THE PARADOX OF PROSPERITY IN CHINA: THE INTERPLAY AMONG ENTREPRENEURS, GOVERNMENT, AND VENTURE CAPITALISTS AT INITIAL PUBLIC OFFERING

A DISSERTATION IN
Entrepreneurship and Innovation
and
Public Affairs and Administration

Presented to the Faculty of the University
of Missouri-Kansas City in partial fulfillment of
the requirements for the degree

DOCTOR OF PHILOSOPHY

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2012

THE PARADOX OF PROSPERITY IN CHINA: THE INTERPLAY AMONG ENTREPRENEURS, GOVERNMENT, AND VENTURE CAPITALISTS AT INITIAL PUBLIC OFFERING

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ABSTRACT

This dissertation includes three essays and focuses on a key entrepreneurial event in a life of a new venture, the initial public offering. Each essay investigates the mechanisms through which three key players, namely founders, government, and venture capitalists, influence governance structure and value creation in an emerging market. I have collected data on all 274 entrepreneurial firms with initial public offering from 2004 to 2009 in the "Small and Medium Enterprise Board" and "Growth Enterprise Market Board" in China. Drawing on resource dependency, multiple agency, and signaling theories, together these three essays aim to develop new theories and provide empirical insights into initial public offering of new ventures in the Chinese context.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Graduate Studies have examined a thesis titled “The Paradox of Prosperity in China: The Interplay among Entrepreneurs, Government, and Venture Capitalists at Initial Public Offering,” presented by Tang Wang, candidate for the Doctor of Philosophy degree, and certify that in their opinion it is worthy of acceptance.

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ACKNOWLEDGEMENTS

I want to thank Dr. Michael Song for allowing me to take on this difficult subject of study. This dissertation could not have been finished without his support and advice. I highly appreciate our discussions and debates regarding the definitions, challenges and essence of each theory, hypothesis, and variables. Dr. Mark Parry, my committee member, consistently challenged me to consider the meaning (not just the mechanics) of my research and academic career. In addition to helping me structure the data analysis used in this dissertation, Dr. Lisa Zhao was my first doctoral program professor. Her seminar on Multivariate Statistics taught me how to do data analysis appropriately and effectively, lessons that I have attempted to apply to my own work. Dr. Joe Singer provided insights on the process of shepherding a dissertation to completion. Finally, Nick Peroff, my co-discipline committee member, has reminded me of the hazards of translating theoretical arguments from the Western world to the reality in the Chinese context. I also grateful for other faculty at Department of Global Entrepreneurship and Innovation and beyond: Richard Arend, Sun Sunny Li, Dirk Libaers, and Dennis Park.

I have been indebted with support from wonderful colleagues at the Department of Global Entrepreneurship and Innovation. My fellow doctoral students including Greg, Yan, Anne, Xian, Xiaoming, and Junyon served as a both support group and sounding board. Fredrik Andersson, my neighbor in the office and a doctoral student majoring in social entrepreneurship and non-profit management, gave me the mental space to complete this dissertation and a forum to test my research ideas.

Most of all, I am deeply thankful to my family. My wife, Lulu, has wholeheartedly supported my journey for moving to the United States from China. She has given me great aspirations and accompanied me through many of the difficult times. My parents have been extremely patient with me over these years. Their unconditional love and support are the source of strength for me to take up the challenge of a doctoral program and finish the journey. I love you all.

CHAPTER 1

INTRODUCTION

This dissertation is concerned with a key entrepreneurial event in the life of a new venture, the initial public offering (IPO). The dissertation addresses three fundamental issues at the nexus of entrepreneurship and transitional institution: board of directors, government investment, and venture capital. The main thrust of the dissertation is to elaborate the mechanisms through which the three key players in such context, namely founders, government, and venture capitalists (VCs), influence governance structure and value creation. Drawing on resource dependency, multiple agency, and signaling theories, the three essays promote direct observation and analysis of contextual effects in Chinese management research.

Motivation

Research background

"The paradox of prosperity" refers not only to the empirical setting that I am studying, but also the various opportunities and challenges that new ventures face on the path to an IPO in an emerging economy. On one hand, the increasing attention of investors has ignited unprecedented excitement and created unfulfilled opportunities and entrepreneurs often grow their firms at high speed toward an IPO. On the other hand, the market infrastructure and institutions are underdeveloped in China and entrepreneurs often fall victim to the "grabbing hands" of various players. From this perspective, IPO in such context represents exactly as the paradox of prosperity – while shareholder wealth may be created fast, fortunes can similarly reversed just as fast.

My choice of China is twofold: First, with its GDP surpassing Japan in the second quarter of 2010, China has become the second-largest economy in the world. The fast development IPO market for small and young firms paves the way for Chinese ventures to raise capital and transform themselves. Second, cross-context theory application and improvement, characterized as "borrow with the intent to improve", constitutes a promising line of inquire for organizational scholars (Whetten, 2009). The research in emerging economies is critical to extend theoretical boundaries and generate knowledge on the management of firms operating in novel national contexts (Tsui, 2006). Hence, based on classical Western theories and Chinese setting, I attempt to use the context effect to explain organizational phenomenon and promote direct observation and analysis of contextual effects in Chinese organizational scholarship.

Research questions

Accordingly, three key research questions are addressed in this dissertation. First, is it detrimental to keep founders in the boardroom at the IPO? Second, how do government investment and entrepreneur affect IPO performance? Third, how does venture capital investment affect the pricing choices at IPO? These three separate yet coherent essays cover a wild range of independent variables. They are all tied to the three central themes in IPO research: corporate governance, upper echelons, and social influence (Certo, Holcomb, & Holmes Jr, 2009). In addition, all three essays fall into a common conclusion. That is, when market-supporting institutions are underdeveloped, entrepreneurs, government, and VCs have to rely on non-market strategies to achieve IPO success and these strategies do not come without a cost. Furthermore, all three essays share a common contribution of researching contextualization in Chinese management. Specifically, this dissertation explores the context effects of resource dependency theory in China where founders possess enormous internal power and resources and

the competence-building heavily relies on interpersonal relations. I expand the traditional principal-agent dyadic into a more diversified context where principals' interests are deviant from the firm and agents may behave more pro-organizationally. I also model the choice between following the leader and following the peer within a less transparent society and high power-distance culture. To the best of my knowledge, these three essays provide first studies about founders' retention, about the interplay between government and entrepreneurs, and about VC syndication in Chinese new ventures. Last, for practitioners and policy makers, all three essays shed light on how to build and manage an eco-system to promote entrepreneurship and IPO in China.

Data Description

The initial sample frame for this study was drawn from all IPOs from 2004 to 2009 in the "Small and Medium Enterprise" (SME) and "Growth Enterprise Market" (GEM) boards in the Shenzhen Stock Exchange, China. I focus on all 363 firms listed in the SME and GEM boards. Its combined market capitalization was approximately 25% of the overall Shenzhen Stock Exchange (by the end of 2009, China in total had over 1,700 publicly traded firms) (Ding, Nowak, & Zhang, 2010). Based on each company's self-description in its prospectus, 87 firms were dropped because they originated from established firms, state-owned enterprises, or other government-owned agencies or organizations. The sample was further reduced to 274 IPOs due to missing data. The average age of the firms at IPO was 3.93 years old. Information about firm was manually collected from each firm's prospectus, provided by WIND Data Services, a leading provider of financial databases in China (Lin, Peng, Yang, & Sun, 2009; Yuan, Xiao, & Zou, 2008). Stock and financial data was obtained from RESSET/DB, a prominent financial research database in China (Zhou & Zhu, 2009). Information about VC investors was collected

from WIND VC/Private Equity (PE) database and Zero2IPO VC/PE database, both of which are the most cited financial databases in China on VC industry. Figure 1 illustrates the 274 new venture IPOs in the SME and GEM boards over time (Note: The amount of proceeds raised is measured in billions of RMB).

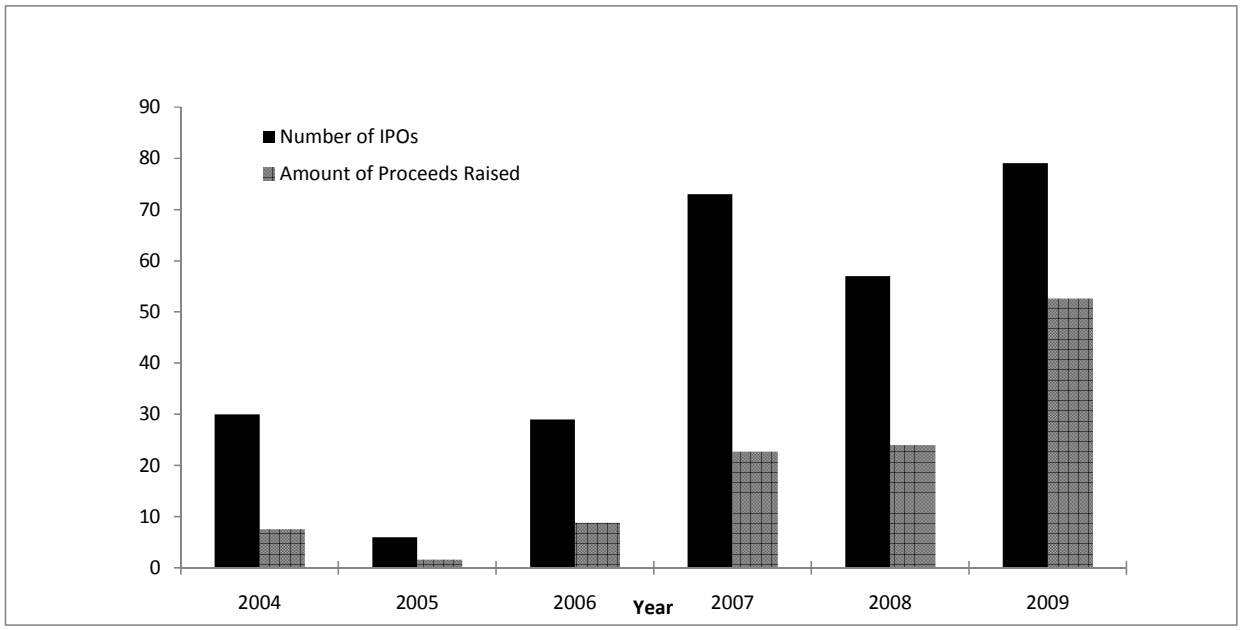


FIGURE 1
IPOs in China from 2004 to 2009

There are some advantages associated with my approach. First, while most existing research on ownership and governance structures uses samples of U.S. *Fortune* 500 firms, my study can provide a deeper understanding of the nature and consequences of small and new firm IPOs. Second, my aim is to study IPO activities among China's entrepreneurial firms. Given the growing Chinese power in the world economy, the sample can offer new insights on new ventures going public in China. Third, while existing research on new venture IPOs in the United States uses firm age as a measure in selecting entrepreneurial firms, I used an alternative approach by examining the details of a firm's origin and history before IPO. This fine-grained examination affords us a better opportunity to distinguish among various types of firms and build

an exclusive sample of early-stage private ventures. Fourth, archival data of listed firms obtained through China Securities Regulatory Commission (CSRC) filings is more accessible than case or survey data typically used in many previous studies of Chinese firms. Finally, given that I track all the IPOs in these two boards launched during the 2004 to 2009 period, I am not likely to have sample selection bias.

CHAPTER 2

ARE FOUNDER DIRECTORS DETRIMENTAL TO NEW VENTURES?

The board and executive team was originally comprised of initial founders, so a lot of emotional and psychological battles happened in the firm. It took us four years to reconcile the conflicts, restructure the company, and formalize our governance structure. Finally, before IPO, we only kept one founder in our board and the board size is decreased from 11 to 5. We also tried to strictly separate board and executives to enhance the power of the board.

-- Michael Minhong Yu, founder, chairman, and CEO of New Oriental Education & Technology Group, P. R. China

Introduction

Is it detrimental to have founders on the board of directors at IPO? Board serves as a key governance structure, resource entity, and signal to the market at IPO (Arthurs, Hoskisson, Busenitz, & Johnson, 2008; Certo, 2003; Kroll, Walters, & Le, 2007; Walters, Kroll, & Wright, 2010). The tumult of external changes places a premium on rapid decision making within a resource-constrained venture (Eisenhardt, 1989b). Thus, investors are especially concerned with whether a relatively young board can make fast decisions because most ventures form a formal board for the first time at IPO.

Rapid decision making is more important for ventures within an emerging market, such as China. First, new ventures going public have to deal with multiple actors (e.g., lawyers, investment bankers, regulators) (Arthurs et al., 2008; Baker & Gompers, 2003; Kroll et al., 2007). The constant market and institutional turbulence in an emerging market require a new venture's board to act promptly. Moreover, the underdeveloped institutions do not support the clear definition of roles of board members (Young, Peng, Ahlstrom, Bruton, & Jiang, 2008). Decision making processes are largely built upon informality including interpersonal ties and trust (Peng, 2004). As a result, it is challenging for a board to make rapid decisions. However,

few studies have explored the impact of founder directors on board's ability to make fast decisions at IPO.

This theoretical gap also echoes the mixed findings from previous literature on the link between board structure and IPO performance. Research emphasizing the governance has advocated a board largely composed of independent and outside directors (Certo, 2003; Eisenhardt, 1989a; Filatotchev & Bishop, 2002; Jensen & Meckling, 1976; Lan & Heracleous, 2010; Peng, 2004; Tian, Haleblian, & Rajagopalan, 2010). In contrast, recent studies find that boards of young firms at IPO are best controlled by original top management team (TMT) rather than outsiders (Arthurs et al., 2008; Kroll et al., 2007; Sanders & Boivie, 2004; Walters et al., 2010). As a result, whether founder directors serve as catalyst or poison is still unknown in the context of IPO and emerging markets.

To address these gaps and reconcile the debate, I explore the impact of founder directors at firm IPO. By doing this, I explicate that through prior joint work experience, founder directors can establish interpersonal trust, reduce internal conflicts, and strengthen the team cohesion which can speed up the decision process. On the other hand, founder directors may be associated with the lack of decision alternatives and the difficulty to make rapid decisions (Eisenhardt, 1989b). As a result, there is a tradeoff between the benefits of a strong presence of founder directors and those of attracting external nonfounder directors. I also answer calls for more context-specific examination of board composition by incorporating three contingency factors (Davis, Schoorman, & Donaldson, 1997): Chief Executive Officer (CEO) turnover, founders' ownership, and venture capitalist (VC) director. As Dalton & Dalton (2011) note, "multilevel research including these dimensions (the CEO and the board) of board leadership and the composition of the board would be unprecedented and may well be the search that discovers our

metaphorical governance unicorn" (p. 409). My findings show that the presence of founder directors can have an inverse U-shaped impact on IPO performance. The moderating effects also deepen our understanding of the moderating effects of CEO and VC (Dalton, Daily, Ellstrand, & Johnson, 1998). More specifically, if the firm is managed by a non-original CEO, the relationship between the founder–board ratio and IPO price premium is an inversed U shape; otherwise, founder directors have no impact on IPO performance. If a VC sits on board, the presence of founder directors has a linear positive impact on IPO performance; otherwise, the inversed U shape still holds.

While previous research has examined the new venture board at IPO, my study is distinctive in several ways. First, I focus on founders, whereas previous studies examine original TMT (Kroll et al., 2007) or TMT at IPO (Walters et al., 2010). This distinction is critical because founders not only create the company but also own part of the company. Many firms experiencing internal conflicts can be characterized as "threshold firms" that are near the point of transition from founder to professional management. It is the founders who are reluctant to trust and appoint "strangers" on board at IPO, which creates frictions and affects the speed of decision process (Anderson & Reeb, 2004). Research has also shown that before IPO new ventures have high incentives to hire prestigious outsiders just for the signaling purpose (Chen, Hambrick, & Pollock, 2008). Thus, to focus on founders is more appropriate for examining the internal tensions within a new venture.

In addition, different from previous research, this study integrates three contingency factors to deepen our understanding of the "paradoxical effects" of founder directors. The speed of decision process does not only reply on board composition. Rather, it is also constrained by managerial and ownership structures (Westphal & Graebner, 2010). As previous research has

identified the direct effect of CEO, ownership, and VC on firm IPO, it is plausible that these factors can also moderate the impact of founder directors. The mixed results of board composition also imply that "an examination for further moderators might be productive" (Dalton et al., 1998).

Furthermore, to the best of my knowledge, this study represents the first empirical investigation of new venture IPO in China. Despite the key role of entrepreneurship in the Chinese economy, there has been little research on IPO and founders in Chinese ventures. The Chinese context may distinctively influence founders' roles in several ways. Chinese culture is characterized as collective and risk-averse as well as lack of formal rule of game. Interpersonal relationships and trust matter in China (Peng, 2004). Meanwhile, founders may be reluctant to leave the company and demand more controls at IPO due to the lack of property protection (Young et al., 2008). Therefore, this study can result in "relationships of practical significance" (Dalton et al., 1998).

Theory and Hypotheses

Founders' dilemma at firm IPO

Existing studies, on the one hand, have supported the positive impact of founders at firm IPO (Adams, Almeida, & Ferreira, 2009; He, 2008; Nelson, 2003). Founders have been involved in the creation and growth of the company, so their personal identification with the firm is likely to be greater than nonfounders (Wasserman, 2006). As Nelson (2003) argues, the extraordinary commitment of founders to their firms may help circumvent agency costs by diminishing their drain on organizational resources when facing the unprecedented wealth. She finds that firms with founder CEOs are likely to receive a higher price premium at IPO than firms with non-founder CEOs. In addition, the retention of original founders will result in the reduction of

conflict between managerial and shareholder interests. Given their reputation, leadership, and pro-organizational attitude, founders can also mitigate political battles within the firm (Fischer & Pollock, 2004a). Moreover, founders' retention at IPO guarantees the consistency of the firm's strategy and fosters long-term vision, which is a key at the transitional period of IPO (Wasserman, 2003). Empirically, a positive impact of original TMT board members on IPO performance has been found (Kroll et al., 2007).

Nevertheless, a growing body of research suggests the negative impacts of founders and original TMT on new venture performance. The liability are largely attributed to founders' cognitive limitations and lack of objectivity and experience in handling organizational change (Anderson & Reeb, 2004; Luo & Chung, 2005). Certo, Covin, Daily, & Dalton (2001) find that founder-CEO has a positive effect on IPO underpricing because of founders' "untested management". Without independent input and alternative perspectives, founders with dominant power can be averse to risks and changes. Bitler, Moskowitz, & Vissing-Jorgensen (2005) show that entrepreneur's equity ownership decreases with risk-taking propensity. Due to the absence of external endorsement and formal control, founder-dominant firm may lose credibility and be susceptible to the liability of newness. Thus, high proportion of nonexecutive directors and the intensity of their extraorganizational links can reduce the extent of underpricing (Filatotchev & Bishop, 2002).

Research on board composition and founders has been recently criticized for mostly occurring within a principal-agent framework (Dalton et al., 1998; Tian et al., 2010). In addition, founders do not fit into the traditional separation of ownership and management, who have major ownership interests and engage in management as well. Furthermore, IPO firms need to undergo a number of changes to their organizational systems, necessitating external resources,

commitment to the firm, and market legitimacy. In such a setting, the speed of decision process is more pronounced and serves as an appropriate lens to examine founders' roles in a board. Both the rapid changes in external environment (e.g., market, institution) and the underdeveloped rules for corporate governance during institutional transitions in China are behind the heightened benefits of making rapid decisions by a board (Peng, 2004).

How to make rapid decisions

One of the key drivers for rapid decision is team cohesion. Conflicts create interruptions and delay the decision process (Eisenhardt, 1989b; Eisenhardt & Schoonhoven, 1990; Schoonhoven, Eisenhardt, & Lyman, 1990). The fast teams not only avoid conflicts but also actively resolve the conflicts. Fast teams use the process of consensus with qualification to resolve conflicts based on the team cohesion and knowledge. For entrepreneurial firms, members constant learn new roles. Therefore, in order maximize performance, new organizations must rely heavily on social relations to learn from each other. Specifically, the joint work experience among teammates can maximize the speed of decision process without the cost in time, worry, conflict, and temporary inefficiency (Stinchcombe, 1965). Entrepreneurs who have worked with one another in the past are likely to have developed trust in one another's ability, to have common goals for the organization, and to have developed routines to resolve conflicts (O'Reilly III, Caldwell, & Barnett, 1989). Individuals with previous work experience together communicate more often than people who do not (Zenger & Lawrence, 1989). Recent studies based on US semiconductor industry show that founding teams who had previous work experience together achieve higher level of trust, are more cohesive, organizational growth, and accelerate the speed of first product introduction (Eisenhardt & Schoonhoven, 1990; Schoonhoven et al., 1990).

Another key factor that drives rapid decision is the use of real time information and decision alternatives. Prior research suggests that faster decision making is associated with more alternatives and is characterized by simultaneously consideration of multiple alternatives (Eisenhardt, 1989b). One explanation for this is that options for making a decision are difficult to assess in isolation. Thus, the process of comparing alternatives helps decision makers to ascertain the alternates' strengths and weakness and builds decision makers confidence (Anderson, 1983). The multiple alternatives also provide a fallback position. That is, when one option fails, decision makers can quickly shift to a new one which saves time and offers cushion. Meanwhile, having simultaneous alternatives reduces the escalation of commitment to any one option. Thus, the decision makers who pursue multiple options are less likely to become psychotically trapped and can quickly act at on negative information. In her case study, Eisenhardt (1989b) finds that one company executives negotiate simultaneous with several potential alliance partners within the strategic decision option. In another company, the decision makers maintain multiple options in the strategic redirection decisions, including sales of firm's technology, technological changes, and liquidation. Consistent with this logic, resource dependency theory proposes that organizations lacking external resources (e.g., information, knowledge, social network) will seek to establish relationships with others in order to obtain complementary resources and perspectives (Peng, 2004; Pfeffer & Salancik, 2003). External directors can provide advice and channels for communicating alternative information between the firm and external organizations (Carpenter & Westphal, 2001; Hillman, Cannella, & Paetzold, 2000; Hillman & Dalziel, 2003; Huse, 2007; Lynall, Golden, & Hillman, 2003).

