Internationalization of Western Venture Capitalists into Emerging Markets: Risk Assessment and Information in India

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ABSTRACT. This paper provides the first analysis of the internationalization of venture capital firms through an examination of risk assessment and information usage by firms in India. Personal interviews were conducted with executives in 31 (84%) of the active venture capital firms. The paper extends previous research by comparing perceptions of the behavior of domestic venture capital firms in India, foreign (primarily U.S.) venture capital firms in India and U.S. venture capital firms in their domestic markets. Foreign firms in India place significantly greater emphasis on product market factors and accountants' reports than domestic firms in India. They place significantly less emphasis on financial contributions of management in assessing risk and own due diligence and information from entrepreneurs than do U.S. firms in their domestic market. They make more use of information from trade publications and relating to production capacity and technology and information from accountants' reports than do domestic venture capital firms in India. The evidence is consistent with venture capital firms adapting to local market conditions rather than implementing "recipes" from their domestic markets.

Introduction

Differences in the institutional, legal and cultural environment and in dominant corporate governance systems (Moerland, 1995; La Porta et al., 1997, 1998) may significantly influence the conduct of business. In respect of venture capital, previous studies have highlighted the heterogeneity of such markets across differing countries (Manigart, 1994; Sapienza et al., 1996). The well-known informational asymmetry problems between entrepreneurs and venture capital firms (Wright and Robbie, 1998) may vary between countries, with consequent implications for the behavior of venture capital firms.

The globalization of venture capital has been marked by increasing cross-border entry into new markets beyond developed Western economies (Patricof, 1989; Sagari and Guidotti, 1992; Aylward, 1998). Venture capital finance in these countries can be provided either by domestically based firms or by foreign based venture capital firms. The entry of foreign venture capital firms may help emerging venture capital markets develop by shortening and reducing the costs of the learning process (Black and Gilson, 1998). While there may be some degree of commonality of venture capitalists' functions in different countries (Sapienza et al., 1996), differences in institutional factors concerning regulation, normative rules of behavior and culture (North, 1990; Scott, 1995) may affect business practices in different countries. Thus, the presence of domestic and foreign funds providers raises questions about their comparative skills' bases, their knowledge of the local market and their approaches to assessing and valuing investees. Evidence on internationalization from the general manufacturing sector indicates that, in entering new markets, foreign firms may either adapt to local market conditions or may seek to work to the same "recipes" used in their home markets (Rosenzweig and Singh, 1991). However, there is an absence of this kind of evidence relating to venture capital firms. In the light of the growth in internationalization by venture capital firms it is important to analyze the extent to which managers in foreign entrants have the discretion to adapt to local market conditions and the extent to which they use the same approaches to assessing risk and sourcing infor-

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mation as in their own domestic markets. These issues present a key dimension of the trade-off between centralization and decentralization in the operation of multinational firms (Buckley and Casson, 1985). The findings of this study, therefore, have implications both for the development of internationalization strategies by venture capital firms and for the development of emerging venture capital markets.

The rather limited research on international comparisons of venture capital firms has tended to focus on cross-country comparisons (Sapienza et al., 1996). Recent studies examining risk assessment and sourcing information have found significant differences between developed countries, notably the U.S. and Europe (Manigart et al., 1997, 2000). The country of origin of venture capital firms within a particular market has, however, been ignored in these studies. Given the recent development of cross-border venture capital investment, this is an important general omission in the literature. In Asia, approaches to dealing with asymmetric information have been examined with respect to screening venture capital investments in a developed economy like Japan (Ray and Turpin, 1993), as well as in newly industrialised economies such as Korea (Rah et al., 1994) and Singapore (Ray, 1991; Zutshi et al., 1999). There is, however, an absence of venture capital work relating to India, one of the most important emerging economies of Asia with significantly lower GDP/capita and FDI/GDP than these more developed economies. India's venture capital market has grown rapidly in recent years (IVCA, 1997, 1998) as the government has embarked on a major liberalization program to stimulate a more competitive market economy.

This paper, therefore, provides an exploratory attempt to fill gaps in previous research in two respects. First, it provides the first analysis of the extent to which foreign venture capital firms adapt to local market conditions or seek to maintain the same approaches used in their own domestic markets. Comparisons are made with the approaches adopted by foreign firms in their own domestic market, in order to separate the effects of country of origin from the effects of the environment on venture capital firm behavior. Second, the paper extends analysis to the risk assessment methods and information sources used in the process of deciding to make a venture capital investment in India. Examination of these issues through a comparison of Indian and U.S. firms is particularly appropriate. U.S. venture capital firms have a long tradition of foreign entry and have made extensive entry into India; virtually all foreign venture capital firms operating in India are of U.S. origin. The highly developed venture capital market of the U.S. and the emerging Indian market provide contrasting contexts between two countries with similar English common law based legal systems and the use of English for business (Khanna and Palepu, 2000). These differing contexts present the circumstances for a choice between adaptation or replication of approaches to risk assessment and sourcing information. We thus examine differences in perceptions between risk assessment and information usage by domestic venture capitalists in India, foreign venture capitalists in India and venture capitalists in the U.S.

This paper is structured as follows. The first section briefly outlines the venture capital context of India. In the second section, propositions regarding differences between domestic venture capital firms in India, foreign venture capital firms operating in India and U.S. venture capital firms are generated. The third section provides an outline of the representative surveys of venture capital firms in India and the U.S. and describes the method used in the study. This is followed by an analysis of the findings. In the final section, some conclusions are drawn and implications for researchers and practitioners discussed.

Venture capital in India

The U.S. has the most developed venture capital market in the world with a high level of deal processing expertise (Bygrave and Timmons, 1999). In contrast, the Indian venture capital market emerged in the late 1980s following a series of measures to establish government sponsored risk capital corporations and capital gains tax concessions for venture capital investments (Mishra, 1996; Verma, 1997). The venture capital industry in India has subsequently witnessed increased activity with a rise in the number as well as the pool of funds for investment. Estimates are that by 1997 total investment funds amounted to approximately $540 millions (Rs. 25,595 million), with about $270 million (Rs 10,000 million) invested in that year (IVCA, 1997). Foreign institutional investors account for about half of the total pool of funds. In contrast to the U.S. market, early stage investments account for the larger share of the Indian venture capital industry. Two thirds of the value of funds invested in India went into early stage investments (IVCA, 1997) compared with less than 30 per cent in the U.S. (Bygrave and Timmons, 1999).

