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Corporate venture capital and the balance of risks and rewards for portfolio companies

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ABSTRACT

This paper contributes to the literature on corporate venture capital (CVC) by examining the management of CVC investments from the perspective of the investee firm. We focus on the trade-off between social interactions and relationship safeguards and examine their effects on the twin relationship outcomes of learning benefits and risks. The model is tested using data collected from CEOs of U.S. technology-based new firms receiving CVC funding. Complementarities between the investee firm and its CVC investor are positively related to the level of social interaction and negatively related to the use of different types of relationship safeguards by the investee firm. The use of safeguards is further negatively related to both realized relationship risks and social interaction. Social interaction is positively related to realized learning benefits. These findings highlight the fine balance that the investee firm has to strike between openness and self protection in a CVC relationship. Implications for future research and current practice are discussed.

1. Executive summary

Corporate venture capitalists (CVCs) are often able to offer different and more wide-ranging support for their portfolio firms compared to independent venture capitalists (Maula et al., 2005). However, because corporate investors commonly have direct business interests in the domains in which their portfolio firms operate, the young firms' relationships with CVC investors can involve trade-offs between openness and self protection. Our study examined these trade-offs and their effects on the risks and rewards of the relationship.

Researchers have primarily studied CVC investments either from the perspective of the corporate investor (i.e. 'how can corporate investors derive maximum benefits from their portfolio firms?') or they have focused on explaining how value-added from CVC differs from that offered by 'classic' venture capitalists. This body of research has identified many strategic benefits that established, and often highly innovative, corporations can derive from investments in technology-based new firms (TBNFs). Yet, researchers have also recognized that corporations' ability to use CVC investments strategically is sometimes limited. Potentially, the most interesting (and valuable) new ventures may avoid CVC relationships for fear that the parent corporations may learn too much about the entrepreneurs' proprietary knowledge. On the other hand, researchers have also recognized that entrepreneurial firms are most likely to accept CVC investments when they need access to scarce and critical resources in order to grow rapidly; and when they are also confident that they are able to protect themselves from a partner's attempts to misappropriate their own unique knowledge.

Such insights have highlighted the need to focus on the structure and conduct of CVC–investee firm 'dyads.' In order to understand how potential benefits can be balanced against the risks of misappropriation, recent research has started to assign

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greater weight to the commercial interests of the entrepreneurial investee firm over the traditional viewpoint of the established corporation (Katila et al., 2008). In so doing, contemporary analyses are now less naïve *as to the costs* as well as the benefits of collaboration with large and powerful corporations. Thus, the net benefits of a CVC tie to the entrepreneurial firm are not treated as axiomatic because of this potential risk of predatory conduct by the corporation. However, neither is it assumed that small firm predation will invariably occur in the relationship given the competencies and experience of many TBNF management teams.

Although research on CVC has advanced to a stage at which there is a greater understanding of the circumstances when entrepreneurs will choose to "swim with sharks,"[3] there is still little research examining *how best* this may be accomplished without being eaten. Prior research has examined the conditions under which ties are formed between entrepreneurial ventures and corporate investors (Dushnitsky, 2004; Katila et al., 2008). Yet, it is silent about how necessary 'checks and balances' evolve. Accordingly, how these trade-offs are managed is the focus of this study.

In this paper, we examine how the CVC–investee firm relationship influences the management of risks and rewards from CVC investments. We take the perspective of the portfolio or investee firms which in our study are technology-based new firms (TBNFs). Building on learning literature and agency theory, we develop a model predicting the impact of complementarities (i.e. whether the deployment of the resources of one party enhances the marginal effectiveness of the resources of the other party (Bendersky, 2003; Milgrom and Roberts, 1992) on both social interaction and the employment of safeguards by the investee firm. Our model further quantifies the effectiveness of safeguards on the risks of the corporation misappropriating the young firm's IP assets. Finally, we look at the degree of social interaction between the entrepreneurial young firm and the CVC and demonstrate how this affects the learning opportunities of the young firm.