Founder directors, rapid decision making, and IPO performance

The main hypothesis argues that although founder directors may share a cohesive objective to make rapid decisions (Certo et al., 2001; Certo et al., 2009; Fischer & Pollock, 2004a), excessive dominance of founder director may slow the decision process of a board. Scholars have found that there is a perception that founders can build the pro-organizational culture and stewardship atmosphere (Deutsch, Keil, & Laamanen, 2010; Golden-Biddle & Rao, 1997). Compared with outside and independent directors, founders tend to hold intrinsic motivation and growth-oriented goal aligned with the organization (Wasserman, 2006). As such, the increase of founders' membership on board may boost team cohesion which can substitute formal institutions in China (Kroll et al., 2007). Arthurs et al. (2008) show that more insiders on a board allows greater vigilance in avoiding underpricing at IPO by an underwriter. Founder directors can also reduce internal conflicts based on their past joint work experience. Founder directors have learned to how to get along with each other the performance routines for making decisions quickly (Eisenhardt, 1989b). As such, the increase of founders on board will speed up the decision process and enhance investors' evaluation of a firm's potential at IPO.

Second, a board's decision-making involves data production, analysis, and presentation can be costly and create conflict among directors (Kroll et al., 2007). Board members' understanding of the venture can be enhanced by the tenure and knowledge of founding members (Eisenhardt, 1989a). By providing detailed information about the organizational origin and facilitating information exchange within an organization, founder directors can help the directors to make rapid decision making. In a similar vein, with the informational advantages, founder directors will enhance board-CEO collaboration which is positively associated with firm performance (Westphal, 1999). Compared with nonfounder directors, founders will thus better

manage the power struggle among TMT, directors, and shareholders in order to make rapid decisions. Kroll et al. (2007) find that the first two years of post-IPO performance are enhanced when original TMT members control a firm's board. Sanders & Boivie (2004) find that the proportion of board members who are outsiders will be negatively associates with market valuation of new firms.

However, the increase of founder directors will produce the diminished return because the incremental increase of founders' shared experience will only add limited cohesion in the board. In other words, the contribution of founder directors will rise up to a threshold, after which, more founders can become counterproductive, because the lack of decision alternatives becomes the barrier for making rapid decisions. Fredrickson & Mitchell (1984) describe a comprehensive decision-making process as one that includes being "exhaustive in the generation and evaluation of alternatives" (p. 402). Multiple alternatives are likely to speed up the decision process. The ability of the board of directors to objectively appraise the firm's strengths/weaknesses and the external environment's opportunities/threats is essential to decision making. However, such objectivity and real-time information may be rare among founders who exhibit an enormous psychic connection to the firm. In fact, founders characteristically exhibit "an extreme bias toward optimism" (Busenitz & Barney, 1997). This lack of objectivity may result in poor decision making. Prior research suggests that the use of real-time information can speed up the strategic decision process (Eisenhardt, 1989b). This premise has also been echoed by the escalation of commitment argument. High responsibility for negative consequences by founders may lead the firm to be "locked into" a costly course of action (Eisenhardt, 1989b; Staw, 1981). Conversely, non-founder members are generally more objective in their appraisals of the firms, which can be attributed to their greater "emotional distance" (Davis et al., 1997).

Behavior theory also suggests that a cohesive TMT with a unified vision likely has cognitive limitations and may benefit from outside perspectives (Walters et al., 2010).

In addition, founders are also likely to generate information with little diversity due to their common social origin. Uzzi (1997) argues that over-embeddedness can result in the network being insulated from market demands. In times of uncertainty and rapid change, a broad range of perspectives, information, and options is conducive to strategic decision making (Eisenhardt, 1989b). Young firms at IPO need to undergo a number of changes that require learning from diverse information. The board needs diversified knowledge and information from non-founder members to independently and complementarily ratify decision formulation and implementation (Filatotchev & Bishop, 2002). Prior research suggests that the number of alternatives considered simultaneously is positively related to the speed of strategic decision process (Eisenhardt, 1989b). Hence, the presence of excessive founder directors may reduce alternatives and in turn negatively affect a board decision speed, which will lower investors' evaluation of a firm's potential at IPO. Therefore, I formally hypothesize:

H1: The relationship between founder-board ratio and IPO performance exhibits an inversed U shape.

Managerial and ownership structure as contingency factors

Previous research suggests that the direct effect on performance cannot fully capture the role of board composition (Dalton et al., 1998; Tian et al., 2010). The mixed results may result from the lack of knowledge of possible contingency factors (Dalton et al., 1998). To understand further the tradeoff between enhancing team cohesion and generating decision alternatives, this study incorporates three important moderating factors: whether the firm is managed by the original CEO, the ownership that founder directors control, and whether a VC sits on the board (Villalonga & Amit, 2006).

As previous research has identified the direct effect of CEO, founders' ownership, and VC, it is plausible that these factors can interact with founder directors to shape the decision process and speed eventually. These moderators capture the managerial and ownership structures that delineate the tension between founders' shared vision and external inputs from nonfounder directors. The moderating effects answer the following question: *when is a firm in a greater need for founders' cohesion or fresh alternative?* Below, it will be elaborated how each of the three factors can enlarge or reduce the relative importance of founder directors and affect the inversed U shape in Hypothesis 1 (Chen, Firth, & Xu, 2009; Weigelt & Sarkar, 2009).

Original CEO. An original CEO's involvement in management may be decreasingly valuable or even become counterproductive as the firm adapts to new situations. As the firm enters IPO stage, different skills and experience are needed to effectively manage the entrepreneurial and administrative challenges. At IPO, an original CEO with the obsolete mental model may lack the necessary social capital and managerial skills to handle organizational transition and deal with broad constituents (investment bank, lawyer, regulative body). In particular, most original CEOs who take their firms public are doing so for the first time and, therefore, represent "untested management" (Certo et al., 2001). As such, it is critical for the nonfounder directors to supply alternative information and diverse expertise to assist the CEO to make rapid decisions.

Second, the interpersonal ties between founder directors and an original CEO can reduce the incremental benefits of team cohesion and therefore lower the positive impact of founder directors. Due to the familiarity and social ties between founders and an original CEO, an additional founder director will have little contribution to the existing trust and shared goals in a board. Moreover, the homophily between an original CEO and founders will twist directors'

assessment of the real time organizational need and slow down the decision process. Uzzi (1997) argues that structural embeddedness accumulated through prior relations will produce biased judgments and decision inertia. The predominant emphasis on collaboration between a CEO and board will foster strategic persistence, which will negatively affect firm-environment interaction and slow down the decision process (Sundaramurthy & Lewis, 2003).

Therefore, in firms managed by original CEOs, to attract external knowledge and non-redundant alternatives from nonfounder directors becomes relatively more important than team cohesion, because such firms are in greater need of more alternatives in order to make rapid decisions (Arthurs et al., 2008). The greater need for nonfounder directors in this context makes more salient the cost of increasing founders' control on board. Such increases may also demotivate external directors and partners from committing to the venture, and/or erect the barriers for a firm to connect with other market actors. In summary, the arguments suggest that in firms managed by original CEOs, a slower increase in IPO performance is expected, given that the incremental benefits of founder directors are outweighed by the loss of external support (Certo et al., 2001; Wasserman, 2006). In other words, the inversed U shape posited in Hypothesis 1 is likely to be less pronounced. Therefore, it can be formally hypothesized:

H2: The inversed U shape in Hypothesis 1 will be <u>less</u> pronounced in firms managed by original CEOs (relative to firms managed by non-original CEOs).

Founder directors' ownership. Founders with high ownership will demand more control and be reluctant to appoint external directors (Anderson & Reeb, 2004). Sanders (2001) finds that executive stock ownership is negatively related to firm acquisition activities with other partners. Stulz (1988) warns that excessive stock ownership widens the risk differential, intensifying managers' aversion to risk taking. As such, high owenrship may keep founders from interacting with external partners and organizing a firm's activitities outside of its boundary

(Jayaraman, Khorana, Nelling, & Covin, 2000), which may exacerbate the lack of decision alternatives.

Especially in China where formal institutions are underdeveloped, founders with high ownership tend to preserve control rights. Founders may be reluctant to share strategically vital information with outsiders at a time when capabilities are being conceived, assembled, or reconfigured firm because of the weak property protection in China (Young et al., 2008). This lack of trust may give rise to coordination cost (Fredrickson, Hambrick, & Baumrin, 1988) and erode other organizational members' aspirations and self-efficacy. As such, nonfounder directors may have less discretion and feel their participation on board is less appreciated. Also due to ownership control, an additional founder director will have little contribution to the existing cohesion in a board.

Therefore, the greater need for bringing fresh alternatives from the outside to assist the rapid decision making when founders control large equity enhances the attractiveness of nonfounder directors. While more founder directors may facilitate the team cohesion, I believe this advantage will be offset by the need for external alternatives. Stated differently, in the context of high ownership held by founders, a slower increase in investors' evaluation and IPO performance can be expected, as the benefit of the internal cohesion to speed up decision process are more clearly outweighed by losses of decision alternatives. Stated formally,

H3: The inversed U shape in Hypothesis 1 will be <u>less</u> pronounced in firms with founder directors' controlling larger equity.

VC on board. Note that each of the two moderators above allows us to add nuance to my predictions regarding how original CEO and founders' ownership makes the attracting fresh perspectives from non-founder directors more important than preserving team cohesion. On the contrary, the third contingency factor suggests the condition when the need for collectivism,

trust, and long-term commitment of founders can be more valuable. Specifically, this study analyzes how VC directors can influence the inversed U shape posited in Hypothesis 1.

VCs impose stringent control and have short-term investment horizon (Arthurs et al., 2008; Bruton, Filatotchev, Chahine, & Wright, 2010; Fischer & Pollock, 2004a; Hsu, 2004). By applying a performance matrix used in previous experience but irrelevant to the current venture, VC directors can cause conflict with the founders' managerial philosophy and hurt their collective attitude. The requirement of formal and strict reporting may result in disagreement with founders who tend to establish and follow informal institutions within an organization. In addition, VCs' short-term investment horizon has been found to offset their financial and professional support and result in conflict. "Google's founders would have preferred to wait longer to do their IPOs, but had to rush it because venture capitalists…, wanted to cash in" (The Economists, November 27, 2004). Fischer & Pollock (2004a) find that a VC may "force the newly public firm to engage in activities that boost short-term performance but are damaging in the long-term" (p. 477). VCs will likely underprice new securities at IPO in order to maintain close ties with institutional investors who encourage recurring business deals (Arthurs et al., 2008). These behaviors contribute to the negative role played by VC directors interacting with the steward-like founders at IPO. Wasserman (2006) reveals that new venture executives tend to shift from stewardship to agency approach and increase their cash compensation with the increase of the number of rounds of financing raised by the firm. Therefore, such conflicts call for stronger commitment and collectivism from founders (Davis et al., 1997).

This suggests that, with VC directors, external participation on board is less valuable and, therefore, that attracting more external directors would provide relatively smaller benefits to the speed of decision process due to the potential conflicts. Indeed, the greater need for cohesion

under this situation enhances the attractiveness of founders relative to nonfounder directors on the board. Thus, in the context of VC directors, a slower decrease of IPO performance is expected even when the level of founder directors becomes excessive and counterproductive. In other words, founders' positive role in resolving internal conflicts are not likely to be quickly outweighed by the losses of external directors, as described in the main hypothesis H1. Thus, the inversed U shape will be less pronounced in the IPO ventures with VC directors. Stated formally:

H4: The inversed U shape in Hypothesis 1 will be <u>less</u> pronounced in firms with VCs on board (relative to firms without VCs on board).

Method

Dependent variables

Following Nelson (2003), Bruton et al. (2010), and Certo, Daily, Cannella Jr, & Dalton (2003), the stock market measure is used - price premium (calculated as [offer price – book value per share]/offer price) - as the dependent variable. Nelson (2003) argues that the price premium demonstrates the difference between the accounting and market values and could measure investor enthusiasm of a firm's potential that would decouple stock price from accounting-based valuations.

Independent variables

Founder–board ratio. This measure is defined as the proportion of a board of directors made up of original founders (a board member who was described in a prospectus as "starting the business" was classified as a founder) (Kroll et al., 2007).

Original CEO. This measure is a dummy variable coded 1 if the CEO of the firm has not been replaced since its inception and 0 otherwise.

Founder directors' ownership. Consistent with Holderness, Kroszner, & Sheehan (2002), total founder directors' ownership is defined as the sum of direct and indirect equity holdings,

both of which the CSRC requires to be reported. This measure equals the proportion of shares outstanding that were beneficially owned by an IPO firms' founders serving as board members at the time of IPO (Fischer & Pollock, 2004a; Kroll et al., 2007).

VC on board. This measure is a dummy variable coded 1 if there is a VC on the board of directors at the time the company went public and 0 otherwise. Given that venture capital and private equity are still in an emerging state in China, I followed an approach similar to Bruton et al. (2010) by employing a variety of resources to identity VC investors, including China Venture Capital Yearbook 2009, China Venture database, and VCs' Web sites.

Control variables

Year of IPO. A number of researchers indicate that stock market conditions, especially in emerging markets, may vary with time. There may be certain periods when IPO investors exhibit over-enthusiasm. In China, these periods can be characterized by large government funds flowing into the stock market and a high number of new issues. Moreover, the time window chosen from 2004 to 2009 includes periods of financial crisis which may affect market condition. Accordingly, six dummies are created that are equal to 1 if the IPO took place in the year of 2004, 2005, 2006, 2007, 2008, and 2009 respectively. Only five dummies are added into the regression model and 2009 is set as base.

Industry dummy. Previous research shows that firms in more technological and faster-growing industries such as the Internet and software can be more risky but generate high valuations (Certo et al., 2003; Fischer & Pollock, 2004a). Following Bruton et al. (2010), an information technology (IT) dummy is used equal to 1 if the firm is from IT and software sectors and 0 otherwise.

Firm age and size. Younger and smaller firms are subject to greater liability of newness to investors. Firm age at IPO is calculated as the years since incorporation. Following Certo et al. (2003) and Welbourne & Andrews (1996), firm size is defined as the natural log of the number of employees.

Prior performance. The financial performance of an IPO firm itself can influence the demand for and performance of its offering. Therefore, following Pollock, Rindova, & Maggitti (2008), I include the net income of the year prior to IPO as a control.

Underwriter quality. Extensive literatures have shown that the involvement of large, prestigious investment bankers in an IPO deal may signal to the market the firm's legitimacy and potential and reduce the uncertainties of investors. In keeping with previous research, underwriter quality is defined as the market share of the lead underwriter during the same period the sample is collected: the total RMB amount of IPOs that are brought to the market over the time period for each lead underwriter is divided by the total amount of all IPOs issued.

CEO ownership. Previous studies have found that the CEO's ownership interest in the firm has a certain impact on IPO performance as a means of interest and incentive alignment (Certo et al., 2003; Fischer & Pollock, 2004a). CEO ownership is defined as the sum of direct and indirect equity holdings of the CEO. This measure equals the proportion of shares outstanding that were beneficially owned by the CEO at the time of IPO.

Headquarters location. Higgins & Gulati (2005) note that young firms located in areas that are rich with industry and market-related activities will likely have greater access to resources and better signal for potential growth, thus generating greater optimism for investors. In the Chinese context, location advantage is likely to accrue to firms that chose to operate in more market-oriented, rather than government- and institution-oriented, regions. Although there

is anecdotal evidence on the tremendous diversity across regions in China, the Fan, Wang, & Zhu (2007a) index provides scholars with a systematic tool to quantitatively differentiate variations of mercerization in regions. Specifically, the marketization index for the region where the headquarters of each listed firm is located is used.

Family firm. Since family firms may demonstrate different attributes from other entrepreneurial firms, a dummy variable is included as control equal to 1 if the firm is controlled by a family and 0 otherwise. While the definitions of family firms vary in previous research, Chinese sample offers us a more direct and precise way to identify family-controlled firms. Accordingly to filings requirement, all firms going public need to explicitly disclose their "controller(s)" information in the prospectus based on the ownership and rights. Thus, it can be determined whether a firm's is controlled by family members.

Analytical model

Given that this study focuses on the impact of the founder–board ratio as well as the impact of original CEO, founder directors' ownership, and VC on board, it is important to control for potential endogeneity issues concerning the founder–board ratio (Arthurs et al., 2008; Kroll et al., 2007). It is argued that firm, board, and other attributes may influence founders' own selection, so control could be subject to self-selection bias or endogeneity. Similar to (Heckman, 1979) remedies for sample selection, Kroll et al. (2007) model the endogeneity problem in a two-equation framework and propose a two-step procedure to estimate the model by creating a dummy as the selection variable. A dummy variable is created taking value of 0 if the founders control less than 33 percent board seats and otherwise. In China, there are three types of directors on board: affiliated directors (e.g., founders), large shareholders but not affiliated (e.g., VCs), and independent directors (e.g., professors). Every public company in China is required to have

at least 33 percent independent directors who do not have any financial or business ties to the company, so founders controlling more than 33 percent of the seats likely hold relative control on a board.

To correct this potential sample selection bias, sample selection models were estimated in a full information maximum likelihood (FIML) procedure using SAS QLIM procedure. The logics behind the QLIM and Heckman selection models are similar to each other, although these two approaches use different estimation procedures. Heckman selection model estimates a selection equation that is summarized by the inverse Mill's ratio and then included as a control in a second step. In contrast, QLIM procedures generates FIML estimator that accounts for the likelihood of selection in a single step. FIML is computationally more involved than interactive two-step techniques and its estimators are asymptotically efficient and generally more efficient than Heckman's two-stage estimator.

The dependent variable for the selection equation is the dummy variable "board control". The dependent variable for the outcome equations is IPO price premium, and the independent variables in the outcome equation include all the variables interested and controls. For the selection equation predicting the likelihood that founders will control the board, the independent variables include the IT industry dummy, firm age, size, prior performance, underwriter quality, founder directors' ownership, VC on board, and the venture founding after 2000. It is important to note that the selection equation includes one addition independent variable that is not included in the outcome equation. It is a dummy variable indicating whether the firm was founded after the year of 2000 (Baker & Gompers, 2003). The year of 2000 marked the end of the IPO quota system controlled by the central government. Prior to 2000, government relied on the quota system to select how many IPOs should be granted for SOEs and private firms respectively.

After 2000 when government abandoned the quota system, the probability of private firms going public has been substantially increased. Thus, private firms founded after 2000 are likely to adopt more outside-oriented board in order to facilitate the transition and formalization from a private to public owned company. That is, firms founded after 2000 would be less likely to have founders controlling a board. Empirically, a negative coefficient for this variable is found to support the argument.

Results

Table 1 presents the descriptive statistics, correlation matrix, and frequency tables for the variables used in my model. Peng (2004) has noted that capital markets in China are volatile and not well developed, so the market-based measures may not reflect firms' true performance. He points out that turnover ratios of the Chinese stock exchanges are approximately 700% - 1,000% versus 67% in the United States. In the sample, however, the turnover rate data is collected at the first day of IPO and find that the average turnover rate is 73%, which is similar to what has been observed in the United States: 63% (Pollock & Rindova, 2003). The basic statistics in my sample also reveal that the average IPO price premium is 80%, which is consistent with the IPO markets in the United States, United Kingdom, and other countries found in previous studies: 60% (Nelson, 2003), 65% (Certo et al., 2003), and 72% (Bruton et al., 2010). All the evidence explicitly suggests that, similar to the developed economies, the market measure for new venture IPOs in China can effectively capture the investors' reaction to a firm's characteristics, corporate governance, and earning potential.

TABLE 1
DESCRIPTIVE STATISTICS

Part A: Mean, standard deviation, minimum value, maximum value, and correlation matrix

Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1.Price Premium	1									
2.Founder–board ratio	.18	1								
3.Original CEO dummy	.26	-.01	1							
4.VC on board dummy	.05	-.01	-.02	1						
5.Founder directors' ownership	.22	.46	-.03	-.13	1					
6.2004 dummy	-.13	-.01	-.08	-.02	-.02	1				
7.2005 dummy	-.22	-.09	-.16	-.04	-.11	-.05	1			
8.2006 dummy	-.42	-.05	-.17	.01	-.16	-.12	-.05	1		
9.2007 dummy	-.09	-.09	.06	-.05	.00	-.21	-.09	-.21	1	
10.2008 dummy	.01	.06	.08	-.08	.16	-.18	-.08	-.18	-.31	1
11.2009 dummy	.52	.10	.09	.14	.01	-.22	-.10	-.22	-.38	-.33
12.IT industry dummy	.17	.12	.05	.14	-.03	-.10	-.06	.08	-.03	-.09
13.Firm age	-.32	-.07	-.10	-.01	-.19	.00	.09	.10	.18	-.12
14.Firm size[a]	-.14	-.05	-.09	-.12	-.06	-.01	.10	.10	-.02	.05
15.Prior performance[b]	.26	.01	.09	-.08	.10	-.13	-.02	-.06	-.11	.20
16.Underwriter quality	.19	.10	.01	.02	.05	-.12	-.05	-.08	-.02	.12
17.CEO ownership	.27	-.04	.37	.03	.41	-.14	-.15	-.11	.01	.09
18.Firm location[c]	-.06	-.12	.18	.02	-.09	.08	.02	.07	.02	-.06
19.Family dummy	.10	.22	.03	-.06	.17	.00	-.02	.03	-.20	.05
20. Before 2000 dummy	.22	.00	.16	-.02	.16	-.19	-.06	-.05	.03	.10
Mean	0.80	0.18	0.68	0.30	0.48	0.11	0.02	0.11	0.27	0.21
Standard Deviation	0.09	0.12	0.47	0.46	0.22	0.31	0.15	0.31	0.44	0.41
Min	0.28	0	0	0	0	0	0	0	0	0
Max	0.95	0.67	1	1	0.99	1	1	1	1	1

TABLE 1 (Cont.)

