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Private Benefits of Control, Growth Opportunities and Investor Protection*

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Abstract

We develop a model to illustrate that controlling shareholders choose the level of investor protection that maximizes their own interests. Controlling shareholders in companies with complicated control structures can easily extract private benefits and are thus reluctant to enhance investor protection which would necessitate increased transparency. In contrast, controlling shareholders in companies with valuable growth opportunities are willing to improve investor protection so that they can benefit from the increased value resulting from the lower cost of capital. We test this prediction using firm-level data in China. The results show that the level of investor protection increases with decreases in control structure opacity and increases in growth opportunities. The correlation is more significant for enforcement than for the mechanisms of investor protection.

JEL classification: G30; K22

Keywords: Private benefits of control; Growth opportunities; Investor protection

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1. Introduction

Since La Porta, Lopez-de-Silanes, Schleifer, and Vishny (abbreviated hereafter as “LLSV”) established the “law and finance” field in 1998, both academic and practical approaches to corporate governance have increasingly focused on the problem of the legal protection of minority shareholders against expropriation by corporate insiders. Many studies focus on the consequences of investor protection and find that legal protection for investors is associated with many corporate financial issues, such as ownership structure (LLSV, 1999), dividend policy (LLSV, 2000), cost of capital (Himmelberg *et al.*, 2002), and equity valuation (LLSV, 2002). As the index of investor protection constructed by LLSV is computed at the country level, related empirical studies use either cross-country analysis (eg, LLSV, 2000) or time-series analysis (eg, Shen *et al.*, 2004). By doing so they imply two assumptions: that firms in a single legal regime are homogenous in their practice of investor protection, and that firm-level investor protection is exogenously determined by laws and regulations.¹

In contrast to these country-level studies, Duenev and Kim (2005) find wide within-country variation in governance and disclosure practices, with the variation increasing as the legal environment becomes less investor friendly. Consistent with Coase (1960), such within-country variation reflects firms’ adaptation to poor legal environments. Firms with better investment opportunities, a greater need for external financing or more concentrated ownership undertake better corporate governance and disclosure.

Based on the Coase theorem, Bergman and Nicolaievslay (2007) suggest that absent a strong legal regime, capital suppliers and users should negotiate, agree, and privately contract on the efficient level of investor protection. Thus, firms can contractually “opt out” of the law. They find that due to a weak legal regime in Mexico, the ability to enforce “precisely filtering contracts” is relatively weak, and only “imprecisely filtering contracts” can be well enforced.² As a result, the legal protection offered to investors may induce an over-regulation cost while preventing expropriation or inefficiency. In this case, private firms tend to offer contracts that are over-inclusive because of low renegotiation costs, whereas public firms tend to offer contracts that are under-inclusive because of high renegotiate costs. Recently La Porta, Lopez-de-Silanes, and Schleifer recognized in their new work with Djankov that prior studies have not distinguished

¹ In the law and finance literature, investor protection is the legal protection of minority shareholders and creditors against expropriation by corporate insiders. In this paper, unless otherwise noted, “investor” is defined as a minority shareholder of a listed company and “protection” is defined as firm-level mechanism and its enforcement.

² In the Bergman and Nicolaievslay (2007) study, “precisely filtering contracts” provide protection to investors only when it is necessary: ie, in the eventualities that expropriation can occur, and only in these eventualities. Precisely filtering contracts, therefore, bar expropriation without barring firms from performing other possibly efficient actions. On the contrary, “imprecisely filtering contract” can only bar a kind of action with possible expropriation, ie, connected party transaction, without distinguishing the essentiality in investor protection.

default rules, mandatory rules, and enabling provisions in the law. Firms can opt out of default rules and enabling provisions or enhance investor protection by including provisions favorable to shareholders in their charters (Djankov *et al.*, 2008).

The stock market in the People's Republic of China was established at the beginning of 1990s, followed by the gradual development of the legal framework for investor protection. The Company Law and Securities Law, which are the core of the legal framework that protects investors, were revised in 2005, with effect from 2006. Driven by this development of a legal framework, Chinese listed companies have implemented investor protection mechanisms. In the Chinese legal system, there are mandatory rules, default rules, and enabling provisions. Compared to criminal law, the commercial law that regulates investor protection tends to include more default rules and enabling provisions. One of the important emendations of the revised Company Law is "taking the spirit of company self-regulation, considering the space of participants' negotiation, and extending the application of non-mandatory rules greatly." (Luo, 2007). Data from the Self-Evaluation Report and Rectification Plan on Corporate Governance (abbreviated as "Self-Evaluation Report" hereafter) provided by Chinese listed companies show that there is wide firm-level variation in the mechanisms of investor protection, especially in enforcement provisions (Shen *et al.*, 2009).

Although the law and finance literature focuses on country-level variation and implicitly assumes firm-level investor protection to be exogenous, it seems reasonable in both theoretical and practical terms that the firm-level legal protection of investors may be not only heterogeneous but also endogenous even under identical legal environments. If that is the case, why do different firms choose different levels of investor protection? An exploration of firm-level investor protection and its determinants will thus be able to shed significant light on the protection of investors.

The extent of firm-level investor protection is likely to depend heavily on micro-level individual contracting in a given legal system within the context of relevant laws. We thus present a simple model based on the heterogeneous and exogenous nature of firm-level investor protection which suggests that favorable legal protection for investors is determined by company attributes in a given legal environment. Controlling shareholders perform a trade-off between the gains and losses induced by investor protection to maximize their own interests. The benefits of controlling shareholders can be categorized as the private benefit of control and the shared benefit of the entire equity (Holderness, 2003). Investor protection restrains the private benefit of control by increasing the cost of theft and improves the shared benefit by lowering the cost of capital and increasing the ability to finance profitable investment opportunities (LLSV, 2002; Dyck and Zingales, 2004; Himmelberg *et al.*, 2002; Demirgüç-Kunt and Maksimovic, 1998). To maximize their own total benefit, controlling shareholders choose the optimal level of investor protection. We use a set of firm-level indices for investor protection based on the Self-Evaluation Report and empirically test the relationship between investor protection, private benefits of control, and investment opportunities.

The remainder of this paper proceeds as follows. Section 2 presents the theoretical model. Section 3 introduces the institutional background in China. Section 4 elaborates hypotheses based on the theoretical model and the institutional background. Section 5 describes the data and variables. Section 6 tests the relationship between investor protection, private benefits of control, and investment opportunities. Section 7 concludes the paper.

