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Le Wang

**(Graduate School of Commerce and management,
Hitotsubashi University)**

Qun Liu

(Hitotsubashi University Research Center for East Asia Policy)

Masaharu Hanazaki

**(Graduate School of Commerce and management,
Hitotsubashi University)**

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Corporate Governance and Corporate Performance under Market Socialism: Empirical
Analysis of Listed Companies in China*

Le Wang*

Qun Liu[†]

Masaharu Hanazaki*

This research quantitatively analyzes the relationship between the presence of government in ownership structure and the corporate board, and corporate performance and corporate behavior, using financial data for all listed non-financial firms in China from 2000 to 2014. We find government ownership and corporate performance has a non-linear U-shaped correlation. We then classify the sample firms into two groups based on whether their chief executive officers (CEOs) and independent directors are government officials, and empirically examine the difference in corporate behavior between the two groups. We find that government-affiliated CEOs aggravate corporate profitability, growth potential, and financial strength, but independent directors have no considerable influence on these factors. This shows that the government enforces its policy effectively via human resource management (HRM).

Key words: Corporate Governance, Market Socialism, Board of Directors.

JEL codes: G34, H70, P34.

*Wang and Hanazaki: Graduate School of Commerce and management, Hitotsubashi University.

[†]Liu: Hitotsubashi University Research Center for East Asia Policy.

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1. Introduction

In 2014, the Chinese economy, which had sustained high growth for 20 years, began to slow down. It is critically important to examine the function and role of corporate governance, on which the government has strong influence, to determine whether to investigate the reasons for the so-called miracle economic growth, or to measure the policy responses to the new difficult phase.

As the biggest market socialist country in the world, China's economy is most distinguished by the initiatives taken by the government. Many researchers have shown the effects that the Chinese government as a shareholder has on firms. This research suggests various correlations between government ownership and performance of firms, such as positive, negative and U-shaped. However, the mechanism by which the government as a large shareholder affects performance remains largely unknown.

This research quantitatively analyzes the relationship between the presence of government in ownership structure and the corporate board, and corporate performance and corporate behavior, using financial data for all listed non-financial firms in China from 2000 to 2014. We find government ownership and corporate performance has a non-linear U-shaped correlation. We then classify the sample firms into two groups based on whether their chief executive officers (CEOs) and independent directors are government officials, and empirically examine the difference in corporate behavior between the two groups. We find that government-affiliated CEOs aggravate corporate profitability, growth potential, and financial strength, but independent directors have no significant influence on these factors. This shows that the government enforces its policy effectively via human resource management (HRM).

The rest of this paper is organized as follows. Section 2 surveys previous studies. Section 3

describes the formal changes in the corporate governance system of China's listed firms, and presents our hypotheses. Section 4 describes the data and variables used in this research. Section 5 presents the regression results. Section 6 offers concluding remarks.

2. Survey

2.1 Role of Government

Shleifer and Vishny (1998) discuss the “grabbing hand” of government under various economic systems. They demonstrate that politicians tend to take advantage of the system to pursue their own interests, and recommend the privatization of state-owned enterprises. Estrin and Perotin (1991) argue that as the shareholder of firms, government gives preference to its political and economic interests over maximization of the firms' value. The authors particularize “prevalence of public service,” “redistribution of wealth,” and “employment maintenance” as the political and economic interest. However, these interests might be inconsistent with each other, and might be modified frequently. Again, these factors decrease the effectiveness of state-owned enterprises. On the other hand, Qian (2003) analyzes economic reform in China, and concludes that local governments contribute significantly to promoting the growth of the private economy as a result of protecting township–village enterprises to secure their fiscal revenue and increasing public investment.

The results of the empirical analysis with respect to listed firms in China are not uniform. Huyghebaert and Wang (2012) state that firms with high government ownership have more transactions between interested parties and more labor surpluses, which is consistent with the theory of the “grabbing hand.” Bai *et al.* (2004) demonstrate that a firm whose largest shareholder is government present lower corporate value. Chen and Al-Najjar (2012) argue that

the higher is the ownership that the government holds, the more inefficient is corporate management and the more severe are agency problems. In addition, the authors point out that the efficiency of the monitoring mechanism worsens and the compensation of board members increases in the case of high government ownership.

On the other hand, a large number of researchers study the “helping hand” of government. Liu *et al.* (2012) study 970 listed firms before and after the world financial crisis of 2008, and find that state-owned firms (whose controlling shareholder is government) did not perform worse during the crisis period compared to usual business periods, although their performance is usually bad. The authors show a U-shaped relationship between large shareholder¹ ownership and firm performance, that is, expropriation tends to occur when the large shareholders’ ownership is low, but improved resistance to crisis can be expected when the large shareholders’ ownership is high. Similarly, Tian and Estrin (2008) point out a U-shaped relationship between government ownership and corporate performance. The authors show that when government ownership increases, voting rights and cash flow rights become higher simultaneously², which alleviates the agency problem. In particular, under such circumstances as in China, where the quality of law enforcement is low, governance of large shareholders is expected to be high. Blanchard and Shleifer (2001) demonstrate that compared with Russia, China’s private economy has developed rapidly, and help from local government plays an important role.

2.2 Influence of CEO Characteristics on Corporate Management

In China, a series of reforms has been accomplished regarding central government-owned enterprises (nearly 100% controlled by central government) and partly state-owned enterprises,

¹ Large shareholders are defined as those whose shareholding ratio is more than 5%.

² Divergence between voting rights and cash flow rights is rare in China.

although improvement of management efficiency remains a major problem. Qian (2003) attributes the failure of these reforms to the appointment of government bureaucrats as firm managers. First, the government bureaucrats or ex-bureaucrats who are appointed as firm managers do not have excellent management skills. Second, the appointments are political and opaque, and do not comply with general assessment criteria of the market. Third, government bureaucrats usually give preference to political objectives over improvements of management and corporate performance. In other words, if CEOs are government affiliated, they work strictly as government's grabbing hand.

Because most CEOs of listed firms are bureaucrats appointed by government in China, if the controlling shareholder is government, the relationship of CEOs and government becomes even closer. Fan *et al.* (2007) analyze 790 firms that went public and were partly privatized between 1993 and 2001. The authors define a CEO who used to belong to the central government, local government, or military force as a government-affiliated CEO, and find that corporate performance in terms of both share prices and financial indexes are worse in the government-affiliated CEO's firm. In addition, the authors show that in the government-affiliated CEO's firm, the corporate board has more government officials, less experts, and higher average age of board members.

With respect to CEOs' shareholding ratio, Liu *et al.* (2012) indicate that the higher is the shareholding ratio of the CEO or director, the better is the performance during the financial crisis. On the other hand, Chen *et al.* (2010) show that in firms whose CEOs hold shares, compensation of directors is increased, adhesion with government bureaucrats is facilitated and value of corporate assets is compromised. However, generally in China, it is rare for insiders to own treasury stock, and stock options are not prevalent.

Non-government-affiliated CEOs can be divided into insider and outsider CEOs. Shapiro *et al.* (2015) analyze the data of 390 enterprises in Zhejiang province, most of which are small and medium sized, to indicate that outsider CEOs tend to oversee greater innovation. On the other hand, there remains little research on the effects of insider CEOs on corporate performance for Chinese enterprises.

There is a large amount of research relating to corporate performance when CEOs concurrently serve as presidents or vice-presidents. When a firm's CEO also works as the president of the firm, the recurring cost and agency cost are both high (Yu & Ashton, 2015). When a firm's CEO also works as the president or vice-president of the firm, the corporate value becomes low (Bai *et al.* (2004)).

2.3 Corporate Board of Directors and Independent Directors

Chen and Al-Najjar (2012) examine the size of the corporate board and the independence of directors, and find positive correlation between the number of directors and the scale of the supervisory board, the size of the firm, and corporate value, and negative correlation between the number of directors and concentration of ownership. Independence measured by the rate of independent directors is correlated negatively with the scale of the supervisory board and the shareholding ratio of government. The authors interpret the results in two ways. First, the scale of the supervisory board, the shareholding ratio of government, and the role of independent directors are alternative to each other in terms of monitoring function for managers. If the government as a large shareholder were to carry out the monitoring function for managers, the agency problem would be alleviated and it would be possible to reduce the number of independent directors in the meantime. Second, from the perspective of the "grabbing hand" theory, the government is the controlling shareholder. If the government expropriated minority shareholders

or impaired corporate value, it would intentionally lower the independence of directors to avoid monitoring. As stated earlier in this section, independent directors can alleviate the agency problem, and increase corporate value.

On the other hand, Stewardship theory indicates that independent directors who are outsiders find it relatively difficult to cooperate with managers who are insiders or other directors, and independent directors have a negative impact on corporate performance. However, Tian and Lau (2001) demonstrate that independent directors do not affect corporate performance at all with regard to listed firms in China. In addition, Cheung *et al.* (2008) analyze listed firms in China by creating governance indexes based on the OECD Principles of Corporate Governance, and show that governance indexes, such as composition of the board of directors, have no effect on corporate value at all.

In China, it is quite common for the government to appoint management and directors for listed firms. Many independent directors are bureaucracy retirees. They are cozy with the controlling shareholders of government and consider remaining loyal to the government as their allegiance (Huyghebaert & Wang, 2012). However, there is no research yet on the position of these independent directors.

3. Transition of Corporate Governance in China and Hypotheses

China's market transition has extended over 30 years since it launched economic reforms at the end of 1978. China's economy has been transformed by successive waves of economic reform. Extensive institutional reforms, such as transfer of authority from central government to local government, tax and fiscal reform, partial liberalization of commodity prices, development of capital markets, and privatization of state-owned enterprises, have been carried out. However,

in the following subsection, we focus on the adoption of a modern enterprise system.

3.1 Adoption of Modern Enterprise System

The adoption of the Company Law³ in 1994 signaled the start of China's modern enterprise system. The organizational structure is the same as that in developed countries in terms of shareholders' meetings, boards of directors and supervisory boards, management, obligations, and authorities. However, the dissimilarity in the case of wholly state-owned enterprises is that they are 100% held by the government. As a single shareholder cannot hold a shareholder's meeting, a board of directors exercises part of the authority of a shareholders' meeting, and the government sector or agency appointed by the government to oversee the company carries voting rights on important issues.

However, adoption of the modern enterprise system has not been successful in China. In particular, replacement of management and delegation of authority has led to problems. Under the old enterprise regime, a communist party committee, employee representation committee, and labor union committee, referred to as the "three old committees," held voting rights regarding the corporate's operations. The members of the "three old committees" could mutually be appointed to the board of directors, supervisory board, or management, referred to as the "three new committees" under the new enterprise regime. For instance, the board of directors and supervisory board must include employee representatives, and cadres of the communist party committee could serve as directors and auditors. In addition, if a member of the "three new committees" were a communist party member, he/she could join the communist party committee, as per the Decision of the Central Committee of the Communist Party of China on Major Issues Concerning the Reform and Development of State-Owned Enterprises (hereafter, the Decision).

³ Company Law of People's Republic of China.

As a result of mutual entering, power became too concentrated to supervise. There are an increasing number of firms whose chairpersons concurrently serve as president, and in some cases, concurrently as party secretary. To break up the concentration of power, the Decision enables the party secretary and president to serve concurrently, but the chairperson and CEO cannot serve concurrently in principle. Although the Company Law allows an additional post, in the case of listed firms, as long as a reasonable excuse is disclosed, the president can also serve as the chairperson, as is presently the case.

