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Managing Risk in a Transitional Environment: An Exploratory Study of Control and Incentive Mechanisms of Venture Capital Firms in China

by Justin Tan, Wei Zhang, and Jun Xia

In this study, we examine the control and incentive mechanisms of domestic and foreign venture capital (VC) firms in China. Primary findings show that most VC firms use staged capital infusion, value reassessment based on subsequent performance, and other tools reflecting the flexible and dynamic characters of the investment systems and rarely replace management team. On the other hand, domestic VC firms are less active in monitoring, less likely to retain veto rights, and less likely to introduce stock options into target firms and for all employees. They are also less motivated to provide value-added services than their foreign counterparts. Instead, they concentrate their monitoring and participation on the financial aspects of the invested ventures. We discuss these findings and suggest directions for future research.

Although venture capital (VC) industry in China is in its infancy, it is now growing at a rapid rate. The development of VC industry provides an important source for Chinese entrepreneurs to solve problems associated with inadequate systems of corporate governance and the lack of long-term financing for restructuring and growth (White, Gao, and Zhang 2005; Zhang 2001). VC has played an increasingly important role, helping small and medium-sized start-up businesses in China (Fung, Liu, and Shen 2004). Given the potential existence of

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divergent interests between VC firms and their portfolio firms, VC investments are also characterized by high risks such as volatile returns, lack of information, and agency problems (Promise and Wright 2005; Sahlman 1990). Thus, VC involvement in entrepreneurial firms also includes monitoring while providing managerial, technical, and capital assistance to venture management (Kaplan and Strömberg 2004, 2003, 2001; Hellmann and Puri 2002; Gorman and Sahlman 1989; MacMillan, Kulow, and Khoylian 1989). However, due to the lack of knowledge and experience, the interfirm governance (control and incentive) mechanism of the Chinese venture capitalists is not always effective.

Many entrepreneurs believe that venture capitalists provide little more than money, yet studies of VC activity show that venture capitalists are actively involved in their portfolio companies (Engel 2004; Kaplan and Strömberg 2004; Bygrave and Timmons 1992). Though VC investments are associated with high risks (Promise and Wright 2005; Moore and Wustenhagen 2004), venture capitalists have provided both capital and management expertise that facilitate the development of entrepreneurial firms in China (Liu and Chen 2006; Zhang 2001). The discontinuity in the business environment during China's transition shifted the old equilibrium, in the course of what Schumpeter (1950) famously called "gales of creative destruction." An important force—private entrepreneurs—has emerged and shaken the foundations of the state monopoly. However, newly established small businesses face the liability of newness. The growth of entrepreneurial firms is severely constrained by their limited access to financial resources. Many entrepreneurs actively seek the support of venture capitalists.

Agency problems arise when venture capitalists invest their capital in entrepreneurial firms. Given that agency problems may arise as asymmetric information potentially exists, which makes it difficult for the venture capitalists to monitor the entrepreneur's actions, the codevelopment between venture capitalists and entrepreneurs depends on the venture capitalists' abilities of screening, monitoring, and involvement. Thus far, nonetheless, few studies have focused on how venture capitalists use control and incentive mechanisms to enhance the firm performance and achieve higher returns in the transitional context such as China. In the emerging VC market in China, venture capitalists offer a form and style of financing that has not been provided elsewhere in the spectrum of financial services available so far in terms of the combination of a certain length of commitment with greater involvement and a degree of influence over the companies in which equity stakes are taken (Zhang 2001). Therefore, studies on the emerging codevelopment phenomenon are important, which may have insightful implications to both theory and practice.

In this study, we conduct an exploratory study, drawing on agency theory, to examine the initial development of VC in entrepreneurial firms in terms of both control and incentive mechanisms. In particular, we identify critical factors that affect the periodic investments by venture capitalists. Our study contributes to the VC literature by providing pieces of evidence based on the first in-depth interviews and survey of major domestic and foreign venture capitalist firms in China.

Theory and Research Issues

Agency theory (Fama and Jensen 1983; Jensen and Meckling 1976) provides a useful theoretical lens for understanding the relationship between venture capitalists and VC-backed entrepreneurs. In practice, venture capitalists incur costs when they monitor and infuse capital. From this perspective,

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venture capitalists are concerned that entrepreneurs' private benefits from certain business activities or strategies may not be perfectly correlated with shareholders' best monetary return (Hellmann 1998). According to previous VC studies (e.g., Amit, Glosten, and Muller 1990; Barney et al. 1989), potential dishonest entrepreneurs may increase the agency costs by deliberately withholding information that is critical equitable contract negotiation. Thus, venture capitalists weigh potential agency and monitoring costs when determining how frequently they should reevaluate projects and supply capital.

The power of suppliers of finance can be exerted through the control and incentive mechanisms they introduce in their relationships with entrepreneurial firms, notably through the return targets they set and the reporting requirements they impose. Though this has tended to be a neglected area in the VC research, it is expected that as VC markets develop, more precise return targets and more detailed reporting requirements are formulated. For example, accounting information flows are typically required on a more regular and more detailed basis than are statutory requirements for quoted companies. Venture capitalists' accounting information demands are designed to deal with moral hazard and information asymmetry problems and provide safeguards through bonding arrangements (Mitchell, Reid, and Terry 1995; Sweeting 1991a).

In practice, venture capitalists can use various mechanisms to encourage entrepreneurs to perform better and to reveal accurate information (Kaplan and Strömberg 2004; Sahlman 1990). In this study, we concentrate on both control and incentive mechanisms that have been used by venture capitalists to enhance the performance of entrepreneurial firms and achieve higher returns through the reduction of agency costs. In transition economies, the development and operation of a VC market are influenced by the incentives and governance mechanisms in place in individual VC firms and the process by which firms make their investments (Karsai, Wright, and Filatotchev 1997).