2. Theoretical Model

Following LLSV (2002) and Doidge *et al.* (2004), we present a single-period model of an all-equity firm that is fully controlled by a single shareholder. To illustrate the tradeoff that determines the level of investor protection, we assume that the controlling shareholder has an exogenously determined cash flow or equity ownership of k in the firm. If there is no expropriation, the firm will receive an amount of Cash C at the end of the period to be shared by all shareholders. However, not all of the cash flow is distributed to shareholders on a pro rata basis. As a benefit of controlling the firm, the controlling shareholder diverts a share f of the firm's cash flow C to himself before distributing the rest as dividends, given that his ownership is less than 100%. Stealing is not free: c is the cost of theft. Under a pyramid or cross-holding ownership arrangement, the control structure of the controlling shareholder is complicated and stealing is concealed by layers of the control chain and the separation of control rights and cash flow rights. An investor protection system, in contrast, makes it difficult for a controlling shareholder to steal. We use o to indicate the level of concealment of the control structure and p to indicate the level of investor protection. The cost of theft c is related to the level of expropriation f . The marginal cost of stealing is positive, and rises as more is stolen: ie, $c_f > 0$ and $c_{ff} > 0$. Stealing is easier with a more complicated control structure and costlier with more protective legal regime: that is, $c_o < 0$, $c_p > 0$. To simplify the analysis, we assume that the cost of theft has a simple functional form that is quadratic in f and linearly increasing in p as in line with LLSV (2002) and Doidge *et al.* (2004): ie,

$$c = \frac{bf^2 p}{2o} C$$

(where b is a constant). Under these assumptions, the controlling shareholder receives

$$U = k(1 - f)C + fC - \frac{bf^2 p}{2o} C, \quad (1)$$

where the first term is the controlling shareholder's share of after-theft cash flow (the shared benefit) and the remaining two terms are his net benefits from expropriation (the private benefit of control).

Then, the controlling shareholder chooses f , solving the following maximization problem. The first order condition for this problem is given by

$$U_f = -kC + C - \frac{bfp}{o} \quad C = 0, \quad (2)$$

which can be rewritten as

$$f = \frac{o(1-k)}{bp}. \quad (3)$$

We substitute (3) into original maximization problem (1) and obtain the total gain of the controlling shareholder,

$$U = kC + \frac{o(1-k)^2}{2bp} C. \quad (4)$$

A higher level of investor protection p^H helps to enhance the confidence of outside investors, lower the cost of capital, and facilitate external financing. The cash flow of the company is thereby improved by z ($z > 0$) through the increase in its ability to take advantage of valuable growth opportunities. Following Doidge *et al.* (2004), for simplicity we assume that if the investor protection is only p , the firm cannot gain access to sufficient financing and take advantage of these growth opportunities. When the level of investor protection is improved to p^H , the firm is able to fund profitable opportunities and obtain the cash flow $(C+z)$ at the end of the period. As growth opportunities increase, so does z . Both the minority shareholders and the controlling shareholder can share $(C+z)$. The controlling shareholder, nevertheless, notices that higher-level investor protection p^H also means the complicated control structure will be discovered or will have to be rearranged. Assuming that the level of the concealment of the control structure is reduced into $(o-x)$, the cost of theft increases and the private benefit of control decreases. Given the change of cash flow, the level of concealment of the control structure and the cost of theft, the controlling shareholder must resolve his problem. Under the assumption of higher investor protection p^H , at the end of the period the cash flowing to the controlling shareholder is

$$U^H = k(C+z) + \frac{(o-x)(1-k)^2}{2bp^H} (C+z). \quad (5)$$

The controlling shareholder wants the firm to improve investor protection if (5) exceeds (4). Using Φ to denote for the difference of (5) and (4), we get

$$\Phi = kz + \frac{(1-k)^2}{2b} \left(\frac{(o-x)(C+z)}{p^H} - \frac{oC}{p} \right). \quad (6)$$

To have the partial derivative:

$$\frac{\partial \Phi}{\partial x} = -\frac{(1-k)^2}{2b} \frac{(C+z)}{p^H} < 0, \quad (7)$$

$$\frac{\partial \Phi}{\partial z} = k + \frac{(1-k)^2}{2b} \frac{(o-x)}{p^H} > 0. \quad (8)$$

For second derivative,

$$\frac{\partial \Phi}{\partial x \partial z} = -\frac{(1-k)^2}{2bp^H} < 0. \quad (9)$$

Therefore, the controlling shareholder chooses the level of investor protection to maximize his net gains. Other things being equal, controlling shareholders in firms with simpler and more transparent control structures have limited opportunities to steal so that their private benefit of control is not reduced very much by improvements in investor protection. Controlling shareholders in firms with more complicated control structures stand to see their private benefit of control significantly eroded, and thus they tend not to improve investor protection. In firms with more profitable investment opportunities and more external financing needs, improvements in investor protection lower the cost of capital needed to fund investment opportunities and increase the shared benefit greatly. Controlling shareholders in these firms thus tend to improve investor protection. In firms with few growth opportunities, however, improvements in investor protection cannot increase the shared benefit significantly through a lower cost of capital and higher equity value. In this instance, controlling shareholders have less incentive to improve investor protection. To summarize, other things being equal, controlling shareholders tend to choose to protect outside shareholders better when the control structure is transparent or growth opportunities are better. In the firms with both control structure opacity and growth potential, controlling shareholders trade off the losses and gains that will result from improvements in investor protection and decide on a moderate level of such protection to maximize their net gains.

3. Institutional Background

3.1. *Stock Market and Corporate Governance in China*

The stock market in the People's Republic China was established as part of an ongoing series of reforms. In 1984, the Chinese government shifted the focus of its reform of the economic system from the countryside to the cities, at the same time launching pilot projects to determine the feasibility of share economy. These pilot projects began with collective enterprises and small state-owned businesses and were then extended to small and medium-sized state-owned enterprises, and finally to large state-owned enterprises.

The initial form of the stock market in China was an over-the-counter transaction market launched in Shanghai during 1986, followed by the establishment of the Shanghai Stock Exchange in December 1990 and the Shenzhen Stock Exchange in June 1991.

Emerging as part of a reform process centered on state-owned enterprises, Chinese listed firms are quite different from their peers in developed markets. The equity of these

companies is split into public shares, legal person shares, and state-owned shares. Public shares are generally held by outside minority investors and are tradable on the stock exchange. Legal person shares and state-owned shares, which are generally held by the firm's promoter, cannot be transferred freely on the exchange. Holders of non-tradable shares who control a firm are not consistent with outside minority shareholders in interests, which blocks the *alignment effect* of shareholding. In addition, a typical listed firm in China has been spun off from a state-owned enterprise and restructured. Its connection with its controlling shareholders thus facilitates an *entrenchment effect*.