As stated in this subsection, CEOs of listed firms, and in particular, of state-owned-enterprises, have significant power and collaborate closely with the government. Consequently, the CEO is significantly affected by the government. When the government prioritizes political motivation, firm performance is inhibited and corporate value is sacrificed. Consequently, we propose the following hypothesis.

Hypothesis 1. A government-affiliated CEO operates the firm in compliance with the political motivation of the government, not for the purpose of maximizing corporate value, and thereby decreasing corporate value.

3.2 Introduction of Independent Directors

Independent directors were introduced as an option for listed firms in 1997. There were only 27 firms that introduced independent directors in 1999, but this had increased to 70 in 2000, and more than 200 by June 2001. The Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies were issued in August 2001, according to which, listed firms had to introduce at least two independent directors by June 30, 2002, and one-third of the total

board by June 30, 2003.

A higher degree of independence of outside directors is required in China compared to Japan. In addition, the Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies established strict limitations on qualification; for instance, independent directors must have expertise in law, accounting, or economics, and related work experience, as well as being independent. First, in order to ensure independence from the firm, employees or relatives of employees of listed firms cannot become independent directors. Second, in order to ensure independence from the shareholder, people who hold more than 1% of shares, the largest 10 shareholders, and their relatives cannot become independent directors. Third, the people who do not satisfy the above two conditions but provide consulting services in law and accounting to the firm are not eligible. The appointment process of independent directors is decided by voting at the general shareholders' meeting, but candidates are recommended by the board of directors, the supervisory board, or the shareholders. Therefore, recommendations of candidates' and their selection are strongly influenced by major shareholders.

Under the regulations, it is stipulated that shareholders and their stakeholders cannot become independent directors, but the definition of stakeholders of shareholders is ambiguous if the shareholder is government. According to a provisional regulation concerning the supervisory control of state-owned enterprise assets issued on May 27, 2003, the State Council (central government) and the people's government (local government) established their own state-owned assets supervision and management organizations to exercise their functions and responsibilities as shareholders. According to this provision, the State Asset Supervision and Administration Commission (SASAC) is the shareholder of state-owned enterprises rather than the government. In other words, an individual who is not a staff member of the SASAC and its stakeholders is

eligible to be an independent director. As can be observed from previous studies, there are many cases in China in which bureaucrats are appointed after retirement. Consequently, the following hypothesis is proposed.

Hypothesis 2. Government independent directors are susceptible to the influence of the government, leading to declines in the monitoring of corporate management and corporate performance.

3.3 Reform of Stock Ownership Structure

Prior to 2005, the shares of Chinese listed firms were divided into two types: tradable shares that can be traded on the capital market and non-tradable shares that cannot. In the early 1990s when stock exchanges were established in Shanghai and Shenzhen, regulations concerning the initial listing had not yet been developed, and thus, entrepreneurs could buy their own shares and keep them, making it impossible for shares in the firm to trade in the open market. Such non-traded shares owned by individuals were only a part of this picture; most were state-owned stocks held by the government or state-owned enterprises. When state-owned enterprises were listed, in order to prevent the government from losing control of the company, the government deliberately created non-tradable stocks. Since then, because there is no clear definition of the shareholders of state-owned enterprises, the status of non-tradable shares has been maintained.

In China, tradable stocks are classified as follows depending on whether the investor is a national or foreigner, and on which stock exchange market the stocks are issued. A shares are stocks that can be openly transacted in mainland China. B shares are stocks originally listed on domestic stock exchanges for foreign investors, but in which it is now also possible for domestic investors to invest. In addition, H shares, N shares, and S shares are the shares of companies listed in

Hong Kong, New York, and Singapore respectively. Non-tradable shares cannot be traded in the open market, but can be traded between corporations only with the permission of the China Securities Regulatory Commission⁴.

On September 4, 2005, the certification board announced the “Circular of China Securities Regulatory Commission on Distributing the Measures for the Administration of the Share-trading Reform of Listed Companies” (hereafter, Administration Measures), as a result of which, non-tradable shares were reformed to allow trading alongside tradable stocks. A specific concrete reform plan was created for each company, and it could be implemented if approval was received from the general shareholders’ meeting. By the end of 2007, these plans had been implemented in 97% of companies (Lit *et al.*, 2011). However, transactions cannot be made immediately upon completion of approval of procedures for non-tradable stock transactions. The Administration Measures stipulated that within 12 months of implementing the reform plan, sale of non-tradable shares within a range not exceeding 5% of the total number of shares is possible, and within 24 months, sale of non-tradable shares within a range not exceeding 10% of the total number of shares is possible. State-owned enterprises are more strictly restricted. On June 30, 2007, the “Interim Measures for the Administration of State-owned Shareholders’ Transfer of Their Shares of Listed Companies” (hereafter, the Interim Measures) were announced, which stipulate that when selling non-tradable shares of state-owned shareholders, the following two conditions must be satisfied:

- 1) for companies with less than 1 billion shares, less than 5% of shares can be sold in 3 consecutive fiscal years and for companies with more than 1 billion shares, 50 million shares or less than 3% can be sold in this timeframe; and
- 2) it is impossible to transfer control rights of listed companies.

⁴ There are few transactions between individuals but they do exist.

As mentioned above, the ownership structure for state-owned enterprises has been mainly reformed, but there is little research on its effects. Most data used in previous research on the government shareholding ratio and corporate performance are from before 2005, and thus, cannot include the impact of the reform of the ownership structure. Therefore, in this study, we investigate this issue using data from 1999 to 2014. Based on previous studies, we propose the following two hypotheses on the “grabbing hand” and “helping hand.”

Hypothesis 3. The higher is the government shareholding ratio, the easier it is for corporate value, and thereby corporate performance, to decline.

Hypothesis 4. The higher is the government shareholding ratio, the easier it is for companies to obtain production resources by utilizing close relationships with the government, thereby improving corporate performance.

Related to Hypothesis 1 on government CEOs and Hypothesis 2 on government independent directors, the government’s alternative roles as the “grabbing hand” or “helping hand” are possible. We attempt to find some evidence for these roles in the following sections.

4. Data and Variables

4.1 Data Description

We collect financial data from China Listed Firms’ Corporate Governance Research Database provided by GTA (CSMAR Solution) from 2000 until 2014. This comprehensive database includes all companies listed on the Shanghai and Shenzhen stock exchanges.

Information on corporate governance, such as that on shareholders and executives, is used 1 year ahead of the financial data. Therefore, corporate governance data are required from 1999 to 2013, although we use data on only three time points, for 1999, 2006, and 2013, because it takes time to manually collect and classify the attributes of CEOs and independent directors.

With respect to target companies, we include 347 chemical companies, 321 electromechanical manufacturing companies, 209 general machine manufacturing companies, 175 information and communication industries, 164 construction and real estate companies, 131 commercial companies, 100 service companies, 96 transportation equipment manufacturers, 45 mining companies, and 22 transportation companies from 10 industries. In total, for 2014, 1610 companies out of 2586 companies listed on both exchanges are included in the dataset⁵. In addition, considering survival bias, we target new entry companies and companies that have delisted during the period of study.

4.2 Definition of Variables

Explained variables are two corporate performance measures, namely, return on assets (ROA) and return on equity (ROE), one growth measure, that is, Sales Growth, and one financial structure measure, that is, DEBT (debt ratio).

Much previous research on listed companies in China focuses on evaluating corporate value and corporate performance using stock price data; however, in this study, we use only corporate financial data. The main reason is that China's capital market is still incomplete, the stock price fluctuates drastically, the stock turnover rate is high, and the average holding period is short,

⁵ This number is based on 2014, and when tracing back to the past, the number of companies decreases. There are only governance data for only 949 companies in 1999.

and thus, the stock price cannot reflect corporate performance correctly. In fact, some studies (Bai *et al.*, 2004; Yu & Ashton, 2015) point out that financial information accurately represents corporate performance rather than market information, such as stock prices.

The key explanatory variables that represent the structure of corporate governance are divided into three groups: ownership structure variables, CEO attribute variables, and independent director attribute variables.

We classify the top 10 shareholders into five types, and define the ownership ratio of each group as the ownership structure variables. They are the State Ratio (ownership ratio of state and government-affiliated corporations), Private Ratio (ownership ratio of private enterprises), Foreign Ratio (ownership ratio of foreign capital), Person Ratio (domestic individual ownership ratio), and Director Ratio (ownership ratio of management and directors).

Previous research classifies the ownership ratio into four groups: national holding, domestic corporation holding, foreign ownership, and individual holding. National holding is the same as State Ratio. However, domestic corporation holding is problematic, as it contains the ownership of both government-affiliated corporations and private enterprises whose corporate attributes are completely different. This is because the government might influence listed companies through state-owned corporations. In this study, we analyze domestic corporations separately for government-based corporations and private corporations. We examine the corporates' annual reports, and if the largest shareholder is the government or another state-owned enterprise, we define the corporation as government affiliated, otherwise private.

In addition to the government's shareholding ratio, we use the following two dummy variables to investigate the state-owned enterprise and the private enterprise: `over50_dummy = 1` when more

than 50% of the company's shares are owned by the government, and control dummy = 1 when the largest shareholder is the government.

The variables regarding the CEO's attributes are roughly divided into two types: "government-based" and "non-government-based." The latter type is further divided into "insider" and "outsider." A government CEO (state_CEO) is a CEO with some connection to the government. An internal CEO (insider) is not related to the government, but has become the CEO after performing various duties for the same company for a long time. An external CEO (outsider) is CEO hired from the outside without a connection to the government or company.

Regarding government-based CEOs, the central government and local governments might have different attitudes toward the company, different motivations for economic development, and different degrees of influence from the government depending on the CEO's last job. Therefore, government-based CEOs are delineated further by their last jobs, indicated by the following five dummy variables: Central_gov_CEO indicates a CEO from central government, local_gov_CEO indicates a CEO from local government, state_rea_CEO indicates a CEO from a government research institute, SOE_CEO indicates a CEO from a state-owned enterprise and Commu_com_CEO indicates a CEO from the Communist Party Committee.

In China, there are various research institutes belonging to central and local governments. Among them, the Chinese Academy of Sciences and the Chinese Academy of Engineering, the so-called "the two academies," are famous. Such research institutes provide consulting services to the government and their relationship is very close. Therefore, CEOs from research institutes are vulnerable to the influence of the government.

Moreover, in China, Communist Party organizations are spreading even to social organizations,

such as schools and hospitals, and foreign capitalized companies are obliged to establish a Communist Party branch organization. It is necessary to establish a branch committee when there are seven or more members of the organization. Thus, listed companies always have a Communist Party branch committee. If a Communist Party committee executive becomes CEO, he/she would certainly be vulnerable to the influence of the government.

There are cases in which there are duplications in the five categories of government CEOs. For example, there are CEOs who belonged to the central government and who served as executives of the Communist Party Committee. In such a case, considering the susceptibility of these CEOs to influence from government, the central government and local governments should be prioritized. In other words, the central government and local government system should be selected first and if neither is applicable, then the CEO is classified in the remaining three categories. The remaining three categories may have overlap.

The variables of the attributes of independent directors can be roughly divided into two types, “government based” and “non-government based.” The variables of the attributes of a government independent director are indicated as stateID, and the variables of an independent director who is not government type as outsiderID. The attributes of government independent directors are subdivided into five types, which are similar to the CEO attribute classification. The five subdivided attributes represent the number of government independent directors with the following variables: cenID is a variable representing the number of central government independent directors; locID is that for local government; SOEID for state-owned enterprises; reashID for government research institutes; and comID for the Communist Party committee.

