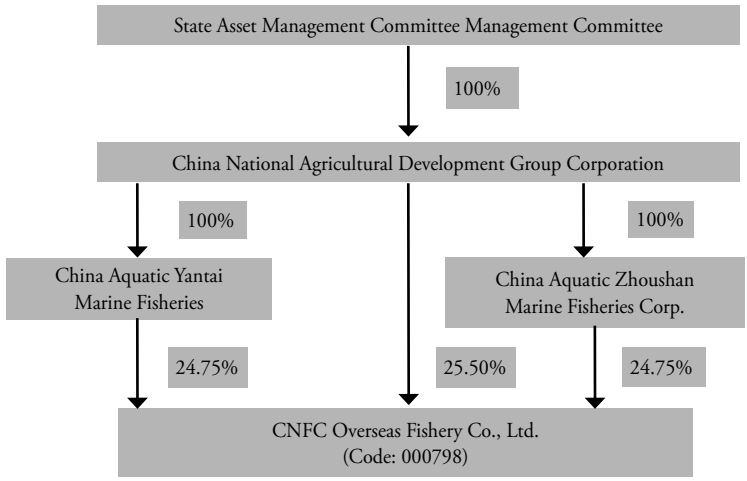


Source: The 2004 annual report of Handan Iron & Steel Co., Ltd. (600001).

[5] According to Article Eight of the Regulation for State-owned Shares in Joint-stock Companies, when an SOE is completely transformed into a listed company, or partially transformed, but still includes its core business, the State holds shares in it directly through a government agency. These shares are classified as State shares. Alternatively, when only small portions or subsidiaries of an SOE are transformed into a listed company, then shares can be classified as State-owned legal person shares or legal person shares and held by a parent-SOE.

Figure 2. Ultimate Control Structure of CNFC Overseas Fishery Co., Ltd. (000798)

CNFC Overseas Fishery Co., Ltd. (000798) is a state-owned listed company that is ultimately controlled by the State Asset Management Committee, which reports to the State Council. This SAMB controls the listed company through three SSOEs: the China National Agricultural Development Group Corporation, the China Aquatic Yantai Marine Fisheries Corporation and the China Aquatic Zhoushan Marine Fisheries Corporation.



Source: The 2004 annual report of CNFC Overseas Fishery Co., Ltd. (000798).

3. Ultimate Government Control Structure and Firm Value

The relationship between ownership structure and firm value has been researched extensively. Since the 1970s, an increasing number of studies have begun to question the nature of ownership (Eisenberg, 1976; Demsetz and Lehn, 1985; Shleifer and Vishny, 1986). La Porta *et al.* (1999) investigate the ownership structures of large corporations in 27 economies and find that they are ultimately controlled by families or the State through pyramids, cross-shareholdings and superior voting rights.

The presence of large shareholders has both positive and negative aspects that affect firm valuation. These shareholders have strong incentives and capabilities to monitor managers so as to maximize firm value (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). However, they possess their own interests, which may not be consistent with those of other investors. Thus, the costs of large shareholder control reduce firm value (Morck, Shleifer and Vishny, 1988; Stulz, 1988; Claessens *et al.*, 2002).

The relationship between ownership structure and firm value becomes even more complicated when the State is the ultimate owner, which is the prevalent situation in China. As the State also plays the role of regulator, its interests may conflict with firm profitability. For example, Fan *et al.* (2007) show that a local government that is burdened by poor fiscal conditions or operates in a region with a high level of unemployment may

require that the firms it owns subsidize public expenditure or increased employment, neither action of which is a value-maximizing objective. In addition, in some cases, it is politicians rather than professional managers who represent the government and who ultimately control firms. Groves *et al.* (1995) find that such politicians are not chosen and promoted for their management experience or specific industry knowledge, but rather because of their commitment to government policies. Shleifer and Vishny (1994) further find that politicians may require firms to serve political interests at the expense of firm efficiency. These political costs are defined as the costs experienced by a firm when it is made to serve political objectives that deviate from economic efficiency. They arise when the State controls firms more rigorously and have a negative effect on firm value (Qian, 1996; Sappington and Stiglitz, 1987; Boycko *et al.*, 1996).