The legal and regulatory framework in India has hitherto not been particularly conducive to the growth of venture capital. Securities and Exchange Board of India (SEBI) guidelines, requiring prospective investees to invest a minimum of Rs. 0.5 million, are a major deterrent for small investors (SEBI, 1999). Another stipulation, requiring 80 per cent of the fund to be invested in early-stage investments or in listed securities in the case of financially sick or weak companies, is also restrictive. Under the guidelines of the Central Board of Direct Taxes (CBDT) and the Government of India, a venture fund is neither permitted to hold more than 40 per cent equity stake in an investee, nor to invest more than 20 per cent of the fund in any one company. Investment is restricted to certain specific sectors and cannot be undertaken without registration both with the SEBI and the CBDT. Venture funds, being regulated by three authorities, the Government of India, the SEBI and the CBDT, need to adhere to three different sets of guidelines that are mutually contradictory (SEBI, 1999).

Although there has been some relaxation of government policy concerning multinational companies (Venkata Ratnam, 1998), different regulations apply to domestic and foreign venture capital funds operating in India (SEBI, 1999). Domestic funds are required to register with the SEBI but overseas funds are not. In addition, domestic funds need to apply to the CBDT to seek tax exemptions, whereas foreign funds need the approval of the Government of India. Moreover, whereas overseas funds operating in India but registered in Mauritius, are only subject to minimal taxation under the double taxation treaty between India and Mauritius, the Indian funds are not similarly exempted. This suggests that foreign funds face relatively low legal pressure to conform to local conditions.

Risk assessment and information in venture capital investment

An important dimension of the internal organization of multinational firms concerns the degree of centralization or decentralization (Buckley and Casson, 1985). This may manifest itself in the extent to which firms entering foreign markets attempt to maintain an approach consistent with that of the parent or whether they adapt to local circumstances (Rosenzweig and Singh, 1991; Haspeslagh and Jemison, 1991). Evidence from multi-national manufacturing companies suggests that the national context of a parent firm influences the mode of operation of the foreign subsidiary (Calori et al., 1994). Calori et al. (1994) find that with respect to cross-border acquisitions, U.S. acquirers were, as expected, more likely to use formal control procedures than U.K. acquirers when they purchased businesses in France. This evidence suggests therefore, that firms may attempt to replicate their domestic mode of operation when entering foreign markets. Sparrow and Budhwar (1997), however, found differences in management practice between the UK and India while Amba-Rao et al. (2000) show that within India foreign and domestic manufacturing firms have significantly different approaches to certain aspects of management, with foreign firms being more likely to use performance appraisal systems and share information and decision making and less likely to be bureaucratic and hierarchical. These differences may involve different degrees of emphasis on the same techniques with Indian firms using a more personalised style while Western firms adopt a more institutionalised approach (Virmani and Guptan, 1991). Lawler et al. (1995) find evidence, however, that foreign firms in India adapt their management practices to local conditions. Examining both subsidiaries of multinational companies and locally owned companies in India, they found contrary to expectations no significant differences between the two groups with respect to the degree to which HRM practices and training were structured. By extension, venture capital firms may transfer approaches that reflect behavior in their domestic market when they enter foreign markets or may seek to adapt to local circumstances.

Significant differences between foreign venture capital firms operating in India and in their domestic market (in this case the U.S.) and an absence of significant differences between domestic and foreign owned venture capital firms operating in India would suggest evidence of an adaptation to local market conditions, while the reverse would suggest foreign venture capital firms attempt to replicate home market approaches. We develop research propositions concerning expected differences between these groups of venture capital firms' in terms of various aspects of risk assessment and information use. These issues may be particularly important in internationalization into an emerging market such as India.

Assessment of riskiness

Venture capitalists are resistant to downside risk exposure (Reid et al., 1995; Gompers 1995; Lerner, 1995) and assess a number of different elements of risk (Macmillan et al., 1987). Managerial experience at a strategic level, a track record of previous success, and relevant experience in the same industry are highly valued (Hisrich and Jankowicz, 1990). The contribution of management in terms of their managerial skills are rated very highly in assessing the riskiness of proposals in the U.S. (Manigart et al., 2000). The liberalization of the Indian economy since 1991 has provided greater flexibility for managers to act in the face of rising competition, changing technology and shifting consumer preferences (Das, 1996). A manager's track record may be particularly relevant in such a dynamic environment, where not only is there a need to overcome earlier attitudes of complacency, but stringent demands are imposed on managers to assess the direction and long term impact of change.

Foreign venture capital firms operating in India may be less familiar with the management culture of an emerging market (Ramachandran and Ramnarayan, 1993) and may thus be more likely to face problems in judging the quality of management. However, Fiet (1995) argues that venture capital firms are less concerned about agency risk as they can deal with it through contractual agreements. Hence, the level of concern in assessing risk associated with management skills for foreign firms operating in India may be no different from domestic Indian providers:

P1a: Foreign venture capital firms in India are likely to place the same emphasis on managerial factors in assessing the riskiness of a proposal as both domestic venture capital firms and U.S. based firms.