Regarding control variables, there are possibilities of “economies of scale” and “diminishing effect of profit and growth,” and thus, we use the total assets (TASS) to control the company size. The

larger is the size of the board of directors, the more experts and the greater diversity of the directors are considered. On the other hand, as the number of people increases, latent problems arise, such as free lighters, and many previous analyses have pointed out that monitoring efficiency is poor. Thus, the size of the board of directors is controlled by the number of directors (board_number).

Many discussions have been held about the independence of the board of directors. One opinion emphasizes that in the case of high independence, as monitoring capability is superior, corporate performance improves. On the contrary, the other viewpoint highlights negative effects, that the monitoring function and the advisory function of the independent director are restricted owing to less accessibility to internal information, and the influence on corporate performance is limited. The number of independent directors, ID_number, is taken as a proxy variable of the independence of the board of directors. We use the debt ratio DEBT to control the financial strength of the company when analyzing the profitability and growth potential of a company. In addition, based on previous research, we use the total shareholding ratio of the top 10 shareholders (top10) to control the concentration of a firm's ownership structure. Generally, for companies with large shareholders, such as family companies, conflicts of interests between major shareholders and minority shareholders are serious and corporate value is considered impaired. However, in the case of developing countries, where the legal system is not complete and the governance mechanism from the capital market cannot be demonstrated, high concentration is evaluated as an effective alternative governance mechanism.

The intersection term of the governance variable and cash flow is a product of standardized cash flow (or logarithmic cash flow) and the corporate governance variable. For example, the intersection term between the standardized cash flow (CASH/K or InCASH) and the government holding ratio is cash_State, the intersection term with the government independent director is

cash_StateID, and the intersection term with the government CEO is Cash_StateCEO, and so on. These intersection terms are set up to investigate whether the relationship with the government can ease the financial constraint, as the degree of abundance of funds is considered an important constraint for capital investment.

In accordance with prior research, the sign of the control variable is predicted as follows. The higher the debt ratio, the more difficult it is to procure additional funds, making capital investment difficult. According to the law of diminishing profit margin, capital investment becomes passive as ROA and ROE decline when corporate size increases. If procurement of external funds is difficult both qualitatively and quantitatively, capital investment is restricted by the level of cash flow, and thus, the coefficient is expected to be positive. Regarding the influence on profitability and capital investment of the size of the board of directors and the number of independent directors, it is difficult to judge theoretically or empirically, because there are two possibilities that could be both bad and good. Table 1 shows the definition of all variables used in this study.

Table 1 Definition of Variables

Variable	
Sales_growth	Sales growth rate
DEBT	Debt ratio
ROA	Operating income/total assets
ROE	Net income/capital
Variables of Ownership Structure	
over50_dummy	Dummy variable, government holding ratio > 50% = 1
control_dummy	Dummy variable, government is the largest shareholder = 1
State_ratio	Government ownership ratio
Private_ratio	Private corporate ownership ratio
Person_ratio	Domestic individual ownership ratio
Foreign_ratio	Foreign capital ownership ratio
Director_ratio	Official shareholding ratio of company

Table 1 Definition of Variables (continued)

Attribute Variables of Independent Director	
stateID	Number of people who are government independent directors (total of the following five types)
cenID	Number of people who belonged to central government before
locID	Number of people who belonged to local government before
SOEID	Number of people who belonged to state-owned-enterprise before
reashID	Number of people who belonged to government research institutes (the Chinese Academy of Sciences, Chinese Academy of Engineering, etc.) before
comID	Number of people, previous or present, who belonged to the Communist Party Committee
outsiderID	Number of people who are non-government-based independent directors
Attribute Variables of CEO	
state_CEO	Dummy variable for government CEOs (the following five types)
central_gov_CEO	Dummy variable if belonged to central government before
local_gov_CEO	Dummy variable if belonged to local government before
state_rea_CEO	Dummy variable if belonged to government research institutes (the Chinese Academy of Sciences, Chinese Academy of Engineering, etc.)
SOE_CEO	Dummy variable if belonged to state-owned-enterprise before
Commu_com_CEO	Dummy variable if, previously or presently, belonged to the Communist Party Committee
insider	Dummy variable if an internal company person
outsider_CEO	Dummy variable if CEO hired from outside the company
Control Variables	
TASS	Total assets
board_number	Number of directors
Top10	Total shareholding ratio of top 10 shareholders
ID_number	Number of independent directors

4.3 Statistical Description

Table 2 presents the descriptive statistics. ROA, ROE, and sales growth rate are 7.32%, 13.06%, and 20.54% on average, respectively, indicating rapid growth of the Chinese economy in recent years. The debt ratio of 47% or more shows the high dependence of listed firms on bank loans in China.

The majority of shares of approximately 27% of the companies in the sample are held by the government. In more than half of the companies, the government is the largest shareholder. Privatization is progressing but government control is still strong. As can be observed from the shareholding ratio, there is a limit to the degree of openness of China and the entry of foreign capital remains low. As in previous research, there are few institutional arrangements, such as executive holdings and stock options, and thus, the ratio of executive ownership is only 2.39%. The total shareholding ratio of the top 10 shareholders is 56.24%, indicating that the concentration of the corporate ownership structure is high. The government ownership ratio of state-owned enterprises is high, and in the case of private enterprises, the holding ratio of private corporations or officials up to the second in charge is also high. With respect to independent directors, some companies had not yet introduced them in 1999, and thus, the minimum value is 0, but on average, there are three in each company, accounting for one-third of the average size of the board of directors. Half of the average three independent directors are government affiliated. Most commonly, government CEOs are from state-owned enterprises, followed by local government. More than half of the CEOs are government affiliated and 41% of the remainder are non-government-based from inside the company. Only 15% are hired from the outside.

The correlation coefficients between variables are shown in Appendix 1. The correlation between Over 50 _ dummy and control _ dummy, and that between Over 50 _ dummy or control _ dummy

and the shareholder's ownership ratio are high. Since the correlation between the government's ownership ratio (State_ ratio), the executive ownership ratio (Director_ratio), and the shareholder variable other than the foreign ownership ratio (Foreign_ratio) appears to be somewhat high, individual regression analysis is undertaken.

Table 2 Descriptive Statistics

variable	mean	p50	min	max	sd	N
sales_growth	20.54	15.41	-61.95	274.46	36.39	17,448
DEBT	47.59	47.78	-19.47	199.68	22.64	19,444
ROA	7.32	5.1	-99.86	99.65	13.5	19,624
ROE	13.06	8.87	-298.76	287.17	28.63	19,578
over50_dummy	0.27	0	0	1	0.45	15,428
control_dummy	0.54	1	0	1	0.5	15,428
State_ratio	29.09	27	0	99.37	25.35	15,428
Private_ratio	17.03	5.17	0	91.64	21.3	15,428
Person_ratio	5.91	0.5	0	76.52	13.93	15,428
Foreign_ratio	1.82	0	0	71.56	5.85	15,428
Director_ratio	2.39	0	0	79.77	9.3	15,428

Table2 Descriptive Statistics (continued)

variable	mean	p50	min	max	sd	N
stateID	1.38	1	0	9	1.2	11,953
cenID	0.24	0	0	6	0.54	11,953
locID	0.45	0	0	4	0.71	11,953
SOEID	0.43	0	0	5	0.73	11,953
reashID	0.12	0	0	3	0.36	11,953
comID	0.22	0	0	3	0.47	11,953
outsiderID	2.25	2	0	8	1.25	11,953
state_CEO	0.52	1	0	1	0.5	13,474
central_gov_CEO	0.02	0	0	1	0.15	13,474
local_gov_CEO	0.1	0	0	1	0.3	13,474
state_rea_CEO	0.02	0	0	1	0.13	13,474
SOE_CEO	0.23	0	0	1	0.42	13,474
Commu_com_CEO	0.17	0	0	1	0.38	13,474
insider	0.41	0	0	1	0.49	13,474
outsider_CEO	0.15	0	0	1	0.35	13,474
top10	56.24	57.57	0.6	100	15.82	15,428
TASS	6,732.36	1,435.45	0.13	2390000	48,955.61	19,686

board_number	9.1	9	4	19	2.05	15,407
ID_number	2.63	3	0	7	1.4	15,352

5. Regression Results and Discussion

5.1 Corporate Governance and Corporate Profitability

5.1.1 Estimated Model

We use the ordinary least squares (OLS) model, fixed-effects model, and random-effects model in our regression analysis. However, according to the results of Hausman test and F-test, fixed effect analysis is the most desirable, and thus, we present only the results of the fixed-effects analysis in this paper.

The basic equation to be estimated is

$$\begin{aligned} \text{Profitability} = & \alpha + \beta_1 \text{Corporate Governance variable} + \beta_2 \text{Control variables} + \beta_3 \text{year} \\ & + \beta_4 \text{industry} + \varepsilon \end{aligned} \quad (1)$$

where:

Profitability: ROA, ROE

Corporate Governance variables: attribute variables of CEO, attribute variables of independent director, shareholder ownership ratio variables, etc.

Control variables: top10 (ownership concentration). TASS (company size), DEBT (debt ratio), board_number (number of directors), and ID_number (number of independent directors),

Year: year dummy,

Industry: industrial dummy

ε : an error term

5.1.2 Effect of CEO Attributes

Panels A and B in Table 3 show the analysis results of the influence of CEO attributes on the profitability of the company. Focusing on the number of directors as the control variable, we observe that corporate performance decreases as the number increases. This is the same result as that of many previous studies, which find that the efficiency of deliberation and other actions deteriorate as the number of directors increases. If both the size of the board of directors and the number of independent directors were included, since the signs and significance of the variables of the size of the board would change, we avoid combining the two variables for future analyses. If the number of independent directors were used as the control variable instead of the number of directors, the significant effect on profitability would be lost (the results are omitted). This result suggests that independent directors of Chinese listed companies do not perform their monitoring function properly and simply serve to bloat the organization.

Panel A of Table 3 presents the effects on profitability of government-born CEOs and CEOs from outside the company, compared to internal company CEOs. The result indicates that government CEOs as a whole do not have a statistically different influence to internal company CEOs. However, by subdividing government-affiliated CEOs into five categories, we observe a significantly negative influence of CEOs who have worked at a state-owned enterprise, who have served as executives in party committees, and who are from national research institutes, and therefore, Hypothesis 1 is supported. Because the state-owned enterprise to which CEOs were affiliated were protected by the government and not exposed to market competition, the managers of these enterprises were inefficient compared with the managers of private enterprises in the same industry. With regard to CEOs of the party committee, as executives of

the Communist Party, they have an obligation of loyalty to the government and Communist Party, and have to prioritize their political and economic objectives over those of the company. Furthermore, as observed from the transition of the system introduced in Section 3, executives of the Communist Party committee have close relationships with workers' representatives, and thus, it is possible that they sacrifice the profitability of the company by considering employees' welfare benefits first. In addition, CEOs from research institutes might be experts in specific fields, but their management skills might not necessarily be excellent.

On the other hand, if the CEO is from the central government, the effect of significantly improving ROE is observed. Among the five types of government-affiliated CEOs, government influence is biggest for CEOs from central government. In China, the personnel management system known as human resource management (HRM) controls the promotion route of people who undertake important duties for the Communist Party of China (CCP). HRM is a means of dominating companies and financial institutions through the personnel management of the Communist Party. Although the government and Communist Party are separate from the organization, the two hierarchies are related to each other while the central government and central committee are closely connected as the highest organizational tiers of the Communist Party (Pistor, 2013). To that end, CEOs from central government strive to raise corporate performance and achieve results with the aim of securing their own promotion.

