Two Essays on Corporate Governance in China

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Abstract of thesis entitled:

Two Essays on Corporate Governance in China

Submitted by YU Wei

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Abstract

My dissertation includes two essays. In essay one, I investigate the party control in China's listed firms. Along with state shareholding and government administration, the third source of political control of Chinese listed firms is the Communist Party of China (CPC). Using a unique hand-collected dataset that includes the party secretaries' information for listed firms between 2000 and 2004, I examine the existence and power of the party secretaries in companies and their influence on performance. The party secretary is the leader of party committee and exercises the power of the CPC at firm-level. Power is assessed by whether the party secretary concurrently holds another key management position, such as chairman or CEO, thus allowing him or her to exert influence on the managerial decisions of the firm. I find that state-owned enterprises (SOEs) and firms with many employees are more likely to have a party secretary or a powerful party secretary than are other firms. Party secretaries are more likely to have political reliability but less professionalism than are CEOs or other senior managers. The existence of a party secretary is negatively associated with a firm's performance, but only in SOEs. Non-state firms with a party secretary are more likely to have senior managers with political connections, but less professionalism, but I find no such significant results for SOEs. The firms with a party secretary or a powerful party secretary have lower labor productivity than do other firms, especially in SOEs and in regions with high unemployment rates. Overall, the results of this study suggest that the CPC has great influence over listed firms in China and that this influence should not be neglected in Chinese studies.

In essay two, I study top executive compensation and CEO turnover and their relationship to firm performance in business groups in China, using a sample of listed subsidiaries and their parent companies in China. The empirical results support the hypothesis that the pay-performance sensitivity of managerial compensation (CEO turnover) in a listed firm is positively (negatively) related to the accounting performance of its parent company. In addition, I find a stronger relationship between the compensation (turnover) in a listed subsidiary and the performance of its parent company when the controlling shareholder's ownership is high. Using related party transactions to proxy for the correlation between the two firms, I find that management compensation in a listed firm is related to the performance of its parent

company if related party transactions exist between them. Using brand name as a proxy for reputation, I find that management compensation and CEO turnover in group firms are more likely to be sensitive to the performance measures in their parent companies if both use the same brand name. In conclusion, the association between the listed subsidiary and its parent company may affect the pay-for-performance sensitivity to a parent company.

Keywords: Communist Party of China (CPC), party secretary, performance; management compensation, business group, China

摘要

論文包括兩部分。論文的第一部分研究了中國共產黨在上市公司中的作用及其影響。除了國有控股和政府的行政幹預，中國共產黨也將對中國上市公司產生很大的政治影響。以手工收集的2000年至2004年上市公司黨委書記的資料作爲研究樣本，本文實證分析了在什麼樣的公司有黨委書記或者集權的黨委書記；黨委書記的存在和集權會對企業的業績產生什麼樣的影響。作爲黨委的領導,黨委書記在企業中代表党行使權力。黨委書記的集權定義爲黨委書記同時兼任其他重要的管理職務，如董事會主席或者總經理。研究發現，在國有企業和職工人數眾多的企業中更可能會存在黨委書記或者集權的黨委書記。與總經理及企業其他管理層相比較，黨委書記在政治上更可靠但專業性較低。黨委書記與公司的業績負相關，但這一現象只存在國有企業中。在非國有企業中，黨委書記的存在及集權與高管的政治背景正相關，與高管的專業性負相關。國有企業中沒有發現相同的結果。另外研究表明，當企業中有黨委書記或者集權的黨委書記，企業的勞動生產率水準比較低，尤其是國有企業或者當企業位於失業率高的地區。綜上所述，本項研究表明中國共產黨對上市公司存在重大影響，這一影響不應該在中國企業研究中被忽略。

論文第二部分研究了中國企業集團內高管的薪酬和總經理的更換機制。以中國上市公司及其母公司的資料作爲研究樣本，對上市公司高管人員的薪酬(總經理的更換)與集團公司的經營績效之間的相關性進行了實證分析。本文通過實證分析，發現上市公司高層管理人員薪酬(總經理的更換)與母公司的公司經營績效存在顯著的正相關(負相關)關係。實證結果顯示，母公司對上市公司控股權的大小會影響上市公司高層管理人員薪酬(總經理的更換)與母公司的公司經營績效的相關性。當控股權大時，母公司更可能使用薪酬激勵機制對上市子公司高管進行控制。當上市公司與母公司之間存在關聯交易時，高層管理人員薪酬更可能受母公司經營業績的影響。當上市公司使用與母公司相同的商標時，上市公司高管的行爲將對母公司的信譽產生直接的影響。爲了對上市公司高管進行約束，當上市公司與母公司使用相同的商標時，高層管理人員薪酬(總經理的更換)更可能受母公司經營業績的影響。實證研究支持了以上這一假設。

關鍵詞: 中國共產黨，黨委書記，企業業績；高管薪酬，企業集團，中國

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Essay One

Party Control in China's Listed Firms

Abstract

Along with state shareholding and government administration, the third source of political control of Chinese listed firms is the Communist Party of China (CPC). Using a unique hand-collected dataset that includes the party secretaries' information for listed firms between 2000 and 2004, I examine the existence and power of the party secretaries in companies and their influence on performance. The party secretary is the leader of party committee and exercises the power of the CPC at firm-level. Power is assessed by whether the party secretary concurrently holds another key management position, such as chairman or CEO, thus allowing him or her to exert influence on the managerial decisions of the firm. I find that state-owned enterprises (SOEs) and firms with many employees are more likely to have a party secretary or a powerful party secretary than are other firms. Party secretaries are more likely to have political reliability but less professionalism than are CEOs or other senior managers. The existence of a party secretary is negatively associated with a firm's performance, but only in SOEs. Non-state firms with a party secretary are more likely to have senior managers with political connections, but less professionalism, but I find no such significant results for SOEs. The firms with a party secretary or a powerful party secretary have lower labor productivity than do other firms, especially in SOEs and in regions with high unemployment rates. Overall, the results of this study suggest that the CPC has great influence over listed firms in China and that this influence should not be neglected in Chinese studies.

JEL codes: G34, G38, L22, P26.

Keywords: Communist Party of China (CPC), party secretary, performance

1. Introduction

Along with state shareholding and government administration, the third source of political control of Chinese listed firms is the Communist Party of China (CPC). A firm's party committee, which is commonly staffed with hand-picked executives, channels state policy into corporate practice. Morck, Yeung, and Zhao (2005) observed that the party committee has control over the board of directors and, thus, exerts actual corporate governance power. As leader of the party committee, the party secretary exercises the power of the CPC. These "bosses" and their influence on firm operation and performance have been something of a mystery in academe.

To date, most analyses of failures of governance in China's state-owned enterprises (SOEs) have focused on administrative interference by state institutions (Aharony et al., 2000; Fan et al., 2007; Sun et al., 2003). In addition, no detailed analysis of the participation and influence of CPC institutions in the governance of Chinese-listed firms has yet been conducted. The few existing studies on this important issue are primarily descriptive in nature, and their findings tend to be based on selective case studies (Tenev et al., 2002; McGregor, 2001; Dean, 2006) or survey results (Wong et al., 2004). Systematic evidence on the existence of party secretaries and their influence on firm performance is scarce.

In this paper, I examine the political control of the CPC over China's enterprises using a unique hand-collected dataset that includes information about party secretaries for listed firms between 2000 and 2004. The existence of a party secretary and the extent of his or her power over a firm's managerial decisions are used as proxy for the CPC's influence on the enterprise. Although China's economy has recently undergone some of the most far-reaching and fundamental changes in its history, the country's political system has not adapted, and the combination of an emerging market and CPC

management has resulted in conflicting goals. The party's role in the new governing institutions of the country's SOEs has created pronounced governance problems and may also be affecting the behavior of non-state firms.

The first set of tests investigates which types of firms are more likely to have a party secretary and, by extension, when a party secretary has more power than usual (i.e., he or she concurrently holds a key management position, such as chairman, CEO, or senior manager, in the firm). I find that SOEs and firms with a large number of employees are more likely to have a party secretary or a powerful party secretary than are other firms, which suggests that the CPC wants to maintain its power over these types of firms in order to avoid challenges to its political status as the ruling party.

The second set of tests examines the personal characteristics of party secretaries. The differing duties of a party secretary and managers (e.g., CEOs) lead to differences in their personal characteristics. CEOs and managers work on the company's operational and strategic decisions, but a party secretary's major duties are to disseminate the CPC's principles, carry out the policies and resolutions of the government-party in the firm, and so on. Empirical evidence shows that a party secretary is likely to be a person with more political reliability (that is, connections) but less professionalism than other managers.

The third set of tests examines the way in which a party secretary affects a firm's performance. Because the CPC has multiple political and social objectives that may deviate from the interests of the firm (that is, those of its shareholders), firm value is likely to be dissipated by a powerful party secretary. Although the controlling shareholders or ultimate owners of a newly listed firm, regardless of whether they are the government or individuals, may be aware of the negative impact on the firm of the

decision to hire a full-time party secretary, they still choose to do so for other reasons. Using several stock- and accounting-based performance measures, I study the impact of a party secretary on firm performance, classifying firms as SOEs or non-SOEs and running performance regressions on the sub-samples. Because the self-choice of controlling shareholders and interested parties may affect whether a party secretary plays a role in the firm and, if so, the level of his or her power, I also use a two-stage regression model for a robustness check. Taken together, my findings suggest that firm performance for SOEs is worse when a firm has a party secretary or a powerful party secretary, although this finding is not supported for non-SOEs.

More specifically, I study the association between the existence of a party secretary or powerful party secretary and the characteristics of a firm's directors and senior mangers ("the party supervises the cadre"), and his or her influence on productivity. I argue that the influence of the party secretary on firm performance stems from his or her ability to control the appointment and dismissal of top managers and influence the productivity of workers. Party management personnel emphasize the political reliability of SOE executives, so the criteria for their selection may not be exclusively based on business performance. In a non-SOE, one of the major duties of the party secretary is to build an external channel between the firm and the government (*Contemporary Manager Journal*, 2006). Although the party committee does not have the power to decide on the appointment and dismissal of key personnel, the presence of a party secretary may indicate that the firm relies heavily on its political ties to do business. Therefore, I hypothesize that the directors and senior managers of firms that have a party secretary are more likely to have political reliability (i.e., connections), but less professionalism. My empirical results show that non-SOEs with a powerful party secretary are more likely to have a senior manager

with political connections and less professionalism. However, I do not find such a result in SOEs.

The CPC's priority is to maintain social stability and keep its ruling power. A high unemployment rate may lead to social instability and encourage negative views of the current government, creating challenges to that ruling power. Therefore, firms with a party secretary are more likely to be used to serve political objectives and so are more likely to hire an excess labor force, which may lead to a low level of productivity. This phenomenon is more likely to be pronounced in SOEs and in regions with high unemployment rates. Accordingly, I find that the existence of a party secretary is significant negatively associated with labor productivity, especially in SOEs and in regions with high unemployment rates, since excess employment may be one reason for low labor productivity.

This study addresses an important corporate governance issue for China's listed firms. Although China's economy has undergone some of the most far-reaching and fundamental changes in its history, the country's political system has not adapted. Without political reform, the interference of the CPC and other state institutions in the corporate governance of enterprises will continue, resulting in poor performance and productivity in many cases.

Although the existence of party secretaries is unique to China, this research also contributes to the literature on firm de-politicization and to comparative studies of corporate governance and reform strategies in transitional economies. More specifically, this study addresses the corporate governance problems of firms in countries that are undergoing economic transition without the introduction of a pluralistic and democratic political system. An understanding of these firms' successes and failures will lead to a better understanding of the interdependence of economic

and political reform.

The remainder of the paper proceeds as follows: Section 2 discusses the institutional background of the CPC in China and develops the research hypotheses. Section 3 introduces the data and the sample. Section 4 describes the existence of a party secretary or a powerful party secretary on a firm. Section 5 shows the party secretary's personnel characteristics. Section 6 examines the performance implications of a party secretary, and Section 7 considers the correlation of this secretary with the characteristics of senior managers. Section 8 presents the association of the party secretary with labor productivity, and Section 9 concludes the paper.

2. Background and hypotheses development

Since winning victory in the "new democratic revolution" and founding the People's Republic of China (PRC) in 1949, the Communist Party of China (CPC) has been the country's ruling party. In theory, the CPC does not take the place of the government in the state's leadership system but, as the party in power, turns its ideas and policies into state laws and decisions, which are then passed by the National People's Congress of China through the state's legislative process. By the end of 2006, there were about 72 million CPC members in China,[1] which accounts for about five percent of the nation's citizens. It is not easy to become a CPC member. An applicant for Party membership must be accepted at a general membership meeting of the Party branch concerned and approved by the next higher Party organization. He or she usually undergoes observation through rigorous examination by the Party brand for a probationary period before being granted full membership. The examination includes whether the persons can fulfill the duties of CPC member in an organization and implement the Party's basic line, principles and policies. Until now, Party members

[1]Source: statistics of the Organizing Department, Central Committee of the CPC.

serve in almost all types of organizations and hold key positions in government, schools, research institutes, and enterprises.

The managers of China's firms have been subject to party control since the founding of the PRC. In late 1978, the country's leadership under Deng Xiaoping introduced a number of economic reforms and started the ongoing efforts to transfer firms' decision-making power from local party committees and state bureaucrats to managers (You, 1998). However, although China's economy has undergone some of the most far-reaching and fundamental changes in its history, the country's political system has not adapted because political stability and control have top priority. The gradual reform approach has generated some competitive pressure and increased the productive efficiency of some state-owned enterprises (SOEs), but it has also allowed the interference of the party and state institutions in the corporate governance of these firms to continue. The reforms implemented have not been able to disentangle party management from corporate governance, and the combination of this management with an emerging market has produced conflicting goals.

The CPC plays two central roles in the corporate governance of SOEs. First, it remains the political center of these enterprises and, as such, handles all political affairs, including managing cadre appointments, enforcing commitment to ideological principles, and ensuring that corporate decisions take national policies into account. The Party selects Party and non-Party cadres according to the principle that they should possess political integrity, implement the Party's policies, and also have some professional competence. The ranks of the cadres usually determine the level of managerial positions they can hold. For instance, CEO is one-level higher cadre than CFO and other department managers. Second, the party may become involved in all of the major corporate decisions of SOEs by placing party cadres in the most

important leadership positions, including those of the CEO and the general manager (MaNally, 2002).

According to the CPC's constitution after 2002, all types of organizations, including non-SOEs, are required to establish the primary organizations of the party if they have at least three full party members. The primary Party organizations precede the Party's work in the basic units of society and usually are constituted by some selected CPC members who are approved by the next higher Party organization. In 2002, the 16th National Congress of the CPC inscribed the duties of the primary organizations in non-SOEs in the party constitution as a signal of its intention to strengthen its control over foreign and private enterprises. Over time, increasing numbers of private enterprises have established the primary organizations of the party, and some have hired a full-time party secretary. In this kind of political and economic institutional environment, these non-SOEs may also have to alter their operating strategies in order to show their compatibility with policies of the dual party-government.

2.1. Party secretaries in China's listed firms

To establish the primary organizations of the CPC, an organization may select a party committee or party branch (a less powerful organization), subject to approval by the next higher party organization. However, if there is no higher party organization, as may be the case with certain private or foreign firms, sometimes no party organization has be established. This may be the reason that CPC strengthens its control over these firms after 2002. A party secretary is hired only when there is a party committee in the firm, although even these firms may have only a deputy party secretary or a number of committee members. As I mentioned before, the party secretary is the leader of party committee and exercises the power of the CPC at

firm-level.

The party executive in the holding company or the government owner decides on the establishment of the primary party organizations and the appointment of party representatives in listed firms. Even in SOEs, the party committee may only be established in the parent company, with the party secretary of the controlling shareholder handling the work in the listed firms. If a listed firm does not hire a full-time party secretary, then the influence of the CPC in that firm is comparatively weak, regardless of whether it has a party committee, demonstrating how a parent company can choose to lessen the direct influence of the Party. Since China's adoption of a market economy, the party secretary has been unable to take the place of managers or directors, although he or she can still exercise power by taking up management positions within the company, such as chairman, CEO, or senior manager. When a party secretary is powerful, that is, he or she serves concurrently as chairman and/or CEO and has influence over the firm's managerial decisions, it is easy for him or her to exercise party control in the firm. This gives rise to my first research question: which types of firms are more likely to have a party secretary or a powerful party secretary?

SOEs are ultimately owned by levels of government (i.e., central or provincial). Because, in reality, China has a party-government system, the CPC has a great effect on these enterprises. At the same time, because the government is run by the CPC, the latter also still controls a major portion of the economy, even after the economic reforms, and its leadership has no intention of giving up that control, particularly over strategic industries such as electricity and telecommunications.

China's private sector (including both privately owned and foreign-owned firms)

is developing very fast. In 2005, non-SOEs (including foreign-owned enterprises) contributed about 65 percent of the country's GDP.[2] The 16th National Congress of the CPC in 2002 inscribed the duties of the primary organizations in non-SOEs in its constitution to signal of the party's intention to strengthen its level of control over foreign and private enterprises. However, the revision of the constitution also shows the comparatively weak influence of CPC over these firms.

In theory, the CPC faces no challenges to its power as ruling party unless the one-party system is abolished. In reality, it shows a strong inclination to maintain its ideological influence over the people, obtain their political support, and avoid any type of defiance. For these reasons, the CPC is more likely to attempt to strengthen its power in firms with many employees ("voters"). Therefore, I expect to find that SOEs, firms with many employees, and firms in strategic industries are more likely to have a party secretary or a powerful party secretary than are other firms.

2.2. Personal characteristics of party secretaries

Compared with the CEO and other managers in the firm, a party secretary should have different personal characteristics and talent, since her or his duties differ. The CEO and managers work on the company's operational and strategic decisions while a party secretary's major duties are to disseminate the CPC's principles, carry out the policies and resolutions of government-party in the firm, and so on. The selection criteria for a qualified party secretary will include the candidate's political reliability and working experience in government and party agencies, while talent and experience in business will be less important. Therefore, it is predictable that a party secretary is likely to have more political reliability and less professionalism than other

[2]October 1, 2007, *Outlook Weekly*, Xinhua News Agency.

managers.