In an extensive review of the VC literature, we identify five critical factors associated with the two mechanisms, which may also affect the codevelopment of venture capitalists and entrepreneurs in China. The control mechanism includes three factors: monitoring, staged investment, and the allocation of ownership and control rights. The incentive mechanism involves two factors: the shares of stock rights by entrepreneurs and employee stock options. According to our conceptualization, agency costs are the primary concerns of these identified factors. These costs include the opportunity cost to both venture capitalists and entrepreneurs, such as contracting costs, monitoring costs, and lost time and resources for the venture capitalists as well as entrepreneurs. If venture capitalists need to "kick the tires" of the plant, read reports, and take time away from other activities, these costs can be substantial. In practice, VC investment is not a one-time deal but VC funding occurs in discrete stages, following the three-step investment: selection, contracting, and monitoring, as described by Kaplan and Strömberg (2001) and Promise and Wright (2005). Each time capital is infused, contracts are rewritten and renegotiated, lawyers are paid, and other associated costs are incurred. The following discussions will focus on how the control and incentive mechanisms may help reduce the agency costs by venture capitalists.

Control Mechanisms

Monitoring. Agency costs increase as the tangibility of assets declines, the share of growth options in firm value rises, and asset specificity grows. Due to information asymmetry between venture

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capitalists and entrepreneurs, the control mechanism becomes extremely important. Effective monitoring may help reduce the agency costs. Sahlman's (1990) extensive field research, for example, described VC in terms of the control mechanisms employed by venture capitalists to manage the agency costs. Research from developed VC markets provides a number of important insights into the monitoring of investees. Three control mechanisms are common to nearly all VC financing: (1) the use of convertible securities (e.g., Kaplan and Strömberg 2003); (2) syndication of investment (Lerner 1994); and (3) the staging of capital infusion (e.g., Kaplan and Strömberg 2003; Gompers 1995). If the monitoring provided by venture capitalists is valuable, certain predictions can be made about the structure of staged capital infusion.

During the screening process, venture capitalists review business plans of young companies and design contracts with entrepreneurs that minimize potential agency costs. Once the initial investment is made, agency costs are associated with the intensity of monitoring and involvement. The intensity of monitoring activities by venture capitalists may vary. Differing levels of involvement in VC investments are related not to the nature of the operating business, but to the choice exercised by the VC firm itself as to the general style it wishes to adopt (MacMillan, Kulow, and Khoylian 1989). Using matched pairs of lead venture capitalists and chief executive officers (CEOs) in investee companies, Sapienza and Gupta (1994) found that the frequency of interaction between the venture capitalists and entrepreneurs depended on the extent of the CEOs' new venture experience, the venture's stage of development, the degree of technological innovation, and the extent of goal congruence between the CEO and the venture capitalist. In general, the intensity of monitoring increases, especially in the early stage of the investment and when problems occur (Kaplan and Strömberg 2004; Elango et al. 1995; Gompers 1995; Lerner 1995, Barry 1994; Sapienza 1992).

The central issue regarding monitoring is that venture capitalists must balance the costs of constructing elaborate governance mechanisms against the benefits (Barney et al. 1989, p. 64). MacMillan, Kulow, and Khoylian (1989, p. 37) suggest that "a relevant issue in need of examination is the opportunity cost of [greater] involvement," suggesting that greater involvement may not always be cost-effective. The need for formal supervisions or elaborate governance mechanisms may increase the agency costs of VC-backed firms. Barney et al. (1989) found that elaborate governance mechanisms used by venture capitalists were more likely to be associated with high agency risks and business risks. Other scholars (e.g., Fried and Hisrich 1994; Hatherly 1994; Sweeting 1991a) also emphasize the importance of flexibility, suggesting that formal power needs to be used sparingly in order to retain effectiveness. Because monitoring is costly and cannot be performed continuously, the venture capitalists usually periodically check the project's status and preserve the option to abandon. Thus, the duration of funding and hence the intensity of monitoring should be negatively related to expected agency costs.

Staged Investment. Staged capital infusions are the most potent control mechanism a venture capitalist can employ to manage agency risk (Sahlman 1990). The staging of capital infusions allows venture capitalists to gather information and monitor the progress of firms, maintaining the option to periodically abandon projects. Staged investments as a funding strategy used by venture capitalists have been emphasized in a number of previous studies (e.g., Fried and Hisrich 1994; Bygrave and Timmons

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1992; Sweeting 1991b; MacMillan, Siegel, and Subbanarasimha 1985). When such a mechanism is employed, prospects for the firm are periodically reevaluated. The shorter the duration of an individual round of financing, the more frequently the venture capitalist monitors the entrepreneur's progress and the greater the need to gather information.

The role of staged capital infusion is analogous to that of debt in highly leveraged transactions, keeping the owner–manager relations on a "tight leash" and reducing potential losses from bad decisions. As the proportion of intangible assets, ratio of market to book value, and investment in research and development (R&D) increases in an entrepreneurial firm, venture capitalists will direct more attention to supervising the venture and choosing the investment stage, the interval of different investment stages, and the scale of each investment (Gompers 1995). While the duration of a particular round is one potential metric for the intensity of monitoring, the size of each investment, total financing provided, and numbers of financing rounds are also important measures of the staged investment structure.

Allocation of Ownership and Control Rights. Voting rights, which measures the impact of the relative power between venture capitalists and entrepreneurs on the company's decision-making (strategic decisions in particular), are another effective control mechanism. Given that the potential conflicts between VC investors and entrepreneurs may happen, business strategies are decided by majority vote under most circumstances. In a randomly selected 50 VC investment contracts from Aeneas Foundation managed by Harvard Management Company, Gompers (1997) found that VC investors tended to rely more on contracting to clearly allocate control rights, separate them from ownership rights, and impose more oversight.

