

**Corporate Layers and Corporate Transparency in a Transition
Economy: evidence from China**

by

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**Corporate Layers and Corporate Transparency in a Transition
Economy: evidence from China**

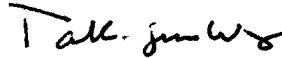
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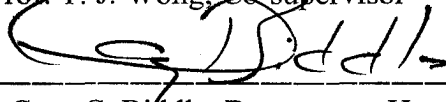
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Abstract:

With a proprietary data set, this thesis first investigates how corporate layers are determined, after which it analyzes the effects of corporate layers on corporate transparency. In chapter one, I find that corporate layers are set up to limit government control and interference in government-controlled listed companies. I document that the development of markets, legal systems and property rights protection in a region is associated with more corporate layers, limiting the control of government as an ultimate shareholder. Market developments and political incentives to interfere business are associated with fewer layers, allowing government to control the firms through direct ownership. The opposite is true for privately-controlled firms. The lack of development in markets, legal systems and property rights protection is associated with more layers in privately-controlled firms, which are used for hiding the identity and/or wealth of ultimate private owners and shielding them from government predation. In chapter two, listed companies are found to be more transparent when they get away from government through setting up more corporate layers in government-controlled firms. More layers between government agencies and listed companies are associated with stronger earnings-return relation. The corporate layers in government-controlled firms emerge as a mechanism to confine political interference and enhance corporate transparency. In companies controlled by private owners, the earnings do not have any explanatory power for stock returns and corporate layers are not associated with the firms' earnings-return relation.

Keywords: Corporate layers; Political interference; Corporate transparency

Chapter 1

Government Influence and Formation of Corporate Layers in a Transition Economy: Evidence from China

1.1. Introduction

Corporate pyramids and multiple layering structures are ubiquitous around the world, not only in emerging markets, but in developed economies as well. In transition economies such as China where privately-controlled firms are in their infant stage, corporate layers have already emerged. Among the government-controlled firms in China, the reform on state assets management system also leads to the formation of corporate layers between government agencies and listed state firms.

It is still a puzzle in the literature why corporate pyramids are so prevalent. Bebchuk (1999) puts forth an expropriation argument that controlling owners with private benefits of control set up pyramids to facilitate expropriation of minority shareholders. However, the controlling owners may not stand to gain from setting up pyramids because outside investors will anticipate the expropriation and price protect themselves. There must be some efficiency gains associated with the formation of pyramids, although such gains are hard to define (Bebchuk et al., 2000), and thus not much evidence has yet been documented in the literature.

In this chapter, we use the newly listed firms in China to test the formation of pyramids and corporate layers from efficiency perspective. More specifically, we study whether the layering structures are used for efficiency enhancing reasons, such as for limiting political interference, direct control or predation of government in corporations. China offers a unique opportunity to investigate how corporate layers are determined because these corporate layers are at their infant stage and the presence of government-

and privately-controlled firms listed in the stock exchanges allows us to compare layer formation between these two types of firms¹. The comparison will shed light on the underlying incentives behind the corporate layer formation.

For government-controlled firms, corporate layers may arise to limit the government control or interference by transferring decision rights from government agencies to state enterprises that are more likely to be driven by economic incentives. This decentralization of decision rights not only allows state-owned firms in the bottom layers to pursue economic goals rather than political goals, but also allows the collocation of decision power and specialized knowledge in the hands of state-owned firm managers. For privately-controlled firms, layers are set up to hide the identity, wealth and business transactions of the ultimate owners, shielding themselves against government interference or even predation and/or hiding themselves for the expropriation of minority shareholders.

Following La Porta et al. (1999), we develop a proprietary dataset, which covers more than 90% of all listed companies from 1993 to 2001, to study the corporate layers of the newly listed Chinese companies. We trace the identity of the ultimate shareholder and tabulate the number of layers in the controlling chain from the ultimate shareholder to the listed company. In the same process, we also calculate the ultimate owner's cash flow rights and separation between cash flow and voting rights in the listed firm.

Using this proprietary dataset, we document how the number of layers for government- and privately-controlled firms is determined. We look at two institutional

¹ As later discussed in section 2.2, the layering structures of the government-controlled firms are not considered as pyramids because government as a controlling shareholder does not have divergence of cash flow and voting rights.

factors—the development of market and legal environment and political incentives of governments—as determinants of corporate layers.

For the government-controlled firms, the competition and monitoring effects from the development of market and legal institutions will increase the political cost of government intervention and reduce the agency cost induced by opportunistic activities of the managers. This will encourage the government to decentralize the controlling rights to those with specialized knowledge. The opposite is true for privately-controlled firms. The development of market and legal enforcement strengthens the protection for private property rights, which reduces private owners' incentives to hide their investment through setting up of corporate layers. Our results support the hypothesis that the development of market and legal institutions is associated with *more* corporate layers in government-controlled firms, but with *fewer* layers in privately-controlled firms.

Our evidence on the relation between government's political incentives and corporate layer formation also supports our prior prediction that government-controlled firms will set up more corporate layers if the government has fewer incentives to influence the state firms. However, there is only weak evidence lending support to our prediction that privately-controlled firms will set up layers if government has political incentives to meddle with the firms' operations.

As a supplementary analysis, we investigate the determinants for cash flow rights and the separation between cash flow and voting rights for privately-controlled firms. The results generally show that the development of market and legal institutions is associated with more cash flow rights and less separation of cash flow and voting rights. This further supports the notion that better market and legal institutions would reduce private owners' incentives to hide from the government. We also test the effect of the

second largest shareholder on the corporate layer arrangement. Everything else equal, a private owner as a second largest shareholder increases the firm's desire to confine the political interference of the government, which leads to the formation of more corporate layers; while the presence of government as a second largest shareholder will increase the predation risk, which therefore will increase the layers of privately-controlled firms.

The remainder of this chapter is organized as follows. Section 1.1 develops the testable hypotheses. Section 1.3 describes the data sample and provides discussion of the empirical results. Robustness checks are presented in section 1.4 and section 1.5 concludes this chapter.

1.2. Hypothesis development

In this section, we explore how corporate layers are set up in listed firms to limit government's interference in business operations. We will first discuss the difference between the government-controlled and privately-controlled firms in their response to government intervention by way of corporate layer formation. Based on this analysis, we develop two sets of hypotheses for the determinants of the corporate layering structure for the two types of firms.

1.2.1. Government-controlled firms

To understand what drives the formation of corporate layers in state-owned firms, we have to first examine the incentives of governments (politicians), which directly or through a corporate chain, hold the majority ownership of the listed firms. As controlling owners, governments are responsible for the efficiency and overall performance of the firms within the jurisdiction. A productive and well-functioning state business sector will propel the economic development of the region, which enhances the politicians' chances of future promotions. This is especially the case as decentralization imposes a

harder budget constraint on local governments, and has created more inter-jurisdictional, product market and capital market competitions.

However, politicians face one constraint, the prohibition to sell off the state ownership, which reduces their incentives to improve the state enterprises' efficiency. Without a market price to reflect the value of the state assets, politicians cannot realize any benefits from building up state firm value. Instead, they may use the controlling power in the listed firms to pursue political goals such as using the enterprise resources to finance public projects or to provide employments for the region. If the politicians are corrupt, they may even use their power to divert listed firms' resources to enrich themselves (grabbing hand in Shleifer and Vishny, 1998).

Politicians, as controlling owners of the listed firms, are trading off between two competing incentives. On the one hand, increasing the efficiency and profitability of the state firms can help improve the local economy and enhance their chances of promotions. This may mean decentralizing their control and giving decision rights to professional managers with specialized knowledge, rather than politicians, to run the firms. On the other hand, politicians can use the state firms they control to achieve personal and political goals, which may hurt the profitability and efficiency of the firms.

In weighing the two competing incentives, politicians need to analyze the costs and benefits of limiting government influence in the firm to promote efficiency or maintaining government control to achieve political goals. In this paper, we attempt to examine whether politicians set up corporate layers, with local government agency as the ultimate owner of a vertical chain of state enterprises, to limit government influence in the state firms. For ideological reasons, government is required to maintain a controlling stake in listed state firms, adding more layers of state-owned firms to distant

the government agency from the listed firm, instead of dumping state shares, serves as a vehicle to confine government's interference in the firm.

The intention of the fundamental restructuring of state-owned firms is to limit government's direct involvement in the firms' business operations. As proposed by Qian (1996), the government needs to transform the ownership structure of state firms and set up a new state asset management system. Consistent with this proposal, local governments have set up large business groups and multiple-tier of state asset management systems. Consequently, layers of entities that pursue more economic objectives are inserted between state-owned firms and government agencies. Such corporate layers can serve as an instrument to bind the "grabbing hand" of government. As described by Shirley and Walsh (2001), *if an enterprise is run as a department of a ministry, with its managers directly appointed by a minister of chief executive, then political interventions will be easy and common. Alternatively, if the government acts as the dominant shareholder of a largely independent firm, acting through a board of directors, political intervention may be possible but is more costly and more transparent.*

A similar argument is found in Williamson (1967) that different goals between hierarchical levels can increase the control loss in an organization. Also, the additional layers are not necessarily solely state-owned firms. Many of them can be joint ventures or state firms that are partially-owned by non-state firms. This dilution of state ownership, termed as pluralization by Qian (1996), can further reduce government control in the listed firms. Appendix I provides examples of such corporate layers for a local- and a central-government-controlled firm.

1.2.2. Privately-controlled firms

La Porta et al. (1999) confine the definition of pyramids to describe firms with a controlling shareholder that exercises control through at least one publicly traded company. Claessens et al. (2000) and Faccio and Lang (2002) broaden the definition as “owning a majority of the stock of one corporation which in turn holds a majority of the stock of another, a process that can be repeated a number of times”. A key characteristic in a pyramidal structure is the deviation of cash flow rights from controlling rights. Thus, corporate layers in government-controlled firms do not give rise to pyramidal ownership structure because there is no or only very little divergence between cash flow rights and voting rights.

However, it remains a puzzle in the literature why privately-controlled firms set up corporate pyramids with multiple layers of firms. Bebchuk (1999) attempts to show that pyramid formation is to facilitate controlling owners in realizing their private benefits of control through expropriation of minority shareholders. However, this argument does not provide a full explanation for corporate pyramids, especially when investors can anticipate controlling owners’ expropriation and price protect themselves.

In this paper, we propose another explanation for the formation of corporate pyramids – ultimate owners of privately-controlled firms use corporate layers to hide their identities and dealings, and shield themselves from government predation. Similar to description by Smith (1776) that “... *in those unfortunate countries... where men are continually afraid of the violence of superiors, they frequently bury and conceal a great part of their [capital] stock... In case of their being threatened with any of those disasters to which they consider themselves as at all times exposed*”, private investors in transition economies are confronted with high risk of predation by government.

Using survey data in Russia, Frye (2003) shows that managers express little confidence that courts could protect their rights in disputes with local or regional governments, which will significantly affect the investment decisions by privately-controlled firms. Johnson, McMillan and Woodruff (2002) also argue that it is the weak property rights not the limited access to external finance that constrains private investments in a country. The poor protection for property rights will drive private owners to disguise their investments and/or hide their identities in business dealings.

1.2.3. Determinants for corporate layers

We investigate two institutional factors—the development of market and legal environment and political incentives of local governments — as the determinants of corporate layers. As a control, we also examine how knowledge specialization affects a Chinese firm's decentralization of decision rights and formation of corporate layers.

1.2.3.1. Development of market and legal institutions

We use three macro variables from a series of comprehensive indexes compiled by Fan and Wang (2001) to proxy for the regional development of market and legal environment. The first variable, marketization index, captures the overall market development, such as the degrees of market competition and government intervention, and the strength of legal environment. Two other variables, legal environment and protection of property rights, proxy for the development of legal institutions in the region. The legal environment index measures the degree of legal protection of copyrights, consumer rights and private property rights. The protection of property rights index measures the number of legal cases and court efficiency in resolving these cases. In addition to these three indexes, we also use a deregulation index compiled by Demruger et al. (2002), which captures the amount of preferential policies granted to the

region by the central government, to proxy for the degree of market development. A more detailed description of the four indexes is reported in Appendix II.

The variation in the levels of the development of markets and legal environment should be critical determinants for corporate layers, which can help to confine government interference and hide private owners' identity, wealth and transactions from government predation. This idea that strong legal environment can limit government intervention is discussed by Hayek (1944): "*..., this (rule of law) means government in all its actions is bound by rules fixed and announced beforehand—rules which make it possible to foresee with fair certainty how the authority will use its coercive powers in given circumstances and to plan one's individual affairs on the basis of this knowledge.*"

We hypothesize that the regional development of market and legal institutions in China can affect the cost and benefit tradeoffs of the decentralization of control in listed firms, which in turn determine the formation of corporate layers in the firms. On the one hand, tight ownership control and intervention in the business operations of the listed firm can help local government to achieve social goals, while corrupt local politicians can even use their influence to obtain private benefits from the firms. However, as the markets in China become more deregulated and competitive, government control becomes an increasing burden to the SOEs, making them harder to survive. Thus, too much government intervention may undermine the long run development of the region, creating heavy political costs to the government officials. On the other hand, decentralization of control and decision rights to SOE managers may lead to excessive opportunistic behavior such as perk consumption and stripping of state assets.