With the development of the Chinese capital market, the ultimate owners of listed companies have become diversified, and include the State-owned Assets Supervision and Administration Commission (SASAC) representing the central or local government, state-owned enterprises, and private individuals. There are considerable differences in acquisition of resources, control structure, and corporate governance between companies controlled by state-owned and non-state-owned entities. What should be noted particularly are those firms ultimately owned by local government and those owned by private individuals.

In the process of the Chinese government's economic reforms, local governments have acquired increasing power to allocate resources, which gives them the incentive to compete with their peers. With the strict control of the approval procedure, company listing has become a kind of scarce resource. Local governments compete in terms of access to the stock market by helping the companies they control to list. The companies subsequently listed are expected to support the regional economy. Given poor property protection and ineffective supervision mechanisms, corruption and rent-seeking thus arise to a certain extent. Under these circumstances, minority shareholders are likely to be exposed to expropriation.

Compared with state-owned enterprises, listed firms controlled by private individuals are in an inferior position. It is difficult for them to acquire financing due to their small size, weak managerial systems and disadvantageous social capital. Perhaps due to the financial restraint, these companies typically have more complicated ownership structures, such as pyramids or cross-holdings. The separation of control rights and cash flow rights prevails in these companies, which also threaten the interests of minority shareholders even though the ultimate owners are less powerful than in state-owned enterprises.

3.2. Investor Protection Regulations in China

With the development of the stock market, the Regulation on Pilot Project of Shareholding System and the Regulation on Listed Companies were published in 1992. The regulations emphasize "one share, one vote" and stipulate various rights for shareholders. In the same year, the China Securities Regulatory Commission (CSRC) was founded. In April 1993, the State Council issued its Provisional Regulations on the Administration of Share Issuance and Trading, which were the first comprehensive

regulations on stock issuance and exchange in the People's Republic of China.

To meet the demand for the development of a modern enterprise system, the Company Law was formally promulgated and came into force in July 1994. The law aimed at regulating firms' operations to protect the legal rights and interests of their shareholders and creditors. It was the first national commercial law in the People's Republic of China to include and included all of the important items on investor protection from prior regulations. In 1997, the Securities Law came into force, adjusting and supplementing some aspects of investor protection based on prior regulations and emphasizing the principles of openness, fairness, and impartiality in security issuance and dealing.

The Company Law and Securities Law laid a foundation for the legal system in the Chinese stock market. Following Western legislative experiences for reference, the Chinese government formulated or revised a number of other laws and regulations. Thus, a relatively complete system of investor protection was constructed in a short time. To meet the needs of the developing market, the two laws were revised in 2005. The new Company Law reflects the spirit of respecting the market mechanism and company self-regulation instead of over-regulation; it strengthens corporate governance and shareholder protection. The new Securities Law requires that intermediaries operate in the prescribed manner, defines the legal liability of civil affairs related to securities, and stipulates more severe punishment for those who violate the law.

3.3. Enforcement of Investor Protection in China

Compared with the rapid development of the legal framework for investor protection, the enforcement environment has been a more difficult scenario. In the traditionally poor legal environment, the rules of investor protection have not sufficiently taken effect. Although the early chaos of the securities market has been eliminated, the expropriation of minority shareholder interest has not been abolished.

In principle, civil liability, administrative liability and criminal liability exist to deter breaches of the law in relation to investor protection. Administrative liability is heavily emphasized in China, and criminal liability is infrequently triggered for securities issues. Civil liability, aimed at defending the civil rights and interests of victims, was incurred late in 2002, but difficulties remain in that area even today.

Investor protection is enforced in two ways: administratively by the CSRC and legally through the local court system. Generally, the prosecution, investigation, punishment, and education conducted by the CSRC and its subsidiaries play an important role in deterring illegality and protecting minority shareholders. In contrast, legal redress is not effective. It is difficult for local courts to retain their independence because of their personnel and financial reliance on local governments. The courts are open to government intervention and regional protectionism prevails in judicial practice, which increases the cost of law suits brought by minority shareholders.

3.4. *Non-tradable Shares Reform and Overall Listing Program*

To solve the institutional problem of split ownership, the Chinese government launched the Non-tradable Share Reform in May 2005. Non-tradable shareholders pay some “consideration” to tradable shareholders to exchange the rights of shares trading so that all the shares have equal rights. At the same time, the government began to promote an Overall Listing Program that required listed companies to stay independent of their controlling shareholders. A company that is about to go public should avoid spin offs in the listing process, and a company that has listed should try to acquire its parent company. All listed companies are expected to be integrated and independent after the program so that the controlling shareholders’ motivation to expropriate is limited. Undoubtedly, the Non-tradable Share Reform and the Overall Listing Program together strengthen the *alignment effect* and mitigate the *entrenchment effect* of shareholding in Chinese listed companies.

4. **Research Hypotheses**

As discussed in the previous section, the legal protection of investors is well developed but the environment of enforcement is lagging in China. At present, the enforcement of investor protection is relative weak and public administration is stronger than the legal system. Nevertheless, the expropriation of minority shareholders by insiders is being held back to some extent by the Non-tradable Share Reform and the Overall Listing Program, and the environment is in the process of improving.

Unlike in developed market economies with strong legal systems, there is wide within-country variation in the Chinese stock market because of differences in growth opportunities, control structures and investor protection for different companies. This variation enables us to study the firm-level determinants of investor protection within one country. Firms with more complicated control structures tend to protect the private control benefit instead of the interests of minority shareholders. Firms with more growth opportunities tend to increase the level of investor protection to lower the cost of capital and fund profitable opportunities. Unlike in underdeveloped market economies with extremely poor legal systems, investors in China do not disregard the investor protection offered by companies. If the legal system does not work at all, the individual contract is meaningless. In this circumstance, investor protection can neither increase the cost of theft nor lower the cost of capital by changing the expectations of minority investors. In China, the effect of legal protection on investors is limited by a weak legal environment to some extent, but it is not impossible for companies to become creditable to outside investors through well-enforced investor protection.

It is obviously not sufficient for listed companies to simply set up investor protection mechanisms. Only when those mechanisms are put into practice can they be trusted by minority shareholders, which decreases the cost of capital. Overall, the relationship

between private control benefits, growth opportunities, and investor protection predicted by our theoretical model should be tenable in China. However, it should be noted that what really works in the relationship may be the enforcement instead of the mechanisms of investor protection.