In the U.S., the entrepreneur's financial contribution is likely to be viewed as an important indicator of commitment to a deal (MacMillan et al., 1987). Entrepreneurs may have acquired significant personal wealth or have personal assets such as their houses that can be used as collateral. Under the present guidelines in India governing the scope of venture fund operations, venture funds are restricted to a debt equity ratio of 1:1.5. These restrictions may necessitate a greater financial contribution on the part of management. On the other hand, although the distribution of wealth is skewed, there are generally lower levels of personal wealth in India. For example, GNP per capita measured in purchasing power parity terms in 1997 was \$370 in India compared with \$29,080 in the U.S. (World Bank, 2000). Thus, as a result of generally lower wealth, if the entrepreneur were forced to make a minimum investment in India, doing so would not necessarily convey a signal of extra commitment to the transaction. In contrast to the U.S., where stronger regulation may make it easier to verify personal wealth (La Porta et al., 1998), the importance of the informal economy in India may pose difficulties for venture capital firms seeking to determine the performance of potential investees and the likely wealth of entrepreneurs. Hence, foreign venture capital firms adapting to local market conditions may play down the importance of the entrepreneur's financial contribution:

P1b: Foreign and domestic venture capital firms in India are likely to place significantly less emphasis on the financial contribution of management in assessing the riskiness of a proposal than are venture capital firms in the U.S.

While venture capitalists are typically viewed as favouring nascent technology industries, in developed markets such as the U.S. they also focus on services, health care, and food services and distribution, which are generally less risky sectors. The nature of the product market is rated very highly in assessing venture capital proposals (MacMillan et al., 1987). In the U.S., evidence indicates that venture capital firms assist innovative new ventures in getting new products to market faster; as no close market substitutes are available, these ventures are likely to be subject to considerable risk (Hellmann and Puri, 2000). Fiet (1995) finds that U.S. venture capital firms place considerable emphasis on product market risk since, unlike agency risk factors, they cannot deal with it through contractual arrangements. In India, new business opportunities and market niches may emerge in deregulating industries but the transfer of technologies and marketing of ideas already tested in developed countries may offer fresh avenues for investment (Sagari and Guidotti, 1992). In India, the post 1990 period has seen increased competition and reduced margins with problems compounded by the limited purchasing power of consumers and the lack of distribution channels (Daneels, 1998). The market risks in India are highlighted by International Country Risk Guide assessments indicating that the risks associated with undertaking contracts in India are markedly higher than in the U.S. (La Porta et al., 1998). Although foreign venture capital firms operating in India may have significant expertise in assessing market risk, they may be less familiar with local market conditions than are U.S. firms in the U.S. or domestic firms in India. Foreign-based firms, however, have investment options in multiple countries, thus reducing single country risk. They may, therefore, place considerable emphasis on the risk associated with the market and perceive a need to find out more about product markets. Hence:

> P1c: Foreign venture capital firms in India are likely to place significantly more emphasis on product market factors in assessing the riskiness of a proposal than venture capital firms in the U.S. or domestic venture capital firms in India.

The financial reporting framework in the U.S. is highly developed with various recent innovations in corporate governance adding further to the transparency of financial reporting (O'Sullivan, 2000). The U.S. and India have been categorised as having the same English-based common law legal origin (La Porta et al., 1997). However, even within English-based systems there is considerable variety of approach, the U.S. having a greater degree of rule of law and shareholder rights, and greater ratios of external capital/GNP, IPOs/population, listed companies/population, and debt/GNP than is the case in India (La Porta et al., 1997, Table II). In the U.S., the developed nature of the main stock market and the introduction of NASDAQ with less stringent requirements provide opportunities for the realization of venture capital investments. Further, a developed takeover market provides additional venture capital realization options. In contrast, the Indian stock market is relatively underdeveloped with little scope for expansion in a regime dominated by state-directed credit. The Securities and Exchange Board of India (SEBI) has introduced the Over The Counter Exchange of India (OTCEI) which enables unlisted companies to trade on the stock exchange (SEBI, 1999). However, a proposal to relax the earlier norm of a minimum 25% public offering is still in its initial stages. Amended guidelines have removed the requirement for a three-year dividend paying track record, requiring companies to have a track-record of three years of profitability instead, but other minimum disclosure requirements continue to pose a hurdle. The above discussion highlights the importance of the nature of the capital market in assessing the riskiness of a proposal in India for both domestic and foreign venture capital firms. Hence:

> P1d: Foreign and domestic venture capital firms in India are likely to place significantly greater emphasis on the nature of the capital market in assessing the riskiness of a proposal than are venture capital firms in the U.S.

Venture capitalists generally provide funds only on condition that the proposal meets their maximum investment horizon criterion because of the impact on rates of return (Wright and Robbie, 1996). It is plausible to expect a significant difference between the three groups of venture capital firms in respect of the importance of investment horizons. Black and Gilson (1998) argue that a well developed stock market, providing exit routes, is critical to the existence of a vibrant venture capital market. In India, as noted above, the established market mechanisms, reliable and current information, and pricing regulations on securities offerings are problematical when compared to developed economies such as the U.S. (La Porta et al., 1997; Khanna and Palepu, 2000). This less developed nature of stock and takeover markets is readily observable to new foreign entrants. Therefore, both foreign and domestic venture capital firms in India may seek reassurance about a clearly specified exit time horizon in order to reduce the risk of not being able to exit an investment (Sabarinathan, 1993). In the U.S., well-developed exit markets may suggest that venture capital firms need to be relatively less concerned about the risks of not being able to achieve a realization of their investment within the timescale consistent with the life of the venture capital fund (Bygrave and Timmons, 1999). Hence:

P1e: Domestic and foreign venture capital firms in India are likely to place significantly greater emphasis on the expected length of the investment horizon in assessing the riskiness of a proposal than are venture capital firms in the U.S.

The redemption of preference shares is also linked to the nature of capital markets and the facilitation of an exit. These shares may be one of the financial instruments used to enable the venture capital firm to obtain realization of part of their investment (Sahlman, 1990). Though preference shares are used as one of the financing instruments by venture capitalists in India, their relative share is only 25% as compared to the 68% share of equity shares (IVCA, 1997). Thus, unlike in the U.S., expected time horizon to redemption of preference shares may be relatively less important in India. Foreign venture capital firms operating in India may thus be constrained in their ability to use preference shares. Hence:

P1f: Foreign and domestic venture capital firms in India are likely to place significantly less emphasis on the redemption of preference shares in assessing the riskiness of a proposal than are venture capital firms in the U.S.