Variable	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1.Price Premium										
2.Founder–board ratio										
3.Original CEO dummy										
4.VC on board dummy										
5.Founder directors' ownership										
6.2004 dummy										
7.2005 dummy										
8.2006 dummy										
9.2007 dummy										
10.2008 dummy										
11.2009 dummy	1									
12.IT industry dummy	.14	1								
13.Firm age	-.16	.00	1							
14.Firm size[a]	-.12	-.21	.12	1						
15.Prior performance[b]	.07	-.07	-.05	.25	1					
16.Underwriter quality	.06	.09	-.06	.05	.34	1				
17.CEO ownership	.13	.02	-.10	-.03	.12	.10	1			
18.Firm location[c]	-.07	-.01	-.05	.02	.02	.07	.09	1		
19.Family dummy	.14	.04	-.06	.02	-.06	-.04	.00	.04	1	
20. Founded after 2000 dummy	.07	.10	-.55	-.04	.08	.07	.11	.00	-.03	1
Mean	0.29	0.13	3.93	6.68	0.06	0.02	0.24	8.93	0.24	0.93
Standard Deviation	0.45	0.33	2.72	0.91	0.05	0.03	0.23	1.46	0.43	0.25
Min	0	0	0	4.49	0.01	0	0	2.50	0	0
Max	1	1	16	9.35	0.45	0.17	0.92	10.41	1	1

TABLE 1 (Cont.)

Part B: Frequency table (N = 274)

Variable	**Frequency**	**Percentage (%)**
Original CEO is retained	186	67.88
Original CEO is not retained	88	32.12
VC on board	81	29.56
No VC on board	193	70.44
Firm going public in the year of 2004	30	10.95
Firm going public in the year of 2005	6	2.19
Firm going public in the year of 2006	29	10.58
Firm going public in the year of 2007	73	26.64
Firm going public in the year of 2008	57	20.80
Firm going public in the year of 2009	79	28.83
Firms in IT industry	35	12.77
Firms not in IT industry	239	87.23
Firms started by family members	65	23.72
Firms started not by family members	209	76.28
Firm founded before the year of 2000	18	6.57
Firm founded no before the year of 2000	256	93.43

Table 2 presents the results of the models based on FIML estimates by SAS QLIM Procedure for pooled cross-sectional data over six years (2004–2009). Model 1 is the baseline. In Model 2, including both the linear and squared term of the founder–board ratio improves the overall model fit (χ^2 = 6.84, p < .05). This confirms the argument about the non-linear relationship between founder–board ratio and IPO performance. The results of the interaction terms between the founder–board ratio and the moderators (original CEO dummy, founder directors' ownership, and VC on board dummy) are shown from Model 3 to Model 5. In Model 6, all the explanatory variables, controls, and interactions are included. This model shows improvement over the partial models and the results remain robust (Model 6 – Model 2 = 23, p <.01; Model 6 – Model 3 = 12.78, p <.05; Model 6 – Model 4 = 18.34, p <.01; Model 6 – Model 5 = 18.26, p <.01). Following the previous studies, the main effect is tested based on Model 2.

The hypothesis testing on H2, H3, and H4 are based on the interactions between each of the moderators and squared term of founder-board ratio (Chen et al., 2009; Hitt, Hoskisson, & Kim, 1997; Luo & Chung, 2005; Weigelt & Sarkar, 2009). For continuous moderators, the interaction effects are calculated at the mean and one standard deviation above and below the mean of the moderators. For dummy moderators, the interaction effects are examined by comparing two groups (dummy = 0 and 1) (Aiken, West, & Reno, 1991; Weigelt & Sarkar, 2009).

As discussed above, to correct endogeneity bias, the FIML procedure is adopted. All independent variables are also standardized except for dummies. The maximum condition index is 15.16, far less than the threshold of 30. Thus, multicollinearity is not a concern.

In H1, it is predicted that the relationship between founder-board ratio and IPO performance exhibits an inversed U shape. The results in Model 2 show a positive coefficient of the linear term ($\beta = 0.02$, $p < .01$) and a negative coefficient of the squared term of the founder–board ratio ($\beta = -0.01$, $p < .10$), suggesting the inverse U-shaped relationship. Figure 2 illustrates the curve. Thus, H1 is strongly supported.

A test is also adopted to confirm that the turning point is 42% and significantly different from the minimum and maximum of the data range from 0 to 67% (Karim, 2009). Therefore, the presence of additional founders on board becomes counterproductive to IPO performance when founders control over 42% of board seats. This result is similar to some findings in the US context: Anderson & Reeb (2004) show that firm performance increases until the ratio of family directors to independent directors reaches 50%. Walters et al. (2010) also find that holding period returns after IPO decrease materially as TMT board membership rose beyond 75% in entreprneurial firms.

TABLE 2
FIML Estimates by SAS QLIM Procedure

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.85**	0.86**	0.86**	0.86**	0.87**	0.87**
IPO in 2004 dummy	-0.08**	-0.09**	-0.09**	-0.09**	-0.09**	-0.09**
IPO in 2005 dummy	-0.17**	-0.17**	-0.16**	-0.17**	-0.17**	-0.16**
IPO in 2006 dummy	-0.16**	-0.16**	-0.15**	-0.16**	-0.16**	-0.15**
IPO in 2007 dummy	-0.06**	-0.07**	-0.07**	-0.07**	-0.07**	-0.07**
IPO in 2008 dummy	-0.07**	-0.08**	-0.08**	-0.07**	-0.08**	-0.08**
IT industry dummy	0.04**	0.04**	0.03**	0.03*	0.04**	0.03*
Firm age	-0.02**	-0.02**	-0.02**	-0.02**	-0.02**	-0.02**
Firm size	-0.01	0.00	0.00	0.00	0.00	0.00
Prior performance	0.02**	0.02**	0.02**	0.02**	0.02**	0.02**
Underwriter quality	0.00	0.00	0.00	0.00	0.00	0.00
CEO ownership	0.01**	0.01†	0.00	0.01†	0.01†	0.00
Firm location	0.00	0.00	0.00	0.00	0.00	0.00
Family dummy	0.01	0.00	0.00	0.01	0.00	0.01
Founder–board ratio		0.02*	0.05**	0.02†	0.03**	0.05**
Founder–board ratio squared		-0.01†	-0.01**	0.00	-0.01*	-0.02**
CEO retention dummy			0.01			0.00
Founder–board ratio*Original CEO dummy			-0.03**			-0.04**
Founder–board ratio squared*Original CEO dummy			0.01†			0.02**
Founder directors' ownership				-0.01		-0.01
Founder–board ratio*Founder directors' ownership				-0.01†		-0.01*
Founder–board ratio squared*Founder directors' ownership				0.00		0.00
VC on board dummy					-0.01	-0.02
Founder–board ratio*VC on board dummy					-0.02	-0.01
Founder–board ratio squared*VC on board dummy					0.01†	0.02**
Selection variable	0.06**	0.06**	0.06**	0.06**	0.06**	0.06**
Log Likelihood	273.62	277.04	282.15	279.37	279.41	288.54
Chi-square	232.98	239.82	250.04	244.48	244.56	262.82

Note: †$p < .10$; *$p < .05$; **$p < .01$.

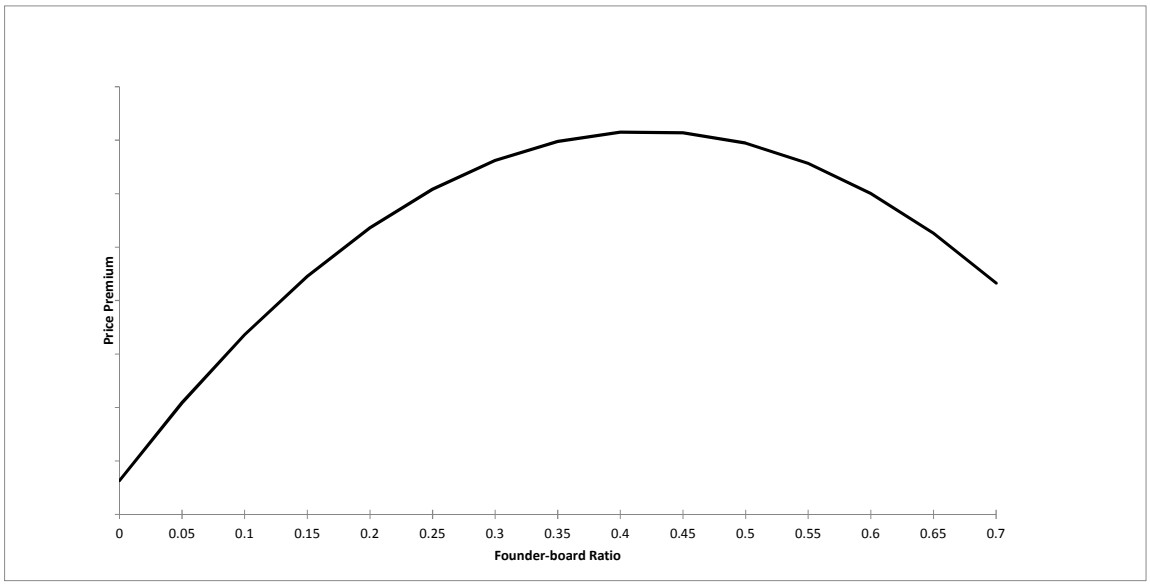


Figure 2

The Effect of the Founder–Board Ratio on IPO Price Premium

In H2, it is predicted that the inversed U shape in H1 will be less pronounced in firms managed by original CEOs (relative to firms managed by non-original CEOs). In Model 6, the interaction between original CEO dummy and founder–board ratio is negative and significant ($\beta = -0.04$, $p < .01$). The interaction between CEO dummy and the squared term of founder–board ratio is positive and significant ($\beta = 0.02$, $p < .01$). Thus, H2 is strongly supported. Figure 3 illustrates the moderating effect. The two curves show that the inversed U shape is less pronounced under original CEO.

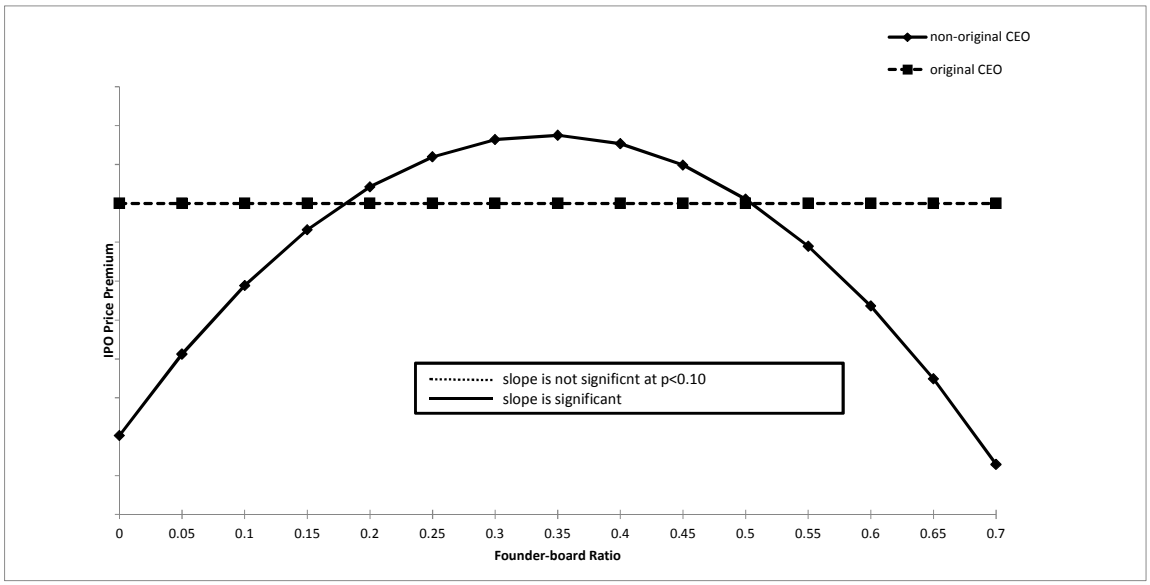


FIGURE 3
The Moderating Effect of Original CEO

In H3, it is predicted that the inversed U shape in H1 will be less pronounced in firms with founder directors' controlling larger equity. The interaction effect between founder directors' ownership and the squared term of founder–board ratio is not significant. Thus, H3 is not supported. Interestingly, the interaction effect between founder–board ratio and founder directors' ownership in Model 6 show a negative coefficient ($\beta = -0.01$, $p < .05$).

In H4, it is predicted that the inversed U shape in H1 will be less pronounced in firms with VCs on board (relative to firms without VCs on board). In Model 6, the interaction between VC on the board dummy and the squared term of founder–board ratio squared is positive and significant ($\beta = 0.02$, $p < .01$). Thus, H4 is strongly supported. Figure 4 the moderating effect. The two curves show that the inversed U shape is more pronounced under VCs' involvement.

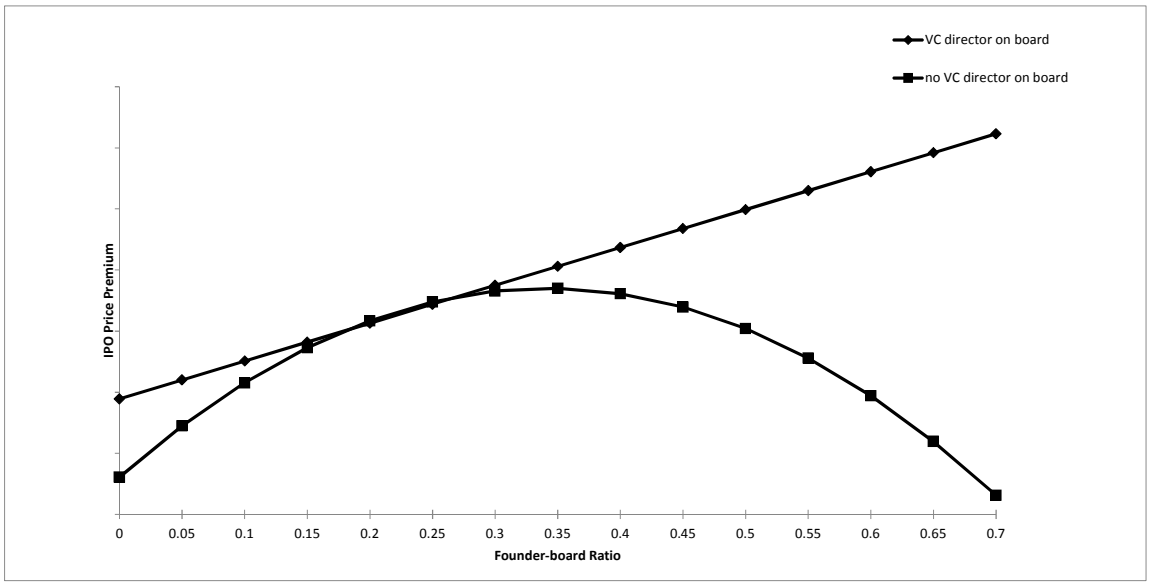


FIGURE 4
The Moderating Effect of VC Director

Conclusion

Under which conditions will entrepreneurs' control on board of directors generate better IPO performance in an emerging market? Founder serving as directors receives scarce attention in previous literature. Research on board composition and IPO in emerging markets has also been limited. To fill these gaps, this study explores the impact of founder directors at firm IPO among 274 new ventures in the largest emerging economy, China. This study empirically tests the tradeoff between enhancing team cohesion and attracting external alternatives associated with founders in order to make rapid decisions by a board. By incorporating three contingency factors, this study answers a call for more research across multiple levels of analysis to capture board, CEO, and other dimensions of leadership (Dalton & Dalton, 2011).

As expected, an optimal founder–board ratio appears to exist that maximizes IPO performance. The results suggest that the limited presence of founder directors is beneficial. Given my research setting in the collective culture of China, this observation suggests that firms can indeed take advantage of their founder directors' shared vision, trust, and cohesion to reduce

conflicts and speed up decision process in a board. However, the effects of an increasing founder–board ratio eventually level off and then become negative, which confirms the disadvantages of losing decision alternatives with fresh and non-redundant inputs from the nonfounder directors. One of the benefits of theorizing and finding a curvilinear relationship between founder directors and IPO performance is that it sheds light on why other studies may have found weak or mixed effects when presuming a linear relationship between board composition and performance (Dalton et al., 1998). Another advantage is that researchers can begin to examine exactly when the relationship begins to change from positive to negative. In my data, the positive effect of founder directors lasts until the founder-board ratio reaches 42 percent, after which the relationship turns negative. Other samples may find varying optimal levels, but together this study shows that there is nothing magical about 50/50 board membership between founders and nonfounders. Furthermore, my study is based on the Chinese context, where founders tend to dominate the board because of their reluctance to share control with others (Young et al., 2008). The findings from this study challenge and warn again the pervasive control by founders at IPO stage.

This study theorizes and finds tension between enhancing internal cohesion and attracting external support to speed up decision process, particularly the advantages of initial increase of IPO performance with more founders' board membership. This study also meaningfully investigates several contingency factors that would imply greater versus less value of founder directors, such that the inversed U shape is likely to change. On the one hand, the benefits of external information, knowledge, and resources can be valuable under conditions that require more objective and diverse inputs. It is found that for firms managed by original CEOs, the benefits of attracting nonfounder directors are so valuable that there is slower improvement of

IPO performance as more founder directors are added. Indeed, the losses in external support under original CEO are so great that I observe no increase in IPO performance as more founder directors join the board (Figure 3).

On the other hand, the benefits of displaying shared vision and resolving internal conflicts can be substantial under conditions that require a particularly high level of stewardship attitudes on the board. It is found that for firms with VC directors on board, the benefits of founder directors become particularly valuable for making rapid decisions and enhancing investors' confidence. Indeed, the losses in attracting external support are so small that I observe the constant increase in IPO performance as the ratio of founders on board become ever larger (Figure 5).

Managerial and policy implications

For policy makers and practitioners in China, this article calls for more attention to the actual roles that founders play in new ventures. First, the inverse U-shaped curve casts doubts on the belief that keeping more founders on board at IPO will help the venture to act more promptly and therefore enhance investors' confidence. If anything, excessive dominance of founders on board may actually lose enough decision alternatives so that the firms will either miss the opportunities or take on less attractive choices. A recent survey of 90 successful entrepreneurs in China reveals that only 8 percent have left their board or executive positions and 40.9 percent hold at least half of the firm's shares. Thus, the findings from this research challenges the conventional beliefs that founders should largely control the board during the transition from a privately to publicly owned firm. Meanwhile, decision makers in China should also recognize the managerial and ownership conditions at the time of appointing directors. In addition, the findings also shed light on the founders' control and transition even in the U.S. context. Some

anecdote evidence reports that “Guericke’s (LinkedIn founder) exit shows that LinkedIn might have reached a point of maturity, where the early start-up adrenaline rush is replaced by more sedate practicality.” Similarly, when Sean Parker (Facebook’s first president) left the board of Facebook, “he insisted that his seat go not to one of Facebook’s investors, but that it falls under control of the company’s CEO and cofounder Mark Zuckerberg. It gave Mark control over three seats on a five-person board.” Therefore, this study demonstrates the conditions in developed economies under which founders should seek more control in some circumstances, but step back otherwise.

Limitations and future research

This research suffers from several limitations. First, this study urges more fine-grained theorization on founders’ roles at transition. In particular, the context of an emerging economy should also be integrated into future theoretical development on entrepreneurs and IPO. The underdeveloped governance mechanisms and founders’ reluctance to give up control creates a complicated situation where entrepreneurs may become short-term oriented at IPO. Second, empirically, more information about the board and TMT should be controlled for. Previous studies suggest that the capacity and social network of the board and TMT have signaling effects and will affect IPO performance. Third, the resources, knowledge, commitment, and conflicts are not directly measured; rather, the variables may be proxies for such attributes. Thus, more fine-grained measures can provide more insight into the analysis in the future research. Last, the hypotheses have been tested using data only collected from China. Since US and China are two of the world’s biggest economies, it would be useful to conduct a comparative study over these two countries.

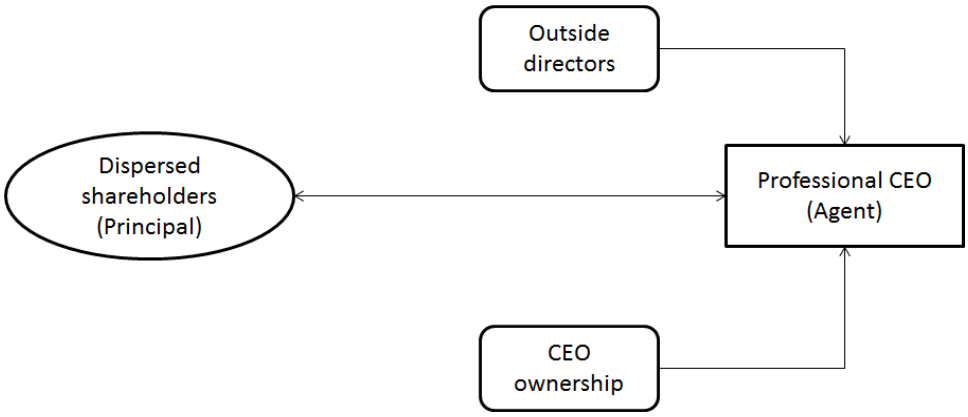
CHAPTER 3

ENTREPRENEURIAL FINANCE MEETS GOVERNMENT INVESTMENT: A GOOD MATCH OR NOT?