Based on the analysis of the theoretical model and the institution background, we present three hypotheses to be tested.

H1. *The level of investor protection is negatively related to the opacity of the control structure, with the correlation more significant for enforcement than for the mechanisms of investor protection under a relatively weak legal environment.*

H2. *The level of investor protection is positively related to growth opportunities, with the correlation more significant for enforcement than for the mechanisms of investor protection under a relatively weak legal environment.*

H3. *More growth opportunities help to mitigate the negative correction between the level of investor protection and the opacity of control structure, with the influence more significant for enforcement than for the mechanisms of investor protection under a relatively weak legal environment.*

5. Data and Variables

5.1. Data

To meet the requirements of the Note for Special Activities on Enhancing the Governance Structure of Listed Companies (CSRC, companies, [2007]28), all companies listed on the Shanghai and Shenzhen stock exchanges are required to evaluate corporate governance by themselves according to related laws and regulations. By November 14, 2007, 1,432 companies had completed Self-Evaluation Reports. In the questionnaire on which the Report is based, the CSRC asks 100 questions on corporate governance, of which 22 are directly related to the legal protection offered to minority shareholders. Replies to these questions provide valuable data for firm-level investor protection research. Given the importance placed on the survey by the CSRC, exchanges, and listed companies, it generates a much better response rate and better response quality than a typical questionnaire (Shen *et al.* 2009). It also provides the first and most comprehensive dataset of cross-sectional investor protection information of Chinese listed companies in a uniform format.

Following Shen *et al.* (2009), we hand-collected the data on control right structures and investor protection from completed Self-Evaluation Reports, and obtained financial and other data from the Wind database. To avoid bias in the research, we exclude the following: (1) firms with missing data in the Wind database; (2) firms listed after the end of 2006; (3) firms with missing information in the Self-Evaluation Report; (4) financial

companies such as banks; (5) firms with extreme values out of the 1st-99th percentile of the variable distribution. We thus obtained 1029 sample companies (Table 1).

Table 1. Sample Selection Procedure

Excluding procedure	Original sample	Excluding firms with missing data in the Wind database	Excluding firms listed after 2006	Excluding firms with incomplete information in Self-Evaluation Reports	Excluding financial companies	Excluding extreme values out of 1st-99th percentiles	Final sample
Sample	1,432	126	58	67	15	137	1,029

5.2. Variables

5.2.1. Dependant Variable: Investor Protection

The investor protection proposed by LLSV (1998) is described by legal origin and three measures, including shareholder rights, creditor rights, and enforcement. For shareholder protection, because shareholders exercise their power by voting for directors and voting on major corporate issues, LLSV focus on voting procedures in evaluating shareholder rights. Those rights encompass the “one share, one vote” principle, the “anti-director rights”, and the “bright-line rule”, which reflects the right to a mandatory dividend. Anti-director rights cover the following six areas: (1) voting by mail; (2) obstacles to the actual exercise of the right to vote; (3) minority representation on the board of directors through cumulative voting or proportional representation; (4) an oppressed minority mechanism to seek redress in case of expropriation; (5) preemptive rights to subscribe to new securities issues by the company; and (6) the right to call a special shareholder meeting. Djankov *et al.* (2008) revised the anti-director rights index by associating better investor protection with laws that are explicitly mandated, or set as default rules, provisions that are favorable to minority shareholders. They revised index by retreating the enabling provisions while keeping the core of the six sub-indices.

For enforcement, LLSV (1998) use five measures: efficiency of the judicial system, rule of law, corruption, risk of expropriation by the government, and likelihood of contract repudiation by the government. In addition, because accounting plays a potentially crucial role in corporate governance, they use an estimate of the quality of the country’s accounting standards. Djankov *et al.* (2008) present a new and more direct measure of investor protection, the anti-self-dealing index, to reflect the legal protection of minority shareholders against self-interested related-party transactions. They describe a hypothetical self-dealing transaction and gathered from attorneys to survey in detail how each country’s legal system regulates that transaction. The new measures include private enforcement and public enforcement, where private enforcement is divided into

ex-ante and post-private control of self-dealing.

Following LLSV (1998), Shen *et al.* (2004) construct a Chinese time series investor-protection regulation index to investigate investor protection within one country. They focus on 16 items associated with shareholder rights and other regulations of investor protection, and develop the index based on the Key Laws and Regulations Index in the Guide for Investor Protection Education issued by the CSRC. Jiang *et al.* (2008) develop a Chinese firm-level investor protection index using the Delphi method. They ask experts from both academic and practical area to determine the main items of investor protection and their weight. Considering the quality of financial reports, related-party transaction, the amount of grabbing by controlling shareholders, profitability, market return, potential profitability, cash dividend, return of holding stocks, punishment by the CSRC, and criticism of the company by the CSRC or the exchanges, the indices include five measures: the right to know, the right to share benefits equally, maximization of shareholder wealth, return on investment, and honesty of the company. Different from a typical investor protection index, this index is constructed from the perspective of all investors, rather than minority shareholders.

Macro-level analysis, such as cross-country measures and time series indices of legal protection, might not be adequate for firm-level research. It is not easy to control other macro-level variables and distinguish the difference among individual companies when doing so. Although Jiang *et al.* (2008) make an effort to solve this problem their index is too comprehensive for use with corporate governance. In line with LLSV (1998), Shen *et al.* (2004), and Djankov *et al.* (2008), Shen *et al.* (2009) develop a Chinese firm-level investor protection index by filtering and classifying the replies associated with investor protection from the Self-Evaluation Report. However, of the 22 questions associated with investor protection in the Self-Evaluation Report, only 6, 7, 8, 4 companies replied with “No” for “violating the Rule on Shareholder’s Meeting of Listed Companies”, “insider control”, “information leaks,” and “insider trading,” respectively. The percentage of negative answers was too low (less than 1%) to be included in computing the index. Hence, we revised the index developed by Shen *et al.* (2009) by using the answers to the remaining 18 questions to obtain our investor protection composite index, IP_Comp (Table 2).³

³ To avoid possible bias, we still considered the answers to all 22 questions in the robustness test. Please see Shen *et al.* (2009) for detailed statistics information about of each item included in the investor protection index.