To set up corporate layers, government will tradeoff the political cost of government control against the agency cost of decentralization of government control to

the management. As the market and legal institutions become more developed, the negative effects of government control are magnified, giving politicians incentives to set up corporate layers. Also, market competition and legal protection of shareholders serve as a discipline against the opportunistic behavior of the management, which allows government to decentralize without incurring heavy agency costs.

Thus, we hypothesize that for government-controlled firms, development of market and legal institutions may lead to the formation of more corporate layers.

The development of market and legal environment will strengthen private owners' confidence in the security of their property rights. The political intervention in the economy is restricted by market rules. Private owners can rely on markets rather than political connections to carry out most, if not all, of their business transactions. This decrease in government's role will also reduce the firms' risk of predation by the government. This is consistent with Shleifer and Vishny's (1998) argument that deregulation and liberalization can bind the grabbing hand of the government. In addition, private owners can seek legal protection when their property rights are violated. Thus, their incentives to hide their identity, wealth and business dealings are much weaker as the legal environment in the region improves. In summary, contrary to the prediction for government-controlled firms, we hypothesize that privately-controlled firms will set up fewer corporate layers in regions where the market and legal institutions are more developed.

1.2.3.2. Political incentives of local governments

The political incentives of governments to interfere with state firms are discussed in Shleifer and Vishny (1998) that "... *key problem of state firms is government interference in their activities to direct them to pursue political rather than economic*

goals, such as over employment". Thus, the decision for the state firms to set up corporate layers is a tradeoff between the short-term opportunistic incentives, such as maintaining excess employment in state firms to provide adequate employment for the region, and the long-term economic incentives of the state, such as hardening the budget of inefficient state firms.² The short-term opportunistic incentives will induce government to interfere business, setting up fewer layers to facilitate such interference. However, the long-term efficient-seeking incentives will encourage the government to set up more layers through which effective control rights are delegated to managers with economic incentives and specialized knowledge to run the firms.

For the privately-controlled firms, the effects of political incentives on corporate layer formation are opposite to those of the government-controlled firms. In China, state predation is a critical threat to the security of private property rights. This threat of government interference will induce private owners to build pyramidal layers as a shelter. However if the governments have incentives to pursue long-term economic development in the region by restricting their interference in business, privately-controlled firms will have less incentive to set up pyramidal layers.

We use two macro variables of the region, unemployment rate and fiscal surplus, to proxy for the short-term political incentives of the government. The high unemployment rate may lead to more severe political interference as politicians try to use their power in the SOE to keep the employment problem under control. In contrast, the fiscal surplus will decrease the government incentives to interfere with state firms' operations. For privately-controlled firms, a grabbing-hand government will shift to

² In most cases, the ultimate objective of this incentive is to pursue future promotion for the politicians.

them the unemployment burden and collect from them arbitrary fees to relieve regional employment problems and budget deficits.

As proxies for the long-term economic development incentives, we use two other variables, the total R&D expenditure by government in the region and the financial difficulties of SOEs in the region. Spending in R&D will advance technology, which in turn fosters productivity growth in the long run. Myopic politicians with interest in short-term personal objectives will be reluctant to spend sufficient R&D. Thus, higher R&D expenditures indicate that the local government is more concerned about long-term regional economic development, and less about maximizing private political objectives. The financial difficulties in SOEs, measured by the percentage of SOEs with net loss in the region, have two opposing effects on corporate layer formation. On the one hand, the government will tighten its control and provide more subsidies to the troubled SOEs, which may lead to a vicious cycle that more state firms become dependent on state support and eventually fall into serious financial problems. On the other hand, the government may try to improve management efficiency of SOEs by confining its political intervention to the firms' operations. Thus, government will set up more layers to delegate decision rights to professional managers. Both sets of political incentive variables are described in details in Appendix II.

1.2.3.3. Specialized knowledge

Other than the two sets of institutional factors, development of market institutions and political incentives, whether a firm requires specialization of knowledge for management plays a role in determining its degree of decentralization and formation of hierarchies (Jensen and Meckling, 1976). In this study, we use two proxies for specialized knowledge: 1. an industry level measure used in Christie et al. (2003), which

captures industry characteristics, and 2. market-to-book ratio, a firm level proxy based on the firm's growth option.

For government-controlled firms, specialization of knowledge is positively associated with decentralization and corporate layer formation. Value maximization requires the decision rights and specialized knowledge to be collocated in the hands of the same party. Specialized knowledge refers to knowledge that is costly to transfer (Christie et al., 2003). Bureaucratic government agencies lack the expertise to process the specialized knowledge from the locus of production activities to arrive at efficient decisions (Hayek, 1945). Thus, the direct control by government agencies will undermine the efficiency, while decentralization of decision rights to those that possess the specialized knowledge is a way to overcome this inefficiency.

The relation between specialized knowledge and pyramidal layers in privately-controlled firm is ambiguous. Private owners should be likely to possess more expertise to process specialized knowledge than government agencies. Thus, private owners should directly control the listed companies for the sake of efficiency. However, the companies in need of specialized knowledge should be decentralized if it is the professional managers rather than the ultimate private owners that possess the specialized knowledge. The effects of specialized knowledge on pyramidal layers in privately-controlled firms depend on which of the manager or the owner has the advantage in processing the specialized knowledge.³

1.3. Data, sample and results

³ The owners of privately-controlled firms, which are all newly established in China, have the advantage in possessing the specialized knowledge in the early stage the firms' development. However, as the company matures and becomes more complex, the specialized knowledge required to manage the firms efficiently belongs professional managers, not the owners of the firms.

1.3.1. Data construction

The study of corporate layers and ultimate controlling shareholders of Chinese listed firms is non-existent in the literature partially due to the difficulty in data collection. Prior studies on ownership structures of Chinese firms do not analyze the ultimate ownership, but simply look at the immediate ownership structure based on proportion of two types of shares: state shares or shares owned by government agencies and legal person shares or shares owned by institutions including state-owned enterprises (Sun and Tong, 2003; Xu and Wang, 1999). Tian (2001) has tried to document the pyramidal ownership structure but identified only 19 cases due to limited publicly available information. Of the 19 cases, the average ultimate owner's cash flow rights is 99% of his/her voting rights.

Starting in 2001, detailed background information of the controlling shareholder including the chain of corporate layers is reported in the annual report. This new regulation enables us to identify and analyze layering ownership structure of the listed firms in China emerging market. Our sample is consisted of all the listed companies in China that have available data on the ultimate controlling shareholders. Following La Porta et al. (1999), we identify the controlling chain through which the ultimate owner controls the listed company through main information source of the annual report in year 2001.

IPO prospectuses are also used as a supplementary source of information. Most listed companies are originally restructured from state-owned enterprises. The restructuring process is disclosed in the prospectus, which provides us with more information about the identity of the ultimate shareholder, especially those controlled by the government.

Another valuable source of information is media reports and company websites. In quite a few cases when we cannot ascertain the ultimate owner's identity, especially those that are controlled by privately-owned firms, we refer to media reports that reveal the ultimate owners of these listed firms. An important database for identifying the ultimate owners in our sample is "the hundred family firms" compiled by *New Fortune*. If ultimate owners cannot be identified through the above sources, we check the homepages of the immediate controlling shareholders for more information.

Based on the 2001 data, we construct the entire history of ownership structure data for each firm from its initial public offering (IPO) year up to 2001. If there is no change in the controlling shareholder, we will regard the ownership chain to remain the same over the years after the IPO. However, if there is any change in the ultimate controlling shareholder, we will identify the ultimate shareholder through various alternative information sources mentioned earlier.

Financial data of the listed companies are available in the *Taiwan Economic Journal* (TEJ) database, and the *Genius* database, which is compiled by the Shenzhen Stock Exchange. The data sources for variables that capture the development of markets and legal institutions, government political incentives, knowledge specialization and other macro control variables are described in Appendix II.

1.3.2 Descriptive statistics

Our sample is composed of all listed companies with shares being traded in either the Shanghai or Shenzhen Stock Exchange in 1993 to 2001. Our final sample is reported in Table 1.1. A small sample of companies is excluded from our sample due to unavailability of ultimate shareholder information from the annual reports and the

alternative information sources. Except in year 1993 and 1996, our sample covers more than 99% of all the listed companies.

[Insert Table 1.1 here]

Table 1.2 presents the descriptive statistics of the ultimate owners of the listed firms. In panel A, we report the distribution of the identity of ultimate shareholders in each year. Ownership control is highly concentrated in China that almost all firms have a controlling shareholder holding more 5% of outstanding shares.⁴ As discussed in the later section, controlling shareholders typically possess concentrated cash flow and voting rights in the firms as well. Widely-held companies, which do not have a large shareholder that controls more than 5% of outstanding voting rights, are almost non-existent which is indicated by its weight of 0.3% in our sample.

Consistent with the literature that government is the largest shareholder in the stock markets, we document that local government controls more than 60% of all listed companies during the sample period, while central government controls more than 10% after 1997. The relative proportion of local-government-controlled firms declines during our sample period, while that of central-government-controlled firms increases during the same period. Also, the privately-controlled firms show a steady growth in proportion, from 3% in 1993 to about 13% in 2001. One reason for the declining trend for local-government-controlled firms is the abolishment of the quota system for IPO, under which the government-controlled firms have priority over privately-owned firms to issue stocks in the stock markets. In addition, the buyout of government control by the management and/or outside private investors also contributes to the increasing trend of

⁴ To consistent with the literature, we also adopt the 10% and 20% as the cutoff point. The results do not change.

privately-controlled firms and decreasing trend of local-government-owned firms. For central-government-controlled firms, the recent reform process of gradually diluting central government's ownership stakes in some big state groups through IPOs has contributed to the increase in this category of firms in the stock markets.

Companies controlled by the army, foreign investor, the media, financial intermediaries, universities, research institutes and worker unions are classified as the miscellaneous group, which comprises only about 5% of the entire sample.

[Insert Table 1.2 here]

In Panel B, we analyze the distribution of ultimate shareholder types based on industry, firm size and regional development.⁵ Companies in regulated industries are mainly controlled by the government because of their strategic value and capital requirement that creates entry barriers for privately-controlled firms. When partitioning the sample by firm size median, the result shows that government tends to control larger firms while the private owners tend to control smaller ones. Most privately-owned businesses are still in their infant stage in China, which will take a longer period to accumulate their wealth. We also find the pattern that local governments control more listed firms in poor regions (provincial GDP per capita below the sample median), where the lack of market-supporting institutions induce more government involvement in business. The central government tends to control more listed companies in rich regions indicating that the large state groups that have gone IPO are mainly located in more affluent regions. However, between rich and poor regions, the difference of privately-controlled firms is marginally small.

⁵ We limit our analysis to one year (year 2001) with the consideration that firms stay with the same ultimate shareholder over the sample period.

Panel C reports the presence of a second largest shareholder, who controls more than 5% of outstanding shares of the firm. Around 35% of local and central government-owned firms have a second largest shareholder, while for privately-controlled firms, 70% have a second largest shareholder. La Porta et al. (1999) argue that the second largest shareholder may serve as a monitor against expropriation by the controlling shareholder. Whether the second largest shareholder in China can serve the monitoring role is an empirical question. There is ample anecdotal evidence that for privately-controlled firms, having government as the second largest shareholder can serve not necessarily as a monitor but to facilitate the access to equity markets (Bai, Li and Wang, 2001). In this panel, we also analyze the distribution of the second largest shareholder for each ultimate controlling owner type. The salient characteristic from the distribution is that most government-controlled firms have the government as the second largest shareholder because these firms are all originated from state enterprises. In addition, the government-controlled firms, as compared with privately-controlled firms, have a higher percentage of (state-owned) financial intermediaries as the second largest shareholders, which may facilitate the firms to raise debt. One possible reason for that there is a higher percentage of foreign firms serving as the second largest shareholder in government-controlled firms is that the joint ownership enables the foreign firms to gain easier access to product and capital markets. Similar to government-controlled firms, about 50% of the privately-controlled firms have the government serving as their second largest shareholder. Although the state ownership is likely to facilitate access to debt and equity capital, it will also increase the risk of predation as the government obtains more proprietary information about the companies. In the later section, we will analyze how the government (a privately-owned firm) serving as the second largest shareholder in a

privately-controlled firm (government) firm affects the risk of government intervention in the firm and the firm's response through setting up of corporate layers.

Table 1.3 summarizes the distribution of the ultimate shareholder types in each layer-group and the distribution of corporate layers in ownership type. The evidence indicates that more central-government-controlled firms and privately-controlled firms belong to the groups with more layers. All except the central-government-controlled and privately-controlled firms, the proportions of the other ultimate shareholder types decrease with more layers. The distribution of the number of layers by each type of ultimate owner, which is reported in parentheses, also shows that there are relatively more central-government-controlled firms and privately-controlled firms when the layers increase.