Sources of information in preparing valuation

Unlike publicly listed corporations (Fama, 1991), venture capital investments are characterized by considerable private information (Wright and Robbie, 1998). Informational problems relating to markets have been found to be more important than those relating to entrepreneurs (Fiet, 1995). Institutional theory (North, 1990; Scott, 1995) points to the impact of regulatory factors on promoting the use of certain types of information. These regulatory factors may vary between countries. Evidence from the U.S. and other Western markets indicates that venture capital firms use a variety of information sources in preparing the valuation of a potential investee in order to address potential adverse selection problems that may arise from informational asymmetries between entrepreneurs and venture capital firms. The relative importance of financial and non-financial sources of information varies between Western countries according to the relative importance of the capital market and networks (Manigart et al., 1997, 2000).

U.S. research suggests that accounting and financial information in the business plan is one of the most important sources of information for venture capitalists in preparing valuations (Manigart et al., 2000). The formal financial reporting framework in the U.S. is highly developed but this is less true for India. Although requirements for disclosure have recently been made more stringent in India (SEBI, 1999), accounting standards are still not on a par with practice in developed countries, with there being notable differences between the quality of financial reporting in India and the U.S. (La Porta et al., 1998). Informational problems may be exacerbated in emerging markets where accounting and financial standards are less well-developed. As a result, accounting and financial information is likely to be less reliable and useful. Hence:

P2a: Foreign and domestic venture capital firms in India are likely to place significantly less emphasis on accounting and financial data in the business plan as a source of information than U.S. venture capital firms.

In the U.S., own due diligence, and the curricula vitae and information from entrepreneurs are also important sources of information (Manigart et al., 2000). Given the expected shortcomings in financial information (La Porta et al., 1998), venture capital firms in India may seek to verify the situation in potential investees by placing greater emphasis on a number of other sources of information. In particular, foreign firms may rely more on own due diligence in verifying aspects of the business plan. This may include their own visits to the firm to enable them to trust information relating to production capacity and technology. They may also seek supplementary information from independent sources such as reputable accounting firms and trade journals. Similarly, foreign venture capital firms in India may place less emphasis on the curricula vitae and information from entrepreneurs. While, members of a network may obtain reliable information (Fiet, 1995) foreign venture capital firms in India may be less likely to be part of entrepreneurs' networks than their counterparts in the U.S. or domestic firms in India. As such they may be expected to place less credence on information about the business supplied by the entrepreneur. Hence:

P2b: Foreign venture capital firms in India are likely to place significantly more emphasis on own due diligence as a source of information than are domestic venture capital firms or venture capital firms in the U.S.

P2c: Foreign venture capital firms in India are likely to place significantly greater emphasis on reports from accounting firms and trade journals than are domestic venture capital firms in India or venture capital firms in the U.S.

P2d: Foreign venture capital firms in India are likely to place significantly less emphasis on information supplied by entrepreneurs and their curricula vitae as a source of information than are domestic venture capital firms or venture capital firms in the U.S.

As noted above, the effects of economic liberalisation in India on product markets (Rao, 1998) and difficulties with other information sources emphasize the importance of market and product related sources of information for foreign venture capital firms in particular since they may be more concerned about market risk (Fiet, 1995). However, weaker professional market research organisations in India compared to the U.S. (Sagari and Guidotti, 1992), poses potential problems for foreign venture capital firms in obtaining such information. Hence:

P2e: Foreign venture capital firms in India are likely to place significantly greater emphasis on market and product related sources of information than are domestic venture capital firms or venture capital firms in the U.S.

Networks with other venture capital firms are an important feature of both the U.S. venture capital industry (Fried and Hisrich, 1994) and the Indian business environment (Nafziger and Terrell, 1996). The similarity of values within professions arising from the commonality of guidelines of professional behavior and membership of trade associations, such as the National Venture Capital Association in the U.S. and the Indian Venture Capital Association, may create a common set of values that reinforce these networks and produce a willingness to share information (Scott, 1995). As such, venture capitalists in the U.S. may seek advice and information from other venture capitalists. Similarly, both domestic and foreign firms, are likely to make efforts to become integrated into the local Indian venture capital market in order to take advantage of this network to access information on potential investments (Ramachandran and Ramnarayan, 1993; Amba-Rao et al., 2000). As a result of the similarity of professional values, foreign venture capital firms may find it easier to access networks with other venture capitalists than is the case of networks with entrepreneurs. Hence:

P2f: Foreign venture capital firms in India are likely to place the same emphasis on venture capital networks as a source of information as domestic venture capital firms or venture capital firms in the U.S.

Methodology

In a rapidly emerging market such as the Indian venture capital market, identifying the target population is problematical. We thus used various approaches to establish a reliable estimate of the population. The Asia Pacific Private Equity Bulletin, a directory of venture capital sources in the Asian region, was used as the initial source to identify the population of venture capital firms in India and the senior venture capital executives to contact. However, since the population of venture capital firms is constantly changing and directories can quickly become dated, snowball sampling was used to access a larger sample. While this approach has its limitations, the generally recognized closeness of firms operating in venture capital markets suggests that firms are highly likely to be aware of other competitors (Bruton et al., 1998). On this basis, 47 venture capital firms were initially identified. Contacts with the IVCA and SEBI supported our view that this was a comprehensive list.

A covering letter, stating the purpose and significance of the study, and promising confidentiality of responses, was faxed to each venture capital firm in July, 1999. They were subsequently contacted by telephone to arrange a convenient meeting time for the interview. This process established that 10 of the firms identified were not providing venture capital (typically advisers), had closed down or were not active. On this basis, the total number of active firms in the Indian venture capital market at the time of the survey was 37. Four of these firms were not contactable and two were unwilling to participate in the study. In total, 31 firms were thus surveyed. 23 face-to-face interviews were successfully conducted in India in July 1999 in the main centers of Delhi, Bangalore and Bombay. Because of respondents' commitments, a further eight respondents were interviewed by telephone in August and September 1999. The 31 completed interviews represent a response rate of approximately 84% among the 37 active venture capitalists in India. This sample accounts for approximately 94% of the total published value of the funds available for investment in Indian market (IVCA, 1998). This response is particularly encouraging in view of the difficulty of conducting survey research of this kind in India given the general tradition of secrecy.

