# The Determinants of Board Structure and Firm Long-run Performance of Chinese SMEs

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# The Determinants of Board Structure and Firm Long-run Performance of Chinese SMEs

by

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#### ABSTRACT

This study examines the factors determining board structure at IPO, as well as the long-run performance of firms after their IPO in the context of China—a transitional economy. Specifically, three characteristics of the board are considered: board size, board composition (i.e outsider ratio) and board political connection (i.e CCP membership ratio). This study focuses on the roles that two contrasting institutional investors – state and venture capitalist (VC) play on board structure and the long-run performance of firms. Based on a sample of 217 Chinese SMEs listed on the SME board of Shenzhen Stock Exchange for the period of 2004 to 2010, the results suggest that state ownership is positively associated with board size and CCP membership ratio and negatively associated with outsider ratio. In addition, there is a negative relationship between state ownership and firm long-run performance and this relationship is mediated by board structure. Contrary to the findings in developed markets, this study suggests that VC involvement does not lead to more efficient board structure and superior performance in Chinese SMEs.

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#### **1. Introduction**

Agency problem, which is induced by the separation of ownership and control, is widely believed to exist in publicly owned firms (Berle and Means, 1932). Agency problem exists because principals (shareholders) and agents (managers) have conflicting interests (Eisenhardt, 1989; Holstrom, 1979). Shareholders are interested in maximizing the value of the firm, but managers' interests are not always aligned with the shareholders. Managers' objectives may also include pursuing personal wealth, job security and political goals (Rechner and Dalton, 1991; Westphal and Zajac, 1995; Fan et al. 2007).

The board of directors of a corporation, which has a fiduciary duty to protect stockholders' interests, is one mechanism to mitigate the agency problem arising from the separation of ownership and control (Fama and Jensen, 1983). The central role of the board of directors in corporate governance is thus to monitor top management and oversee important business plan. Along with their legal duties of reviewing the firm's major plans, directors are endowed with the power to monitor, evaluate and determine the compensation package of the top managers of the firm (Conyon and Peck, 1998). In extreme cases, directors will replace the CEO if his performance is poor (Weisbach, 1988). Hence, the structure of the board (e.g board size, board composition) should have an impact on firm value and performance. Extensive studies have considered the influence of board structure on firm performance (Hermalin and Weisbach, 1998; Yermack, 1996).

Initial public offering (IPO), which is the first time that private firms raise capital in a public equity market (Baker and Gompers, 2003), determines the ability of firms to invest in new projects and thus will consequently influence their long-run performance. However, private firms undertaking IPOs suffer from information asymmetry problems (Rock, 1986)—it is difficult for the potential investors to identify firm quality. Since the firm owners, especially those of high-quality firms, want to maximize the price at which they can sell their shares, they are strongly motivated to demonstrate firm quality to potential investors. According to signaling theory (Spence, 1973), an effective signal must satisfy two criteria: observable/known in advance and costly/difficult to imitate. Since firms undertaking IPO must include director biographical information in the prospectus so that all the potential investors are able to observe, and affiliations with poorly performing firms may damage the reputations of the directors (Gilson, 1990), hence, Certo (2003) argues that board structures represent credible information that signals firm quality.

Because of its importance in the firm's IPO process and long-run performance, scholars attempt to determine what an effective board looks like. These studies mainly focused on four board characteristics: board size, board composition, board leadership structure and board reputation. However, the relationships between these variables and firm performance have been found to be inconsistent. For example, Jensen (1993), Lipton and Lorsch (1992), Yermack (1996) suggest that large boards can be less effective than small boards, while Alexander, Fennell and Halpern (1993), and Dalton,

Daily, Ellstrand and Johnson (1999) found evidence that larger boards are more beneficial. In addition, MacAvoy et al. (1983), Hermalin and Weisbach (1991), Mehran (1995), Klein (1998), and Bhagat and Black (1999) all report insignificant relationships between board composition (i.e. fraction of outside directors on the board) and accounting performance. One possible explanation is the endogeneity problem (Hermalin and Weisbach, 1998)—poor performance leads to increases in board independence.

A large body of literature attempts to identify the determinants of board structure, and one stream of studies focused specifically on the role of CEO. Unfortunately, whilst corporate law requires that shareholders choose the board of directors, in practice, directors are selected by the very managers they are supposed to monitor (Mace, 1971; Lorsch and MacIver, 1989). In the absence of effective contract that resolves agency problem, CEO has incentives to shape the board to favor himself. Empirical results suggest that board independence, as measured by the fraction of outside directors, decreases with CEO power (Hermalin and Weisbach, 1998; Yermack, 1999; Baker and Gompers, 2003). Hence, CEO power (e.g. Age, Tenure, Chairmen Duality) is believed to have a negative influence on board effectiveness and firm's long-run performance.

Another stream of studies examined the influence of financial intermediary on board structure. Venture capitalists (VC), who are typically active investors that try to add

value to their portfolio companies and make a profit by taking them public, have incentives to ensure that the board structure of their portfolio companies is optimal. Prior studies have documented that venture capitalists play a role in CEO turnover and appointment of outside directors (Hellmann and Puri, 2002; Baker and Gompers 2003; Hochberg, 2008). Hermalin and Weisbach (1998) argued that board structure is the outcome of bargaining between venture capitalists and CEO.

The contribution of this study is three-fold. First, although most studies on board structures and long-run performance are conducted in the context of developed economies (e.g Hermalin and Weisbach, 1998; Yermack, 1996), a growing body of literature focuses on emerging economies as they are playing a more and more important role. However, the institutional settings of those transition economies are fundamentally different from that of the developed economies. Hence, whether the prior findings still apply is an interesting question. This paper contributes to this stream of studies by focusing on a transition economy-China. Second, the influence of CEO and institutional investors (e.g venture capitalist) on board structures has been considered extensively, however, the role of government is largely ignored. In the context of emerging market, government plays a central role in the privatization process and retains a substantial ownership even after the privatization. Hence, state ownership should have an impact on the board structure of newly public firms. To fill this gap, this study examines the role of state ownership on board structure and its impact on firm long-run performance. Third, although several board characteristics

(e.g board size, board composition, board ownership) have been considered in prior studies, the political connection of board and its impact on firm performance received relatively less attention. To fill this gap, this study includes the political connection of board as another dimension of board structures and investigates its role on firm performance. In particular, the fraction of board CCP (Chinese Communist Party) membership is used as a measure of board political connection.

### 2. Theory Development and Hypotheses

#### **2.1 Institutional Background**

Institutional theory (North, 1990; Scott, 1995) argues that the beliefs, goals, and actions of individuals and groups are strongly influenced by institutions. In this study, I focus on China, one of the world's largest transition economies, it is necessary to describe the institutional conditions first. The institutional environment of China is fundamentally different from that of the developed economies. One important feature is that government holds a significant ownership in publicly listed firms. This phenomenon is derived from the China's state owned enterprise (SOE) reform process. China's SOE reform process started from 1980s, which aims to improve efficiency, optimize ownership structure and clarify property rights. The establishment of the Shanghai Stock Exchange in 1990 and the Shenzhen Stock Exchange in 1991 marked an important milestone in this process. Unlike the radical ownership privatization approach adopted in Eastern Europe and Russia, China's reform of SOEs implemented partial privatization approach, which still allows the state hold some

shares. In the reform, unprofitable small- and medium-sized SOEs are privatized or merged, while large SOEs are generally converted into shareholding companies where government still retain a substantial ownership. There are mainly two reasons why government attempts to retain its ownership: (1) due to the ideology of socialist market economy, as long as the state still holds some shares of the SOE, it conforms to the communist public ownership principle (Sun and Tong, 2003); (2) many of these SOEs produce energy resources, primary materials and basic life necessities and thus have strategic importance (Lin, et al. 1998), hence, the state must have the control.

Another feature of Chinese listed firms is that politically connected directors have a significant presence in board, especially in the SOEs. Chinese Communist Party (CCP) was founded on July 1, 1921 in Shanghai. After 28 years of struggle, the CCP finally won victory of "new-democratic revolution" and founded the People's Republic of China in 1949. CCP is the ruling party of mainland China, hence, CCP membership is a symbol of political connections. Since its establishment, CCP membership has been increasing over the years. At the end of 2009, there are near 78 million CCP members, which constitute about 5.6 percent of the population in China. In order to enforce the political legitimacy of the government and consolidate its power base, the government and its organs commonly appoint CCP members as CEOs of SOEs (Li, 1998). SOE managers are commonly sympathetic to or support the government because the government is the ultimate shareholder of their firms. In private enterprises, CCP members are also very common in board, since a large number of private

entrepreneurs are former SOE managers. According to a survey in 2005, 33 percent of the private entrepreneurs are CCP members (Guo Liangping, 2006).

The ownership structure of Chinese listed firms also has some unique features compared to developed economies. The shares of Chinese companies are categorized in five types: state shares, legal person shares, employee shares, A shares and B shares. State shares are those owned by the central government. Legal person shares are those held by domestic legal entities such as listed companies and financial institutions, which are partially owned by the central or local government. Both state shares and legal person shares are non-tradable in the market. Employee shares are collectively owned by the employees, which are not tradable at the time of listing and typically account for only a small fraction of total shares outstanding. A shares are those that can only be purchased by Chinese citizens and traded in RMB. B shares can only be purchased by foreign investors and traded in foreign currency. Currently, a typical Chinese firm has a mixed ownership structure, the state, legal person and individual investors are the dominant stockholders, each accounting for about 30 percent of total shares outstanding (Qi, Wu and Zhang, 2000). However, inefficiency is inherent in such an ownership structure for multiple reasons. First, the objectives of government includes political considerations and social welfare, while the institutional and individual shareholders are more profit-oriented, thus, conflict of interests exist between different types of shareholders. Second, since a large proportion of the total shares are non-tradable, the disciplinary function of market takeovers is weakened

considerably. Third, since individual shares only account for a small proportion of total shares, no significant independent shareholder have incentives to provide effective monitoring of management, hence, agency problems arise.

#### 2.2 The Role of State Ownership

#### **2.2.1 State Ownership and Firm Performance**

State ownership is widely believed to be inefficient, and privatization results in improved performance (Megginson and Netter, 2001). Prior studies almost unanimously support the idea that state ownership is negatively associated with firm performance. For instance, in a sample of 500 non-U.S. industrial firms, Boardman and Vining (1989) found large SOEs perform substantially worse than similar private corporations in several profitability measures (i.e. ROE, ROA, ROS and net income). In a sample of 774 firms listed on Shanghai Stock Exchange, Qi, Wu and Zhang (2000) found ROE decreases in the proportion of state shares. Similarly, Xu and Wang (1999) also found firm's profitability is either negatively correlated or uncorrelated with the fractions of state shares. Based on a sample of 634 Chinese SOEs, Sun and Tong (2003) reported a negative relationship between state ownership and firm performance. In a more recent study, Wei, Xie and Zhang (2005) found state shareholdings are significantly negatively related to Tobin's Q.