Separating business operations from government control can reduce political costs because decentralization provides firms with more decision-making autonomy. However, such separation may at the same time increase agency costs, as managers may pursue private benefits at the expense of the firm (Qian, 1995, 1996). According to Aghion and Tirole (1997), such agency costs increase as more formal authority is delegated to an agent. This increase is also significantly higher in developing markets, which are generally characterized by a lack of corporate governance mechanisms. China's market economy has existed for less than 30 years, and its stock market for less than 20. The country lacks sufficient mechanisms to protect shareholders from management shrinkage or entrenchment. Therefore, the agency costs between the State and corporate insiders (controlling shareholders or managers who have substantive control over the firm and who may be government bodies or SSOEs) increase with a firm's separation from government. The net effect of decentralization on firm value in a developing economy is thus an open empirical question. If the reduction in political costs following decentralization exceeds the incremental agency costs, then firm value will increase. If, instead, agency costs exceed the reduction in political costs, then firm value will decrease.

This study uses different proxies to gauge the extent of decentralization. The first proxy is the length of the control chain between listed firms and the government. As Qian and Stiglitz (1996) report, managerial autonomy is enhanced, and political intervention reduced, in companies that maintain their distance from the government through a series of organizational transformations.[6] Accordingly, we predict that the longer the control chain, the fewer political costs for the firm. However, corporate insider agency problems, such as tunneling and asset stripping may become worse when government control is reduced and lessen firm value.

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[6] Qian and Stiglitz (1996) report several cases of such organizational transformation. Qian (1996) documents the following process: "a state-owned enterprise of Beijing first sets up a wholly-owned subsidiary in a special economic zone of Shenzhen; then the subsidiary enters into a joint venture with domestic and Hong Kong partners; later the joint venture sets up another subsidiary in Pudong development zone in Shanghai, and then the subsidiary forms another joint venture with a TVE (Tower-village Enterprise) in nearby Wuxi of Jiangsu. After several rounds of transformation, effective managerial control expands."

The second proxy is the identity of the direct controlling shareholder. When this shareholder is an SSOE, the State's control over the listed firm is more rigorous. According to China's Company Law (1993), SSOEs are wholly owned by State-authorized organizations (institutions or government departments). Such a company's chairman and deputy chairman will be directly appointed by a State-authorized organization. Thus, although the firm's board of directors may make decisions about certain business activities, the most important decisions, including those with regard to mergers and acquisitions, dissolution, changes in capital and bond issuance, are ultimately made by the State-authorized organization. Accordingly, a listed firm immediately held by an SSOE bears higher political costs and lacks the opportunity to reduce its size.

Our third proxy is the divergence between the cash flow and control rights held by the ultimate controller and government agencies. Such divergence results from a longer control chain and thus represents the level of separation between the business and the government (Qian, 1996), particularly when the shareholders in this chain are non-SSOEs. The degree of divergence is measured in three ways: ultimate control rights divided by cash flows rights, the difference between control rights and cash flow rights, and a dummy variable that equals one if cash flow rights are weaker than control rights and zero if they are equal. Greater divergence between the two types of rights implies lower political costs for the firm.

4. Data Collection and Descriptive Statistics

Since 2004, listed companies in China have been required to disclose their complete control chain, including their ultimate owner, in their annual reports. This requirement provides us with an opportunity to investigate in detail the relationship between the ultimate control structure and firm value and, using the aforementioned proxies, to determine the appropriate level of separation between firm and government.

Control chain data were manually collected from the 2004 annual reports of all listed firms in China. Other financial and stock market data were obtained from Tsinghua University's Center for China Finance Research (CCFR) database. The definitions of all variables used in this paper are explained in Table 1.