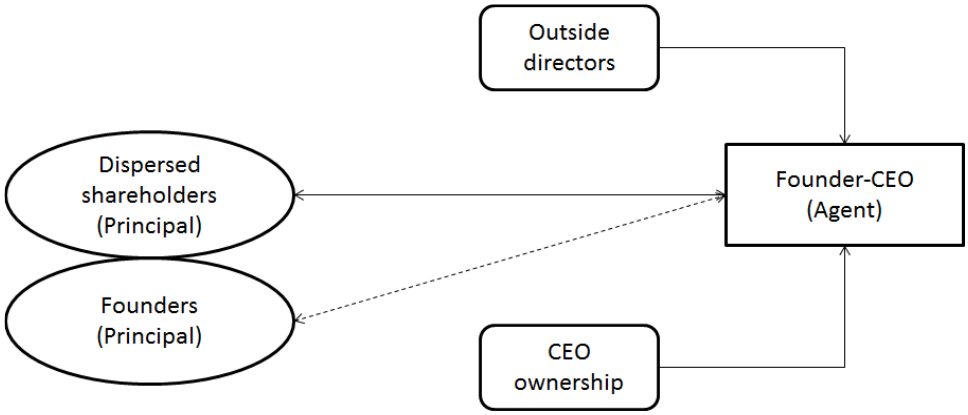
Introduction

In recent years, the research on agency theory has proliferated in corporate governance among finance, strategy, and organization scholars. From an agency perspective, executives will generate "agency cost" by pursuing strategies that enhance their personal wealth and minimize their employment risk at the expense of shareholder wealth maximization. Agency theory has thus prescribed two remedies to mitigate agency problem through outcome-based contrasts like CEO ownership and information systems such as outside directors (Eisenhardt, 1989a).

However, the dichotomous division between principal and agent is too simplistic to describe entrepreneurial firms in a non-industrialized setting. First, it is common that a founder in a new venture plays an overlapping role as both an investor and manager (Goranova, Dharwadkar, & Brandes, 2010). Founder-CEO (i.e., when a company's founder serves as its chief executive officer) may answer directly to the controlling shareholders in a new venture (i.e., founding team), which diminishes the traditional principal-agent conflict. Second, in developing countries, government may invest in private ventures with different objectives from founders, whereas owners share common goals in many firms. Figure 5 presents the distinctions among three different types of governance structure. Under this circumstance, a unique principal-principal conflict emerges and replaces the principal-agent relationship (Young et al., 2008).

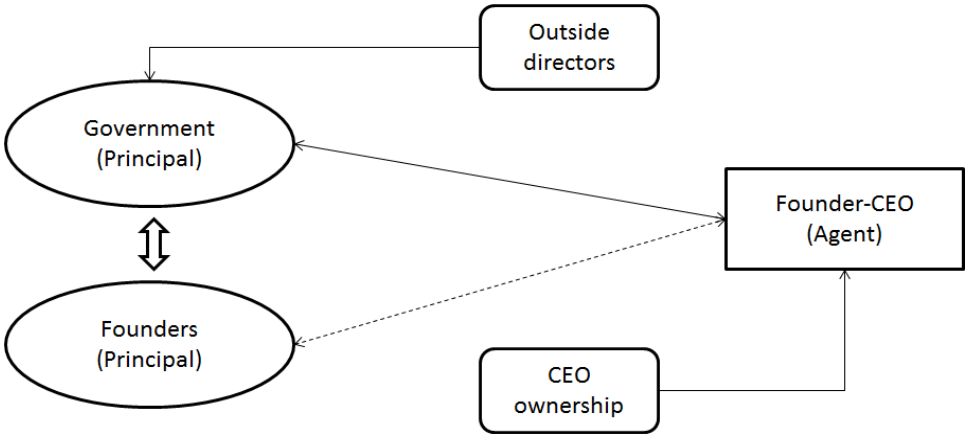


a. US Established Firm



b. US New Venture

c.



c. Chinese New Venture

FIGURE 5
Comparison of Three Types of Governance Structures

How do such principal-principal conflicts in entrepreneurial firms create or destroy value? Through the lens of principal-principal view, this research examines the impacts of two

competing actors –founder-CEO and government investor – on IPO premium in China. In emerging economies, many firms experiencing principal-principal conflicts can be characterized as "threshold firms" that are near the point of transition from founder to professional management (Young et al., 2008). Thus, IPO represents the threshold stage when dispersed investors for the first time evaluate and invest in the firm (Baker & Gompers, 2003; Bruton et al., 2010). Empirically, IPO premium reflects the investors' intention of participation and firm competitiveness because underwriters set the offer price after ascertaining the views of investors through the book building process. Furthermore, principal-principal conflicts may "alter the dynamics of the corporate governance process and, in turn, require remedies different from those that deal with principal-agent conflicts" (Young et al., 2008). The institutional setting in emerging economies thus calls for a different bundle of governance mechanisms. Thus, what governance mechanisms can mitigate the principal-principal conflicts (i.e., outside directors and CEO ownership)? Previous studies find that the acquiring firms are likely to experience principal-principal conflicts when owners have ownership in both the acquiring and target firms and this adversity can be constrained by stronger board control (Goranova et al., 2010).

Various owners may hold incongruent interests and aim to promote conflicting agendas (Bruton et al., 2010; Park & Steensma, 2011). The tension between government and entrepreneurs are particularly germane within emerging markets (Luo & Junkunc, 2008; Peng, 2003; Peng & Luo, 2000). During institutional change, both "public" and "private" templates coexist and compete for legitimacy (Johnson, Smith, & Codling, 2000; Ralston, Terpstra-Tong, Terpstra, Wang, & Egri, 2006; Tan & Tan, 2005). A founder-CEO views the organization as an individual entity, identifies herself/himself with the venture (Davis et al., 1997), and aims to maximize the firm's own welfare (Mackey, 2008), whereas government investors view the

venture as part of its political legitimacy and aims to maximize social welfare (Reid & Toffel, 2009). While the conflict is widely recognized, little work has been done to empirically investigate its consequence on the firm value.

Therefore, this research first contributes to the general management literature on how the traditional principal-agent model in small and young firms may need modification. The assumption of heterogeneous principal-agent is violated as a founder-CEO can play overlapping roles as principal and agent. Meanwhile, founders and government as homogenous owners do not share common goals. The findings first show that government investment reduces IPO price premium and the discount is weakened by more outside directors. This result is important because the literature shows inconclusive evidence on how board composition (i.e., outside directors) affects firm performance (Dalton et al., 1998; Ho, Wu, & Xu, 2011). Denis & McConnell (2003)conclude that the board may impact performance by influencing managerial decisions in specific activities. My result echoes the argument in that outside directors can supply the external knowledge and reputation that limits the interference from government. In addition, the literature based on the U.S. context shows CEO equity holding can lower agency cost, encourage more risk taking, and lead to success following IPO (Fischer & Pollock, 2004a). My finding challenges this view by showing, for entrepreneurs who occupy principal and agent positions, high ownership results in lower IPO premium. Thus, the moderating effects of outside directors and CEO ownership shed light on the validity of monitoring and incentive mechanisms. Moreover, it is revealed that private enterprises receiving government investment can benefit from founder-CEO management to “politically respond to government bureaucracy they face” (Luo & Junkunc, 2008). That is, principals are not isolated and they may look at and influence

each other for decision making. Thus, this result expands and contributes to the traditional principal-agent relationship.

Second, government investment plays an indispensable role in emerging economies and IPO signifies entrepreneurial growth (Hoskisson, Eden, Lau, & Wright, 2000; Peng, 2003). This study thus answers a call by Zahra, Ireland, Gutierrez, & Hitt (2000) that "most of this (entrepreneurial transformation under emerging markets) research has been grounded in economic or financial theories, leaving important organizational issues unexplored" (p.510). More importantly, this research examines the principal-principal conflict and government investment in a context where decision makers compete with each other as the country undergoes institutional transition (Tan & Tan, 2005). Formal rules are underdeveloped and second-best political substitutes for rules, namely state ownership, are a part of corporate life. While previous research on governmental involvement focuses on the SOEs (Peng, 2004), this research examines private firms at the "exit" stage. Different from SOEs, the degree to which founders refuse to comply with government may be an important source of innovation and value.

Theory and Hypotheses

Principal-principal conflict and corporate governance

Principal-principal relationship breaks down the oversimplified dichotomous line of division for principals and agents in classical agency theory (Arthurs et al., 2008; Fiss & Zajac, 2004; Hoskisson, Hitt, Johnson, & Grossman, 2002). It allows for additional complexities in modern firms and focuses on divergent values among various agents (Huse, 2009). Different from agency theory, which focuses only on a principal-agent dyad (Baker & Gompers, 2003; Eisenhardt, 1989a; Fama & Jensen, 1983), principal-principal view broadens the scope of conflicts and examines its consequence for organizations. More specifically, scholars have

attributed the failure of an outsider-dominated board to achieve agency-based objectives to the conflicts among directors representing different owners with different backgrounds and interests (Golden-Biddle & Rao, 1997). Brickson (2005) notes that "it may be more problematic for members to view organizations as relating to stakeholders in completely different ways (e.g., self-interested and other-oriented)" (p.581).

In principal-principal view, insiders who also serve as the principal groups may not be more opportunistic compared to principals (i.e., overlapping roles). Insiders sometimes guard against the opportunistic behavior of other principals. For instance, inside directors of firms going through an IPO have an incentive to reduce the underpricing of newly issued securities. Especially, founders hold strong identification with the venture they created (Davis et al., 1997). However, venture capitalists (VCs) and underwriters will likely underprice new securities to maintain close ties with institutional investors who encourage recurring business deals. In addition, the short-term investment horizon will lead VCs and institutional investors to favor IPO underpricing (Arthurs et al., 2008). Deutsch et al. (2010) also find that outside directors can be viewed as self-interested who have to be provided with incentives to align their intersts with those of the shareholders. The effect on a firm's risk by paying outside directors with stock options is stronger than the effects of paying CEO with stock options (Deutsch et al., 2010). Hillman, Nicholson, & Shropshire (2008) argue that a potential conflict of interest exists between directors' identification with customers/suppliers and the focal organization in the context of the resource provision and monitoring.

Under principal-principal conflict, a firm's strategic choice and risk-taking are not a homogenous economic construct (Chen et al., 2009; Thomsen & Pedersen, 2000). Various principals may choose different compensation scheme to the executives. Allcock & Filatotchev

(2010) find executive founders' ownership has a negative impact on the probability of conditional schemes and the VCs are likely to have incentive pay schemes with specific performance targets attached. At new venture IPO, VCs reduce but angels increase price premium because they focus on interests of investors in their funds, and angels are concerned with the ventures going public (Bruton et al., 2010). In a similar vein, managers of public pension funds prefer internal innovation, but professional investment fund's managers as a different principal group who experience higher pressure of return and shorter time horizon choose acquiring external innovation (Hoskisson et al., 2002). Dedicated ownership is positively associated with a firm's strategic competitive actions but transient ownership is negatively affects those actions (Connelly, Tihanyi, Certo, & Hitt, 2010). Organizational response to environmental pollution depends on "who controls the organization and how much the controlling party values achieving social worthiness apart from any economic gains" (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010). Specifically, family-controlled public firms protect their socioemotional wealth by having a better environmental performance than their nonfamily counterparts. In nonfamily firms, stock owned by the CEO has a negative environmental impact (Berrone et al., 2010; Kim, Kim, & Lee, 2008).

Divergent goals of profit sharing and principal-principal conflicts

Entrepreneurs and government represent two principal groups with competing views towards profit sharing. During institutional transition, profits may go to private entrepreneurs and investors as a reward for risk taking. Government's "old institution," however, may direct the profits to protect the public welfare and political legitimacy (Zahra et al., 2000). That is, institutional shift is characterized as a trend toward "marketization" with intensive governmental control (Hoskisson et al., 2000). In addition, the property rights of individuals and organizations

are primarily held and protected by the government (Hoskisson et al., 2000; Park & Luo, 2001). Chartered to stimulate economic and social growth, government exercises its ownership in companies to satisfy macro-economic, political, and social needs. Therefore, government investor will be more concerned with distributing profits of IPO for the purpose of maintaining its political ideology, social stability, and party apparatus (Peng & Heath, 1996). Brickson (2005) argues that nonprofits, public agencies, and citizens' groups would favor to advance the broad causes at stake, as opposed to firm profits. On the other hand, entrepreneurs are concerned with the values and premium they can gain from the offering to fuel the growth of the venture.

More specifically, government may force the venture to engage in inefficient activities (Cuervo & Villalonga, 2000; Dharwadkar, George, & Brandes, 2000). First, from the social legitimacy standpoint, government is concerned with the representativeness and trust from the public and responsible for protecting property rights and maintaining external legitimacy. As such, government-sponsored firms should induce the care and protection for the related members and stakeholders which may not align with the firm's interest (Brickson, 2000, 2005). For example, in government-sponsored firms, the choice of a firm's activity and location is constrained both politically and geographically by government (Cuervo & Villalonga, 2000). Government investors can leverage their power to influence the book-building process and allocate new shares to their related parties. That is, the financial performance of an individual venture may not be optimized (Cuervo & Villalonga, 2000). Previous research finds that cultivating and sustaining relationships with government officials can be costly in terms of reciprocal and utilitarian demands in Chinese society (Luo & Junkunc, 2008; Park & Luo, 2001). Government may also avoid restructuring to maintain employment figures, sacrificing the need for adaptation and efficiency from a firm's perspective (Dharwadkar et al., 2000). Peng (2004)

finds that government ownership and state directors in Chinese transformed SOEs have a negative impact on financial performance. This argument resonates with recent findings that VCs may force the newly public firm to engage in activities that boost short-term performance but damage shareholder values in the long run (Fischer & Pollock, 2004a) due to the divergent interests. Thus, government investors will intervene with the resource allocation decisions, which will hurt investors' confidence and IPO premium.

If investors are not convinced that government can credibly commit to foregoing expropriation, then a firm must rely on internal financing or pay a lot for external capital. Either of these options limits growth and hurts the performance of emerging economy firms. In sum, government investment may undermine firm competitiveness and discourage investor participation. This, in turn, increases the cost of capital through lower prices for equity offerings. Fan, Wong, & Zhang (2007b) find that politically connected firms in China have lower stock performance than their politically unconnected counterparts after the IPO. Existing studies on social network in China find that political ties can hurt the firm performance (Sheng, Zhou, & Li, 2011). More formally:

> *H1: Firms receiving government investment will have lower IPO performance than firms not receiving government investment.*

In contrast to government, founder-CEOs can improve firm performance through intrinsic motivation and pro-organizational attitude (Adams et al., 2009; Fischer & Pollock, 2004a; He, 2008; Nelson, 2003). In general, managers often are the most visible members of an organization, and they give a face to the identity of an organization (Scott & Lane, 2000). Organizational identity and managers' identities are likely to overlap to a greater extent than other members. Founders' individualistic identity in young firms is a representation of the stewardship-defined entity, deviating from the traditional agency assumption (Wasserman,

2006). Founders have been involved in the creation and growth of the company, so their personal identification with the firm is likely to be greater than non-founders. Nelson (2003) finds that firms managed by founder CEOs are likely to receive a higher percentage price premium at IPO. Arthurs et al.(2008) also find that the insiders on a board can protect the venture and reduce the IPO underpricing.

In addition, founder-CEOs with pro-organizational attitude can cause the reduction of conflict within the firm (Fischer & Pollock, 2004a). Managers can act to form a consensus on core values and organizational purpose and furnish a consistent view of what the organization is all about (Scott & Lane, 2000). Thus, founder-CEOs can lead a company more smoothly and speed up decision-making processes. Founder-CEOs can also more effectively articulate the firm's purpose, position, and strategy. Research on family businesses indicates that family members' retention can reduce conflicts and improve business performance. Eddleston & Kellermanns (2007) provide empirical evidence that identification to family firms will lead to less conflict and high involvement motivation. As such, founder-CEOs will manage the firm more effectively and send a favorable signal to investors at IPO. Therefore, more formally:

> *H2: Firms managed by founder-CEOs will have higher IPO performance than firms managed by outside CEOs.*

Governance mechanisms: Outside directors and CEO ownership

With overlapping roles as both investors and managers, founder-CEOs may respond to incentives differently from what the traditional agency model predicts. In a similar vein, the principle-principle conflict may also redirect the roles of outside directors to the principal group whose interests are not aligned with the organization. That is, outside directors may not serve as a control mechanism for founder-CEOs but for government investment (Figure 1). Prior research has been unable to find consistent relationships between the effectiveness of corporate

governance mechanism and firm outcomes. Scholars thus suggest that corporate governance research can yield more consistent results when heterogeneous principals are considered. As an IPO is the first time that firms face multiple investors, it is a fitting context for testing specific governance tool as a safeguarding mechanism to address competing interests. Therefore, it is suggested that corporate governance mechanisms may moderate the impact of heterogeneous owners. That is, outside directors and CEO ownership will influence the extent to which the divergent actors (i.e., government and founder-CEO) affect IPO premium. Prior research has found that professional investment funds favor international diversification when more outside board members are present. In contrary, pension funds favor international diversification when more inside board members are present (Tihanyi, Johnson, Hoskisson, & Hitt, 2003).

Agency theory has advocated the positive role of outside directors in reducing agency cost and formalizing governance structure (Eisenhardt, 1989a). In addition, outside directors conform to the institutional norm and enhance symbolic value (Certo, 2003; Westphal & Graebner, 2010). In this research, it is expected that outside directors may prevent the hazards of government's inefficient activities through "political engagement" (Luo & Junkunc, 2008). First, to serve as board member requires sufficient commitment because board members have to fulfill fiduciary duty and maintain accountability. Otherwise, the affiliation with low-quality firms would risk their reputations. Thus, outside directors will work vigilantly to make sure the firm is maximizing its performance rather than being oriented towards political or party interests (Certo, 2003). Outside directors including government officials will serve as a formal governance vehicle to monitor the firm performance and behavior in order to protect shareholders' interests (Baysinger & Butler, 1985; Dalton et al., 1998; Lin & Germain, 2003; Pearce II & Zahra, 1991). Prior research suggests that outside directors can promote sales growth in Chinese publicly listed

companies during institutional transition (Peng, 2004). Research has also shown that formal control in Chinese state-owned enterprises is positively related to firm growth relative to the industry (Lin & Germain, 2003). As a result, investors will feel more confident to the government investment at the presence of more outside directors including government officials. On the contrary, government investment will generate more skeptics and distrust when no external directors are willing to sit on the board (Certo, 2003). This role of outside directors is illustrated by the following statement by an outside director interviewed for this study who works as a university professor and specializes in corporate strategy:

> *In China, the role of outside directors is moving towards more formality with higher demand on responsibility. Shareholders and analysts are becoming more concerned with our roles and putting more pressure on us. Meanwhile, we start to see turnovers in many companies of outside directors when they cannot get the job done well.*

Second, outside directors may bring external resources which are critical to deal with IPO transition and circumvent governmental influence. Resource dependency theory proposes that organizations lacking essential resources will seek to establish relationships with others to obtain needed resources and reduce environmental uncertainty (Huse, 2007; Lynall et al., 2003). I argue that, under uncertainty, firms are likely to appoint resource-rich outsiders to the board to engage in firm-environmental interaction (Hillman et al., 2000). Especially, during the institution transition, external directors (e.g., venture capitalists, consultants, lawyers, retired officials, and professors) may help the firm to resist to governmental interference through their social network (Cuervo & Villalonga, 2000). The designated directors from outside usually possess unique capabilities, thus it is expected that they can help firm to discern the market opportunity and restructure organizations (Lan & Heracleous, 2010). Outside directors including officials can also mobilize resources to help firms successfully circumvent governmental interference. The

following experience of a software venture CEO whom I interviewed showcases the role of outside directors:

> *We recruited outside directors not only for controlling our top management team and helping our managers to make right decisions. But more importantly, we want them to make sure all the directors and major shareholders follow the rule of game when it comes to the decision making because they are the people who are accountable.*

Thus, it is expected that the value destroying role of government investment at IPO can be weakened by more outside directors. Ho et al. (2011) find that board independence positively moderate the relation between IT investment and firm performance in an emerging market of Taiwan. More formally:

> *H3: The discount of government investment on IPO performance is moderated by outside board ratio such that more outside directors will weaken the discount of government investment.*

Classical agency theory suggests that CEO ownership can align agents' interest with the firm and motivate risk-taking. However, from the principal-principal view, CEO equity may magnify CEO's discretion, compromise risk taking, and intensify the struggle among competing groups. The behavior aspect of agency theory suggests that executives may exhibit risk-averse preferences when considering the incentive schemes. During the lock-up experience, executives may become more concerned with avoiding loss of perceived wealth than to attracting additional wealth (Allcock & Filatotchev, 2010; Arthurs et al., 2008). Previous studies have shown that founders with higher ownership are more reluctant to transition to a public firm to avoid losses (Young et al., 2008). First, CEOs with high ownership may use their power to gain private benefits from firm assets. Especially by creating the company, founder-CEOs hold strong leadership and reputation. As such, the entrenchment of CEOs with large equity stakes will exacerbate the conflicts with other groups. Allcock & Filatotchev (2010) find that executive founders' ownership lowers the probability that the condition share-option compensation scheme

is adopted, supporting the risk avoidance argument. Especially, under the principal-principal model, founder-CEO with excessive power may be able to circumvent many of the traditional monitoring mechanisms in China (Young et al., 2008).