2.3. Performance implications of party control

Since the party secretary has historically been involved in all aspects of strategic decisions in SOEs, it is predictable that he or she would be involved in a broad range of decisions that have performance implications. The party secretary's influence on firm performance can be exerted either by concurrently working as a director or manager or by influencing the decisions of the chairman and/or CEO, since the persons in those jobs may also be party members. The institutional structure through which a party secretary exercises his or her authority over the SOE is likely to have an impact on other aspects of corporate governance and, ultimately, on firm performance.

A survey carried out by *Contemporary Manager Journal* (September 2006, in Chinese) investigated the role of the party in 400 private enterprises in 26 provinces. Only 9% of the respondents thought that the party organization played no role and/or had a weak influence over management. In 7% of the firms under investigation, all important strategies and polices had to be approved by the party secretary. In the remaining 84% of the firms, the party heavily influenced strategy and policy because the senior managers were also CPC members. These survey results demonstrate that the role of party secretaries in the private sector is strong and influential.

A substantial body of empirical evidence has documented both the superior efficiency of private firms relative to public firms (Dewenter et al., 2001; Kole et al., 1997) and the improvement in efficiency after privatization (Boubakri et al., 1998; Jones et al., 1999; Megginson et al., 2001). Public enterprises in China are inefficient, the result of political pressure from the politicians who control them. Therefore, a similar result may be found in firms with a party secretary, regardless of whether they

are non-SOEs or SOEs. The party secretary's responsibility is to channel state policy into corporate practice and to make sure that the directives of the CPC are upheld within the firm. This kind of influence is not always inherently favorable to shareholder interest, because the party is looking at the company's broader social and economic impact (Dean, 2006), rather than at maximizing shareholder value. In the party secretary's reward-and-advancement system, following policy directives and creating the right political image are first-order considerations, especially since there are few negative consequences to economic mismanagement (Ke et al., 2008). On the basis of this argument, firm value is likely to be dissipated if a firm has a party secretary or a powerful party secretary. Wong, Opper, and Hu (2004) found a negative relationship between party control and firm performance in a small sample of 71 listed firms. Their party control proxies were obtained from survey data and measured by respondents' assessment of that control in the firms under study.

Demsetz and Lehn (1985) argued that ownership concentration and firm performance are unrelated because a decision by shareholders to alter the ownership structure of a firm would be made with awareness of its consequences. China's listed firms are usually carved out from SOEs to qualify for listing and to increase the offering price in the initial public offering (IPO); the original SOE then becomes the parent or holding company (Aharony et al., 2000). After listing, the controlling shareholders or owners decide whether to hire a full-time party secretary for the newly listed firm or to rely on the party secretary who is in the parent company. (Sometimes private firms that choose not to have a party secretary try to introduce one later.) Therefore, whether a party secretary operates in the firm is the choice of the controlling shareholders and reflects their underlying interests. Because they should be aware of the consequences of their decision, I expect there to be no relationship

between whether a firm has a party secretary and firm performance in non-SOE firms. However, in SOEs, although the controlling shareholders—or the government behind them—know the negative consequences on firm performance of having a party secretary, they may still choose to hire one for other considerations, for example, to strength the power of CPC in a firm.

If having a party secretary has implications for firm performance, then another question arises: how does the party secretary go about affecting firm performance? In the next section, I identify the channels through which he or she does so and consider that the correlation between the presence of a party secretary and firm performance may be due to the secretary's direct control of appointments and dismissal of top managers and to his or her indirect influence on labor productivity.

2.3.1. Senior management characteristics ("the party supervises the cadre")

In 2004, just before the listing of Netcom, the Chinese government suddenly swapped the top executives at China's big four telecom companies. The boards were presented with a fait accompli, as the decision had been made by party committees comprised of a handful of senior executives (Dean, 2006).

The CPC firmly controls personnel appointments and dismissals in SOEs. In ordinary SOEs, it is the CPC, not the board of directors, that appoints top managers. The "party supervises the cadre" rule refers to the party's right to recommend and approve all appointments for managerial positions in the economic bureaucracy and in state enterprises. Internal management appointments, career advancements, and disciplinary actions are all strictly controlled by party agencies (Qian, 1995).

Wong, Opper, and Hu (2004) analyzed the extent of party control over individual

firm decisions and revealed that that control is primarily focused on personnel decisions, followed by strategic decisions and financial decisions. The five personnel decisions over which local party committees exert the greatest level of control are the selection and dismissal of (1) functional department managers, (2) business department managers, (3) branch managers, (4) subsidiary managers, and (5) vice-CEOs.

Top enterprise leaders tend to have considerable say over who their successors will be, although, in most cases, it is the party committee of state holding corporations that suggests appointments. This approach allows key committee members, especially the party secretary, to control the decision-making process tightly from the outset and to skew it in favor of candidates with strong party connections. Once the decision-making process is complete, the board of directors simply rubber-stamps the appointments.

The continuity of the CPC's control over personnel decisions has important implications. First, the party's personnel management emphasizes the political reliability of state sector executives, so these executives tend to exert considerable effort in presenting the right political image and in nurturing good relationships with their superiors in the party hierarchy. Second, the CPC's selection criteria are not exclusively based on economic or business performance; party management within SOEs curtails the effective monitoring of managerial behavior and thereby distorts the management incentive system. This is not a very efficient selection criterion and does not lead to an effective governance structure (MacNally, 2002). Political reliability and connections are primary considerations, whereas managerial skill is secondary,

especially because there are few negative consequences to economic mismanagement (Ke et al., 2008).

By contrast, in non-SOEs, it is the ownership, rather than the party committee, that has the power to decide on the appointment and dismissal of key personnel. The major duty of the party secretary within non-SOEs is not to choose personnel but to build connections between the firm and the government. The deputy party secretary of the Fosun Group,[3] Xue Xingwen, explained: "I have two major types of work: one is to attend the meetings conducted by government agencies; the other is public relations"[4] (*Contemporary Manager Journal*, 2006). Both types of work are related to establishing a good image for the firm and to strengthening political connections. A firm's having a party secretary may reveal that a firm relies heavily on political ties to do business. In this case, firms also have the incentive to hire managers with good political relationships in addition to business talent. Therefore, I hypothesize that firms with a party secretary are likely to have senior managers with more political reliability (that is, connections) but less professionalism than senior managers in firms without a party secretary.

2.3.2. Labor productivity

Major duties of a party secretary include enforcing ideology and ensuring that corporate decisions take national policies into account. If the political and ideological incentives he or she uses to motivate workers work, then we can predict a high level of labor productivity in the firm. However, without material incentives, it is doubtful that such a ritualized system can affect labor productivity in the current economic

[3]Fosun's business portfolio includes listed companies, namely, Nanjing Iron & Steel Co., Ltd. (600282.SH), the Forte Group (233.HK), Fosun Pharmacy (600196.SH), Yuyuan Tourist Mart (600655.SH), and Zhojin Mining (1818.HK).

[4]"A party secretary's day in a private enterprise," *Contemporary Manager Journal*, 2006 September.

environment.

The priority consideration of the CPC is to maintain social stability and keep its ruling power. Lin et al. (1998) noted that, because of party concerns about unemployment, SOEs are not allowed to lay off surplus workers without party approval, so surplus employees lead to a low level of employee productivity in firms with a party secretary who represents the interests of the CPC. This phenomenon will be more pronounced in regions with a high unemployment rate, an undesirable condition from the point of view of the party because unemployment may lead to social instability and encourage negative views of the government and challenges to the ruling power of the CPC. Thus, firms with a party secretary are more likely to serve the party's political objectives by maintaining excess employment, and this may lead to reduced labor productivity.

3. Sample selection and data description

3.1. Sample selection

My data include information about the party secretary in firms with A-shares for the years between 2000 and 2004, inclusive. Because it is not mandatory for firms to disclose their information about party secretaries, I obtained these data in a proactive manner. First, I consulted the proxy statements of the firms' annual reports and announcements in the news. Some of the proxy statements included party secretary information if the secretaries also worked as directors, executives, or supervisors. If this was not the case, then I browsed the firm's website (if it had one) or performed a Google search using the key words "firm's name" + "party secretary," "firm's listing symbol" + "party secretary," "firm's stock code" + "party secretary," "the chairman's

name" + "party secretary," "the CEO's name" + "party secretary," etc. For those firms for which I was still unable to obtain the relevant information, I called the telephone numbers listed in their financial statements. In most cases, this put me through to the staff in the office of the board secretary, most of whom kindly answered my questions about the presence of a party secretary in their firms. In the end, I was able to gather information about party secretaries for about 70% of the firms for the sample period under consideration.

My empirical analyses require accounting numbers and data on the listing status and ownership structure of the firms, and biographical information about senior manager and directors. I obtained all of the required data from CSMAR (a widely used database in Chinese research), except for the data on the directors and senior managers, which was retrieved from the Wind database. Wind contains detailed information about company executives of publicly traded firms in China. From the biographical information, I extracted the personal characteristics—including age, sex and educational background—of the current or former government bureaucrats, CPC members, CPAs, and lawyers in a firm. I winsorized the top and bottom 1% of the financial variables to diminish the effect of outliers. Because of incomplete data for some of the items, the total number of observations varies across the estimation models.

3.2. Data description

The sample distribution is reported in Table 1. Most of the firms have a party secretary. I obtained party secretary data for 4,104 firm-years between 2000 and 2004, which represents 68% of the total firms with A-shares in China during that period. Only 11% of the firms said that they did not have a party secretary. In those firms with

party secretaries, many of the secretaries hold other management positions as well: 5% also serve as both the chairman and the CEO; 18% also serve as the chairman; 6% also serve as the CEO; and 26% also serve as a supervisor, director, or executive (Table 1). Thus, many party secretaries have a significant affect on firm management.

In the following analysis, I delete the 30% of firms whose party secretary status was not determined, although I added those 30% missing observations in unreported sensitivity tests. With no reason to predict that these firms are any different from the others, I assume that those firms behave as other firms do and that their results are similar to results from the other firms. The percentage of firms without a party secretary (235/806, or 29.2%) is higher in non-SOEs than in SOEs (330/2828, or 11.6%). The industry sector classification is based on the *Index of Industrial Distribution of List Companies*, which is issued by the China Securities Regulatory Commission (CSRC). I use the one-digit industry codes, except for the manufacturing sector, for which I use two-digit codes. The manufacturing sector accounts for about 56% of the sample.

Table 2 presents the summary statistics of financial numbers in the sample firms, both as a group and as classified by their party secretary status. The definitions of the variables used in this paper are listed in Appendix A. Table 2 shows that the firms with a party secretary are larger in terms of both total assets and the number of employees. The mean and median of sales growth, Tobin_Q, and MTB, but not the ROA, of the firms with a party secretary are statistically significantly lower than those for the firms without a party secretary, indicating the possible negative effect of party intervention. However, there is no significant difference between the two groups in terms of the amount of leverage. As for the labor productivity measures, there is no significant difference between the groups in sales per employee, although firms with a

party secretary have more sales than those without one, which is consistent with the results for total assets and the number of employees.

Appendix B.1 reports the correlation coefficients of the party secretary and the key model variables. The two measures of party secretary show a simple positive correlation with the firm size measures of *log_totalassets*, *ln_employees*, and *ln_sales*. They also correlate positively with the dummy variables for SOEs, regardless of whether they are owned by the central or provincial government. However, both *secretary_dummy* and *secretary_important* are negatively correlated with the firm performance measures, except for ROA. Furthermore, the two measures for party secretary are highly correlated.

4. The presence of a party secretary in a firm

I test the existence of a party secretary and powerful party secretary using a logistic model or ordered logistics model of the following form:

$$Logistic(Secretary\_dummy) = f(\alpha_0 + \beta_1 Ownership + \beta_2 Strategic\ industry + \beta_3 Number\ of\ employees + \sum \beta_i Control\ Variables + \varepsilon_i) \quad (1)$$

$$Ordered\ Logistic(Secretary\_important) = f(\alpha_0 + \beta_1 Ownership + \beta_2 \text{Strategic}\ industry + \beta_3 Number\ of\ employees + \sum \beta_i Control\ Variables + \varepsilon_i) \quad (2)$$

I use both the logistic and ordered logistic model to test for the existence of a party secretary and a powerful party secretary in the firms. One of the dependent variables, *Secretary_dummy*, is a binary dummy variable that is equal to 1 if a firm has a party secretary, and zero otherwise. Another dependent variable, *Secretary_important*, is an ordinal number equal to zero if a firm has no party secretary; to 1 if the party secretary holds no other position in the firm; to 2 if he or she is also a director, senior manager, or supervisor; to 3 if he or she is also the chairman or CEO; and to 4 if the party secretary is also both the chairman and the CEO. *Secretary_important* measures the

power the party secretary wields in the firm's management. The underlying assumption is that his or her level of power will increase if he or she concurrently holds another important management position in the firm. The independent variables include *Ownership*, *Strategic industry*, and *Number of employees*. In addition, I attempt to control for certain other factors by using control variables, *log_totalassets*, *BH_list*, and the fraction of shares held by the largest shareholder. In China, firms may issue A-shares, B-shares, or H-shares individually or jointly. A-shares are issued on the Shanghai or Shenzhen Stock Exchange and are traded by local investors. B-shares are also issued on the Shanghai or Shenzhen Stock Exchange but, before 2000, were traded only by foreign investors.[5] H-shares are issued on the Hong Kong Stock Exchange and traded by global investors. This study focuses on firms with A-shares, although some of the firms in the sample also issued B- or H-shares at the same time. The participation of foreign investors may have a negative effect. Industry and year dummies are included in all of the regression models.

In general, it is likely that, because of local economic, political, and cultural factors, firms within the same geographical context will be more like each other than like those in other municipalities (Fan et al., 2007). Therefore, I include a regional dummy variable to categorize the firms based on the provincial-level location of their headquarters. Because I use panel data, I run the regression with and without controlling for firm-cluster effects. In the model without this control, I estimate the standard errors using Huber-White sandwich estimators, which take into account the issues surrounding heterogeneity.

Table 3 reports the results of the logistic and ordered logistic regressions to determine whether firms have a party secretary or a powerful party secretary. The

[5]After 2000, local investors with foreign currency could also trade B-shares.

dependent variable in Models (1) and (2) is *secretary_dummy*, and both the coefficients and the marginal effects are presented. As expected, the coefficients of *ownership_soe* and *ln _employees* are significantly positive, which suggests that SOEs and firms with many employees are more likely to have a party secretary. However, the coefficient of *strategic_industry* is insignificant, although it has a positive sign. Models (3) and (4) use *secretary_important* as the dependent variable, and the results are generally consistent with those of Models (1) and (2). However, in Models (3) and (4), the coefficient of *log_totalassets* becomes insignificant. Compared with the assets measure (*log_totalassets*), "voters" seem to be a more important consideration for the CPC. Surprisingly, foreign investors have no obvious influence.

I perform some robust tests and consider two alternative explanations for these results. One explanation is that these firms have a full-time party secretary simply because they have many party members; the number of CPC members in a firm is proportional to the number of employees hired. To rule out this possibility, I add the interaction terms of *ln_employees* and *ownership_soe* in Models (1) and (2). If SOEs are more likely to hire party member employees and to have a high percentage of CPC members, then the coefficients on these interaction terms should be positive. However, these coefficients are negative and significant in Model (2). Therefore, in a sense, I can rule out this explanation. Another concern is the reverse causality that the firms with a party secretary are more likely to hire excess employees. In Models (3) and (4), I use the industry-level number of employees to replace my measure of employees because an industry-level measure is less likely to be affected by the presence of a party secretary in a firm. The coefficients on industry-level of employee numbers in the two determinant models remain significantly positive.

In addition, I run the regression by separating samples into SOE and non-SOE

firms in the sensitivity test and obtain similar results in both SOE and non-SOE firms, except that the coefficients on *strategic_industry* are significantly positive in the regression of non-SOE firms.

In summary, SOEs and firms with many employees are more likely to have a party secretary or a powerful party secretary than are other firms. However, I do not find significant results regarding whether strategic industries are likely to have a party secretary.

5. Personal characteristics of party secretaries

I use the following model to study the personal characteristics of party secretaries:

$$Logistic(Party\_secretary) = f(\alpha_0 + \beta_1 Current\ or\ ex-government\ bureacrats + \beta_2 Age + \beta_3 CPA + \beta_4 Lawyer + \beta_5 Education + \beta_6 Woman + \varepsilon_i) \quad (3)$$

I use the logistic model to test for what types of persons are most likely to be a party secretary. My sample includes party secretaries, managers, and directors in Chinese listed firms from 2000 to 2004. The dependent variable *Party_secretary* is a binary dummy variable that is equal to 1 if an individual is a party secretary, and zero otherwise. The independent variables measure the personal characteristics, including *current or ex-government bureaucrats, age, CPA, lawyer, education, and woman.* The variables definitions are listed in Appendix A. Because I use panel data, I run the regression with year dummies and control for individual-cluster effects.

Table 2 shows that the party secretary is less professional and more politically connected than are CEOs and other managers.

Table 4 reports the regression results for the type of person that is most likely to be a party secretary for all party secretaries, managers and directors and for only party secretaries and CEOs. Consistent with my prediction, party secretaries are more likely to be persons with political connections who are less professional than CEOs and

other senior managers.

6. Party secretary and firm performance

I perform regression analyses to examine the effect of a party secretary on firm performance, employing several stock- and accounting-based measures to evaluate the performance of the listed firms with and without a party secretary. Table 5 presents the regression analysis using Tobin's Q, MTB, and ROA as the dependent variables. On the right-hand side of the regressions, I include *secretary_dummy* and *secretary_important*. I also include a few control variables: the leverage ratio, the log of total assets, sales growth, two dummies that proxy for centrally or provincially owned SOEs, the fraction of shares held by the largest shareholder, and the strategic industry dummy variable. I control for year and industry dummies and consider the cluster effect of the firm level.

Table 5 shows that all of the coefficients of *secretary_dummy* and *secretary_important* are negative. After controlling for the firm-cluster effect, only MTB is significantly negative. Firms with a party secretary or a powerful party secretary exhibit worse performance than do the other types of firms. Firm value is likely to be diluted in such firms since the CPC has multiple political and social objectives that may deviate from the interests of the firm (i.e., the shareholders).