Table 1. Definitions of Variables

Variable	Description
SSOE	Equals one if the direct controlling shareholder is an SSOE or government bureau
LAYER	Measured by the number of ownership layers connecting listed companies to government agencies
OC1	Ln (ultimate control rights/ultimate cash flow rights)
OC2	Ultimate control rights minus (-) ultimate cash flow rights

Variable	Description
OC3	Dummy variable that equals one if the ultimate cash flow rights are less than the control rights and zero otherwise
BLOCK	Dummy variable that equals one if there is more than one large shareholder and zero otherwise
H3	Square root of total squared ownership of the three largest shareholders
Current	Current assets/Current liabilities
Leverage	Total liabilities/Total assets
Accounts receivable turnover	Sales/Year-end accounts receivables
Inventory turnover	COGS/Year-end inventory
Total assets turnover	Sales/Total assets
Profit margin from core business	(Net sales - COGS - operating taxes - operating expenses - management expenses - financial expenses)/Net sales
Net profit margin	Net income/Net sales
ROA	Net income/Year-end total assets
CROA	(Net sales - COGS - operating taxes - operating expense - management expenses - financial expenses)/Year-end total assets
CFROA	Cash from operations/Year-end total assets
ROE	Net income/Year-end equity
CROE	(Net sales - COGS - operating taxes - operating expenses - management expenses - financial expenses)/Year-end equity
CFROE	Cash from operations/Year-end equity
MB	Market price/Book value of equity per share
Tobin's Q1	(Book value of liability + Market price × Total shares outstanding)/Book value of total assets
Tobin's Q2	(Book value of liability + Market price × Tradable shares outstanding + Book value of equity per share × Non-tradable shares outstanding)/Book value of total assets
Age	Number of years from the IPO year to 2004
Size	Natural log of total assets

As shown in Table 2, out of all 1,340 listed companies in 2004, we identify 889 firms as our sample firms, which provide complete layer information on how they are ultimately controlled by government agencies.[7] The industry distribution of sample

[7] Among all 1,340 listed firms that provide annual report, 96 firms do not provide clear information of their ultimate controller; 302 firms are ultimately controlled by persons (which is defined as privately-owned firms). The remained 942 are classified as state-owned listed companies whose ultimate controllers are government agencies, including local and central government bureaus or state assets management bureaus, and research institutions and other organizations. To focus on government's intervention, we exclude 49 firms ultimately controlled by research institutions and other organizations. Among the remained 893 firms that are defined as state-owned listed companies with government agencies as ultimately controllers, 889 provide complete layer information and indentified as our sample firms.

firms is consistent with that of all listed companies. In particular, we exclude firms from financial industry. Government control 66% of listed companies according to our sample. In particular, government control varies by industry in China. In such industries as IT, Publishing and Diversified, there are relatively less state-owned firms. In the mining, utility and transportation sectors, in contrast, most firms (more than 80%) are ultimately controlled by government.

Table 2. Industry Distribution of Sample Firms

	Firms that disclose control chain information	Sample firms ultimately controlled by government[a]	% of sample firms over all listed companies
Number of Observations	1340	889	66%
Agriculture	37	21	57%
Mining	25	21	84%
Manufacturing	764	528	69%
Utilities	56	51	91%
Construction	28	19	68%
Transportation	56	47	84%
IT	84	39	46%
Wholesale	96	68	71%
Finance	10	0	0%
Real estate	48	30	63%
Services	40	31	78%
Publishing	11	3	27%
Diversified	85	31	36%

[a] *Among all Chinese listed companies whose ultimate controllers are government agencies, our sample includes 889 of them, which provide information of layer.*

We investigate four characteristics of the ultimate control chain: ultimate owner, control chain length, identity of the direct controlling shareholder, and the degree of divergence between the ultimate cash flow rights and control rights held by the government.