Voting rights normally correspond to the board seats, but it is often not strictly aligned in VC-backed ventures. As described by Kaplan and Strömberg (2001), "voting rights, board rights, and liquidation rights are allocated such that, if the company performs poorly, the venture capitalists obtain full control. As company performance improves, the entrepreneur retains or obtains more control rights. If the company performs very well, the venture capitalists retain their cash-flow rights but relinquish most of their control and liquidation rights." Kaplan and Strömberg (2003) found that VC firms enjoyed majority voting rights in 53 percent of the cases where entrepreneurs meet the performance milestones set forth by venture capitalists.

In addition, the allocation of control rights in a VC-backed firm is also highly associated with the reputation of the VC investor and the actual performance of the entrepreneurial firm. Using a large sample of 1,076 firms that had initial public offering (IPO), including those receiving VC and those without receiving VC, Baker and Gompers (1999) found that (1) numbers of inside directors increased as the shares and control power of CEO increased. After receiving VC, however, seats of inside directors decreased, especially when VC investors have a high reputation; and (2) the higher the cash flow a start-up generated, the more likely founders remained as CEO regardless of how many seats inside directors had in the board.

Incentive Mechanisms

Shares of Stock Rights of Entrepreneurs. Entrepreneurs holding equity shares may have an incentive to improve firm performance because they can get a positive payoff only when the firm performs well. Shares of stock rights held by entrepreneurs and management of a VC-backed firm vary depending on their time with the firm and the firm's post-investment performance. Early-stage

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companies confront more difficulties to have their performance measurements meet the predetermined milestones, mainly because of high growth uncertainty, incomplete management team, and the lack of experience. VC investment contracts usually allow entrepreneurs and management to hold more shares when the firm performs well and reduce their shares when the firm performs poorly. In a study of 213 VC investments in 119 portfolio start-up companies by 14 VC firms, Kaplan and Strömberg (2003) found that the difference of the average stock rights held by entrepreneurs and management under different states of performance was 8.8 percent. This difference increases to 12.6 percent in those receiving the first round of VC.

Employee Stock Option. With the introduction of the concept of employee stock option in China, more venture capitalists and entrepreneurs have come to realize its importance. In an analysis of 402 publicly traded corporations, Cyr (1998) found that companies that received VC investment tended to use more incentive stock option and employee stock purchase plans than those that did not receive VC investment. Moreover, the more the VC firm was involved in a company before its IPO, the more likely the company adopted a widespread use of stock options. The overall performance of companies that received VC investments was apparently better than those without VC financing three years after IPO. Among the companies with higher involvement rates by venture capitalists, those widely adopting employee stock purchase plans showed better performance (stock price) than those that adopted it in a smaller scope, three years after IPO. We expect that employee stock option as an important incentive mechanism may play an important role to enhance firm performance.

The discussion so far highlights various control and incentive mechanisms. Though limited attention on VC market in transitional China has not offered sufficient justification to formulate hypotheses, we nevertheless expect that these mechanisms are related to the reduced agency costs and improved performance. In search for empirical evidence in a setting with significant implications for theory and practice yet has largely been overlooked, we set out to conduct an exploratory survey study. In the next section, we discuss research design, data collection, and report results of our interview and survey.

Research Design

Research Setting

VC emerged in China in the mid-1980s and the VC industry has developed rapidly since the late 1990s. In 2002, there were a total number of 210 VC firms in China (Zhang and Jiang 2002). The Chinese government has always seen science and technology as a critical part of its search for economic development and national security. VC in the context of China, therefore, has been promoted not as a means to private gain, but as a critical mechanism for linking scientific and technological capabilities and outputs, on the one hand, with national and regional economic and social development, on the other. While China's system for financing new ventures "has evolved to include specialized VC firms that are undertaking more of the fundamental activities of the financing system—the same activities that one would find in a developed country—the specific actors, means of coordination and control, regulations and other constituent elements of the Chinese system differ in important ways" (White, Gao, and Zhang 2005, p. 912). No longer, however, do policymakers or analysts ask the naïve question of whether China's VC industry will follow the "Silicon Valley model," that of some other country or region, or develop into a distinctive "Chinese" model. Though still developing, China's VC industry is clearly an

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outcome of its particular combination of political, economic, and social institutions and the nature of the broader changes it has been undergoing during the transition from central planning to a more market-based business system just as impressive as the growth of its economy (Zhang et al. 2007; Vega et al. 2005).

Are Mainstream Theories Applicable?

Mainstream perspectives such as agency theories grew out of the behavior of firms operating in a market economy. Whether they can be plausibly extended to a Chinese setting remains to be debated (Peng 1996, pp. 48–50; Pye 1992). Tan and Litschert (1994), among others, demonstrated the applicability of some of these theories in the Chinese context, as long as institutional variations are accounted for.

We believe that the theories on which we focus offer key insights in a transition economy. On the one hand, the uncertain transitions and information asymmetry may call for more monitoring in order to protect venture capitalists from opportunistic behavior, and hence, monitoring improves performance. On the other hand, the complexity of a transition economy makes monitoring extremely costly. These issues represent a paradox (Poole and Van de Ven 1989). Unable to answer these questions *a priori*, we set out to conduct an empirical study.

Sample Selection and Survey Development

To the best of our knowledge, this study is among the most comprehensive and systematic investigations of both domestic and foreign VC firms in China. The results reported here were based on extensive interviews of major VC firms in China from 2000 to 2002. As discussed earlier, the VC market is an emerging phenomenon in China. Even the term *venture capitalist* is hardly well understood and defined. We first attended numerous professional and academic conferences to generate a consensus as to what constitutes VC firms and identified the most active and influential VC firms in China. As most VC firms were newly established during that time, quite a number of VC firms had only invested in one or two cases. Some have not even started making investments. Though some scholars in China and overseas have made preliminary efforts to study VC firms, a random survey of registered VC firms would face serious validity problems.