Because governments are more likely to use SOEs than non-SOEs to achieve their political or social objectives, I expected to find more negative effects in SOEs than in non-SOEs. Because the choice to have a party secretary is voluntary on the part of the controlling shareholders and reflects their interests, individual or family owners should place more weight on firm performance. Moreover, if the presence of a party secretary reflects the firm's political connections, then a non-negative

correlation should be expected between the presence of a party secretary and firm performance. Table 5 reports the regression results for SOEs and non-SOEs separately, showing that the coefficient on *secretary_important* is not significant for non-SOE firms but is significantly negative for SOEs. After controlling for firm-cluster effects, the coefficient on *secretary_important* becomes only weakly significant for SOEs, with a p-value of 0.117.

As a robustness check, Table 5 also provides a treated model for *secretary_dummy* and a 2-SLS model for *secretary_important* in order to address the impact of self-selection on the results. I use the index of provincial-level market development (Fan and Wang, 2001, 2006) as the instrumental variable and find that this index is strongly correlated with the presence of a party secretary in a firm. Moreover this instrumental variable is not correlated with firm-specific performance. Two-step regression estimation obtains consistent estimates. Thus, there is some evidence that a party secretary has a negative impact on firm performance, but only in SOEs.

7. Characteristics of senior management

Senior managers are defined as the directors and executives whose biographical information is listed in the firms' financial statements. I exclude the chairman, CEO, and the party secretary if he or she also serves as a director or executive because appointments to these positions are mainly determined by the higher-level party organization, such as the party committee in the parent company. Following Fan et al. (2007), the dependent variables in these regressions are (1) the number of female managers, (2) the number of managers who have at least a Bachelor's degree, (3) the mean age of the managers, (4) the number of managers who are CPAs, (5) the number of managers who are lawyers, (6) the number of managers who are CPC members, and (7) the number of managers who are current or former government bureaucrats.

Professionalism is measured by the number of female managers, the number of managers with a Bachelor's degree, the age of managers, and the number of managers who are CPAs and lawyers. Political connections are measured by the number of managers who belong to the CPC and the number of managers with working experience in government bureaus. The independent variables in each regression are *secretary_dummy*, *secretary_imporant*, the size of the management team, the ownership-type dummy, the strategic-industry dummy, the leverage ratio, ROA, and the log of total assets. Following Hermalin and Weisbach (1988), Agrawal and Knoeber (2001), and Fan et al. (2007), I estimate a Poisson model using the maximum likelihood method, controlling for the industry and year dummies and using standard errors clustered by firm.

Appendix B.2 reports the correlation coefficients of the pairs of party secretary and managerial characteristics variables. In general, the two measures of party secretary correlate positively with the political reliability measures and negatively with the professionalism measures. Firms with a party secretary and a powerful party secretary are more likely to have older managers, managers who are CPC members, and managers with working experience in government bureaus, and are less likely to have female managers and managers who are CPAs or lawyers.

The overall regression results are reported in Table 6. The coefficient of *secretary_dummy* is significantly negative in the regression when *lawyer_manager* is the dependent variable and significantly positive when *comm_manager* is the dependent variable. There is a significantly positive correlation between *poli_manager* and *secretary_important.* Although the coefficients of *secretary_dummy* and *secretary_important* are insignificant in the other regressions, all regressions show the expected sign, which indicates management with a high

degree of political reliability but a low degree of professionalism in firms with a party secretary or a powerful party secretary.

In the regression reported in Table 6, I control for ownership type, as it may be assumed that a firm's governance structure depends primarily on who has the control rights. I classify the sample firms into two types: SOEs and non-SOEs. The party secretaries in non-SOEs are related negatively with managerial professionalism and positively with their political connections or political reliability. The presence of a party secretary has no incremental effect on management characteristics, although the coefficients show the predicted signs. One possible reason for this finding is that all of the SOEs in the sample had similar management teams with a low degree of professionalism and a high degree of political reliability, regardless of whether they had a party secretary.

In addition, I perform several sensitivity tests to redefine senior management in groups such as all directors and executives, including the CEO and chairman; all directors and executives, but separated into insiders and outsiders; only executives, including and excluding the CEO; only directors, including and excluding the chairman; only the CEO; and only the chairman, and obtained similar results in these tests.

In general, the results are consistent with my expectations: non-SOEs with a party secretary are more likely to have senior managers with political connections but a low degree of professionalism. However, there is no such significant result for SOEs, although the coefficients show the predicted signs.

8. Labor productivity

I also examine the relationship between the presence of a party secretary and the level of labor productivity. I assume a typical Cobb-Douglas production relationship

between productivity and the two general categories of inputs, capital and labor. The translog production function is expressed as:

$$Ln(productivity) = \alpha_0 + \alpha_1 \ln Labor + \alpha_2 \ln capital \qquad (4).$$

This translog production function (4) is modified by adding variables that reflect firms' characteristics, for example, ownership structure or the presence of a party secretary.

$$\begin{aligned} Ln(productivity_i) = {} & \alpha_0 + \alpha_1 \ln Labor_i + \alpha_2 \ln capital_i + \alpha_3 Secretary_i + \alpha_4 Ownership_i \\ & + \alpha_5 \ln Labor_i * Secretary_i + \alpha_6 \ln capital_i * Secretary_i + \alpha_7 \ln Labor_i * Ownership_i \\ & + \alpha_8 \ln capital_i * Ownership_i + \text{Industry Dummies} + Year \text{ Dummies} + \varepsilon_i \qquad (5) \end{aligned}$$

In (5), i is the firm subscript, and ε is the disturbance term. I capture the year- and industry-specific effects by introducing industry and year dummies. The estimates of the production function indicate the impact of a party secretary and type of ownership on total factor productivity. The interaction term between the party secretary and *ln Labor* provides a test of the effect of a party secretary on labor productivity; this effect is accounted for by its interaction with labor (α_5). I also include *ownership* as the control variable because different ownership types may affect firm productivity differently.

I measure productivity as *ln_sales*. Inputs to the production function are capital, measured by total PPE, and labor, proxied by the number of employees (Clark 1984; Bemmels 1987; Brunello 1992; and Moretti 2004). Clark (1984), Bemmels (1987) and Brunello (1992) used a similar model to investigate the way in which unions affect productivity, while Moretti (2004) studied the spillover effect of educated workers on firm productivity by separating workers into low and high levels of human capital.

Table 7 shows the relationship between the presence of a party secretary and labor productivity. The coefficient of *ln_employees* in firms with a party secretary is

comparatively lower than that in firms without one. To examine the difference, I run a regression that includes the interaction variables. The interactions of both *secretary_dummy*ln_employees* and *secretary_important*ln_employees* are significantly negative.

In general, SOEs or firms in regions with a high unemployment rate tend to have extra constraints on the decision to lay off surplus workers; an excess number of employees should lead to a low level of employee productivity in these firms. To verify this suggestion, I separate the sample into two sub-samples of firms, SOEs and non-SOEs and firms in high- and low-unemployment regions, according to whether the provincial unemployment rates are in the top or bottom one-third of the sample. Table 7 shows that, consistent with my hypothesis, the negative association between the presence of a party secretary and the level of labor productivity is much more pronounced in SOEs and in firms located in regions of high unemployment.

In summary, firms with a party secretary have lower labor productivity than other firms do, especially among SOEs and in regions with high unemployment rates. An excess number of employees may be the reason for this low level of labor productivity.

9. Conclusion

This study analyzes the political control of the Communist Party on China's enterprises. I examine which types of firms are more likely to have a party secretary and, by extension, when that party secretary has more power by holding a key management position, such as chairman or CEO. I also study the personal characteristics of party secretaries. In addition, I investigate the impact of a party secretary on a firm's performance and study the relationship of the presence of a party secretary in a firm and the characteristics of senior management and the influence of a

party secretary on labor productivity.

I find that SOEs and firms with many employees are more likely to have a party secretary and a powerful party secretary than are other firms. Party secretaries are more likely to have more political reliability but less professionalism, compared to CEOs and other senior managers. The presence of a party secretary has a negative implication on firm performance, but only in SOEs. Although non-SEOs with a party secretary are more likely to have senior managers with political connections, but a lower degree of professionalism, I do not find significant result for SOEs. The firms with a party secretary also have lower labor productivity than that of other firms, especially in SOEs and in regions with high unemployment rates; an excess number of employees may be the reason for the lower degree of labor productivity. Overall, the results of this study suggest that party secretaries are an essential source of political control in Chinese listed firms. By influencing the appointment and dismissal of top managers and labor productivity, these secretaries have a negative impact on firm performance.

These results have several implications for the study of government intervention in less developed countries, including China. First, I investigate the third source of political control in China's listed firms: the CPC. (The other two are state shareholding and government administration.) To date, no other detailed analyses of CPC institutions in the governance of these firms have been carried out, so this research is the first to study in detail the influence of a party secretary in Chinese enterprises and to be supported by empirical evidence. Second, as long as politicians and bureaucrats enjoy unchallengeable political authority, the high political costs will have an effect on the behavior of both SOEs and non-SOEs. The party secretary's role in the governing institutions of the country's listed firms creates several pronounced

governance problems. Finally, I identify the channels through which the party secretary may influence firm performance, which distinguishes the work from other firm-performance studies.

There are at least two important caveats to be made with regard to an interpretation of this study's findings. First, the evidence is based on one country, so it may not be applicable to others. This limitation may be particularly severe because China is unique in many respects, and prior research has found that existing theories are often unable to explain many Chinese economic phenomena (Allen, 2005). Moreover, caution should be exercised because of the specific focus on the political control that party secretaries exert over China's listed firms. However, China has become a formidable force in the world's economy, and understanding its successes and failures in the face of economic transition without the introduction of a pluralistic and democratic political system should help us understand the interdependence of economic and political reform. A second limitation is the possibility that the party secretary and firm performance are determined jointly and are in equilibrium. The fact that a party secretary has a negative impact on a firm does not necessarily lead to a conclusion of causality. However, the two-stage models lessen the problem. I also identify that the party secretary might influence the appointment and dismissal of top managers and also labor productivity.

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Table 1. Panel A. Sample Distribution

This table presents the party secretary information for all the listed firms over 2000 and 2004.

Year		2000		2001		2002		2003		2004		total	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Firms have party secretary	No split of Secretary/Chairman/CEO	54	5%	53	5%	55	5%	59	5%	63	5%	284	5%
	Party secretary is chairman of board	169	16%	201	18%	220	18%	240	19%	264	19%	1094	18%
	Party Secretary is CEO	70	7%	73	6%	70	6%	72	6%	78	6%	363	6%
	Party Secretary is the chairman of supervisor committee	7	1%	8	1%	10	1%	9	1%	11	1%	45	1%
	Party secretary is executive, director, or supervisor	262	25%	288	25%	303	25%	325	26%	320	23%	1498	25%
	Others	26	2%	29	3%	30	2%	31	2%	42	3%	158	3%
Firms do not have party secretary		111	10%	116	10%	130	11%	141	11%	164	12%	662	11%
Information is not available		361	34%	371	33%	389	32%	390	31%	421	31%	1932	32%
Total		1060	100%	1139	100%	1207	100%	1267	100%	1363	100%	6036	100%

Table 1. Panel B. distribution of sample by ownership

	Secretary_dummy		
Ownership_soe	0	1	Total
0	235	571	806
1	330	2,493	2823
Total	565	3,064	3,629

Note: I exclude the sample whose party secretary information and ownership type are not available.

Table 1. Panel C. Sector distribution of the sample

csrc_code	Industry	Frequency	Percent
A	Agriculture	71	1.73%
B	Mining	55	1.34%
C	Manufacturing	2,311	56.31%
C0	Food, Beverage	176	4.29%
C1	Textile, Apparel, Leather	154	3.75%
C2	Wood Products	8	0.19%
C3	Paper, Printing	74	1.80%
C4	Petroleum, Chemical Products, Rubber, Plastics	450	10.96%
C5	Electronic Equipment	129	3.14%
C6	Metal, Nonmetallic Mineral Products	367	8.94%
C7	Machinery, Equipment, Meters	613	14.94%
C8	Medicine, Biological Products	287	6.99%
C9	Other Manufacturing	53	1.29%
D	Electricity, Gas, Water Supply	163	3.97%
E	Construction	67	1.63%
F	Transportation & Storage	187	4.56%
G	Information, Technology	215	5.24%
H	Wholesale and Retail Trade	297	7.24%
I	Finance and Insurance	30	0.73%
J	Real Estate	150	3.65%
K	Social Services	96	2.34%
L	Transmission, Culture	33	0.80%
M	Conglomerate	429	10.45%
	Total	4,104	100%

Note: The classification is based on *Index of Industrial Distribution of List Companies*, Issued by the CSRC on April 3rd, 2001.
I exclude the sample whose party secretary information is not available and whose industry group I cannot identify.

Table 2. Summary Statistics

Panel A reports the mean and median statistics of the financial characteristics for the sample during 2000-2004. The table also reports the statistics for two sub-samples of firms sorted by whether or not they have a party secretary. The definitions of the variables are given in Appendix A. Test statistics of the differences in the mean and median are provided.

Panel A. Financial Numbers

Variable	All	Firm without Party Secretary	Firm with Party Secretary	P_value (difference)
	(1)	(2)	(3)	(4)
Log_totalassets	21.1285	20.7596	21.1994	**0.0000**
	(20.9987)	(20.6285)	(21.0678)	**0.0000**
	[4104]	[662]	[3442]	
Ln_employees	7.3694	6.7368	7.4911	**0.0000**
	(7.4281)	(6.8357)	(7.5299)	**0.0000**
	[4104]	[662]	[3336]	
leverage	0.2458	0.2530	0.2444	0.2285
	(0.2302)	(0.2256)	(0.2306)	0.8652
	[4104]	[662]	[3442]	
Sale_growth	1.2973	1.5794	1.2431	**0.0000**
	(0.2746)	(0.3882)	(0.2656)	**0.0000**
	[4104]	[662]	[3442]	
ROA	0.02880	0.0218	0.0302	**0.0121**
	(0.0327)	(0.0299)	(0.0334)	0.1068
	[4104]	[662]	[3442]	
MTB	2.3993	2.6605	2.3490	**0.0005**
	(1.7262)	(1.8582)	(1.7130)	**0.0039**
	[4104]	[662]	[3442]	
Tobin_Q	1.5596	1.6517	1.5419	**0.0002**
	(1.3344)	(1.3806)	(1.3264)	**0.0051**
	[4104]	[662]	[3442]	
Ln_sales	20.3259	19.7208	20.4422	**0.0000**
	(20.2535)	(19.6956)	(20.3322)	**0.0000**
	[4104]	[662]	[3442]	
Ln_sales_per_employee	12.9564	12.9840	12.9511	0.5847
	(12.8524)	(12.9032)	(12.8317)	0.2347
	[4104]	[662]	[3442]	
Ln_PPE	19.8906	19.4540	19.9746	**0.0000**
	(19.8089)	(19.4212)	(19.8784)	**0.0000**
	[4104]	[662]	[3442]	

Panel B reports the mean statistics of party secretary, CEO, senior managers and directors' characteristics during 2000-2004. The definitions of the variables are given in Appendix A. Test statistics of the differences in the mean are provided.

Panel B Party secretary, CEO, Senior Managers and Directors' characteristics

	Party Secretary		CEO		P_value for difference in mean (Party Secretary Versus CEO)	Senior Managers and Directors		P_value for difference in mean (Party Secretary Versus Senior Managers and Directors)
	Mean	N	Mean	N		Mean	N	
Woman	0.078	3314	0.042	5896	**0.0000**	0.102	101252	**0.0000**
Age	49.476	3301	44.709	5843	**0.0000**	45.653	99463	**0.0000**
Education	2.024	3223	2.159	5689	**0.0000**	2.082	94514	**0.0004**
CPA	0.002	3329	0.007	5875	**0.0000**	0.048	99411	**0.0000**
Lawyer	0.004	3329	0.004	5875	0.8142	0.020	99411	**0.0000**
CPC member	1	3442	0.403	5875	**0.0000**	0.328	99411	**0.0000**
Current or ex-government bureaucrats	0.427	3329	0.312	5875	**0.0000**	0.333	99411	**0.0000**

Table 3. The existence of a party secretary or a powerful party secretary

Panel A reports the regression results for the existence of a party secretary or a powerful party secretary. The variable definitions are listed in the Appendix A. Due to incomplete data for some items, the total number of observations varies across the estimation models.

Panel B reports the some results for the robust tests. In model (1) and (2), I add the interaction terms of *ln_employees* and *ownership_soe*. In model (3) and (4), I use industry-level of employee number to replace firm-level of employees.