As previously noted, in our definition, the ultimate controller must be a government department.[8] In some instances, although we were able to identify the control chain from the listed company to the government, we were unable to find shareholding information for the intermediate level of the chain. In these cases, ultimate cash flow

[8] When a firm discloses that its ultimate owner is another company, then we trace the chain to the upper level, that is, the government level; otherwise, this firm is put into the group for which the ultimate owner cannot be identified.

and control rights data were unavailable. Therefore, the number of observations for our analysis of ultimate owners and the number of control layers is larger than that for our analysis of the identity of the direct controlling shareholders and the divergence between the cash flow and control rights ultimately held by the government.

When calculating the length of the control chain, we identify the chain(s) that connects the largest ultimate owner and the company in question and count the number of layers it contains. When the ultimate owner has several control chains through which to control the listed firm, the number of layers is determined by those in which the ultimate owner has the most voting rights.

In line with Claessens *et al.* (2000) and La Porta *et al.* (1999), our definition of ownership relies on cash-flow rights and our definition of control on voting rights; that is, ownership is equal to the product of the ownership stakes along the control chain, whereas control rights are the weakest link in the chain of voting rights. When an ultimate owner has several control chains through which to control the votes in a company, we trace those chains individually and then sum up the control (cash flow) rights to yield the ultimate control (cash flow) share.

4.1. Who Controls China's Listed firms?

Of the 889 government-controlled firms in our final sample (Table 2), 509 (57% of government-controlled firms) are controlled by local SAMBs. The second largest group of firms includes the 197 that are controlled by a central SAMB. These firms represent 22.1% of all government-controlled firms. These figures show that since the SOE reforms, both the central and local governments control listed firms primarily through SAMBs. The other firms in our final sample include 161 controlled by other local government bureaus (18.3% of government-controlled firms) and 22 controlled by other central government bureaus (2.5% of government-controlled firms).

4.2. How Does the Government Control Listed Companies?

Table 3 presents the ownership characteristics of government-controlled SOEs. The government controls 84% of companies through an SSOE at the second level of the control chain. This percentage is even higher (around 95%) for central government-controlled firms. 64% of sample firms and even more of the firms controlled by local governments, also have an SSOE as their direct controlling shareholder.

Table 3. Control Structure of State-Controlled Listed Companies[a]

			Whole sample	Ultimate Government Agencies			
				Central SAMB	Other Central Government	Local SAMB	Other Local Government
Number of Observations			889	197	22	509	161
% of firms with SSOE at the second to top layer			84.40	96.95	95.45	81.14	77.91
% of firms with SSOE as the largest shareholder			64.19	54.31	45.45	68.70	64.60
Mean of layer			2.33	2.81	2.59	2.17	2.25
Number of Firms with	1	layer	56	0	0	46	10
	2	layers	543	75	11	348	109
	3	layers	241	94	9	102	36
	4	layers	38	21	2	11	4
	5	layers	8	4	0	2	2
	6	layers	3	3	0	0	0
Mean of Ultimate ownership (%)			42.56	42.86	30.65	42.72	43.30
Mean of Ultimate control (%)			46.09	48.09	38.68	45.60	46.12
Mean of OC1			0.1231	0.1902	0.3618	0.0932	0.0964
Mean of OC2 (%)			3.52	5.23	8.03%	2.88	2.82%
Mean of OC3 (%)			27.83	39.59	54.55	22.00	28.82
Mean largest shareholding (%)			46.02	49.06	38.63	45.43	45.21
Mean of H3 (%)			48.46	51.56	42.77	47.74	47.76

[a] *Definitions of the variables are given in Table 1.*

With regard to the length of the ultimate control chain, it can be seen from Table 3 that, on average, there are 2.33 layers between the ultimate owner and the listed firm. In 56 of the firms in our sample, there is only one layer between the two, and in three firms there are six. The numbers of layers in SAMB- and other government bureau-controlled firms are similar (2.17 and 2.25, respectively), but central government-controlled firms tend to have longer control chains, an average of 2.81 and 2.59 layers, respectively, in those controlled by SAMBs and other government bureaus. The possible reason for this is that central government-controlled firms are larger. As a result, the common practice is for the subsidiaries in the group, rather than the group itself, to go public.