The questionnaire administered to respondents was developed based on the authors' previous questionnaires used in several developed countries, including the U.S. Face-to-face interviews were conducted because, given the nascent state of the Indian market, we were concerned that although the questions were framed in practitioner jargon, respondent apprehension about research of this nature may require further reassurance and clarification that could not be achieved through a mailed questionnaire (May, 1997). A pilot study was not conducted, partly because of the already small size of the population. It was also considered that as the questionnaire items had been utilized elsewhere with other venture capitalists, there was less likely to be serious problems. Personal interviews were expected to help in this respect and in the event respondents had no problems comprehending the questionnaire. The face-to-face interviews lasted an hour on average. Except for two cases, conversations were tape-recorded and verbatim transcriptions made after each interview.

The final sample of 31 firms comprised 13 captives (including affiliates), 14 independents and 4 public-sector firms. There were 18 foreign and 13 Indian firms. All except one of the foreign firms had a U.S. parent. In terms of investment stage focus, 13 firms were exclusively late-stage investors, 3 were exclusively early stage investors and the remaining 15 were prepared to invest across all stages. Hence, 58 per cent of firms had at least some involvement in early stage investments. The funds had been established for an average of 4.9 years, with the oldest being 11 years old and the youngest being less than a year old at the time of the interviews. There were on average 5.6 investment executives per firm with seniority varying from presidents, chairpersons, fund managers, portfolio managers, analysts and chartered accountants. Of the sample, 47 percent had an investment pool exceeding $50 million, while 20 per cent invested between $21 and $50 million. Some 31 percent of firms had 10 or more industries represented in their portfolio, while 62 percent of the total had less than six industries. On the basis of these comments, it is concluded that the sample is representative of the Indian venture capital industry.

There are some notable differences between foreign and domestic venture capital firms in India in terms of their investment activity (Table I). Foreign venture capital firms are on average smaller than domestic ones in terms of numbers

TABLE I
Firm characteristics – domestic v foreign firms in India

Firm level characteristics	Categories	Domestic	Foreign
Ownership (*n*)	Captive	3	5
	Independent	5	9
	Affiliated	–	4
	Public sector	2	–
	Other	2	–
Number of years involved in venture capital		16.3 (5)	18.7 (3)
Number of investment executives		8.4 (4)	4.6 (3)
Fund size/No. execs		0.79	1.32**
Size of funds managed	0–$20 m	6	1
	$21–30 m	1	4
	$31–50 m	–	4
	>$50 m	5	9
Number of industries represented in portfolio	1–3	3	6
	4–6	1	8
	7–9	1	1
	10+	7	3*
Preferred stage of investment[a]	Start-Up/Early stage	9	6
	Expansion/Development	9	17
	Late stage	3	2

[a] A number of firms indicated that they had a preference for more than one stage of investment. In such cases the both preferences have been included.
Figures in brackets are mode scores as a small number of venture capital firms have a much greater longevity than all others. Fund size/no.execs based on scores 1–6 for fund size where 1 = <$10 m thru 6 = >$50 m.

of executives but tend to be larger in terms of the size of funds managed. Hence the amount of funds managed per investment executive is also significantly larger for foreign venture capital firms. Foreign venture capital firms tend to be more specialized in terms of the number of industries represented in their portfolios. Finally, both foreign and domestic firms have multiple stage preferences.

Follow-up interviews were conducted in November 2000 to ascertain details of backgrounds of executives. We were able to obtain detailed information on executives' skills, background and experience for fifteen foreign firms and ten domestic venture capital firms operating in India (Table II). There are significantly more non-Indian nationals in foreign venture capital firms in India (at 10% level) than in domestic venture capital firms in India. For the domestic firms, none of the executives were foreign nationals. Surprisingly, an average of only 8.93 per cent of the executives in foreign venture capital firms are foreign nationals. Furthermore, there were no significant differences between the executives in the domestic and foreign venture capital firms in terms of background expertise in technology and consulting. The one significant difference between the foreign and domestic firms was that the executives of foreign firms have significantly more prior experience/qualifications in finance and accounting or finance (at the 10% level). However, the large standard deviations for many of the factors indicate that the strategies of both foreign and domestic firms may vary widely. In terms of the experience of executives and their training, both domestic and foreign firms in India place quite high importance on recruiting executives who are already experienced (Table III).

TABLE II
Investment executives background and skills

	Domestic mean	Foreign mean	Domestic std. dev.	Foreign std. dev.	Mann-Whitney test statistic
Percentage of executives that are non-Indian nationals	0.00	8.93	0.00	13.87	45*
Percentage of executives with venture capital experience outside India	17.90	32.27	20.80	29.90	54.5
Percentage of executives that have prior experience/qualifications in technology based industries	49.90	52.60	26.75	31.98	73.5
Percentage of executives that have prior experience/qualifications in consulting/strategy	41.20	26.00	38.98	28.47	55
Percentage of executives that have prior experience/qualifications in finance and accounting	46.80	66.20	32.05	19.81	42.5*

Asterisks relate to results of Mann-Whitney U-test for differences between the two types of firm, where $*p < 0.1$ level, and $**p < 0.05$, $***p < 0.01$ level of significance.

TABLE III
Extent of training

What form of training is provided for investment executives? Please rate the following statements on a scale from 5 = 1 strongly agree . . . 1 = strongly disagree	Domestic mean	Foreign mean	Domestic std. dev.	Foreign std. dev.	Mann-Whitney test statistic
We recruit only executives who are already trained and experienced	3.80 (1)	3.93 (1)	0.92	1.10	69
No formal training, investment executives learn on the job	2.70 (5)	3.40 (2)	1.49	1.50	55.5
Formal training programs organised by the firm in India	3.50 (3)	2.47 (3)	1.27	1.36	43*
Formal training program organised by the local venture capital association	3.10 (4)	2.27 (4)	1.29	1.39	50
Formal training programs organized by local parent bank/consultancy company	3.56 (2)	2.00 (5)	1.24	1.11	21.5***

Asterisks relate to results of Mann-Whitney U-test for differences between the two types of firm, where $*p < 0.1$ level, and $**p < 0.05$, $***p < 0.01$ level of significance. Figures in parentheses are ranks.