[Insert Table 1.3 here]

Table 1.4 reports the descriptive statistics for the variables used in the regression analyses. We measure the development of markets, legal protection and political incentives based on 31 provinces and administrative regions. Due to data availability, we use only one estimate, the average of year 1999 and 2000, throughout the nine-year sample period for each of the following variables: marketization, legal protection, protection for property rights, deregulation, percentage of SOE with net loss and R&D expenditure. The unemployment rate has 263 observations because the data for Tibet over all the periods and for Chongqing in 1999 and 2000 are missing. All other macro variables have time series data for all the periods. The maximum of growth is recorded in 1992 for Hunan province when the Chinese economy went through a period of high inflation. Specialization of knowledge is based on 84 two-digit industry codes. To

reduce the potential influence of outliers, we winsorize ROA, Leverage and M/B at the top and bottom 1% level.

[Insert Table 1.4]

1.3.3 Regression results

Table 1.5 investigates the determinants for the number of corporate layers in government-controlled companies. We explore the effects of political incentives and the development of market institutions on the formation of corporate layers, while controlling for knowledge specialization and other macro and firm specific factors. Especially, we use the region and year dummy variables⁶ to control for factors that relate to region, such as administrative ranking and geographic location, and time, such as changes in the regulation policies⁷.

Since our dependent variable is the number of layers, which ranges from one to five, as dependent variable, we use the ordered probit model in our estimation. Each of the four market and legal institution variables, marketization, legal environment, protection of property rights and deregulation, is included separately in four models (model 1 to 4 in Table 1.5) because of the high correlation among them (Appendix III). The rest of the determinants are included in each of the four models. Each regression is run by pooling over the nine-year sample period. The autocorrelation is adjusted by clustering in each model.

Consistent with our expectation, the development of markets and legal institutions are positively associated with the number of layers except marketization. Model (2) and

⁶ We have six dummy variables to capture metropolis, northeast, central, northwest, coast and southwest regions and nine dummy variables to identify the year of the observation.

⁷ For example, the IPO policy changes across the period. Corporate layers may be the result of carving-out for IPO to satisfy the quota assigned by the regulator under the quota system. The abandonment of quota system may have systematically changed the corporate layers. However, these changes can be captured by our year dummy variables.

(3) indicate that the legal environment and private property protection are effective in confining government interference. Thus, government would be more likely to set up corporate layers and delegate decision rights to entities driven by economic incentives. In addition, better legal enforcement will discourage managers' opportunistic behaviors and reduce the agency cost of decentralization, which further contributes to the emergence of corporate layers. Model (4) indicates that market deregulation is positively associated with corporate layers, suggesting that development of market institutions reduces government's incentives to control the listed firm. The advantage of this model is that it is less subject to the endogeneity problem as discussed in the diagnostic section.

We also find evidence supporting our government incentive predictions. The coefficient of unemployment rate is negative in all four models and is statistically significant in model (1), (3) and (4). This is consistent with the hypothesis that unemployment problem creates political pressure for the local government to increase control in listed firms that can provide employment opportunities for the region.

The coefficient of fiscal surplus is positive in all models, although it is statistically significant only in model (1). When the government does not have severe financial burden and thus less incentive to interfere SOEs' operations, it will reduce control by setting up more layers. R&D expenditure, which captures the government's commitment to long-term economic development in the region, is positively associated with the number of layers, and the relation is statistically significant in model (3) and (4). This further supports that the incentive to promote SOE efficiency in the government will lead to setting up of more corporate layers.

We do not have a predicted sign for the coefficient of SOE with net loss because the financial difficulties in the state sector are expected to influence the degree of

political control of listed firms in opposite directions. The significantly positive coefficients in all four models indicate that the government, knowing that it does not have the resources and capability to run the listed firms efficiently, will reduce rather than increase their political control in the firms. This result further suggests that corporate layers emerge as a mechanism to improve firm efficiency.

The specialized knowledge, which is measured by both industry characteristics and firm-specific growth options, is significantly positively associated with corporate layers in all the models. This is consistent with the efficiency enhancing argument that decentralization of rights to the management through setting up of corporate layers to collocate specialized knowledge with decision rights.

The other controlling variables, economic growth and economic developments are expected to be positively related to corporate layers. Our findings are consistent with this expectation. The coefficient of size is significantly positive, which suggests that for large firms, more decision rights are decentralized from the government to more professional management. The coefficient of ROA is positive and statistically significant because of the endogenous relation between political control, measured by corporate layers, and firm performance. The negative association between financial leverage and corporate layers is due to the political role of government in capital allocations. Firms with a close relationship with government have the priority to obtain loans from state banks, leading to the higher leverage.

Industry regulation is expected to be negative. However, its coefficient is significantly positive in all the four models, which is contrary to our expectation. The possible reason is that there are many central-government-controlled firms in our sample

that belong to regulated industries and they tend to have more layers⁸. Consistent with our expectation, the IPO age has a significantly negative coefficient, which means that the firms that have been listed for longer period tend to have fewer layers. Firms went public in the earlier years are more likely to be closely controlled by government. In the early stage of the economic reform, governments had tighter control over the state firms and tended to give priority of raising capital from the stock market to companies directly controlled by government.

[Insert Table 1.5 here]

Table 1.6 reports the determinants of pyramidal layers in privately-controlled firms. To compare with the analysis of the government-controlled firms, we use the same models and variables as those in Table 1.5.

Three market and legal institution variables, marketization, legal environment and protection of property rights, are all significantly negative in determining the pyramidal layers of privately-owned firms as shown in model (1), model (2) and model (3). The fourth market institution variable, deregulation, has the opposite sign to prior expectation but it is statistically insignificant. The market institution results in Table 1.5 and 1.6 show a big contrast between government-controlled versus privately-controlled firms. When market institutions are *better* developed, the government-controlled firms set up more corporate layers to limit government control in the firms. On the other hand, when market institutions are *less* developed, privately-controlled firms will set up more layers to protect private property rights. In both types of firms, corporate layers are set

⁸ We re-estimate the four models by excluding central-government-controlled firm. The coefficient of industry regulation is insignificant, while the result on other variables remains almost the same.

up for efficiency enhancing purposes of limiting government interference in their operations.

The macro conditions of the province, which proxy for the political incentives of government, generally have a weaker effect on pyramidal layer formation among privately-controlled firms than government-controlled firms. One possible reason is that it is relatively easier for the local government to shift social and fiscal burdens to its own firms than those controlled by private owners. The risk of predation on privately-controlled firms is more affected by the development of market institutions, rather than social and fiscal conditions of the region.

The two political incentive variables that are more consistent with our prediction are unemployment rate and SOE with net loss. The coefficient of unemployment rate is positive in all four models although the z-value is statistically insignificant. This result weakly suggests that in regions with unemployment problem, the threat of government shifting the employment burden to privately-controlled firms induces them to set up more pyramidal layers. The coefficient of SOE with net loss is positive and statistically significant in all four models. The financial difficulties in the SOEs may induce government to shift the financial burden to privately-controlled firms, such as pressing them to takeover insolvent state firms. Thus, privately-controlled firms in regions where SOEs are faced with serious financial difficulties tend to set up more layers to protect themselves. The coefficients of the other two political incentive variables, fiscal surplus and R&D, generally have the wrong sign and they are not statistically significant.⁹

⁹ The coefficient of fiscal surplus is positive and statistically significant in model (2) and model (3). This result is likely to be driven by multicollinearity because the coefficient becomes statistically insignificant when model (3) is rerun without the market institution variable, protection of property rights, and the other three government incentive variables.

Although the coefficient of knowledge specialization based on industry membership is not significant in all four models, the coefficient of M/B, which measures the specialization in knowledge at the firm level, is positive and statistically significant in all four models. This result of the firm-level knowledge specialization suggests in China's privately-controlled firms, managers possess the specialized knowledge and owners would decentralize decision rights to managers by setting up corporate layers.

For other controlling variables, the economic growth and GDP per capita are expected to have a negative coefficient if economic development leads to better market-supporting institutions. However, the private owners in high growth or wealthy regions may face bigger risk of predation because their wealth tends to attract government's attention. The empirical results show that the coefficient of economic growth is negative and statistically significant in model (2), model (3) and model (4), while GDP per capita has a significantly positive coefficient in model (1) and model (3), suggesting that the wealth level in a region increases risk of predation. Firm size does not have any significant explanatory power for layer formation. Consistent with our prediction, the coefficient for ROA is significantly negative in all models, suggesting that the endogenous relation between layers formation and firm performance that private owner sets up more layers to hide the performance. The coefficient for financial leverage is significantly positive in all the models. In China, privately-controlled firms have more difficulties in obtaining loans from state banks than government-controlled firms. Thus, hiding the identity of the ultimate controlling owners would facilitate privately-controlled firms to borrow from the state banks. Regulation in the industry is predicted to increase the corporate layers because it will increase the possibility of state predation. However, the coefficient is insignificant. Consistent with our expectation, the IPO age

has a statistically positive coefficient, suggesting that the privately-controlled firms went public in later years have less incentive to hide due the development of market and establishment of market-supporting institutions over the time.¹⁰

[Insert Table 1.6 here]

1.4. Supplementary Analyses and Robustness Checks

1.4.1. Cash flow rights and voting rights

Table 1.7 describes the distribution of cash flow rights and the separation between the cash flow rights and voting rights of the ultimate shareholders. Panel A indicates that on average the cash flow rights held by the government as controlling shareholder is much higher than that of private owners serving as controlling shareholder. The difference in cash flow rights between government-controlled and privately-controlled firms is likely to be even larger because of the understatement of government's cash flow rights. The 2001 disclosure requirement only regards companies under the control of the same business entity, not the same government, as related shareholders.¹¹

One explanation for the significant gap in cash flow rights between government and private firms is that the Chinese Company Law requires the government to remain as the dominant shareholder in the listed SOE. Also, local governments can only liquidate state shares after the approval of the central government. Another reason for the cash flow rights gap is that a private owner can structure a corporate pyramid to secure dominant control over a listed firm with a relatively low level of cash flow rights.

¹⁰ We did not adjust the IPO age if the private owner assumed the control of listed company through takeover subsequent to the IPO. Thus, there is some noise in the IPO age for measuring the number of years the firms are listed in our analysis of privately-controlled firms.

¹¹ As shown in Panel C of Table 2, 35% of local government-controlled firms have another large shareholders among which only 44% are also local government. Thus, around 15% of local government-controlled firms are likely to be underestimated.

[Insert Table 1.7 here]

Panel B reports the separation between cash flow rights and voting rights of the ultimate shareholder. The divergence of the two rights for government-controlled firms is insignificant, where only less than 10% of them have a separation. However the divergence is significant for privately-controlled firms. The mean CV (cash flow rights divided voting rights) is 0.51 among privately-controlled firms.

Due to the restriction in selling of shares by local governments and the lack of divergence between cash flow and voting rights for government-controlled firms, we focus our analysis of cash flow rights and voting rights to only the sub-sample of privately-controlled firms.

Table 1.8 presents the results on how cash flow rights of these private owners are determined. Consistent with results in Table 1.6, legal environment and protection of property rights do not only encourage private owners to reduce the corporate layers but also to increase the level of cash flow rights in the firms as well. However, neither marketization nor deregulation has significant explanatory power for the cash flow rights. Similar to the determinants of corporate layers, the macro-economic variables of the region that proxy for political incentives does not have strong explanatory power for cash flow rights either.

Contrary to prior expectation, the coefficient of industry level knowledge specialization is significantly positive, indicating that the ultimate owner holds more cash flow rights in firms that require more specialized knowledge. None other controlling variables have significant explanatory power except ROA and leverage. The coefficient of ROA is significantly positive in all models, indicating that private owners tend to increase their cash flow rights in more profitable companies. The financial

leverage has a significantly negative coefficient in all the four models, which suggests that private owners are reluctant to bear the high leverage risks. Another possible reason for a low cash flow rights among high leverage firms is that private owners need the government to serve as a second largest shareholder in order gain easier access to bank loans from the state. We do not predict the sign of industry regulation because it will affect the cash flow rights in two opposite directions: 1) the regulation will drive the private owner to diminish cash flow rights as regard to the high possibility of being predated; and 2) the relative high return will induce the private owner to increase the cash flow rights. The significant positive coefficient indicates that the return in the regulated industry is dominant in determining cash flow rights held by the private owner. Consistent with our expectation derived from the similar argument for corporate layers, the IPO age has a significant negative coefficient.

[Insert Table 1.8 here]

Table 1.9 reports the determinants for separation between cash flow rights and voting rights. The results are stronger than those in Table 1.8. There is less separation of the two rights in regions where there is better legal environment and protection of property rights and more developed markets. Consistent with the cash flow rights results, none of the political incentive variables are statistically significant. Among the controlling variables, only ROA and leverage have the coefficient consistent with the theoretical expectation as discussed earlier for the Table 1.8 results.