Table 2. Firm-level Investor Protection Indices⁴

Index	Questions Asked by the CSRC	Score for the Reply
Anti-director rights	Have shareholders ever voted online except in the Non-tradable Share Reform?	1 for "Yes", 0 for "No"
	Has a proxy been used in shareholder meetings except in the Non-tradable Share Reform?	1 for "Yes", 0 for "No"
	Has cumulative voting been used in voting for directors and supervisors?	1 for "Yes", 0 for "No"
	Has a provisional shareholders' meeting been requested by no less than 10% of shareholders?	1 for "Yes", 0 for "No"
	Have provisional proposals been raised by no less than 3% shareholders?	1 for "Yes", 0 for "No"
	Does the company have long-term mechanisms to prevent the grabbing of control by the controlling shareholder and its subsidiary enterprise?	1 for "Yes", 0 for "No"
Anti-director Rights Index (IP_Anti)⁵		The sum is distributed as [0, 6]
Disclosure	Has a disclosure system been established according to Rule on Listed Companies' Information Disclosure?	1 for "Yes", 0 for "No"
	Has a system been established for announcing, transferring, censoring and disclosing major issues?	1 for "Yes", 0 for "No"
Disclosure Index (IP_Disc)		The sum is distributed as [0, 2]
Enforcement	Have any major issue been put into practice without/ before a resolution is passed at the shareholder meeting	1 for "No", 0 for "Yes"
	Have insiders bought or sold their own company's shares illegally?	1 for "No", 0 for "Yes"
	Have company decisions been made independent of the controlling shareholder?	1 for "Yes", 0 for "No"
	Have regular reports been issued on time?	1 for "Yes", 0 for "No"
	Have any modified auditing opinions been issued on financial reports?	1 for "No", 0 for "Yes"
	Has the company had to restate any financial disclosure?	1 for "No", 0 for "Yes"
	Has the company been spot-inspected by regulators?	1 for "No", 0 for "Yes"
	Has the company had to rectify problems of disclosure or something else?	1 for "No", 0 for "Yes"
	Has the company been criticized, accused, or punished by exchanges for disclosure problems?	1 for "No", 0 for "Yes"
Has the company disclosed information voluntarily?	1 for "Yes", 0 for "No"	
Enforcement Index (IP_Enfo)		The sum is distributed as [0, 10]
Total	Investor Protection Composite Index (IP_Comp)	The sum is distributed as [0, 18]

⁴ We refer to Shen *et al.* (2009) to compute the investor protection indices in this table.

⁵ The answer "No" to some items in the anti-director section could indicate either no investor protection mechanism or no case to trigger the mechanism. To avoid possible bias, we thus eliminate these ambiguous items (provisional shareholders' meeting, provisional proposal, and proxy) to reconstruct the anti-director index in the robustness test.

In China, legal rules of investor protection have been regulated gradually with the development of the stock market. However, enforcement improvement is lagging. In this context, it may be difficult, if not impossible, for the investor protection mechanisms established by firms to be put into practice. Only when investor protection is brought into effect can firms restrain insider expropriation and obtain the trust of outside investors. We thus break the investor protection composite index *IP_Comp* into three: *IP_Anti* is an anti-director index, *IP_Disc* is a disclosure index, and *IP_Enfo* is an enforcement index of investor protection (Table 2).

5.2.2. Independent Variables: Control Structure and Growth Opportunities

Following the methodology of Claessens *et al.* (2000), we hand-collected data on ultimate ownership held by controlling shareholders by tracing the pyramid and cross-holding control chains disclosed in the Self-Evaluation Report. We define control rights (*C*) as minimal ownership in the control chain and cash flow rights (*O*) as the product of the percentage in the control chain of the controlling shareholder (or the sum of the product, if there is more than one control chain for that shareholder). We then have the separation of control rights and cash flow rights, *C_O*. *Layer* measures the number of layers in the control chain of the controlling shareholder. For instance, the *Layer* is 1 if B directly controls listed firm A and 2 if B controls A through C.

Tobin's Q, market-book value ratio and sales growth are often used to measure growth opportunities. However, Tobin's Q and the market-book value ratio are not adequate here because not all shares of Chinese listed firms were tradable before the end of 2006. We thus use the average annual sales growth rate in 2004-2006 as the proxy for the investment opportunity set, *Inv_Oppo*. As the rate of sales growth increases, so do a firm's investment opportunities. In addition, following Demircug-Kunt and Maksimovic (1998) and Durnev and Kim (2005), we estimate the external finance needed for growth, *Ext_Fin*, as the difference between the firm's actual growth rate and internal growth rate. The actual growth rate is computed as a two-year average of the annual growth rate of total assets in 2005-2006, and the internal growth rate as a two-year average of $(ROA \times b) / (1 - ROA \times b)$.⁶ We assume that those firms with higher *Ext_Fin* have more investment opportunities and need more outside capital given internal financial resources.

5.2.3. Control Variables

We control firm size, leverage, and the cash flow rights of the ultimate owner. Considering the relatively poor legal environment, prevailing government administration

⁶ See Demircug-Kunt and Maksimovic (1998; p. 2111) for an elaboration of this measure. In our paper, *Ext_Fin* = actual growth rate - internal growth rate. In the formula for the internal growth rate, *b* is the proportion of the firm's earnings retained for reinvestment. To avoid the influence of outliers, we set the actual growth rate as 1 when it is more than 1.

and the difference among firms with different controlling shareholders in control structure, the ability to finance and corporate governance in China, we divide our sample into four parts: firms controlled by private individuals, firms controlled by state-owned enterprises, firms controlled by local government, and firms controlled by the central government. We use three dummies to control this difference: *Corporation*, *Local_Gov*, and *Center_Gov* (Table 3).

Table 3. Definitions of Variables

Variables	Symbol	Definition
Control layers	Layer	Log of the control layers of the controlling shareholder
Separation of control and cash flow rights of the controlling shareholder	C_O	1 if control rights exceed cash flow rights, 0 otherwise.
Investment opportunity set	Inv_Oppo	Average annual sales growth from 2004 to 2006
External funding needs	Ext_Fin	Difference between actual growth rate and internal growth rate
Size	Size	Log of assets at the end of 2006
Leverage	Leverage	Debt to equity ratio at the end of 2006
Cash flow rights	Ownership	Cash flow rights owned by controlling shareholder
Corporate-controlled company	Corporation	1 if the controlling shareholder is a state-owned enterprise, 0 otherwise.
Local government-controlled company	Local_Gov	1 if the controlling shareholder is a local SASAC, 0 otherwise.
Central government-controlled company	Center_Gov	1 if the controlling shareholder is a SASAC of the state council, 0 otherwise.