Second, founder-CEOs' ownership may deepen their psychic attachment to the firm and trigger "an extreme bias toward optimism" (Busenitz & Barney, 1997). Founders, constrained by their founding experience, are likely to generate information with little diversity and novelty. This argument has also been echoed by the escalation of commitment theory. That is, high responsibility for negative consequences by founders may lead the firm to be "locked into" a costly course of action (Staw, 1981). In times of uncertainty and fast change, a broad range of perspectives, information, and options is conducive to strategic decision making (Eisenhardt, 1989b). Young IPO firms need to undergo a number of changes, necessitating learning from diverse information. It demands diversified information and skills from other parties to ratify decision formulation and implementation. Hence, the higher ownership may result in more bias and resistance by founder-CEOs and intensify their conflicts with other groups.

Third, with their exclusively focus on their own firm, founders' excessive equity may de-motivate other stakeholders to communicate and provide resources to the CEOs. Only after external agents gain more ownership will they have sufficient incentive to engage in boundary-spanning activities. In contrast, when founder-CEOs control greater ownership, other agents' commitment is reduced and short-term goals will be more prominent (Deutsch et al., 2010). Even worse, prior research suggests that individualist-oriented organization understood by its members as "the top performer in the industry" can readily terminate existing suppliers and distributors contracts in order to realize its own benefits (Brickson, 2005). As such, excessive ownership held by founder-CEOs may give rise to managerial disputes and coordination costs (Fredrickson et

al., 1988). The following statement from one of the prominent entrepreneurs in China, Wang Shi (founder and CEO of China Venka Co. Ltd), illustrates the conflicts between government and entrepreneurs over entrepreneurs' stake:

> *You (entrepreneur) take too much, the state is unhappy, and you take too little, you get upset with yourself.*

The above arguments suggest that the increase of CEO ownership will erode the benefit of founder-CEOs. The recent studies based on China also find that entrepreneurs benefit from attracting external equity investors to the firm (Sheng et al., 2011). Therefore, more formally:

> *H4: The benefit of founder-CEOs on IPO performance is moderated by CEO ownership such that higher ownership will weaken the benefit of founder-CEOs.*

In the previous sections, the opposing influence of government and founder-CEOs is illustrated on the perceived potential of IPO firms. Previous studies also suggest that various owners may look to each other for guidance and attempt to influence each other. A variety of governance mechanisms operates in conjunction with ownership to either alleviate or exacerbate principal-principal conflicts, and may substitute for one another (Goranova et al., 2010). George, Wiklund, & Zahra (2005) find that higher CEO ownership is associated with the higher impact of VCs' ownership on scale of internationalization. That is, VCs push firms on higher internationalization with the increase of CEO's ownership. The impact of transient institutional ownership on strategic competitive actions is less negative when dedicated institutional ownership is high (Connelly et al., 2010). Following this line of logic, it is expected that there may be an interaction effect between government investment and founder-CEO.

First, with information and leadership advantages, founder-CEOs can limit the discount of government investment (Kor, 2006; Pearce II & Zahra, 1991; Sundaramurthy & Lewis, 2003). Compared with outside CEOs, founder-CEOs possess more firm-specific knowledge and unique

reputation and are better at influencing the insiders and stakeholders. In addition, founder-CEOs, with strong leadership, can limit the government's access to information and resources through "political engagement" (Luo & Junkunc, 2008). In their study on VCs, Fischer & Pollock (2004a) find that if the CEO retains power, he or she may be in a strong position to resist the pressures from VCs and lower the firm's failure rate.

Meanwhile, a founder-CEO can take advantage of the governmental involvement when he/she holds managerial control. The cultural propensity to rely on relationships (*guanxi*) during institutional transition is behind the heightened role of external resource and ties to government officials (Li & Zhang, 2007; Li, Poppo, & Zhou, 2008; Park & Luo, 2001; Peng, 2004). As Luo (2003) argues, "In China, business people often prefer to rely on their contacts with those in power to get things done" (p. 1317). Thus, founder-CEOs can gain political legitimacy and facilitate boundary spanning through government investment. Recent studies show that managers' business ties can leverage the impact of political ties in driving firm performance (Sheng et al., 2011). More formally:

> *H5: The discount of government investment on IPO performance will be weaker at the presence of founder-CEO.*

Method

Dependent variable

The absolute stock price at IPO, while important, can be misleading in that it fails to account for the worth of firm asset (Welbourne & Andrews, 1996). Following Nelson (2003), Bruton et al. (2010), and Certo et al. (2003), I use the stock market measure — price premium as dependent variable [(offer price — book value per share)/offer price]. Nelson (2003) argues that the price premium demonstrates the difference between the accounting and the market value and could measure "intangible assets, monopoly control, investor overenthusiasm, or some other

factor that would dislocate stock price from accounting-based figures" (Bruton et al., 2010). It represents the perceived potential of the venture from the founder's standpoint. From the government's view, however, it also embodies the perceived risks for investors (Welbourne & Andrews, 1996). Thus, this measure can capture the outcome of competing interests between founder-CEOs and government.

Independent variables

Government investment. This variable is measured by a dummy variable coded 1 if the firm received any investment from government agencies and related SOEs and 0 otherwise.

Founder-CEO status. This variable is measured by a dummy variable coded 1 if CEO of the firm is the founder and 0 otherwise.

Outside board ratio. This variable is measured by a continuous variable calculated as the number of board members who are neither currently nor was previous serving as firm officers divided by total number of board members, excluding any governmental related members (Certo et al., 2001). The governmental directors are defined as individuals who used to work or currently work for central or local government, and military, as well as SOEs (Peng, 2004).

CEO ownership. CEO ownership is defined as the sum of direct and indirect equity holdings of the CEO. This measure equals the proportion of shares outstanding that were beneficially owned by the CEO at the time of IPO.

Control variables

2007 bubble year. Bruton & Ahlstrom (2003) show that periods of high funds inflow can affect IPO valuations. In 2007, China witnessed a massive stock market bubble. "The Chinese stock market bubble of 2007 displays at least three classic features of an asset price bubble: a boom followed by a crash in asset prices, a surge in trading activity that is strongly correlated

with price levels, and a stampede of new investors entering the market" (The Economists, May 24, 2007). Thus, the bubble period of rapid growth is included by a dummy variable equal to 1 if the IPO occurred during the year of 2007 and 0 otherwise.

Firm age and size. Younger and smaller firms are subject to greater liability of newness to investors (Certo et al., 2001; Fischer & Pollock, 2004a). Firm age at IPO was calculated as the years since incorporation. Following Certo et al. (2003), firm size is the natural log of the number of employees.

Manufacturing industry. Previous research shows that firms in different industries exhibit levels of risk and generate valuations (Certo et al., 2003). Given that China is concentrated in manufacturing industry, a manufacturing industry dummy equal to 1 is included if the firm was from manufacturing sectors.

Headquarter location. Higgins & Gulati (2006) noted that young firms located in areas that are rich with industry and market-related activities will likely to have greater access to resources, better signal for potential growth, and therefore, generate higher optimism for investors. In the Chinese context, location advantage is likely to accrue to firms that chose to operate in more market-oriented, rather than government-controlled, regions. Although there is anecdotal evidence on the tremendous diversity across regions in China, the Fan et al. (2007a) index provides scholars with a systematic tool to quantitatively differentiate variations of mercerization in regions. Specifically, the marketization index for the headquarters region of the listed firms is used.

Prior performance. The financial performance of an IPO firm itself can influence the demand for and performance of its offering (Arthurs et al., 2008). Therefore, the net income at prior year of IPO is included as a control.

Underwriter quality. Extensive literatures have shown that involvement of large, prestigious investment bankers in an IPO deal may signal to the market of the firm's legitimacy, potential, and reduce the uncertainties of investors. In keeping with previous research (Bruton et al., 2010), underwriter quality is equal to the market share of the lead underwriter during the same period I sampled: the total RMB amount of IPOs that are brought to the market over the time period for each lead underwriter is divided by the total amount of all IPOs issued.

VC backing. VC backing is a dummy variable coded 1 if a firm received fund from VCs before IPO and 0 otherwise. Previous research has shown that VC-backing is associated with IPO price premium (Bruton et al., 2010).

Founding after the year of 2000. The year of 2000 marked the end of the IPO quota system controlled by the central government in China. Before 2000, the government relied on the quota system to select how many IPOs should be for SOEs and private firms. As a result, a disproportional number of SOEs received the certificate for going public from the government before 2000. After 2000, the probability of private firms to go public has increased dramatically, which gives faster and legal channel of liquidity for VCs. Similar to Baker & Gompers (2003) , this dummy variable equal 1 if the firm was founded after 2000.

Analytic model

Because this study focuses on the impact of government investment and founder management, it is important to control for potential endogeneity issue concerning government investment (Arthurs et al., 2008). To correct this potential sample selection bias, sample selection models were estimated in a full information maximum likelihood (FIML) procedure using SAS QLIM procedure. The logics behind the QLIM and Heckman two-stage selection models (1979) are similar to each other, although these two approaches use different estimation

procedures. QLIM procedures generate an FIML estimator that accounts for the likelihood of selection in a single step. FIML is computationally more involved than interactive two-step techniques and its estimators are asymptotically efficient and generally more efficient than Heckman's two-stage estimator.

A dummy variable is created taking value of 1 if the firm received government investment and 0 otherwise as the dependent variable for the selection equation (Arthurs et al., 2008). The dependent variable for the outcome equations is price premium. It is important to note that, in addition to the independent variables in the outcome equations, the selection equation includes one addition independent variable: a dummy variable indicating whether the firm was founded after the year of 2000. The year 2000 marked the end of the IPO quota system controlled by the central government. Before 2000, government relied on the quota system to select how many IPOs should be for SOEs and private firms. After 2000, the probability of private firms going public has increased. Thus, private firms founded after 2000 are less likely to receive government investment as a result of transition from government- to market-based economy. Empirically, a negative coefficient for this variable is found to support the argument.

Results

Table 3 presents descriptive statistics of the variables used in my model. Table 4 also shows the cross tabulation results between government investment and founder-CEOs.

TABLE 3
Descriptive Statistics

Part A: mean, standard deviation, minimum value, maximum value, and correlation matrix

Correlation matrix	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Price premium	1													
2.Government investment[a]	-0.17	1												
3.Founder-CEO[b]	0.29	-0.05	1											
4.Outside board ratio	-0.03	0.30	-0.03	1										
5.CEO ownership	0.27	-0.16	0.68	-0.15	1									
6.Bubble period dummy	-0.09	-0.10	-0.01	0.05	0.01	1								
7.Firm age	-0.32	0.19	-0.04	0.09	-0.10	0.18	1							
8.Firm size[c]	-0.14	-0.04	-0.07	-0.05	-0.03	-0.02	0.12	1						
9.Manufacturing industry	-0.19	0.05	-0.02	0.09	-0.03	0.08	0.07	0.19	1					
10.Headquarter location[d]	-0.06	-0.01	-0.03	-0.04	0.09	0.02	-0.05	0.02	0.06	1				
11.Prior performance[e]	0.27	-0.19	0.00	-0.08	0.12	-0.11	-0.05	0.25	-0.12	0.02	1			
12.Underwrite quality	0.19	-0.02	0.14	0.01	0.10	-0.02	-0.06	0.05	-0.13	0.07	0.34	1		
13.VC-back dummy	0.15	0.29	0.17	0.23	0.08	-0.10	-0.06	-0.09	-0.06	0.02	-0.07	0.15	1	
14.Firm founded after 2000	0.29	-0.17	0.02	-0.08	0.04	0.04	-0.60	0.03	-0.08	-0.02	0.10	0.12	-0.01	1
Mean	0.80	0.17	0.57	0.57	0.24	0.27	3.93	6.68	0.74	8.93	0.06	0.02	0.39	0.82
Standard deviation	0.09	0.38	0.50	0.13	0.23	0.44	2.72	0.92	0.44	1.46	0.05	0.03	0.49	0.38
Min	0.28	0	0	0.33	0	0	0	4.49	0	2.50	0.01	0	0	0
Max	0.95	1	1	0.91	0.92	1	16	9.35	1	10.41	0.45	0.17	1	1

Part B: Frequency table (N = 274)

Variable	**Frequency**	**Percentage (%)**
Firm going public in the year of 2007	73	26.64
Firm going public not in year of 2007	201	73.36
Firms in manufacturing industry	202	73.72
Firms not in manufacturing industry	72	26.28
Firms backed by VCs	108	39.42
Firms not backed by VCs	166	60.58

I test out hypotheses using a series of hierarchical models based on SAS QLIM procedure. Table 5 presents the results for pooled cross-sectional data over six years (2004-2009).

TABLE 4
Cross Tabulation Results between Government Investment and Founder-CEO

	Outside CEO	Founder-CEO	Total
Not having government investment	95 (34.67%)	132 (48.18%)	227 (82.85%)
Having government investment	23 (8.39%)	24 (8.75%)	47 (17.15)
Total	118 (43.07%)	156 (56.93%)	274 (100%)

Note: Chi-square = 0.80, d.f. = 1, Prob = 0.3719. No significant relationship between government investment and founder-CEO.

TABLE 5
Full Maximum Likelihood Estimates in SAS QLIM

Parameter	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Intercept	.95** (.05)	.97** (.05)	.94** (.05)	.95** (.05)	.93** (.05)	.95** (.05)	.95** (.05)
Bubble period dummy	.00 (.01)	.00 (.01)	.00 (.01)	.00 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
Firm age	-.01** (.00)	-.01** (.00)	-.01** (.00)	-.01** (.00)	-.01** (.00)	-.01** (.00)	-.01** (.00)
Firm size	-.01* (.01)	-.02** (.01)	-.02** (.01)	-.02** (.01)	-.02** (.01)	-.02** (.01)	-.02** (.01)
Manufacturing industry	-.02 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.02 (.01)	-.02 (.01)	-.02 (.01)
Location	-.01 (.00)	-.01 (.00)	.00 (.00)	.00 (.00)	-.01 (.00)	.00 (.00)	.00 (.00)
Prior performance	.44** (.10)	.43** (.11)	.45** (.10)	.44** (.10)	.43** (.10)	.45** (.10)	.43** (.10)
Underwrite quality	.22 (.20)	.23 (.20)	.11 (.20)	.11 (.19)	.12 (.19)	.09 (.19)	.09 (.19)
VC-back dummy	.03** (.01)	.03** (.01)	.02* (.01)	.02* (.01)	.02* (.01)	.02* (.01)	.02* (.01)
Government investment dummy (*H1*)		-.12** (.04)	-.12** (.03)	-.26** (.07)	-.12** (.03)	-.15** (.03)	-.26** (.07)
Founder-CEO dummy (*H2*)			.04** (.01)	.04** (.01)	.06** (.02)	.03** (.01)	.04* (.02)
Outside board ratio				-.02 (.04)			-.01 (.04)
Government investment* Outside board ratio (*H3*)				.22* (.10)			.17† (.10)
CEO ownership					.23* (.10)		.22* (.10)
Founder-CEO* CEO ownership (*H4*)					-.23* (.10)		-.20* (.10)
Government investment* Founder-CEO (*H5*)						.05* (.02)	.05* (.02)
Log Likelihood	177.28	178.71	188.93	191.51	191.79	191.40	196.03
Model Chi-square	73.72	76.58	97.02	102.18	102.74	101.96	111.22

Note: a. †p <.10, *p <.05, **p <.01;

Model 1 is the baseline. In Model 3, including the government investment and founder-CEO variables improve the overall model fit (Model 3 vs. Model 1 = 23.30, $p<.01$). This confirms the multiple agency argument that government investors and founder-CEOs can significantly affect IPO performance. The results of the interaction terms between government investment, founder-CEO status, outside board ratio, and CEO ownership are shown in Model 4, 5, and 6. Model 7, which includes all the variables, exhibits the best fit compared with the partial models (Model 7 vs. Model 4 = 9.04, $p<.05$; Model 7 vs. Model 5 = 8.48, $p<.05$; Model 7 vs. Model 6 = 9.26, $p<.10$). The coefficient and significance of estimates in Model 7 are also consistent with the partial models. Therefore, all the hypotheses testing will be derived from the results in Model 7.

Hypothesis 1 predicts that firms receiving government investment will have lower IPO performance than firms not receiving government investment. The results in Model 7 show a negative coefficient of the direct effect ($\beta = -0.26$, $p<.01$). Thus, H1 is supported.

Hypothesis 2 predicts that firms managed by founder-CEOs will have higher IPO performance than firms managed by outside CEOs. The results in Model 7 show a positive coefficient of the direct effect ($\beta = 0.04$, $p<.05$). Thus, H2 is supported.

Hypothesis 3 predicts that the discount of government investment on IPO performance is moderated by outside board ratio such that more outside directors will weaken the discount of government investment. The results in Model 7 show a negative coefficient of the interaction term ($\beta = 0.17$, $p<.10$). Thus, H3 is supported. Figure 6 shows the graph of this moderating effect.

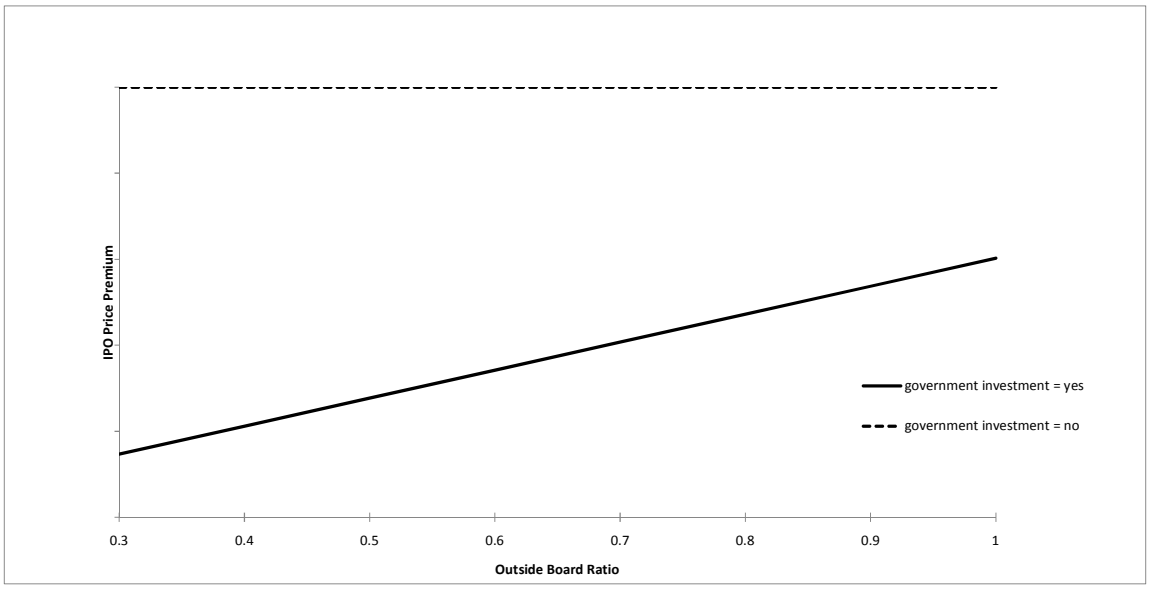


FIGURE 6
The Moderating Effect of Outside Board Ratio

Hypothesis 4 predicts that the benefit of founder-CEOs on IPO performance is moderated by CEO ownership such that higher ownership will weaken the benefit of founder-CEOs. The results in Model 7 show a negative coefficient of the interaction term ($\beta = -0.20$, $p<.05$). Thus, H4 is supported.

Figure 7 shows the graph of this moderating effect. When CEO ownership is less than 20 percent, as expected, the benefit of founder-CEOs will decrease with ownership. However, once the ownership exceeds 20 percent, founder-CEOs shift from an asset to liability and underperform outside CEOs. The discount of founder-CEOs increases with CEO ownership thereafter. Thus, my findings highlight the interaction effect between founder-CEOs and ownership under a multiple agency setting.

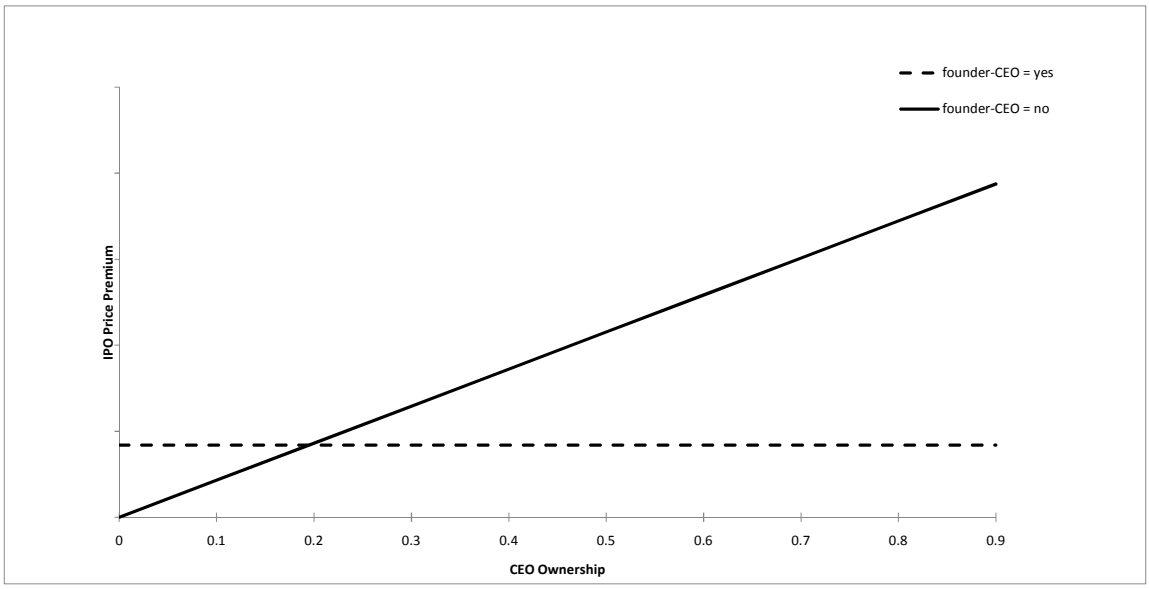


FIGURE 7
The Moderating Effect of CEO Ownership

It is also worthy to note that my results contradict the previous finding by Fischer & Pollock (2004a), which suggests founder-CEOs interact with CEO ownership to decrease the likelihood of failure following IPO. Two explanations are offered. First, Fischer & Pollock (2004a) employ the dependent variable of failure during the five years following an IPO, whereas the current study examine the short-term market-based measure of IPO stocks. The firms that underperform immediately after IPO may survive longer. Thus, more research seems warranted to examine the relationship between short-term IPO performance and post-IPO risks and survival (Certo et al., 2009). Second, Fischer & Pollock (2004a) and my research are based on two dissimilar contexts, the developed system of the United States and the emerging economy of China. Thus, there will be opportunities for studies that compare the impact of founder-CEOs and ownership concentration on IPO performance across two countries.