[Insert Table 1.9 here]

1.4.2. Role of the second largest shareholder

Results in Table 1.5 and 1.6 show that the development of market institutions have an opposite effect on corporate layer formation between government-controlled and

privately-controlled firms. In this section, we analyze how the effect of a private owner serving as a second largest shareholder in a government-controlled firm on corporate layer formation would be different from that of government serving as a second largest shareholder in a privately-controlled firm.

In government-controlled firms, the private owner, as the second largest shareholder, will on the one hand benefit from his/her association with government, such as easy access to financial capital from state-owned banks, he/she on the other hand will also bear the cost of political interference from the state (Qian, 2001; Che and Qian, 1998; Che, 2002; Li, 1996). This cost-benefit tradeoff will determine whether a private owner invests in a state-controlled firm. While for the government, the joint ownership with private owners can provide not only the capital but also the entrepreneurship that is critical for improving firm efficiency. To attract investments from private owners, the government may try to set up corporate layers to signal its commitment against excessive interference and predation. To test the effect of the presence of private owner as a second largest owner in a government-controlled firm, we repeat the four models in Table 1.5 and add a dummy variable, which equals one when the second largest shareholder is a private owner, and zero otherwise. The coefficients of the dummy in all four models are positive and statistically significant, with z-statistics ranging from 5.01 to 6.41. The other key results remain qualitatively similar as those in Table 1.5. Consistent with our prior expectation, government-controlled firms would set up more layers to constrain its influence if a private owner has joined as a second controlling shareholder in the listed firm.

As discussed earlier, a private owner may benefit from inviting the government to hold a significant block of shares in his/her firm in order to seek rent, however, sharing

control with the government can expose themselves to more predation risks. In a privately-controlled firm, government serving as a second largest shareholder can get more information about the firm and its private controlling shareholder, making it easier for predation. Thus, the private owner has even stronger hiding incentives to set up corporate layers not necessarily to hide his/her identity but mainly all the transactions and wealth away from the second largest shareholder – the government. We repeat the four regressions for privately-controlled firms in Table 1.6 and add a dummy variable, which equals one when the second largest shareholder is the government, and zero otherwise. The coefficient of the dummy variable is positive and statistically significant (z-statistics ranging from 1.63 to 2.37). Other main results remain similar to those reported in Table 1.6.

In summary, the interaction between the state owner and private owner, serving as first and second largest owners, also provides corroborating evidence that corporate layers are set up by government to confine its political intervention in the SOEs' operations, while pyramidal ownership structure is used by private owners to shield from state predation.

1.4.3. Endogeneity issue

The results in Table 1.5 can be endogenous because the relation between the formation of corporate layers of government-controlled firms and the development of market and legal institutions can be simultaneous. More specifically, the decentralization through the setting up of corporate layers between government agencies and the listed firms not only may result from market development, but will lead to further development and establishment of market institutions.

However, the significant result of deregulation (Table 1.5, model (4)) does provide some support that development of market institutions and formation of corporate layers may not be endogenous. The deregulation index, assembled from a twenty-year period from 1978 to 1998, is likely to be exogenous to the emergence of corporate layers because: 1) it is the central government that grants preferential economic policies to the region, which in turn lead to the deregulations, while corporate layer formation is decided by local governments; 2) the period in which the deregulation index covers many years prior to our sample period in determining the corporate layer formation.

In addition, in a two-stage model, we first regress our three market and legal institutions variables on deregulation index. In the second stage of regression, we repeat model (1) to (3) in table 1.5 using the expected value of three market and legal institutions variables from first stage. The coefficients of the three market and legal institutions variables are positive and significant at 1% level, which is not reported here. This result addresses the endogeneity issue in our analysis.

1.4.4. Year Factors

In the regressions of Table 1.5 and 1.6, we use clustering method to address the autocorrelation issues resulting from pooling all the years from 1993 to 2001 in a regression.

We also estimate the year-by-year result to in order to address the autocorrelation problem in the pooled regression model. The results remain same as those reported in table 1.5 for government-controlled firms. The marketization index as a determinant for corporate layers is not significant at 10% level in each year; the legal environment as a determinant for corporate layers is significantly positive in eight of nine years at 10% statistical level; the coefficient of protection for property rights is significantly positive

at 10% level in five of nine years and the z-value is over one even for those years in which the coefficient is not statistically significant. For the political incentives, the results are also consistent with those in table 1.5 for government-controlled firms. The coefficient is consistent with our prediction in all the cases and significant in some of years. For example, the coefficient of unemployment rate is significantly negative in four of nine years when it is combined with marketization as a determinant for corporate layers. The year-by-year results for privately-controlled firms are weaker than those in the pooled model. However, the signs are still consistent with our prediction even when it gets insignificant.

We also confine our estimation to the IPO year of the listed firms. The legal environment, protection for property rights and deregulation variables are all significantly positive in determining the number of corporate layers with the z-value ranging around four for government-controlled firms. However, the results for the political incentives are weaker than those from the pooled estimation. The unemployment rate and fiscal deficit become insignificant but the sign is still consistent with our prediction. The R&D expenditure is statistically significant at 10% when it is combined with protection for property rights and deregulation as determinants for corporate layers. For privately-controlled firms, only the protection for property rights is significantly negative at 10%. The results from IPO year still support our argument.

1.5. Conclusion

By constructing a proprietary sample of newly listed Chinese firms, we investigate the determinants of corporate layers at the infant stage of their formation. Consistent with the hypothesis that corporate layers are set up to limit government control and interference in the listed firms, we document that the development of markets, legal

environment and property rights protection in a region is associated with more corporate layers in government-controlled listed firms, limiting the control of government as an ultimate owner. In addition to these institutional factors, we also find that the stronger political incentives to control the listed firms, proxied by high unemployment rate and low fiscal surplus in the region, will encourage the formation of corporate layers. We also find that the local government's inability to run the state sector and the requirements of specialized knowledge in managing the listed firm will encourage the government to decentralize by setting up more layers. All these findings strengthen our argument that layers are set up to limit political control.

The opposite is true for privately-controlled firms. The lack of development in markets, legal environment and property rights protection is associated with more layers, which are used for hiding the identity and dealings of the ultimate private owners and shielding them from government predation. In addition, we also find some evidence that government incentives to predate on private owners, such as unemployment rate and percentage of SOEs with net loss, are positively associated with pyramidal layers of privately-controlled firms. The analysis of the determinants of cash flow rights and separation between cash flow rights and voting rights of the private owners serving as ultimate shareholders lends more support to our hypothesis that they use corporate pyramids to prevent government's intervention.

Chapter 2

The effect of corporate layers on corporate transparency

2.1. Introduction

After nearly ten years of development, China listed firms are still described as to be “...with serious flaws...companies’ accounts are opaque, though it is clear that most listed firms have high debt and low profit.” (Economist, June 3rd, 2000). New accounting standards and policies are promulgated by regulator with the intention to improve corporate transparency for combating potential and exposed frauds. However, Chinese regulators have placed too much importance in the rules and regulations even though Ball Kothari and Robin (2000) have documented that it is the institutional environment not the rules that determine corporate transparency. As a key institutional factor, the Chinese government, not only as the regulator but also as the ultimate owner of most firms, plays a critical role in shaping the emerging capital market in China. However, the accounting literature of the China capital market emphasizes factors that are common in developed markets, especially in the U.S. market, while ignoring a key institutional factor, the role of government, in the China market. In this Chapter, we try to integrate the role of government as another important determinant of corporate transparency and investigate how institutions and organization structures affect the usefulness of accounting information.

The enormous political power endowed with the government determines the importance of its role in the transitional economy that lacks market-supporting institutions. For state-owned firms, government can facilitate the grabbing hand in using the firm resources for personal and/or political goals. As argued in Leuz and Oberholzer-

Gee (2003), the benefits originated from political connection tend to undermine corporate transparency. The political interference that resulted from government ownership will also discourage listed companies from improving corporate transparency. As a result, transparency of government-controlled firms is undermined by government as the ultimate shareholder in China. For privately-controlled firms, without the market rule to confine government activities, property rights of these private owners are threatened by state predation. Thus the private owners do not have the incentive to strengthen corporate transparency, although it may bring benefits to the firms in the long run. Instead, for security of their property rights, private owners engage in hiding their identity and transactions within a pyramid. As a consequence, corporate transparency is damaged by short-term opportunistic hiding activities of private owners.

According to the finding in Chapter one, corporate layers emerge to confine political control or interference in business activities. Since corporate transparency tends to be undermined by political connections (Leuz and Oberholzer-Gee, 2003), corporate layers of government-controlled firms, which tends to confine political interference, can thus help to improve corporate transparency. In privately-controlled firms, the threat of state predation on property rights induces the private owners to hide their identity as well as the business transactions in the public firms. As a result, the private ownership of listed companies does not result in the improvement of corporate transparency. On the one hand, corporate transparency of privately-controlled firms should improve because they are less exposed to state interference through a government agency as the controlling shareholder. On the other hand, their strong incentives to hide from predation can significantly lower their transparency. Depending on which effect dominates, it

remains an empirical issue that privately-controlled firms have higher or lower transparency than government-controlled firms.

Our results suggest that, in government-controlled firms, the number of corporate layers is positively associated with corporate transparency measured by the earnings-return relation. In privately-controlled firms, the earnings-return relation is not statistically significant, suggesting that private control lowers corporate transparency. Also, our evidence shows that corporate layers are not statistically associated with corporate transparency.

The remaining of the chapter is organized as follows. Section 2.2 presents literature review and hypothesis development; Section 2.3 discusses our data and sample selection; Section 2.4 reports empirical results; Section 2.5 provides the concluding remarks.

2.2. Literature review and hypothesis development

Chen, Chen and Su (1999), by investigating the earnings-return relation, provide evidence of the value relevance of accounting information in China's emerging capital markets. Eccher and Healy (2000) compare the effects of International Accounting Standards (IAS) and the rigid local PRC standards on the earnings-return relation, and find no significant difference in the usefulness of accounting information produced by the two standards. This is consistent with the conjecture that accounting rules may not be a critical factor in determining corporate transparency, lending support to Ball, Kothari and Robin's (2000) finding that institutions and stakeholders' incentives play a stronger role in influencing corporate transparency.

To emphasize the importance of incentives of the controlling shareholder, Fan and Wong (2002) investigate the effects of the pyramidal ownership structures on corporate transparency. They find that the conflicts of interests between controlling shareholder and outside investors undermine the informativeness of accounting information. Thus, the incentives of the controlling shareholder will have significant influence on the transparency of the corporation.

Not only do the conflicts of interests undermine corporate transparency, the political connections also play a critical role in determining the earnings-return relation in emerging markets. Leuz and Oberholzer-Gee (2003) argue that high level of transparency and public attention are difficult to reconcile with political favors of often dubious legality. The political connections tend to satisfy the objectives of the controlling shareholder at the expense of minority shareholder and sacrifice firm efficiency. As a result, the controlling owner would rather to keep the firm opaque than to improve transparency.

In the China's stock markets, ownership is highly concentrated as indicated by the evidence in Chapter one that controlling shareholder holds more than 40% of the voting rights of government-controlled firms. Thus, the listed firms are closely connected with governments through direct controlling ownership. During the transition from planned to market economy, government ownership is critical for the development or even the survival of the enterprises because firms still need to resort to government, who retains the power in resources allocation, for necessary inputs for production before market-supporting institutions are established. Government ownership provides firms with priority access to capital markets due to government control over the stock market and the banking system. Such priority may prevent the firm from improving corporate

transparency because it is reluctant to disclose its dependence on political favors. As in Leuz and Oberholzer-Gee (2003), the companies that are well connected with politicians are reluctant to go for global financing, which may expose its dependence on and usage of political resources. In China, firms that are more closely connected with government and depend more on political resources will be more reluctant to strengthen corporate transparency even after going public.

In addition to the significant benefits, political connections also bring political burdens to state-owned firms. The key problem associated with government-controlled firms is that political interference in their (state firms) activities may direct the firms to pursue political rather than economic goals (Shleifer and Vishny, 1998). Politicians, who possess the decision rights of government-controlled firms as well as the responsibilities for jurisdictional development, lack incentives to improve the efficiency of the listed firms in most times, such as through the establishment of governance mechanism or improvement of corporate transparency, but have incentives to resolve the regional economic problems, such as propping insolvent state firms, reducing unemployment and providing fiscal benefits to governments. Thus, political interference usually tends to bring more harm than benefits to the outside minority shareholders. In order to hide such negative⁷ effects of government interference on the listed firms, the controlling shareholder may choose opaque accounting to lower corporate transparency.

Political connections do not only undermine corporate transparency through reducing the quantity but also the quality of the reported information. To protect reputation and social stability, firms and politicians do not want to reveal their private dealings. Since accounting information fails to capture these exchanges of favors between the firms and politicians that may significantly influence the firms' operations,

it may lose its value relevance. In addition, evidence in Chen, Fan, and Wong (2004) suggests that political connections lowers professional skills of the board of directors, which may in turn reduce the quality and reliabilities of accounting information. As a consequence, corporate transparency is also undermined due to the lower quality of disclosed information.