Gupta (2005) stated that government's social objectives and agency problems are the two main reasons account for the inefficiency of SOEs. Bös (1991) argued that in a

non-competitive environment, the government acts as an 'internal regulator' to reach a compromise between the firm's objectives and the government's social welfare objectives. Shleifer and Vishny (1994) illustrated how excess employment, inefficient allocation of products and price suppression create conflicts with the value maximization objective in SOEs. In China, the SOEs bear a heavy burden from lifelong employment policy, retirement pensions, housing, health care and other social welfare provided for the employees (Dollar, 1990; Lin et al, 1998; Sun and Tong, 2003), and thus are less efficient than their counterpart non-SOEs. An alternative opinion is that agency problems tend to be more severe in the state-owned firms. On the one hand, managers in SOEs typically only have a small ownership, and they draw income from the government payroll, which has nothing to do with the performance of the firm (Xu and Wang, 1999), hence, they may not have sufficient incentives to increase the value of the firm. On the other hand, with more autonomy and power, there are more opportunities for managers to pursue their own interests. For example, although the managers are paid very little in monetary terms, they often gain substantial non-pecuniary benefits from control rights, such as housing allowances, free use of corporate cars, luxury meals and foreign travels paid by firms (Wei, Xie and Zhang, 2005). Thus, I propose:

H1: Firm long-run performance is negatively associated with state ownership.

#### 2.2.2 Literature Review on Board Structure and Firm Performance

#### **Board Size**

The relationship between board size and firm performance has not been unequivocally established. The main reason why smaller board is more effective is that coordination problem, agency problem and free-riding problem will arise when board becomes larger. Lipton and Lorch (1992) suggest that since directors are bounded with limited time, when a board has more than ten members, it becomes difficult for all the directors to express their ideas and comprehend complex information. Besides, an effective board needs members to share a common goal and ultimately reach a consensus, and this cohesiveness decreases with the number of directors. Hence, they believe that the optimal board should have eight or nine directors and the maximum number of directors should be limited to ten.

Agency problem arises from the separation of ownership and control (Fama and Jensen, 1983), thus, shareholders (as principals) and managers (as agents) have conflicting interests. The function of the board to mitigate agency problem is hindered by overly large board size. Mintzberg (1983) argues that board members' assessments of top management are easier to be manipulated when boards are large and diverse. Jensen (1993) also suggests that larger boards lead to less candid discussion of managerial performance and greater control by the CEO. Hence, a larger board size represents weaker corporate governance.

According to free-riding theory (Olson, 1965), the term "free rider" refers to a

member of a group who obtains benefits from group membership but does not bear a proportional share of the costs of providing the benefits. Based on the assumption that people act rationally, each individual tries to minimize their costs relative to the benefits they receive, thus, the free riding problem arises. Group size is usually seen as a proxy of the degree of free riding. As group size increases, noticeability, perceptibility and individual share of reward tend to decrease (Albanese and Fleet, 1985). Hence, a smaller board is perceived to be more effective in decision making.

Several empirical studies have found evidence that smaller board is beneficial. For example, based on a sample of 452 large U.S. industrial corporations between 1984 and 1991, Yermack (1996) found a negative relationship between board size and Tobin's Q as an approximation of market valuation. Outside U.S, Eisenberg et al. (1998) found a significant inverse relationship between board size and profitability in a sample of small and midsize Finnish firms. In addition, Gertner and Kaplan (1996) examined what an optimal board looks like based on a sample of reverse leveraged buyouts (LBO), the idea is that LBO specialists have strong incentives to structure the boards in a way that maximizes shareholder's interests. They found that boards of reverse LBOs tend to be smaller than in otherwise similar firms.

However, researchers have not achieved consensus on the opinion that smaller boards will be associated with better firm performance. Based on resource dependence theory, larger board size suggests that an organization has better ability to form environmental links to secure critical resources (Goodstein et al., 1994). Pfeffer (1973) and Provan (1980) found that board size is positively associated with a firm's amount of budget, external funding and leverage. Alexander, Fennell and Halpern (1993) found that leadership instability, which is defined as the rate of succession in the CEO position over a specified time period, decreases with board size since it is easier for CEOs to manage a large, diverse group of directors with disagreement and fragmentation. They argued that in the context of environmental change, governance structures that favor influence and control by CEO may promote convergence on an established strategic direction. In another study, Dalton, Daily, Johnson and Ellstrand (1999) provided systematic evidence of significantly positive relationship between board size and firm financial performance based on meta-analytical approaches. To summarize, the relationship between board size and firm performance is ambiguous.

#### **Board Composition**

Generally, directors can be classified as three categories: insiders, outsiders and quasi outsiders (or grey directors). Insiders are directors who are employees or former employees of the firm, their success is usually tied to the CEO so they are not considered to be independent of top management team. Typical insiders include corporate officers, retirees and other insiders (Baysinger and Butler, 1985). Outsiders are not employees of the firm, nor do they have substantial business ties with the firm or its management (Hochberg, 2008). Since their incentives are not aligned with those of the CEO or top management, outsiders represent the degree of independence of the

board. Typical outsiders include public directors, professional directors, private investors and independent decision makers. Some directors, such as financiers, consultants, legal counsel and interdependent decision makers, fall into neither of the above categories, are usually referred to as quasi outsiders. They primarily provide expertise that may complement the CEO's skills and assist in management.

Board composition, which is defined as the fraction of insiders/outsiders, received a lot of attention in literature. Probably the most discussed question regarding the board is whether having more outsiders increase corporate performance (Hermalin and Weisbach, 2003). Fama (1980) and Fama and Jensen (1983) argue that outside directors bear a reputation cost if firm performance is poor, this leads them to monitor management more carefully compared to other directors. Hence, it is widely believed that an outsider-dominated board is more effective since the tendencies that management abuses power is reduced (Monks and Minow, 2001). Consistent with these arguments, two main streams of studies attempt to examine the role of board composition. One stream of studies focused on board composition and firm's HR policy, especially the CEO turnover. For example, Weisbach (1988) reported a stronger relationship between prior performance and the probability of CEO resignation for firms with outsider-dominated boards.

Another stream of studies concentrated on board composition and firm performance.

Ezzamel and Watson (1993), for example, found outside directors were positively associated with profitability in a sample of U.K firms. In another study, Baysinger and Butler (1985) found that outsider-dominated firms realized higher return on equity. However, several studies have found insignificant relationships between board composition and accounting performance measures (MacAvoy et al. 1983; Hermalin and Weisbach, 1991; Bhagat and Black 2000). One possible explanation is provided by Hermalin and Weisbach (1998), who suggest that board composition may be the consequence of poor performance. Hence, the positive role of outside directors received partial support in literature.

#### **Board Political Connection**

Scholars point out that there are various incentives for a corporation to become politically connected, including preferential access to loans and government contracts, lighter taxation and more friendly regulatory treatments (Stigler, 1971; Backman, 1999; Agrawal and Knoeber, 2001; Khwaja and Mian, 2005; Faccio, 2006). Faccio (2006) suggests that political connections are particularly common in countries with higher levels of corruption, countries imposing restrictions on foreign investments by their citizens, and countries with more transparent systems. It is widely believed that the benefits from political connections will eventually reflected in firm performance, and a number of studies provided evidence that support this opinion. For instance, Fisman (2001) showed that a considerable percentage of well –connected firm's value derives from political connections in a sample of Indonesia firms. Based on a sample of 20202 firms in 47 countries, Faccio (2006) found that corporate value increases around the time of the announcements that officers or large shareholders are entering politics. Similar evidence is also found in China, for example, Peng and Luo (2000) and Li and Zhang (2007) documented that manager's political ties are positively associated with firm performance.

#### 2.2.3 State Ownership and Board Structure

The above review on board structure suggests that there is mixed evidence on the relationships between board size, proportion of outsiders and firm performance. I suggest in a transitional economy like China, it is possible to make predictions on board size and proportion of outsiders of state-owned firms when compared to non-state-owned firms. Below I build predictions for structure and performance of state-owned firms.

The managers of Chinese SOEs are directly appointed by the government, due to the employment objective, the redundant management teams are commonly found in SOEs. In the privatization process, managers were entitled with the power to dismiss excess workers and consequently caused a large number of state workers lost their jobs during the reform. However, the managers themselves, who are usually government officials, were not likely to be dismissed. In fact, in the reform process of Chinese SOEs, most members of previous management are retained for parallel positions (Qi, Wu and Zhang, 2000). For example, Fan, Wong and Zhang (2007)

report almost 27% of the CEOs in a sample of 790 newly partially privatized firms in China are former or current government bureaucrats.

Although prior studies suggest the role of board size is ambiguous, in the context of the transition economy such as China, most of the directors in the board are former or current government bureaucrats that lack of relevant experience (Chen, Fan and Wong, 2002) and have multiple goals, the cost of having a larger board is likely to outweigh the benefits. Thus, I propose:

*H2a*: State-owned firms tend to have larger board size than non-state-owned firms at the time of IPO.

*H2b:* Board size is negatively associated with firm long-run performance, and mediates the relationship between state ownership and firm long-run performance.

Outside directors, who are usually equipped with relevant experience and professional skills, are seen as effective monitors of management (Fama, 1980; Fama and Jensen, 1983). However, since the presence of outside directors may thwart the opportunistic behaviors of the insiders, they are not preferred in SOEs. This idea is supported by Mak and Li (2001)'s findings: in a sample of Singapore listed firms, they found that the proportion of outside directors is negatively related to government ownership. In the context of transition economy, where agency problem is particularly severe due to

the weak legal protections and ill-defined property rights, having more outsiders is expected to be beneficial since the tendency of manager's opportunistic behaviors is reduced. Hence, we propose:

H3a: State-owned firms tend to have smaller fraction of outsiders on board than non-state-owned firms at the time of IPO.

**H3b:** Fraction of outsiders is positively associated with firm long-run performance, and mediates the relationship between state ownership and firm long-run performance.

It is believed that SOEs tend to appoint directors that are mainly based on political considerations rather than economic performance. In Chinese SOEs, the candidates for directors and general managers are always nominated by government, who are usually government officials or local bureaucrats. For example, in a sample of 621 companies that went public from 1993 to 2000 in China, Chen et al. (2002) reported almost half of the directors are appointed by state controlling owners, and another 30% are affiliated with various layers of governmental agencies (e.g. central government, local government). Studies also suggest that politically connected top managers do not enhance shareholder value but rather fulfill their political goals. For example, Fan, Wong and Zhang (2007) found that firms led by politically connected CEOs are more likely to appoint other bureaucrats to the board of directors rather than directors with

relevant professional backgrounds.