The degree of divergence between ownership and government control is also shown in Table 3, from which it can be seen that, on average, ultimate controllers own 42.6% of the cash flow rights in listed firms. Central SAMBs and local government bureaus other than SAMBs have greater cash flow rights. The mean control rights held by ultimate owners are 46.1%, with central SAMBs enjoying the greatest percentage. During the data collection process, we noted that cross-holdings are rare in government-controlled firms. Furthermore, although there are a number of layers in the control

chain, the degree of divergence between ownership and government control is unremarkable, which implies that the state's intention was probably not to establish pyramidal structures. The mean difference between the ultimate owner's control rights and cash flow rights in our sample of listed firms is 3.5%, with the degree of divergence the least in firms controlled by local governments. This finding demonstrates that there is still little separation between government and SOEs, particularly those controlled by local governments. Consistent with our supposition that the degree of divergence between ownership and control is a good proxy for such separation, we find that in a large percentage of our sample there is no difference between ultimate ownership and control rights. Only 27.8% of the firms have greater ultimate control rights than cash flow rights, with the central government tending to delegate more rights to enterprises.

Finally, Table 3 also shows that among our sample firms, the direct controlling shareholder holds an average of 46% of shares, with the largest shareholders under central SAMB control owning a greater number. This may be because central SAMB-controlled firms are larger. The mean Herfindahl index of the three largest shareholders is 48.5%.

4.3. To What Extent is the Government the Only Large Shareholder?

Table 4. Probability that the Government has Sole Ultimate Control[a]

	Control > 20%	Control > 50%	Largest shareholding > 20%	Largest shareholding > 50%
Whole sample	92.13	42.07	93.64	43.04
Group 1	94.42	45.24	94.92	51.78
Group 2	93.64	31.82	86.36	31.82
Group 3	43.04	42.04	93.12	42.44
Group 4	92.64	39.26	96.32	41.10
Group 5	86.11	26.22	86.11	19.44
Agriculture	95.45	45.45	90.91	36.36
Mining	100.00	80.95	100.00	80.95
Manufacturing	92.74	45.07	95.16	46.55
Utilities	92.16	39.22	92.16	39.22
Construction	100.00	47.37	100.00	52.63
Transportation	97.92	50.00	97.92	52.08
IT	90.00	32.00	92.00	36.00
Wholesale	88.24	32.35	88.24	29.41
Real estate	87.10	29.03	90.32	29.03
Service	96.77	35.48	100.00	35.48
Publishing	100.00	50.00	100.00	50.00
Diversified	76.32	18.42	76.32	21.05

[a] *This table reports the probability that the government has sole control in the whole sample, different sub-samples and different industries. Four criteria are used to determine whether the government has sole control: control rights of the ultimate owner > 20%, control rights of the ultimate owner > 50%, largest shareholding > 20% and largest shareholding > 50%. Group 1 includes firms with a central SAMB as the ultimate owner. Group 2 includes firms with a central government bureau as the ultimate owner. Group 3 includes firms with a local SAMB as the ultimate owner. Group 4 includes firms with a local government bureau as the ultimate owner. Group 5 includes firms with universities or research institutions as the ultimate owner.*

Table 4 shows the percentage of firms in which the government is the only large shareholder. We use four criteria to determine the level of government control over listed firms: the government's ultimate control rights are greater than 20% (1) or 50% (2), and its direct ownership is greater than 20% (3) or 50% (4). It can be seen that 92.1% of ultimate owners have a relatively strong degree of control over listed companies (control rights greater than 20%), and 42.1% have absolute control (control rights greater than 50%). When direct ownership is used as the criterion, the fraction of firms under sole government control is even greater, with the central government more likely than local governments to have absolute control. Government control is strongest in the mining and transportation industries and weaker in more diversified sectors.