Domestic venture capital firms place significantly more importance than foreign venture capital firms on formal training organized by local parent banks or consultancy companies. Foreign firms indicated an inclination to send investment executives on parent firm-based training programs in house (mean = 3.56, std. dev. = 1.24), with the large standard deviation indicating approaches differ between firms. Furthermore, domestic firms were found to be significantly more likely to organize their own formal training programs in India (at the 10% level). However, it is important to note that 31.2 per cent of the foreign firms' executives have experience in the domestic market (i.e. U.S.) of the firm's parent.

High levels of discretion were reported by foreign venture capital firms in respect of their ability to make investment decisions, the assessment of risk and the use of information (Table IV). While foreign venture capital firms reported considerable discretion in their ability to make investment decisions, it is clear that firms needed to seek approval for deals in unusual sectors and have discretion to make investments only up to a certain size. Foreign venture capitalists in India report greatest discretion in relation to taking account of managerial and product market information in assessing risk and least discretion in assessing the target rate of return to be sought, this last point reflecting the need for the venture capital firm to achieve a target return on its portfolio as a whole. Foreign venture capital firms had both discretion

TABLE IV
Foreign firm's discretion in risk assessment

What is the nature of the policy you adopt towards the potential investees? Please rate each item on a scale from 5 = have full discretion . . . 3 = policy set in discussion with parent . . . 1 = company sets a company-wise policy	Mean	Median	Std. deviation
Ability to make investment decisions	3.53	4.00	1.30
Investment in unusual sectors	4.07	4.50	1.14
Investment decisions up to a certain size	3.53	4.00	1.30
Importance of investee management in assessing risk	4.24	5.00	1.15
Importance of product market in assessing risk	3.94	4.00	1.09
Importance of capital market in assessing risk	3.94	4.00	0.83
Target rate of return sought from investee company	3.12	3.00	1.11
Importance of financial information from investee's business plan used in company valuation	3.71	4.00	1.31
Importance of information from entrepreneurs used in valuation	4.29	5.00	1.10
Importance of product and market information related to the investee company used in valuation	4.18	5.00	0.95

to use information from entrepreneurs and product and market information in making a valuation (Table IV).

The U.S. survey, with which the Indian responses were compared, was carried out in late 1996 as part of the authors' larger international study of the behavior of venture capital firms. The U.S. questionnaire was sent to a random sample of 299 U.S. venture capitalists listed in Pratt's Guide to Venture Capital Sources. Follow-up reminders were sent after two months. A total of 73 completed and usable replies were received, representing a response rate of 24%. No significant differences were identified between respondents and non-respondents in terms of type of venture capitalist and amount of capital under management.

Results and analysis

Analysis is provided of the similarities and differences between domestic and foreign firms operating in India and also firms in the U.S. When comparing scores across countries and types of firm, systematic biases may arise in the scoring of items between groups of respondents that do not reflect meaningful differences between the importance attached to particular variables between the groups. For example, it was evident in this study that venture capital firms in India rated all factors as more important than was the case for U.S. firms. To avoid possible misleading conclusions, the ratings were normalized by subtracting out of each rating by each venture capitalist respondent the overall average rating for each set of variables (i.e. assessment of risk and sources of information) for that venture capitalist. The tests for differences between groups were then performed on these normalized scores.[1]

Tests were carried out to ascertain differences between the three groups of domestic firms, foreign firms and U.S. firms using Kruskal-Wallis test and on a pairwise basis using Mann-Whitney test (Silver, 1992). The pairwise tests enabled us to investigate whether perceptions were greatest between firms of different origin operating in the Indian market, or between venture capital firms from the same country operating in a foreign or their domestic market. As noted earlier, the former would provide evidence of a country of origin effect on perceptions while the latter provides evidence of an environment effect.

Assessment of riskiness

The assessment of riskiness was found to vary significantly across the three different groups with respect to the nature of the product market of the company, the nature of the capital market, the financial contribution of management and the expected time horizon to exit of the company (see Table V). There were no significant differences

TABLE V
Assessment of risk – Indian domestic v Indian foreign v U.S.A.

Hypothesis	Variable		Normalized rating	Std. deviation	Kruskal-Wallis test sig. level
1a	Contribution by management in terms of their managerial skills	India domestic	0.961	0.667	0.277
		India foreign	1.262	0.538	
		U.S.A.	1.070	0.538	
1b	Financial contribution of management	India domestic	–0.789	0.746	0.000***
		India foreign	–0.460	1.086	
		U.S.A.	0.292[b]	0.792	
1c	Nature of product market of the company	India domestic	0.544[a]	0.501	0.045**
		India foreign	1.068	0.885	
		U.S.A.	0.626[b]	0.803	
1d	Nature of the capital market	India domestic	–0.039	0.649	0.021**
		India foreign	–0.516	0.848	
		U.S.A.	–0.694	0.709	
1e	Expected time horizon to exit of company	India domestic	0.378	0.623	0.007***
		India foreign	0.151	0.721	
		U.S.A.	–0.236	0.737	
1f	Expected time horizon to redemption of preference shares	India domestic	–1.152	1.266	0.167
		India foreign	–1.593	1.004	
		U.S.A.	–1.120[b]	0.841	

Figures are mean scores based on a range from 1 = irrelevant through to 5 = essential. Asterisks relate to results of the Kruskal-Wallis test for differences between the two countries, where $**p < 0.05$ and $***p < 0.01$ level of significance respectively. [a] indicates a Mann-Whitney U test significant difference at the $p < 0.05$ level between Indian domestic and Indian foreign firms and [b] at $p < 0.05$ level between Indian foreign firms and U.S. firms.

between the three groups of venture capital firms in respect of the contribution of management in terms of their managerial skills, with standard deviations being particularly low indicating general consensus of perception. This provides support for proposition P1a.