To balance sample size against the quality and validity of the research findings, we decided to set the following criteria. The firm must have been founded prior to September 2000 and has invested in at least four projects. This reduced the sample size to 53 VC firms, among which 33 are Chinese domestic VC firms whose offices were located in Beijing, Shanghai, Shenzhen, and Guangzhou. The remaining 20 were foreign VC firms. Though our study aims to provide insights about the control and incentive mechanisms of domestic VC firms, it is important to include the foreign VC firms for comparisons. This approach is useful for better understanding the development of the Chinese VC firms. In general, these foreign VC firms have more experiences and knowledge dealing with control and incentive issues associated with the portfolio firms. As the emergence of private VC is a new phenomenon, Chinese domestic venture capitalists are still learning the rules of the game. Such a comparison may indirectly measure the level of experience in the venture industry.

From that list, we made a preliminary visit to 40 VC firms actively involved in investing in Chinese firms. Based on preliminary visits and quality of cooperation, we selected 35 firms as our final sample. Based on the key control and incentive mechanisms we identified in the VC literature, we developed a preliminary question list. We first sent the list to top

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Table 1
Use of Staged Capital Infusionina Round of Investment

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	1	5	2	15	3	9
Partially Used	3	14	5	38	8	23
Rarely Used	8	36	3	23	11	31
Never	10	45	3	23	13	37
Total	22	100	13	100	35	100

[a]VC, venture capital.

management at major VC firms for consultation. Subsequent revisions were made and the survey list extended to 10 items (see Appendix 1). The practice was appreciated by our respondents because they had the opportunity to gather and verify information before the interviews took place. Because all the interviewees were competent in Chinese, the interviews were conducted in Chinese. Most interviews lasted several hours, consisting of some structured questions followed by open-ended questions and discussions. In most cases we made follow-up visits for additional clarifications. Because we interviewed and surveyed all the VC firms in our study, in the next section we report both survey outcomes and the explanations of venture capitalists based on our interviews.

Results and Discussions

Staged Investment Structure

Table 1 demonstrates the number of VC firms that have utilized staged capital infusions in a round of investment. Of the total 22 domestic VC firms, 4 (19 percent) used staged financing to some degree. Foreign VC firms employed staged capital infusion more frequently than did domestic VC firms. Among 13 foreign VC firms, 7 (53 percent) used this method. Forty-five percent of domestic VC firms had never used it, whereas this was true for only 23 percent of foreign VC firms.

According to our interview, the general idea of staged investment was accepted by the Chinese venture capitalists. If entrepreneurs performed poorly after the initial financing, it was difficult for them to receive the next round of funding. Nevertheless, whether to use a staged investment depends on several reasons such as the size of investment, the experience of venture capitalists, and the reputation of venture capitalists. Few venture capitalists invested in a start-up company in one lump sum large enough to support the company to its maturity. Venture capitalists employed staged capital infusion more frequently in cases of large projects to control risk when the entrepreneurial

[1]For all tables in this paper, "Widely used" means a VC firm uses the method in at least two thirds of its investments, "Partially" means at least one third but less than two third, and "Rarely used" means less than one third but more than zero.

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firm was in its early stage, or when the firm has experienced initial growth but uncertainty remains very high. However, if the total promised amount of investment was not very large, usually involving new start-ups, venture capitalists infused the capital in one lump sum.

The lack of experience is another reason for the less frequent use of the staged investment. Domestic venture capitalists often lack adequate knowledge and experience, as compared to foreign VC firms, on how to effectively conduct and oversee the staged investment. Some domestic venture capitalists also complained that China's Company Law imposes overly strict provisions on the verification of a company's registered capital, which constitutes a barrier to staged investments, though such an obstacle can be overcome by registering the change of capital with the Industrial & Commercial Administration.

From the entrepreneurs' perspective, entrepreneurs prefer the one-time investment to the staged investment arrangement for the reason to avoid high financing costs (e.g., the auditing costs and legal fees) that are often associated with multiple investments. In addition, because venture capitalists in China have not established goodwill and reputation, entrepreneurs usually have less confidence in the VC's commitment in delivering the next promised capital infusion. As a result, entrepreneurs may not accept the investment from domestic venture capitalists that use staged capital infusion.

In general, foreign venture capitalists were more experienced in using staged investment to control risk than were domestic venture capitalists. They were usually able to generate better forecasts on capital requirements of various stages of entrepreneurial firms. If the amount of total investment is relatively small (roughly between $1 million and $2 million), foreign venture capitalists may not use the strategy of staged investments. In the first investment contract, foreign venture capitalists clearly state the number of days within which funds will be transferred into the firm's bank account. By contrast, domestic VC investors still lacked consciousness and capabilities in this aspect of contracting.

Reevaluation of Invested Firms

Table 2 shows that 61 percent of foreign VC firms at least partially implemented value reappraisal during the investing period, a much higher proportion than among their counterpart domestic VC firms (9 percent). We note that there are some institutional constraints preventing domestic VC firms from using this tool. For instance, some VC firms with a majority of state-owned capital usually face a tremendous difficulty in increasing stock option rights for entrepreneurs or management when the firm performs well because the practice is likely to be perceived as funneling out state-owned capital.

Our interviews revealed that a large proportion of VC firms used value reappraisal to adjust the allocation of stock options or the staging of the committed funds according to the venture performance, and to give entrepreneurs strong incentive as well as strict control. Two types of actions are usually taken following reappraisal: (1) adjusting stock option rights ratio while keeping the total invested capital unchanged, or (2) adjusting total invested capital while keeping the stock option rights ratio fixed. In two cases, consensus could not be reached with regard to the value of the venture and thus a contractual agreement could not be finalized. As a compromise, the VC and the entrepreneur opted to reassess the value to preserve post-contract flexibility, with the option to terminate the contract.