Next, there is no significant difference between internal and external CEOs. With respect to internal and external CEOs, many studies focus on developed countries, but less research has been undertaken in China. The reason is that the ratio of external CEOs in listed companies in China is only 12%, which is lower than the one-third of the U.S. (Murphy and Zabochnik, 2007). Theoretical views on the relationship between external CEO and performance are divergent. Some scholars indicate that external CEOs improve corporate performance, because they are

more likely to introduce new ideas and strategic changes. However, some scholars argue that external CEOs are more conservative than internal CEOs, because they cannot grasp company information in the short term and lead to decreasing corporate performance (Balsmeier & Bushwald, 2015). Meanwhile, there is also a view (John, 1993) that emphasizes differences in the initial purpose of appointment between external and internal CEOs. The external CEO is generally appointed when the company is facing management problems and is expected to carry out reforms, such as cost reduction, restructuring, and debt reduction. In the case of Chinese companies, further analysis about why external CEOs have no significant influence on profitability is necessary to assess if the effects of both sides cancel each other out. Panel B presents the results of the analysis with the target group of non-government CEOs. The results are in line with the findings that CEOs from central government improve corporate profitability, but CEOs from national research institutes, state-owned enterprises, and the Communist Party committee have a negative influence on profitability.

Another control variable, that larger total assets are associated with lower profitability of the company, demonstrates that the effect of diminishing revenue is more effective than the effect of economies of scale. The coefficient of the debt ratio is significantly negative, as expected from theory.

5.1.3 Effect of Independent Director Attributes

Panel C of Table 3 presents the analysis results of the attributes of independent directors on profitability. As the number of independent government directors increases, ROE significantly worsens, and therefore, Hypothesis 2 cannot be rejected. However, there are only a few cases in which the coefficients are statistically significant when categorizing the independent directors further. Thus, independent directors in China do not necessarily play an important role in terms

of corporate governance.

5.1.4 Effect of Shareholder Attributes

Finally, Panel D of Table 3 shows the analysis results of the impact of shareholders' attributes on the profitability of the company. The explained variable of Model 1-5 is ROA, and that of Model 6-10 is ROE. Comparing Models 1 and 2, or Models 6 and 7, when the government is the largest shareholder, but its holding ratio is relatively low, the profitability of the company appears to be low. However, if the government owns more than 50% of the company's shares, the impact on the profitability of the company becomes insignificant. This result is similar to a previous study introduced in Section 3 showing a U-shaped relationship between the government's shareholding ratio and corporate performance. Therefore, in Models 5 and 10, we include the government's shareholding ratio and its squared term in the analysis. The result indicates that although the profitability of the company worsens as the shareholding ratio of the government increases, the negatively influence declines.

Models 3 and 8 compare the impact of various shareholders on companies' profitability. In these models, compared to individual investors, the higher are the shareholding ratios of private corporate shareholders, executive shareholders, foreign investors, and government-affiliated shareholders, the worse the companies' profitability becomes. In general, individual investors in China are found to be strongly speculative and do not hold shares over the long term; thus, individual investors are considered not to have a positive impact on corporate performance owing to their lack of enthusiasm for monitoring the enterprises. Appendix 1 shows that the possibility of multiple collinearity exists because the government's shareholding ratio is highly correlated among other shareholders' shareholding ratios. The coefficient of the government ownership ratio becomes significantly negative in Models 4 and 9 when individually considering the effect of the

government's shareholding ratio. This result rejects Hypothesis 4 on the "helping hand" and supports Hypothesis 3 on the "grabbing hand."

Regarding another explanatory variable, the top 10, the concentration degree of stockholding structure shows significantly positive results in all analyses. Different from developed countries, in China, where the legal system is not complete, the existence of major shareholders is evaluated as a kind of effective governance means.

Table 3 Internal Governance and Corporate Profitability
 Panel A Analysis Compared with Internal CEOs

Variable	ROA	ROA	ROE	ROE
state_CEO	-0.247		0.55	
outsider_CEO	0.048	-0.026	0.675	0.385
central_gov_CEO		1.064		6.225***
local_gov_CEO		0.491		1.478
state_rea_CEO		-1.517*		-5.913**
SOE_CEO		-0.594**		0.794
Commu_com_CEO		-0.526**		-1.873**
top10	0.101***	0.101***	0.222***	0.224***
lnTASS	-0.653***	-0.643***	-1.597***	-1.564***
DEBT	-0.146***	-0.146***	-0.146***	-0.144***
board_number	-0.122**	-0.122**	-0.412**	-0.424**
_cons	10.710***	10.627***	13.454***	13.116***
r2_w	0.136	0.138	0.038	0.039
N	12877	12877	12807	12807

Panel B Analysis Compared with Non-government CEOs

Variable	ROA	ROA	ROE	ROE
state_CEO	-0.255		0.444	
central_gov_CEO		1.069		6.154***
local_gov_CEO		0.495		1.413
state_rea_CEO		-1.512*		-5.992**
SOE_CEO		-0.591**		0.747
Commu_com_CEO		-0.522**		-1.940**
top10	0.101***	0.101***	0.222***	0.225***
lnTASS	-0.653***	-0.643***	-1.601***	-1.567***
DEBT	-0.146***	-0.146***	-0.146***	-0.144***
board_number	-0.122**	-0.122**	-0.410**	-0.423**
_cons	10.719***	10.621***	13.569***	13.188***
r2_w	0.136	0.138	0.038	0.039
N	12877	12877	12807	12807

Note: * $p < .1$; ** $p < .05$; *** $p < .01$

Panel C Attributes of Independent Directors and Corporate Profitability

Variable	ROA	ROA	ROE	ROE
stateID	-0.167		-.712**	
cenID		-0.0909		-0.094
locID		-0.159		-.977*
SOEID		-0.0345		-0.532
reashID		-0.101		-0.422
comID		-.386*		-0.729
top10	.129***	.129***	.254***	.254***
lnTASS	-1.43***	-1.43***	-3.19***	-3.19***
DEBT	-.144***	-.144***	-.126***	-.125***
ID_number	0.0268	0.0245	-0.412	-0.427
_cons	13.6***	13.6***	14*	13.8*
r2_w	0.141	0.142	0.0435	0.0436
N	11546	11546	11487	11487

Panel D Attributes of Shareholders and Corporate Profitability

Variable	ROA					ROE				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
over50_dummy	0.0472					-0.292				
control_dummy		-.685***					-2.17***			
State_ratio			-.106***	-.0108**	-.0427***			-.169**	-.0371**	-.156***
Private_ratio			-.0984***					-.128*		
Foreign_ratio			-.0817**					-.298***		
Director_ratio			-.0838***					-.314***		
State_ratio2					.0005**					.00186***

top10	.111***	.111***	.206***	.115***	.109***	.249***	.244***	.391***	.26***	.237***
lnTASS	-.472***	-.471***	-.42***	-.47***	-.461***	-1.25***	-1.25***	-1.18***	-1.24***	-1.21***
DEBT	-.149***	-.149***	-.149***	-.149***	-.149***	-.156***	-.155***	-.157***	-.156***	-.154***
_cons	7.06***	7.55***	6.64***	7.21***	7.65***	4.75	6.33**	4.99*	5.3*	6.96**
r2_w	0.142	0.143	0.144	0.142	0.143	0.0413	0.0419	0.0427	0.0416	0.0422
N	15127	15127	15127	15127	15127	15050	15050	15050	15050	15050

Note: * p<.1; ** p<.05; *** p<.01

Table 4 Internal Governance and Corporate Growth

Panel A Attributes of CEOs and Corporate Growth

Variable	sales_growth	sales_growth	sales_growth	sales_growth
state_CEO	-0.101		0.302	
central_gov_CEO		1.781		2.154
local_gov_CEO		-0.004		0.324
state_rea_CEO		-13.858***		-13.434***
SOE_CEO		-0.173		0.069
Commu_com_CEO		-1.943		-1.592
outsider_CEO			2.596	2.01
top10	0.162***	0.165***	0.161***	0.164***
lnTASS	1.411*	1.428*	1.435*	1.447*
DEBT	0.091***	0.092***	0.092***	0.093***
board_number	0.092	0.074	0.08	0.066
_cons	-4.211	-4.035	-4.748	-4.482
r2_w	0.041	0.042	0.041	0.042
N	12137	12137	12137	12137

Panel B Attributes of Independent Directors and Corporate Growth

Variable	sales_growth	sales_growth
stateID	-0.691	
cenID		-1.93*
locID		-1.75**
SOEID		0.741
reashID		1.6
comID		0.0501
top10	.14***	.142***
lnTASS	2.93***	3***
DEBT	.0673**	.0693**
ID_number	-0.398	-0.281

_cons	-16.1	-16.7
r2_w	0.041	0.0417
N	11181	11181

Panel C Attributes of Shareholders and Corporate Growth

Variable	sales_growth	sales_growth	sales_growth	sales_growth	sales_growth
over50_dummy	-0.755				
control_dummy		-2.64**			
State_ratio			-0.189	-0.0255	-.217***
Private_ratio			-0.177		
Foreign_ratio			-0.069		
Director_ratio			0.0906		
State_ratio2					.00299***
top10	.179***	.17***	.334***	.182***	.145***
lnTASS	2.14***	2.17***	2.25***	2.16***	2.18***
DEBT	.0762***	.0779***	.078***	.0766***	.0801***
_cons	-9.78*	-7.94	-10.9**	-9.43*	-6.64
r2_w	0.038	0.0383	0.0385	0.038	0.0386
N	14045	14045	14045	14045	14045

Note: * p<.1; ** p<.05; *** p<.01

5.1.5 Effect on Sales Growth Rate

Table 4 presents the results of the influence of internal governance on the sales growth rate. There is no significant difference between government-affiliated CEOs and non-government CEOs, and between internal and external CEOs. However, CEOs from national research institutes seem be associated with a decrease in the growth of the company. As mentioned above, it is possible that experts in a specific field lack management skills, and that these experts might place emphasis on, for example, R&D, rather than advanced growth. However, owing to data limitations, it is difficult to estimate this possibility. In addition, independent directors from local government are associated with lower corporate growth. This result suggests that the appointment of independent directors from local government does not provide

the management team with an advice function, or an efficient monitoring capability. When the government is the largest shareholder, the relationship between the shareholding ratio and sales growth is U-shaped. However, there are no significant differences observed between the attributes of the five types of shareholders.