Closer examination of the samples reveals a number of significant pairwise differences both between the Indian domestic and foreign venture capital firms and between foreign venture capital firms operating in India and their U.S. counterparts. U.S. based firms were significantly more likely to perceive the financial contribution of management as essential in assessing risk compared to foreign and domestic firms operating in India, thus supporting proposition P1b. Foreign firms operating in India were significantly more likely to perceive the nature of the product market of the company to be an essential factor in assessing the riskiness of proposals than their domestic Indian counterparts. Foreign firms operating in India were also significantly more likely to rate this factor as essential in assessing risk than their counterparts in the U.S. This suggests that in entering foreign markets, venture capital firms see it as most important to find out about local market conditions and provides support for proposition P1c. While there were significant differences between the three groups with respect to the nature of the capital market and the expected time horizon to exit of the company, there were no pairwise significant differences. Hence, there is limited support for propositions P1d and P1e.

In respect of the expected time horizon to redemption of preference shares, pair wise tests reveal a significant difference between the foreign firms in India and their counterparts in the U.S., with the latter rating this factor higher than the former. However, this was the least important factor in risk assessment. These findings provide support for proposition P1f.[2] In general, the differences between foreign venture capital firms operating in India and their U.S. counterparts is consistent with the degree of discretion in making investment decisions noted earlier (Table IV).

Sources of information

While there are significant differences between the three groups, the results regarding information sources are striking in that there are more significant differences between the Indian foreign firms and their counterparts in the U.S. than between Indian foreign and Indian domestic firms when pair-wise analysis is conducted (Table VI).

A significant difference was identified between the three groups in respect of the importance of accounting and financial information in business plans. Although there were no significant differences on a pairwise basis, U.S. venture capital firms placed the most importance on this factor. There is thus some support for proposition P2a.[3] Proposition P2b was examined in relation to own due diligence in general and information on production capacity and technology of the investee, the latter being an important part of due diligence that can be verified by site visits. U.S. venture capital firms rate information from own due diligence reports and information provided by entrepreneurs and the curriculum vitae of management as significantly more important sources of information than is the case for foreign firms operating in India. However, a significant difference was identified between U.S. firms and foreign venture capital firms in respect of information on production capacity and technology. Hence, there is limited support for proposition P2b. Foreign firms operating in India were found to place significantly more importance on accounting/consulting firms' reports on the company than their domestic Indian counterparts. Foreign venture capital firms in India rate financial and trade journals more importantly than their U.S. counterparts. There is, therefore, some support for proposition P2c.

Significant differences are found between foreign venture capital firms in India and U.S. firms in respect of information provided by entrepreneurs and in respect of the curricula vitae of management. However, no significant differences are found between foreign and domestic venture capital firms in India with respect to these variables. Hence there is only partial support for P2d. The standard deviations relating to own due diligence reports are particularly low, indicating a high degree of consensus among the respondents in each of the three groups.

Although the scores for foreign venture capital firms were higher than those for domestic venture capital firms in India and U.S. firms with respect to market and product information, no significant differences were found between the three groups. Hence proposition P2e is not supported. In terms of information from other venture capital firms, there were no significant differences between the three groups. Hence there is some support for proposition P2f.

Discussion and conclusions

This paper has presented the first analysis of the internationalization of venture capital firms through an examination of differences between foreign and domestic venture capital firms in India and between foreign venture capital firms in India and U.S. firms. Unlike developed markets, where lists of venture capital firms are readily accessible, this paper devoted considerable effort to identifying active venture capital firms in a rapidly developing market where access to information was fragmentary. The exploratory evidence identifies some novel findings regarding the assessment of risk and the sources of information used to prepare a valuation (see Table VII for summary of results compared with hypotheses). In particular, there are more significant differences between the Indian foreign firms and their counterparts in the U.S. than between Indian foreign and Indian domestic firms when pair-wise analysis is conducted. We note, however, that greater significant differences between foreign venture capital firms in India and U.S. venture capital firms than between India foreign and domestic venture capital firms may be an artifact of smaller power to detect within country differences because of the small sample, even though we were able to survey almost the entire population of active venture capital firms in India. The small population size also meant that it was not possible to conduct multivariate analysis.

Our evidence suggests that foreign firms entering emerging markets need to adapt to local market conditions rather than seeking to simply replicate their domestic strategies. Evidence was

TABLE VI
Sources of information in preparing valuation – Indian domestic v Indian foreign v U.S.A.

Hypothesis	Variable	Country	Normalized rating	S.D.	Mann-Whitney U test sig. level
2a	Business plan accounting & financial data	India domestic	–0.042	0.588	0.096*
		India foreign	0.197	0.754	
		U.S.A.	0.522	0.832	
2b	Own due diligence reports	India domestic	0.958	0.361	0.034**
		India foreign	1.030	0.362	
		U.S.A.	1.196[b]	0.407	
2b	Production capacity/technology information	India domestic	0.231	0.516	0.031**
		India foreign	0.447	0.614	
		U.S.A.	0.024[b]	0.776	
2c	Accounting/consulting firms' reports	India Ddomestic	–0.133[a]	0.300	0.072*
		India foreign	0.197	1.198	
		U.S.A.	0.135	0.653	
2c	Financial and trade journals	India domestic	–0.721	0.801	0.004***
		India foreign	–0.653	0.845	
		U.S.A.	–1.375[b]	0.894	
2d	Information provided by entrepreneurs	India domestic	–0.133	0.462	0.005***
		India foreign	–0.026	0.575	
		U.S.A.	0.538[b]	0.903	
2d	Curriculum vitae of management	India domestic	0.685	0.527	0.045**
		India foreign	0.113	0.821	
		U.S.A.	0.511[b]	0.747	
2e	Sales and marketing information	India domestic	0.231	0.559	0.249
		India foreign	0.419	0.538	
		U.S.A.	0.210	0.676	
2e	Product information	India domestic	0.231	0.417	0.359
		India foreign	0.363	0.684	
		U.S.A.	0.210	0.730	
2f	Other venture capitalists	India domestic	–0.225	0.832	0.720
		India foreign	–0.331	1.264	
		U.S.A.	–0.365	0.967	