Because of the benefits of adjusting stock option rights based on subsequent performance, an increasing number of VC firms have started to implement this investment tool. Since 2001, foreign

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Table 2
Reappraisal Based on Subsequent Performance

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	0	0	2	15	2	6
Partially Used	2	9	6	46	8	23
Rarely Used	6	27	2	15	8	23
Never	14	64	3	23	17	49
Total	22	100	13	100	35	100

[a]VC, venture capital.

venture capitalists, such as Softbank Venture Capital China, have expressed their intention to use it more frequently in their future investments. Even some domestic venture capitalists in our sample, such as the Shenzhen Capital Group Co. Ltd, have also employed this tool in at least six start-up companies.

We also discovered that some foreign venture capitalists avoid employing this tool when they invest in early-stage ventures. They believe that the success of an investment ultimately relies on the characteristics of entrepreneurs, including capabilities, experiences, and commitment to the growth of the company. Once such entrepreneurs are identified, investors give them sufficient support and security to lead the new company as long as the company has a reasonable value. This is certainly related to the experience that foreign venture capitalists have accumulated through their investment and management, a competitive advantage most domestic venture capitalists still lack.

Convertible Preferred Stock

Table 3 shows that only four domestic venture capitalists (19 percent) used convertible preferred stock in their investments. Among 13 foreign venture capitalists, 10 of them widely used convertible preferred stock, whereas the other three used it in portfolio companies. It is necessary to note that China's Company Law does not provide detailed rules about the convertible preferred stock. As a result, most VC firms that employed this financial instrument were foreign venture capitalists, who used it mainly when investing in offshore entrepreneurial firms.

As we learned from our interviews, some domestic VC firms had emulated their foreign counterparts by using convertible preferred stock in their portfolio investments. Xi'an High-tech Industrial Venture Capital Investment Company, for example, widely adopted it in their investment in early-stage start-ups. Some VC firms included a clause in the contract stipulating that in the event of liquidation, cash investments have priority over the entrepreneur's intangible assets.

Majority Voting Right

Table 4 reports that the syndication of VC investments as a control and cooperative mode was widely adopted by both domestic and foreign VC firms. Thirty out of 35 VC firms (86 percent) at

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Table 3
Whether Venture Capitalists Own Convertible Preferred Stock in Entrepreneurial Firms

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	1	5	10	77	11	31
Partially Used	3	14	3	23	6	17
Rarely Used	3	14	0	0	3	9
Never	15	68	0	0	15	43
Total	22	100	13	100	35	100

[a]VC, venture capital.

Table 4
Syndication of Venture Capital (VC) Investments

	Domestic VC		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	9	41	7	54	16	46
Partially Used	8	36	6	46	14	40
Rarely Used	4	18	0	0	4	11
Never	1	5	0	0	1	3
Total	22	100	13	100	35	100

least partially formed a co-investment. We note that some domestic venture capitalists have built de fact veto rights by owning over 33 percent of shares in entrepreneurial firms (including the case of syndication of investments with other venture capitalists). According to China's Company Law, "increasing registered capital, decreasing registered capital, going independent, mergers, dismissals, or changing the form of corporation," and "resolutions to revise corporate chapters" should "be agreed to and passed by stockholders representing over two-thirds of voting rights."

According to our interviews, most venture capitalists use the syndication of VC investments in order to spread risks and obtain post-investment information on the invested companies through multiple channels. Some venture capitalists have chosen to invite strategic investors into the game in order to obtain their support and to build combined majority

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control rights. With combined VC equity of more than 50 percent, the venture capitalists can replace the entrepreneurs as a last resort in the event that poor performance persists.

However, 34 of the 35 venture capitalists interviewed explicitly stated that they did not require a majority control. Only one foreign VC firm required having a majority control or a joint majority control through strategic alliance with other investors. According to the general manager of this VC, they chose joint control mainly because the commercial credit environment in China is still poor and because they usually do not require majority control in investments in other regions. Instead, these venture capitalists require some level of control to ensure certain voting and control power in the invested firms and expect to own from 10 to 30 percent of total equity, which provides sufficient incentives for them to engage in supporting activities for the growth of the firms.

Two factors are associated with the fact that venture capitalists do not require majority control rights, according to our interviews. First, domestic entrepreneurs are usually not willing to give up majority control rights, or at least are not willing to give it up too early. Second, VC investors have realized that the growth of entrepreneurial firms will mainly rely on the capabilities and efforts of entrepreneurs. Giving entrepreneurs a large share, especially in the early stages, will motivate them to manage the company more effectively.

Monitoring Agency Problems

Table 5 shows that of 35 VC firms, 21 (60 percent) reported that they required the boards of their invested companies to meet at least quarterly. Five out of 13 foreign VC firms (38 percent) required the meeting to be no less than once every two months.

According to our interviews, venture capitalists have exercised the control mechanism through close monitoring, which consists of supervision from the outside and direct control from the inside. Sampled venture capitalists were often actively involved in the management of entrepreneurial firms, but they

Table 5
Frequency of Holding Board Meeting in Entrepreneurial Firms

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Monthly	0	0	2	15	2	6
Once Every Two Months	3	14	3	23	6	17
Quarterly	7	32	6	46	13	37
Semiannually	10	45	2	15	12	34
Annually	2	9	0	0	2	6
Total	22	100	13	100	35	100

[a]VC, venture capital.