As indicated in Chapter one, corporate layers emerge to confine political inference in government-controlled firms. Thus, corporate transparency is likely to be improved when decision rights are delegated to entities that are more driven by economic incentives and are also equipped knowledge to disclose more transparent information. In addition, as the agency cost increases with the number of corporate layers, the government as ultimate controlling shareholder may have more incentives to improve the quality of accounting information that facilitates monitoring.

In summary, the corporate layers tend to improve the corporate transparency by confining political interference in the government-controlled firms, and thus our formal hypothesis is as follows:

H1: Corporate transparency is positively associated with the number of corporate layers in government-controlled firms.

Political connections tend to undermine the corporate transparency in government-controlled firms. However, the corporate transparency of privately-controlled firms, which have weak political connections, is not necessarily higher than that of government-controlled firms. The political interference through direct political government control does not seem to be the critical factor in undermining corporate transparency in privately-controlled firms, but the state predation, which threatens the security of private property rights, will induce the hiding incentives of private owners,

and thus damage the corporate transparency. Private owner tends to engage more in expropriation rather than value-building activities before market-supporting institutions are established in China (Hoff and Stiglitz, 2002). The effect of state predation on private property rights is exhibited in the ambiguous arrangement in the ownership of TVE, which helps to hide the identity of the private owners (Li, 1996). The expropriation incentives of the controlling shareholder also induce the firm to keep its accounting opaque, hiding their tunneling transactions that benefit the controlling owners at the expense of outside investors. From this perspective, the private ownership structure may damage rather than enhance corporate transparency. Thus, it is an empirical issue whether the corporate transparency is higher or lower in privately-controlled firms than in government-controlled firms. Our formal hypothesis is as follows:

H2.1: Privately-controlled firms will be less transparent than government-controlled firms.

If the hiding incentives dominate, we expect to find evidence supporting this hypothesis. However, if the reduction in political interference resulting from the retreat of government as the controlling owner has a stronger effect on corporate transparency, we will reject the hypothesis.

Following the argument in Chapter one, the corporate layers in privately-controlled firms emerge to satisfy the hiding incentive. As a result, the corporate layers in privately-controlled firm will lower corporate transparency. Our formal hypothesis is as follows:

H2.2: Corporate transparency is undermined as corporate layers in privately-controlled firms increase.

2.3. Data and sample

Our analysis covers all Chinese listed firms with the required data available from year 1993 to 2001. The sample for ownership is hand-collected from the annual report, prospectus of listed firms and other supplementary database as described in Chapter one. The financial data is from the CD-ROM of Genius and Taiwan Economics Journal (TEJ). The stock returns are assembled from the China Stock Market and Accounting Research database (CSMAR). We have a final sample of 3,583 firm-year observations for government-controlled firms and 397 firm-year observations for privately-controlled firms. The sample size is significantly smaller than that of the ownership sample in Chapter one because we need to calculate the unexpected earnings based on the random walk model, thus we lose one (year) observation for each firm in our sample. Our final sample covers more than 90% of all the listed firms, thus our research is free from selection bias. For the privately-controlled firms, the sample is relative smaller than that of government-controlled firms. Table 2.1 reports the descriptive statistics, which is similar to those in Chapter one, for the ownership structure of our sample.

2.4 Regression analysis

2.4.1 Basic earnings-return relationship

We perform analysis on the basic relationship between stock returns and earnings for government- and privately-controlled firms separately with the following model.

$$CAR_{it} = \alpha + \beta * UE_{it} + (\text{fixed effect}) + \varepsilon_{it}$$

CAR_{it} is the cumulative 12-month market-adjusted stock return for firms i at year t , starting from May in year t to April in year $t+1$. UE_{it} is the unexpected earnings for firm i in year t using the random walk model. We also control for the fixed year effects using calendar year dummies, and ε_{it} is the error term.

The results are reported in Table 2.2. To control for the autocorrelation, we estimate the t-value based on the Newey-west standard errors. This basic earnings-return relation indicates that accounting earnings of government-controlled firms are more informative than those of privately-controlled firms. The unexpected earnings have a statistically significant positive coefficient (3.13) in explaining the stock returns in government-controlled firms, however, unexpected earnings do not seem to have any explanatory power for stock return in privately-controlled firms. The Wald test indicates that the difference in the coefficients of UE in two models is statistically significant at the 5% level. From Table 2.2, we find that the basic earnings-return relation does only exist in government-controlled firms. The results indicate that the hiding incentives of the private owners are the dominant factor that determines corporate transparency. The lack of market-supporting institutions drives the private owners to hide their identity and business transactions, shielding themselves from state predation and/or facilitating their expropriation activities. This finding also lends supports to Hoff and Stiglitz (2002)'s argument that mass privatization is actually the obstacle to the emergence of market rules. The control of firms by private investor can become an obstacle to the improvement of accounting quality in a transition economy like China. The unambiguous private property rights arrangement is not a sufficient condition for high corporate transparency. Market rules are required to provide the security for private

property rights, which in turn gives incentives to the private owners to increase accounting quality. In a transition economy, government ownership is necessary to maintain a certain level of corporate transparency even though the resulting political interference is a countervailing factor against high corporate transparency. Next, we examine whether government as an ultimate owner can enhance corporate transparency further by limiting political interference through setting up corporate layers.

2.4.2 Effects of corporate layers

We investigate the effects of corporate layers on corporate transparency in government- and privately-controlled firms through the following multiple variable regression :

$$CAR_{it} = \alpha + \beta_1 * UE_{it} + \beta_2 UE_{it} * Layers_{it} + \beta_3 UE_{it} * MB_{it} + \beta_4 UE_{it} * Leverage_{it} + \beta_5 UE_{it} * Size_{it} + (fixed\ effect) + \varepsilon_{it}$$

The variable *layers* is the number of intermediate controlling firms between the ultimate shareholder and the listed firms. *MB* is the market-to-book value, where the market value and book value are both measured at the fiscal year end. *Leverage* is the long-term liability divided by net assets and *Size* is the natural logarithm of total assets. These controlling variables are widely adopted in the earning response coefficient (ERC) studies. To control the autocorrelation, we estimate our *t*-statistics using the Newey-west standard errors.

Descriptive statistics of variables used in the regression are reported in Table 2.3. The *CAR* for government-controlled firms, ranging from -11.9% to 31.3%, has a mean of -0.5%, and *CAR* for privately-controlled firms, ranging from -8.4% to 15.6%, has a mean of 0.1%. The standard deviations of *CAR* for privately- and government-controlled firms are similar, even though their ranges differ significantly. The

unexpected earnings standardized by closing stock price of first trading day in year t have a mean of -0.012 and -0.005 for government- and privately-controlled firms respectively. Neither CAR nor UE is significantly different from zero, which is due to the high standard deviations. For the other controlling variables, they are within the reasonable range after winsorizing at the top and bottom 1% and there is no significant difference between government- and privately-controlled firms.

Table 2.4 reports the effects of corporate layers on corporate transparency in government- and privately-controlled firms. From the first column, the regression result using government-controlled firms, the coefficient of interaction between unexpected earnings and corporate layers is 2.46, which is statistically significant at 5% level. Combining with the results for government-controlled firms in Table 2.2, we find that the explanatory power of unexpected earnings on stock return disappears in table 2.4. Thus, accounting information is useful only when the political interference is reasonably confined through corporate layers in the government-controlled firms. Our evidence is consistent with H_1 that corporate transparency improves with the increase of corporate layers in government-controlled firms.

For privately-controlled firms, the corporate layers do not seem to have any influence on corporate transparency. Table 2.4 does not provide evidence in supporting $H2.2$. The threat of state predation and the incentives of tunneling have a dominant effect on the earnings-return relation. As a consequence, no matter how the organization form is modified and how the decision rights are allocated through pyramids, corporate transparency still remains low.

In summary, for government-controlled firms, improving corporate transparency requires the confinement of political interference of the controlling shareholder.

Similarly, for privately-controlled firms, corporate transparency can be raised through strengthening the security of private property rights and establishing market rules. Private owners would like to conduct business in a transparent environment without the threat of state predation, the consequence of which is that private owners will engage more effort in value building rather than in tunneling activities.

2.4.3 Robustness tests

In the previous section, we have found significant effects of corporate layers on transparency in government-controlled firms with one year observing window. In this section, we perform the robustness tests by varying the window to six months (from November of year t to April of year $t+1$) and twenty four months (from January of year t to December of year $t+1$) for calculation of *CARs*. The results are reported in Table 2.5. Effects of corporate layers on corporate transparency are still significant at 10% level in government-controlled firms. For privately-controlled firms, the results remain statistically insignificant. The robustness tests indicate that our results are not confined to a specific window of *CARs*, lending stronger support to our findings in the previous section.

Prior studies in developed markets provide evidence that positive earnings are more informative than negative earnings (Hayn, 1995). Thus, instead of confining the political influence, the effect of corporate layers on corporate transparency in this study may result from that government-controlled firms with more layers can easily use related party transactions to smooth income and avoid negative earnings¹². Thus, firms with more layers tend to have fewer net losses and stronger earnings-return relation. To

¹² The corporate layers may also provide the convenience for firms to smooth reported earnings. The correlation coefficient between variance of unexpected earnings and number of corporate layers is -0.0448 but insignificant.

address this alternative explanation, we include the earnings level in the previous model. The results for the effect of corporate layers remain same. Consistent with the literature, when we confine our sample to those firms with net loss, the effects of corporate layers disappear. However, the results in the sub-sample of firms with positive earnings remain same as those reported in Table 2.4. The coefficient of interaction between unexpected earnings and layers is 0.038 and is significant at 5% level.

2.5. Conclusion and policy implications

Based on the findings of underlying determinants for corporate layers in both government- and privately- controlled firm, we use a proprietary data to test the effects of corporate layers on corporate transparency. In addition, we also test the effect of the identity of the ultimate controlling shareholder on corporate transparency.

Consistent with our expectation, we find some evidence that: (1) privately-controlled firms are less transparent than government-controlled firms; (2) corporate layers in government-controlled firms tend to enhance corporate transparency because political interference is confined by corporate layers; (3) in privately-controlled firms, corporate layers do not affect corporate transparency.

This evidence indicates that corporate layers (organization structures) play a key role in determining corporate transparency in China, which further provides explanation for Eccher and Healy's (2000) finding that IAS do not provide more useful information than China local accounting standards. It is the underlying incentives of controlling shareholders, not the regulations and rules, that determine corporate transparency. Thus, the China economic reform should not merely rely on borrowing rules from developed markets but should strive to proper incentives for market participants. Our results show

that corporate layers serve as an effective mechanism to confine political interference. This is consistent with Qian's (1996) argument that multiple-tier state assets management should be set up to improve the efficiency of state business. State predation is always a threat to the security of private property rights. Thus private investors, who are controlling the listed firms, will hide information from the public and the government. As a response, market-supporting institutions should be established to guarantee the security of property rights and protect the minority shareholders from expropriation of controlling shareholders.

Chapter 3

Conclusion and future research

With a proprietary data set, I first investigate how corporate layers are determined, after which I analyze the effect of corporate layers on corporate transparency. In chapter one, I find that corporate layers are set up to limit government control and interference in government-controlled listed companies. I document that the development of markets, legal systems and property rights protection in a region is associated with more pyramidal layers, limiting the control of government as an ultimate shareholder. Political incentives to interfere business are associated with fewer layers, providing the convenience for control of government. The opposite is true for privately-controlled firms. The lack of development in markets, legal systems and property rights protection is associated with more layers in privately-controlled firms, which are used for hiding the identity and/or wealth of ultimate private owner and shielding them from government predation.

In chapter two, listed companies are found to be more transparent when it gets away from government through more corporate layers in government-controlled firms. More layers between government agencies and listed companies are associated with stronger earnings-return relation. As a result, the corporate layers in government-controlled firms emerge to confine political interference and enhance corporate transparency. In companies that are controlled by private owners, earnings do not have any explanatory power over stock return and corporate layers are not associated with the usefulness of accounting information.

With the understanding that the formation of corporate layers is to confine political interference in listed companies, I can carry out further studies to investigate

the effects of corporate layers on other activities of listed firms. Using corporate layers as a measurement of political interference, I can use the related party transactions between listed firms and the controlling shareholder to provide evidence of propping and tunneling incentives of government in state-owned firms. In addition, I can investigate how political interference affects auditor choice in both government- and privately-controlled firms. Combining with the political interference in state banks, I can investigate how political interference affects capital structure in listed firms.

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Table 1.1
Summary of sample

Year	Sample (no. of firms)	Sample (% of population)	Total population
1993	166	93.79%	177
1994	285	99.30%	287
1995	309	99.36%	311
1996	486	94.55%	514
1997	719	99.86%	720
1998	825	99.88%	826
1999	923	99.89%	924
2000	1,060	99.91%	1,061
2001	1,134	99.47%	1,140
Total	5,907	99.11%	5,960

The sample comprises of companies with stock traded in either the Shanghai or Shenzhen Stock Exchange by the end of each year from 1993 to 2001. Only those companies whose annual reports reported in the Genius CD-ROM, a database constructed by the Shenzhen Stock Exchange, are used in our final analysis. The percentage column indicates that more than 99% of the population of listed firms in both exchanges is included in our sample in seven out of nine years.