Panel A

	Logit Model: Secretary_dummy(0,1)				Ordered Logit Model: Secretary_important	
	(1)		(2)		(3)	(4)
	Coefficient	Marginal Effect	Coefficient	Marginal Effect	Coefficient	Coefficient
ownership_soe	1.118***	0.155***	1.055***	0.139***	0.644***	0.627***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
strategic_industry	1.057	0.084	0.546	0.048	0.636	0.209
	(0.336)	(0.177)	(0.655)	(0.591)	(0.218)	(0.735)
ln_employees	0.351***	0.038***	0.373***	0.039***	0.121*	0.116**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.083)	(0.049)
bh_list	-0.239	-0.028	0.055	0.005	-0.541	-0.488
	(0.813)	(0.828)	(0.957)	(0.956)	(0.113)	(0.139)
ownership_percent	-0.004	-0.0004	-0.005	-0.0005	-0.006	-0.004
	(0.529)	(0.526)	(0.428)	(0.429)	(0.114)	(0.348)
log_totalassets	0.324***	0.035***	0.271**	0.028***	0.090	0.085
	(0.006)	(0.008)	(0.048)	(0.046)	(0.307)	(0.263)
Constant	-9.971***		-10.729***			
	(0.000)		(0.000)			
Year Dummy	Yes		Yes		Yes	Yes
Industry Dummy	Yes		Yes		Yes	Yes
Region Dummy	No		Yes		No	Yes
Control for Cluster	Region		Firm		Region	Firm
Observations	3549		3327		3628	3567
Pseudo R^2	0.1286		0.1855		0.0257	0.0474

Robust p values in parentheses

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

Panel B. Robust tests

	(1)	(2)	(3)	(4)
	secretary_dummy	secretary_important	secretary_dummy	secretary_important
ownership_soe	2.360*	3.762***	1.077***	0.683***
	(0.051)	(0.000)	(0.000)	(0.001)
lg_employee_number	0.501***	0.458***		
	(0.001)	(0.000)		
median_employee_number			0.451**	0.299**
			(0.035)	(0.020)
ln_employees *ownership_SOE	-0.190	-0.437***		
	(0.280)	(0.001)		
strategic_industry	0.508	0.088	0.164	0.083
	(0.688)	(0.887)	(0.695)	(0.710)
bh_list	0.128	-0.349	0.341	-0.455
	(0.905)	(0.307)	(0.711)	(0.169)
ownership_percent	-0.005	-0.003	-0.005	-0.004
	(0.466)	(0.481)	(0.433)	(0.310)
log_totalassets	0.268*	0.083	0.458***	0.167**
	(0.052)	(0.271)	(0.000)	(0.012)
Constant	-11.618***		-15.382***	
	(0.000)		(0.000)	
Year Dummy	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	No	No
Region Dummy	Yes	Yes	Yes	Yes
Control for Cluster	Firm	Firm	Firm	Firm
Observations	3327	3567	3345	3567
Pseudo R^2	0.1869	0.0524	0.128	0.037

Robust p values in parentheses

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

Table 4. Party secretary's personal characteristics

Table 4 reports the results for what type of persons is more likely to be a party secretary. The dependent variable is *party_secretary*, which equals to 1 if the person is a party secretary and zero otherwise. Personal characteristics are included as independent variables. In column (1), the sample includes all party secretary, managers and directors. In Column (2), the sample only includes party secretaries and CEOs. The variables definitions are listed in the Appendix A.

	Logit Model: Party_secretary(0,1)	
	(1)	(2)
Current or ex-government bureaucrats	0.280***	0.443***
	(0.000)	(0.000)
Age	0.044***	0.097***
	(0.000)	(0.000)
CPA	-3.135***	-1.666
	(0.000)	(0.100)
Lawyer	-1.487***	0.465
	(0.008)	(0.432)
Education	0.040	0.090
	(0.289)	(0.101)
Woman	-0.171	0.660***
	(0.218)	(0.001)
Constant	-5.535***	-5.594***
	(0.000)	(0.000)
Year Dummy	Yes	Yes
Control for Cluster	Individual	Individual
Observations	97030	8871
Pseudo R^2	0.0329	0.0888

Robust p values in parentheses

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

Table 5. Party secretary and firm performance

Table 5 reports the results of the association between the existence of a party secretary or a powerful party and firm performance. In Panel A, *secretary_dummy* is included as the independent variable. In Panel B, *secretary_important* is included as the independent variable. In Panel C, I classify the sample firms into two types: SOEs and non-state firms (or non-SOEs). In Panel D, I use the two-stage regression models. I use the index of provincial-level market development (Fan and Wang, 2001, 2006) as the instrumental variable. The variables definitions are listed in the Appendix A.

Panel A

	(1)	(2)	(3)	(4)	(5)	(6)
	Tobin_Q	MTB	ROA	Tobin_Q	MTB	ROA
secretary_dummy	**-0.046***	**-0.211*****	**-0.003**	**-0.046**	**-0.211***	**-0.003**
	(0.055)	**(0.003)**	**(0.238)**	**(0.217)**	**(0.064)**	**(0.398)**
log_totalassets	-0.143***	-0.228***	0.027***	-0.143***	-0.228***	0.027***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
leverage	0.792***	4.526***	-0.115***	0.792***	4.526***	-0.115***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
sale_growth	0.058***	0.129***	0.008***	0.058***	0.129***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
province_soe	0.015	0.028	-0.007***	0.015	0.028	-0.007**
	(0.469)	(0.652)	(0.003)	(0.603)	(0.740)	(0.024)
central_soe	0.111***	0.256***	-0.012***	0.111***	0.256**	-0.012***
	(0.000)	(0.001)	(0.000)	(0.005)	(0.034)	(0.004)
strategic_industry	-0.086	-0.119	-0.004	-0.086	-0.119	-0.004
	(0.227)	(0.510)	(0.634)	(0.370)	(0.596)	(0.775)
ownership_percent	-0.003***	-0.010***	0.000**	-0.003***	-0.010***	0.000*
	(0.000)	(0.000)	(0.017)	(0.000)	(0.000)	(0.089)
Constant	4.850***	7.092***	-0.496***	4.850***	7.092***	-0.496***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	No	No	No	firm	firm	firm
Observations	3881	3881	3881	3881	3881	3881
R-squared	0.398	0.387	0.284	0.398	0.387	0.284

Panel B

	(1)	(2)	(3)	(4)	(5)	(6)
	Tobin_Q	MTB	ROA	Tobin_Q	MTB	ROA
secretary_important	**-0.006**	**-0.061*** **	**-0.000**	**-0.006**	**-0.061***	**-0.000**
	(0.401)	**(0.003)**	**(0.591)**	**(0.586)**	**(0.060)**	**(0.703)**
log_totalassets	-0.145***	-0.232***	0.027***	-0.145***	-0.232***	0.027***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
leverage	0.796***	4.526***	-0.115***	0.796***	4.526***	-0.115***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
sale_growth	0.058***	0.130***	0.008***	0.058***	0.130***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
province_soe	0.011	0.023	-0.008***	0.011	0.023	-0.008**
	(0.583)	(0.705)	(0.002)	(0.691)	(0.779)	(0.019)
central_soe	0.105***	0.237***	-0.012***	0.105***	0.237**	-0.012***
	(0.000)	(0.002)	(0.000)	(0.007)	(0.046)	(0.003)
strategic_industry	-0.091	-0.126	-0.004	-0.091	-0.126	-0.004
	(0.204)	(0.484)	(0.603)	(0.352)	(0.575)	(0.756)
ownership_percent	-0.003***	-0.010***	0.000**	-0.003***	-0.010***	0.000*
	(0.000)	(0.000)	(0.018)	(0.000)	(0.000)	(0.090)
Constant	4.881***	7.155***	-0.494***	4.881***	7.155***	-0.494***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	No	No	No	firm	firm	firm
Observations	3881	3881	3881	3881	3881	3881
R-squared	0.397	0.387	0.284	0.397	0.387	0.284

Panel C. Stratified subsamples by ownership

	Dependent variable: MTB			
	SOE		Non-SOE	
	(1)	(2)	(3)	(4)
secretary_important	**-0.064** **	**-0.064**	**-0.045**	**-0.045**
	(0.016)	**(0.117)**	**(0.307)**	**(0.431)**
log_totalassets	-0.253***	-0.253***	-0.741***	-0.741***
	(0.000)	(0.000)	(0.000)	(0.000)
leverage	3.866***	3.866***	5.418***	5.418***
	(0.000)	(0.000)	(0.000)	(0.000)
sale_growth	0.150***	0.150***	0.125***	0.125**
	(0.000)	(0.000)	(0.010)	(0.020)
strategic_industry	0.078	0.078	-0.058	-0.058
	(0.641)	(0.721)	(0.881)	(0.897)
ownership_percent	-0.011***	-0.011***	-0.021***	-0.021***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	8.113***	8.113***	23.055***	23.055***
	(0.000)	(0.000)	(0.000)	(0.000)
Year Dummy	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes
Control for cluster	No	Firm	No	firm
Observations	2823	2823	805	805
R-squared	0.366	0.366	0.469	0.469

Robust p values in parentheses

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

Panel D. two-stage regression model

	Treatment-effect Model				2SLS regression			
	Stage One	Stage two			Stage One	Stage two		
		(1)	(2)	(3)		(4)	(5)	(6)
	Secretary_dummy	Tobin_Q	MTB	ROA	secretary_important	Tobin_Q	MTB	ROA
secretary_dummy		**-0.621*** **	**-1.879*** **	**-0.006**				
		(0.000)	**(0.000)**	**(0.556)**				
secretary_important						**-0.467** **	**-1.147** **	**-0.018**
						(0.010)	**(0.027)**	**(0.255)**
Market Development	**-0.092*** **				**-0.018***			
	(0.001)				**(0.065)**			
ln_employees	0.345***				0.098***			
	(0.000)				(0.000)			
bh_list	-0.236				-0.294**			
	(0.627)				(0.025)			
ownership_soe	1.109***				0.395***			
	(0.000)				(0.000)			
log_totalassets	0.341***	-0.141***	-0.226***	0.026***	0.075***	-0.115***	-0.184**	0.028***
	(0.000)	(0.000)	(0.061)	(0.014)	(0.002)	(0.001)	(0.048)	(0.000)
regulated_industry	0.982**	0.085	0.328	0.456	0.317**	0.168	0.485	0.006
	(0.013)	(0.352)	(0.620)	(0.361)	(0.032)	(0.311)	(0.234)	(0.699)
ownership_percent	-0.004	-0.003***	-0.004	-0.003	-0.003**	-0.004***	-0.013***	0.000
	(0.183)	(0.000)	(0.140)	(0.099)	(0.022)	(0.001)	(0.000)	(0.346)
leverage		0.567***	3.904***	-0.126***		0.369**	3.461***	-0.134***
		(0.000)	(0.000)	(0.000)		(0.029)	(0.000)	(0.000)
sale_growth		0.056***	0.131***	0.007***		0.047***	0.110***	0.007***
		(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
province_soe		0.119***	0.294***	-0.006		0.210**	0.467*	0.001
		(0.001)	(0.009)	(0.157)		(0.024)	(0.080)	(0.927)
central_soe		0.197***	0.491***	-0.012**		0.225***	0.494**	-0.008
		(0.000)	(0.001)	(0.017)		(0.009)	(0.037)	(0.206)
Constant	-9.897***	4.678***	7.072***	0.034	-0.041	4.694***	7.295***	-0.508***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.945)	(0.000)	(0.000)	(0.000)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	No	Firm	Firm	Firm	No	Firm	Firm	Firm
Observations	3563	3563	3563	3563	3563	3563	3563	3563

Robust p values in parentheses

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

Table 6. Senior managers' and directors' characteristics

Table 6 reports the results of the association between the existence of a party secretary or a powerful party and the senior managers' and directors' characteristics. In Panel A, *secretary_dummy* is included as the independent variable. In Panel B, *secretary_important* is included as the independent variable. In Panel C and Panel D, I classify the sample firms into two types: SOEs and non-state firms (or non-SOEs). The variables definitions are listed in the Appendix A.

Panel A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	gend_manager	college_manager	manager_age	cpa_manager	lawyer_manager	comm_manager	poli_manager
secretary_dummy	**-0.058**	**-0.037**	**0.008**	**0.031**	**-0.262****	**0.248*****	**0.04**
	(0.413)	**(0.322)**	**(0.250)**	**(0.786)**	**(0.041)**	**(0.002)**	**(0.524)**
num_man_direct	0.071***	0.081***	-0.001*	0.055***	0.053***	0.078***	0.081***
	(0.000)	(0.000)	(0.065)	(0.000)	(0.000)	(0.000)	(0.000)
ownership_soe	-0.152**	0.036	0.032***	-0.238**	0.054	0.218***	0.037
	(0.014)	(0.283)	(0.000)	(0.011)	(0.688)	(0.001)	(0.444)
strategic_industry	-0.313	-0.014	-0.001	-0.26	-0.112	-0.043	-0.06
	(0.101)	(0.891)	(0.969)	(0.319)	(0.720)	(0.857)	(0.515)
log_totalassets	-0.080**	0.031**	0.023***	-0.200***	0.073	-0.046	0.03
	(0.029)	(0.025)	(0.000)	(0.000)	(0.287)	(0.100)	(0.216)
leverage	-0.213	0.059	-0.028**	0.478**	-0.096	0.389***	0.017
	(0.221)	(0.415)	(0.039)	(0.036)	(0.761)	(0.005)	(0.889)
ROA	-0.199	-0.015	-0.042	0.463	-0.636	0.17	0.066
	(0.591)	(0.925)	(0.136)	(0.320)	(0.302)	(0.508)	(0.790)
Constant	1.719**	-0.089	3.354***	0.78	-4.012***	0.523	-0.431
	(0.030)	(0.785)	(0.000)	(0.589)	(0.006)	(0.463)	(0.406)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	3629	3629	3629	3629	3629	3629	3629

Panel B

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	gend_manager	college_manager	manager_age	cpa_manager	lawyer_manager	comm_manager	poli_manager
secretary_important	**-0.016**	**-0.017**	**0.002**	**0.004**	**-0.097****	**0.044***	**0.039***
	(0.518)	**(0.170)**	**(0.448)**	**(0.901)**	**(0.022)**	**(0.051)**	**(0.060)**
num_man_direct	0.071***	0.081***	-0.001*	0.056***	0.053***	0.079***	0.081***
	(0.000)	(0.000)	(0.072)	(0.000)	(0.000)	(0.000)	(0.000)
ownership_soe	-0.154**	0.037	0.033***	-0.235**	0.053	0.230***	0.029
	(0.013)	(0.268)	(0.000)	(0.012)	(0.691)	(0.000)	(0.548)
strategic_industry	-0.315	-0.013	-0.00007	-0.256	-0.114	-0.028	-0.07
	(0.101)	(0.899)	(0.996)	(0.326)	(0.722)	(0.906)	(0.451)
log_totalassets	-0.082**	0.031**	0.023***	-0.198***	0.069	-0.038	0.027
	(0.026)	(0.026)	(0.000)	(0.000)	(0.312)	(0.178)	(0.253)
leverage	-0.214	0.057	-0.028**	0.477**	-0.09	0.377***	0.026
	(0.218)	(0.433)	(0.037)	(0.037)	(0.776)	(0.006)	(0.832)
ROA	-0.195	-0.014	-0.043	0.456	-0.614	0.143	0.072
	(0.599)	(0.928)	(0.127)	(0.329)	(0.318)	(0.580)	(0.771)
Constant	1.696**	-0.25	3.297***	-12.081***	-18.281***	1.13	-0.378
	(0.021)	(0.454)	(0.000)	(0.000)	(0.000)	(0.110)	(0.435)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	3629	3629	3629	3629	3629	3629	3629

Robust p values in parentheses

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

Panel C. SOEs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	gend_manager	college_manager	manager_age	cpa_manager	lawyer_manager	comm_manager	poli_manager
secretary_important	**-0.024**	**-0.011**	**-0.00002**	**0.005**	**-0.068**	**0.038**	**0.028**
	(0.459)	**(0.435)**	**(0.994)**	**(0.916)**	**(0.169)**	**(0.148)**	**(0.231)**
num_man_direct	0.071***	0.080***	-0.002***	0.055***	0.056***	0.075***	0.078***
	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)
strategic_industry	-0.442**	0.017	-0.004	-0.227	-0.01	-0.072	-0.058
	(0.026)	(0.873)	(0.759)	(0.406)	(0.975)	(0.781)	(0.542)
log_totalassets	-0.078*	0.038**	0.025***	-0.232***	0.053	-0.033	0.019
	(0.073)	(0.012)	(0.000)	(0.000)	(0.483)	(0.286)	(0.472)
leverage	-0.232	0.061	-0.038***	0.639**	-0.077	0.334**	-0.059
	(0.259)	(0.446)	(0.009)	(0.025)	(0.832)	(0.032)	(0.688)
ROA	-0.395	-0.023	-0.001	0.305	-0.213	0.167	0.381
	(0.348)	(0.900)	(0.975)	(0.613)	(0.789)	(0.588)	(0.213)
Constant	1.745*	-0.139	3.313***	2.709**	-4.531***	1.138*	-0.18
	(0.051)	(0.683)	(0.000)	(0.025)	(0.002)	(0.092)	(0.742)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	2823	2823	2823	2823	2823	2823	2823

Panel D. non-SOEs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	gend_manager	college_manager	manager_age	cpa_manager	lawyer_manager	comm_manager	poli_manager
secretary_important	**-0.011**	**-0.031**	**0.006**	**-0.015**	**-0.190****	**0.071***	**0.071***
	(0.776)	**(0.190)**	**(0.106)**	**(0.781)**	**(0.015)**	**(0.074)**	**(0.062)**
num_man_direct	0.068***	0.084***	0.003*	0.059***	0.036	0.108***	0.095***
	0.000	0.000	(0.070)	(0.006)	(0.206)	0.000	0.000
strategic_industry	-0.187	-0.057	0.004	-1.157	-16.002***	-0.246	-0.152
	(0.518)	(0.559)	(0.897)	(0.152)	0.000	(0.420)	(0.646)
log_totalassets	-0.063	0.022	0.018**	-0.13	0.192	-0.06	0.04
	(0.295)	(0.517)	(0.016)	(0.165)	(0.173)	(0.401)	(0.409)
leverage	-0.068	-0.059	-0.004	0.103	-0.416	0.609**	0.154
	(0.810)	(0.706)	(0.896)	(0.780)	(0.492)	(0.041)	(0.434)
ROA	0.444	-0.022	-0.109**	0.148	-1.532*	0.328	-0.6
	(0.510)	(0.942)	(0.027)	(0.830)	(0.091)	(0.491)	(0.111)
Constant	1.104	-0.349	3.489***	-0.069	7.931***	0.247	-1.002
	(0.414)	(0.635)	0.000	(0.978)	(0.002)	(0.878)	(0.364)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	806	806	806	806	806	806	806

Robust p values in parentheses

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

Table 7. Labor productivity

Table 7 shows the association of a party secretary and labor productivity. Columns (1) and (2) of Panel A illustrate the regression results for firms with or without a party secretary separately. In Columns (3) and (4), the interaction variables are included. In Panel B, I separate the sample into two sub-samples of firms, SOEs and non-SOEs and firms in high- and low-unemployment regions, according to whether the provincial unemployment rates belong to the top or bottom one-third of my sample. The variables definitions are listed in the Appendix A.