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Table 6
Frequency of Financial Information Disclosure by Entrepreneurial Firms

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Annually	0	0	0	0	0	0
Quarterly	6	27	1	8	7	20
Monthly	16	73	12	92	28	80
Total	22	100	13	100	35	100

[a]VC, venture capital.

usually did not want to be too involved in daily operations. In the absence of majority control rights, most venture capitalists usually maintained relatively strong monitoring power in the following ways. First, all venture capitalists require having seats on the board of directors in entrepreneurial firms, unless their shares are too low. Second, the frequency of board meetings is often much higher than that of general companies. In addition, foreign venture capitalists that have seats on the board, even if only one, have maintained the right to call for a meeting whenever an important matter requires resolutions. Some entrepreneurial firms invested by domestic venture capitalists also hold interim board meetings at mid-year in addition to those stipulated in the corporate chapters.

Table 6 shows that of 35 VC firms, 28 (80 percent) reported that they had required entrepreneurial firms to report financial information monthly, more frequent than the semiannual reporting by domestic public traded companies. Twelve out of 13 foreign VC firms require entrepreneurial firms to provide monthly reports, and the remaining one requires quarterly reports.

Our interviews indicate that venture capitalists usually had higher requirements on financial information disclosure for entrepreneurial firms than for other general companies. All sampled VC firms required entrepreneurial firms to provide annual reports audited by professional auditing firms. Some even required semiannual auditing.

Besides board meetings and financial reports, venture capitalists also frequently visited entrepreneurial firms and sometimes even attended operation meetings. Telephone inquiry from venture capitalists on firm operation was not rare either. The deputy general manager of QiFeng Capital Management Company told us, for instance, that they had visited companies as often as once every two weeks and contacted top-level managers on the phone two or three times a week.

Veto Rights

Table 7 shows that of 35 VC firms, 19 (54%) possess veto rights in their invested companies. Nine of the 13 foreign VC firms have veto rights in most of their investees, and three VC firms have veto rights in some of their investees.

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Table 7
Veto Rights in Entrepreneurial Firms

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	1	5	9	69	10	29
Partially Used	6	27	3	23	9	26
Rarely Used	4	18	1	8	5	14
Never	11	50	0	0	11	31
Total	22	100	13	100	35	100

[a]VC, venture capital.

Veto rights are considered an important mechanism of control by the VC firms we studied. We find that some venture capitalists, especially foreign venture capitalists, required veto rights regarding certain important corporate matters. Respondents report that veto was used in the following issues: important changes in the scope of business; important changes in assets including the transfer of intangible assets, merger and acquisition; important investment decisions; and changes in equity structure including the issuance and sale of stock. The director and general manager of Warburg Pincus told us that when a VC is a minority shareholder, veto rights are a critical tool for a VC firm to protect its investment interests.

However, many venture capitalists also indicated to us that for more capable and reputable entrepreneurs who were more familiar with the condition and growth of their companies, VC investors usually respected their opinions in many important corporate matters. The ideal result was that two parties came to an agreement after negotiation. We found that venture capitalists were most concerned with entrepreneurs' characteristics, especially their credibility and commitment. VC investors also emphasized the trust and cooperation between them and entrepreneurs. Though venture capitalists may own veto rights, they usually do not exercise the "deadly sword" unless it is absolutely necessary. We note that in China, the harmony between business partners is paramount and investors try to avoid confrontations with entrepreneurs. Thus, venture capitalists tend to play an advising role to remind entrepreneurs that they have shared interests with venture capitalists.

The case of AsiaInfo illustrates these dynamics. In December 1997, AsiaInfo received $18 million from three venture capitalists—Warburg Pincus, ChinaVest, and Fidelity Investments. The three VC firms assigned two directors to the board of AsiaInfo and possessed veto rights. But as the CEO in 2001 and cofounder of AsiaInfo, Jian Ding recalled: "the VC firms and our firm resolved disputes mainly through advising instead of coercing, and VC firms have never actually used their veto rights. All important corporate decisions were made through sincere negotiations." Yet equipped with such a powerful control tool as veto, which always shadows the decision-making process, venture capitalists are better able to

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protect their investment interests from future decisions made by entrepreneurs. Under the vision of entrepreneurs and the assistance of venture capitalists, the high-tech start-up AsiaInfo was able to take advantage of the Internet boom in China, experiencing a steady growth and eventually becoming listed on the NASDAQ exchange in March 2000.

Replacing the Management Team

Table 8 shows that only one domestic VC demanded the option in over one-third of its investments. Nine VC firms use this tool in less than one-third of portfolio companies. They account for 26 percent of total investigated VC firms.

Previous studies show inconsistent results with respect to the option to replace management. Though some find evidence that the option to replace is an effective tool used by venture capitalists to manage agency problems (e.g., Hellmann 1998), others suggest that venture capitalists prefer exercising relationship power to formal power (Fried and Hisrich 1995). According to our interviews, most venture capitalists did not explicitly demand, as part of the investment contract, the option to replace management teams when new ventures fail to show satisfactory performance. Many venture capitalists explained to us that it was up to the board to decide whether to replace management.

The cases of venture capitalists in China appear to support Fried and Hisrich's (1995) arguments, in that the venture capitalists depend on the expertise of management and want to leave competent management to run the company. For the same reason as that for veto rights, venture capitalists operating in China, whether domestic or foreign, avoid invoking the option to replace management teams, as it is considered embarrassing and confrontational.

Employee Stock Option

Table 9 shows that 29 of the 35 VC firms (83 percent) in our studies adopted employee stock options in their invested companies to some degree, with 66 percent partially or widely using it. An overwhelming 77 percent of foreign VC firms *widely* incorporate stock options compared with only 14 percent of domestic VC firms.

Table 8
Explicit Provision that Venture Capitalists Have Rights to Replacing Management

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	0	0	0	0	0	0
Partially Used	1	5	0	0	1	3
Rarely Used	4	18	4	31	8	23
Never	17	77	9	69	26	74
Total	22	100	13	100	35	100

[a]VC, venture capital.

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Table 9
The Adoption of Employee Stock Options

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Widely Used	3	14	10	77	13	37
Partially Used	7	32	3	23	10	29
Rarely Used	6	27	0	0	6	17
Never	6	27	0	0	6	17
Total	22	100	13	100	35	100

[a]VC, venture capital.