Table 1.2
Who Controls China's Listed Firms?

Panel A: Identity of ultimate controlling shareholder

YEAR	Number of listed companies	Local government (%)	Central government (%)	Privately-controlled firms (%)	Collective (%)	Widely-held (%)	Miscellaneous (%)	Unidentified (%)
1993	166	77.71	6.63	3.01	3.01	1.81	3.61	4.22
1994	285	75.44	6.32	3.86	4.21	1.05	4.56	4.56
1995	309	75.73	7.12	3.88	3.88	0.97	3.88	4.53
1996	486	73.05	9.67	4.94	3.91	0.41	4.32	3.70
1997	719	70.93	11.68	5.29	4.45	0.14	4.45	3.06
1998	825	68.97	12.73	7.15	4.12	0.12	4.48	2.42
1999	923	65.44	13.76	8.99	4.33	0.22	4.88	2.38
2000	1,060	63.11	14.62	10.85	3.87	0.19	5.66	1.70
2001	1,134	61.38	15.26	12.79	3.44	0.09	5.82	1.23
Total	5,907	67.39	12.56	8.38	3.96	0.30	4.94	2.51

This table reports the ultimate controlling shareholder of China's listed companies. We trace the following publicly available information sources to identify the ultimate controlling shareholder: (1) annual reports; (2) prospectuses; (3) media reports; (4) websites of the controlling shareholders. According to the identity of ultimate shareholders, we classify the sample into the following categories: (1) local government: firms that are controlled by a department in the local government, such as bureau of state assets management or finance bureau; (2) central government: firms that are controlled by a central government unit, such as Ministry of Finance or Central Industrial Enterprises Administration Committee; (3) privately-controlled firms: those controlled by privately-owned firms; (4) collectives: firms that are controlled by a collective of citizens, which are typically TVEs; (5) widely-held: firms with no block shareholder having 5% or more share ownership; (6) miscellaneous: firms that are controlled by army, media, universities, work unions, foreign companies and financial intermediaries; (7) unidentified: firms whose ultimate shareholder cannot be identified using the above mentioned information sources.

Table 1.2, continued

Panel B: Distribution of ultimate controlling shareholder based on industry, firm size and region

	Industry		Size		Region	
	Unregulated	Regulated	Small	Large	Poor	Rich
Local Government	60.67%	67.77%	55.91%	66.96%	66.49%	56.36%
Central Government	14.13%	24.79%	3.58%	16.96%	12.35%	18.20%
Privately-controlled Firms	13.74%	4.96%	18.34%	7.24%	12.52%	13.07%

This table reports the distribution of ultimate controlling shareholders based on industry, firm size and regional development. Regulated industries include natural resources, public utilities, finance and transportation. Size is measured by book value of total assets. Regional development is measured by GDP per capita of the province where the listed company is registered. Sample median is used as cutoff point for the size and region classifications.

Table 1.2, continued

Panel C: Identity of the second largest shareholder

Identity of second large shareholder	Local Government	Central Government	Privately-owned Firms
Percentage of sample with the second largest shareholder	35.77	37.74	70.33
Local Government	44.52	50.71	50.58
Central Government	6.11	12.14	2.6
Privately-owned Firms	3.09	2.14	9.25
Financial Intermediary	16.36	11.43	5.49
Collectively-owned Firms	3.09	3.21	3.76
Unidentified	13.9	1.43	23.12
Foreign Firms	10.04	16.07	4.91

This table reports the distribution of the second largest shareholder for companies controlled by each of the three types of ultimate controlling shareholder: local government, central government and privately-controlled firms. A second largest shareholder is the largest shareholder other than the controlling shareholder that possesses more than 5% of outstanding voting shares.

Table 1.3
Distribution of ultimate controlling shareholder types by the number of corporate layers

No. of Layer	N	Local Government		Central Government		Privately-owned Firms		Collectively-owned Firms		Miscellaneous		Unidentified Firms	
		%		%		%		%		%		%	
One-layer Firm	101	63.35	(9.48)	1.98	(1.16)	0.99	(0.69)	16.83	(43.59)	11.88	(18.18)	2.97	(21.43)
Two-layer Firm	695	70.50	(70.40)	8.92	(35.84)	11.22	(53.79)	2.73	(48.72)	5.32	(56.06)	1.29	(64.29)
Three-layer Firm	279	43.01	(17.24)	32.97	(53.18)	17.92	(34.48)	1.08	(7.69)	4.3	(18.18)	0.20	(14.29)
Four-layer Firm	48	33.33	(2.30)	31.25	(8.67)	27.08	(8.97)			8.33	(6.06)		
Five-layer Firm	10	40.00	(0.57)	20.00	(1.16)	30.00	(2.07)			10	(1.52)		
N		(696)		(173)		(145)		(38)		(66)		(14)	

This table reports the distribution of ultimate controlling shareholder type by the number of corporate layers in year 2001. The number of layers is defined as one when the ultimate shareholder directly controls the listed company and the number increases by one when one intermediate company is added into the chain of ownership. When multiple controlling chains exist, we will use the number of layers in the longest ownership chain. The numbers in parentheses are the distribution of number of layers by controlling shareholder type

Table 1.4
Descriptive statistics for regression variables

Variables	N	mean	std	min	median	max
Marketization	30	5.71	1.38	2.75	5.57	8.26
Legal environment	30	5.12	1.20	2.44	5.03	7.75
Protection of property rights	30	6.22	1.48	2.53	6.32	8.85
Deregulation	30	0.92	0.68	0.33	0.67	2.86
Unemployment rate (%)	263	3.12	1.22	0.40	3.10	7.40
Fiscal surplus	274	0.05	0.03	-0.09	0.05	0.24
Percentage of SOE with net loss (%)	30	34.19	7.79	19.29	33.16	46.68
R&D/GDP (%)	30	0.89	1.15	0.11	0.61	6.30
Specificity of knowledge	84	0.65	0.44	0.00	1.00	1.00
Growth (%)	274	11.44	4.02	4.30	10.35	40.20
Ln(GDP)	274	8.40	0.66	6.91	8.43	10.45
ROA (%)	5102	4.85	6.49	-24.72	5.46	5.36
Ln(Total Assets)	5102	13.73	0.09	10.79	13.66	19.70
Leverage	5102	4.94	6.98	0.00	1.64	37.29
M/B	5102	4.79	3.37	1.10	3.93	23.85

Variable definitions and data sources are presented in Appendix III. ROA, leverage, and M/B reported here are winsorized at top and bottom 1% to control for outliers.

Table 1.5
Determinants for corporate layers of government-controlled firms

Independent variable	Expected Sign	Model (1)	Model (2)	Model (3)	Model (4)
<i>Market and legal system development:</i>					
Marktization	+	-0.001 (-0.03)			
Legal Environment	+		0.234 (6.09)***		
Protection for Property Rights	+			0.104 (5.85)***	
Deregulation	+				0.241 (4.85)***
<i>Government incentives:</i>					
Unemployment Rate	-	-0.082 (-3.13)***	-0.020 (-0.87)	-0.060 (-2.5)**	-0.056 (-2.91)***
Fiscal Surplus	+	3.536 (1.98)**	1.419 (0.89)	1.698 (1.07)	0.637 (0.43)
R&D	+	0.027 (1.32)	0.007 (0.52)	0.052 (2.61)***	0.058 (3.82)***
SOE with Net Loss	?	1.658 (6.21)***	1.060 (5.75)***	1.175 (5.89)***	1.104 (5.01)***
<i>Specialized Knowledge:</i>					
Knowledge Specialization	+	0.384 (8.82)***	0.383 (8.82)***	0.392 (9.07)***	0.393 (9.07)***
M/B	+	0.032 (11.08)***	0.034 (13.82)***	0.033 (12.55)***	0.033 (10.51)***
<i>Other Control Variables:</i>					
Economic Growth	+	0.035 (1.59)	0.030 (1.64)	0.034 (1.64)	0.026 (1.27)
GDP per capita	+	0.288 (3.06)***	0.088 (1.24)	0.195 (2.85)***	0.046 (0.56)
Total Assets	+	0.072 (8.72)***	0.071 (8.00)***	0.074 (8.24)***	0.071 (8.57)***
ROA	+	0.007 (2.42)**	0.007 (2.37)**	0.007 (2.44)**	0.007 (2.68)**

Leverage	-	-0.011 (-4.2)***	-0.011 (-4.1)***	-0.012 (-4.3)***	-0.011 (-4.05)***
Regulated Industry	-	0.353 (8.77)***	0.338 (8.62)***	0.362 (8.5)***	0.338 (9.04)***
IPO Age	-	-0.016 (-2.27)**	-0.019 (-2.4)**	-0.019 (-2.41)**	-0.020 (-2.63)***
Number of obs		4482	4482	4482	4482
Pseudo R2		0.0664	0.0717	0.0689	0.0683

The ordered probit model is used to analyze the determinants of corporate layers. The regression model also controls for fixed effects for regions and calendar years, which are not reported in the table. Macro data are measured in the beginning of the year when the number of corporate layers is counted. Z-statistics are in parentheses. *significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table 1.6
Determinants for corporate layers of privately-controlled firms

Independent variable	Expected Sign	Model (1)	Model (2)	Model (3)	Model (4)
<i>Market and legal system development:</i>					
Marktization	-	-0.391 (-4.78)***			
Legal Environment	-		-0.414 (-3.02)***		
Protection for Property Rights	-			-0.346 (-4.17)***	
Deregulation	-				0.072 (0.49)
<i>Government incentives:</i>					
Unemployment Rate	+	0.251 (1.62)	0.142 (0.98)	0.215 (1.60)	0.236 (1.57)
Fiscal Surplus	-	5.960 (1.41)	8.602 (1.64)*	12.028 (2.23)**	3.581 (0.81)
R&D	-	0.115 (1.4)	0.118 (1.36)	0.002 (0.02)	0.100 (1.01)
SOE with Net Loss	+	1.802 (3.99)***	2.376 (3.17)***	2.766 (3.37)***	1.315 (3.08)***
<i>Specialized Knowledge:</i>					
Knowledge Specialization	?	-0.096 (-0.82)	-0.110 (-0.85)	-0.181 (-1.3)	-0.091 (-0.76)
M/B	?	0.047 (4.45)***	0.047 (5.84)***	0.047 (5.34)***	0.049 (4.54)***
<i>Other Control Variables:</i>					
Economic Growth	-	-0.035 (-1.06)	-0.067 (-1.88)*	-0.065 (-1.75)*	-0.072 (-2.13)**
GDP per capita	-	1.530 (5.47)***	1.195 (3.69)***	0.978 (4.2)***	0.693 (2.6)***
Total Assets	+	0.018 (0.3)	0.054 (0.88)	0.036 (0.64)	0.036 (0.59)
ROA	-	-0.007 (-1.88)*	-0.008 (-1.75)*	-0.010 (-1.99)**	-0.008 (-2.02)**
Leverage	+	0.018 (4.40)***	0.018 (3.09)***	0.020 (3.34)***	0.018 (3.96)***
Regulated Industry	+	-0.067 (-0.52)	-0.119 (-0.79)	-0.027 (-0.2)	-0.044 (-0.36)

IPO Age	+	0.065 (3.91)***	0.059 (2.87)***	0.055 (2.56)***	0.060 (3.7)***
Number of obs		463	463	463	463
Pseudo R2		0.0854	0.0945	0.1051	0.0786

The ordered probit model is used to analyze the determinants of corporate layers. The regression model also controls for fixed effects for regions and calendar years, which are not reported in the table. Macro data are measured in the beginning of the year when the number of corporate layers is counted. Z-statistics are in parentheses. *significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table 1.7
Descriptive statistics for ultimate controlling shareholders' cash flow rights and separation of cash flow and voting rights

Panel A: Cash flow rights in %

Ultimate controlling shareholder	N	Mean	Bottom 10%	First quartile	Median	Third quartile	Top 10%
Local government	3,981	45.53	21.66	31.11	45.42	60.03	70.00
Central government	742	44.19	19.10	29.21	42.22	60.00	70.01
Privately-controlled firms	492	16.73	4.34	7.98	14.64	22.34	32.68

The calculation of cash flow rights follows the method in La Porta et al (1999). We sum across all ownership chains ultimate shareholder's cash flow rights, which is the product of the cash flow rights in all the layers. We ignore the controlling chain with cash flow rights less than 5%. The sample only includes those firms with ultimate shareholder having cash flow rights over 5%.

Panel B: Separation of cash flow rights and voting rights

Ultimate controlling shareholder	N	Mean	Bottom 10%	First quartile	Median	Third quartile	Top 10%
Local government	3,981	0.97	1.00	1.00	1.00	1.00	1.00
Central government	742	0.90	0.56	0.89	1.00	1.00	1.00
Privately-controlled firms	492	0.51	0.22	0.31	0.51	0.65	0.90

The separation is measured by the ultimate controlling shareholder's cash flow rights divided voting rights. We sum across all ownership chains the ultimate shareholder's cash flow rights, which is the product of the cash flow rights in all the layers. Likewise, we sum across all ownership chains the ultimate shareholder's voting rights, which is the weakest link (lowest voting rights) in the chain. The sample only includes those firms with cash flow rights and voting rights over 5%.