Table 5 Internal Governance and Debt Ratio

Panel A Attributes of CEOs and Debt Ratio

Variable	DEBT	DEBT	DEBT	DEBT
state_CEO	-0.274		-0.551	
central_gov_CEO		-0.993		-1.337
local_gov_CEO		-2.419***		-2.732***
state_rea_CEO		1.183		0.792
SOE_CEO		-0.17		-0.396
Commu_com_CEO		0.545		0.22
outsider_CEO			-1.759***	-1.860***
top10	-0.066***	-0.065***	-0.065***	-0.064***
lnTASS	3.658***	3.624***	3.645***	3.610***
board_number	0.177	0.17	0.182*	0.174
_cons	16.677***	17.091***	16.972***	17.437***
r2_w	0.044	0.046	0.045	0.046
N	12883	12883	12883	12883

Panel B Attributes of Independent Directors and Debt Ratio

Variable	DEBT	DEBT
stateID	0.0947	
cenID		-0.864**
locID		1.04***
SOEID		-0.334
reashID		-1.44**
comID		-0.264
top10	-0.0421**	-0.0405**
lnTASS	3.41***	3.39***
ID_number	-0.0564	-0.059
_cons	19.4***	19.5***
r2_w	0.0209	0.0233

N	11551	11551
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Panel C Attributes of Shareholders and Debt Ratio

Variable	DEBT	DEBT	DEBT	DEBT	DEBT
over50_dummy	-1.37***				
control_dummy		1.74***			
State_ratio			0.033	0.0112	.169***
Private_ratio			0.0271		
Foreign_ratio			-0.015		
Director_ratio			-.132**		
State_ratio2					-.00247** *
top10	-.0784***	-.0899***	-.114***	-.0957** *	-.0649***
lnTASS	3.85***	3.86***	3.86***	3.86***	3.81***
_cons	17.3***	16.1***	17.5***	17.2***	14.9***
r2_w	0.0606	0.061	0.061	0.0602	0.0627
N	15135	15135	15135	15135	15135

Note: * p<.1; ** p<.05; *** p<.01

5.1.6 Effect on Debt Ratio

Table 5 presents the influence of internal governance on debt ratio. Panel A indicates that CEOs from local government are associated with lower corporate debt ratio. Many previous studies argue that corporate debt ratio is considered high, since local governments provide funds to companies by pressurizing state-owned financial institutions for political purposes, such as regional economic development and securing employment rates. Our results seem contrary to those of previous studies. However, our analysis on independent directors is consistent with previous studies. In other words, the debt ratio is higher as the number of independent directors from local government increases. The differences between CEOs and independent directors in terms of effect of local governments are

considered to be due to the different roles and responsibilities of CEOs and independent directors. That is, independent directors only advise and utilize personal human resources to make it convenient to receive corporate loans or investment. However, in the case of CEOs, corporate performance is closely tied to their careers and remuneration, and thus, it is necessary for CEOs to adopt a risk avoidance attitude and consider the cost aspect of a high liability ratio. People from local government are considered to have different effects on the debt ratio owing to different jobs and responsibilities. Independent directors from central government and national research institutes have a negative impact on the debt ratio. We consider it reasonable to lower debt from a high average value of about 50% of the debt ratio at the end of the high economic growth period. Furthermore, the shareholding ratio and debt ratio of the government have an inverted U-shaped relationship. From the perspective of improving financial structure, it can be said that it is desirable to expedite privatization, but at the same time, it is also a good choice to nationalize important companies in strategic industries.

5.2 Revalidation of Impact of Corporate Attributes, Internal Governance, and Performance

In the previous Subsection 5.1, we analyze the influence of internal governance on corporate performance using all samples. However, different corporate attributes might mean that there are differences in the appointment of government CEOs versus government independent directors. For example, the government might dispatch government officials as officers to strengthen control over state-owned

enterprises, but in the case of private enterprises, companies might hire government officials to develop access to production resources. For this reason, in this subsection, we classify enterprises into central state-owned enterprises, local state-owned enterprises, and private enterprises, and undertake an analysis of these subsamples.

As a shareholder or investor of a state-owned enterprise, the SASAC works for the interests and obligations, but central state-owned enterprises are managed by the State Assets Supervision and Administration Committee of the State Council, and local state-owned enterprises by the State Assets Supervision and Administration Committee of various local governments. As mentioned in Section 2 on preceding research, the government might act to impair the enterprise value of state-owned enterprises for political or personal interests, but the political purposes of the central and local governments are not consistent in the first place. Moreover, since the effectiveness of the law decreases as it moves away from the central government, it is considered that pursuing the interests of bureaucrats as individuals is likely in rural areas. Therefore, state-owned enterprises are divided into two types: central state-owned enterprises and local state-owned enterprises.

There were 112 central state-owned enterprises that are directly managed by the State Assets Supervision and Administration Committee of the State Council in 2014. They are large-scale companies of core industries, such as China National Nuclear Corporation, Aviation Industry Corporation of China, and China National Petroleum Corporation. There were more companies before 2014, but the list of 112 companies is what is available from the website of SASAC for 2014. Most central government-owned enterprises are 100% owned by the government, and many of

them are unlisted companies. Instead of central state-owned enterprises, companies funded by central state-owned enterprises and companies in which the government ownership ratio accounts for more than half the top 10 are defined as central state-owned-affiliated enterprises in this study. State-owned enterprises that are not funded by central state-owned enterprises are defined as local state-owned enterprises, and the others are defined as private enterprises.

5.2.1 Statistical Description by Attributes

Table 6 provides a statistical description of the data. According to Table 6, we observe there are many local state-owned enterprises and private enterprises. The central state-owned-affiliated enterprises account for about one-third of local state-owned enterprises. The latter enterprises have the highest profitability and growth potential. Private enterprises appear to have a slightly lower debt ratio. The government ownership ratio of private enterprises is about 6% on average, and the maximum value is smaller than the average value of central state-owned and state-affiliated enterprises and local state-owned enterprises. However, the size and independence of the directors are almost the same, and the average number of government independent directors of 1.3 and 1.4, respectively, does not differ greatly. Few private enterprises have government-affiliated CEOs. Private enterprises and local state-owned enterprises have ownership concentration of 55%, while central state-owned and state-affiliated enterprises have ownership concentration of nearly 60%.

Table 6 Statistical Description by Attributes
 Panel A Central State-Owned and State-affiliated Enterprises

variable	mean	p50	min	max	sd	N
ROA	5.42	4.14	-43.28	81.04	8.93	2349
ROE	9.42	8.08	-244.97	168.35	20.51	2345
sales_growth	19.32	15.56	-61.49	268.03	34.08	2157
DEBT	48.53	48.56	4.24	1.15E+02	19.79	2348
over50_dummy	0.61	1	0	1	0.49	1956
control_dummy	0.99	1	0	1	0.08	1956
State_ratio	53.27	54.27	19.21	96.15	14.4	1956
Private_ratio	2.77	0.72	0	33.66	4.73	1956
Person_ratio	0.57	0	0	20.44	1.87	1956
Foreign_ratio	2.05	0	0	39.06	6	1956
Director_ratio	1.25	0	0	41.52	5.32	1956
stateID	1.45	1	0	6	1.25	1493
outsiderID	2.24	2	0	8	1.25	1493
state_CEO	0.69	1	0	1	0.46	1841
insider	0.33	0	0	1	0.47	1841
outsider_CEO	0.06	0	0	1	0.24	1841
TASS	26,809.16	2,624.26	53.88	2.39E+06	132602.55	2350
board_number	9.67	9	5	19	2.15	1960
ID_number	2.72	3	0	7	1.57	1955
top10	59.91	60.19	20.42	98.68	14.7	1956

Panel B Local State-owned Enterprises

variable	mean	p50	min	max	sd	N
ROA	9.63	5.9	-99.86	99.65	15.59	10036
ROE	17.44	10.14	-259.81	277.24	31.3	10028
sales_growth	21.33	15.81	-61.89	274.07	36.28	8496
DEBT	49.35	49.67	-19.47	196.89	21.34	9947
over50_dummy	0.49	0	0	1	0.5	6246
control_dummy	0.98	1	0	1	0.14	6246
State_ratio	49.04	49.7	2.82	99.37	15.93	6246
Private_ratio	4.19	1.24	0	37.68	6.47	6246
Person_ratio	0.94	0	0	21.54	1.94	6246
Foreign_ratio	1.07	0	0	40.72	4.11	6246
Director_ratio	0.61	0	0	33.75	3.04	6246
stateID	1.46	1	0	9	1.2	4401
outsiderID	2.12	2	0	8	1.23	4401
state_CEO	0.6	1	0	1	0.49	5437
insider	0.36	0	0	1	0.48	5437
outsider_CEO	0.12	0	0	1	0.33	5437
TASS	4,202.26	1,233.99	0.51	861733.56	18,488.70	10073
board_number	9.36	9	4	18	2.14	6239
ID_number	2.35	3	0	8	1.59	6209
top10	55.86	57.18	3.38	100	15.81	6246

Panel C Private Enterprises

variable	mean	p50	min	max	sd	N
ROA	4.74	4.52	-95.17	92.14	10.77	7239
ROE	8.14	7.91	-298.76	287.17	25.94	7205
sales_growth	19.95	14.74	-61.95	274.46	37.22	6795
DEBT	44.83	44.46	0.71	199.68	24.88	7149
over50_dummy	0	0	0	1	0.05	7338
control_dummy	0.06	0	0	1	0.23	7338
State_ratio	5.94	2.5	0	47.18	7.97	7338
Private_ratio	31.64	33.07	0	91.64	22.58	7338
Person_ratio	11.51	1.75	0	76.52	18.58	7338
Foreign_ratio	2.4	0	0	73.44	6.96	7338
Director_ratio	4.16	0	0	79.77	12.62	7338
stateID	1.32	1	0	7	1.18	6170
outsiderID	2.35	2	0	8	1.26	6170
state_CEO	0.41	0	0	1	0.49	6308
insider	0.47	0	0	1	0.5	6308
outsider_CEO	0.19	0	0	1	0.39	6308
TASS	3,745.34	1,448.99	0.13	530825	13,660.42	7263
board_number	8.73	9	4	19	1.86	7318
ID_number	2.85	3	0	6	1.09	7298
top10	55.66	57	0.6	100	16	7338

5.2.2 Analysis Results of CEOs by Company Attributes

Tables 7, 8, and 9 summarize the analysis results of central state-owned and state-affiliated enterprises, local state-owned enterprises, and private enterprises, respectively. Panel A of each table shows the relationship between attributes of CEOs, profitability, and growth potential, Panel B of each table shows the relationship between independent director attributes and corporate performance,

Panel C of each table shows the relationship between shareholders' shareholding ratio and corporate profitability, while Panel D of each table shows growth potential.

Compared with non-government-based internal CEOs, central state-owned and state-affiliated enterprises and local state-owned enterprises are not significantly different in impact on profitability measured by the three variables and growth potential of companies. Meanwhile, for private enterprises, government CEOs are associated with worse ROA. In addition, in comparison with internal CEOs, external CEOs are associated with better ROA for central state-owned and state-affiliated enterprises whereas for private enterprises, the result is the opposite. When decomposing government CEOs, different results are obtained depending on the attributes of the company. In other words, in the case of central state-owned and state-affiliated enterprises, CEOs from the central and local governments generally improve profitability and the growth potential of companies. On the contrary, the same result cannot be found for local state-owned enterprises. In addition, CEOs of private enterprises have a positive impact if they are from the central government, but a negative impact if they are from local governments. The difference between these results suggests that when a company is close to the central government, the law is highly effective and the link between corporate performance and CEOs' personal political paths becomes closer. Therefore, government CEOs of central state-owned and other state-affiliated enterprises can improve corporate performance, and for private enterprises, CEOs from central government are preferable to those from local governments.

5.2.3 Other Analysis Results by Company Attributes

Government independent directors are associated with lower ROA for the central state-owned and state-affiliated enterprises. In particular, independent directors from local government are associated with lower profitability in terms of both ROA and ROE. However, if the independent directors are from central government, the profitability of local state-owned enterprises and private enterprises partially improves. Independent directors strongly related to the central government are believed to demonstrate an effective monitoring function. Regarding ownership structure, there is no significant result in the case of central state-owned enterprises. Coinciding with all samples, for local state-owned enterprises with the largest number of samples, the government's shareholding ratio and growth potential are U-shaped. Although there does not appear to be a U-shaped relationship between profitability and government holding ratio, when the largest shareholder is government, profitability declines; if the government owns more than 50% of the shares, the coefficient becomes positive although it is not significant. For private enterprises, the higher the shareholding ratio of the government is, the worse is the company's performance.