Consistently, our interviews also indicate that many domestic high-tech ventures that have already received VC investments, especially those started by entrepreneurs who were educated overseas and familiar with the culture of Silicon Valley, implement stock option programs. Baidu.com Inc, for example, which was headquartered in Silicon Valley and received a total of $11.2 million in the first two financing rounds from foreign venture capitalists, adopted an all-employee stock purchase plan. Everyone in the company owned stock options notarized by a U.S. law firm. The corporate background and the incentive mechanism helped to attract more talent. Kingdee Software is another example. It received VC from IDGVC in 1998 and was publicly listed in the Hong Kong Growth Enterprise Market in February 2001. Kingdee's 154 employees owned 9.04 percent of the total shares of the company.

Table 10 shows that all selected 29 VC firms adopted stock options to some degree, 13 (45 percent) only offer stock options to senior managers and key technical personnel. Another 13 offer stock options to employees of middle level or above (equivalent to almost all the important employees). The remaining three foreign VC firms (10 percent) that were in the early-stage developments offered stock options to all employees.

Among the VC firms that adopted all-employee stock option plans, the average number of shares per employee is relatively small, according to our interview results. Nonetheless, this can be a significant reward if the company succeeds. When employee stock options were given, staged stock granting was often the norm. The average granting period was typically four years but could vary from three to five years. In practice, venture capitalists usually require entrepreneurial firms to grant stock options to key employees, but entrepreneurs have the freedom to design the plans, which then are reviewed by the venture capitalists.

It is interesting to note that once stock options are in place, entrepreneurs, especially those getting financing from foreign VC firms, typically become more enthusiastic about expanding employee stock options. For example, before its VC investment, Intel Capital required the entrepreneurial firm, Beijing Golden Human Computer Co., to clearly define the allocation of stock shares and

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Table 10
The Adoption Scope of Employee Stock Options

	Domestic VC[a]		Foreign VC		All VC	
	Number of VC Firms	Percent	Number of VC Firms	Percent	Number of VC Firms	Percent
Senior	9	56	4	31	13	45
Middle and Above	7	44	6	46	13	45
All Employees	0	0	3	23	3	10
Total	16	100	13	100	29	100

[a]VC, venture capital.

demanded that all key personnel have stocks options. After the initial investment, Intel Capital further suggested that the company adopt employee stock option plans. Intel itself was a company growing up with the support of VC, with stock options for all regular employees. Influenced by the Intel growth model and with advice and support from Intel Capital, Golden Human rolled out its all-employee stock option plans that included all formal employees who had stayed with the company for at least three months.

For domestic venture capitalists, though the concept of all-employee stock option plans is widely accepted, its implementation has not been easy due to a lack of clearly defined and codified regulations on all-employee stock options. Various practical problems have been documented, including the source of stocks, the execution methods, as well as taxation. This has been a major point of divergence between domestic and foreign venture capitalists. We were told by domestic venture capitalists that were mainly financed by government or state-owned enterprises that it was already a huge challenge for them to give senior managers and key technical personnel stock options. In addition, they had to execute it in a "flexible way" so that their parent companies and state government did not regard the stock options as a dilution of state-owned assets.

Discussions and Conclusion

To the best of our knowledge, this paper represents the first study to examine the control and incentive mechanisms of VC firms in curbing agency problems in entrepreneurial ventures in an environment undergoing a rapid economic reform. Facing market imperfections and information asymmetry, venture capitalists face a general adverse selection problem in screening investment proposals and managing venture financing, and typically place great emphasis on detailed scrutiny of all aspects of a business. Scrutiny of accounting and financial information, including sensitivity analysis, is of particular importance, especially in later-stage transactions where such information may be expected to be more robust (Wright and Robbie 1996). However, in an environment characterized by complexity, ambiguity, particularistic relationships, and uncodified information, such as the current stage of the Chinese market (Tan 1996), the key

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elements in the VC process would appear to relate to monitoring and managing the investment process, as shown in our study.

In the case of China at this stage in transition, to the extent that the market consists of more inexperienced domestic VC players and more experienced foreign VC players, differing requirements may be anticipated (White, Gao, and Zhang 2005; Zhang 2001). For many VC firms, difficulties are posed in screening the capabilities of management who typically have not operated in a market environment before and information may be particularly subjective. There may also be concerns about the availability of appropriate managerial expertise, both of the entrepreneurs making proposals and the venture capitalists who are to conduct monitoring, at least in the short to medium term.

A comparison of domestic and foreign VC firms vis-à-vis their investees in China provides insights into not only the nature of the relationship between VC firms and investees but also insights into the stage of development of China's VC firms. In a recent study, Zhang and Jiang (2002) found a number of key differences, supporting those uncovered by Bruton and Ahlstrom (2002). Their efforts are supported by our results. From our interviews, we find that foreign venture capitalists are more concerned with agency risks, resulting in more VC involvement and more frequent interactions between the VC and CEO. This is consistent with previous findings of the impact of agency risk (Sapienza and Gupta 1994).

Traditionally, it is important for VC firms to place great importance on offering strategic guidance to investees, particularly with managing crises and problems. There may, however, be differences between types of firms in their perceptions about these roles and their ability to undertake them, particularly in the case of state sector venture capitalists (Zhang 2001). Uncertain market conditions are expected to be linked to the use of a wide range of monitoring devices, with close relationships being especially important. Moreover, the rapidly changing environment in transitional markets places considerable importance on timely receipt of information concerning problems, as well as on effective and flexible responses. Our findings suggest that though many entrepreneurs accept veto rights as a "shadow threat" that indirectly affects decision-making and would never be used, the presence of the option in the contract is easily construed as a threat to employment security and a lack of trust on the part of the VC firms. For venture capitalists as well as entrepreneurs, it is crucial to establish mutual trust and confidence. It is in both parties' interests to maintain top management stability because frequent CEO turnover may be considered a sign of organizational crises, which may compromise firm value (Lerner 1995). In addition, when the macroeconomic environment is poor, for instance the setback among Internet companies in 2000 and 2001, simply replacing management is not an effective solution.