Table 1.8
Determinants for cash flow rights of privately-controlled firms

Independent variable	Expected Sign	Model (1)	Model (2)	Model (3)	Model (4)
<i>Market and legal system development:</i>					
Marktization	+	0.517 (0.43)			
Legal Environment	+		2.576 (3.23)***		
Protection for Property Rights	+			1.472 (2.58)***	
Deregulation	+				2.254 (1.45)
<i>Government incentives:</i>					
Unemployment Rate	-	0.702 (0.75)	1.280 (1.55)	0.795 (0.91)	0.883 (1.00)
Fiscal Surplus	+	-46.887 (-0.88)	-67.023 (-1.27)	-76.420 (-1.37)	-83.482 (-1.35)
R&D	+	0.422 (0.67)	0.333 (0.53)	0.830 (1.26)	0.686 (1.03)
SOE with Net Loss	-	-3.085 (-0.3)	-9.536 (-0.94)	-8.650 (-0.82)	-1.612 (-0.16)
<i>Specialized Knowledge:</i>					
Knowledge Specialization	?	5.814 (4.38)***	5.937 (4.41)***	6.131 (4.47)***	5.819 (4.39)***
M/B	?	-0.256 (-1.87)*	-0.243 (-1.69)*	-0.247 (-1.76)*	-0.264 (-1.91)
<i>Other Control Variables:</i>					
Economic Growth	+	0.402 (1.37)	0.430 (1.54)	0.412 (1.46)	0.362 (1.25)
GDP per capita	+	-1.850 (-0.59)	-3.314 (-1.22)	-1.579 (-0.59)	-3.716 (-1.18)
Total Assets	-	-0.020 (-0.03)	-0.149 (-0.19)	-0.066 (-0.09)	-0.087 (-0.11)
ROA	+	0.258 (5.53)***	0.258 (5.22)***	0.261 (5.41)***	0.264 (5.52)***
Leverage	-	-0.316 (-5.92)***	-0.316 (-5.98)***	-0.325 (-6.07)***	-0.322 (-5.78)***
Regulated Industry	?	3.424 (1.98)**	4.062 (2.35)**	3.399 (2.06)**	3.523 (2.05)**
IPO Age	-	-0.558 (-2.14)**	-0.527 (-2.06)**	-0.524 (-2.05)**	-0.589 (-2.33)**

Constant	?	-16.430 (-0.42)	-13.684 (-0.4)	-19.839 (-0.54)	5.067 (0.12)
Observations		463	463	463	463
Adjusted R-squared		0.14	0.15	0.15	0.14

We use the OLS regression to analyze the determinants for the ultimate shareholder's cash flow rights. The dependent variable is the ultimate owner's cash flow rights. The regression model also controls for fixed effects for regions and calendar years, which are not reported in the table. Macro data are measured in the beginning of the year when the number of corporate layers is counted.

Absolute value of t-statistics in parentheses. *significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table 1.9
Determinants for the separation of cash flow rights and voting rights for privately-controlled firms

Independent variable	Expected Sign	Model (1)	Model (2)	Model (3)	Model (4)
<i>Market and legal system development:</i>					
Marktization	+	0.049 (1.69)*			
Legal Environment	+		0.065 (3.49)***		
Protection for Property Rights	+			0.055 (3.98)***	
Deregulation	+				0.067 (2.03)**
<i>Government incentives:</i>					
Unemployment Rate	-	-0.006 (-0.32)	0.010 (0.63)	-0.001 (-0.05)	0.001 (0.07)
Fiscal Surplus	+	-0.116 (-0.1)	-0.477 (-0.43)	-1.106 (-0.97)	-1.070 (-0.8)
R&D	+	-0.017 (-1.26)	-0.018 (-1.27)	-0.001 (-0.04)	-0.008 (-0.52)
SOE with Net Loss	-	-0.141 (-0.65)	-0.260 (-1.2)	-0.314 (-1.39)	-0.057 (-0.27)
<i>Specialized Knowledge:</i>					
Knowledge Specialization	?	0.037 (1.01)	0.041 (1.16)	0.049 (1.46)	0.038 (1.01)
M/B	?	-0.006 (-1.86)*	-0.006 (-1.87)*	-0.005 (-1.91)*	-0.006 (-1.97)**
<i>Other Control Variables:</i>					
Economic Growth	+	0.007 (1.06)	0.011 (1.68)*	0.010 (1.51)	0.008 (1.31)
GDP per capita	+	-0.140 (-1.63)	-0.117 (-1.58)	-0.081 (-1.16)	-0.139 (-1.77)
Total Assets	-	-0.005 (-0.3)	-0.010 (-0.64)	-0.009 (-0.5)	-0.009 (-0.5)
ROA	+	0.004 (3.00)***	0.004 (3.13)***	0.004 (3.52)***	0.004 (3.24)***
Leverage	-	-0.006 (-4.26)***	-0.006 (-4.16)***	-0.006 (-4.46)***	-0.006 (-4.25)***
Regulated Industry	?	0.038 (0.72)	0.053 (0.93)	0.037 (0.71)	0.040 (0.71)
IPO Age	-	0.001 (0.19)	0.002 (0.34)	0.003 (0.41)	0.000 (0.07)

Constant	?	0.636 (0.71)	0.118 (0.14)	0.027 (0.03)	0.728 (0.75)
Observations		463	463	463	463
Adjusted R-squared		0.03	0.04	0.07	0.03

We use the OLS regression to analyze the determinants for the ultimate shareholder's cash flow rights. The dependent variable is the ultimate owner's cash flow rights over voting rights. The regression model also controls for fixed effects for regions and calendar years, which are not reported in the table. Macro data are measured in the beginning of the year when the number of corporate layers is counted. Absolute value of t-statistics in parentheses. *significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table 2.1
Description for ownership structure

	Firm No	Mean	Std Dev	Min	10 percentile	Median	90 percentile	Max
Panel A: Corporate layers								
Government-controlled firms	3583	2.141	0.726	1	1	2	3	5
Privately-controlled firms	397	2.634	0.779	2	2	2	4	5
Panel B: Controlling Rights								
Government-controlled firms	3583	46.94	16.59	10.01	24.98	46.95	69.57	88.58
Privately-controlled firms	397	31.36	12.24	10.95	15.9	29.22	51	67.59
Panel C: the ratio of cash flow rights over controlling rights								
Government-controlled firms	3583	0.954	0.137	0.168	0.811	1	1	1
Privately-controlled firms	397	0.509	0.244	0.068	0.205	0.51	0.9	1

Number of corporate layers is coded as the number of intermediate corporate in the pyramidal organization from ultimate controlling shareholder to listed firms. Controlling rights and ratio of cash flow rights over controlling rights is calculated in the same way as in La Porta et al (1999) and Claessens et al (2000).

Table 2.2
Return earnings relationship

	Government-controlled firms	Privately-controlled firms	CAR
UE	0.032 (3.13)***	0.006 (0.64)	
Constant	-0.002 (0.52)	0.016 (4.23)***	
Adj R ²	0.111	0.034	
Observations	3583	397	
Wald Test:	F=4.00		
	Prob>F=0.0457		

This table is based on the following model

$$CAR_{it} = \alpha + \beta * UE_{it} + (fixed\ effect) + \varepsilon_{it}$$

Where CAR_{it} is the cumulative 12-month market-adjusted return for firm i from May in year t to April in year $t+1$; UE_{it} is the unexpected earnings calculated from random model for firm i in year t . Fixed effect is controlled by calendar year dummy variables

Absolute value of t based on Newy-West standard error is in the parentheses

***significant at 1%

Table 2.3
Description for variables used in regression

	Firm No	Mean	Std Dev	Min	First Quantile	Median	Third Quantile	Max
Panel A: Government-controlled firms								
CAR	3583	-0.005	0.03	-0.119	-0.022	-0.005	0.009	0.313
UE	3583	-0.012	0.116	-3.68	-0.018	-0.005	0.033	2.73
MB	3583	4.62	3.44	1.11	2.62	3.78	5.47	25.48
Leverage	3583	0.116	0.197	0	0	0.0313	0.149	1.108
Size	3583	13.85	0.87	11.51	13.25	13.78	14.35	1788
Panel B: Privately-controlled firms								
CAR	397	0.001	0.0313	-0.084	-0.0165	-0.003	0.016	0.156
UE	397	-0.005	0.172	-2.359	-0.016	-0.002	0.008	2.19
MB	397	7.71	5.33	1.66	4.08	6.11	9.51	25.48
Leverage	397	0.098	0.188	0	0	0.001	0.116	1.11
Size	397	13.33	0.766	10.8	12.81	13.31	13.8	16.01

Where *CAR* is the cumulative 12-month market-adjusted return for firm *i* from May in year *t* to April in year *t+1*; *UE_{it}* is the unexpected earnings calculated from random walk model for firm *i* in year *t*; *MB* is the market value of firm by year end divided by book value; *Leverage* is the long-term liability divided by total equity; *Size* is the natural logarithm of total assets. To eliminate the effect of extreme value, all the variable are winsorized at top and bottom 1%.

Table 2.4
Effect of corporate layers on transparency

	Government-controlled firms	Privately-controlled firms
UE	-0.156 (0.61)	-0.400 (0.77)
UE*Layers	0.035 (2.46)**	0.023 (0.55)
UE*MB	0.002 (0.69)	0.009 (1.72)*
UE*Leverage	0.064 (0.88)	0.138 (1.04)
UE*Size	0.009 (0.45)	0.023 (0.63)
Constant	-0.002 (0.43)	0.016 (2.92)***
Adj R ²	0.119	0.041
Observations	3583	397

The result for this table is based the following model

$$CAR_{it} = \alpha + \beta_1 * UE_{it} + \beta_2 UE_{it} * Layers_{it} + \beta_3 UE_{it} * MB_{it} + \beta_4 UE_{it} * Leverage_{it} + \beta_5 UE_{it} * Size_{it} + (fixed\ effect) + \varepsilon_{it}$$

Where CAR_{it} is the cumulative 12-month market-adjusted return for firm i from May in year t to April in year $t+1$; UE_{it} is the unexpected earnings calculated from random walk model for firm i in year t ; MB is the market value of firm by year end divided by book value; $Leverage$ is the long-term liability divided by total equity; $Size$ is the natural logarithm of total assets.

Absolute value of t based on Newy-West standard error in the parentheses

*** significant at 1%; ** significant at 5%; * significant at 10%

Table 2.5
Robustness test

	Government-Controlled firms		Privately-controlled firms	
	CAR6	CAR24	CAR6	CAR24
UE	-0.152 (0.64)	-0.079 (0.47)	-0.823 (1.80)*	-0.333 (1.12)
UE*Layers	0.028 (1.73)*	0.016 (2.29)**	-0.003 (0.09)	-0.005 (0.21)
UE*MB	0.003 (0.81)	0.002 (1.05)	0.015 (2.71)***	0.005 (1.45)
UE*Leverage	0.048 (0.62)	0.042 (0.90)	0.066 (0.49)	0.154 (1.41)
UE*Size	0.009 (0.50)	0.004 (0.34)	0.056 (1.69)*	0.024 (1.15)
Constant	-0.0004 (0.14)	0.001 (0.49)	-0.023 (2.89)***	0.023 (11.90)***
Adj R ²	0.038	0.117	0.040	0.020
Observations	3583	3583	397	397

The result for this table is based the following model

$$CAR_{it} = \alpha + \beta_1 * UE_{it} + \beta_2 UE_{it} * Layers_{it} + \beta_3 UE_{it} * MB_{it} + \beta_4 UE_{it} * Leverage_{it} + \beta_5 UE_{it} * Size_{it} + (fixed\ effect) + \varepsilon_{it}$$

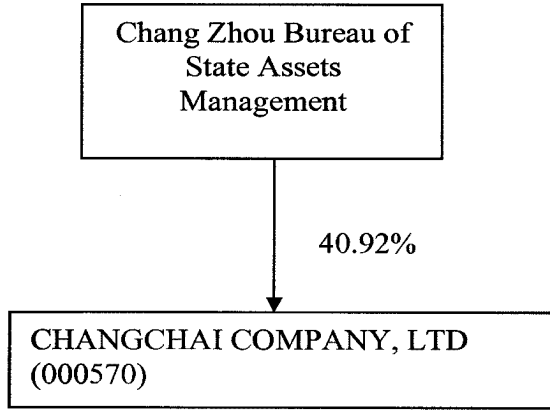
Where CAR_{6t} is the cumulative 6-month market-adjusted return for firm i from November of year t to April of year $t+1$, CAR_{24t} is the cumulative 24-month market-adjusted return for firm i from January of year t to December of year $t+1$; UE_{it} is the unexpected earnings calculated from random walk model for firm i in year t ; MB is the market value of firm by year end divided by book value; $Leverage$ is the long-term liability divided by total equity; $Size$ is the natural logarithm of total assets.