5.3. Descriptive Statistics and Correlation Analysis

The descriptive statistics in Table 4 show that the investor protection composite index is from 5 to 16 with an average of 11.256. Specifically, the anti-director index, disclosure index, and enforcement index are distributed as [0, 5], [0, 2], and [2, 10], respectively. There is enough variation in the investor protection composite index, anti-director index and enforcement index. In unreported descriptive statistics, all of the kurtosis and the skewness for these indices are close to zero. The disclosure indices for different companies are slightly similar, which may have some negative influence on the following regression.

Table 4. Descriptive Statistics

	Average	Median	Standard deviation	Minimum	Maximum
IP_Comp	11.256	11.000	1.861	5.000	16.000
IP_Anti	2.277	2.000	0.944	0.000	5.000
IP_Disc	1.932	2.000	0.267	0.000	2.000

	Average	Median	Standard deviation	Minimum	Maximum
IP_Enfo	7.047	7.000	1.523	2.000	10.000
Layer	0.827	0.693	0.352	0.000	2.079
C_O	0.473	0.000	0.500	0.000	1.000
Inv_Oppo	0.196	0.178	0.208	-0.797	0.986
Ext_Fin	0.073	0.045	0.145	-0.452	0.948
Size	21.473	21.346	1.165	18.157	29.647
Leverage	1.603	1.176	2.056	0.021	35.283
Ownership	0.309	0.288	0.164	0.010	0.821
Corporation	0.121	0.000	0.326	0.000	1.000
Local_Gov	0.431	0.000	0.496	0.000	1.000
Center_Gov	0.163	0.000	0.370	0.000	1.000

The correlation analysis in Table 5 shows that the investor protection composite index correlates with the anti-director index, the disclosure index, and the enforcement index at 53%, 28%, and 84%, respectively. It also correlates significantly with the four explanatory variables, ie, control layers, the separation of control and cash flow rights, investment opportunities, and external funding needs, at -6%, -6%, 19% and 18%, respectively. Specifically, the correlation of the enforcement index with the explanatory variables is more significant than those of the anti-director index and disclosure index. Our hypotheses are preliminarily supported by the correlation analysis.

Table 5. Correlation Analysis

	IP_Comp	IP_Anti	IP_Disc	IP_Enfo	Layer	C_O	Inv_Oppo	Ext_Fin	Size	Leverage	Ownership
IP_Comp	1										
IP_Anti	0.53***	1									
IP_Disc	0.28***	0.09***	1								
IP_Enfo	0.84***	0.01	0.11***	1							
Layer	-0.06**	0.01	-0.03	-0.08**	1						
C_O	-0.06**	0.06**	-0.05	-0.11***	0.40***	1					
Inv_Oppo	0.19***	0.15***	-0.01	0.15***	-0.01	-0.01	1				
Ext_Fin	0.18***	0.21***	-0.01	0.09***	-0.01	0.00	0.43***	1			
Size	0.19***	0.14***	0.04	0.14***	0.02	-0.11***	0.14***	0.30***	1		
Leverage	-0.04	-0.01	-0.03	-0.04	0.01	0.01	0.06*	0.26***	0.41***	1	
Ownership	0.11***	0.00	0.03	0.13***	-0.15***	-0.49***	0.09***	0.03	0.23***	-0.05	1

Note: * Significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level.

6. Empirical Test and Results

6.1. Relation between Control Structure and Investor Protection

In this section we turn to the regression analysis. To examine the relation between control structure and investor protection, we use all four indices of investor protection (*IP_Comp*, *IP_Anti*, *IP_Disc*, and *IP_Enfo*) as dependent variables and *Layer* and *C_O* as independent variables. The regression in Table 6 shows that the investor protection composite index, *IP_Comp*, is significantly negatively related to *Layer* and *C_O*. Generally, the level of investor protection is lower for companies with more complicated control structures. However, the significantly negative relation between investor protection and control structure exists only for the enforcement index and not for the anti-director and disclosure indices. Therefore, our results are supportive of H1. Control structure opacity facilitates the acquirement of private benefit of control and discourages the improvement of investor protection. In China, the negative correlation is more likely to exist for the quality of enforcement than for the establishment of mechanisms of investor protection due to the relatively weak legal environment.

Table 6. Control Structure and Investor Protection

	<i>IP_Comp</i>	<i>IP_Anti</i>	<i>IP_Disc</i>	<i>IP_Enfo</i>	<i>IP_Comp</i>	<i>IP_Anti</i>	<i>IP_Disc</i>	<i>IP_Enfo</i>
Intercept	3.608*** (3.06)	-0.961 (-1.58)	1.698*** (9.75)	2.871*** (2.96)	3.344*** (2.85)	-0.994* (-1.65)	1.687*** (9.75)	2.652*** (2.74)
Layer	-0.374** (-2.23)	0.018 (0.21)	-0.022 (-0.89)	-0.370*** (-2.67)				
C_O					-0.127 (-0.92)	0.137* (1.92)	-0.019 (-0.93)	-0.245** (-2.14)
Size	0.373*** (6.54)	0.159*** (5.42)	0.012 (1.40)	0.202*** (4.30)	0.376*** (6.56)	0.155*** (5.25)	0.012 (1.46)	0.209*** (4.42)
Leverage	-0.123*** (-4.04)	-0.041*** (-2.60)	-0.007 (-1.45)	-0.076*** (-3.02)	-0.124*** (-4.04)	-0.040*** (-2.52)	-0.007 (-1.48)	-0.077*** (-3.06)
Ownership	0.505 (1.29)	-0.168 (-0.83)	-0.010 (-0.17)	0.683** (2.11)	0.529 (1.27)	-0.022 (-0.10)	-0.021 (-0.35)	0.572* (1.67)
Corporation	0.167 (0.85)	-0.137 (-1.34)	-0.007 (-0.25)	0.311* (1.91)	0.134 (0.67)	-0.110 (-1.07)	-0.011 (-0.39)	0.255 (1.56)
Local_Gov	-0.137 (-0.91)	-0.111 (-1.44)	0.029 (1.33)	-0.055 (-0.45)	-0.199 (-1.24)	-0.055 (-0.66)	0.021 (0.89)	-0.165 (-1.25)
Center_Gov	0.171 (0.87)	-0.116 (-1.14)	0.009 (0.30)	0.277* (1.71)	0.034 (0.17)	-0.070 (-0.69)	-0.003 (-0.09)	0.107 (0.66)
Adj.R ²	5.66%	2.28%	0.08%	4.52%	5.28%	2.63%	0.09%	4.28%

Note: * Significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level; t statistics are shown in parentheses.