Panel A. Full sample

	Dependent Variable: ln_sales			
	(1)	(2)	(3)	(4)
	Firm without Party Secretary	Firm with Party Secretary	All firms	
ln_employees	**0.191*** **	**0.068*** **	**0.197*** **	**0.206*** **
	(0.000)	**(0.000)**	**(0.007)**	**(0.002)**
ln_PPE	0.584***	0.658***	0.654***	0.670***
	(0.000)	(0.000)	(0.000)	(0.000)
secretary_dummy			0.176	
			(0.903)	
secretary_dummy*ln_employees			**-0.138***	
			(0.052)	
secretary_dummy*ln_PPE			0.054	
			(0.521)	
secretary_important				0.104
				(0.810)
secretary_important*ln_employees				**-0.053** **
				(0.014)
secretary_important*ln_PPE				0.016
				(0.531)
ownership_soe			-0.971	-0.826
			(0.341)	(0.414)
ownership_soe*ln_PPE			0.057	0.054
			(0.302)	(0.324)
ownership_soe*ln_employees			-0.002	-0.010
			(0.978)	(0.868)
Constant	7.078***	6.793***	6.161***	5.891***
	(0.000)	(0.000)	(0.000)	(0.000)
Year Dummy			Yes	Yes
Industry Dummy			Yes	Yes
Control for cluster			Yes	Yes
Observations	662	3442	3629	3629
R-squared	0.471	0.461	0.574	0.571

p values in parentheses

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

Panel B. Partition by ownership and regional unemployment rate

	Dependent Variable: ln_sales			
	(1)	(2)	(3)	(4)
	non-state firms	SOEs	Unemployment Rate>1/3	Unemployment Rate<1/3
ln_employees	0.166**	0.206***	0.134*	0.471***
	(0.027)	(0.002)	(0.062)	(0.000)
secretary_important*ln_employees	**-0.055**	**-0.053****	**-0.055****	**-0.047**
	(0.105)	**(0.049)**	**(0.050)**	**(0.223)**
secretary_important	0.516	-0.029	0.117	-0.461
	(0.369)	(0.959)	(0.870)	(0.489)
secretary_important*ln_PPE	-0.004	0.021	0.015	0.043
	(0.909)	(0.503)	(0.660)	(0.256)
ln_PPE	0.658***	0.711***	0.793***	0.390***
	(0.000)	(0.000)	(0.000)	(0.000)
ownership_soe			0.271	-2.533
			(0.859)	(0.134)
ownership_soe*ln_PPE			0.012	0.212**
			(0.864)	(0.017)
ownership_soe*ln_employees			-0.038	-0.207
			(0.573)	(0.114)
Constant	6.791***	4.433***	3.627**	9.871***
	(0.000)	(0.002)	(0.028)	(0.000)
Year Dummy	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes
Cotrol for cluster	Yes	Yes	Yes	Yes
Observations	806	2823	1372	1146
R-squared	0.561	0.573	0.615	0.591

Robust p values in parentheses
*significant at 10%; **significant at 5%; ***significant at 1%

Appendix A:

This table provides the definitions of the variables employed in the study.

Variable	Definition
secretary_dummy	a dummy variable: 1 if a firm has party secretary; zero otherwise.
secretary_important	an ordered variable: 0 if a firm has no party secretary;1 if the party secretary holds no other position in the firm;2 if the party secretary is also a director, senior manager, or supervisor; 3 if the party secretary is also the chairman or CEO; 4 if the party secretary is also the chairman and CEO
ownership_SOE	a dummy variable: 1 if the ultimate owner is a government agency or state-owned enterprise; zero otherwise.
strategic_industry	a dummy variable: 1 if the firm belongs to the following industry: "B01" Coal Mining;"B03"Oil and Gas Extraction;"D01"Electric, Gas, & Sanitary Services;"F01"Railroad Transportation;"I01" Depository Insitutions;"I21"Security & Commodity Brokers, Dealers, Exchanges & Services ;"I31" Trusts,"J01"Real estate and Construction,"K01"Utilities Services,"L10"Media(CSRC industry Classification);0 otherwise.
ln_employees	log of employees' number
bh_list	a dummy variable : 1 if a firm also issue B- or H- shares;zero otherwise
central_soe	a dummy varialbe: 1 if the ultimate owner is central government; zero otherwise
province_soe	a dummy varialbe: 1 if the ultimate owner is local government; zero otherwise
ownership_percent	ownership percent of the largest shareholder
log_totalassets	log of total assets
leverage	(short_term_debts+long_term_debts)/total_assets
ln_PPE	log of total fixed assets
sale_growth	average sales growth in three years (t-1,t,t+1)
Tobin_Q	(total liabilities+market value of tradable shares+book value of non-tradable shares)/total_assets
MTB	(market_value_of_tradable_shares+book value of non-tradable shares)/total_shareholders_equity
ROA	operating income/total Assets
gend_manager	number of female managers and directors
college_manager	number of managers and directors who have at least a bachelor degree
manager_age	mean age of managers and directors
cpa_manager	number of managers and directors who are or were CPAs
lawyer_manager	number of managers and directors who are or were lawyers
comm_manager	number of managers and directors who are CPC members
poli_manager	number of managers and directors who are current or former government bureaucrats
num_man_direct	number of managers and directors whose biographical information is disclosed in financial statements
median_employee_number	industry median level of number of employees
ln_sales	log of sales
ln_sales_per_employee	ln(sales/number of employees)
current or ex-government bureaucrats	a dummy variable: 1 if the person is current or former government bureaucrat; zero otherwise

age	the person's age
CPA	a dummy variable: 1 if the person is or was CPA; zero otherwise
lawyer	a dummy variable: 1 if the person is or was lawyer; zero otherwise
education	an ordered variable: 4 equals a doctoral degree, 3 a master's degree, 2 a university degree, 1 a junior college degree, and 0 below junior college.
woman	a dummy variable: 1 if the person is woman; zero otherwise
party_secretary	a dummy variable: 1 if the person is the party secretary; zero otherwise
Market development	index constructed to be inversely related to the extent that government influences the market price of commodities

Appendix B.1:

This table reports the Pearson correlation coefficients between pairs of the variables of party secretary and financial numbers. *denotes significance at the 5% percent level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Secretary_dummy	1																
(2) Secretary_important	0 8208*	1															
(3) central_soe	0 0735*	-0 014	1														
(4) ownership_SOE	0 2002*	0 1631*	0 2457*	1													
(5) strategic_industry	0 0164	0 0096	0 0131	0 0469	1												
(6) bh_list	0 04	0 0104	0 1091*	0 0557	-0 0082	1											
(7) ownership_percent	0 0562*	0 0222	0 1082*	0 2394*	-0 0021	0 0513	1										
(8) log_totalassets	0 1701*	0 1309*	0 0971*	0 1372*	0 1626*	0 2302*	0 1544*	1									
(9) ln_employees	0 2159*	0 1601*	0 0463	0 0758*	-0 1197*	0 1678*	0 1794*	0 4044*	1								
(10) leverage	-0 0189	-0 0321	-0 0908*	-0 1135*	0 0677*	-0 0508	-0 1629*	0 2300*	0 0428	1							
(11) Sale_growth	-0 0690*	-0 0442	-0 005	-0 0157	0 0272	-0 0271	0 0800*	-0 0167	-0 0346	-0 0289	1						
(12)ROA	0 0426	0 0541	0 0146	0 0567	0 0748*	0 0201	0 1534*	0 3578*	0 0596*	-0 1837*	0 2456*	1					
(13) MTB	-0 0602*	-0 0632*	-0 0117	-0 0852*	0 0541	-0 0867*	-0 1961*	-0 0012	-0 0854*	0 4656*	0 2008*	-0 0343	1				
(14) Tobin_Q	-0 0633*	-0 0448	0 0133	-0 0426	0 0361	-0 1050*	-0 1474*	-0 1267*	-0 1419*	0 2475*	0 2872*	0 1105*	0 8305*	1			
(15) ln_PPE	0 1488*	0 1346*	0 0664*	0 1446*	0 047	0 2165*	0 1684*	0 8082*	0 4968*	0 2270*	0 0146	0 3456*	-0 0013	-0 0910*	1		
(16) ln_sales_per_employee	-0 0086	-0 0203	0 0597*	0 0598*	0 1313*	0 0284	0 0056	0 4200*	-0 5185*	0 0777*	0 041	0 3714*	0 0539	0 0179	0 1900*	1	
(17) ln_sales	0 2003*	0 1337*	0 1059*	0 1396*	0 0233	0 1928*	0 1802*	0 8381*	0 4192*	0 1240*	0 01	0 4521*	-0 0256	-0 1186*	0 6835*	0 5590*	1

Appendix B.2:

This table reports the Pearson correlation coefficients between pairs of the variables of party secretary and manager characteristics. *denotes significance at the 5% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Secretary_dummy	1									
(2)Secretary_important	0.8208*	1								
(3) Ownership_soe	0.2002*	0.1631*	1							
(4) gend_manager	-0.0136	-0.0126	-0.0562*	1						
(5) college_manager	0.0326	-0.0012	0.0660*	0.1231*	1					
(6) manager_age	0.1092*	0.0884*	0.2108*	-0.027	-0.1313*	1				
(7) cpa_manager	-0.0371	-0.0322	-0.1141*	0.1058*	0.1545*	-0.1637*	1			
(8) lawyer_manager	-0.0549*	-0.0543*	-0.0033	0.0972*	0.1731*	-0.0788*	0.1860*	1		
(9) comm_manager	0.1356*	0.0943*	0.1339*	0.0519*	0.2194*	0.0797*	0.0321	0.0024	1	
(10) poli_manager	0.0518*	0.0736*	0.0634*	0.0997*	0.3173*	0.1494*	0.1356*	0.1038*	0.2875*	1

Essay Two
Management Compensation and CEO Turnover in Chinese Business Groups

Abstract

Using a sample of listed subsidiaries and their parent companies in China, I study top executive compensation and CEO turnover and their relationship to firm performance in business groups. The empirical results support the hypothesis that the pay-performance sensitivity of managerial compensation (CEO turnover) in a listed firm is positively (negatively) related to the accounting performance of its parent company. In addition, I find a stronger relationship between the compensation (turnover) in a listed subsidiary and the performance of its parent company when the controlling shareholder's ownership is high. Using related party transactions to proxy for the correlation between the two firms, I find that management compensation in a listed firm is related to the performance of its parent company if related party transactions exist between them. Using brand name as a proxy for reputation, I find that management compensation and CEO turnover in group firms are more likely to be sensitive to the performance measures in their parent companies if both use the same brand name. In conclusion, the association between the listed subsidiary and its parent company may affect the pay-for-performance sensitivity to a parent company.

JEL codes: J41, G34, G35.

Keywords: management compensation, business group, China

1. Introduction

This paper investigates management incentive systems within a business group. More specifically, it considers top executive compensation and CEO turnover and their relationship to firm performance in business groups in China. Past research has focused on the executive incentive system in stand-alone firms, which are not affiliated with other companies. Business groups provide a different setting for the management incentives of their member firms than do stand-alone companies. In many respects, individual business members have their own economics. The senior managers in these firms have certain decision rights that are decentralized from the parent company.

Recent empirical evidence suggests that business groups in developing countries can facilitate the allocation of capital and managerial resources. When a particular market mechanism is poorly developed or inaccessible, a business group can add value by providing its member firms with alternative means of solving problems.

With the existence of cooperation and possible externalities among business group members, compensation programs should support the goals set for each member firm and the business group. In addition, the conflicts of interests in Chinese firms are between the controlling shareholder and minority shareholders, because of concentrated ownership structure. In order to facilitate the expropriation of minority shareholders from the listed subsidiary, the parent company also has the incentive to align the interests of the managers in the member firms with its own. Therefore, I expect that management compensation (turnover) in group firms should be sensitive

to performance measures in their parent companies.

By extension, I test how the association of the listed subsidiary and its parent company is related to the pay-for-performance sensitivity to a parent company. The association between the two firms is measured by the parent's ownership over the listed subsidiary, the related party transactions between them, the existence of common directors and managers, sharing a brand name, and the industry diversification.

When ownership is sufficiently concentrated, an owner (or the parent company) controls a listed firm. Through concentrated ownership, the parent company obtains the power to determine the incentive system of managers in the listed firms and align their interests with its own. Therefore, the sensitivity of management compensation (turnover) in a listed subsidiary to the performance measures in its parent company is stronger, when the parent's cash flow right is high.

Deng, Gan, and He (2006) find that the parent-subsidiary structure is significantly related to the number of related party transactions (RPTs). RPTs can arise when the outputs of one firm are the inputs of other firms in the same group. In the presence of such direct interactions, the actions of a particular manager affect both the performance of his own firm and that of its parent company. It reveals how the performance of the subsidiary flows through the parent's financial statements. Using related party transactions as proxy, I investigate the way in which intra-group transactions affect the pay-for-performance sensitivity of a listed subsidiary to its parent company.

Moreover, I consider the pay-for-performance sensitivity of the member firms to the performance of its parent company according to the percentage of common directors and managers who serve in both the listed subsidiary and its parent company. On the one hand, when there is a high percentage of common directors and managers, subsidiary manager compensation and turnover may be less sensitive to the performance of its parent company, because the directors and managers can directly monitor it, and because the information asymmetry between the parent and subsidiary is low. On the other hand, the existence of common directors and managers may show the requirement for coordination between the listed firm and its parent company, which also connects the management compensation (turnover) with the performance of the parent company.

I also study the effects of reputation externalities on incentive systems. When the members of a business group share a brand name, the effects of the managers in one member firm on the reputation of the entire group may be large. To protect its reputation and avoid the harmful effects of its member firms, a parent company has the incentive to tie the performance evaluation and compensation system of the managers in those member firms to its own performance.

In addition, industry diversification changes the costs of organization. When the firms in a business group become more dispersed, it becomes difficult to develop an effective incentive-compensation system. I investigate how industry diversification affects the pay-for-performance sensitivity of a listed subsidiary to its parent company. With an increase in the difference between the two firms, the requirement for

cooperation decreases. Managerial compensation and turnover in the listed subsidiary are then less likely to be tied to the performance of the parent company.

Using the hand-collected list of listed subsidiaries and their parent companies from Fan, Jin, and Zheng (2008), I generate a comprehensive dataset that includes managerial compensation (turnover) in the listed subsidiaries and the financial performance of both those listed subsidiaries and their parent companies. I measure management compensation in two ways: a) by managerial annual cash compensation; and b) by CEO turnover. I do not consider equity compensation, as it is not widely used in China.

The empirical results of my investigation support the hypothesis that the pay-for-performance sensitivity of managerial compensation (CEO turnover) in a listed firm is positively (negatively) related to the accounting performance of its parent company. I find a stronger relationship between the compensation (turnover) in a listed subsidiary and the performance of its parent company when the controlling shareholder's ownership is high. Using related party transactions to proxy for the correlation between the two firms, I find that management compensation (CEO turnover) in a listed firm is related to the performance of its parent company if there are related party transactions between them. However, I find no consistent results according to the percentage of common directors and managers.

The results also show that management compensation (turnover) in a member firm is more likely to be sensitive to the performance measures of its parent company if both use the same brand name or are in the same industry category.

This paper contributes to the literature in several ways. First, previous studies have treated the firms in a business group in the same way that they treat stand-alone firms, thus neglecting the possible effects of the other components of a business group on a manager's incentive system. In fact, managers must consider the joint effect of their actions on the entire corporate group. The interests of a manager in a member firm should be aligned with those of the parent company. Because there are differences in institutional environments and firm structure, we should not merely follow the existing theoretical and empirical research of developed economies such as the United States and Britain.

Second, my paper answers a previously unanswered question about business groups. The literature on such groups has not revealed how they solve the problems that stem from conflicts of interest or meet the requirements of cooperation among member firms. This study points out that one solution lies in instituting an incentive system that measures and evaluates managerial performance and rewards or punishes that performance accordingly.

Third, I add to the small but growing body of literature on managerial compensation and turnover outside of the United States. Although there is an extensive body of literature on incentive systems in that country (Murphy, 1985, 1986; Jensen and Murphy, 1990; Weisbach, 1988; Warner, Watts, and Wruck, 1988), studies that examine the issue outside of these contexts are scarce. Although I test my research question using a Chinese sample, the results can be generalized to other developing countries, which have quite similar corporate structures and institutional environments.

The rest of the paper is organized as follows. Section 2 reviews the extant literature. Hypotheses are developed in Section 3. Section 4 presents the regression models of managerial annual cash compensation and CEO turnover. Section 5 describes the data sources and provides descriptive statistics for the sample firms. Section 6 reports the regression results. Section 7 reports the results of a number of robustness tests, and Section 8 concludes the paper.

2. Literature Review

2.1. Business groups

Recent empirical evidence suggests that business groups in developing countries can facilitate the efficient allocation of capital and managerial resources. If a particular market mechanism is not well-developed or accessible, then a business group can add value by providing its member firms with alternative means of solving problems.

Khanna and Palepu (2000) argue that business groups in developing countries emulate the beneficial functions of market mechanisms that are present only in advanced economies. For example, when a country's external capital market is poorly developed, the operation of an internal capital market within a business group enables those firms with the best projects within the group to obtain resources.

Bertrand, Mehta, and Mullainathan (2002), for example, examine the tunneling activities within Indian business groups by tracing the propagation of earnings shocks from group firms in which the controlling shareholders have few cash-flow rights to those in which they hold greater cash-flow rights. These researchers show that such

propagation takes place through non-operating earnings items, such as miscellaneous and nonrecurring gains and losses (thus suggesting that tunneling could be the result of asset transfers rather than transfer pricing). They also show that firms in which fewer funds are tunneled away trade at higher market-to-book ratios.

Bae, Kang, and Kim (2002) examine rescue mergers within Korean industrial groups (chaebols). They find that the stock prices of the Korean companies affiliated with chaebols decline when they are asked to bail out other under-performing firms within the group through rescue mergers, although, at the same time, the value of the remaining firms in the group increases. Buysschaert, Deloof, and Jegers (2004), in contrast, examine the valuation effects of transfers of equity stakes by companies belonging to Belgian business groups during the late 1990s, but fail to find any expropriation of minority shareholders.