The model developed in our paper is tested using data collected from CEOs of CVC funded, U.S. technology-based start-ups. It employs structural equation modeling. The model and the associated hypotheses receive good support from the empirical data. Complementarities between the entrepreneurial investee firm and its CVC investor are positively related to the social interaction between them and negatively related to the use of different types of relationship safeguards by the new venture. The use of safeguards is negatively related to both realized relationship risks and social interaction. Social interaction is positively related to realized learning benefits.

For entrepreneurs, our findings indicate the critical need to distinguish between true *complementarity*, on the one hand, and *relatedness*, on the other, when choosing corporate investors. Complementarity exists when the resources of one party directly enhance the effectiveness of the resources of the other party. Relatedness, on the other hand, concerns the commonality of firm functions and may signal potential overlap or even substitutability between the two parties' resources. Determining the degree of complementarity and relatedness is crucial in determining whether or not a relationship should be started and how it should subsequently be managed. Besides this important initial condition, the findings indicate that social interaction between the CVC and the investee firm's management significantly (and positively) influences the latter's ability to learn from the corporate investor. The study also shows that relationship risks can be partially mitigated by the entrepreneurial venture using various safeguards such as limiting CVC ownership of its stock, restricting the allocation of board seats to CVC investors, and/or accepting CVC investors only in the later stages of the investee firm's development. However, these safeguards come at a cost. The reduction in social interaction and trust resulting from employing these safeguards also reduces learning benefits for the investee firm. A central reason for the collaboration between the young enterprise and the established corporation is therefore diminished. These trade-offs call for transparent and sensitive management of the ongoing CVC–investee firm relationship from both corporate and entrepreneurial participants.

2. Introduction

The tension between the simultaneous needs for both cooperation and control is inherent in most collaborative relationships between firms (Das and Teng, 2000; Kale et al., 2000; Khanna et al., 1998; White, 2005). This tension is particularly characteristic of knowledge-intensive relationships, where the reciprocal and staged nature of knowledge disclosures creates considerable scope for free-riding (Dyer and Singh, 1998; Human and Provan, 1997). Open and frequent interactions are required in inter-firm relationships so as to facilitate the integration of valuable resources (Inkpen and Tsang, 2004). However, misplaced or naïve openness may result in the misappropriation of valuable knowledge and resources by an opportunistic partner (Das and Teng, 1998; Katila et al., 2008). The overt use of safeguards will not necessarily help as such precautions can send a signal of mistrust which may prompt the withholding of resources and closer social interaction (Ghoshal and Moran, 1996; Lui and Ngo, 2004). At worst, the use of safeguards may set off a 'learning race' in which only one partner can win (Khanna et al., 1998; Larsson et al., 1998).

The above dilemma is particularly pertinent for growth oriented, technology-based new firms (TBNFs) whose rapid growth is often dependent on access to external resources (Jarillo, 1989; Stinchcombe, 1965) including venture capital (Hellmann and Puri, 2002; Sapienza, 1992). However, this risk capital option is not always sufficient as the resource needs of TBNFs typically extend beyond early-stage financing and managerial expertise. An alternative, complementary source of resources is provided by industrial corporations, which have become important VC investors in their own right (Gompers and Lerner, 1998; Maula and Murray, 2002). In addition to finance, corporate investors are often able to provide access to valuable strategic resources

[3] The imagery of the shark used by Katila et al. (2008) is interesting. Sharks are predators at the top of their food chain. Earlier uses of metaphors in Entrepreneurship studies are more likely to describe corporations as lumbering, slow and clumsy rather than swift and deadly. Hence the popular use of giants, elephants or dinosaurs (Block and MacMillan, 1993; Gerstner, 2005; Kanter, 1989).