Table 10 presents the results of internal governance of a subsample and the debt ratio. Although notation is omitted for the control variable, the result is almost the same as that for the whole sample. First, Panel A shows that CEOs from local governments have a significant and negative effect on the debt ratio for all enterprises, except for central state-owned and state-affiliated enterprises. Panel B shows that the coefficients of independent directors from central government lose significance, while independent directors from local governments increase the debt

ratio of companies for local state-owned enterprises. Furthermore, the relationship between the government's ownership ratio and the debt ratio is a non-linear U-shape for central state-owned and state-affiliated enterprises, which is different from the whole sample. In the case of private enterprises, there is a linear relationship between the debt ratio and government holding ratio; that is, the debt ratio rises as the government holding ratio increases. For private enterprises, it turns out that when the government becomes a shareholder, the degree of tolerance for risk increases and it is easy to procure funds, such as bank loans.

Table 7 Central State-owned and State-affiliated Enterprises
 Panel A Attributes of CEOs and Performance

Variable	ROA	ROA	ROE	ROE	sales_growth	sales_growth
state_CEO	-0.208		0.795		0.898	
outsider_CEO	1.856**	1.802**	4.034	3.099	-1.206	-1.361
central_gov_CEO		1.535		6.479**		7.965
local_gov_CEO		2.104**		9.556***		11.141**
state_rea_CEO		0.275		1.412		-14.388*
SOE_CEO		-0.152		-0.802		7.135*
Commu_com_CEO		-0.538		-1.762		-3.946
lnTASS	0.734**	0.713**	6.070***	6.019***	0.721	0.446
DEBT	-0.167***	-0.166***	-0.417***	-0.417***	0.401***	0.411***
board_number	-0.269***	-0.263***	-1.008***	-0.992***	0.662	0.81
top10	0.109***	0.097***	0.165**	0.122*	0.294*	0.279*
_cons	1.727	2.411	-24.097***	-20.649**	-33.803*	-35.063*
r2_w	0.161	0.168	0.105	0.12	0.091	0.099
N	1743	1743	1740	1740	1653	1653

Panel B Attributes of Independent Shareholders and Performance

Variable	ROA	ROA	ROE	ROE	sales_growth	sales_growth
stateID	-.566**		-0.244		-1.77	
cenID		0.0494		1.59		-2.67
locID		-2.1***		-3.53***		-2.76
SOEID		-0.0503		-0.274		-1.14
reashID		-0.473		-5.56**		2.49
comID		-0.0618		2.98*		-0.211
lnTASS	-0.188	-0.269	5.12***	5.32***	1.52	1.27
DEBT	-.164***	-.163***	-.456***	-.46***	.332***	.331***
ID_number	-0.441	-0.18	-1.25	0.0992	-1.88	-1.65
top10	.112***	.112***	.206**	.225**	0.275	0.25
_cons	10.1**	10.6**	-21.8	-25.1*	-37.9	-34.3
r2_w	0.162	0.178	0.0913	0.107	0.0964	0.0975
N	1419	1419	1416	1416	1391	1391

Panel C Attributes of Shareholders and Performance

Variable	ROA	ROA	ROA	ROA	ROE	ROE	ROE	ROE
over50_dummy	-0.647				-0.394			
control_dummy		-3.79				-8.06		
State_ratio			-0.178	-0.108			1.18**	-0.344
Private_ratio			-0.127				1.3**	
Foreign_ratio			-0.167				1.5**	
Director_ratio			-0.216				1.01*	
State_ratio2				0.000615				0.00284
lnTASS	.935***	.915***	.982***	.966***	6.99***	6.97***	6.96***	7.08***
DEBT	-.176***	-.176***	-.177***	-.177**	-.459***	-.46***	-.45***	-.463***
top10	.121***	.107***	0.277	.141***	.185**	.181***	-1.03**	.211*
_cons	-2.63	1.7	-2.19	-0.516	-40***	-31.8***	-38.5***	-32.6***
r2_w	0.159	0.159	0.159	0.159	0.113	0.114	0.117	0.114
N	1913	1913	1913	1913	1910	1910	1910	1910

Panel D Attributes of Shareholders and Growth Potential

Variable	sales_growth	sales_growth	sales_growth	sales_growth
over50_dummy	-6.36*			
control_dummy		-2.12		
State_ratio			-1.96*	-0.221
Private_ratio			-1.86*	
Foreign_ratio			-1.59	
Director_ratio			-2.25*	
lnTASS	1.54	1.44	2.09	1.58
DEBT	.366***	.363***	.347***	.36***
top10	.444**	.283*	2.21**	.474*
_cons	-36.6**	-28.1	-33.5**	-30.6*
r2_w	0.0855	0.0839	0.0865	0.0843

N	1796	1796	1796	1796
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Note: * $p < .1$; ** $p < .05$; *** $p < .01$

Table 8 Local State-owned Enterprises
Panel A Attributes of CEOs and Performance

Variable	ROA	ROA	ROE	ROE	sales_growth	sales_growth
state_CEO	-0.169		1.061		-0.802	
outsider_CEO	0.512	0.436	0.686	0.298	-1.23	-1.299
central_gov_CEO		1.107		4.065		1.695
local_gov_CEO		0.546		3.045*		-0.159
state_rea_CEO		-1.348		-9.602**		-16.656**
SOE_CEO		-0.04		2.430*		0.434
Commu_com_CEO		-0.483		-0.44		0.804
lnTASS	1.101***	1.114***	1.476*	1.491*	2.899**	2.836**
DEBT	-0.202***	-0.201***	-0.313***	-0.313***	0.036	0.037
board_number	-0.276***	-0.282***	-0.585**	-0.653**	-1.476***	-1.536***
top10	0.114***	0.115***	0.245***	0.255***	0.270***	0.286***
_cons	1.054	0.841	-0.504	-1.002	-5.457	-5.931
r2_w	0.188	0.19	0.049	0.052	0.04	0.042
N	5032	5032	5006	5006	4700	4700

Panel B Attributes of Independent Shareholders and Performance

Variable	ROA	ROA	ROE	ROE	sales_growth	sales_growth
stateID	0.237		0.339		-0.795	
cenID		.767**		0.343		-0.397
locID		0.239		0.56		-1.6
SOEID		0.135		-0.11		0.412
reashID		0.181		0.627		1.65
comID		-0.231		0.267		-1.05
lnTASS	0.36	0.349	-1.83**	-1.84**	3.83**	3.93**
DEBT	-.219***	-.22***	-.249***	-.25***	0.0219	0.0275
ID_number	-1.19***	-1.18***	-1.17	-1.22	-4.64**	-4.56**
top10	.148***	.144***	.342***	.343***	.255***	.255***
_cons	2.63	2.88	8.55	8.73	-3.94	-7.31
r2_w	0.2	0.201	0.0535	0.0536	0.0409	0.0413
N	4140	4140	4118	4118	4018	4018

Panel C Attributes of Shareholders and Performance

Variable	ROA	ROA	ROA	ROA	ROE	ROE	ROE	ROE
over50_dummy	0.585				-0.0174			
control_dummy		-2.05**				0.265		
State_ratio			-.223**	-0.00697			0.00632	.439**
Private_ratio			-.253**				-0.0504	
Foreign_ratio			-.251**				-0.169	
Director_ratio			-.29**				-0.262	
State_ratio2				0.000269				-0.002
lnTASS	1.29***	1.25***	1.34***	1.28***	1.57**	1.57**	1.58**	1.65**
DEBT	-.204***	-.204***	-.205***	-.204***	-.273***	-.273***	-.272***	-.274***
top10	.0922***	.106***	.333***	.0881***	.26***	.259***	0.264	
_cons	-2.36	-0.548	-3.32**	-2.13	-10.4*	-10.7*	-10.5*	-12.5**
r2_w	0.185	0.185	0.186	0.185	0.0431	0.0431	0.0434	0.0424
N	6069	6069	6069	6069	6039	6039	6039	6039

Panel D Attributes of Shareholders and Growth Potential

Variable	sales_growth	sales_growth	sales_growth	sales_growth
over50_dummy	-1.56			
control_dummy		-6.75		
State_ratio			-0.558	-.979***
Private_ratio			-0.62	
Foreign_ratio			-0.225	
Director_ratio			-1.04	
State_ratio2				.00965***
lnTASS	3.35***	3.26***	3.59***	3.55***
DEBT	0.00748	0.00949	0.00708	0.00872
top10	.265***	.242***	0.809	.272**
_cons	-20.7**	-13.1	-22.7**	-0.971
r2_w	0.0328	0.033	0.0332	0.0349

N	5527	5527	5527	5527
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Note: * p<.1; ** p<.05; *** p<.01

Table 9 Private Enterprises
Panel A Attributes of CEOs and Performance

Variable	ROA	ROA	ROE	ROE	sales_growth	sales_growth
state_CEO	-1.035*		0.063		0.581	
outsider_CEO	-0.848	-1.022*	-0.394	-1.267	8.404***	7.727***
central_gov_CEO		2.147		16.162**		1.312
local_gov_CEO		-2.437***		-6.118**		-2.882
state_rea_CEO		-4.674*		-13.735*		-16.86
SOE_CEO		-2.638***		-0.664		1.595
Commu_com_CEO		1.553**		-1.215		-0.202
lnTASS	-2.402***	-2.419***	-4.607***	-4.558***	2.203*	2.253**
DEBT	-0.105***	-0.106***	-0.029	-0.03	0.120***	0.122***
board_number	-0.014	-0.041	0.436	0.384	0.39	0.401
top10	0.112***	0.109***	0.297***	0.288***	0.023	0.018
_cons	20.347***	21.216***	18.429**	20.160***	-1.992	-0.938
r2_w	0.153	0.158	0.053	0.056	0.044	0.044
N	6102	6102	6061	6061	5784	5784

Panel B Attributes of Independent Shareholders and Performance

Variable	ROA	ROA	ROE	ROE	sales_growth	sales_growth
stateID	-0.178		-0.473		-0.384	
cenID		0.225		3.17**		-2.32
locID		0.247		-0.108		-0.492
SOEID		-0.191		-0.832		0.586
reashID		0.166		-0.344		0.72
comID		-1.43***		-3.11**		-1.22
lnTASS	-3.08***	-3.11***	-6.05***	-6.13***	2.97**	3***
DEBT	-0.0741***	-0.0735***	0.00734	0.00882	.137***	.136***
ID_number	-0.166	-0.0718	-2.56*	-2.65*	1.16	1.53
top10	.125***	.128***	.329***	.338***	0.00739	0.00581
_cons	21.1***	20.7***	31.2***	31***	-11.5	-12.7
r2_w	0.154	0.156	0.0613	0.0631	0.0439	0.0442
N	5987	5987	5953	5953	5772	5772