Cheung et al. (2006) examine a sample of connected transactions between Hong Kong-listed companies and their controlling shareholders. They classify these connected transactions into three broad categories: transactions that are a priori likely to result in expropriation, transactions that are likely to benefit the listed firm, and transactions that may have been driven by strategic rationales. Focusing on the first category, they find that considerable shareholder value is destroyed. However, they find no evidence of such an effect for the other two categories.

Peng et al. (2006) and Jian et al. (2007) demonstrate the prevalence of connected transactions within business groups in China. In China, hundreds of listed firms are restructured from existing enterprises through a "carve-out," under which part of a

business group is carved-out and set up as a to-be-listed firm, and the original business group remains the parent firm. Due to this unique ownership structure, connected transactions are almost a daily routine for the majority of listed firms in the country. Statistics show that out of 719 listed firms in 1997, 609 (84.6%) were involved in connected transactions to different degrees. In 2000, the figure reached 93.2%. More than 70% of these connected transactions were conducted between the controlling shareholders and their listed firms (Peng et al., 2006).

However, many characteristics of business groups in China remain unexplained, for example, their incentive systems. Unlike in stand-alone firms, there are correlations among the components of a business group, and complete decentralization does not maximize firm value. For example, related party transactions can arise when the outputs of one firm are the inputs of other firms within the group. In the presence of such direct interactions, it is clear that the actions of a particular manager may affect the performance of both his or her own firm and that of the other firms in the group. The maximization of unit profits by the managers of each firm does not lead to the profit maximization of the business group. The way in which the interests of the managers of member firms can be aligned with those of the parent company and those of the other members of the business group is a timely and important research question.

2.2. Compensation studies

Most of the studies in the U.S. or in other Western countries on the relationship

between executive compensation and company performance have been firmly (if not always explicitly) rooted in agency theory: that is, compensation plans are designed to align the interests of risk-averse, self-interested executives with those of shareholders. Some studies in this area have documented the relationship between CEO pay and company performance (Murphy, 1985, 1986; Jensen and Murphy, 1990). Others have examined whether CEOs are terminated for poor performance (Weisbach, 1988; Warner, Watts, and Wruck, 1988) and whether they are rewarded for performance that is measured relative to the market or the industry (Antle and Smith, 1986; Gibbon and Murphy, 1990)

Only one study (Bushman, Indjejikian, and Smith, 1995) has considered the determinants of the extent to which the incentive compensation package of a business unit manager is based on aggregate performance at a higher organizational level. These researchers find that the more the informative aggregate measures of a manager's effort choice are reflected in interdependent operations, the more important those measures will be in determining that manager's contingent compensation. Their results are subject to several limitations, however. First, their empirical proxies for the aggregate performance measures are confounded by the inclusion of the expected values of unit performance measures. Second, their measures of intra-firm interdependencies using segment disclosures do not necessarily correspond to the underlying business units that make up the firm. Finally, their empirical tests do not examine the effects of correlations among business units. Unlike the business units in a firm, the member firms in a business group are separate companies, with their own

shareholders, management teams, and operations. It is not certain that the results of research on business units, such as that of Bushman, Indjejikian, and Smith (1995) can be generalized to the member firms of business groups.

Since the development of China's capital market, some researchers have conducted studies on compensation and turnover in Chinese listed firms. Mengistae and Xu (2003), for example, examine the extent to which agency theory can explain CEO compensation in the country's state-owned enterprises (SOEs) during the 1980s. Their data support their relative performance evaluation hypothesis, and they find that the elasticity of pay to profitability is comparable to estimates for regulated industries in the United States. Firth, Fung, and Rui (2006a, 2006b) explore the factors that affect CEO compensation and turnover in China. They find evidence that CEO compensation and turnover are related to firm performance, which is quite similar to the empirical results of studies in the United States and Britain. Ke, Rui, and Yu (2008) investigate the way in which cross-listing affects the pay-for-performance sensitivity of Chinese firms. They find that cross-listed firms have stronger pay-for-performance sensitivity than do non-cross-listed firms, but that this is only true among firms that are not state-controlled. Yuan (2008) studies the sensitivity of CEO turnover to firm performance in China and finds that CEO demotion is inversely related to firm performance in local government-controlled SOEs and non-SOEs, but insensitive to firm performance in central government-controlled SOEs.

All of these studies neglect one key aspect of Chinese listed firm: in China, listed firms are usually carved out of an existing enterprise to qualify for listing and to

increase the initial public offering (IPO) price. The original enterprise then becomes the parent or holding company after listing (Aharony et al., 2000). In general, the parent firm and the carved-out listed firms are then formed into a business group, which may include other member firms. As one unit within a business group, these listed firms may have quite different incentive systems from those that exist in stand-alone firms in the United States or Britain.

3. Hypotheses Development

3.1. Compensation and turnover in business groups

In China, listed firms become separate entities from their parent companies after IPOs. They have their own shareholders, boards of directors, and management teams. The parent companies cannot directly intervene in their listed member firms' daily operations or management, and certain decision rights are decentralized to the executives of the listed firms.

Like their counterparts in the U.S., Chinese listed firms have compensation committees. All of the major decisions related to top-level pay are passed to this committee, which then submits its recommendations to the full board of directors for approval. However, in China, almost all listed firms (regardless of whether they are SOEs or non-SOEs) are controlled by majority shareholders. These shareholders are not only the owners, but also the controllers. Under such an ownership structure, it is questionable whether the board can decide on a management compensation system that has not been approved by the controlling shareholders, given that the major board members are nominated by these shareholders (or by the ultimate controlling parties

behind them, such as the local government, individuals, or a family).

On the basis of agency theory, the conflict interests under concentrated ownership structure are between the controlling shareholder and minority shareholders. In China, the parent company remains the dominant and largest controlling shareholder of its listed subsidiary. In order to facilitate the expropriation of minority shareholders from the listed subsidiary, the parent company has the incentive to align the interests of the managers in the member firms with its own. Otherwise, the managers in the listed subsidiary lack an incentive to work hard and help to tunnel the portion of the listed firm's profit to the parent company.

According to the efficiency story, the pay of listed firms' managers should also be linked to the performance of parent firm under the existence of cooperation and possible externalities within business groups. The correlation among business members and their parent company may stem from the competitive or complementary nature of demand for the products and services. Such business correlation among firms may affect both own-business-unit performance and other-business-firm performance. The intra-group transactions and services mean that complete decentralization does not maximize overall group value. Such externalities generate demand for coordination among the actions of the managers in the member firms.

On the basis of above argument, I generate the following hypothesis:

H1: Management compensation (CEO turnover) in group firms should be sensitive to the performance measures of the parent company.

3.2. Controlling shareholder's ownership

High ownership concentration is a feature of publicly listed companies in China and other emerging markets. Ownership concentration is an institutional arrangement that facilitates transactions in a weak property rights environment (Fan and Wong, 2002). When ownership is sufficiently concentrated, an owner (or the parent company) obtains dominant control of a listed firm. Through concentrated ownership, the parent company obtains power to determine the incentive system of managers in the listed firms and align their interests with its own.

Using the parent company's ownership (cash flow rights) levels to proxy for the power of the controlling shareholder over the listed subsidiary, I generate the following hypothesis:

H2: The sensitivity of management compensation (CEO turnover) in a listed subsidiary to the performance measures in its parent company is stronger when the parent's cash flow right is high.

3.3. Related party transactions between listed firms and its parent company

The correlation among business members may affect own-business-unit performance and other-business-firm performance. Deng, Gan, and He (2006) find that the parent-subsidiary structure is significantly related to related party transactions (RPTs). RPTs can arise when the outputs of one firm are the inputs of other firms in the same group. In the presence of such direct interactions, it is clear that the actions of a particular manager may affect both the performance of his own firm and the performance of other firms. It reveals how the performance of the subsidiary flows

through the parent's financial statements. Using RPTs to proxy the inter-dependence between the listed subsidiary and its parent company, I generate the following hypothesis:

H3: The sensitivity of management compensation (CEO turnover) in a listed subsidiary to the performance measures in its parent company is stronger if RPTs exist between them.

3.4. The percentage of common directors and managers who serve in both the listed subsidiary and parent company

As stated earlier, the parent company could control the listed firm by affecting the decision process of board and taking a majority of board seats in the listed firms. It is not clear how these common directors and managers affect the management incentive system in the listed firm. Since the directors and managers can directly monitor firm operation and affect the firm's decision, the information asymmetry between the parent and subsidiary is low. Therefore, the management compensation (turnover) may not have to align with the interests of its parent company. However, the existence of common directors may show the requirement for coordination between the listed firm and its parent company, which also connects the management compensation (turnover) with the performance in the parent company.

H4: The sensitivity of management compensation (CEO turnover) in a listed subsidiary to the performance measures in its parent company is stronger (weaker) according to the percentage of common directors and managers who serve in both the listed subsidiary and its parent company.

3.5. Reputation

There are also reputation externalities among the member firms in a business group. A group-wide reputation for service and quality that is gained by a particular member firm may enhance both that firm's profitability and that of the other member firms. By the same token, wrongdoing by one firm may tarnish the reputation of the whole group. When the firms within a business group have the same brand name, the effect that the managers in one member firm can have on the group's reputation may be large. To protect its reputation and avoid harmful effects from its member firms, a parent company retains the right to monitor its subsidiaries. One possible solution is to tie the performance evaluation and compensation of the subsidiary managers to the performance of the parent company. Using brand name as a proxy for reputation, I generate the following hypothesis.

H5: Management compensation (CEO turnover) in a listed subsidiary is more likely to be sensitive to performance measures in the parent company when both firms use the same brand name.

3.6. Industry distance between a listed firm and its parent company

Industry diversification increases the costs of organization. If a listed firm and its parent company are in different SIC industry categories, the distance between the two firms is greater. Coase (1937) mentions that the costs of organizing will increase with the spatial distribution of transactions. When the firms in a business group become

more dispersed, it becomes difficult to develop an effective incentive-compensation system. One possible reason for this is that the specific knowledge used in the firms' business activities is quite different when the listed firm and its parent company operate in different industries. In addition, the cooperation requirement between firms also decreases, as cooperation becomes quite difficult.

I define the *Same_industry* dummy as 1 if a listed firm and its parent company are within the same two-digit SIC group, and 0 otherwise, which leads to the following hypothesis.

H6: The sensitivity of management compensation (CEO turnover) in a listed subsidiary to the performance measures of its parent company is stronger if the two firms are in the same industry.

4. Research Design

4.1. Annual cash compensation regression

Following Murphy (1998), I adopt the following regression of managerial annual compensation.

$$LnPAY_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 Parent\_ROA_{it} + \sum \beta Control\ Variables_{it} + \varepsilon_{it}. \quad (1)$$

The dependent variable *lnPAY* is the natural logarithm of the average annual cash compensation for the top executives in my sample. During my sample period, this compensation was not required to be disclosed by individual. Instead, firms were required to disclose the total cash payment, including salaries, bonuses, and pensions

of their three highest-paid executives.

Firm performance is measured by *ROA*, which is defined as the ratio of annual operating income to year-end total assets. Parent company performance is measured by *Parent_ROA*, which is defined similarly to *ROA*. I do not include stock performance, as almost all of the parent companies in the sample are unlisted.

The managerial cash payment is affected by many factors aside from performance. I control for those factors by using the control variables of leverage ratio, the log of total assets, firm growth potential, and a dummy proxy for SOEs. I also control for year dummies and use the firm-fixed effect model to control for firm-specific effects.

4.2. CEO turnover regressions

I use the following regression to investigate the sensitivity of CEO turnover to firm performance (Murphy, 1999; Defond and Hung, 2004).

$$\Pr ob(Turnover) = \beta_0 + \beta_1 \begin{pmatrix} industry-adjusted \\ ROA \end{pmatrix}_{t-1} + \beta_2 \begin{pmatrix} industry-adjusted \\ Parent\_ROA \end{pmatrix}_{t-1} + \sum \beta ControlVariable \quad (2)$$

Following prior research, I measure CEO turnover as a binary dummy variable and use a logistic model, in which the dependent variable is equal to 1 if dismissal of CEO.

In the turnover models, the independent variables are the *industry-adjusted ROA*

in the listed firm and its parent company, and the control variables include CEO age, the leverage ratio, the log of total assets, a dummy proxy for SOE, and year dummies. *Industry-adjusted ROA* is defined as a firm's total operating income scaled by its year-end total assets minus the industry-median ROA in its two-digit SIC category. The industry-median ROAs for the listed firms are based on all of their industry peers that issue A-shares and are contained in the CSMAR database. The industry-median ROAs for the parent companies are based on their industry peers contained in the Annual Industrial Survey Database of the Chinese National Bureau of Statistics (NBS). I use *industry-adjusted ROA* in the year *t-1*, as CEO turnover is mainly determined by a firm's performance in the previous year. I also control for year dummies and industry dummies. Because I use panel data, I run the regression with controlling for firm-cluster effects.

5. Sample Selection and Descriptive Statistics

5.1. Sample selection

My empirical analyses require information on the listed firms' ownership structures, top executives' annual cash compensation, and accounting and stock return data. I obtained the required data from CSMAR, a leading provider of Chinese company financial data. As previously mentioned, during my sample period, the annual cash compensation of executives was not required to be disclosed by individual. Instead, firms were required to disclose: (1) the total cash payment, including salary, bonuses, and pensions, for all paid executives, directors, and supervisors; (2) total cash payment for the three highest-paid executives; and (3) total

cash payment for the three highest-paid directors. In my major test, I calculate the average annual cash compensation for the three highest-paid executives from (2). In the robustness test, I also use (1) and (3) to compute the average annual cash compensation.

I obtained a comprehensive list of listed subsidiaries and their parent companies from Fan, Jin, and Zheng (2008). Most of the parent companies on this list are unlisted. They hand-constructed their sample by comparing the names of the controlling shareholders of listed firms from the CSMAR database with the names of firms from the NBS's Annual Industrial Survey Database for the 1999-2005 period. The latter database covers Chinese industrial firms with annual sales of at least RMB 5 million (roughly US$600,000, according to the exchange rate on Dec. 31, 2005), regardless of whether they are listed. Numerous studies have used this database as a data source and confirmed that its data are accurate and representative of the national economy (Chuang and Hsu, 2004; Li et al., 2006; Fan et al., 2007). Financial and operating information on the parent companies were also obtained from the Annual Industrial Survey Database.

My CEO turnover data and profile information on directors and managers were retrieved from the Wind database, which contains detailed company office information for publicly traded firms in China. I do not differentiate between voluntary and involuntary turnover and retain observations for all CEO departures between 1999 and 2005. My sample consists of a promotion sample, the inclusion of which may reduce the test power. To alleviate this problem, I separate the sample

according to whether a firm's performance was better than that of the industry median. When a firm's ROA is less than that of the industry median, its CEOs are more likely to face dismissal for bad performance. The firm-years in which no turnovers occur make up the remainder of my sample.

I winsorize the top and bottom 1% of the financial variables to diminish the effect of outliers. Due to incomplete data for some items, the total number of observations varies across the estimation models.

5.2. Descriptive statistics

My sample consists of 1,942 firm-years during the 1999 to 2005 period. It includes firms for which I was able to obtain financial information for both the listed subsidiaries and their parent companies. As presented in Table 1, Panel A, the listed subsidiaries report mean and median *Log_totalassets* of 21.1968 and 21.1231, respectively. The sizes of the parent companies are comparatively small, with a mean of 14.8007 and a median of 14.7616. The mean (median) *ROA*s are 0.0398 (0.0422) for the listed firms and 0.0154 (0.0107) for their parent companies. The former exhibit better accounting performance than the latter, which is consistent with the findings of previous studies. Deng et al. (2006), for example, argue that in the IPO the most profitable part of a firm is carved-out for public listing, with the parent company retaining obsolete plant, excess workers, and financial liabilities. The mean (median) *leverage* measure is equal to 0.2001 (0.1908). The mean and median *MTB* ratios are approximately 2.24 and 1.8478. The mean (median) of average annual cash

compensation for top executives is approximately RMB 78,237 (RMB 80,000). With an exchange rate of approximately RMB 7 to the U.S. dollar, this is equivalent to only around US$11,178, a very small figure. The low level of cash pay can be explained in part by the low cost of living in China.

As reported in Table 1, Panel B, the departure rate for CEOs is 22.19%, which is quite similar to the percentage identified by Yuan (2008). He studied all of the listed firms that had issued A-shares between 2000 and 2004 and identified a CEO turnover rate of about 28%.

Table 1, Panel C reports the distribution of the sample by industry sector. Industry classification is based on the index of the Industrial Distribution of Listed Companies, issued by the China Securities Regulatory Commission (CSRC). I use the one-digit industry codes, except for the manufacturing sector, which accounts for 85.94% of the sample and for which I use two-digit industry codes. This panel shows that the sample ranges from 0.1% in Transportation & Storage to 23.74% in Machinery, Equipment, and Meters.

Table 2 reports the correlation coefficients of the key variables in the models. My measure of management compensation (*Ln_Pay*) shows a simple positive correlation with the performance measure of the listed firm (*ROA*) and its parent company (*Parent_ROA*). It also correlates positively with the firm size measure (*log_totalassets*), but negatively with firm growth potential (*MTB*). Consistent with previous studies, the compensation is negatively related with ownership type measure (*ownership_SOE*), which reveals the lower cash payment in SOEs. *CEO_turnover* is

negatively related to the performance measures of the subsidiaries and their parent companies, regardless of whether these figures are adjusted by *industry-median ROA*.

6. Hypotheses Tests

6.1. Compensation and turnover in business groups

The results of my first hypothesis test are shown in Table 3. I adopt an ordinary least squares regression model for management compensation that regresses the natural log of average compensation on the accounting performance measures and several control variables. I also include dummy variables that represent the year in which the observation is measured and add firm-fixed effects. Accounting performance is measured by *ROA* for a listed subsidiary and by *Parent_ROA* for its parent company. Consistent with the first hypothesis, compensation is significantly positively related to the accounting performance of a parent company.

I perform logit analysis to test for CEO turnover. In addition to the compensation regression, I use industry-adjusted ROA in year *t-1* as my accounting measure (Murphy, 1999; Defond and Hung, 2004). As predicted, both *indust_adjust_ROA* and *parent_indust_adjust_ROA* have negative coefficients. The coefficient of *indust_adjust_ROA* is significantly negative in the CEO turnover regression in Columns (3) and (4). This demonstrates that poor firm performance leads to a higher level of CEO turnover. However, the coefficient on *parent_indust_adjust_ROA* is insignificant, although it is negative in Column (4).