Hypothesis 5 predicts that the discount of government investment on IPO performance will be weaker at the presence of founder-CEO. The results in Model 7 show a positive coefficient of the interaction term ($\beta = 0.05$, $p<.05$). Thus, H5 is supported. Figure 8 is the graph

of this interaction effect. As expected, at the presence of founder-CEOs, the discount of government investment is reduced (flatter line on the top and steeper line on the bottom).

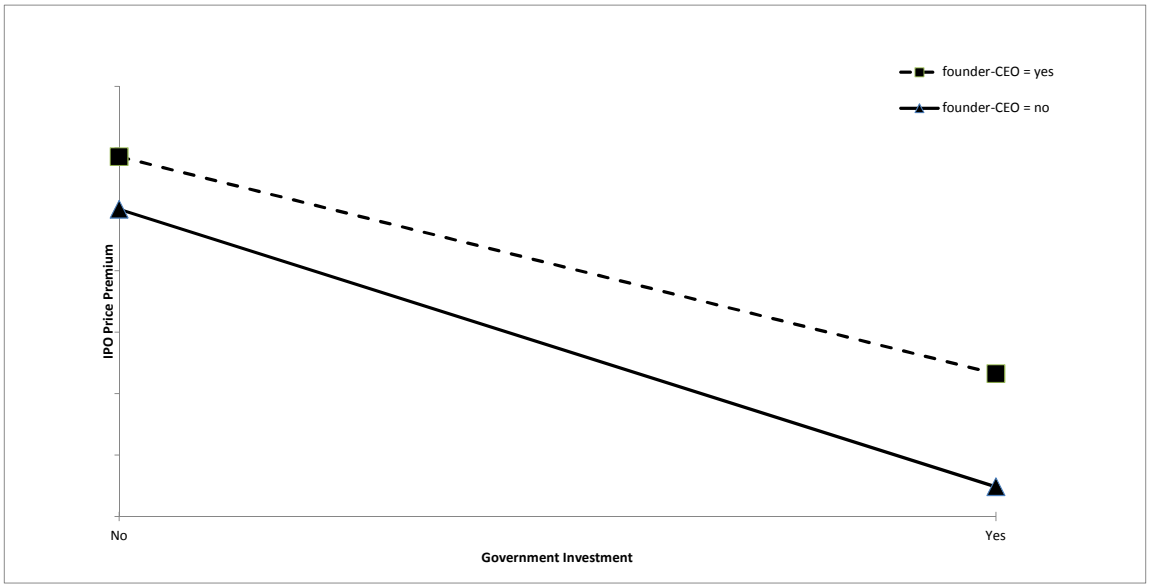


FIGURE 8
The Interaction Effect between Government Investment and Founder-CEO

Conclusion

The steady trend of government investment and entrepreneurial development has created overlapping roles of founders as both principals and agents. Principal-principal conflicts between founders and government also emerge. This study investigates the frictions that arise when the logic of entrepreneurial finance meets government investment by exploring the relationship between government investment, founder-CEOs, and IPO premium among 274 new ventures in China. By examining the moderating effects of outside directors and CEO ownership, this study codifies the different remedies to deal with principal-principal conflicts. The results provide support for my hypotheses and contribute to the nascent understanding of complex governance issues of small and young firms. Furthermore, government investing in entrepreneurial firms is a common yet poorly understood phenomenon in a non-industrialized setting. To the best of my knowledge, this research is one of the first studies on new venture IPO in China.

First, it is shown that government and entrepreneurs possess incongruent interests and result in conflicting impacts on the IPO premium. This finding supports the argument that government may force new ventures to engage in inefficient activities and destroys the value (Brickson, 2000). On the contrary, the benefit of founder-CEOs confirms my prediction that entrepreneurs' stewardship and intrinsic motivation creates value at firm IPO. Therefore, founder-CEOs provide protection against other self-serving principals whose interests are divergent from the firm (Arthurs et al., 2008).

In addition, although the main goal of this study has been to identify consequences associated with founder-manager overlaps and principal-principal conflict, it also critical to reconsider traditional solutions premised on monitoring and incentive alignment. Several meta-analyses question the link between governance facets and firm performance (Dalton et al., 1998), suggesting that it may be more useful to consider these mechanisms in the context of overt conflicts between owners and managers. That is, the ability of multiple corporate governance mechanisms to reinforce each other to resolve internal conflicts must be considered (Rediker & Seth, 1995). The results show that CEO ownership can weaken the benefit of founder-CEOs due to excessive power and cognitive limitation. Specifically, ownership does not have any impact for founder-CEOs, whereas ownership exhibits a positive impact for outside CEOs. While the classical agency theory suggests that CEO equity holding can lower agency cost and encourage more risk taking, my finding adds to the behavioral agency theory by showing entrepreneurs with strong ownership positions may be compromised by exiting after lock-up period than others under the fragile market infrastructure and risk aversion culture in China. These findings are consistent with prior conclusion that founders act as stewards and are not motivated by economic factors (Wasserman, 2006). Meanwhile, it is found that the discount of government investment is

weakened by more outside directors. Given the mixed findings in prior literature, this result is important to corporate governance in general because board structure is not conclusive associated with performance; rather, the board may impact performance by influencing managerial decisions in specific activities.

Finally, the positive interaction effect between government investment and founder-CEOs echoes previous findings that CEOs with strong power can resist the pressure from VCs and keep the firm from failure. Luo & Junkunc (2008) examine the antecedents of the means through which private enterprises respond to government influence through active managerial control. This research complements their study by examining the consequence of those means on the prices for equity offering at IPO. It also sheds light on "matching to the beat of different drummers" between founder management and government investment. More interesting, Deutsch et al. (2010) find that the incentives (stock option) provided to CEOs and outside directors to resolve conflicts are mutually substituting. In contrast, it is shown that founder-CEOs and government investment triggering the conflicts are mutually complementing.

Overall, this research sheds more light on an emerging research avenue for the broader agency problem. If managerial interests coincide with the interests of some owners and not others, it raises the question of the relativity incentive and control (Goranova et al., 2010). For example, what portion of shareholders should benefit from a deal before concluding that managers are acting in the interests of the shareholders? What power and role should be assigned to overlapping owners and managers such as founder-CEO? This research calls for a more contextualized approach. One step towards this goal is to redefine the governance mechanisms for a specific purpose. In other words, board monitoring and CEO incentive can only function when the unique roles and interests of owners and managers are taken into account. That is,

"heterogeneous principal interests may affect firms' choices among different governance structures" (Goranova et al., 2010).

Managerial and policy implications

For policy makers and practitioners in China and elsewhere, the article calls for more attention on the actual role played by government. During institutional transition, entrepreneurial start-ups compete on the basis of both (1) networks and relationships (Park & Luo, 2001) and (2) competitive resources and capabilities (Peng, 2003). As such, both political engagement by government and internal capability building by entrepreneurs become equally crucial. The results first indicate that government investment reduces IPO performance and the negative impact is weakened under founder management or more external directors. That is, new ventures need to embrace the "formal" and "individualistic" structure to resist government's inefficient activities (Peng, 2003). The finding also spells out a central concern in venture financing: the right money to chase and how to swim with sharks (Katila, Rosenberger, & Eisenhardt, 2008).

There are two consecutive stages throughout institutional transition (Peng, 2003). The early stage is characterized by informal networks and collectivistic-oriented approaches whereas the later one is oriented toward competition and individualistic-oriented management style. Thus, the positive vehicle of founder management reflects the trend shifting towards individualistic-oriented norms and rules and individualistic, profit-driven, and autonomous style (Peng, 2003).

The negative moderating effect of CEO ownership casts doubts on the hope that granting higher ownership for executives will help improve investors' confidence. If a firm is managed by founder, less ownership held by the CEO is beneficial. On the other hand, higher ownership will be beneficial only for outside CEO. This contrasting scheme echoes what Wang Shi (founder and

CEO of China Venka) states, “You (founder-CEO) take too much, the state is unhappy, and you (outside CEO) take too little, you get upset with yourself” (Mcgregor, 2010).

Limitations and future research

This research suffers from several limitations. First, more information about the firm and environment should be controlled. Previous studies suggest that board and TMT composition, firm innovation, and environment may affect IPO outcome. Second, this research only specifies the conflicts between government and founder-CEOs and does not take other relevant parties into account such as VCs, foreign investors, or other institutional investors. It will be necessary to broaden the scope of principal groups in future research. Third, the government investment is treated as proxy of government influence in the venture, without articulating the activities and mechanisms of such intervention. In the future, it will be important to develop more fine-grained measures to capture the government’s role in private businesses. Last, while China is one of the world’s biggest emerging economies, it would be useful to explore a global empirical study over more regions and sectors as the Chinese government may impact IPO differently. Although it is extremely difficult to gather cross-country data, such a project would be a worthwhile effort.

CHAPTER 4

TWO SIDES OF THE SAME COIN: CONFLICTING SIGNALS IN A NASCENT FINANCIAL MARKET

Introduction

Initial public offerings (IPOs) enable actors involved to gain better reputation and visibility. An IPO is considered as an ideal event for IPO firms and venture capitalists (VCs) to signal their quality to respective audiences (Certo et al., 2009). However, IPO firms and VCs may exhibit distinctive signaling intentions and purposes. On one hand, a new venture has to pass the strict due diligence process in order to receive venture capital fund. Meanwhile, both financial and non-financial resources provided by VCs also correlate with the quality of the firm. Because the stocks have not been publicly traded and do not have a history of price change, investors may look to those involved before an IPO and assume these entities have vetted the firm (Certo et al., 2009; Pollock & Rindova, 2003; Pollock et al., 2008). Thus, venture capital affiliation can enhance investors' confidence and increase offer price at IPO (Davila, Foster, & Gupta, 2003; Megginson & Weiss, 1991; Sanders & Boivie, 2004; Stuart, Hoang, & Hybels, 1999). On the other hand, taking portfolio companies public is a critical signal to raise fund for VCs (Arikan & Capron, 2010). VCs create limited partnerships (''venture capital funds'') to raise and invest capital (Gompers, 1996). These funds have finite lives, typically ten years, after which they must liquidate their investments and return money to the original providers. As a result, in order raise fund in the future, VCs rush the portfolio company to the market, signal its reputation, and compromise to lower price by providing a good taste to investors with a quick return (Lee & Wahal, 2004). The tension of these two competing signaling mechanisms between IPO firms and VCs is shown in Figure 9.

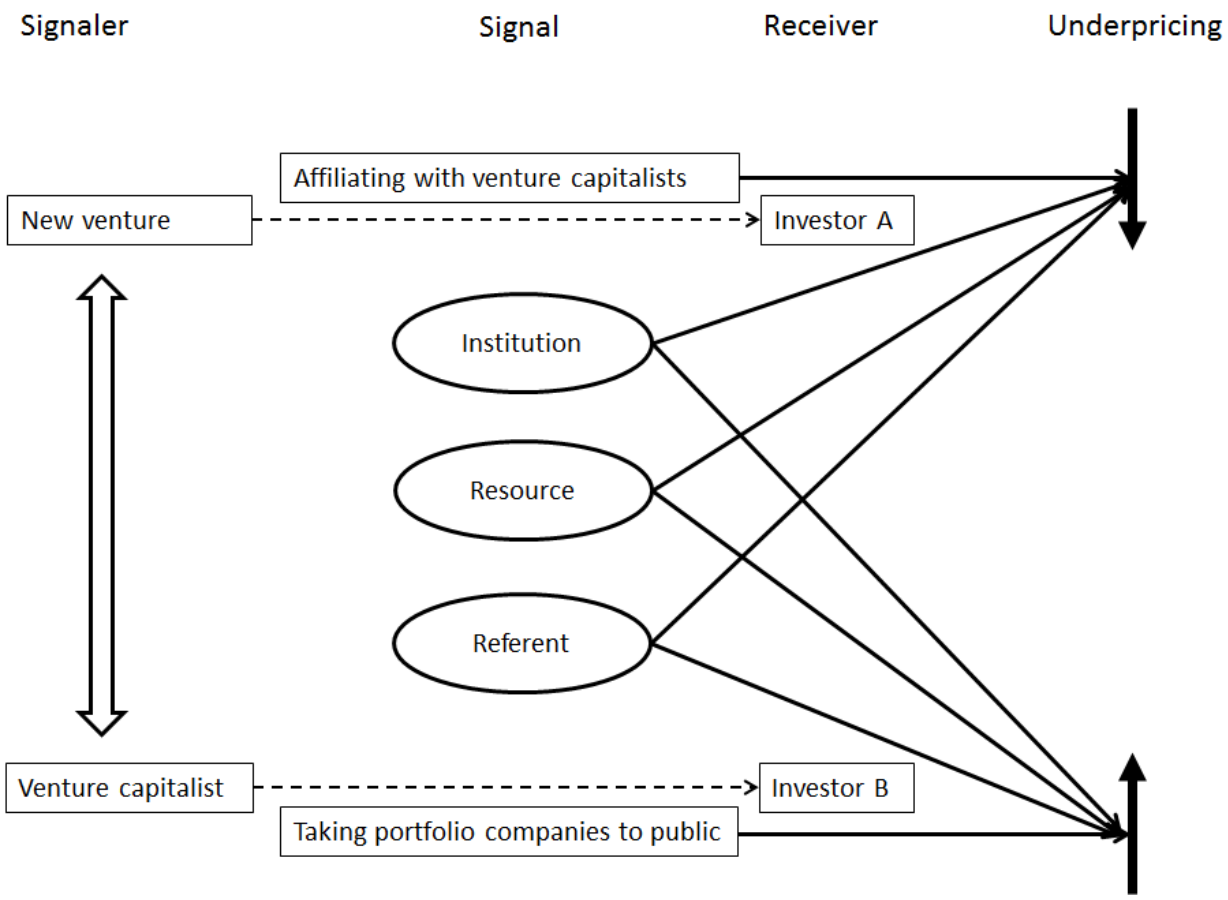


FIGURE 9
The Illustration of Two Competing Signaling Mechanisms

One of the key performance measures at IPO is underpricing, which is viewed as a transfer of wealth from the pre-IPO owners such as entrepreneurs and VCs to first-day investors (Rock, 1986). Researchers generally attribute the underpricing to the existence of information asymmetries between pre-IPO owners and first-day investors. Thus, while venture-VC tie may signal high quality of IPO firm and reduce underpricing, VCs are willing to bear the cost of underpricing in order to please the institutional investors and take companies public fast (Lee & Wahal, 2004). So, what will be the net effect of the venture capital affiliation on underpricing?

Management scholars have found that signaling intention and effectiveness is influenced by the way receivers interpret the signals. Receiver interpretation reflects the amount of

distortion introduced by the receiver, and/or weights applied to signals by the receiver (Zhang & Wiersema, 2009). It captures the process of translating signals into perceived meaning. Park and Mezias (2005) touch on this perspective by explaining how investors respond to the signals of strategic alliance announcement under different periods of different periods of environmental resource munificence. Thus, the extent to which the venture capital affiliation reduces or increases underpricing depend on how both investors of IPO firms and VCs interpret the signal which in turn will influence the incentive for setting up higher or lower price (Connelly, Certo, Ireland, & Reutzel, 2011). Specifically, three environmental factors (Connelly et al., 2011) are selected: the age of the IPO market, the number of venture capital deals and the underwriter's market share to capture the institutional, resource, and referent in the environment. These factors also comprise the actors within a deal network constructed for IPO (Pollock, Porac, & Wade, 2004). I conduct this research based on 274 newly public ventures in China from 2004 to 2009.

This research contributes to the existing literature in at least three important ways. First, the research on venture capital has evolved around the axiom that VCs as third-party certificate are better – that venture capital affiliation enhances investors' confidence at IPO (Hochberg, Ljungqvist, & Lu, 2007; Megginson & Weiss, 1991; Stuart et al., 1999). Yet, the recent findings have pointed out the cost of VCs (Arthurs et al., 2008; Bruton et al., 2010). These works all together, however, sheds little light on the mechanism by which the two contradictory signaling mechanisms influenced the underpricing (see a few exceptions (Gulati & Higgins, 2003; Stuart et al., 1999)). Thus, it is urgent to understand the conditions under which venture capital affiliation can be beneficial or harmful. As (Hsu, 2004) puts, "the costs of affiliating with prominent actors have not been systematically analyzed empirically" (p. 1806). This study suggests that the venture capital affiliation reduce underpricing more when the IPO market gains more

institutional maturity and involves more reputable underwriters. On the other hand, the venture capital affiliation increases underpricing more when more venture capital deals have occurred.

This research also deepens the understanding of signaling theory. More specifically, this study tackles the issue of contradictory signaling mechanisms when two parties are tied together. While prior research has employed transaction cost economics and principal-principal view to examine the tension between two parties, this research adds new knowledge about how the different actors send competing signals and form contradictory signaling intensions. In addition, while signaling theory has been applied to the context of board of directors, strategic alliance, and VCs, the knowledge has been limited to the signal strength. This research incorporates the environment to explicate the receiver interpretation. It also elaborates how different receivers (i.e., audiences) may interpret the meaning and value of signals differently. Therefore, this research answers a call that "future research would benefit from examining in more depth the various qualities signaled and more carefully linking the signals used to measure these qualities" (Connelly et al., 2011, p. 59).

Finally, while extensive research has addressed the effects of VCs in the US context, it is unclear about the VCs in an emerging market where companies and market are undergoing significant changes. In countries where venture capital and IPO markets are still in a process of attaining maturity, many firms and management teams do not have any track record to show. For VCs, the length of the investment–divestment cycle would limit the availability of these data due to the scarce number of fully liquidated funds. Similarly, new ventures are lack of formal support from competitive market players. Thus, the two conflicting signaling mechanisms are especially pronounced in a new IPO market because of the high level of information asymmetry. However, scholars have not addressed the impact of venture capital affiliation in this context. Thus, the aim

of this paper is to provide evidence on the factors that characterize the two signaling mechanisms between IPO firms and VCs in developing markets.

Theory and Hypotheses

Recap of the signaling theory

Signaling theory is concerned with reducing information asymmetry between two parties (Spence, 1973). Therefore, signaling theory is useful to describe when two parties (individuals or organizations) have access to different information. For example, a job applicant might engage in behaviors to reduce information asymmetry that hampers the selection ability of prospective employees and differentials themselves from low-quality candidates via the costly signal of higher education. The usefulness of a signal depends on the extent to which the signal corresponds with the sought-after quality of the signaler and the extent to which signalers attempt to deceive (i.e., honesty) (Connelly et al., 2011). Focusing on the signal of CEO's certification on financial statement, (Zhang & Wiersema, 2009) find that a CEO's shareholdings and external directorships are positively related to the abnormal returns of CEO certification. The stock market penalizes a firm with a CEO who is associated with the firm's prior financial restatement and rewards a firm with a CEO who is appointed after the firm's prior financial restatement. Different signaling patterns and effects may also result from the diverse aims the signals were set up for. Specifically, the signals sent by funds backed by private-sector investors or government exhibit different purposes (Balboa & Marti, 2007). Managers for whom the majority of private equity funds are provided by private-sector investors are more obliged to account for their performance. In the case of government operators, however, greater importance is given to economic and social objectives rather than to obtaining high financial returns.

Entrepreneurship scholars have long considered IPO as an attractive context for studying investor reactions to various signals (i.e., executive compensation, human capital, and third-party certificate) (Certo et al., 2009). First, high levels of information asymmetry between insiders (founders, early investors, etc.) and external investors characterize the IPO process, which increases uncertainty, complicates the valuation of firms entering the public market for the first time, and leads to discount on offer price. Firms thus disclose critical information to signal its quality and well-beings. Recent studies have confirmed that uncertainty and information asymmetry at IPO increase investors' reliance on observable and credible signals (Cohen & Dean, 2005; Sanders & Boivie, 2004). For example, the retained ownership by founders in an entrepreneurial IPO limits adverse selection problems and the associated IPO underpricing. The characteristics of founders, board of directors (Certo, 2003), and new ventures serves as credible signals (Bruton, Chahine, & Filatotchev, 2009). In particular, existing theories suggests that third-party endorsement by VCs and strategic alliances plays the key role to signal a firm's quality at IPO (Gulati & Higgins, 2003; Stuart et al., 1999; Zimmerman & Zeitz, 2002).