Although there is a growing body of literature on the role of political connections in firm performance, Chinese Communist Party (CCP) membership, as a unique feature of political connections in China, received relatively less attention. CCP is the only ruling party in China, the attainment of Party membership follows a distinct selection process that consists of five stages: self-selection, political participation, daily monitoring, closed-door evaluation and probationary examination (Bian et al., 2001). In a transition economy with weak legal system, ill-defined property rights and great institutional instability, affiliation with CCP not only protect the firms from the expropriation by the government but also represents preferential access to key resources, hence, Party membership will add value to the firms. In their study, Li, Meng, Wang and Zhou (2007) found that firm owner's Party membership status helps firms to obtain loans and better legal protections, which eventually result a superior firm performance.

In this study, I include the percentage of CCP members in the board as a proxy of board political connections. Although political connection is believed to be beneficial for the firms, its role is asymmetric in state-owned firms and non-state-owned firms. As Li and Zhang (2007) suggested, non-state-owned firms receive little support from government, thus, political connections are more crucial for non-state-owned firms. Thus, I propose: *H4a:* Stated-owned firms tend to have larger fraction of CCP members on board than non-state-owned firms at the time of IPO.

*H4b:* Fraction of CCP members is positively associated with firm long-run performance, and mediates the relationship between state ownership and firm long-run performance.

#### **2.3 The Role of Venture Capitalist**

Venture capitalists (VCs) are active investors who try to add value to the companies that they finance through ongoing longer-term involvement with continuing business development (Venture Capital Journal, 1987). Other than the money, venture capitalists use industry contacts to help the company recruit key employees, to assist in production to line up suppliers and to develop customer relations (Warne, 1988). Venture capitalists typically invest in young, high-risk companies with unpredictable future prospects (Barry et al., 1990) and they usually specialize in a particular industry where their expertise is most valuable (Warne, 1988). Venture capitalists serving as general partners and the investors as limited partners. Gompers and Lerner (1995a) reported that more than 80 percent of venture capital funds are organized as limited partnerships with a predetermined lifetime of about ten years. To remain active, venture capital firm must periodically recapitalize itself by raising a new limited

partnership. A venture capital organization would cease operations without raising a new fund. Hence, venture capital firms have incentives to establish reputation by taking their portfolio firms public, Gompers (1996) found that venture capital firms who were unable to take portfolio firms public were unlikely to receive future fundraising. Venture capitalists typically exit successful investments by taking them public (Gompers and Lerner, 1998), however, they usually do not sell their shares at the time of IPO, but rather undertake a "lock-up" agreement with underwriters (e.g. investment banks)and hold a significant ownership for several months after IPO. Barry et al. (1990) reported that 58% of VCs did not sell any shares at the IPO. Megginson and Weiss (1991) also documented that VCs retained a significant portion of their holding after the IPO.

As Kaplan and Stromberg (2001) point out, venture capitalists mainly serve as three functions: screening, contracting and monitoring. During the screening process, venture capitalists review business plans of young stratups. Attractiveness of the opportunity (e.g. strategy, technology, market size, competition), the management team and the contract terms are evaluated before they decide which firm to invest in. Once a decision is made, a big challenge for VCs is to solve agency problem. One option is to provide appropriate incentive for entrepreneurs by contracting. Sahlman (1990) suggests that the most efficient contract form is staged financing. Staged financing is preferable for two reasons: (1) it reduces agency cost by providing stronger incentives for entrepreneur than if all needed capital were provided at once; (2) it allows the venture capitalists periodically to revalue an investment and control the loss if the expectation is not met. An alternative solution is to monitor management. According to Gorman and Sahlman's (1989) survey, lead venture capitalist visit each portfolio company an average of 19 times a year, and spend 100 hours in direct contact with the company. Besides, they sit on the board, help recruit, evaluate or even fire top management.

A number of studies have demonstrated the monitoring role of VC in shaping and recruiting the top management team. For example, Lerner (1995) found that VCs are more likely to join the board in periods when the CEO turnover. Hellmann and Puri (2002) found venture capital is associated to the hiring of a marketing vice president, and VC-backed firms are also more likely and faster to replace the founder with an outside CEO. In addition, Baker and Gompers (2003) found firms backed by VCs have more independent outsiders at IPO. Kaplan and Stromberg (2000b) provide evidence that VC plays a role in shaping the management team even before investing. Following the idea that when a venture backed firm goes public, its board should already been shaped in a way that favors shareholders, we propose:

*H5a:* Venture-backed firms tend to have larger proportion of outsiders in the board than the non-venture backed firms at the time of IPO.

Besides, since venture capitalists retain a significant proportion of their holdings after

IPO, they will continuingly add value to their portfolio companies. With the benefits of monitoring, market contacts and professional advices, venture backed firms are expected to outperform those non-venture backed firms in the post-IPO period. Several studies provide evidence that support this argument, for example, Brav and Gompers (1997) find that venture-backed IPOs outperform non-venture-backed IPOs using equal weighted returns. In addition, Jain and Kini (1995) found that VC-backed IPO firms exhibit superior post-issue operating performance compared to non-VC backed IPO firms. Hence, I propose:

*H5b:* Venture-backed firms outperform non-venture backed firms in the post-IPO period.

The theory framework is shown in Figure 1.

#### Figure 1: Theory Framework





#### **3. Sample and Descriptions**

The sample consists of 217 Chinese SMEs listed on the SME board of Shenzhen Stock Exchange for the period of 2004 to 2010. The study period is from 2004 because this is when the China Securities and Regulatory Commission (CSRC) approved the launch of the SME board. Since I am focused on the long-run (2-year) performance after IPO, I restrict the sample to those SMEs that were listed before 2009. After dropping the missing observations, I have 217 observations.

The financial and ownership data used in this study are collected or derived from GTA Research Service Center—a leading global provider of China financial market data, China industries and economic data. The venture capital-backed firms in the sample are identified in the Zero2IPO Database, which provides information that covers venture capital, private equity funds, firms, executives, and portfolio companies focused on China. The information is double-checked using firm prospectus as provided at the time of IPO. The definitions of the variables used in this study are provided in Table 1.

Table 2 reports the distribution of the sample by ownership. 33 firms in the sample are both state-owned and VC-backed; 43 firms are state-owned and non-VC-backed; 23 firms are non-state-owned and VC-backed; and 118 firms are non-state-owned and non-VC-backed.

#### **Table 1 Definitions of variables**

Variable	Definition
Firm's attributes	
size (million RMB)	Total assets in the previous year end of IPO
age (year)	Firm age at the time of IPO
totalshares	Total number of shares at IPO
stateshares	The number of state-owned shares at IPO
soeownership	The number of state-owned shares divided by total number of shares at IPO
soedummy	A dummy variable which equals 1 if the state owns shares of the firm, and 0 otherwise
soeasmajority	A dummy variable which equals 1 if the state ownership exceeds 50 percents
vcdummy	A dummy variable which equals 1 if the firm is backed by venture capitalist
<b>Board Structure</b>	
boardsize	The total number of directors in the board at the time of IPO
outsiderratio	The number of independent directors divided by total number of directors
ccpratio	The number of directors who are CCP members divided by total number of directors
outsiderccpratio	The number of outsiders who are CCP members divided by total number of directors
insiderccpratio	The number of insiders who are CCP members divided by total number of directors
Firm Performance	
twoyearreturn	Two year buy-and-hold return of the firm stock after IPO
roa	Return on assets one year after IPO
roe	Return on equity one year after IPO
initialreturn	First day return of IPO
marketcap	Market capitalization at IPO

#### Table 2 Distribution by ownership





Table 3 shows the distribution of the sample by ownership and listing year. I find that the non-state owned firms have not received investment from VCs until 2007. I also note that in general, from 2004 to 2007, the number of IPOs in the sample is increasing. It is not surprising that I only observed 7 IPOs in 2005, since the Chinese Securities Regulation Committee (CSRC) regulated the disclosure rules of publicly traded firms and temporarily suspended IPO in 2005, the IPO market was reopened in 2006. However, the number of IPOs experienced a downturn in 2008. A possible explanation is that the financial crisis dealt a heavy blow to the IPO market in China.

Table 4 presents the industry breakdown of the sample for each year. I find that the industries of the sample concentrate on Petrochemicals, Agriculture, Forestry, Livestock Farming & Fishery, Machinery, Manufacturing, IT, Metal/Nonmetal, while the minority groups are Financial Service, Media, and Timber & Furnishings. I also note that for most of the industries, the number of IPO reached a peak in 2007.

Year	SOEs and S	ubgroups	Non-SOEs a	and Subgroups	Total
	SOE and VC	SOE and	Non-SOE and	Non-SOE and	
		Non-VC	VC	Non-VC	
2004	4	7	0	11	22
2005	1	3	0	3	7
2006	6	9	0	21	36
2007	13	13	12	49	87
2008	9	11	11	34	65
Total	33	43	23	118	217

## Table 3 Distribution of sample firms across listing years and ownership structure

Industry	2004	2005	2006	2007	2008	Total
Petrochemicals	4	0	4	12	12	32
Construction	0	0	3	1	0	4
Electronics	2	2	5	10	6	25
Agriculture, Forestry, Livestock	0	1	2	0	2	5
Farming & Fishery						
Financial Service	0	0	0	1	0	1
Food & Beverage	0	0	0	4	2	6
IT	1	0	5	9	6	21
Machinery	2	1	2	10	8	23
Manufacturing	4	0	0	11	6	21
Media	0	0	0	0	1	1
Metal/Nonmetal	1	1	5	9	4	20
Paper & Printing	0	0	2	1	4	7
Pharmaceuticals	3	0	0	4	3	10
Real Estate	1	0	0	2	2	5
Wholesale & Retail	1	0	0	1	2	4
Services	0	0	3	8	2	13
Textiles & Apparel	2	0	4	3	2	11
Transportation	1	1	1	1	2	6
Timber & Furnishings	0	1	0	0	1	2
Total	22	7	36	87	65	217

Table 4 Distribution of sample firms across listing years and industries

Table 5 shows the industry breakdown for each ownership subgroup. I find that for SOEs, VC-backed firms concentrate on IT, Machinery and Electronics, while the non-VC-backed firms concentrate on Petrochemicals, Services and Electronics. As for non-SOEs, the dominant groups of VC-backed firms are Electronics and Manufacturing, while that of non-VC-backed firms are Petrochemicals and Metal/Nonmetal. I also note that the only Financial Service firm and Media firm are both state-owned and non-VC-backed. This is intuitive since financial industry and media industry are considered as of strategic importance in China. Besides, I find that for both SOEs and Non-SOEs, VC-backed firms concentrate on a small number of

industries, while the industry distribution of non-VC-backed firms has a wider range.