(Dushnitsky, 2004; Gompers and Lerner, 1998; Hellmann, 2002; Maula et al., 2005; Maula and Murray, 2002). However, such benefits are not without costs and risks. Unlike VC firms, CVCs may have actual or potentially competing business interests in the domain of the portfolio firm. The relationship with a CVC investor is therefore a 'double-edged sword,' which brings both potential advantages and disadvantages to the young investee firms (Hellmann, 2002; Maula and Murray, 2002). At worst, the young firm's collaboration may help educate a powerful future competitor.

Despite its importance, the causes, manifestations and consequences of this tension between collaboration and control are insufficiently explored in the VC literature (Katila et al., 2008). Studies of CVC have emphasized the benefits and value-adding mechanisms of corporate investors while ignoring the risks. There is little rigorous empirical research to provide a balanced overview of the *actual* risks and benefits that CVC investments entail for entrepreneurs (Maula and Murray, 2002). This imbalance is a result of the predominantly corporate perspective of much of the strategic literature. The interests of the investee firm in the CVC relationship has been almost completely ignored by the received literature (Katila et al., 2008). Consequently, there is little research to guide TBNFs on how to manage the trade-off between collaboration and control in CVC relationships.

In this paper, we take the perspective of technology-based new firms (Yli-Renko et al., 2001; Zahra et al., 2000). They are the primary focus of much of CVC activity given the corporation's interests in continued innovation (Hill and Birkinshaw, 2008; Maula, 2007). We have three reasons for this choice of focus. First, we provide a rare empirical examination of management of CVC relationships from the venture perspective thereby counterbalancing the corporate bias of extant CVC literature (Dushnitsky, 2006; Katila et al., 2008; Maula, 2007). Second, while research has examined when ties are formed between entrepreneurial ventures and corporate investors (Dushnitsky, 2004; Katila et al., 2008), the subtlety and complexity of managing such relationships has been largely overlooked. Third, because of our focus on the *dynamic* tension between collaboration and competition, we extend the common 'static' view of social capital as an exogenous (given) asset in inter-firm relationships (Ariño et al., 2008; Maula et al., 2003).

Building on both the learning literature and agency theory, we develop a model predicting the impact of complementarities between the investee firm and the parent company of the CVC investor on both their social interaction and the use of various safeguards by the investee firm. Complementarities are defined as existing between the CVC investor and its portfolio firm when the deployment of the resources of one party enhances the marginal effectiveness of the resources of the other party (Bendersky, 2003; Milgrom and Roberts, 1992). Complementarity is central to the CVC logic in that it improves asset productivity. In contrast, relatedness defines the relative similarity of the two businesses. Thus, we do not see the two complementarity and relatedness as opposite ends of a continuum of overlap/similarity (e.g. Kale et al., 2000) and prefer the conceptualization of complementarities of Milgrom and Roberts (1992) and Bendersky (2003) focusing on the productivity implications.

We propose that in the presence of high complementarities, social interaction will be increased and the use of safeguards will diminish because mutual specialization enables the parties to focus on knowledge access rather than competing in a learning race (Grant and Baden-Fuller, 2004; Larsson et al., 1998). Relatedness assumes no such consequences. Social interaction between the focal firm and the corporate investor is here defined as a dimension of social capital (Larson, 1992; Nahapiet and Ghoshal, 1998; Ring and Vandeven, 1994; Yli-Renko et al., 2001). The model importantly allows predictions concerning the impact of safeguards on the risks of misappropriation, as well as the influence of social interaction on the receipt of learning benefits from the corporate investor.

The model developed in the paper is tested using data collected from CEOs of CVC funded, U.S. start-ups. The hypotheses were tested using structural equation modeling. The model and the associated hypotheses received good support from the empirical data. Complementarities between the investee firm and its CVC investor are positively related to the social interaction between them and negatively related to the use of different types of relationship safeguards by the venture. The use of safeguards is negatively related to both realized relationship risks and social interaction. Social interaction is positively related to realized learning benefits. Given these subtle trade-offs, the findings have relevance for entrepreneurs, CVCs and VC firms alike when seeking new partners or wishing to manage existing relationships for maximum commercial benefit. Given disparities in size and thus relative vulnerabilities, we would argue that this information on the management of relationships is particularly important to the investee firm.