6.2. Growth Opportunities and Investor Protection

Using the indices of investor protection (*IP_Comp*, *IP_Anti*, *IP_Disc*, and *IP_Enfo*) as dependent variables and the investment opportunities set (*Inv_Oppo*) and external funding needs (*Ext_Fin*) as independent variables, we estimate a regression to explore the relation between growth opportunities and investor protection.

Table 7. Growth Opportunities and Investor Protection

	IP_Comp	IP_Anti	IP_Disc	IP_Enfo	IP_Comp	IP_Anti	IP_Disc	IP_Enfo
Intercept	3.752*** (3.23)	-0.766 (-1.27)	1.677*** (9.67)	2.841*** (2.95)	4.488*** (3.80)	-0.206 (-0.34)	1.663*** (9.43)	3.031*** (3.08)
Inv_Oppo	1.492*** (5.49)	0.594*** (4.22)	-0.010 (-0.25)	0.908*** (4.03)				
Ext_Fin					2.112*** (5.16)	1.315*** (6.27)	-0.030 (-0.50)	0.828** (2.43)
Size	0.338*** (5.96)	0.146*** (4.98)	0.012 (1.40)	0.180*** (3.82)	0.310*** (5.37)	0.121*** (4.10)	0.013 (1.46)	0.176*** (3.67)
Leverage	-0.124*** (-4.11)	-0.041*** (-2.66)	-0.007 (-1.44)	-0.076*** (-3.03)	-0.147*** (-4.81)	-0.056*** (-3.59)	-0.006 (-1.35)	-0.085*** (-3.32)
Ownership	0.519 (1.36)	-0.238 (-1.20)	0.001 (0.02)	0.755** (2.38)	0.674* (1.77)	-0.176 (-0.90)	0.000 (0.01)	0.849*** (2.67)
Corporation	0.205 (1.05)	-0.118 (-1.17)	-0.008 (-0.28)	0.331** (2.05)	0.200 (1.02)	-0.111 (-1.11)	-0.008 (-0.28)	0.319* (1.96)
Local_Gov	-0.084 (-0.57)	-0.086 (-1.12)	0.028 (1.28)	-0.027 (-0.22)	-0.109 (-0.73)	-0.087 (-1.15)	0.028 (1.28)	-0.050 (-0.40)
Center_Gov	0.066 (0.35)	-0.114 (-1.16)	0.003 (0.11)	0.176 (1.12)	0.063 (0.33)	-0.117 (-1.20)	0.003 (0.11)	0.177 (1.12)
Adj. R ²	7.92%	3.96%	0.01%	5.35%	7.61%	5.91%	0.03%	4.40%

Note: * Significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level; *t* statistics are shown in parentheses.

The regression results in Table 7 indicate that the investor protection composite index increases significantly with both investment opportunities and external funding needs. Specifically, this relation exists for the anti-director index and the enforcement index rather than the disclosure index. The results thus support H2. More investment opportunities and more outside capital are needed motivate the controlling shareholder to protect investors better so that the company can finance profitable opportunities with a lower cost of capital. In this way, the controlling shareholder can obtain more shared benefit. Given the relatively ineffective legal institutions in China, the positive

correlation between growth opportunities and investor protection is more likely to exist for the quality of enforcement than for the establishment of mechanisms of investor protection.

6.3. Control Structure, Growth Opportunities, and Investor Protection

Given that the level of investor protection decreases with the opacity of the control structure and increases with growth opportunities, how would investor protection fare if the two determinants combined? To consider this situation we introduce the interaction terms of control structure and growth opportunities into the regression. In the left sides of Tables 8 and 9, the results reveal that the coefficients of *Layer* are negative and those of the interaction terms of *Layer* and *Inv_Oppo* and *Layer* and *Ext_Fin* are positive. All are statistically significant except in the regression of the anti-director index and the disclosure index. The right sides of Tables 8 and 9 show that except for the anti-director index, the level of investor protection increases with the decrease in *C_O* and with the interaction term of *C_O* and growth opportunities. However, only the coefficients in the regression of the investor protection composite index and the enforcement index are all statistically significant. These results are supportive of H3. More growth opportunities help to mitigate the negative correlation between the opacity of the control structure and the level of investor protection, but the effect is associated more with enforcement rather than the mechanisms of investor protection.

Table 8. Control Structure, Investment Opportunity Set and Investor Protection

	IP_Comp	IP_Anti	IP_Disc	IP_Enfo	IP_Comp	IP_Anti	IP_Disc	IP_Enfo
Intercept	4.186*** (3.57)	-0.724 (-1.19)	1.703*** (9.73)	3.207*** (3.30)	3.501*** (3.00)	-0.952 (-1.58)	1.683*** (9.72)	2.770*** (2.88)
Layer	-0.622*** (-3.58)	-0.084 (-0.93)	-0.024 (-0.93)	-0.514*** (-3.57)				
Layer× Inv_Oppo	1.456*** (4.89)	0.597*** (3.87)	0.013 (0.29)	0.846*** (3.43)				
C_O					-0.436*** (-2.78)	0.052 (0.65)	-0.012 (-0.49)	-0.477*** (-3.69)
C_O× Inv_Oppo					1.509*** (4.10)	0.411** (2.16)	-0.037 (-0.68)	1.135*** (3.74)
Size	0.346*** (6.11)	0.149*** (5.06)	0.012 (1.36)	0.186*** (3.97)	0.371*** (6.51)	0.153*** (5.21)	0.012 (1.47)	0.205*** (4.36)
Leverage	-0.126*** (-4.19)	-0.042*** (-2.69)	-0.007* (-1.46)	-0.078*** (-3.10)	-0.128*** (-4.21)	-0.041*** (-2.60)	-0.007 (-1.46)	-0.080*** (-3.21)
Ownership	0.390 (1.00)	-0.215 (-1.07)	-0.011 (-0.18)	0.616* (1.91)	0.447 (1.08)	-0.045 (-0.21)	-0.019 (-0.31)	0.511 (1.50)

	IP_Comp	IP_Anti	IP_Disc	IP_Enfo	IP_Comp	IP_Anti	IP_Disc	IP_Enfo
Corporation	0.176 (0.90)	-0.133 (-1.32)	-0.007 (-0.25)	0.316* (1.96)	0.154 (0.78)	-0.105 (-1.02)	-0.012 (-0.40)	0.270* (1.66)
Local_Gov	-0.112 (-0.76)	-0.101 (-1.32)	0.030 (1.34)	-0.041 (-0.33)	-0.202 (-1.27)	-0.056 (-0.68)	0.021 (0.89)	-0.168 (-1.28)
Center_Gov	0.128 (0.66)	-0.133 (-1.32)	0.008 (0.29)	0.253 (1.57)	0.108 (0.09)	-0.075 (-0.74)	-0.002 (-0.08)	0.095 (0.59)
Adj. R ²	7.73%	3.60%	0.00%	5.51%	6.73%	2.98%	0.03%	5.48%

Note: * Significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level; t statistics are shown in parentheses.