5. Empirical Analysis

Table 5 gives general information on SOE performance. Compared with the industry median, SOEs tend to be larger and have higher current, turnover and market performance ratios, but lower profit ratios. A t-test on the variance between central and local government-controlled firms shows that the former are significantly larger than the latter. Firms under central government control also have significantly lower degrees of leverage and higher profit margins from their core business, as well as higher net profit margins and greater ROA, CROA, ROE, CROE and Tobin's Qs (see Table 1 for variable definitions).

Table 5. Performance of SOEs[a]

	Local government bureau-controlled		Central government bureau-controlled		t-test	Wilcoxon Z test
	Mean	Median	Mean	Median		
	(1)	(2)	(3)	(4)	(5)	(6)
Current ratio	0.17	0.00	0.31	0.16	-1.20	-2.7480***
Leverage	-2.00%	0.21%	-6.00%	-4.38%	1.97**	2.2296**
Total assets (millions Yuan)	2350.00	1786.73	2810.00	1802.86	-2.06**	-0.2529
Accounts receivable turnover	4.14	0.61	1.51	0.76	1.62	0.0730
Inventory turnover	0.65	0.14	-1.10	-0.18	1.36	1.6620*
Total assets turnover	0.07	0.01	0.10	0.09	-1.61	-1.8298*
Profit margin from core business	-9.40%	-0.27%	-3.10%	0.18%	-2.13**	-1.3062
Net profit margin	-12.00%	-0.34%	-2.60%	0.34%	-2.14**	-1.2391
ROA	-1.40%	-0.06%	-0.20%	0.38%	-2.94***	-2.0256**
CROA	-1.20%	-0.04%	-0.20%	0.06%	-2.63***	-1.8421*
CFROA	-0.50%	0.17%	-1.00%	0.02%	-0.2	-0.3757
ROE	-10.70%	-0.19%	-3.40%	-0.05%	-2.47**	-1.4816
CROE	-10.50%	-0.34%	-3.00%	-0.04%	-2.34**	-1.4508
CFROE	-0.04%	0.41%	-2.30%	0.14%	-0.39	0.0006
MB	0.16	-0.10	0.15	0.10	-0.34	-2.1759**
Tobin's Q1	0.03	-0.07	0.08	0.08	-2.09**	-2.7974***
Tobin's Q2	0.01	-0.02	0.02	0.01	-1.21	-1.6780*

*Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.*

[a] *This table provides performance information for government-controlled listed firms. All of the variables (except Total assets) are industry median-adjusted values. Columns (1) and (3) report the sample means, Column (2) and (4) report the sample median. Column (5) and (6) report the results of t-test and Wilcoxon Z-test between firms controlled by the local and central governments, respectively.*

Tables 6 to 8 present the effects of ultimate control structure on firm value, as measured by the market-to-book ratio (MB).[9] Our key independent variables include all of the decentralization measures: LAYER, measured by the number of ownership layers that connect a listed company to a government agency; SSOE, a dummy variable that equals one if the direct controlling shareholder is an SSOE or government bureau and zero otherwise; OC1, measured by ultimate control rights divided by ultimate cash flow rights; OC2, calculated by ultimate control rights minus ultimate cash flow rights; and OC3, a dummy variable that equals one if ultimate cash flow rights are less than control rights and zero otherwise.

In addition to these decentralization variables, we also adopt several control variables, as follows. BLOCK is a dummy variable that equals one if there is more than one large shareholder and zero otherwise. We include this variable to control for the positive impact on firm value of the presence of another legal person shareholder or foreign investor, which may reduce managerial agency problems. H3, which is calculated by the square root of the total squared ownership of the three largest shareholders, is used to control for ownership concentration. Although firms with concentrated ownership may have fewer agency problems, they may also suffer a greater political burden, as the government has more powerful control. Therefore, the coefficient between H3 and firm value is difficult to predict, and we determine it from the empirical results. Finally, we also control for firm age (Age), firm size (Size) and the leverage ratio (Leverage), all being found in prior studies to be correlated with firm performance.