Figures are mean scores based on a range from 1 = irrelevant through to 5 = essential. Asterisks relate to results of the Mann-Whitney U test for differences between the two countries, where $*p < 0.1$, $**p < 0.05$ and $***p < 0.01$ level of significance respectively. [a] indicates a Mann-Whitney U test significant difference at the $p < 0.05$ level between Indian domestic and Indian foreign firms and [b] at $p < 0.05$ level between Indian foreign firms and U.S. firms.

provided that the foreign venture capital firms generally had a substantial degree of discretion in their decision making. Our evidence on executives' backgrounds indicated little significant difference in terms of their background expertise. However, despite being more likely to have received training and experience in the home country of the parent, executives in foreign firms adapted their risk assessment and sources of information to local conditions. High levels of employment of Indian nationals appeared to afford access to local information networks but foreign firms were also more likely to seek other independent information.

The analysis in this paper suggests a number of implications for practitioners and researchers. For practitioners, the findings of the study highlight that different modes of operation may be appropriate in the different venture capital markets in which they seek to operate. This observation applies particularly to the ways in which they access information, but it may also raise wider

TABLE VII
Summary of hypotheses and results

Hypothesis	Prediction	Result
1a	A = B = C	Supported
1b	A > B = C	Supported
1c	A < B > C	Supported
1d	A < B = C	Limited support
1e	A < B = C	Limited support
1f	A > B = C	Limited support
2a	A > B = C	Limited support
2b	A < B > C	Limited support
2c	A < B > C	Supported
2d	A > B < C	Supported in respect of A > B
2e	A < B > C	Not supported
2f	A = B = C	Supported

Notes: A = U.S. venture capital firms in U.S.; B = foreign venture capital firms in India; C = domestic venture capital firms in India.

questions concerning venture capital firms' entry modes into foreign markets and the way in which they make valuation decisions in those markets. For researchers, the results for the first time identify differences within and between markets concerning domestic and foreign firms. The findings, therefore, highlight the dangers of overgeneralization on the basis of treating venture capital firms as homogenous as regards their country of origin within a particular market. However, the analysis in this paper has focused only on internationalization by U.S. venture capital firms into India. In the light of evidence from general manufacturing firms of differences in country behavior (Calori et al., 1994), there is a need for further studies that examine internationalization by U.S. venture capital firms into other markets and by non-U.S. firms to test whether the exploratory findings identified here are generalizable to other markets. Multi-country studies of this nature would enable the creation of larger datasets that would enable multivariate analyses to be undertaken.

The findings also highlight the need for further research concerning the behavior of venture capital firms as they enter foreign markets. There is an extensive literature on entry mode strategies by both manufacturing (Leonidou and Katsikeas, 1996) and service sector firms (Erramilli and Rao, 1993), but so far internationalization mode by venture capital firms has been largely neglected in the academic literature. Examination of this issue would be especially pertinent given the developing cross-border activity of venture capital firms both into and within Western Europe (EVCA, 1999) and into less developed markets elsewhere (Bygrave and Timmons, 1999; Wright and Robbie, 1999). To what extent do venture capital firms engage in new start-ups, acquisitions, investments in other funds or arms' length operations? Is there a life-cycle to these entry modes? Given the size of the Indian market and the absence of knowledge in this area, there may be an important initial role for qualitative studies of the how and why of internationalization. These studies could then form the basis for larger scale multi-country examination of these issues.

A second related area concerns the decision and control processes of domestic and foreign based venture capital firms, both in India and indeed in other markets. This study provided some exploratory evidence of the skills, background and discretion levels regarding venture capital firms operating in India. Further research might also examine the extent to which control styles are associated with the investment stage or industry focus of the venture capital firms. The research also suggests that future studies might usefully examine in more detail the human resource management issues adopted by venture capital firms in entering foreign markets. There is a need to examine the evolution of these human resource management policies over time when the firm becomes more established. For example, when and how do venture capital firms identify, develop and retain local executives?

The findings of the study also draw attention to the importance of obtaining information for valuation decisions, especially since market risks pose greater problems for venture capitalists than agency risk (Fiet, 1995). Information asymmetry is a well-recognized difference between venture capital markets as compared with public markets (Wright and Robbie, 1998). This problem is evident in developed economies but the research presented here suggests it is exacerbated in emerging market environments. Further research is required to examine the ways in which venture capital firms can access the information they need to make screening decisions in different types of venture capital market.

Finally, this paper, has focused on issues relating to assessing risk and sources of information. However, extensive research in the U.S. has examined monitoring and control issues (Gompers, 1995; Lerner, 1995, Hellmann, 1998). Further research might usefully also examine issues relating to the structuring and monitoring of investments in emerging venture capital markets as compared to developed markets. These issues have so far been generally neglected in these markets.

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Notes

[1] The helpful suggestion of a referee is acknowledged.

[2] We also carried out regression analyses for each variable using the following: Risk $Factor_i = a + b_1$ (India domestic) + b_2 (India foreign) + b_3 (late stage only), where b_1 & b_2 are the coefficients on two dummy variables relating to firm type, U.S. origin being the control; and b_3 is the coefficients on a dummy variable relating to investment in late stage only, early stage only and some early stage being in the control. The findings for the venture capital firm type were consistent with those presented in the table. The findings relating to stage of investment were almost all insignificant, except for expected time horizon to redemption of preference shares and product market of company. The tables of these results are available from the authors on request.

[3] As for the assessment of risk, we also carried out regression analysis of normalized scores against dummy variables for type of venture capital firm and stage of investment (see note 2). The findings for the venture capital firm type were consistent with those presented in the table. The findings relating to stage of investment were almost all insignificant, except for CSO statistics. The tables of these results are available from the authors.

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