To put our findings in perspective, we highlight several patterns. First, Chinese venture capitalists are less active in their monitoring of investee management than are foreign venture capitalists. For example, foreign firms require financial reports more frequently. Almost all foreign venture capitalists require monthly financial reports, whereas only two-thirds of domestic venture capitalists require reports in such frequency. Furthermore, foreign venture capitalists are more likely to retain veto rights. On the other hand, both domestic and foreign venture capitalists face the same challenge in interacting with management in new ventures. Many local entrepreneurs are extremely reluctant to allow "outsiders" (including venture capitalists) into the firm. They tend to perceive such

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outside involvement as a potential loss of control or power. This perception has been exacerbated by the media, which has tended to position "capital" and "knowledge" (venture capitalists and entrepreneurs, respectively) as opponents rather than as working toward a common goal and mutual gain.

Second, domestic venture capitalists exercise weaker influence over their investee management decisions than do their foreign counterparts. For example, they use staged investment in the same round of financing less frequently than foreign venture capitalists. They are also less likely to make financial arrangements of entrepreneurs' contingent on the venture's performance. Domestic venture capitalists have just started to introduce stock option plans into new venture firms and often only among top management, whereas foreign venture capitalists almost always introduce stock options into target firms and for all employees.

Finally, domestic venture capitalists provide much less to entrepreneurs in terms of value-added services. Foreign venture capitalists usually take part in board meetings at least once per quarter (and often monthly), whereas less than half of the domestic venture capitalists participate so frequently. Indeed, an underlying difference between these types of firms is that domestic venture capitalists in general do not see addressing operational issues as an important part of their role as investors. Instead, they concentrate their monitoring and participation on the financial aspects of the investee firms.

One reason for some of these differences is that domestic venture capitalists are much less experienced than their counterparts in foreign firms. This can partially explain their more restrained involvement in investee firms—they do not have the experience to justify taking a leading role in many top management issues. It also explains the limited value-added services they provide to entrepreneurs. Although capital can be raised rather quickly, the experience and expertise to invest, monitor, and support start-ups takes much longer to develop.

It should be noted that foreign venture capitalists also tend to invest at earlier stages than domestic VC firms. Starting in mid-2001, when new investment funds became scarcer and domestic VC firms came under pressure to generate profits, this divergence became even more pronounced. As a result, venture capitalists in China have shifted their priority from the development stage to later stages such as growth and pre-IPO. Various external factors may play a confounding role, such as government policies in different regions and the investment strategies of venture capitalists in different regions. VC investments based in northern cities such as Beijing are concentrated in post-development stage ventures, whereas those based in southern cities such as Shanghai are commonly focused on start-up-stage investments. Meanwhile, foreign venture capitalists are also making structural adjustments and becoming more focused on realizing returns sooner. They are increasingly wary of inherently risky and uncertain projects. As they are the primary source of venture funds, the shift represents a contradiction between the desires of the government for venture capitalists to nurture early-stage high-tech firms and the logic of the market represented by VC firms' decisions. Such emerging issues and changes should inspire future research that compares and contrasts venture capitalists in different regions and industries.

In sum, this study represents one of the first thorough investigations of the investment experience of domestic and foreign venture capitalists in China. Our findings suggest that venture capitalists give entrepreneurs certain motivations as well as strict boundaries in their investments. In addition, the use of staged

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capital infusion, value reassessment based on subsequent performance, and other tools reflects the flexible and dynamic character of the investment systems. To reach more definitive conclusions, however, more future research efforts are called for. In particular, future research can examine how environmental changes in Chinese transition economy continue to pose a profound impact on VC strategies and style and how the VC firms, especially more experienced overseas VC investors, proactively enact their environment (Levinthal and March 1993). Such a "coevolutionary" perspective is likely to offer added insights for academic research and practice (Tan and Tan 2005).

We close the paper by citing the remark by the senior manager of Acer Venture Capital Fund:

> ... [E]ntrepreneurs are drivers, while VC investors are passengers. If the vehicle is not heading to the right direction, or it is driven too fast or too slow, the passengers' interests, as well as those of the drivers, will likely be hurt. Thus VC investors need to impose reasonable monitoring and control while giving the drivers certain level of discretion and autonomy. We do not want to have our eyes closed and fall asleep on the back seat, nor do we want to end up sitting in driver's seat. We want to enjoy a smooth ride, and exit at the destination of our choosing. Finding and maintaining the balance between the two competing goals, however, has never been a smooth ride.

The vibrant and dynamic landscape in China is crowded with fast-moving vehicles, enthusiastic drivers, and motivated passengers anxious for an exciting journey. We hope the preliminary evidence presented in this paper will inspire future research interest to offer more insights and lessons that these drivers and passengers desperately need.

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Appendix 1
Survey Questionnaires of Venture Capital Firms in China

1	Use of Staged Capital Infusion in a Round of Investment
2	Reappraisal Based on Subsequent Performance
3	Whether Venture Capital Firms Own Convertible Preferred Stock in Entrepreneurial Firms
4	Syndication of Venture Capital Investments
5	Frequency of Holding Board meeting in Entrepreneurial Firms
6	Frequency of Financial Information Disclosure by Entrepreneurial Firms
7	Veto Rights in Entrepreneurial Firms
8	Explicit Provision that Venture Capitalists Have Rights to Replacing Management
9	The Adoption of Employee Stock Options
10	The Adoption Scope of Employee Stock Options

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