We first include all sample firms into the regression (see Table 6). Except for SSOE, all of the key independent variables are significantly related to firm value. The coefficient between LAYER and firm value is 0.22 and significant at the 1% level; that is, one additional layer would improve firm value by 22 percent. The significantly positive parameters for OC1, OC2 and OC3 indicate that firm value is greater when there is more separation between the government and the enterprise. As all of these variables are proxies for the level of decentralization, which is associated with lower political costs and higher agency costs, these results suggest that the former costs are more severe than the latter in government-controlled firms. When a firm is further separated from the government (through a longer control chain or a greater degree of divergence between ultimate ownership and control rights), then although the agency costs increase, the lower political costs become the dominant effect, and firm value increases. Table 6 also shows leverage and the number of years from the IPO is positively correlated to firm value, and larger firms to have less value. The shareholding concentration at the direct control level is also found to have a positive and significant effect on firm performance.

9 We also measure it by Tobin's Q, with consistent results.

Table 6. Ownership Structure and Firm Performance: Whole Sample[a]

	(1)	(2)	(3)	(4)
Intercept	6.2908***	6.6742***	6.8315***	6.7625***
	(5.82)	(6.23)	(6.32)	(6.33)
LAYER	0.2198***			
	(3.25)			
SSOE	-0.1577			
	(-1.06)			
OC1		0.6832***		
		(4.00)		
OC2			0.0140**	
			(2.10)	
OC3				0.2004*
				(1.94)
BLOCK	0.2596	0.0061*	0.0047	0.0055*
	(1.38)	(1.83)	(1.40)	(1.66)
H3	0.0053	0.3413**	0.3840**	0.3536**
	(1.61)	(2.09)	(2.33)	(2.20)
Age	0.0361**	0.0357**	0.0368**	0.0356**
	(2.00)	(1.98)	(2.02)	(1.97)
Size	-0.3528***	-0.3649***	-0.3701***	-0.3636***
	(-7.00)	(-7.24)	(-7.28)	(-7.21)
Leverage	0.7639***	0.8840***	0.9060***	0.7493***
	(3.36)	(3.84)	(3.90)	(3.29)
Adj_R^2	0.0967	0.1121	0.0973	0.0888
F	12.01***	15.71***	13.56***	12.72***
Observations	889	820	820	820

*Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively. The t statistics are in parentheses.*

[a] *This table reports the effects of ownership structure on firm performance, as measured by MB. The sample includes all firms with non-persons as the ultimate owner (firms in the finance industry are excluded). All of the variables except for LAYER and SSOE are winsorized at 1% and 99%.*

In Tables 7 and 8, we present the effects on firm value of ultimate control structure in our subsamples of local government-controlled firms and central government-controlled firms, respectively. Consistent with our prediction and the results presented in Table 6, we find that in the latter, firm value increases with the extent of decentralization. However, this is not the case for central government-controlled firms, in which further decentralization fails to improve firm performance. These findings confirm our understanding that the central government engages in less political intervention

in the firms under its control. Moreover, there is, on average, a longer control chain between the central government and the SOEs under its control than is the case with local government-controlled firms, which suggests that reduced political costs do not sufficiently compensate for increased agency costs in central government-controlled firms. In other words, decentralization is more successful in local government-controlled firms.