Signaling theory argues that the signaling effect of third-party certificate depends on receiver interpretation on the unobserved quality of the actor. First, receivers must assume that gaining a partnership with a prominent organization draws attention from respective audience. This premise is likely to hold because the initiates of prominent organizations are focal points that attract the attention of industry analysts and business press, as well as potential investors. In the case of the tie between IPO firm and VCs, new ventures can draw interests and confidence from the underwriter and institutional investors by affiliating with VCs before IPO. Meanwhile, VCs, by taking portfolio companies public, will become more attractive to the potential limited partners for future fundraising (Arikan & Capron, 2010). Second, receivers are influenced by the

particular tie that an organization has established because they trust the tie approves the organization's ability to navigate under conditions of uncertainty (Stuart, 1998). In the case of the tie between IPO firm and VCs, underwriters and institutional investors will trust that VCs can provide both financial resources and non-financial expertise (industry contacts, market and R&D knowledge, governance skills) to help the firm deal with potential uncertainty (Davila et al., 2003). Prior research has found the significant negative correlation between IPO firm earnings management and the prestigious third-party affiliation, confirming the quality certificate role of VCs. In a similar vein, taking portfolio company to public, VCs will also be considered by their potential investors (i.e., limited partners) as more capable of capturing market opportunity and generating high returns. The future flow of capital has been found to be positively related to underpricing, implying that there is a benefit to bearing the cost of underpricing (Lee & Wahal, 2004). Therefore, the receivers interpretation on the effect of venture capital affiliation will differ based on the attention and trust that respective audience assign to the signal; this assigned attention and trust in turn influences underpricing.

In this research, it is argued that signaling environment affects the receiver interpretation on venture capital affiliation as a signal (Balboa & Marti, 2007; Certo, 2003). Signaling environment, either within an organization or between organizations, can influences the extent to which venture capital affiliation is correlated with the unobservable quality of the IPO firm and VCs respectively (Busenitz, Fiet, & Moesel, 2005; Zhang & Wiersema, 2009). Environmental distortion occurs whenever the medium for propagating the signal reduces the observability and trustworthiness of the signal. For example, press releases serve as signals, but media outlets reporting on those releases introduce distortion. Stock market responds more favorably to strategic alliances during the less munificent period. Stock market response to alliance partner

and type is also affected by the change in environmental munificence between the periods of pre- and post- internet bubble clash (Park & Mezias, 2005). The ties to prominent VCs are more beneficial to IPO success during cold markets (Gulati & Higgins, 2003). Prior investor conceive that a signal has higher influence on attaining subsequent capital when industries are younger and the financing environment is less conducive to fundraising (Janney & Folta, 2006). Also, external referents can also influence the relationships between signals and receivers. College rankings signal educational quality, but prospective students calibrate rankings based on the opinions of other peers in the environment. The following section will focus on how institution, resource, and referent in the environment affect the asymmetrical signaling intention and value of venture capital affiliation on underpricing. Since this study focuses on the contingent value of venture capital affiliation, the main hypothesis will not be presented (Park & Steensma, 2011).

Institution in the environment

The new markets are defined as those "business environments in an early stage of formation" (Santos & Eisenhardt, 2009). In a new stock market, both regulative and market uncertainty contribute to the lack of legitimacy. Legitimation is a complex social process, involving both entrepreneurial organizations and prospective resource providers, such as investors, analysts, customers, media, and other interested audiences (Zimmerman & Zeitz, 2002). (Navis & Glynn, 2010) point out that the legitimation of a new market category shifts in the focus of the market as a whole to the differentiation of firms within it. That is, with market growth, identities claimed by firms and recognized by audiences shifts in their focus from the collectivity and convergence of the category to the individuality of the firms. Therefore, with the category's legitimation, firms' affiliations were less often shared and more often exclusive, serving to qualify their membership in the new market category and to highlight their

competitive advantage. Empirically, the authors find that firms' affiliations with established actors provide needed resources and also function as proxies for quality, particularly during the market's emergence. Thus, the uniqueness and within-group variation such as venture capital affiliation at IPO is more important when the new IPO market undergoes institutional development.

Therefore, it is argued that IPO investors will be more influenced by VCs' signaling value when the market gains more institutional maturity. When the institutions are undeveloped, the changes and possible failure of investment are highly beyond control. Market infrastructures such as rating system and market analysts are rare and few reliable source of information exists. Thus, investors may have less reliable and objective information for evaluating the third-party certificate (Pollock et al., 2008). From receiver interpretation perspective, investors will be more likely to be influenced by the signaling value of VCs in that VCs' expertise can be more important under institutional development. For example, VCs serving as board member can play important role only under the formalization of corporate governance. In particularly, people accept risks that they feel they can control and one of the key factors for the perception of controllability is the familiarity with the risk (MacCrimmon & Wehrung, 1990; March & Shapira, 1987). Thus, VCs' expertise in mentoring and monitoring the firm will have more value only when more formal institutions are established (MacCrimmon & Wehrung, 1990; March & Shapira, 1987). In addition, the institutional transition in a new market is characterized by the shift from informal relationship-based norm to capability and quality-based criteria (Peng, 2003). That is, the quality certification and value-added services of VCs will be more recognized by investors with the market growth. As a result, the signaling value of venture capital affiliation

will be enhanced and leads to lower underpricing. That is, market growth will strengthens the negative impact of venture capital affiliation on underpricing.

Meanwhile, with institutional development, the signal of taking portfolio companies to public will become less effective to VCs' audience (e.g., limited partners from whom VCs raise fund from). Institution development supplies more and objective matrix for evaluating VCs' performance and reputation. The quality of VCs will not be solely signaled by the number of IPOs. Specifically, receiver interpretation will be distorted by other factors such as internal report, media coverage, quality of portfolio companies, and credibility of fund managers. In other words, the reputation of VCs will depend on more and deliberate measures in the market (Balboa & Marti, 2007). Thus, the signaling intention and effectiveness of venture capital affiliation at IPO will play less important role in affecting offer price. In addition, VCs typically retain a large fraction of their equity holdings subsequent to an IPO. (Megginson & Weiss, 1991) report that VCs on average own 36.6% of the firm prior to the IPO and 26.3% immediately thereafter. Greater underpricing represents a real cost to the VCs because there is a transfer of wealth to new shareholders. The receiver interpretation on the IPO pricing will also dilute the signal of taking portfolio companies public (i.e., investors may consider the underpricing as a significant loss). As a result, VCs will less likely accept to put money on the table. In other words, institutional development will weaken the positive impact of venture capital affiliation on underpricing. Therefore, more formally:

> *Hypothesis 1: The impact of venture capital affiliation on underpricing will be negatively moderated by market age. That is, with the increase of market age, the venture capital affiliation will lead to even lower underpricing.*

Resource in the environment

The receiver interpretation also depends on resource environment. It is argued that the signaling value of venture capital affiliation will be weaker when more venture capital deals occur. One of the key attributes of receiver attention and trust is the cost and competitiveness of the signal. That is, gaining the affiliation with VCs must be a costly and competitive process because the prominent organization's reputation (VCs) may be damaged if the new venture is of very low quality (Stuart et al., 1999). The certified target must face a cost of leasing the reputational capital of the certifying agent (Certo, 2003; Hsu, 2004). The increase of venture capital deals in the environment implies the bandwagon effects among VCs. As a result, the quality of dual diligence and monitoring functions of VCs will be questioned regarding receiver interpretation (Gulati & Higgins, 2003). This over-enthusiasm towards VCs is illustrated by the following statement by venture capital fund manager:

> *The intention of venture capital investment is to cultivate the new ventures and provide both financial and non-financial support to the firm. However, an overwhelmingly number of VCs is investing in new ventures many of which actually are not ready for the new financing or IPO. Similarly, many VCs are chasing the deals and lose its focus on certain industries.*

During hot markets, “too much money will chase too few deals” (The Economist, 1997). VCs are likely to be overly optimistic about the upside of firms going public when more venture capital deals occur. And, with so many firms receiving venture capital investment during a hot market, the amount of information that a VC must process to make the decision to take a firm public is likely greater than when fewer firms receiving venture capital investment. That is, when VCs are not overwhelmed by a hot market’s “fools rush in” phenomenon, investors are likely to attribute greater value associated with a focal firm’s tie to a VC (Gulati & Higgins, 2003). Thus, the venture capital affiliation is less likely to reduce underpricing.

Meanwhile, the increase of venture capital deals will dilute the attention and trust from potential investors for VCs. To take portfolio firms to public will gain more signaling value for VCs. More venture capital deals assign even higher weight of VCs' ability to take firms to public for future fundraising. The signaling theory argues that the uniqueness gives rise to the signal's credibility (Busenitz et al., 2005; Sanders & Boivie, 2004). Previous research suggests that signal superiority does not lie on the mimicking of practices. Once the legitimacy and social acceptance has been reached, external actors will not trust underlying quality of the firm simply based on the population or common practice (Fernhaber & Li, 2010). As such, taking investees to public will attract more attention and imply VCs' quality. In addition, more venture capital deals poses challenges for future fund raising because of the higher demand of additional capital injection into new projects. Thus, the pressure to take investees to public will be more pronounced. As a result, more venture capital deals in the market will increase VCs' intention to comprise to lower price because of the pressure of taking firm to public earlier and faster. Therefore, I formally hypothesize:

> *Hypothesis 2: The impact of venture capital affiliation on underpricing will be positively moderated by the number of venture capital deals. That is, with the increase of venture capital deals, the venture capital affiliation will lead to even higher underpricing.*

Referent in the environment

The key external referent of the venture capital affiliation is underwriter. The competitive and reputable referent in the environment is reflected by the market share of underwriter. First, the market share of an underwriter suggests the power and reputation of the underwriter to its institutional investors at IPO. Investors tend to buy at the higher price because they can expect more deals will be given by the reputable underwriter. Therefore, IPO investors evaluating signal of venture capital affiliation will more likely to accept the price because the reputable external

referent can usually set prices more accurately (Carter & Manaster, 1990). In addition, the more reputable underwriter will enhance the attention and trust from receivers while judging the signaling value (Stuart et al., 1999; Zimmerman & Zeitz, 2002) because underwriters generally avoid risky stocks (Gulati & Higgins, 2003). Prior research has shown that underwriters actively seek VC-backed venture for the quality purpose. In their study of stock market reaction to CEO certification of financial statement, a CEO's external directorships is found to be positively related to the firm's abnormal stock returns because the number of external directorships held by the CEO can serve as external referent indicating the credibility of the CEO and thus the quality of the firm's financial statements (Zhang & Wiersema, 2009).

On the other hand, VCs' investors will link the venture capital affiliation with higher quality of VCs under the presence of more reputable underwriter. Thus, receivers will pay less attention to the fact that VCs take portfolio firms public in that their attention will be directed towards the fact that VCs are able to cultivate higher-quality firms and create more value. Previous studies suggest that underpricing has a larger effect on the ability of young VCs to raise future capital (Gompers, 1996). These results are also consistent with the grandstanding explanation predicting that low-reputation VCs are more likely to underprice in order to raise fund (Lee & Wahal, 2004). Moreover, receivers (limited partners) will place less emphasis on VCs' ability to take portfolio firms to public than the reputation of an underwriter as referent because underwriters will seek more future IPO deals from VCs (Arthurs et al., 2008). In a Wall Street Journal article titled "Something ventured and something gained", it is reported that investment bankers usually allocate hot IPO deals to VCs in exchange for IPO deals from VCs. Thus, reputable underwriters will ensure that VCs will receive more hot IPO deals which will

produce higher returns to its investors and reduces the intention for reducing offer price. Therefore, more formally:

> *Hypothesis 3: The impact of venture capital affiliation on underpricing will be negatively moderated by underwriter's market share. That is, with the increase of underwriter's market share, the venture capital affiliation will lead to even lower underpricing.*

Method

Dependent variable

Investor confidence: Underpricing. Underpricing is calculated as the first-day closing price minus the offer price, divided by the offer price (Arthurs et al., 2008; Certo et al., 2001; Filatotchev & Bishop, 2002). The initial price of an IPO firm's stock is set prior to public trading by the underwriters leading the offering, who presumably have both the expertise and market information from investor community necessary to accurately price the securities (Cornelli & Goldreich, 2001). However, on the first day of trading most IPO stocks close at a price significantly higher than their initial offering price. Finance scholars have termed this phenomenon "underpricing" as investors buy the stocks with initial price of the stock at a level somewhat lower than its expected market value (Certo et al., 2009). Thus, the higher the number is, the more unfavorable (favorable) outcome for pre-IPO investors (institutional investors) is (Pollock, Rindova, & Maggitti, 2008a).

Independent variables

Venture capital investment. This variable is measured by a dummy which takes the value of 1 if the venture receives investment from VCs and 0 otherwise.

Signaling environmental. The institution variable equals to the age of the newly launched stock market (measured by months). The larger the number is, the more institutional developments are. While previous studies have derived various indicators of environmental

uncertainty (Gulati & Higgins, 2003), the key to this study is the formal institution development over time. At the micro-level, prior research has also used firm age to assess the internal formalization within a new venture (Shane & Foo, 1999).

The resource variable is measured by the number of total venture capital deals in the three-month window prior to the focal IPO. This variable indicates both the investment and fundraising activities among VCs.

The referent variable is measured by the market share of the lead underwriter during the same period the sample is collected: the total RMB amount of IPOs that are brought to the market over the time period for each lead underwriter is divided by the total amount of all IPOs issued. Previous literatures suggests that the involvement of large, prestigious investment bankers in an IPO deal serves as a credible referent for the IPO firm and other actors to the potential investors.

Control variables

Stock market index. The daily Shenzhen Stock Exchange Index is collected. The market index is measured by the total trading volume by price on the day when the firm went public. The higher volume by price reflects the trading activity and investors' enthusiasm.

Firm age. This variable equals to the age of the venture going public (Sanders & Boivie, 2004; Stuart et al., 1999).

CEO ownership. Previous studies have found that the CEO's ownership interest in a firm can impact IPO performance (Certo et al., 2003; Fischer & Pollock, 2004b). I define CEO ownership as the sum of direct and indirect equity holdings of the CEO. This measure equals the proportion of shares outstanding that were beneficially owned by the CEO at the time of IPO.

IT industry dummy. Previous research shows that firms in more technological and faster-growing industries such as the Internet and software can be more risky but generate high valuations (Certo et al., 2003; Fischer & Pollock, 2004b). An information technology (IT) dummy is used which equals to 1 if the firm is from IT and software sectors and 0 otherwise (Bruton et al., 2010).

Firm location. In the Chinese context, location advantage is likely to accrue to firms that chose to operate in more market-oriented, rather than government- and institution-oriented, regions. Specifically, the marketization index for the region is used to quantitatively differentiate variations of mercerization in regions where the headquarters of each listed firm is located (Fan et al., 2007a).

Prior performance. The financial performance of an IPO firm itself can influence the pricing performance of its offering. Therefore, the net income of the year prior to IPO is included.

Founder-CEO. Prior research finds that founder-CEO management can influence IPO performance. Therefore, the founder-CEO dummy prior to IPO is included as a control.

Board size. This variable equals to the number of directors prior to IPO.

Outside board ratio. Outside ratio may influence investor confidence and underpricing at IPO. Therefore, the ratio of directors who do not serve as firm's officers prior to IPO is included as a control.

IPO open price. This variable is obtained from the RESSET/DB research database. Opening price can send signals to the market about the relative quality and potential of a public offering.

VCs' ownership. This variable equals to the percentage of shares outstanding that were beneficially owned by VCs at the time of IPO.

The number of VCs. This variable equals to the total number of VCs investing or co-investing in a new venture before IPO.

VCs' status. The industry ranking can serve as the key proxy for status. Each year, Zero2IPO ranks the "Top 50 Best VC/PE Firms in China". Even though there are controversies regarding the exact ranking order of particular firms, people in the industry generally agree these firms are among the best in China. Thus, VCs' status is measured by a dummy variable assessing whether any of the co-investing VCs were ranked among top 50 in the year when the firm went public.

Analytical model

Given that the analysis focuses on the impact of the VCs as well as the impact of other firm and environmental characteristics, it is important to control for potential endogeneity issues concerning the VCs (Arthurs et al., 2008; Hamilton & Nickerson, 2003; Kroll et al., 2007). First, the firm and environmental attributes may influence VCs' investment decisions, so VCs could be subject to self-selection bias or endogeneity. In addition to the omitted variables problem, the endogeneity may also be due to reverse causality. Ex-ante promising deals may be more likely to attract VCs to back them, i.e., the probability of venture capital investment increases with the likely success of the entrepreneurial firm. Therefore, the predicted relationship between venture capital affiliation and underpricing may result from the fact that the new venture is of high quality in the first place and may not necessarily reflect a causality flowing from venture capital investment to underpricing.

Similar to the remedies for sample selection (Heckman, 1979), the models were estimated in a full information maximum likelihood (FIML) procedure using SAS QLIM procedure. The logics behind the QLIM and Heckman selection models are similar to each other, although these two approaches use different estimation procedures. The Heckman selection model estimates a selection equation that is summarized by the inverse Mill's ratio and then included as a control in a second step. In contrast, QLIM procedures generate an FIML estimator that accounts for the likelihood of selection in a single step. FIML is computationally more involved than interactive two-step techniques and its estimators are asymptotically efficient and generally more efficient than Heckman's two-stage estimator. Specifically, the first equation models the effects of firm attributes on the likelihood of receiving venture capital investment and the second equation models the effects of the venture capital investment on investor evaluation.

Before regression analyses, several model diagnostics are conducted. First, the conditional index (less than 30) and VIF (less than 10) are checked. Therefore, multicollinearity is not a concern. Second, the SPEC test in SAS is not significant and, therefore, fails to reject the null hypothesis that the errors are homoskedasticity. Third, the residual-versus-fitted plot is examined and no outlier point is found.

Results

Table 6 presents the descriptive statistics and correlation matrix for the variables. Part A shows the frequency table of whether a firm receives venture capital investment in my sample.

TABLE 6
Descriptive Statistics

Part A: Frequency Table

Whether a firm receives venture capital investment	0	1
Frequency (# of cases)	166	108
Percentage (%)	60.58	39.42

Part B: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1.Underpricing	1																		
2.Stock market index	.41	1																	
3.Firm age	.07	.03	1																
4.CEO ownership	-.02	.14	-.10	1															
5.IT industry	.02	.04	.00	.02	1														
6.Firm location	-.07	-.07	-.05	.09	-.01	1													
7.Prior performance	-.22	.07	-.05	.12	-.07	.02	1												
8.Founder-CEO	-.02	.14	-.04	.68	.13	-.03	.00	1											
9.Board size	.03	-.09	.11	-.21	-.04	-.02	-.02	-.14	1										
10.Outside board ratio	.01	.02	.09	-.15	-.03	-.04	-.08	-.03	.12	1									
11.Open price	.26	.44	.06	.25	.27	-.05	.14	.22	-.11	-.05	1								
12.VCs' ownership	.03	.07	.04	.02	.17	.03	-.05	.17	.21	.24	.07	1							
13.# of VCs	.00	.12	-.06	.09	.23	.05	-.02	.13	.21	.24	.14	.66	1						
14.VCs' status	.05	.11	-.06	.05	.15	.04	.03	.07	.10	.12	.13	.33	.64	1					
15.Founding year	.09	.27	-.60	.04	.09	-.02	.10	.02	-.12	-.08	.13	-.03	.01	.04	1				
16.VC dummy	.01	.08	-.06	.08	.14	.02	-.07	.17	.25	.23	.14	.69	.78	.44	-.01	1			
17.Market age	-.03	.58	-.17	.23	.14	-.12	.17	.25	-.15	-.03	.43	.07	.20	.13	.34	.18	1		
18.Venture capital deals	.34	.45	-.06	.20	.02	-.09	.13	.16	-.13	-.07	.22	.01	.00	.03	.32	.00	.60	1	
19. Market share of underwriter	-.08	.07	-.06	.10	.09	.07	.34	.14	.01	.01	.18	.05	.11	.00	.12	.15	.17	.16	1
Mean	1.21	1.22	3.93	23.81	0.13	8.93	0.06	0.57	8.75	0.57	29.63	5.55	0.64	0.16	0.82	0.39	42.53	167.11	0.02
Std. Dev.	0.98	0.74	2.72	22.96	0.33	1.46	0.05	0.50	1.51	0.13	17.10	9.93	1.02	0.46	0.38	0.49	19.59	60.70	0.03
Min	-0.10	0.05	1	0	0	2.50	0.01	0	5	0.33	5.61	0	0	0	0	0	1	41	0
Max	5.38	3.48	16	92.35	1	10.41	0.45	1	15	0.91	100.1	69.7	8	3	1	1	67	285	0.17

The alternative explanations for the non-random treatment effects show that firms in IT industry are more likely to receive venture capital investment. This result is consistent with prior findings that VCs concentrate their investments in fast growing and R&D intensive industries (Megginson & Weiss, 1991).

TABLE 6 (Cont.)

Part C: Frequency table (N = 274)

Variable	**Frequency**	**Percentage (%)**
Firms in IT industry	35	12.77
Firms not in IT industry	239	87.23
Firms managed by founder as CEO	156	56.93
Firms not managed by founder as CEO	118	43.07
Firms receiving VCs' investment	108	39.42
Firms not receiving VCs' investment	166	60.58

Hypotheses testing

Table 7 presents the regression results predicting IPO underpricing for pooled cross-sectional data over six years (2004–2009).