Panel A of Table 6 reports the descriptive statistics of board structure variables for each ownership subgroup. For board size, I find that state-owned and non-VC-backed firms have the largest board size (on average, 9.86 seats), while non-state-owned and non-VC-backed firms have the smallest board size. The t-value suggests that for SOEs, VC-backed firms and non-VC-backed firms have similar board size. However, for Non-SOEs, VC-backed firms have a larger board size. The t-value also suggests that for both VC-backed and non-VC-backed firms, SOEs tend to have a larger board size than Non-SOEs. For the fraction of outsiders, I find that this ratio is about the same among the subgroups. For the fraction of CCP members, I find that state-owned and non-VC-backed firms have the largest fraction of CCP members, while that of state-owned and VC-backed firms is the smallest. The t-value suggests that for SOEs, VC-backed firms have a significantly smaller fraction of CCP members than non-VC-backed firms. The t-value also suggests that for non-VC-backed firms, SOEs have a significantly larger fraction of CCP members than Non-SOEs. Furthermore, I separate CCP ratio into two groups-outsider CCP ratio and insider CCP ratio. The state-owned and non-VC-backed firms and non-state-owned and VC-backed firms have the highest outsider CCP ratio, while the non-state-owned and non-VC-backed firms have the lowest outsider CCP ratio. Finally, state-owned and non-VC-backed firms have the highest insider CCP ratio, and state-owned and VC-backed firms have the lowest insider CCP ratio.

Panel B of Table 6 reports the descriptive statistics of firm performance for each ownership subgroup. In this study, I include two year buy-and-hold return, return on assets (ROA) and return on equity (ROE) as three alternative measures for firm long-run performance. As shown, non-state-owned and non-VC-backed firms have the highest two year buy-and-hold return, and non-state-owned and VC-backed firms have the lowest two year buy-and-hold return. In addition, state-owned and VC-backed firms have the highest ROA and ROE, while the state-owned and non-VC-backed firms have the lowest ROA and ROE. To explore the firm performance at IPO, I include initial return and market capitalization. State-owned and non-VC-backed firms are found to have the highest initial return. Non-state-owned and non-VC-backed firms are found to have the lowest initial return. Non-state-owned and non-VC-backed firms are found to have the lowest initial return. Non-state-owned and non-VC-backed firms are found to have the lowest initial return. Non-state-owned and non-VC-backed firms are found to have the lowest initial return. Non-state-owned and non-VC-backed firms are found to have the lowest initial return. Non-state-owned and non-VC-backed firms are found to have the lowest initial return.

Industry	SOEs an	nd Subgroups	Non-SOEs	and Subgroups	Total		
	SOE and VC	SOE and	Non-SOE and VC	Non-SOE and			
		Non-VC		Non-VC			
Petrochemicals	4	10	3	15	32		
Construction	0	2	0	2	4		
Electronics	6	4	4	11	25		
Agriculture, Forestry,	0	2	0	3	5		
Farming & Fishery							
Financial Service	0	1	0	0	1		
Food & Beverage	0	1	0	5	6		
IT	8	1	3	9	21		
Machinery	8	2	2	11	23		
Manufacturing	3	2	4	12	21		
Media	0	1	0	0	1		
Metal/Nonmetal	3	0	3	14	20		
Paper & Printing	0	0	1	6	7		
Pharmaceuticals	0	1	0	9	10		
Real Estate	0	2	0	3	5		
Wholesale & Retail	0	1	0	3	4		
Services	1	7	1	4	13		
Textiles & Apparel	0	3	0	8	11		
Transportation	0	2	1	3	6		
Timber & Furnishings	0	1	1	0	2		
Total	33	43	23	118	217		

Table 5 Distribution of sample firms across industries and ownership structure

#### Table 6 Descriptive statistics of board structure and firm performance by ownership

#### **Panel A: Board Structure**

Variable	(1)SOE :	and VC	(2)SOE and	d Non-VC	(3)Non-SOE and VC		(4)Non-SOE and Non-VC		t-value between the subgroups			
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	(1) vs (2)	(3) vs (4)	(1) vs (3)	(2) vs (4)
<b>Board Size</b>	9.73	1.63	9.86	2.04	9.22	1.13	8.50	1.58	-0.32	2.60**	1.39*	3.96**
Outsiders	0.35	0.04	0.34	0.03	0.35	0.06	0.37	0.05	0.84	-1.32*	-0.20	-4.28**
<b>CCP</b> Ratio	0.16	0.22	0.41	0.30	0.20	0.29	0.18	0.23	-4.02**	0.38	-0.48	4.52**
Outsider CCP	0.07	0.11	0.09	0.11	0.09	0.13	0.06	0.09	-0.96	1.63*	-0.70	2.23**
Insider CCP	0.10	0.16	0.31	0.24	0.11	0.20	0.12	0.18	-4.52***	-0.30	-0.24	5.54***

Note: n=217, \*\* indicates significant at 5%, \* indicates significant at 10%

#### Panel B: Firm Performance

Variable	(1)SOE	and VC	(2)SOE an	nd Non-VC	(3)Non-SOE and VC (4)Non-SOE and Non-V			and Non-VC	t-value between the subgroups				
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	(1) vs (2)	(3) vs (4)	(1) vs (3)	(2) vs (4)	
Two Year Return	1.11	0.77	1.04	0.57	1.03	0.55	1.16	0.85	0.45	-0.99	0.48	-1.07	
ROA	7.02	4.27	3.53	7.65	5.62	3.94	6.16	4.91	2.35**	-0.50	1.24	-2.57***	
ROE	11.89	8.88	6.19	14.61	8.89	5.49	10.26	7.85	1.98**	-0.80	1.44*	2.27**	
Initial Return	1.83	1.27	1.22	0.93	1.41	0.91	1.38	1.06	2.42***	0.15	1.35*	-0.88	
Market Cap	1550.53	3031.19	1663.96	3369.57	1714.56	1331.41	1454.82	1322.47	-0.15	0.86	-0.24	0.57	

Note: n=217, \*\* indicates significant at 5%, \* indicates significant at 10%

Table 7 reports the summary statistics of all the variables. The average size of the firms in the sample is 994 million RMB, who have an average age of 5.04 years and 117 million shares outstanding at IPO. Among these firms, about 35% are SOEs, 13% are dominated by state and the state has an average ownership of 13% and a maximum of 75%. 26% of the firms in the sample are VC-backed. As for board structure, the average board size is 9.03 seats, the average fraction of outsiders is 36%. The average fraction of CCP members is 22%, and the outsiders CCP ratio and insiders CCP ratio are 7% and 15% respectively. Baker and Gompers (2003) found that the average board size is 6.07 seats and the average fraction of outsiders is about 20% based on a sample of 1116 IPOs between 1978 and 1987 in US. Compared with their findings, the firms in this study have a larger board size and a larger fraction of outsiders. As for firm performance, the average two year buy-and-hold return is 112% and the average ROA and ROE are 5.71% and 9.56% respectively. In this study, I also considered IPO valuation and underpricing, the average initial return of the sample is 142% and average market capitalization at IPO is 1538.35 million RMB.

Table 8 presents the correlation matrix of all the variables.

Variable	Observations	Mean	Std. Dev.	Min	Max
Firm's attributes					
size (million RMB)	217	994	3900	108	56500
age (year)	217	5.04	3.44	0.58	19.58
totalshares (million)	217	117	182	50	2500
stateshares (million)	217	20.20	49	0	488
soeownership	217	0.13	0.23	0	0.75
soedummy	217	0.35	0.48	0	1
soeasmajority	217	0.13	0.34	0	1
vcdummy	217	0.26	0.44	0	1
<b>Board Structure</b>					
boardsize	217	9.03	1.75	5	18
outsiderratio	217	0.36	0.05	0.22	0.60
ccpratio	217	0.22	0.26	0	1
outsiderccpratio	217	0.07	0.10	0	0.44
insiderccpratio	217	0.15	0.21	0	0.67
Firm Performance					
twoyearreturn	217	1.12	0.76	0.23	5.90
roa	217	5.71	5.48	-29.14	21.31
roe	217	9.56	9.65	-63.91	33.56
inirialreturn	217	1.42	1.06	0.03	5.38
marketcap (million RMB)	217	1538.35	2169.58	327.60	23000

Table 7 Summary statistics of all variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
firmsize	1															
age	0.106	1														
boardsize	0.345*	0.129	1													
outsiderratio	-0.015	-0.132	-0.335*	1												
ccpratio	0.032	0.158*	0.086	-0.057	1											
outsidercc~o	0.061	0.070	0.086	0.071	0.700*	1										
insiderccp~o	0.011	0.168*	0.0673	-0.1082	0.9362*	0.405*	1									
soedummy	0.068	0.0978	0.3241*	-0.2098*	0.2207*	0.1019	0.2325*	1								
soeowner~p	0.015	0.0568	0.2237*	-0.211*	0.2888*	0.061	0.3398*	0.7751*	1							
soeasmajority	-0.035	-0.062	0.1402*	-0.1598*	0.2102*	0.0035	0.2675*	0.5350*	0.8655*	1						
vc	-0.052	-0.0205	0.1641*	-0.1052	-0.0958	0.0573	-0.1509*	0.2955*	0.0272	-0.0769	1					
twoyearre~n	-0.083	-0.1068	-0.1477*	0.1508*	-0.0899	-0.0249	-0.1029	-0.0451	-0.0596	-0.0421	-0.0316	1				
roa	-0.083	-0.0226	-0.1497*	0.0112	-0.1832*	-0.0786	-0.1960*	-0.09	-0.0785	-0.0135	0.0791	0.3627*	1			
roe	0.050	-0.0214	-0.1012	0.0589	-0.1452*	-0.0557	-0.1586*	-0.068	-0.0767	0.0066	0.0673	0.3245*	0.9069*	1		
initialreturn	-0.035	-0.0424	-0.0263	-0.054	-0.1259	-0.1169	-0.1037	0.0443	-0.0162	-0.0458	0.133	-0.3287*	-0.1172	-0.1697*	1	
marketcap	0.792*	0.062	0.2208*	0.0202	-0.0129	0.0198	-0.0263	0.0259	0.0089	-0.0584	0.0217	-0.0879	0.0097	0.1673*	-0.0404	1

Note: n=217, \* indicates significant at 5%

#### 4. Results

To test our hypotheses, robust regression analyses were used, which is essentially a form of weighted least squares regression that compromise between dropping the case(s) that are moderate outliers and seriously violating the assumptions of OLS regression (e.g. multicollinearity, heteroskedasticity). Robust regression provides robust variance estimators. However, the variance inflation factor (VIF) has still been reported to quantify the severity of multicollinearity in an ordinary least squares regression analysis. A value greater than 10 is an indication of potential multicollinearity problems. Since after running robust regression, heteroskedasticity test is not available since Stata reports "hettest not appropriate after robust cluster", I assume heteroskedasticity has already been adjusted by robust regression. To test the mediating role of the board structures, we followed Baron and Kenny's (1986) suggested procedure, which involves estimating three separate regression equations: (1) regressing the mediators (board structures) on the independent variables; (2) regressing the dependent variables (performance) on the independent variables; (3) regressing the dependent variables on both the mediators and independent variables.