Table 7. Ownership Structure and Firm Performance: Local Government-Controlled SOEs[a]

	(1)	(2)	(3)	(4)
Intercept	7.1609***	7.2547***	7.4239***	7.5656***
	(5.49)	(5.56)	(5.65)	(5.86)
LAYER	0.2850***			
	(3.00)			
SSOE	-0.1538			
	(-0.96)			
OC1		0.8107***		
		(3.85)		
OC2			0.0200**	
			(2.40)	
OC3				0.26434**
				(2.13)
BLOCK	0.2480	0.0026	0.0011	0.0023
	(1.08)	(0.69)	(0.29)	(0.61)
H3	0.0027	0.4054**	0.4413**	0.4135**
	(0.72)	(2.23)	(2.41)	(2.34)
Age	0.0266	0.0278	0.0281	0.0265
	(1.32)	(1.37)	(1.37)	(1.31)
Size	-0.3895***	-0.3809***	-0.3864***	-0.3935***
	(-6.42)	(-6.23)	(-6.27)	(-6.48)
Leverage	0.6543**	0.6162**	0.6336**	0.6321**
	(2.47)	(2.33)	(2.38)	(2.38)
Adj_R^2	0.1022	0.1114	0.0959	0.1287
F	9.80***	11.90***	10.23***	5.33***
Observations	670	626	626	626

*Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively. The T statistics are in parentheses.*

[a] *This table reports the effects of ownership structure on firm performance, as measured by MB. The sample includes all firms with a local SAMB or local government bureau as the ultimate owner (firms in the finance industry are excluded). All of the variables except for LAYER and SSOE are winsorized at 1% and 99%.*

Table 8. Ownership Structure and Firm Performance: Central Government-Controlled SOEs[a]

	(1)	(2)	(3)	(4)
Intercept	6.3438***	6.5986***	6.6567***	5.5038***
	(2.98)	(3.41)	(3.43)	(2.78)
LAYER	0.0469			
	(0.39)			
SSOE	-1.0448*			
	(-1.75)			
OC1		0.2950		
		(0.96)		
OC2			-0.0024	
			(-0.20)	
OC3				-0.0553
				(-0.27)
BLOCK	0.1246	0.0141**	0.0133*	0.0132*
	(0.33)	(2.02)	(1.92)	(1.84)
H3	0.0135*	0.1380	0.2125	0.1902
	(1.89)	(0.38)	(0.57)	(0.50)
Age	0.0686*	0.0726*	0.0747*	0.0813**
	(1.72)	(1.88)	(1.94)	(2.03)
Size	-0.3180***	-0.3916***	-0.3929***	-0.3258***
	(-3.37)	(-4.25)	(-4.26)	(-3.48)
Leverage	1.0149**	1.7603***	1.7619***	1.0608**
	(2.25)	(3.71)	(3.70)	(2.34)
Adj_R^2	0.0886	0.1332	0.0952	0.0774
F	3.47***	5.51***	10.51***	3.59***
Observations	219	194	194	194

*Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively. The t statistics are in parentheses.*

[a] *This table reports the effects of ownership structure on firm performance, as measured by MB. The sample includes all firms with a central SAMB or central government bureau as the ultimate owner (firms in the finance industry are excluded). All of the variables except for LAYER and SSOE are winsorized at 1% and 99%.*

6. Conclusions

This study documents the ultimate control structures of state-owned listed companies in China. We find that more than 70% of these firms are ultimately owned by the state and controlled by local governments or branches of the central government. In line with the evidence reported in La Porta *et al.* (1999) on the structures of state-owned firms, we

show that the State holds listed companies directly or indirectly through a control chain. Our results also indicate that the degree of divergence between cash flow rights and government control rights is insignificant and that the State strengthens its control over listed firms by reducing the length of the control chain or by employing SSOEs as the immediate shareholders.

Consistent with Qian (1996), we take both political costs and agency costs into account to explain the impact of ultimate control structures on firm value. Compared with previous studies, which generally consider only one of these costs, this approach allows us to interpret the relationship between firm value and ownership structure more fully. We find that, in general, firms perform better when there is a greater degree of separation from government. This is particularly true of firms controlled by local governments. Thus, we conclude that local governments should devolve more control rights to corporate insiders to improve firm efficiency.

This paper has implications for state enterprise reform in developing countries. Although the governments in these countries will most likely retain a substantial degree of control over listed companies, we demonstrate the importance of identifying the most efficient type of control structure and show that greater decentralization usually improves firm performance.

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