Because I do not distinguish forced from voluntary departures, my sample may include CEOs who have been promoted within the company or business group or

have obtained a better job outside of the corporate group. Therefore, I repeat this analysis separately according to whether a firm's accounting performance is greater than that of the industry median, and the results are presented in Table 4. If a firm's ROA is less than that of the industry median, then its CEO is more likely to have departed because of poor performance. In Table 4, the coefficient of *parent_indust_adjust_ROA* in Columns (2) is significantly negative.

In conclusion, I find that management compensation (turnover) in listed subsidiaries is sensitive to the performance measures of their parent companies. In the following analysis, I focus on firms whose performance is worse than the industry median.

6.2. Shareholder's ownership

In Table 5, I run the regression separately, according to the controlling shareholder's cash flow right. I use 30% as the breakpoint in my main tests. I obtained quite similar results to those reported in the tables, if I use 20% as the cut-off. My results indicates that management compensation (CEO turnover) in a listed subsidiary is significant positively (negatively) related to performance measures in its parent company, only when the percentage of shareholder ownership is greater than 30%. A T-test on the difference in the coefficients on *Parent_ROA(t)* across the two groups is statistically significant.

As expected, the ownership of the parent company on the listed subsidiary change changes the pay-for-performance sensitivity. When the shareholder's

ownership is high, the management compensation (CEO turnover) is more likely to be aligned with the interests of its parent company.

6.3. RPTs between a listed firm and its parent company

In Table 6, I partition the sample into two categories: *RPT_dummy* is equal to 1 if there are RPTs between a listed firm and its parent company (Columns 3-4), and to 0 otherwise (Columns 1-2). In the compensation regression (Column 3), the coefficient on *parent_ROA* is significantly positive, thus indicating a stronger relationship between compensation and performance if RPTs exist between the two firms. In the CEO turnover regressions, I only obtain significant result on the coefficient of *parent_indust_adjust_roa(t-1)* in Column 4. By comparing the coefficients on performance measures of the parent company across the models (Column 1 vs. Column 3, Column 2 vs. Column4), I find the coefficients on *parent_indust_adjust_roa(t-1)* are significantly different across two sub-samples (*T*-value=-1.72).

In conclusion, my results support my third hypothesis that the sensitivity of management compensation (CEO turnover) in a listed subsidiary to the performance measures in its parent company is stronger if RPTs exist between them.

6.4. Common directors and managers

In Table 7, I separate the sample into two groups according to whether the percentage of common directors and managers who take positions in both of the listed

subsidiary and its parent compensation is more or less than the median. The empirical results are inconsistent with each other. In the compensation regression (Column 1), the coefficient on *parent_ROA* is significantly positive. Column 4, however, shows that the coefficient on *parent_indust_adjust_ROA* is significantly negative in the CEO turnover regression. In contrast, the difference on coefficients of on performance measures of the parent company is only significant across Column 1 and Column 3.

6.5. Reputation

Table 8 reports the pay-for-performance sensitivity to a parent company separately, according to whether a listed firm and its parent have the same brand name. In Columns 1 and 2, the two firms do not use the same brand name, whereas those in Columns 3 and 4 do. In the compensation regression (Column 1 vs. Column 3), the coefficient on *Parent_ROA* is only significantly positive when the listed subsidiary and its parent company share the brand name. In the CEO turnover regression, the coefficient on *parent_indust_adjust_ROA* is only significantly negative in Column 4. The difference between the regression coefficients on performance measures of the parent company across Columns 1 and 3 (Columns 2 and 4) is significant (*T*-value=2.64 and -2.16).Therefore, when a subsidiary and its parent firm have the same brand name, management compensation and CEO turnover in the former are more likely to be sensitive to the performance measures of the latter.

6.6. Industry diversification

In Table 9, I separate the sample on the basis of industry category: *same_industry* is equal to 1 if a listed firm and its parent company are in the same industry (Columns 3-4), and to 0 otherwise (Columns 1-2). The results show that industry sector does matter. The coefficient on *parent_ROA* is significantly positive in the compensation regression (Column 3), and that on *parent_indust_adjust_ROA* is significantly negative in the CEO turnover regression (Column 4). I find no such results when the two firms are in different industry categories.

As expected, the industry distance between a listed subsidiary and its parent company changes the requirement for cooperation between the two. With an increased need for cooperation between the firms in the same industry category, pay-for-performance sensitivity to the parent company becomes stronger.

7. Robustness Tests

7.1. Full sample analysis

In Table 2 Panel B, Pairwise Pearson correlation among my variables (*Same_industry*, *Same_brand*, *RPT_dummy*, *Dual_percent*, *Shareholder_ownership*) which represent the association between the listed subsidiary and its parent company are generally significant (p-value<=0.05) but low (less than 0.2), with one exception: the correlation between *Dual_percent* and *Shareholder_ownership*, which is 0.2014.

I first regress the management compensation and CEO turnover on performance measures of the listed subsidiary and its parent company across different firms. The coefficients on *parent_ROA* and *parent_indust_adjust_ROA* are calculated from the

models for each firm. Table 10 Panel A indicates the mean and median of the coefficients on my performance measures of the parent companies are highly significant and of the predicted signs. The findings in Table 3, Table 4, and Table 10 are consistent.

When b_2 (by firm: $LnPay=a+b_1*ROA_{(t)}+b_2*Parent\_roa_{(t)}+\varepsilon$) is greater than 0, $Dummy\_b_2$ is 1, and 0 otherwise. When d_2 (by firm: $CEO\_turnover=c+d_1*indust\_adjust\_roa_{(t-1)}+d_2*parent\_indust\_adjust\_roa_{(t-1)}+\varepsilon$) is less than 0, $Dummy\_d_2$ is 1, and 0 otherwise. In Table 10 Panel B, I estimate the relations between $Dummy\_b_2$($Dummy\_d_2$) and my variables (*Same_industry*, *Same_brand*, *RPT_dummy*, *Dual_percent*, *Shareholder_ownership*) using *Logit* regression. The results for Models 1 and 2 indicate that only the coefficients on *Same_brand* and *Dual_percent* are significantly positive.

7.2. Alternative compensation measures

In addition to the total cash compensation of the three highest-paid executives, the firms in the sample were required to disclose the total cash compensation to all paid executives, directors, and supervisors and the total cash compensation of the three highest-paid directors. Using these two measures to proxy for management compensation, I obtained quite similar results to those reported in the tables.

7.3. Alternative performance measures

One concern in this study is that the performance of listed subsidiaries is highly correlated with that of their parent companies just because they are in the same

industry. Therefore, I repeat my analysis using industry-adjusted performance in both the compensation and turnover regressions. I also run all of the regressions with firm raw performance. In both of these sensitivity tests, however, I obtain quite similar results to those reported in the tables.

7.4. Alternative regression models

A potential problem in compensation regression is that management payment is from a restricted part of the population. Salary need to be greater than 0 to be included in the sample. In addition, there is a ceiling on management compensation in SOEs in China. Critics could opportunistically use the high managerial cash compensation as evidence of managerial entrenchment and expropriation of state-owned assets. With floors and ceilings to management compensation, it may not be suitable to use ordinary least square regression model. I perform sensitivity tests that use truncated regression models in compensation regressions. The results are still consistent with my conclusion that the compensation in a listed subsidiary is positively associated with the performance of its parent company.

7.5. Relative size between a listed firm and its parent company

The relative size between the listed subsidiary and its parent company may affect the weight put on performance of the parent company. In Table 11, I separate the sample on the basis of their relative size: *Relative_size* is greater than sample median (Columns 1-2), and less than sample median (Columns 3-4). The coefficient on

parent_ROA is significantly positive in the compensation regression (Column 3), and that on *parent_indust_adjust_ROA* is significantly negative in the CEO turnover regression (Column 4). I find no such results when the listed subsidiary is considerably larger than its parent company. The results can be partly explained in terms of the bargaining power between the two firms: the managers in the listed subsidiary are less likely affected by the parent company, when the listed subsidiary is extremely large.

7.6. Correlation between performance of the listed subsidiary and that of its parent company

One concern for my study is that I obtain the results because of the spurious correlation between management compensation (CEO turnover) of the listed subsidiary and performance of its parent company. For instance, the parent and listed subsidiary are in the same businesses. Their performances are highly correlated. In Table 12 shows the pay-for-performance sensitivity for the two groups of firms, according to the absolute value of correlation between performance of the listed subsidiary and that of its parent company. Whenever *abs(corr_ROA)* is greater or less than median, the coefficients on *Parent_ROA(t)* and *parent_indust_adjust_roa(t-1)* are significant and of the predicted sign. Therefore, the correlation between performance of the listed subsidiary and that of its parent company can not be an explanation of my results.

7.7. Common directors versus common managers

I repeat the analysis by separating common directors and common managers. This analysis finds that the results in Table 7 remain qualitatively unchanged. Both the common directors and managers have similar results.

7.8. Other listed firms in the same business group

Within a business group, cooperation is required not only between the parent company and its member firms, but also between two or more member firms. To facilitate the relocation and transfer of resources among business members, and to motivate cooperation among them, managerial pay may also be designed to put weight on the performance of the other firms in the group.

Therefore, I investigate the sub-group of my sample in which the parent company controls at least two listed firms, and the results are reported in Table 13. The sample now drops to 104 for the compensation regression and to 24 for the turnover regressions. Because these samples are small, I do not use the firm-fixed effect model. The small size of these samples also means that the results should be interpreted with caution. As can be seen in Table 13, all of the coefficients on the accounting performance of another listed subsidiary are insignificant. In general, I find that management compensation (turnover) in listed subsidiaries is insensitive to the performance of other firms in the same group. One possible explanation is that the managers of one subsidiary have little influence over the management incentive system in another subsidiary at the same level, whereas the managers in the parent company have a direct effect on deciding the compensation and turnover of the

managers of its subsidiaries.

8. Conclusion

In this study, I use a unique sample of Chinese business groups to test the sensitivity of managerial compensation (turnover) in listed subsidiaries to the performance of their parent companies. By extension, I investigate the effects of association between the listed subsidiary and its parent company on pay-for-performance sensitivity to a parent company. The association between the two firms is measured by the controlling shareholder's ownership over the listed firm, the related party transactions between them, the existence of the common directors and managers, having the same brand name, and their industry diversification. I measure managerial pay-for-performance sensitivity in two ways: 1) by managerial annual cash compensation; and 2) by CEO turnover.

Consistent with my prediction that cooperation is required to align the interests of managers in the member firms with those of its parent company, I find that management compensation (CEO turnover) in listed subsidiaries is sensitive to the performance measures in their parent companies. Management compensation (CEO turnover) in a listed subsidiary is significant positively (negatively) related to performance measures in its parent company when the controlling shareholder's ownership is high. When RPTs exist between a listed subsidiary and its parent company, management compensation (CEO turnover) in the former are related to the performance of the latter. When both firms use the same brand name, management compensation (CEO turnover) in the member firm is more likely to be sensitive to the

performance measures of its parent company.

My results have several implications for the literature. First, this study adds to compensation research by investigating the managerial incentive systems in business groups. Unlike stand-alone firms in the United States or Britain, the member firms in a business group in China have quite different incentive systems. In the presence of correlations among the components of a business, the actions of a particular manager may affect both the performance of his or her own firm and that of the other firms in the same business group. In addition, to facilitate the expropriation of minority shareholders from the listed subsidiary, the parent company has the incentive to align the interests of the managers in the member firms with its own. I demonstrate how the interests of a manager in a member firm may be aligned with those of the parent company by the compensation incentive system. Second, my results complement recent international research on business groups, which are widespread in developing regions. This body of work fails to explain a substantial number of the characteristics of business groups. The incentive systems in this type of business structure pose interesting research questions.

Several caveats must be kept in mind when interpreting my findings. First, my study of compensation is limited to consideration of cash payments. In addition to cash payments, substantial perquisites are made available to Chinese executives, including housing, imported cars, telecommunications equipment, and food and drink expenses (Cai et al., 2005). However, I also investigate CEO turnover, which may overcome this limitation. Second, I do not distinguish forced from voluntary

departures and do not examine whether CEOs who have been replaced have been promoted within the company or business group or have accepted a better job outside of the corporate group. To alleviate this problem, I separate my sample according to whether a firm's performance is better than that of the industry median. The study then focuses on those firms whose performance is worse than that of the industry median, as CEOs in this category are more likely to have departed because of poor performance.

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Table 1 Descriptive Statistics

This table presents the descriptive statistics for the full sample of 1,942 firm-year observations over the 1999 to 2005 period. The variable definitions are listed in the Appendix. I winsorize the top and bottom 1% of the financial variables to diminish the effect of outliers.

Table 1 Panel A Summary Statistics

	N	Mean	Median	Standard Deviation
log_totalassets	1942	21.1968	21.1231	0.8834444
parent_log_totalassets	1935	14.8007	14.7616	1.19213
ROA	1942	0.0398	0.0422	0.0632913
parent_ROA	1934	0.0154	0.0107	0.0449472
leverage	1942	0.2001	0.1908	0.1367675
stock_return	1750	0.008	-0.0201	0.2709709
RISK	1750	0.07142	0.0639	0.0343855
MTB	1942	2.24	1.8478	1.291343
LnPay	1596	11.2675	11.2898	0.9199

Table 1 Panel B CEO turnover

		turnover=0	turnover=1	total
CEO	Number	1,284	358	1,642
	Percentage	77.81%	22.19%	100.00%

Table 1 Panel C Sector distribution of the sample

csrc_code	Industry	Frequency	Percent
A	Agriculture	17	0.88%
B	Mining	64	3.30%
C	Manufacturing	1,669	85.94%
C0	Food, Beverage	127	6.54%
C1	Textile, Apparel, Leather	93	4.79%
C2	Wood Product	3	0.15%
C3	Paper, Printing	63	3.24%
C4	Petroleum, Chemical Product, Rubber, Plastics	365	18.80%
C5	Electronic Equipment	72	3.71%
C6	Metal, Nonmetallic Mineral Product	362	18.64%
C7	Machinery, Equipment, Meter	461	23.74%
C8	Medicine, Biologic Products	110	5.66%
C9	Other manufacturing	13	0.67%
D	Electricity, Gas, Water Supply	55	2.83%
E	Construction	5	0.26%
F	Transportation & Storage	2	0.10%
G	Information, Technology	82	4.22%
H	Wholesale and Retail Trade	16	0.82%
J	Real Estate	4	0.21%
K	Social Services	3	0.15%
M	Conglomerate	25	1.29%
	Total	1,942	100.00%

Table 2 Correlation Matrix

Panel A This table reports the Pearson correlation coefficients between pairs of the variables of management compensation (CEO turnover) and financial characteristics. *denotes significance at the 5% level. The variable definitions are listed in the Appendix.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	Lnpay	1											
(2)	CEO turnover	-0.1056*	1										
(3)	ROA	0.2782*	-0.1409*	1									
(4)	Parent_ROA	0.2368*	-0.0414	0.4446*	1								
(5)	Indust_adjust_ROA(t-1)	0.3069*	-0.1416*	0.6611*	0.3992*	1							
(6)	Parent_indust_adjust_ROA(t-1)	0.1844*	-0.035	0.3127*	0.7183*	0.4258*	1						
(7)	Log_totalassets	0.2625*	-0.0468	0.2772*	0.1721*	0.3105*	0.1613*	1					
(8)	Parent_log_totalassets	0.1581*	-0.0325	0.2477*	0.2120*	0.2388*	0.1761*	0.678*	1				
(9)	Leverage	-0.0651*	-0.0215	0.3281*	-0.1750*	-0.2101*	-0.1058*	0.0479	-0.0729*	1			
(10)	MTB	-0.1834*	0.0028	0.0068	-0.0352	-0.0083	0.011	-0.4306*	-0.2379*	-0.1985*	1		
(11)	RISK	0.1688*	-0.0161	-0.0299	0.0503*	-0.0099	-0.0503	0.0702*	0.029	0.0541*	0.0905*	1	
(12)	Ownership_SOE	-0.0791*	-0.0141	-0.0268	-0.2119*	-0.0532	-0.2116*	0.1416*	0.1532*	-0.0323	0.0367	0.0736*	1

Panel B This table reports the Pearson correlation coefficients between pairs of the variables which represent the association between the listed subsidiary and its parent company. *denotes significance at the 5% level. The variable definitions are listed in the Appendix.

		(1)	(2)	(3)	(4)	(5)
(1)	Same_industry	1				
(2)	Same_brand	0.1226*	1			
(3)	RPT_dummy	0.0600*	0.1265*	1		
(4)	Dual_percent	0.0648*	0.1255*	0.1291*	1	
(5)	Shareholder_ownership	0.1525*	0.1542*	0.1643*	0.2014*	1

Table 3 Regression of Management compensation and CEO turnover

This table reports the regression results for the effect of performance measures in the parent companies on management compensation and CEO turnover. The variable definitions are listed in the Appendix. Due to incomplete data for some items, the total number of observations varies across the estimation models.

	Lnpay		CEO Turnover	
	(1)	(2)	(3)	(4)
ROA(t)	1.635***	1.423***		
	(5.60)	(4.60)		
Parent_ROA(t)		1.068**		
		(2.15)		
indust_adjust_roa(t-1)			-6.361***	-6.151***
			(3.87)	(3.50)
parent_indust_adjust_roa(t-1)				-0.977
				(0.39)
log_totalassets	0.335***	0.299***	-0.080	-0.065
	(5.30)	(4.66)	(0.61)	(0.49)
leverage	-0.572***	-0.560***	-1.721***	-1.759***
	(2.96)	(2.89)	(2.67)	(2.72)
MTB	0.030	0.023	-0.300*	-0.294*
	(1.45)	(1.13)	(1.95)	(1.91)
ownership_SOE	0.375**	0.317**	-0.164	-0.203
	(2.55)	(2.13)	(0.67)	(0.83)
CEO_age			-0.002	-0.003
			(0.13)	(0.19)
Constant	4.190***	5.002***	2.461	2.232
	(3.09)	(3.63)	(0.74)	(0.67)
Year Dummy	Y	Y	Y	Y
Industry Dummy			Y	Y
Firm_fixed	Y	Y		
Firm_cluster			Y	Y
Observations	1413	1407	1096	1092
R-squared/Pseudo R^2	0.49	0.49	0.057	0.058

Absolute value of t statistics in parentheses

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

Table 4 Regression of Management compensation and CEO turnover classified by firm performance

This table reports the regression results of CEO turnover separately according to whether a firm's accounting performance is greater than that of the industry median. The variable definitions are listed in the Appendix.