TABLE 7
Results of Regression Analyses Predicting IPO Underpricing

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	0.51(0.46)	0.22(0.48)	0.13(0.48)	0.26(0.49)	0.24(0.49)
Stock market index	0.64(0.07)**	0.63(0.07)**	0.63(0.07)**	0.62(0.07)**	0.63(0.07)**
Firm age	-0.02(0.02)	-0.02(0.02)	-0.02(0.02)	-0.02(0.02)	-0.02(0.02)
CEO ownership	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)	0.00(0.00)
IT industry	0.01(0.14)	-0.21(0.16)	-0.21(0.16)	-0.23(0.16)	-0.23(0.16)
Firm location	-0.03(0.03)	-0.04(0.03)	-0.04(0.03)	-0.05(0.03)	-0.05(0.03)
Prior performance	-3.89(0.83)**	-3.94(0.85)**	-4.04(0.85)**	-4.09(0.85)**	-4.64(0.89)**
Founder-CEO	-0.04(0.12)	-0.03(0.12)	-0.03(0.12)	-0.06(0.12)	-0.06(0.12)
Board size	0.03(0.03)	0.02(0.03)	0.02(0.03)	0.02(0.03)	0.02(0.03)
Outside board ratio	0.01(0.33)	0.00(0.32)	0.01(0.32)	0.03(0.31)	0.02(0.31)
Open price	0.02(0.00)**	0.02(0.00)**	0.02(0.00)**	0.02(0.00)**	0.02(0.00)**
VCs' ownership	0.00(0.01)	0.00(0.01)	0.00(0.01)	0.00(0.01)	0.00(0.01)
# of VCs	0.02(0.08)	0.03(0.08)	0.04(0.08)	0.06(0.08)	0.07(0.08)
VCs' status	0.03(0.12)	0.03(0.11)	0.03(0.11)	0.01(0.11)	0.00(0.11)
Market age	-0.04(0.00)**	-0.04(0.00)**	-0.03(0.00)**	-0.03(0.00)**	-0.03(0.00)**
Venture capital deals	0.01(0.00)**	0.01(0.00)**	0.01(0.00)**	0.01(0.00)**	0.01(0.00)**
Market share of underwriter	-2.04(1.69)	-2.28(1.67)	-2.01(1.67)	-2.18(1.65)	3.56(3.46)
VC dummy		1.01(0.23)**	1.32(0.29)**	1.09(0.29)**	1.11(0.29)**
VC *Market age			-0.01(0.00)†	-0.01(0.01)**	-0.01(0.01)**
VC *Venture capital deals				0.00(0.00)*	0.00(0.00)*
VC *Market share of underwriter					-7.04(3.78)†
Log likelihood	-455.91	-454.29	-452.78	-450.66	-448.92
Model chi-square	220.8	224.04	227.06	231.3	234.78

Note: a. $^{\dagger}p$ <.10, *p <.05, **p <.01;

Model 1 is the baseline with only control variables. Model 2 includes the predictor, the dummy variable of venture capital investment. From Model 3 to 5, the three interaction terms are incrementally added. In particular, all independent variables are included in Model 5. In all the models, the significant coefficients of the interaction terms confirm the moderating effects of the three dimensions of signaling environment: institution, resource, and referent. By include all the variables in Model 5, the model fit is significantly improved (Model 5 – Model 2 = 10.74, p<.05; Model 5 – Model 3 = 7.72, p<.05; Model 5 – Model 4 = 3.48, p<.10).

Institution in the environment. Hypothesis 1 predicts that the impact of venture capital affiliation on underpricing will be negatively moderated by market age. That is, with the increase of market age, the venture capital affiliation will lead to even lower underpricing. In Model 5, the results show a negative coefficient of the interaction term between VC dummy and market age ($\beta = -0.01$, $p<.01$), supporting Hypothesis 1. The moderating effect is shown in Figure 10.

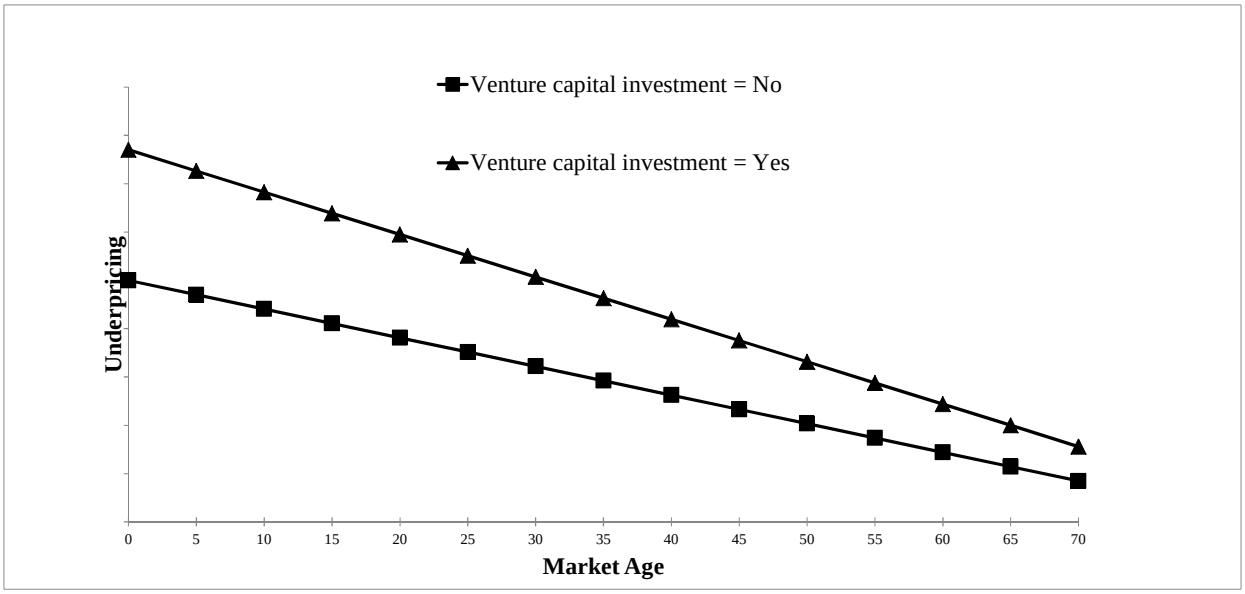


FIGURE 10
The Moderating Effect of Market Age

Resource in the environment. Hypothesis 2 predicts that the impact of venture capital affiliation on underpricing will be positively moderated by the number of venture capital deals. That is, with the increase of venture capital deals, the venture capital affiliation will lead to even higher underpricing. In Model 5, the results show a positive coefficient of the interaction term between VC dummy and venture capital deals ($\beta = 0.00$, $p<.01$), supporting the Hypothesis 2. The moderating effect is shown in Figure 11.

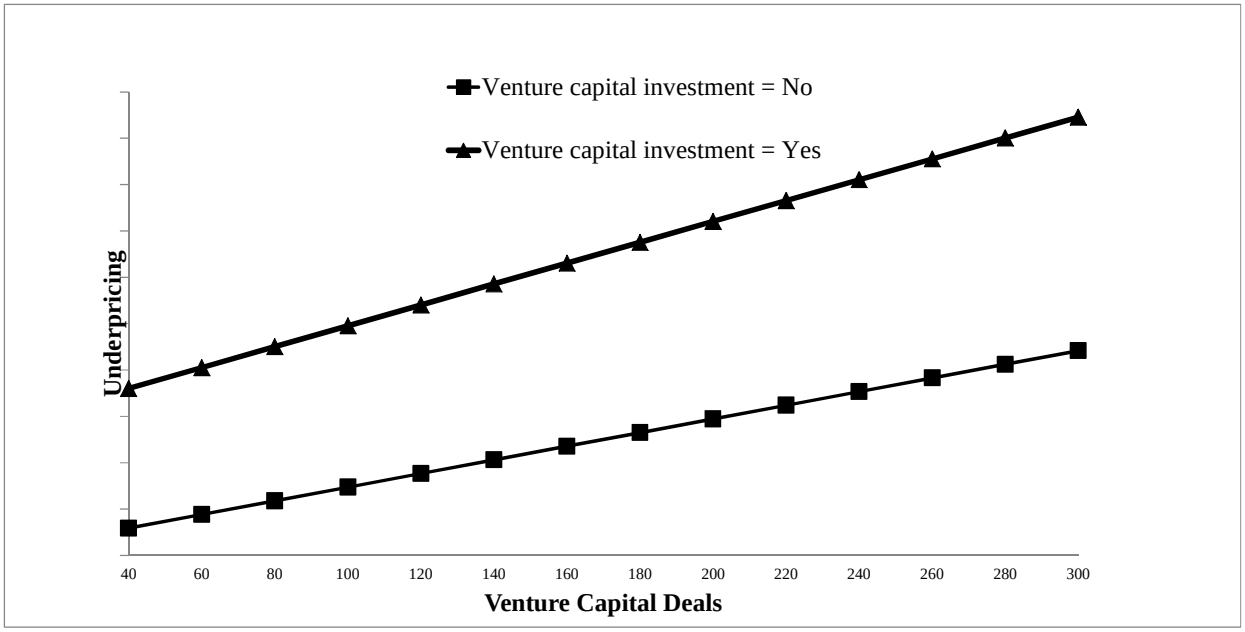


FIGURE 11
The Moderating Effect of Venture Capital Deals

Referent in the environment. Hypothesis 3 predicts that the impact of venture capital affiliation on underpricing will be negatively moderated by underwriter's market share. That is, with the increase of underwriter's market share, the venture capital affiliation will lead to even lower underpricing. In Model 5, the results show a negative coefficient of the interaction term between VC dummy and market year is negative and significant ($\beta = -7.04$, $p<.10$), supporting the Hypothesis 3. The moderating effect is shown in Figure 12.

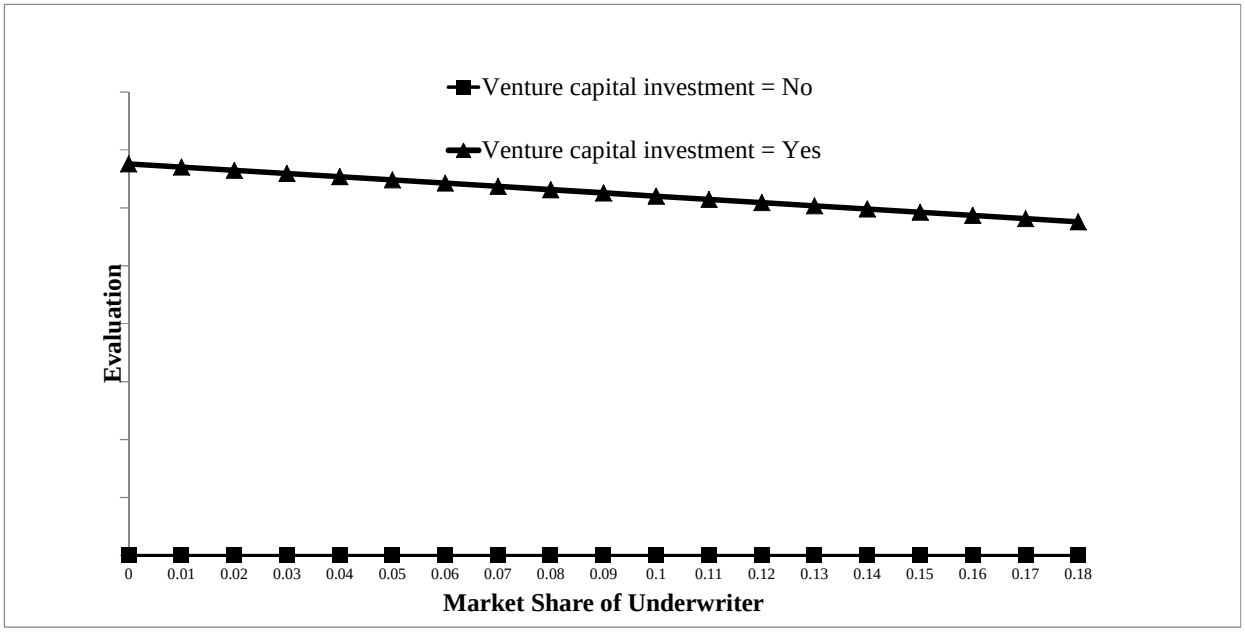


FIGURE 12
The Moderating Effect of Underwriter's Market Share

Post-hoc analyses on post-IPO performance

To further explore the two competing signaling mechanisms, two post-hoc analyses are conducted for linking the venture capital affiliation and post-IPO performance. First, I examine whether venture capital affiliation can drive the post-IPO operating performance. If VCs are willing to bear the cost of underpricing for signaling its ability to take portfolio companies to public, they will be more likely to help the firm achieve higher performance in order to gain more when the lock-up period expires. In China, the lock-up period for VCs is usually 12 months. Thus, the firm's gross margin reported in the first annual report after IPO is selected as the dependent variable. The results are shown in the model 6 of Table 3. The results support my contention that post-IPO gross margin is higher for new ventures receiving venture capital investment. That is, VCs aim to enhance firm performance and value post-IPO to cover the cost of being underpriced at IPO.

Second, while the above results indicate that venture capital affiliation may lead to more favorable outcome after IPO. It will be interesting to see whether this effect holds when VCs join the venture at different stage. Specifically, I explore whether the window-dressing behavior of VCs can bring the same level of benefits to the venture after IPO. The window-dressing is defined as the participation of VCs in the final year towards IPO (Chen et al., 2008). If the IPO investors are concerned with the signaling value of venture capital affiliation, they may be less convinced by the value-added role of VCs who participate in the deal in the final year towards IPO because the due diligence and service functions of VCs are greatly reduced. That is, VCs will be less able to help the firm achieve higher performance. The results are shown in the model 7 of Table 8. The findings also support my contention that post-IPO gross margin is lower for new ventures not receiving venture capital investment until the final year towards IPO.

TABLE 8
Post-hoc Analyses on Post-IPO Performance

	Model 6	Model 7
Intercept	0.37(0.11)**	0.57(0.20)**
Stock market index	-0.04(0.02)*	-0.06(0.03)*
Firm age	-0.01(0.00)*	0.00(0.01)
CEO ownership	0.00(0.00)	0.00(0.00)
IT industry	0.05(0.04)	0.08(0.05)†
Firm location	-0.02(0.01)*	-0.01(0.01)
Prior performance	-0.07(0.20)	-0.48(0.33)
Founder-CEO	0.01(0.03)	0.02(0.04)
Board size	0.00(0.01)	0.00(0.01)
Outside board ratio	-0.06(0.07)	-0.11(0.13)
Open price	0.00(0.00)**	0.01(0.00)**
VCs' ownership	0.00(0.00)	0.00(0.00)†
# of VCs	-0.01(0.02)	0.00(0.02)
VCs' status	-0.02(0.02)	-0.02(0.02)
IPO Underpricing	0.01(0.01)	-0.02(0.02)
Market age	0.00(0.00)*	0.00(0.00)
Venture capital deals	0.00(0.00)**	0.00(0.00)
Market share of underwriter	0.38(0.37)	0.36(0.40)
VC dummy	0.31(0.05)**	
VC window-dressing		-0.09(0.03)*
Log likelihood	-42.35	-116.03
Model chi-square	113.08	61.36
N	274	118

Note: †p <.10, *p <.05, **p <.01.

Conclusion

Building on signaling theory, this study examines the relationship between venture capital affiliation and IPO underpricing among 274 new ventures in China, by focusing on the conflicting signaling mechanisms between IPO firms and VCs to their respective audience at IPO. The sample of entrepreneurial firms going public in China provides us with insights of IPO and signaling effects in a unique context. To the best of my knowledge, this is the first study on VCs and IPO of new ventures in China.

Signaling theory emphasizes that affiliating with credible third-party can mitigate information asymmetry and imply its high quality (Busenitz et al., 2005). However, there is a potential conflict of the signaling logics between the two actors tied together who face two sets of different audiences respectively. In this study, the first group of audience evaluating the venture-VC tie as a signal is the investors at IPO who make decisions on the IPO firm's value and whether to purchase its shares. The second group of audience judging the venture-VC tie as a signal is the limited partners of VCs who evaluate the VCs' ability to take portfolio companies public and make decisions on whether to invest in the venture capital fund. To build theories and make predictions around these differences, this research explicates how the receiver interpretation among these two groups eventually affects IPO pricing decisions, namely underpricing.

Underpricing is viewed as a discount to first-day investors and represents a transfer of wealth from the pre-IPO owners such as entrepreneurs and VCs to first-day investors (Rock, 1986). Thus, while venture-VC tie may signal high quality of IPO firm and reduce underpricing, VCs are willing to bear the cost of underpricing in order to take companies public soon (Lee & Wahal, 2004). To further the understanding on the tension, this research investigates the moderating effects of three factors in the signaling environment: institution, resource, and referent in the environment. All the hypotheses are found to be supported. With the increase of market age and institutional development, the venture capital affiliation will lead to even lower underpricing which suggests that venture capital affiliation signals higher quality to IPO investors. Also, with the increase of venture capital deals, venture capital affiliation will lead to even higher underpricing. It suggests that venture capital affiliation signals VCs' ability to its limited partners so that VCs are willing to compromise to lower price. Third, with the increase of

underwriter's market share, the venture capital affiliation will lead to even lower underpricing based on the strong referent in the environment.

Previous studies on signaling theory were built on the assumption that third-party endorsement matters. Yet, no research has attempted to distinguish the various signaling mechanism among different actors. This study focuses on two competing signaling mechanisms pertaining to two actors: IPO firm and VCs. Therefore, this study contributes to the deeper understanding of VCs' roles at IPO. The results also echo the mixed findings in the recent literature. On the one hand, a positive relationship has been found between venture capital affiliation and IPO outcome (Megginson & Weiss, 1991). On the other hand, research also suggests that venture capital affiliation may be harmful due to its short-term investment horizon (Arthurs et al., 2008; Fischer & Pollock, 2004a). To capture the underlying mechanisms of these two competing logics, my study examines the environmental conditions under which venture capital affiliation can increase or decrease underpricing.

In addition, this study contributes to the research on signaling theory. While prior research has focused on the attributes and strength of signal, scholars have paid little attention on signaling environment. Various factors influence investment decisions for VCs and investors decision making (Pavone, 2009). In particular, the institutional development can influence the value of VCs in mitigating information asymmetry. Thus, the increase of market age suggests the development of formal institutions and enhances the signaling value of venture-VC tie so that IPO investors are willing to pay higher offer price. The resource environment characterized by the number of venture capital deals suggests the pressure of fundraising and the value-added roles of VCs. Thus, the increase of venture capital deals requires more resources for VCs' fundraising and reduces the certification value of VCs for the venture-VC tie. Therefore, VCs

will be willing to bear the cost and accept lower offer price with more venture capital deals in the market. Regarding the referent in the environment, the increase of underwriter's market share enhances the quality of the venture-VC tie which leads to even lower underpricing.

Furthermore, this research adds new knowledge about an important phenomenon at IPO: underpricing. Investors seek more fine-grained information and take deliberate approaches to evaluate IPO firms. IPO context is conductive to signaling effect because public investors must make investment decisions based on the implicit indicators that may correlated with the quality of the firm before there are no history of price change and firm value. While prior research has shown how signal attributes and strength can influence underpricing (Certo, 2003; Pollock & Gulati, 2007; Pollock & Rindova, 2003; Pollock et al., 2008), this is one of the first studies distinguishing the competing signaling mechanisms involved by actors in the IPO context. Specifically, underpricing is related to the motivations of new ventures and VCs to raise capital at IPO and raising fund for future investment respectively. Meanwhile, the pricing decisions are also influenced by the deal network including institution, resource, and referent in the environment. For firms entering the public market for the first time, the actors and relationships in the deal network include IPO firm, VCs, and underwriters (Gulati & Higgins, 2003; Stuart et al., 1999).

Another contribution lies on the empirical context. This study is conducted based on a setting where the signal and the venture-VC tie meets with the nascent stock market. In such context, the third-party certificate is highly visible because information is publically available reported in the prospectus. In addition, actors also expect the value of third-party certificate to be contingent on the characteristics associated with the emerging market. For example, both IPO investors and VCs' investors are concerned with the development of formal institutions which

ensures transparency and corporate governance. Meanwhile, the emerging market is characterized by increasing activities of venture capital investment and fundraising. Thus, within such a context, the effect of venture capital affiliation is arguably dependent on the institution and resources in the environment. The contexts in which previous studies are conducted may not have fulfilled these circumstances. Most of previous studies are built upon a certified practice (Terlaak & King, 2007) and set of well-established criteria for assessing the signaling value (Haunschild & Miner, 1997).

Managerial implications

The growth of emerging economies has gained substantial momentum, especially the liberalization of capital market and development of entrepreneurial firms. Without well-established rules of game, venture capital industry is still trying to build reputation as a credible play in mitigating information asymmetry. Start-ups, especially those in the early stages, often do not have an established reputation, and may therefore seek for credible affiliation. In the market for affiliation, the supply of financial capital (and attention) from VCs is limited (Hsu, 2004). Venture capitalists can therefore be suppliers of certification (Megginson & Weiss, 1991). My research informs that VCs can exert a unique pattern of influence at IPO and signaling benefits are contingent on environmental factors. For entrepreneurs, VCs, and public investors, it is important to recognize the characteristics of the venture-VC tie and environment within the transitional institutions. For policy makers, it also sheds light on the key criteria for establishing formal institutions in the capital market, particular for venture capital and IPO.

Limitations and future research

This study also suffers from some limitations. First, this research is only concerned with a special affiliation: VCs. There are other key players under such context like government or SOE

related investors. To broaden the research scope on social influence and include different types of adopters will shed more light on the patters of signaling effects under institutional transition. Second, this study aggregates all the VCs and treats them as identical by one dummy. VCs hold different ownership, traits, and may exert different impacts through board interlock and voting rights. Thus, more fine grained composite measures are needed to capture the heterogeneous signaling effects of VCs. Prior research on venture capital syndication has also stressed the role of syndication at the same round. Thus, another future research path is to compare the impacts of VCs at different rounds.

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