Table 9. Control Structure, External Funding Needs, and Investor Protection

	IP_Comp	IP_Anti	IP_Disc	IP_Enfo	IP_Comp	IP_Anti	IP_Disc	IP_Enfo
Intercept	4.661*** (3.95)	-0.364 (-0.60)	1.689*** (9.56)	3.336*** (3.40)	4.110*** (3.52)	-0.656 (-1.09)	1.695*** (9.72)	3.072*** (3.17)
Layer	-0.473*** (-2.84)	-0.038 (-0.44)	-0.021 (-0.85)	-0.413*** (-2.98)				
layerx Inv_Oppo	2.370*** (5.29)	1.344*** (5.83)	-0.020 (-0.30)	1.046*** (2.81)				
C_O					-0.357** (-2.50)	0.035 (0.48)	-0.021 (-1.00)	-0.371*** (-3.12)
C_Ox Inv_Oppo					3.096*** (5.43)	1.367*** (4.64)	0.032 (0.38)	1.697*** (3.59)
Size	0.323*** (5.66)	0.131*** (4.46)	0.012 (1.42)	0.180*** (3.79)	0.341*** (5.99)	0.139*** (4.75)	0.012 (1.40)	0.189*** (4.01)
Leverage	-0.150*** (-4.91)	-0.056*** (-3.56)	-0.006 (-1.39)	-0.088*** (-3.45)	-0.141*** (-4.64)	-0.047*** (-3.03)	-0.007 (-1.51)	-0.087*** (-3.44)
Ownership	0.532 (1.37)	-0.153 (-0.77)	-0.010 (-0.17)	0.695* (2.16)	0.594 (1.45)	0.007 (0.03)	-0.021 (-0.33)	0.608* (1.78)
Corporation	0.169 (0.87)	-0.135 (-1.35)	-0.007 (-0.25)	0.312* (1.93)	0.156 (0.80)	-0.100 (-0.99)	-0.011 (-0.38)	0.268 (1.64)
Local_Gov	-0.120 (-0.81)	-0.102 (-1.33)	0.029 (1.32)	-0.048 (-0.39)	-0.206 (-1.30)	-0.058 (-0.71)	0.021 (0.89)	-0.169 (-1.29)
Center_Gov	0.119 (0.61)	-0.145 (-1.45)	0.009 (0.32)	0.255 (1.57)	0.006 (0.03)	-0.083 (-0.83)	-0.003 (-0.10)	0.092 (0.57)
Adj. R ²	0.081	0.053	0.000	0.052	7.85%	4.55%	0.00%	5.38%

Note: * Significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level; t statistics are shown in parentheses.

6.4. Robustness Test

To examine the robustness of the abovementioned results, we reconsider the investor protection index by eliminating the items with some ambiguity in computing the anti-director index, keeping the four items with little variation in the enforcement index and combining the anti-director and disclosure indices into an establishment index. Using these new indices, our main results remain unchanged.

In addition, we replace the average annual sales growth rate and external funding needs with the market-book value of equity in 2006 as a proxy of growth opportunities and rerun the regressions employed in Tables 6 to 9. The results show that the coefficients remain unchanged in sign and become even more statistically significant.

7. Conclusion

In the law and finance literature, ample studies use the index of investor legal protection developed by LLSV to explore the economic consequences of investor protection. We argue, however, that it may not make sense to take firm-level homogeneity and exogeneity for granted. The level of legal protection for investors at the firm level may not only be heterogeneous but may also be endogenous even under identical legal environments. It is thus important to explore firm-level investor protection and its determinants.

We have developed a theoretic model to illustrate how the controlling shareholder chooses the level of investor protection to pursue their own interests. Investor protection limits the controlling shareholder's acquisition of private control benefit, and at the same time helps to improve that shareholder's shared benefit. Controlling shareholders thus make decisions by trading off the losses and gains resulted from improvements in investor protection. If the control structure of a company is complicated, the controlling shareholder can easily extract the private benefit of control. He is reluctant to enhance investor protection because his private benefit would be reduced greatly due to the required transparency. In contrast, if a company has good growth opportunities and is thus in need of external financing, investor protection would help the company to fund profitable opportunities with a lower cost of capital. Hence, the controlling shareholder would be willing to improve investor protection in that his shared benefit would increase with the increase in the entire equity.

We use a measure of firm-level investor protection and examine the relationship between control structure, growth opportunities, and investor protection. Empirical evidence supports our theoretical prediction. Generally, the level of investor protection improves with a decrease in the opacity of the control structure and an increase in growth opportunities. Furthermore, better investment opportunities mitigate the negative correlation between investor protection and control structure opacity. Dividing the composite index of investor protection into three parts, we find that the coefficients

in the regression of the enforcement index are the most significant and those in the regression of the anti-director and disclosure indices unstable in their significance. It seems insufficient to simply set up mechanisms of investor protection in a relatively weak legal environment. Provided that the performance of an individual contract cannot be ensured, it is difficult for a company's mechanisms to increase an insider's cost of theft and lower the cost of capital. Thus, only the quality of the enforcement of investor protection is significant.

Our empirical study is based on the open replies of Chinese listed companies to questions associated with investor protection asked by the CSRC. These unique data provide us with insight into firm-level investor protection within one country. However, the survey is not conducted regularly, which makes longitudinal research difficult. In addition, even though each listed company should be open in its replies to the survey because it bears the legal liability to tell the truth, the information is inevitably not flawless. Finally, although we use the lagged value of independent variables to explain the level of investor protection in 2007 to mitigate reverse causality, we have not thoroughly solved this problem. How to obtain better data and eliminate reverse causality are thus avenues for further research. It will also be necessary to do further work to grasp the intrinsic factors that affect corporate policy choices and find a way to compel listed companies to improve the quality of their investor protection, especially in transition economies.

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