Table 9 presents the results for the determinants of board structures. I include state ownership dummy, state ownership (continuous) and state as majority dummy as three alternative measures of state ownership. Columns 1-3 provide the results for board size. The coefficients of three alternative measures of state ownership are all significantly positive, which supports our Hypothesis 2a. Specifically, 1 percent increase in state ownership will lead to a 0.01891 increase in board size. Besides, VC ownership also has a positive impact on board size. Columns 4-6 provide the results for outsider ratio. Consistent with Hypothesis 3a, the coefficients of three alternative state ownership measures are all significantly negative. Specifically, 1 percent increase in state ownership will lead to a 0.049 percent decrease in outsider ratio. Besides, VC ownership also has a negative influence on outsider ratio, which is on the contrary to Hypothesis 5b. Columns 7-9, 10-12, 13-15 present the results for CCP ratio, outsider CCP ratio and insider CCP ratio respectively. Consistent with Hypothesis 4a, state ownership is positively associated with CCP ratio, outsider CCP ratio and insider CCP ratio. Specifically, 1 percent increase in state ownership will increase CCP ratio, outsider CCP ratio and insider CCP ratio increase by 0.467 percent, 0.075 percent and 0.392 percent respectively. Although VC ownership has no significant effect on CCP ratio, the interaction term of state ownership and VC ownership is negative and significant, which suggest the roles of state and VC in CCP ratio are opposite.

Variable		<b>Board Size</b>			Outsider Rati	0
	1	2	3	4	5	6
soedummy	1.182***			-0.024***		
soeownership		1.891***			-0.049***	
soeasmajority			1.014***			-0.028**
vcdummy	0.724**	0.896***	0.837***	-0.018	-0.016*	-0.015*
soe*vc	-0.672	-1.472	-0.597	0.023	0.037	0.017
firmsize	1.79e-04	1.43e-04	1.45e-04	4.44e-06	4.92e-06	4.84e-06
age	0.032	0.039	0.051	-1.57e-03	-1.68e-03	-1.99e-03**
<b>Real Estate</b>	-0.924	-0.734	-0.731	5.37e-03	1.61e-03	1.59e-03
Industrial	-0.233	-0.273	-0.254	4.11e-03	4.10e-03	3.48e-03
<b>Public Service</b>	0.070	-0.047	0.108	-3.87e-03	-2.16e-03	-6.10e-03
Finance	-2.066	-0.636	0.779	-0.250	-0.291	-0.293
Service	-0.401	-0.447	-0.405	5.03e-04	2.21e-03	1.54e-03
Constant	8.420***	8.513***	8.516***	0.373***	0.373***	0.373***
Adj R <sup>2</sup>	0.2022	0.1813	0.1644	0.0334	0.0403	0.0287
F value	6.47***	5.78***	5.25***	1.75*	1.91**	1.64*
Vif	5.57	5.27	5.20	5.57	5.27	5.20

### **Table 9 The Determinants of Board Structures**

## Continued

Variable		CCP Ratio(tota	al)		Outsider CCP R	Ratio		Insider CCP Ratio		
	7	8	9	10	11	12	13	14	15	
soedummy	0.238***			0.043*			0.195***			
soeownership		0.467***			0.075**			0.392***		
soeasmajority			0.246***			0.034			0.212***	
vcdummy	0.021	0.019	-0.017	0.037	0.037*	0.022	-0.0159	-0.018	-0.039	
soe*vc	-0.272***	-0.631***	-0.326**	-0.069*	-0.200**	-0.102*	-0.204**	-0.431***	-0.223**	
firmsize	1.11e-05	8.07e-06	7.00e-06	-1.13e-06	-1.17e-06	-1.95e-06	1.23e-05	9.24e-06	8.95e-06	
age	9.60e-03*	0.011**	0.013**	1.96e-03	0.002	0.002	7.64e-03*	0.008**	0.011***	
<b>Real Estate</b>	-0.013	0.022	0.030	0.031	0.037	0.041	-0.0440	-0.015	-0.011	
Industrial	0.030	0.033	0.041	0.016	0.017	0.019	0.0141	0.016	0.022	
<b>Public Service</b>	0.090	0.075	0.122	-0.007	-0.007	0.003	0.0966	0.083	0.119	
Finance	-0.731	-0.422	-0.296	0.131	0.160	0.215	-0.863	-0.582	-0.511	
Service	-0.096	-0.110	-0.092	-0.064	-0.063*	-0.057	-0.0329	-0.047	-0.035	
Constant	0.099*	0.099*	0.099*	0.036	0.036	0.037	0.0628	0.063	0.062	
Adj R <sup>2</sup>	0.1088	0.1254	0.0742	0.0166	0.0232	0.0070	0.1389	0.1625	0.1095	
F value	3.64***	4.10***	2.73***	1.36	1.51	1.15	4.48***	5.19***	3.66***	
Vif	5.57	5.27	5.20	5.57	5.27	5.20	5.57	5.27	5.20	

Table 10 presents the results of the determinants of long run performance. I include two year buy-and-hold return, return on assets (ROA) and return on equity (ROE) as alternative measures of long run performance. Columns 1-3 reveal the main effect of state ownership and VC ownership; columns 4-5 show the influence of board structures; columns 6-11 show the combined results.

In Table 10 (a), a negative and significant effect of state ownership dummy is found in column 1, which supports Hypothesis 1. As shown in column 4 and 5, outsider ratio is positively associated with two year buy-and-hold return. Specifically, 1 percent increase of outsider ratio will boost the 2 year buy-and-hold return by 2.256 percents. In columns 6-11, the effect of outsider ratio is still positive and significant while the effect of state ownership is no longer significant, which support Hypothesis 3b. Besides, no significant effect is found for VC ownership or the interaction of state and VC.

In Table 10 (b), a negative and significant effect of state ownership dummy is found in column 1, which supports Hypothesis 1. As shown in column 4 and 5, board size, CCP ratio and insider CCP ratio are negatively associated with ROA. In particular, if board size increases by 1 seat, ROA will drop by 0.417 percent; if CCP ratio increases by 1 percent, ROA will drop by 3.659 percents; if insider CCP ratio increases by 1 percent, ROA will drop by 5.644 percents. In columns 6-11, the effects of board size, CCP ratio and insider CCP ratio are still negative and significant while the effect of

state ownership is no longer significant, which support Hypothesis 2b.

In Table 10 (c), a negative and significant effect of state ownership dummy is found in column 1, which supports Hypothesis 1. As shown in column 4 and 5, CCP ratio and insider CCP ratio are negatively associated with ROE. Specifically, 1 percent increase in CCP ratio and insider CCP ratio will lead to 5.596 and 9.302 percents decrease in ROE respectively. In columns 6-11, the effects of CCP ratio and insider CCP ratio are still negative and significant while the effect of state ownership is no longer significant.

Table 11 presents the results of IPO performance. As for initial return, no results are found since the F values for all the models are not significant. For market capitalization, only the influence of firm size and finance industry (dummy) are significant.

Table 12 reveals how firm performance variate with insider CCP ratio. As shown in Panel A-C, in general, the two year buy-and-hold return, ROA and ROE are decreasing with the insider CCP ratio, and there are no trends for initial return and market capitalization.

Table 13 reveals how firm performance variate with outsider CCP ratio. As shown in Panel A-C, in general, no trends are found for the five performance measures.

## Table 10 The Determinant of Long-run Performance

(a)											
Variable					2 year	buy-and-hold	return				
	1	2	3	4	5	6	7	8	9	10	11
soedummy	-0.238*					-0.105	-0.091				
soeownership		-0.337						-0.063	-0.029		
soeasmajority			-0.180							-0.028	-0.007
vcdummy	-0.092	-0.019	-0.032			-0.021	-0.041	0.061	0.042	0.036	0.019
soe*vc	0.259	0.026	-0.005			0.142	0.138	-0.245	-0.232	-0.128	-0.121
board size				-0.042	-0.045	-0.039	-0.042	-0.042	-0.044	-0.042	-0.045
outsiderratio				2.256**	2.083**	2.184**	2.025*	2.224**	2.078**	2.237**	2.082*
ccp ratio(total)				-0.199		-0.146		-0.185		-0.190	
outsider ccp ratio					0.279		0.289		0.240		0.252
insider ccp ratio					-0.377		-0.321		-0.357		-0.366
firmsize	-1.04e-04*	-9.75e-05*	-9.94e-05*	-1.01e-04*	-9.74e-05*	-1.04e-04*	-1.00e-04*	-1.00e-04*	-9.68e-05*	-1.02e-04*	-9.81e-05*
age	-0.021	-0.023	-0.025*	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.016	-0.015
Real Estate	0.202	0.157	0.159	0.124	0.107	0.154	0.132	0.130	0.110	0.134	0.113
Industrial	0.086	0.087	0.086	0.077	0.070	0.074	0.069	0.075	0.070	0.077	0.073
Public Service	0.257	0.246	0.226	0.266	0.286	0.281	0.300	0.263	0.279	0.267	0.286
Finance	5.756*	5.275	5.334*	5.865*	5.640*	6.096*	5.844*	5.823*	5.614*	5.915*	5.684*
Service	0.586**	0.569**	0.565**	0.516**	0.545**	0.556**	0.578**	0.528**	0.546**	0.530**	0.548**
benchmark return	0.536***	0.528***	0.519***	0.541***	0.542***	0.546***	0.545***	0.547***	0.547***	0.540***	0.541***
Constant	0.692***	0.684***	0.693***	0.207	0.286	0.210	0.286	0.208	0.277	0.214	0.284
Adj R <sup>2</sup>	0.1549	0.1509	0.1476	0.1867	0.1865	0.1772	0.1763	0.1766	0.1755	0.1759	0.1750
F value	4.6***	4.49***	4.4***	5.51***	5.13***	4.32***	4.08***	4.31***	4.07***	4.29***	4.06***
Vif	5.17	4.91	4.84	4.86	4.60	4.44	4.28	4.22	4.07	4.14	4.00