Panel C Attributes of Shareholders and Performance

Variable	ROA	ROA	ROA	ROA	ROE	ROE	ROE	ROE
over50_dummy	(omitted)				(omitted)			
control_dummy		-1.31				-2.11		
State_ratio			-.119***	-0.0492			-.293***	-0.166
Private_ratio			-.0658**				-0.103	
Foreign_ratio			0.0227				-.276*	
Director_ratio			0.0251				-0.0242	
State_ratio2				-0.000231				-0.00204
lnTASS	-2.32***	-2.31***	-2.23***	-2.3***	-4.26***	-4.25***	-4.13***	-4.19***
DEBT	-.103***	-.102***	-.101***	-.102***	-.0579***	-.0569**	-.0541**	-.0539**
top10	.128***	.128***	.183***	.131***	.324***	.324***	.43***	.337***
_cons	17.2***	17.4***	16.4***	17.5***	15.6***	15.9***	15.8***	16.5***
r2_w	0.158	0.159	0.161	0.159	0.0563	0.0564	0.0582	0.0575
N	7145	7145	7145	7145	7101	7101	7101	7101

Panel D Attributes of Shareholders and Growth Potential

Variable	sales_growth	sales_growth	sales_growth	sales_growth
over50_dummy	(omitted)			
control_dummy		-10.2**		
State_ratio			-.3*	-.217*
Private_ratio			-0.0805	
Foreign_ratio			0.13	
Director_ratio			0.0979	
lnTASS	2.53**	2.62**	2.72**	2.6**
DEBT	.148***	.152***	.156***	.153***
top10	0.0645	0.0643	0.136	0.0773
_cons	-3.67	-2.42	-4.87	-2.8
r2_w	0.0478	0.0487	0.0486	0.0482
N	6722	6722	6722	6722

Note: * $p < .1$; ** $p < .05$; *** $p < .01$

Table 10 Internal Governance of Subsample and Debt Ratio
 Panel A Attributes of CEO and Debt Ratio

	Central		Local		Private	
Variable	DEBT	DEBT	DEBT	DEBT	DEBT	DEBT
state_CEO	1.574*		-0.522		-2.185**	
outsider_CEO	1.234	0.886	-4.764***	-5.500***	-1.386	-0.849
central_gov_CEO		-1.492		-1.796		3.062
local_gov_CEO		1.441		-3.002***		-4.531***
state_rea_CEO		1.082		1.401		10.660**
SOE_CEO		-0.135		0.672		-2.786**
r2_w	0.229	0.23	0.082	0.086	0.028	0.031
N	1743	1743	5034	5034	6106	6106

Panel B Attributes of Independent Shareholders and Debt Ratio

	Central		Local		Private	
Variable	DEBT	DEBT	DEBT	DEBT	DEBT	DEBT
stateID	.784*		0.238		0.513	
cenID		-0.878		0.421		-0.648
locID		1		1.85***		0.0467
SOEID		1.44**		-1.05*		1.02*
reashID		-2.03		-1.96**		-1.74*
comID		0.129		-0.269		1.33
r2_w	0.174	0.179	0.0285	0.0358	0.0234	0.0249
N	1419	1419	4142	4142	5990	5990

Panel C Attributes of Shareholders and Debt Ratio

	Central			Local			Private		
Variable	DEBT	DEBT	DEBT	DEBT	DEBT	DEBT	DEBT	DEBT	DEBT
over50_dummy	0.736			-0.854			(omitted)		
control_dummy		-6.4			4.31**			7.11***	
State_ratio			-0.481***			-0.0523			.239***
State_ratio2			.00355**			-0.000345			

r2_w	0.259	0.259	0.262	0.0997	0.1	0.1	0.0375	0.0408	0.0416
N	1913	1913	1913	6073	6073	6073	7149	7149	7149

Note: * p<.1; ** p<.05; *** p<.01

5.3 Interaction between Management and Shareholders and Impact on Corporate Performance

In Subsection 5.2, we analyze three types of enterprise: central state-owned and state-affiliated enterprises, local state-owned enterprises, and private enterprises. The CEOs of state-owned enterprises often come from government, but it is possible they do not. The CEOs of private enterprises too also come from both government and non-government. According to previous studies, the government creates concrete paths to realize the “grabbing hand” through control of the corporate management personnel. Specifically, government CEOs are affected by government-based shareholders, and the interaction between the management team and shareholders might lower the profitability of the company and shareholders. Therefore, in this subsection, in order to determine the interaction between the manager, the shareholder, and its influence, we use the interaction terms of the CEO and the shareholder attributes variable as independent variables for analysis.

We define the non-government CEO (`unstate _ CEO`) as the inverse of the government CEO (`state _ CEO`), with a value of 0 if the CEO is government based, and 1 otherwise. Similarly, `uncontrol_dummy` is symmetrical with `control_dummy`, which has a value of 1 if the government is not the largest shareholder. Furthermore, `under50` is a dummy variable that takes a value of 1 if the shareholding ratio of the government is less than 50%. Table 11 summarizes the definitions of 11 interaction terms.

Table 11 Definition of Interaction Terms of CEO and Shareholder

Csta	Government CEO * “the largest shareholder is government” = state_CEO*control_dummy
unCunsta	Non-Government CEO * “the largest shareholder is not government” = unstate_CEO*uncontrol_dummy
unCsta	Non-Government CEO * “the largest shareholder is government” = unstate_CEO*control_dummy
Cunsta	Government CEO * “the largest shareholder is not government” = state_CEO*uncontrol_dummy
C50	Government CEO * “the shareholding ratio of the government is more than 50%” = state_CEO*over50
unCun50	Non-Government CEO * “the shareholding ratio of the government is less than 50%” = unstate_CEO* under50
unC50	Non-Government CEO * “the shareholding ratio of the government is more than 50%” = unstate_CEO*over50
Cun50	Government CEO * “the shareholding ratio of the government is less than 50%” = state_CEO* under50

Table 12 presents the regression results of dependent variables (ROA and ROE) and independent variables (CEOs’ attributes, shareholders’ attributes, and their interaction terms).

Table 12 Interaction of CEO and Shareholder and Profitability
 Panel A Use of Largest Shareholder Variable

Variable	ROA (1)	ROA (2)	ROA (3)	ROA (4)	ROE (1)	ROE (2)	ROE (3)	ROE (4)
unCsta	-0.927**				-0.529			
Cunsta		-0.927**				-0.529		
Csta			0.927**				0.529	
unCunsta				0.927**				0.529
unstate_CEO	0.794**			-0.133	-0.515			-1.044
state_CEO		0.133	-0.794**			1.044	0.515	
control_dummy	0.041		-0.886**		-2.120**		-2.649**	
uncontrol_dummy		0.886**		-0.041		2.649**		2.120**
lnTASS	-0.648***	-0.648***	-0.648***	-0.648***	-1.574***	-1.574***	-1.574***	-1.574***
DEBT	-0.148***	-0.148***	-0.148***	-0.148***	-0.154***	-0.154***	-0.154***	-0.154***
top10	0.103***	0.103***	0.103***	0.103***	0.225***	0.225***	0.225***	0.225***
_cons	9.112***	9.019***	9.905***	9.153***	11.679***	8.515**	11.164***	9.559***
r2_w	0.137	0.137	0.137	0.137	0.039	0.039	0.039	0.039
N	12922	12922	12922	12922	12851	12851	12851	12851

Panel B Use of 50% Ownership Variable

Variable	ROA (1)	ROA (2)	ROA (3)	ROA (4)	ROE (1)	ROE (2)	ROE (3)	ROE (4)
unC50	-0.869*				-1.283			
Cun50		-0.869*				-1.283		
C50			0.869*				1.283	
unCun50				0.869*				1.298
unstate_CEO	0.475*			-0.394	-0.454			-1.667
state_CEO		0.394	-0.475*			1.737	0.454	
over50_dummy	0.766**		-0.103		0.526		-0.757	
under50		0.103		-0.766**		0.757		-2.940***
lnTASS	0.650***	0.650***	0.650***	-0.650***	-1.590***	1.590***	1.590***	-1.054**

DEBT	0.148***	0.148***	0.148***	-0.148***	-0.154***	0.154***	0.154***	-0.157***
top10	0.099***	0.099***	0.099***	0.099***	0.225***	0.225***	0.225***	
_cons	9.091***	9.462***	9.566***	9.856***	10.057***	8.846**	9.603***	22.744***
r2_w	0.137	0.137	0.137	0.137	0.038	0.038	0.038	0.033
N	12922	12922	12922	12922	12851	12851	12851	12851

Note: * p<.1; ** p<.05; *** p<.01

Table 12 shows similar results to those in Subsection 5.2, that corporate profitability deteriorates when CEOs are from government. In addition, when government is the largest shareholder, profitability deteriorates, but if the shareholding ratio of the government surpasses 50%, ROA increases. The coefficients of non-government-affiliated CEOs and non-government-affiliated shareholders show opposite signs.

Regarding the interaction terms, we focus on the cases in which the dependent variables are ROA, because significant results cannot be obtained in the case of ROE being a dependent variable. First, ROA (3) of panel A of Table 12 indicates that profitability declines significantly when the CEO and shareholders are government affiliated, but the coefficient of their interaction term is positive and significant, which suggests that the negative influence of the single variable of CEO or shareholder is alleviated. In addition, ROA (4) of panel A indicates that if both CEOs and shareholders are non-governmental affiliated, profitability increases. ROA (1) and ROA (2) of panel A show that if one of either CEO or shareholder is government affiliated and the other is non-government affiliated, a negative impact is observed, and the positive effect of non-government affiliation is impaired. As described above, the interaction between the CEO and shareholder is confirmed, and in general, the profitability of the company improves when both the attributes coincide.

5.4 Government CEOs and Benefits

Subsections 5.1–5.3 show that the influence from government CEOs is bad as a whole but the results are mixed when examined by attributes. In particular, government-affiliated CEOs, such as those from the central government and local governments, often play the role of improving profitability and growth potential and decreasing the debt ratio, whereas CEOs from national research institutes often exercise bad influence. However, since there is the possibility that employee welfare is emphasized over profitability, we examine these hypotheses in this subsection.

First, we consider the hypothesis that welfare is emphasized at the expense of corporate earnings. The only item in the cash flow table, which can be used owing to data constraints, is “benefit payable to employees.” By normalizing this item with the sales of the company, we create an explanatory variable called “welfare.” We use OLS, the random-effects model, and the fixed-effects model in our regression analyses, creating three dummy variables of the central state-owned and state-affiliated enterprise (Dcen), the local state-owned enterprise (Dloc), and the private enterprise (Dpri), controlling company attributes and including five types of government CEOs as explanatory variables. From the Hausman test, only the results of the fixed-effects model determined to be most desirable are shown in Table 13.

Table 13 Government CEOs and Employee Benefits

Variable	welfare	welfare	welfare	welfare
state_CEO	-.221*		-0.167	
outsider_CEO	-.344**	-.353**		
central_gov_CEO		-0.168		-0.103
local_gov_CEO		-0.0368		0.0233
state_rea_CEO		-0.00976		0.0654
SOE_CEO		-.475***		-.432***
Commu_com_CEO		-0.0399		0.0216
Dcen	-0.228	-0.269	-0.251	-0.292
Dloc	.755***	.767***	.761***	.773***
lnTASS	-2.28***	-2.28***	-2.28***	-2.28***
DEBT	.00999***	.01***	.0101***	.0102***
board_number	.151***	.152***	.15***	.152***
top10	.0262***	.026***	.026***	.0258***
_cons	15.9***	15.9***	15.8***	15.8***
r2_w	0.157	0.157	0.156	0.157
N	12883	12883	12883	12883

Note: * p<.1; ** p<.05; *** p<.01

Table 13 shows that government CEOs do not provide abundant wages to employees compared to internal CEOs. In particular, the level of welfare benefits in the case of CEOs from state-owned enterprises is significantly lower. On the other hand, the other four types of government CEOs, such as those from central government and local government, do not have significant differences in welfare standards. In addition, in the case of external CEOs, the welfare benefits of employees tend to be lowest. Overall, the results show that internal CEOs place great importance on the interests of employees.