	CEO Turnover	
	ROA(t-1)>industry median ROA(t-1)	ROA(t-1)<=industry median ROA(t-1)
	(1)	(2)
indust_adjust_roa(t-1)	-8.671*	-5.800*
	(1.85)	(1.89)
parent_indust_adjust_roa(t-1)	5.413	-11.149***
	(1.59)	(2.84)
log_totalassets	-0.061	-0.163
	(0.34)	(0.80)
leverage	-2.343**	-1.434
	(2.48)	(1.39)
MTB	-0.287	-0.401*
	(1.14)	(1.73)
ownership_soe	0.024	-0.180
	(0.08)	(0.40)
ceo_age	0.006	-0.002
	(0.33)	(0.12)
Constant	0.653	3.378
	(0.18)	(0.75)
Year Dummy	Y	Y
Industry Dummy	Y	Y
Firm_cluster	Y	Y
Observations	598	477
Pseudo R^2	0.048	0.124

Robust z statistics in parentheses

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

Table 5 Regression of Management compensation and CEO turnover classified by shareholder ownership

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified by shareholder ownership. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	Shareholder_ownership<30%		Shareholder_ownership>=30%	
	(1)	(2)	(3)	(4)
	Lnpay	CEO Turnover	Lnpay	CEO Turnover
ROA(t)	1.517		0.928	
	(0.48)		(1.01)	
Parent_ROA(t)	-2.134		3.603**	
	(0.52)		(2.33)	
indust_adjust_roa(t-1)		-1.224		-5.013
		(0.16)		(1.51)
parent_indust_adjust_roa(t-1)		-4.176		-13.380***
		(0.30)		(2.74)
log_totalassets	-0.391	-0.964	0.192	-0.036
	(0.58)	(1.12)	(1.00)	(0.17)
leverage	0.978	-2.911	-0.382	-0.747
	(0.45)	(1.07)	(0.70)	(0.63)
MTB	-0.294	-0.483	-0.036	-0.389
	(1.34)	(0.57)	(0.59)	(1.46)
ownership_soe	0.155	0.906	0.714	-0.335
	(0.21)	(1.02)	(0.77)	(0.65)
ceo_age		-0.011		0.002
		(0.15)		(0.09)
Constant	19.555	21.302	6.225	-2.212
	(1.38)	(1.20)	(1.46)	(0.48)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	225	51	1276	404
R-squared/Pseudo R^2	0.13	0.155	0.12	0.136

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	3.52***
parent_indust_adjust_roa(t-1)	-0.65

Absolute value of t statistics in parentheses

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

Table 6 Regression of Management compensation and CEO turnover classified by the existence of Related Party Transactions

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified according to whether RPTs exists between the listed subsidiary and its parent company. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	RPT_dummy=0		RPT_dummy=1	
	(1)	(2)	(3)	(4)
	Lnpay	CEO Turnover	Lnpay	CEO Turnover
ROA(t)	1.848***		1.100***	
	(2.99)		(3.16)	
Parent_ROA(t)	0.240		1.448***	
	(0.19)		(2.82)	
indust_adjust_roa(t-1)		-6.446		-6.794*
		(1.16)		(1.73)
parent_indust_adjust_roa(t-1)		4.992		-15.966***
		(0.45)		(3.01)
log_totalassets	0.339**	-0.313	0.355***	0.072
	(2.00)	(0.73)	(5.11)	(0.28)
leverage	-0.687	-3.745*	-0.478**	-1.757*
	(1.36)	(1.81)	(2.38)	(1.66)
MTB	0.061	-0.799	0.026	-0.058
	(1.49)	(1.63)	(0.99)	(0.20)
ownership_soe	0.406	1.739	0.125	-0.745
	(1.44)	(1.15)	(0.67)	(1.42)
ceo_age		-0.038		0.004
		(0.96)		(0.15)
Constant	4.219	8.955	3.900***	-1.761
	(1.17)	(0.95)	(2.59)	(0.30)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	425	88	1155	376
R-squared/Pseudo R^2	0.44	0.141	0.53	0.153

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	0.88
parent_indust_adjust_roa(t-1)	-1.72*

Absolute value of t statistics in parentheses

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

Table 7 Regression of Management compensation and CEO turnover classified by the percentage of the common directors and managers

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified by the percentage of the common directors and managers between the listed subsidiary and its parent company. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	Dual_percent<Median		Dual_percent>=Median	
	(1)	(2)	(3)	(4)
	Lnpay	CEO Turnover	Lnpay	CEO Turnover
ROA(t)	2.085***		0.815*	
	(4.89)		(1.68)	
Parent_ROA(t)	2.563***		0.277	
	(3.57)		(0.37)	
indust_adjust_roa(t-1)		-3.818		-13.929**
		(1.24)		(2.36)
parent_indust_adjust_roa(t-1)		-7.761		-25.465**
		(1.51)		(2.37)
log_totalassets	0.234**	-0.173	0.388***	-0.256
	(2.29)	(0.73)	(3.76)	(0.48)
leverage	0.273	-1.683	-0.829***	0.292
	(0.93)	(1.27)	(2.84)	(0.14)
MTB	0.072*	-0.307	0.021	-0.386
	(1.70)	(1.11)	(0.61)	(0.64)
ownership_soe	0.282	0.255	0.254	0.517
	(1.33)	(0.44)	(0.80)	(0.54)
ceo_age		-0.018		0.010
		(0.78)		(0.22)
Constant	6.172***	4.238	3.210	4.128
	(2.83)	(0.83)	(1.43)	(0.37)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	713	253	701	196
R-squared/Pseudo R^2	0.38	0.092	0.49	0.237

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	-2.17**
parent_indust_adjust_roa(t-1)	-1.49

Absolute value of t statistics in parentheses

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

Table 8 Regression of Management compensation and CEO turnover classified by using the same brand name

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified according to whether the listed subsidiary and its parent company use the same brand. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	Same_brand=0		Same_brand=1	
	(1)	(2)	(3)	(4)
	Lnpay	CEO Turnover	Lnpay	CEO Turnover
ROA(t)	0.798		1.431***	
	(1.26)		(3.91)	
Parent_ROA(t)	-1.434		2.058***	
	(1.21)		(3.61)	
indust_adjust_roa(t-1)		-5.630		-4.645
		(1.03)		(1.19)
parent_indust_adjust_roa(t-1)		3.362		-18.346***
		(0.41)		(3.22)
log_totalassets	0.241*	-0.348	0.254***	0.012
	(1.67)	(0.98)	(3.31)	(0.04)
leverage	-1.010**	1.229	-0.453**	-2.434*
	(2.40)	(0.69)	(1.99)	(1.86)
MTB	-0.008	-0.442	0.015	-0.274
	(0.16)	(0.55)	(0.63)	(0.96)
ownership_soe	0.549	0.531	0.180	-0.390
	(1.52)	(0.69)	(1.01)	(0.79)
ceo_age		-0.023		0.009
		(0.56)		(0.36)
Constant	6.456**	6.585	5.974***	-1.446
	(2.06)	(0.79)	(3.62)	(0.24)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	303	92	1036	356
R-squared/Pseudo R^2	0.45	0.115	0.52	0.168

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	2.64***
parent_indust_adjust_roa(t-1)	-2.16**

Absolute value of t statistics in parentheses

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

Table 9 Regression of Management compensation and CEO turnover classified by industry category

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified according to whether the listed subsidiary and its parent company are in the same industry category. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	Same_industry=0		Same_industry=1	
	(1)	(2)	(3)	(4)
	Lnpay	CEO Turnover	Lnpay	CEO Turnover
ROA(t)	1.830***		1.287***	
	(3.47)		(3.39)	
Parent_ROA(t)	1.153		1.504**	
	(1.26)		(2.55)	
indust_adjust_roa(t-1)		-21.277**		-3.485
		(2.22)		(1.21)
parent_indust_adjust_roa(t-1)		-7.634		-10.905**
		(0.62)		(2.54)
log_totalassets	0.184	-0.059	0.325***	-0.201
	(1.39)	(0.14)	(4.33)	(0.82)
leverage	0.048	-5.085**	-0.512**	-0.994
	(0.13)	(2.09)	(2.16)	(0.73)
MTB	0.098**	-0.178	-0.008	-0.402
	(2.28)	(0.35)	(0.32)	(1.64)
ownership_soe	0.410**	0.178	0.110	-0.355
	(2.29)	(0.19)	(0.33)	(0.69)
ceo_age		-0.077		0.006
		(1.30)		(0.26)
Constant	7.369***	5.490	4.541***	1.099
	(2.60)	(0.59)	(2.77)	(0.21)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	384	116	1023	357
R-squared/Pseudo R^2	0.50	0.243	0.50	0.117

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	0.32
parent_indust_adjust_roa(t-1)	-0.25

Absolute value of t statistics in parentheses

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

Table 10 Full sample analysis

Panel A reports the coefficients on performance measures of the parent companies from the regressions across different firms. b_2 and d_2 is calculated for each firm. Wilcoxon signed-rank and t statistics are reported in parentheses.

Panel B shows the effects of the association between the listed subsidiary and its parent company on pay-performance sensitivity to performance measure of the parent company. When b_2 is greater than 0, Dummy_b_2 equals 1, and 0 otherwise. When d_2 is less than 0, Dummy_d_2 is equal to 1, and 0 otherwise.

Panel A

by firm: $LnPay=a+b_1*ROA_{(t)}+b_2*Parent\_roa_{(t)}+\varepsilon$

by firm: $CEO\_turnover=c+d_1*indust\_adjust\_roa_{(t-1)}+d_2*parent\_indust\_adjust\_roa_{(t-1)}+\varepsilon$

	b_2	d_2
Mean	6.5784***	-10.8411***
(T test)	(4.118)	(-2.810)
Median	0.7339***	0**
(Wilcoxon signed-rank test)	(5.789)	(-2.063)

Panel B

Dummy_b_2=1 if b_2 is greater than 0;0 otherwise

Dummy_d_2=1 if d_2 is less than 0;0 otherwise

	(1)	(2)
	Dummy_b_2	Dummy_d_2
same_brand	0.798***	-0.300
	(5.86)	(1.05)
RPT_dummy	-0.065	-0.048
	(0.51)	(0.17)
dual_percent	0.970**	-0.070
	(2.01)	(0.07)
dual_dummy	-0.247	-0.253
	(1.31)	(0.64)
shareholder_ownership	0.004	0.009
	(1.00)	(1.11)
same_industry	0.062	0.239
	(0.41)	(0.68)
Constant	0.894	-1.558*
	(1.06)	(1.89)
Industry Dummy	Yes	Yes
Observations	1549	474
Pseudo R^2	0.048	0.064

Absolute value of z statistics in parentheses

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

Table 11 Regression of Management compensation and CEO turnover classified by relative size

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified by relative size of the listed subsidiary and its parent company. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	Relative_size>=Median		Relative_size<Median	
	(1)	(2)	(3)	(4)
	Lnpay	CEO Turnover	Lnpay	CEO Turnover
ROA(t)	2.967***		1.310	
	(4.49)		(1.64)	
Parent_ROA(t)	1.567		3.536***	
	(1.55)		(2.61)	
indust_adjust_roa(t-1)		-9.670*		-2.942
		(1.70)		(0.62)
parent_indust_adjust_roa(t-1)		-4.458		-21.867***
		(0.71)		(3.06)
log_totalassets	0.313***	-0.557	0.114*	-0.069
	(4.61)	(1.21)	(1.95)	(0.25)
leverage	-0.184	-1.427	-0.376	-3.088**
	(0.52)	(1.01)	(1.14)	(2.27)
MTB	0.171***	-0.216	0.088*	-0.804**
	(3.53)	(0.53)	(1.88)	(2.29)
ownership_soe	-0.132	-0.947**	-0.137	
	(1.03)	(2.00)	(1.14)	
ceo_age		0.000		-0.009
		(0.00)		(0.29)
Constant	4.881***	11.143	9.176***	3.080
	(3.35)	(1.13)	(7.44)	(0.50)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	713	237	687	215
R-squared/Pseudo R^2	0.30	0.15	0.38	0.16

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	1.17
parent_indust_adjust_roa(t-1)	-1.82*

Robust t statistics in parentheses

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

Table 12 Regression of Management compensation and CEO turnover classified by the correlation between performance of the listed subsidiary and that of its parent company

This table shows the comparison of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the parent companies classified by the absolute value of correlation between performance of the listed subsidiary and that of its parent company. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	abs(corr_ROA)<Median		abs(corr_ROA)>=Median	
	(1)	(2)	(3)	(4)
	lnpay	CEO turnover	lnpay	CEO turnover
ROA(t)	2.353***		1.471	
	(2.92)		(1.58)	
Parent_ROA(t)	2.886**		3.280**	
	(2.40)		(2.37)	
indust_adjust_roa(t-1)		3.129		-11.184*
		(0.76)		(1.84)
parent_indust_adjust_roa(t-1)		-14.749**		-12.864*
		(2.02)		(1.66)
log_totalassets	0.166**	-0.460	0.168**	0.932**
	(2.19)	(0.82)	(2.50)	(2.32)
leverage	-0.503	-2.262	-0.071	-5.520***
	(1.35)	(0.93)	(0.17)	(2.71)
MTB	0.167***	-0.309	0.129**	-0.616
	(3.04)	(0.55)	(2.37)	(1.04)
ownership_soe	-0.049	0.177	-0.012	0.837
	(0.37)	(0.25)	(0.09)	(1.40)
ceo_age		0.003		0.049
		(0.07)		(1.30)
Constant	8.001***	6.506	7.746***	-21.647**
	(4.87)	(0.56)	(5.58)	(2.22)
Year Dummy	Y	Y	Y	Y
Industry Dummy		Y		Y
Firm_fixed	Y		Y	
Firm_cluster		Y		Y
Observations	645	100	634	191
R-squared/Pseudo R^2	0.30	0.19	0.27	0.21

T-test for the difference between the regression coefficients on performance of the parent company across two sub-samples

	T-value
Parent_ROA(t)	0.21
parent_indust_adjust_roa(t-1)	0.18

Robust t statistics in parentheses

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

Table 13 Regression of Management compensation (CEO turnover) in a listed subsidiary and the performance of the other firms in the group

This table reports the regression results of the pay-performance sensitivity of management compensation and CEO turnover to performance measures in the other listed firms in the same business group. In CEO turnover regressions, my sample only includes the firms whose performance is worse than the industry median. The variable definitions are listed in the Appendix.

	Lnpay		CEO Turnover	
	(1)	(2)	(3)	(4)
ROA(t)	-2.873**	-2.873**		
	(2.21)	(2.17)		
Parent_ROA(t)	2.764*	2.764*		
	(1.73)	(1.72)		
related_ROA(t)		0.002		
		(0.00)		
indust_adjust_roa(t-1)			-19.398	-25.275
			(1.57)	(1.61)
parent_indust_adjust_roa(t-1)			27.816	13.586
			(0.71)	(0.32)
Related_indust_adjust_roa(t-1)				18.432
				(1.03)
log_totalassets	0.195**	0.195**	0.931	1.078
	(2.13)	(2.12)	(1.31)	(1.57)
leverage	-0.818	-0.818	2.349	3.151
	(1.06)	(1.07)	(0.65)	(0.64)
MTB	0.146***	0.146**	0.081	0.161
	(2.92)	(2.66)	(0.13)	(0.31)
ownership_soe	-0.512**	-0.512**		
	(2.41)	(2.51)		
ceo_age			0.107	0.160
			(0.65)	(0.77)
Constant	9.157***	9.157***	-26.866	-33.320
	(4.09)	(4.08)	(1.30)	(1.53)
Year Dummy	Yes	Yes	No	No
Industry Dummy	Yes	Yes	No	No
Firm cluster	Yes	Yes	Yes	Yes
Observations	104	104	24	24
R-squared/Pseudo R^2	0.76	0.76	0.205	0.252

Robust t statistics in parentheses

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

Appendix: Variable Definitions

Variable	Definition
Lnpay	the natural logarithm of the average annual cash compensation for the three highest-paid executives
CEO Turnover	a dummy variable: 1 if dismissal of CEO, 0 otherwise
ROA	operating income/total assets in listed firm
parent_ROA	operating income/total assets in parent company
related_ROA	operating income/total assets in other listed firm in the same business group
indust_adjust_roa(t-1)	industry median-adjusted ROA in the listed firm
parent_indust_adjust_roa (t-1)	industry median-adjusted ROA in the parent company
related_indust_adjust_roa(t-1)	industry median-adjusted ROA in the related listed firm in the same business group
log_totalassets	log of total assets
parent_log_totalassets	log of total assets in parent company
leverage	(short_term_debts+long_term_debts+bond)/total_assets
risk	standard deviation of monthly returns on stock in year t
MTB	(total liabilities+market value of owner's equity)/total_assets
ownership_SOE	a dummy variable: 1 if the ultimate owner is government agencies or state-owned enterprises; 0 otherwise
RPT_dummy	a dummy variable: 1 if RPTs exist between the listed firm and its parent company
dual_percent	The percentage of common directors and managers in the listed subsidiary who also work in its parent company
dual_dummy	a dummy variable: 1 if the percentage of common directors and managers is greater than the sample median
same_brand	a dummy variable: 1 if the listed subsidiary and its parent company use the same brand name
same_industry	a dummy variable: 1 if the listed subsidiary and its parent company belong to the same industry
shareholder_ownership	the controlling shareholder's cash flow right
relative_size	log of total assets in listed subsidiary/log of total assets in parent company
corr_ROA	correlation between the performance of the listed subsidiary and that of its parent company
CEO_age	the age of CEO