Variable						ROA					
	1	2	3	4	5	6	7	8	9	10	11
soedummy	-2.662***					-1.694	-1.553				
soeownership		-2.749						-0.588	-0.196		
soeasmajority			0.132							1.501	1.752
vcdummy	-0.497	0.218	0.958			-0.256	-0.447	0.610	0.393	1.247	1.044
soe*vc	3.891**	5.15	-1.033			3.030*	2.987	2.609	2.726	-2.546	-2.484
board size				-0.417*	-0.445*	-0.403	-0.425*	-0.457*	-0.482*	-0.496**	-0.520**
outsiderratio				-5.042	-7.030	-5.990	-7.590	-4.803	-6.513	-3.630	-5.530
ccp ratio(total)				-3.659***		-2.684*		-3.291**		-3.965***	
outsider ccp ratio					1.668		1.554		1.532		1.279
insider ccp ratio					-5.644***		-4.388**		-5.262**		-6.065***
firmsize	-8.15e-04*	-7.70e-04*	-7.32e-04*	-6.54e-04	-6.17e-04	-6.86e-04	-6.51e-04	-6.54e-04	-6.20e-04	-6.14e-04	-5.75e-04
age	0.006	-0.008	-0.016	0.036	0.041	0.036	0.039	0.036	0.041	0.054	0.062
<b>Real Estate</b>	0.030	-0.463	-0.551	-0.894	-1.083	-0.347	-0.559	-0.718	-0.935	-0.792	-1.036
Industrial	0.682	0.683	0.842	0.789	0.737	0.686	0.671	0.679	0.658	0.875	0.853
<b>Public Service</b>	0.104	-0.168	-0.599	-0.067	0.122	0.358	0.514	0.055	0.210	-0.063	0.120
Finance	44.809*	40.567	38.475	37.482	35.155	40.483	38.144	38.042	35.806	36.532	33.971
Service	2.238	1.889	1.415	1.092	1.461	1.810	2.060	1.323	1.583	0.827	1.100
Industry ROA	0.447**	0.460**	0.492**	0.466**	0.486**	0.443**	0.460	0.456**	0.476**	0.481**	0.503**
Constant	4.637***	4.322***	3.784**	10.231**	11.050**	10.548**	11.209**	10.344**	11.047**	9.805**	10.556**
Adj R <sup>2</sup>	0.0381	0.0139	0.0024	0.0452	0.0496	0.0591	0.0530	0.0384	0.0411	0.0436	0.0477
F value	1.78*	1.28	1.05	1.93**	1.94**	1.84**	1.81**	1.62*	1.62*	1.70*	1.72**
Vif	5.20	4.93	4.87	4.88	4.63	4.46	4.30	4.23	4.08	4.16	4.02

(c)											
Variable						ROE					
	1	2	3	4	5	6	7	8	9	10	11
soedummy	-4.729***					-3.122	-2.864				
soeownership		-5.080						-1.416	-0.778		
soeasmajority			0.569							3.006	3.415
vcdummy	-1.181	1.240	2.260			-0.653	-0.994	1.987	1.628	2.875*	2.527
soe*vc	7.939**	5.287	-4.532			6.514**	6.435**	1.115	1.313	-7.115	-6.992
board size				-0.610	-0.664	-0.613	-0.655	-0.687	-0.730	-0.774*	-0.817*
outsiderratio				1.852	-1.757	0.062	-2.783	2.060	-0.753*	4.716	1.467
ccp ratio(total)				-5.596**		-3.693		-4.858*		-6.230**	
outsider ccp ratio					4.226		3.992		3.229		2.884
insider ccp ratio					-9.302**		-6.816*		-8.191**		-9.904***
firmsize	9.34e-06	1.65e-04	2.26e-04	2.78e-04	3.39e-04	2.40e-04	2.99e-04	2.87e-04	3.40e-04	3.53e-04	4.18e-04
age	-0.042	-0.066	-0.082	0.015	0.023	0.013	0.018	0.016	0.024	0.048	0.061
<b>Real Estate</b>	3.796	2.867	2.753	2.087	1.715	3.177	2.773	2.465	2.082	2.366	1.923
Industrial	1.738	1.673	1.965	1.872	1.808	1.746	1.739	1.680	1.662	2.052	2.029
Public Service	0.841	0.117	-0.457	0.342	0.766	1.219	1.566	0.458	0.789	0.419	0.815
Finance	2.532	-4.686	-8.157	-6.106	-10.345	-1.250	-5.473	-5.515	-9.258	-7.825	-12.258
Service	6.129*	5.343	4.310	4.008	4.679	5.569	6.007*	4.544	4.960	3.466	3.921
<b>Industry ROE</b>	0.371***	0.379***	0.381***	0.389***	0.413***	0.382***	0.401***	0.392***	0.411***	0.393***	0.414***
Constant	5.643**	5.171**	4.343*	10.449	11.859	11.020	12.151	10.594	11.719	9.662	10.918
Adj R <sup>2</sup>	0.0400	0.0105	0.0030	0.0298	0.0350	0.0450	0.0464	0.0253	0.0272	0.0365	0.0403
F value	1.82*	1.21	1.06	1.60*	1.65*	1.73*	1.70	1.40	1.40	1.58*	1.60*
Vif	5.19	4.92	4.86	4.87	4.61	4.45	4.29	4.22	4.07	4.15	4.01

Variable						Initial Return					
	1	2	3	4	5	6	7	8	9	10	11
soedummy	-0.207					-0.109	-0.130				
soeownership		-0.178						0.041	-0.009		
soeasmajority			-0.173							-0.073	-0.105
vcdummy	0.032	0.277	0.300*			0.042	0.071	0.299	0.328	0.302	0.330
soe*vc	0.599*	0.282	0.0387			0.505	0.510	-0.008	-0.027	-0.095	-0.107
board size				-0.020	-0.018	-0.035	-0.032	-0.359	-0.032	-0.033	-0.029
outsiderratio				-1.315	-1.168	-1.300	-1.070	-1.149	-0.929	-1.237	-0.988
ccp ratio(total)				-0.487*		-0.369		-0.442		-0.415	
outsider ccp ratio					-0.891		-0.997		-1.085		-1.126
insider ccp ratio					-0.336		-0.117		-0.181		-0.132
firmsize	-1.659e-04*	-1.67e-04*	-1.687e-04**	-1.568e-04*	-1.596e-04*	-1.497e-04*	-1.552e-04*	-1.526e-04*	-1.574e-04*	-1.551e-04*	-1.607e-04*
age	-0.011	-0.012	-0.013	-0.008	-0.008	-0.008	-0.009	-0.008	-0.008	-0.009	-0.009
<b>Real Estate</b>	0.087	0.041	0.046	-0.018	-0.003	0.057	0.089	0.027	0.056	0.037	0.071
Industrial	-0.031	-0.049	-0.055	-0.017	-0.011	-0.023	-0.165	-0.040	-0.033	-0.042	-0.034
<b>Public Service</b>	0.072	-0.008	-0.023	0.020	0.003	0.103	0.075	0.021	-0.005	0.023	-0.007
Finance	9.530*	9.428*	9.492*	8.963*	9.151*	8.861*	9.226*	8.930*	9.247*	9.032*	9.400*
Service	0.176	0.106	0.124	0.014	-0.010	0.127	0.097	0.044	0.016	0.074	0.045
Constant	1,580***	1.572***	1.589***	2.351***	2.283***	2.398***	2.289***	2.349***	2.243***	2.370***	2.256***
Adj R <sup>2</sup>	0.0064	-0.0065	-0.0049	-0.065	-0.0100	0.0039	0.0023	-0.0063	-0.0078	-0.0054	-0.0061
F value	1.14	0.86	0.89	0.86	0.81	1.06	1.04	0.90	0.88	0.91	0.91
Vif	5.57	5.27	5.20	5.22	4.90	4.69	4.50	4.44	4.26	4.36	4.19

**(a)** 

Variable					Ma	rket Capitaliza	tion				
	1	2	3	4	5	6	7	8	9	10	11
soedummy	-85.541					51.465	57.854				
soeownership		-119.129						106.298	128.316		
soeasmajority			-10.835							112.484	119.404
vcdummy	267.533	236.831	407.232			315.837	306.86	301.352	288.565	456.181	450.354
soe*vc	249.512	1092.198	-267.165			148.219	146.605	848.627	857.004	-390.174	-387.722
board size				-64.338	-66.899	-90.552	-91.656	-88.906	-90.444	-87.003	-87.751
outsiderratio				-1506.493	-1673.221	-1288.448	-1360.654	-1210.883	-1307.596	-1246.961	-1299.846
ccp ratio(total)				-318.218		-258.159		-249.846		-283.836	
outsider ccp ratio					141.839		-60.929		31.999		-133.136
insider ccp ratio					-489.651		-337.259		-364.589		-343.992
firmsize	1.395***	1.391***	1.394***	1.408***	1.412***	1.420***	1.422***	1.412***	1.414***	1.415***	1.416***
age	-12.294	-12.449	-13.191	-9.292	-8.891	-8.955	-8.815	-8.299	-8.026	-7.492	-7.274
<b>Real Estate</b>	-26.064	-36.531	-40.564	-159.548	-176.666	-106.226	-116.413	-94.251	-107.433	-93.585	-100.859
Industrial	114.628	104.613	114.900	126.539	119.497	106.510	104.592	93.443	90.375	108.867	107.266
<b>Public Service</b>	274.323	271.547	232.867	261.846	281.177	298.922	307.669	283.590	294.845	269.336	275.717
Finance	-55974.47**	-55816.7**	-56005.5**	-56321.78**	-56535.4**	-56672.75**	-56787.22**	-56217.71**	-56356.78**	-56386.83**	-56464.94**
Service	15.936	8.386	-20.316	-102.816	-75.537	-44.587	-35.073	-56.179	-44.135	-79.620	-73.410
Constant	301.139**	305.469**	288.841**	1548.58**	1626.234**	1569.594**	1603.678**	1538.317**	1584.498**	1523.123**	1547.245**
Adj R <sup>2</sup>	0.7896	0.7910	0.7894	0.7870	0.7864	0.7915	0.7905	0.7928	0.7919	0.7914	0.7904
F value	82.07***	82.76***	81.96***	80.80***	73.28***	64.06***	59.22***	64.56***	59.72***	64.05***	59.79***
Vif	5.57	5.27	5.20	5.22	4.90	4.69	4.50	4.44	4.26	4.36	4.19

**(b)** 

## Table 12 Statistics of Firm Performance by Insider CCP Ratio

#### Panel A: Total (N=217)

Insider CCP Ratio (%)	0-20 (1	58 obs)	20-40 (	24 obs)	40-60 (	21 obs)	60-80 (14 obs)	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
2 year buy and hold return	1.171	0.818	1.002	0.669	0.7879	0.385	1.176	0.510
ROA	6.361	5.608	4.717	4.174	2.287	6.066	5.263	2.337
ROE	10.537	9.794	7.401	7.600	4.850	11.703	9.292	4.276
IPO Initial Return	1.447	1.084	1.370	1.203	1.519	0.959	1.026	0.639
Market Cap (Million	1659.102	2475.477	1068.072	776.165	1429.406	1181.002	1145.141	469.161
RMB)								