Table 13 shows that all the coefficients of the local state-owned enterprises (Dloc)

are significantly positive compared to private enterprises, indicating that employees' welfare benefits are abundant in the local state-owned enterprises. On the other hand, the coefficient of the central state-owned and state-affiliated enterprises (Dcen) is negative and insignificant. In local state-owned enterprises, which are affected by partial privatization reforms, employees' welfare benefits are gradually emphasized.

6. Conclusion

This study presents the influence on corporate performance of government as a shareholder and by means of personnel control, such as appointment of management teams. We report firm-level regression results for 10 industries, including the chemicals, electromechanical manufacturing, general machinery manufacturing, information communication, construction and real estate industries, using financial data between 2000 and 2014, as well as corporate governance data for 3 years: 1999, 2006, and 2013.

The major difference between this study and previous research lies in the manner of processing governance variables. We discuss the reclassification of shareholders in our analysis, whereas previous studies ignore the difference between state-owned corporate shareholders and private corporation shareholders. In addition, although previous research has considered various attributes, such as CEOs' terms of office and concurrent posts, there is still little analysis of the existence of a relationship between government and corporate performance. In addition, in this study, we analyze the effect on corporate performance of independent directors, who are

categorized based on their relationship with the government. Accessibility to data after the stock reform in 2005 enables us to conduct an analysis over a longer span of 14 years.

The main analysis results are as follows. First, as presented in previous research, we confirm a U-shaped relationship between the government's shareholding ratio and the profitability and growth potential of the company. In other words, a relatively low government shareholding ratio is negatively associated with the profitability and growth potential of an enterprise. However, when the government owns more than 50% of the company's shares, an increase in the government shareholding ratio improves corporate performance. On the other hand, there is an inverted U-shaped relationship between the government's ownership ratio and the debt ratio, and it is found that if the government owns a share ratio exceeding a certain threshold, an increase in its shareholding ratio improves the soundness of corporate finance. This result suggests that if the government is not the largest shareholder, the government tends to prioritize issues such as politics and social stability rather than maximizing corporate value. Therefore, a government shareholding ratio lower than 50% tends to exacerbate corporate performance at the expense of the interests of minority shareholders. However, once the shareholding ratio of the government exceeds a certain threshold, it is more likely that the company is able to balance interests and corporate performance improves.

Second, depending on the attributes of the company, the role of the government as a shareholder is different. In local state-owned enterprises, a U-shaped relationship is found, but in the case of central government enterprises and companies invested in

by central government enterprises, the ownership ratio of the government is found to have no influence on performance. Moreover, the higher is the government shareholding ratio in private enterprises, the worse is corporate performance. The overall results suggest that privatization of general state-owned enterprises is desirable. However, for strategically important companies involved in national security, national regulations should be strengthened and they should remain unlisted.

Third, the appointment of CEOs and directors of listed companies in China is significantly affected by shareholders. If the government is a major shareholder, in order to ensure the implementation of a policy, it is highly likely that the manager with a close relationship with the government is appointed, and thereby, the government influences the management. This result suggests that CEOs who have worked at state-owned enterprises, CEOs who have served as executives of Communist Party committees, CEOs from national research institutes, and other government-affiliated CEOs have worsened corporate performance. Moreover, if private enterprises have CEOs from local governments, profitability declines. When the effectiveness of the law is weak, a government-affiliated CEO as the representative of the government is likely to realize political objectives or collaborate with the “grabbing hand.” On the contrary, a CEO with most relevance to the central government is motivated to improve company performance when laws and regulations are highly effective and his/her career path is strongly related to corporate performance. With respect to central-government enterprises and enterprises invested in by central-government enterprises, government CEOs have no negative impact on performance, and CEOs from central government and local

government have a positive impact on performance.

Fourth, in limited research comparing inside and outside CEOs of Chinese enterprises, our results show there is no significant difference on corporate performance between the influence of inside and outside CEOs. Outside CEOs are more likely to implement cost reductions, such as restructuring, and can promote reforms utilizing externally acquired knowledge, whereas they are more conservative than internal CEOs are because they cannot grasp corporate information in the short term. It is possible that the effects on both sides offset each other. A better understanding of the difference between internal and outside CEOs of Chinese listed companies awaits further research.

Fifth, the effect of independent directors on corporate performance is limited. A government independent director has had influence on the profitability, growth potential, and financial soundness of a company. The size and independence of the board of directors are not regarded as important in Chinese listed companies and it is found that these variables do not play an important role.

Sixth, using the total value of the shareholding ratio of the top 10 shareholders, we measure the concentration of the ownership structure of listed companies. Although the concentration level is high at 56% on average, an effect of improving corporate performance is confirmed. It can be observed that high concentrations are valued as effective means of governance in developing countries, such as China, where the legal system is not complete.

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Appendix Correlation Matrix

	ROA	sales_growth	over50_dummy	control_dummy	State_ratio	Private_ratio	Person_ratio	Foreign_ratio	Director_ratio	stateID
ROA	1.000									
sales_growth	0.254	1.000								
over50_dummy	0.019	-0.001	1.000							
control_dummy	-0.076	-0.042	0.560	1.000						
State_ratio	-0.027	-0.014	0.801	0.857	1.000					
Private_ratio	-0.010	0.018	-0.423	-0.635	-0.604	1.000				
Person_ratio	0.145	0.054	-0.234	-0.391	-0.364	-0.145	1.000			
Foreign_ratio	0.051	0.003	-0.047	-0.083	-0.075	-0.074	0.081	1.000		
Director_ratio	0.095	0.025	-0.111	-0.153	-0.179	-0.105	-0.020	-0.063	1.000	
stateID	0.008	0.011	0.054	0.054	0.065	-0.062	0.036	-0.001	-0.004	1.000
cenID	0.022	0.011	0.065	0.067	0.070	-0.060	0.007	-0.013	-0.016	0.458
locID	-0.011	-0.008	0.003	0.012	0.010	-0.014	-0.003	-0.016	0.007	0.532
SOEID	-0.017	0.009	0.014	0.008	0.025	-0.041	0.074	0.041	-0.023	0.554
reashID	0.051	0.014	0.016	0.010	0.017	-0.012	-0.004	0.034	0.035	0.200
comID	-0.004	0.006	0.055	0.054	0.048	-0.020	-0.031	-0.030	0.012	0.343
outsiderID	0.002	-0.005	-0.067	-0.076	-0.093	0.055	0.008	0.010	0.038	-0.576
state_CEO	-0.018	-0.016	0.156	0.226	0.213	-0.122	-0.166	-0.053	-0.067	0.072
central_gov_CEO	0.012	0.008	0.015	-0.007	0.008	-0.008	0.007	0.046	-0.019	0.044
local_gov_CEO	0.018	0.012	0.046	0.027	0.045	-0.015	-0.022	0.015	-0.021	0.047
state_rea_CEO	0.030	-0.003	0.006	0.005	-0.002	-0.057	0.079	-0.027	0.025	0.055
SOE_CEO	-0.038	-0.004	0.103	0.165	0.168	-0.110	-0.106	-0.020	-0.033	-0.022
Commu_com_CEO	-0.036	-0.032	0.130	0.187	0.187	-0.118	-0.111	-0.018	-0.041	0.054
insider	0.057	0.000	-0.128	-0.135	-0.149	0.024	0.126	0.051	0.042	-0.063
outsider_CEO	-0.022	0.008	-0.087	-0.104	-0.119	0.138	0.017	-0.024	0.024	-0.030
top10	0.145	0.066	0.428	0.057	0.341	0.160	0.116	0.186	0.115	0.046
DEBT	-0.269	0.018	0.039	0.136	0.111	0.051	-0.269	-0.063	-0.113	-0.001
TASS	-0.011	-0.009	0.094	0.065	0.105	-0.042	-0.042	0.118	-0.015	0.100
board_number	-0.015	-0.007	0.144	0.192	0.194	-0.062	-0.171	0.000	-0.035	0.195
ID_number	0.113	-0.018	-0.166	-0.161	-0.199	0.039	0.125	0.058	0.075	0.275

Appendix Correlation Matrix (continued)

	stateID	cenID	locID	SOEID	reashID	comID	outsiderID	state_CEO	Central_gov_CEO	local_gov_CEO	State_rea_CEO	SOE_CEO	Commu_com_CEO
stateID	1.000												
cenID	0.458	1.000											
locID	0.532	0.031	1.000										
SOEID	0.554	0.045	-0.046	1.000									
reashID	0.200	-0.017	-0.049	-0.065	1.000								
comID	0.343	0.011	-0.019	0.089	-0.013	1.000							
outsiderID	-0.576	-0.245	-0.332	-0.317	-0.117	-0.182	1.000						
state_CEO	0.072	0.025	0.026	0.040	-0.014	0.066	-0.062	1.000					
central_gov_CEO	0.044	0.115	-0.012	0.027	-0.040	0.010	0.019	0.148	1.000				
local_gov_CEO	0.047	-0.001	0.074	-0.018	0.031	0.003	-0.046	0.323	0.084	1.000			
state_rea_CEO	0.055	0.040	-0.003	0.082	0.014	-0.004	-0.042	0.127	-0.021	-0.036	1.000		
SOE_CEO	-0.022	-0.029	-0.056	0.029	-0.018	0.026	-0.003	0.520	-0.084	-0.161	-0.045	1.000	
Commu_com_CEO	0.054	0.039	0.018	0.013	-0.023	0.087	-0.035	0.436	-0.056	-0.095	-0.044	0.122	1.000
insider	-0.063	-0.035	-0.012	-0.061	0.009	-0.010	0.053	-0.566	-0.129	-0.274	-0.092	-0.264	-0.280
outsider_CEO	-0.030	-0.027	0.004	-0.016	0.000	-0.039	0.022	-0.175	-0.064	-0.140	-0.055	-0.121	-0.156
top10	0.046	0.019	-0.007	0.050	0.041	0.016	-0.033	-0.024	0.014	0.026	-0.005	0.005	0.015
DEBT	-0.001	-0.016	0.023	-0.010	-0.049	0.029	0.009	0.106	-0.008	0.005	-0.076	0.077	0.080
TASS	0.100	0.084	0.054	0.051	-0.002	0.039	-0.033	0.036	0.026	0.027	-0.014	0.008	0.039
board_number	0.195	0.117	0.107	0.066	0.085	0.048	0.177	0.065	0.028	0.021	-0.016	0.028	0.056
ID_number	0.275	0.147	0.148	0.109	0.092	0.111	0.234	-0.012	-0.010	0.004	-0.011	0.002	0.027

Appendix Correlation Matrix (continued)

	insider	Outsider_CEO	top10	DEBT	TASS	board_number	ID_number
insider	1.000						
outsider_CEO	-0.344	1.000					
top10	-0.054	0.012	1.000				
DEBT	-0.070	-0.012	-0.082	1.000			
TASS	0.006	-0.030	0.109	0.060	1.000		
board_number	-0.055	-0.038	0.058	0.098	0.061	1.000	
ID_number	0.121	0.000	-0.091	0.004	0.111	0.146	1.000