Absolute value of t based on Newy-West standard error in the parentheses

*** significant at 1%; ** significant at 5%; * significant at 10%

Appendix I

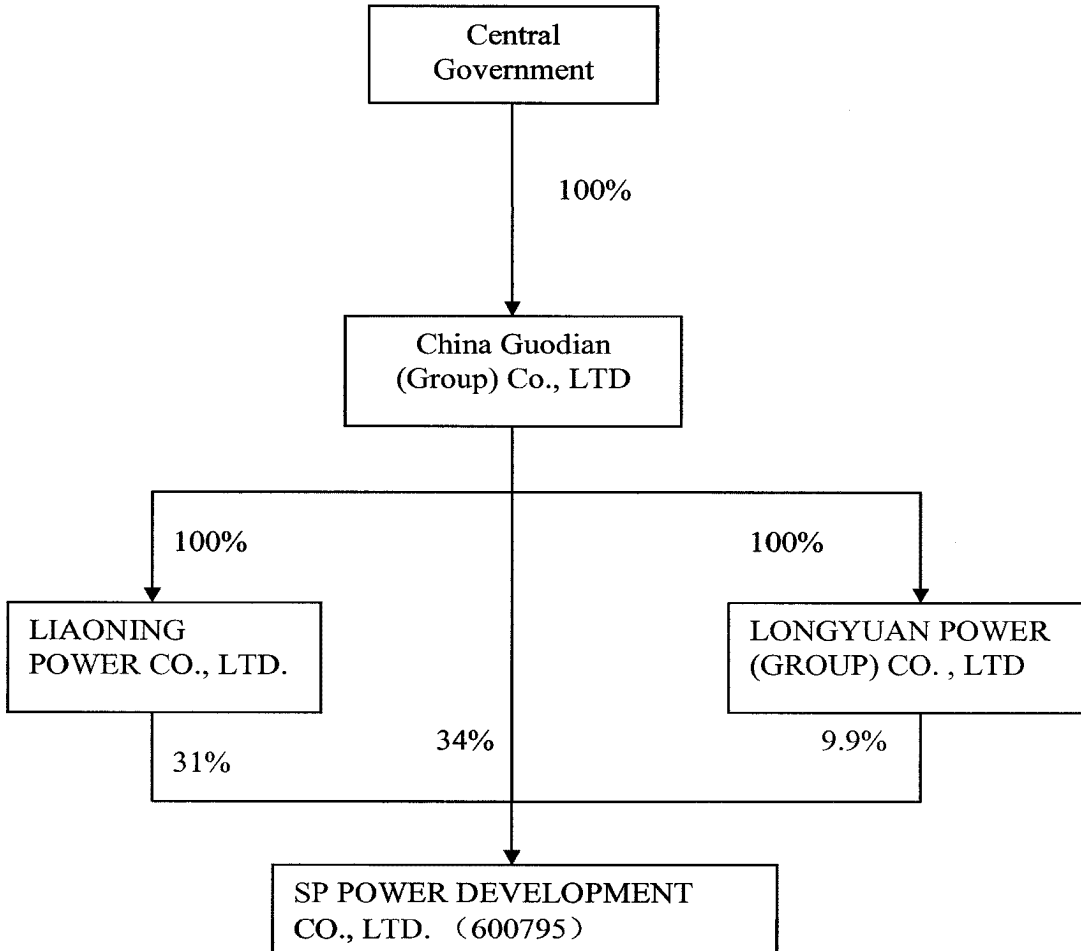
Case 1: A local-government-controlled firm: CHANGCHAI COMPANY, LTD



Note: This graph is based on the ownership data from annual report year 2001.

Appendix I, Continued

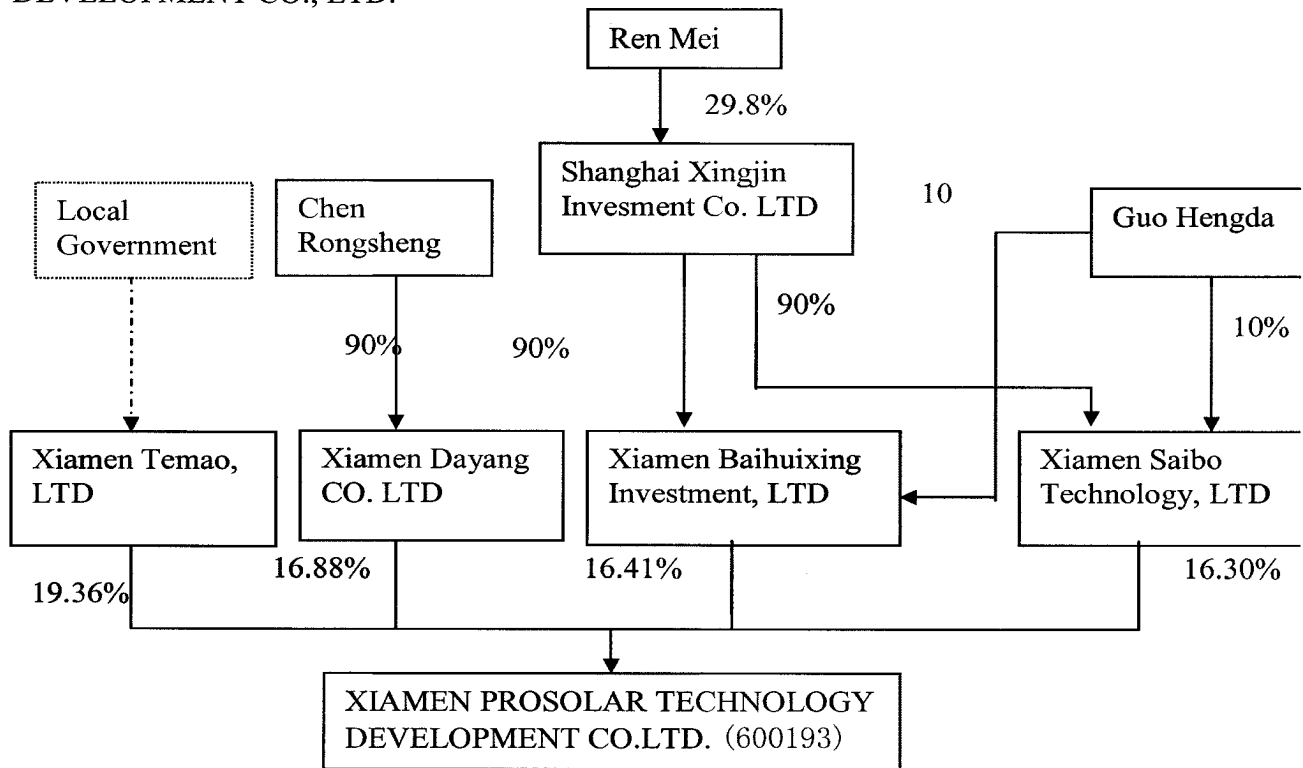
Case 2. A central-government-controlled firm: SP POWER DEVELOPMENT CO., LTD.



Note: The data are from annual report year 2001. Layers is coded to be 3 and cash flow rights and voting rights are same: $(31\%+34\%+9.9\%)=74.9\%$.

Appendix I, Continued

Case 3: A privately-controlled firm: XIAMEN PROSOLAR TECHNOLOGY DEVELOPMENT CO., LTD.



Note: The graph is based on annual report and New Fortune. The pyramid ownership measurement is coded from the controlling chain by Ren Mei. The number of layers is 3, and cash flow rights are $(16.41\% \times 29.8\% \times 90\% + 16.30\% \times 29.8\% \times 90\%) = 8.77\%$, and voting rights are $(16.41\% + 16.30\%) = 32.41\%$. The shares controlled by Xiamen Damao is identified as state legal person shares, which indicate its relationship with local government. However we did not trace the detail information about it.

APPENDIX II

Variable Definition

Variable	Description	Sources
Marketization	This is a comprehensive index to capture the regional market development from the following aspects: (1) relationship between government and markets, such as role of markets in allocating resources and enterprises' burden in addition to normal taxes; (2) the development of non-state business, such as ratio of industrial output by private sector to total industrial outputs; (3) development of product markets, such as regional trade barrier; (4) development of factor markets such as FDI and mobility of labor; (5) development of market intermediaries and legal environment such as protection of property rights.	Fan and Wang (2001)
Legal environment	This index, which also serves as a component of the marketization index, measures the levels of the development of market intermediary, copyrights and consumer protection, and protection of property rights.	Fan and Wang (2002)
Protection of property rights	This index, which also serves as a component of the index of legal environment, comprises of the following components: market order, which is captured by total economic legal cases standardized by GPD of the region, and court efficiency, which is captured by the ratio of the solved legal cases to total cases received.	Fan and Wang (2003)
Deregulation	This index measures the amount of preferential policies granted to the region by central government to set up special economic zone. This variable is coded based on the special economic zone through 1978 to 1998.	Demruger et al. (2003)
Unemployment rate (%)	This is to capture the unemployment problems in the urban area of the region. $\text{Unemployment rate} = \frac{\text{unemployment population}}{\text{employment population} + \text{unemployment population}}$.	China Information Bank
Fiscal surplus	This is to capture the fiscal pressure for government. $\text{Fiscal Surplus} = (\text{Fiscal revenue} - \text{fiscal expenditure}) / \text{GDP}$	China Information Network Data Co., LTD
Percentage of SOE with net loss (%)	This measures the percentage of SOEs in the region that experience net loss, which captures the local government's ability in running the state sector.	Statistics of Industrial Enterprises all over the country in 1995

Appendix II, Continued

Variable	Description	Sources
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R&D/GDP (%)	R&D expenditure includes expenditure spent on fundamental research, application research, experimental development and capital construction for scientific research in the region. This captures the government's concern about long-term benefits of the region.	National Bureau of Statistics
Specialization of knowledge	This captures the specialization of knowledge at the industry level. Specialized industries include agriculture, mining, heavy construction and manufacturing. Non-specialized industries include transportation, wholesale and retail trades, and real estate.	Christie et al. (2003)
M/B	Market-to-book equity ratio, a measure of growth option of the listed company used in Christie et al. (2003) to capture firm-level knowledge specialization.	TEJ & Genius
Growth (%)	Percentage of growth in GDP captures the speed of economic growth in the region	China Information Network Data Co., LTD
Ln(GDP per capita)	Log of GDP per capita captures the development level of the regional economy.	China Information Network Data Co., LTD
Ln(Total Assets)	Book value of total asset proxies for the size of company.	TEJ & Genius
ROA (%)	Return-on-assets measure the performance of the company.	TEJ & Genius
Leverage	Long-term liability divided by total assets measures the risk of the company and its ability to access to debt capital.	TEJ & Genius
Regulated industry	Natural resources, public utilities, finance and transportation.	TEJ&Genius
IPO age	Number of years since IPO.	Genius

APPENDIX III
Pearson Correlation Matrix

	Marketization	Legal Environment	Protection of property rights	Deregulation	Unemployment Rate (%)	Fiscal Surplus	Percentage of SOE with net Loss (%)
Marketization	1						
Legal Environment	0.47	1					
Protection of property rights	0.65	0.83	1				
Deregulation	0.86	0.58	0.71	1			
Unemployment Rate (%)	-0.28	-0.36	-0.58	-0.28	1		
Fiscal Surplus	0.19	0.64	0.59	0.36	-0.43	1	
Percentage of SOE with net Loss (%)	-0.12	-0.36	-0.39	-0.11	0.42	-0.45	1
Knowledge specialization	-0.09	-0.14	-0.13	-0.13	0.06	-0.12	0.01
R&D/GDP (%)	-0.10	-0.01	0.24	-0.13	-0.48	0.18	-0.02
Growth (%)	0.44	0.28	0.36	0.42	-0.28	0.25	-0.23
Ln(GDP per capita)	0.43	0.67	0.70	0.47	-0.35	0.55	-0.61
Ln(Total assets)	0.06	0.09	0.12	0.07	-0.05	0.08	-0.07
ROA (%)	-0.02	-0.03	-0.01	-0.06	-0.04	0.02	-0.05
Leverage	-0.09	-0.04	-0.07	-0.09	0.03	-0.02	0.02
M/B	-0.04	-0.04	-0.04	-0.03	0.05	0.02	0.03

APPENDIX III, Continued
Pearson Correlation Matrix

	Knowledge specialization	R&D/GDP (%)	Growth (%)	Ln(GDP per capita)	Ln(Total assets)	ROA (%)	Leverage	M/B
Knowledge specialization	1							
R&D/GDP (%)	-0.04	1						
Growth (%)	-0.07	-0.05	1					
Ln(GDP per capita)	-0.10	0.10	0.02	1				
Ln(Total assets)	0.01	0.01	-0.12	0.21	1			
ROA (%)	-0.04	0.02	0.16	-0.08	-0.02	1		
Leverage	0.03	-0.04	-0.04	-0.08	0.19	-0.07	1	
M/B	-0.01	0.03	-0.24	0.08	-0.30	-0.13	-0.06	1