#### Panel B : SOEs (N=76)

Insider CCP Ratio (%)	0-20 (4	l6 obs)	20-40 (	12 obs)	40-60	(9 obs)	60-80 (9 obs)	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
2 year buy and hold return	1.106	0.697	1.1237	0.802	0.731	0.230	1.149	0.525
ROA	5.549	7.417	5.018	5.272	2.241	6.740	5.301	2.260
ROE	9.510	14.312	7.633	10.133	5.353	13.638	9.060	3.684
IPO Initial Return	1.584	1.232	1.341	1.077	1.584	0.912	1.050	0.755
Market Cap (Million	1989.406	4071.536	998.177	608.940	944.208	564.233	1192.109	480.282
RMB)								

#### Panel C: Non-SOEs (N=141)

Insider CCP Ratio (%)	0-20 (2	112 obs)	20-40	(12 obs)	40-60	(12 obs)	60-80 (5 obs)	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
2 year buy and hold return	1.198	0.865	0.881	0.511	0.831	0.476	1.224	0.537
ROA	6.695	4.668	4.416	2.904	2.321	5.818	5.194	2.742
ROE	10.959	7.212	7.170	4.239	4.472	10.649	9.710	5.651
<b>IPO Initial Return</b>	1.391	1.018	1.399	1.366	1.471	1.030	0.982	0.428
Market Cap (Million	1523.442	1372.282	1137.967	937.104	1793.305	1402.615	1060.598	490.027
RMB)								

Note: The Range of Insider CCP Ratio is from 0-66.67%

## Table 13 Statistics of Firm Performance by Outsider CCP Ratio

#### Panel A: Total (N=217)

Outsider CCP Ratio (%)	0-10 (	143 obs)	10-20 (	(42 obs)	20-30	(23 obs)	>30 (9 0bs)	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
2 year buy and hold return	1.123	0.805	1.138	0.732	0.995	0.491	1.200	0.814
ROA	6.121	5.598	4.655	5.783	5.403	4.797	4.994	3.144
ROE	10.128	9.679	8.015	11.048	9.310	7.708	8.368	6.308
<b>IPO Initial Return</b>	1.521	1.111	1.203	0.951	1.349	1.052	0.968	0.534
Market Cap (Million	1517.688	1856.262	1642.239	3433.309	1429.552	1164.185	1659.802	1294.824
RMB)								

#### Panel B: SOEs (N=76)

Outsider CCP Ratio (%)	0-10 (4	15 obs)	10-20 (	18 obs)	20-30	(9 obs)	>30 (4	4 obs)
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
2 year buy and hold return	1.066	0.715	1.013	0.468	0.956	0.464	1.617	1.071
ROA	5.247	7.680	4.046	5.787	5.779	2.929	5.595	1.828
ROE	8.657	15.137	7.027	9.670	11.076	4.452	10.755	6.880
IPO Initial Return	1.555	1.105	1.434	1.183	1.603	1.315	0.615	0.025
Market Cap (Million	1486.774	2605.588	2231.13	5198.224	1103.132	466.868	1431.067	640.633
RMB)								

#### Panel C: Non-SOEs (N=141)

Outsider CCP Ratio (%)	0-10 (9	98 obs)	<b>10-20 (24 obs)</b>		20-30	(14 obs)	>30 (5 obs)	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
2 year buy and hold return	1.150	0.845	1.232	0.878	1.021	0.524	0.866	0.388
ROA	6.522	4.314	5.111	5.862	5.162	5.788	4.514	4.076
ROE	10.804	5.635	8.756	12.130	8.174	9.208	6.458	5.816
<b>IPO Initial Return</b>	1.506	1.118	1.031	0.711	1.185	0.857	1.251	0.588
Market Cap (Million	1531.883	1401.428	1200.571	751.862	1639.394	1427.694	1842.790	1717.892
RMB)								

**Note:** The Range of Outsider CCP Ratio is from 0-44.44%

#### **5. Discussion And Conclusion**

Extant studies have investigated the determinants of board structures and the relationship between firm performance and board structures in the context of developed economies. However, relatively few studies focus on transition economies. In addition, the role of institutional investors such as blockholders and venture capitalist in board structures and firm performance has been extensively investigated, while the role of government is largely ignored. This study attempts to examine the roles of two types of institutional investors—the state and venture capitalist in board structures in a context of transition economy—China. Specifically, three aspects of board structures are considered: board size, board composition and board political connection (i.e CCP membership).

**State ownership and firm performance.** Prior studies have found that state ownership is detrimental to firm performance (Boardman and Vining, 1989; Xu and Wang, 1999; Qi, Wu and Zhang, 2000; Sun and Tong, 2003). Two reasons may account for the inefficiency of state ownership: (1) conflicts exist between firm's economic goals and government's social goals (Bös, 1991; Shleifer and Vishny, 1994; Lin et al, 1998); (2) agency problems are more severe in state-owned firms (Xu and Wang, 1999; Wei, Xie and Zhang, 2005). Consistent with prior studies, state ownership is found to be negatively associated with several performance measures in this study.

State ownership and board structures. In the reform process of Chinese SOEs, most members of previous management are retained for parallel positions (Qi, Wu and Zhang, 2000), and new members are likely to be brought in the firm during the privatization, thus, state-owned firms are expected to have a larger board. Outside directors are believed to be effective monitors who can reduce the opportunistic behaviors of the management (Fama and Jensen, 1983). However, such monitors are not preferred in SOEs where agency problems are severe, since they may thwart the effort of the insiders to seek their own interests. In this study, Chinese Communist Party (CCP) is included to reflect the political connections of the board. Since the management teams of Chinese SOEs are directly appointed by the government, it is reasonable to expect the fraction of CCP membership in board is higher in SOEs. The results of this study show that state ownership is positively associated with board size and CCP ratio in board and negatively associated with the outsider ratio in board, which support the predictions above.

**Board structures and firm performance.** There have been disagreements on the relationship between board size and firm performance. On one hand, a larger board represents more valuable resources, which may contribute to the firm performance (Pfeffer, 1973; Provan, 1980; Goodstein et al, 1994). On the other hand, agency problem, free-riding problem and coordination problem also arise as the board becomes larger (Fama and Jensen, 1983; Olson, 1965; Lipton and Lorsh, 1992). In this study, board size is found to be negatively associated with ROE, which supports

the second perspective. Outsiders are almost unanimously believed to be effective monitors and hence would be beneficial for firm performance. Consistent with this prediction, outsider ratio is found to be positively associated with two year buy-and-hold return in this study. CCP is the ruling party in China, affiliation with CCP may help the firm to access to key resources and hence get superior performance (Li, Meng, Wang and Zhou, 2007). However, the results of this study suggest that CCP ratio in board is detrimental to firm ROA and ROE. In particular, the role of CCP membership is heterogeneous among the insiders and the outsiders: the impact of CCP membership of the outsiders on firm performance tends to be positive, although not significant, while the influence of CCP membership of the insiders is negative and significant. This finding is opposite to the prediction, a possible explanation is that the politicians must extract some rent during the political process (Shleifer and Vishny, 1994), only when the benefits outweigh the costs will political connections add value to the firms. Finally, the mediation role of board structures is supported by the results.

The role of VC. Venture capitalists are believed to be active investors who try to add value to their portfolio companies, hence, VC-backed firms are supposed to have more efficient board structures and superior performance than non-VC-backed firms (Brav and Gompers, 1997; Hellmann and Puri, 2002; Baker and Gampers, 2003). However, the evidence in this study reveals that VC-backed firms tend to have larger board size and less outsiders in board, and does not outperform those non-VC-backed firms. This means the role of VC in developed market and emerging market are

heterogeneous.

**Implications.** This study offers some implications for government, firm owners and investors. First, to increase firm's financial performance, government should consider further dilute its ownership. Second, to build a more effective board, firm owners should consider a smaller board size, a higher outsider ratio. Besides, they should be more cautious to bring in politically connected insiders since the benefits of political connections might be offset by the cost. Third, investors may adjust their expectations of the VC-backed firms in emergent markets, since the findings suggest VC involvement does not add much value to their portfolio firms.

Limitations. Like all research, this study has limitations. The most obvious limitation stems from the sample, since this study is based on a sample of Chinese SMEs over the period of 2004-2010, it is difficult to tell whether the results can be generalized to other emergent markets over a different period. In addition, the tradeoff of state's social goals and firm's economic goals are used to explain the underperformance of SOEs, however, the performance of state's social goals (e.g employment, salary) are not captured in this study. Besides, although VC involvement is found to be ineffective in this study, the reason is not well understood since VC background and investment process are not observed. Finally, since this study focuses on long-run performance and the SME board has a relatively short history, practically panel data model is not available, future research may consider using panel data model.

#### References

- Agrawal, A., & Knoeber, C. R. 2001. Do some outside directors play a political role? *Journal of Law & Economics*, 44(1): 179-198.
- Albanese, R., & Vanfleet, D. D. 1985. Rational behavior in groups: The free-riding tendency. Academy of Management Review, 10(2): 244-255.
- Alexander, J. A., Fennell, M. L., & Halpern, M. T. 1993. Leadership instability in hospitals: The influence of board-CEO relations and organizational growth and decline. *Administrative Science Quarterly*, 38(1): 74-99.
- Bös, D. 1991. Privatization: a theoretical treatment. Oxford University Press.
- Backman, M. 1999. Asian Eclipse: Exposing the dark side of business in Asia. John Wiley, Singapore.
- Baker, M., & Gompers, P. A. 2003. The determinants of board structure at the initial public offering. *Journal of Law & Economics*, 46(2): 569-598.
- Barry, C. B., Muscarella, C. J., Peavy, J. W., & Vetsuypens, M. R. 1990. The role of venture capital in the creation of public companies: Evidence from the going-public process. *Journal of Financial Economics*, 27(2): 447-471.
- Baysinger, B. D., & Butler, H. N. 1985. The role of corporate law in the theory of the firm. *Journal of Law & Economics*, 28(1): 179-191.
- Berle, A. A., & Means, G. C. 1932. The modern corporation and private property.
- Bhagat, S., & Black, B. 1999. The uncertain relationship between board composition and firm performance. *Business Lawyer*, 54(3): 921-+.
- Bian, Y. J., Shu, X. L., & Logan, J. R. 2001. Communist party membership and regime dynamics in China. *Social Forces*, 79(3): 805-841.
- Boardman, A. E., & Vining, A. R. 1989. Ownership and performance in competitive environments: A comparison of the performance of private, mixed, and state-owned enterprises. *Journal of Law & Economics*, 32(1): 1-33.
- Brav, A., & Gompers, P. A. 1997. Myth or reality? The long-run underperformance of initial public offerings: Evidence from venture and nonventure capital-backed companies. *Journal of Finance*, 52(5): 1791-1821.
- Certo, S. T. 2003. Influencing initial public offering investors with prestige: Signaling with board structures. *Academy of Management Review*, 28(3): 432-446.
- Chen, D. H., Fan, J. P. H., & Wong, T. J. 2002. Do politicians jeopardize professionalism? Decentralization and the structure of chinese corporate boards. *Working Paper*.
- Chhaochharia, V., & Grinstein, Y. 2009. CEO compensation and board structure. *Journal of Finance*, 64(1): 231-261.
- Conyon, M. J., & Peck, S. L. 1998. Board control, remuneration committees, and top management compensation. Academy of Management Journal, 41(2): 146-157.
- Core, J. E., Holthausen, R. W., & Larcker, D. F. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51(3): 371-406.
- Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 19(3): 269-290.
- Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. 1999. Number of directors and financial performance: A meta-analysis. *Academy of Management Journal*, 42(6): 674-686.

- Dollar, D. 1990. Economic reform and allocative efficiency in china state-owned industry. *Economic Development and Cultural Change*, 39(1): 89-105.
- Eisenberg, T., Sundgren, S., & Wells, M. T. 1998. Larger board size and decreasing firm value in small firms. *Journal of Financial Economics*, 48(1): 35-54.
- Eisenhardt, K. M. 1989. Agency theory: An assessment and review. *Academy of Management Review*, 14(1): 57-74.
- Faccio, M. 2006. Politically connected firms. American Economic Review, 96(1): 369-386.
- Fama, E. F. 1980. Agency problems and the theory of the firm. *Journal of Political Economy*, 88(2): 288-307.
- Fama, E. F., & Jensen, M. C. 1983. Separation of ownership and control. Journal of Law & Economics, 26(2): 301-325.
- Fan, J. P. H., Wong, T. J., & Zhang, T. Y. 2007. Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics*, 84(2): 330-357.
- Fisman, R. 2001. Estimating the value of political connections. *American Economic Review*, 91(4): 1095-1102.
- Gertner, R., & Kaplan, S. N. 1996. The value-maximizing board. Working Paper.
- Gilson, S. C. 1990. Bankruptcy, boards, banks, and blockholders: Evidence on changes in corporate ownership and control when firms default. *Journal of Financial Economics*, 27(2): 355-387.
- Gompers, P. A. 1996. Grandstanding in the venture capital industry. *Journal of Financial Economics*, 42(1): 133-156.
- Gompers, P. A., & Lerner, J. 1995. An analysis of compensation in the united-states venture partnership. *Journal of Finance*, 50(3): 971-972.
- Gompers, P. A., & Lerner, J. 1998. What drives venture capital fundraising. *Brookings Papers on Economic Activity*: 149-204.
- Goodstein, J., Gautam, K., & Boeker, W. 1994. The effects of board size and diversity on strategic change. *Strategic Management Journal*, 15(3): 241-250.
- Gorman, M., & Sahlman, W. A. 1989. What do venture capitalists do. *Journal of Business Venturing*, 4(4): 231-248.
- Gupta, N. 2005. Partial privatization and firm performance. Journal of Finance, 60(2): 987-1015.
- Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views of organizational outcomes. *Research in Organizational Behavior*, 9: 369-406.
- Hellmann, T., & Puri, M. 2002. Venture capital and the professionalization of start-up firms: Empirical evidence. *Journal of Finance*, 57(1): 169-197.
- Hermalin, B. E., & Weisbach, M. S. 1991. The effects of board composition and direct incentives on firm performance. *Financial Management*, 20(4): 101-112.
- Hermalin, B. E., & Weisbach, M. S. 1998. Endogenously chosen boards of directors and their monitoring of the CEO. American Economic Review, 88(1): 96-118.
- Hermalin, B. E., & Weisbach, M. S. 2003. Board of directors as an endogenously-determined institution: A survey of the economic literature. *Economic Policy Review*, 9: 7-26.
- Hochberg, Y. A. 2008. Venture capital and corporate governance in the newly public firm. *Working Paper*.

Holmstrom, B. 1979. Moral hazard and observability. Bell Journal of Economics, 10(1): 74-91.

Jain, B. A., & Kini, O. 1995. Venture capitalist participation and the post-issue operating performance

of IPO firms. Managerial and Decision Economics, 16(6): 593-606.

- Jensen, M. C. 1993. The modern industrial-revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48(3): 831-880.
- Kaplan, S. N., & Stromberg, P. 2000. How do venture capitalists choose and manage their investments? Working Paper, University of Chicago.
- Kaplan, S. N., & Stromberg, P. 2001. Venture capitalists as principals: Contracting, screening, and monitoring. *American Economic Review*, 91(2): 426-430.
- Khwaja, A. I., & Mian, A. 2005. Do lenders favor politically connected firms? Rent provision in an emerging financial market. *Quarterly Journal of Economics*, 120(4): 1371-1411.
- Klein, A. 1998. Firm performance and board committee structure. *Journal of Law & Economics*, 41(1): 275-303.
- Laffont, J. J., & Tirole, J. 1993. Cartelization by regulation. *Journal of Regulatory Economics*, 5(2): 111-130.
- Lerner, J. 1995. Venture capitalists and the oversight of private firms. *Journal of Finance*, 50(1): 301-318.
- Li, H. B., Meng, L. S., Wang, Q., & Zhou, L. A. 2008. Political connections, financing and firm performance: Evidence from Chinese private firms. *Journal of Development Economics*, 87(2): 283-299.
- Li, H. Y., & Zhang, Y. 2007. The role of managers' political networking and functional experience in new venture performance: Evidence from China's transition economy. *Strategic Management Journal*, 28(8): 791-804.
- Lin, J. Y. F., Cai, F., & Li, Z. 1998. Competition, policy burdens, and state-owned enterprise reform. *American Economic Review*, 88(2): 422-427.
- Linck, J. S., Netter, J. M., & Yang, T. 2008. The determinants of board structure. *Journal of Financial Economics*, 87(2): 308-328.
- Lipton, M., & Lorsch, J. W. 1992. A modest proposal for improved corporate governance. Business Lawyer, 48(1): 59-77.
- Lorsch, J. W., & Maclver, E. 1989. Pawns or potentates: the reality of america's corporate boards. *Harvard Business School Press*.
- MacAvoy, P. W., Cantor, S., Dana, J., & Peck, S. 1983. ALI proposals for increased control of the corporation by the board of directors: An economic analysis. In: Statement of the Business Roundtable on the American Law Institute's proposed principles of corporate governance and structure: Restatement and recommendations. *Business Roundtable, New York*.
- Mace, M. L. 1971. Directors: Myth and Reality. Harvard Business School Press.
- Mak, Y. T., & Li, Y. 2001. Determinants of corporate ownership and board structure: evidence from Singapore. *Journal of Corporate Finance*, 7(3): 235-256.
- Mallette, P., & Fowler, K. L. 1992. Effects of board composition and stock ownership on the adoption of poison pills. *Academy of Management Journal*, 35(5): 1010-1035.
- Megginson, W. L., & Netter, J. R. 2001. From state to market: A survey of empirical studies on privatization. *Journal of Economic Literature*, 39(2): 321-389.
- Megginson, W. L., & Weiss, K. A. 1991. Venture capitalist certification in initial public offerings. *Journal of Finance*, 46(3): 879-903.
- Mehran, H. 1995. Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics*, 38(2): 163-184.

- Mintzberg, H. 1983. Why America needs, but cannot have, corporate democracy. *Organizational Dynamics*, 11(4): 5-20.
- Monks, R. A., & Minow, N. 2001. Corporate governance. Blackwell Publishing, London.
- North, D. C. 1990. Institutions, institutional change and economic performance. *Cambridge University Press*.
- Olson, M. 1965. The logic of collective action: Public goods and the theory of groups. *Cambridge, MA: Harvard University Press*.
- Patton, A., & Baker, J. C. 1987. Why wont directors rock the boat. *Harvard Business Review*, 65(6): 10-&.
- Peng, M. W., & Luo, Y. D. 2000. Managerial ties and firm performance in a transition economy: The nature of a micro-macro link. *Academy of Management Journal*, 43(3): 486-501.
- Pfeffer, J. 1973. Size, composition, and function of hospital boards of directors: A study of organization-environment linkage. *Administrative Science Quarterly*, 18(3): 349-364.
- Provan, K. G. 1980. Board power and organizational effectiveness among human service agencies. *Academy of Management Journal*, 23(2): 221-236.
- Qi, D., Wu, W., & Zhang, H. 2000. Shareholding structure and corporate performance of partially privatized firms: Evidence from listed Chinese companies. *Pacific-Basin Finance Journal*, 8(5): 587-610.
- Rechner, P. L., & Dalton, D. R. 1991. CEO duality and organizational performance: A longitudinal analysis. *Strategic Management Journal*, 12(2): 155-160.
- Rock, K. 1986. Why new issues are underpriced. Journal of Financial Economics, 15(1-2): 187-212.
- Sahlman, W. A. 1990. The structure and governance of venture capital organizations. *Journal of Financial Economics*, 27(2): 473-521.
- Scott, W. R. 1995. Institutions and organizations. Thousand Oaks, CA: Sage.
- Shivdasani, A., & Yermack, D. 1999. CEO involvement in the selection of new board members: An empirical analysis. *Journal of Finance*, 54(5): 1829-1853.
- Shleifer, A., & Vishny, R. W. 1994. Politicians and firms. *Quarterly Journal of Economics*, 109(4): 995-1025.
- Spence, M. 1973. Job market signaling. Quarterly Journal of Economics, 87(3): 355-374.
- Stigler, G. J. 1971. Theory of economic regulation. *Bell Journal of Economics and Management Science*, 2(1): 3-21.
- Sun, Q., & Tong, W. H. S. 2003. China share issue privatization: the extent of its success. Journal of Financial Economics, 70(2): 183-222.
- Walsh, J. P., & Seward, J. K. 1990. On the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, 15(3): 421-458.
- Warne, K. F. 1988. Essays on the venture capital market. Yale University Unpublished Ph.D. Dissertation.
- Wei, Z. B., Xie, F. X., & Zhang, S. R. 2005. Ownership structure and firm value in China's privatized firms: 1991-2001. *Journal of Financial and Quantitative Analysis*, 40(1): 87-108.
- Weisbach, M. S. 1988. Outside directors and CEO turnover. *Journal of Financial Economics*, 20(1-2): 431-460.
- Westphal, J. D., & Zajac, E. J. 1995. Who shall govern? CEO board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, 40(1): 60-83.
- Xu, X. N., & Wang, Y. 1999. Ownership structure and corporate governance in Chinese stock

companies. China Economic Review, 10(1): 75-98.

Yermack, D. 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2): 185-211.

## Appendix--Histograms (1) SOE Ownership within SOEs



### (2) Board Structures











## (3) Performance