3. Model and hypotheses development

The CVC literature has shown that corporate investors differ significantly from traditional, independent VCs (Maula et al., 2005; Maula and Murray, 2002). Whereas traditional VCs focus on servicing the venture's financing needs and assisting in rapid organizational growth, CVCs are portrayed as 'strategic' investors whose objectives and value-adding contributions are much more wide-ranging than those of traditional VCs (Maula et al., 2005). In addition to funding, CVC investors are often able to provide their portfolio firms with rapid access to their global strategic resources including deep industry and technological know-how. By virtue of possessing significant market power in sectors where their investee firms operate, CVCs are also in a position to directly assist the growth of their investee firms. As investors, CVCs are often seen as complementing traditional VCs (Maula et al., 2005).

While the benefits of CVCs are well recognized, the costs and risks associated with CVC engagement have received less attention than those associated with traditional VC investors. They arise from the very characteristics that distinguish CVC investors from traditional VCs. CVCs usually only invest in sectors that are related to those of their own existing or planned business activities given that corporations usually have strategically oriented reasons for the CVC activities. Strategic motivations may easily give rise to a conflict of interests between the corporate and the portfolio firm (Hellmann, 2002). Such hazards have not been widely recognized in the literature despite being very clearly understood by entrepreneurs. In their recent review, Katila et al. (2008) observed that: "…

a key omission in [received CVC studies is] the tension between resource dependencies and potentially damaging misappropriation of resources…" This ignorance of the downsides associated with CVC relationships is an important gap in our understanding of CVC practice. Naïve assumptions of partner benevolence are dangerous and can expose the investee firm to a risk of misappropriation. To find an optimal balance between cooperation and control, participants in CVC arrangements always need to consider the context in which such devices are employed (Ariño et al., 2008; Kale et al., 2000; Maula et al., 2003).

In our paper, we build a theoretical model (Fig. 1) describing how the level of complementarities acts as an important initial condition for the relationship. Complementarities are first linked to the development of social interactions and the use of relationship safeguards. These two intermediary states in the model will in turn determine the realization of dyadic learning benefits and relationship risks, respectively.

3.1. Complementarities influence social interaction

We propose that in order to understand the tension between collaboration and control in CVC relationships, it is important to distinguish between relatedness and complementarity in CVC–investee dyads. The potential for conflicting interests arises from the fact that CVC investors typically operate in sectors that are *related* to those of their investee firms. If the investee firm's sector interests grow to intersect with the domain of the CVC investor, this creates a threat that the investee firm's technologies may become superior substitutes for those of its CVC investor. In such a situation, the temptation will arise for the corporate investor to remove or reduce the competitive threat by seeking to learn as much as possible from its portfolio firm while covertly preparing to take unilateral control of the new domain (Keil et al., 2008).

Alternative and more benign scenarios also exist. There may also be scope for the generation of additional and shared value through resource combination (Sakakibara, 1997) when the resources are *complementary* rather than substitutes to one another. Such situations are quite common in relationships between large and small firms (e.g., King et al., 2003). We propose that when the resources of the CVC investor and its investee firm are complementary rather than related, both parties will have an economic incentive to engage in social interaction in order to enhance mutually the marginal effectiveness of their own resources (Grant and Baden-Fuller, 2004). In previous research, complementarities have been found to influence both the *formation* of interorganizational relationships (Chung et al., 2000; Gulati, 1995; Hitt et al., 2000; Rothaermel and Boeker, 2008) and their *performance* (Sarkar et al., 2001). Knowledge and resource complementarities increase the potential benefits to be derived from a dyadic relationship (Sapienza et al., 2004). Given that social relations facilitate the realization of potential complementarities (for example by through learning benefits and identification of practicable collaboration opportunities) both parties have an incentive to increase social interaction (Dyer and Singh, 1998). Summarizing, we hypothesize:

Hypothesis 1. The greater the complementarities between the corporate investor and the portfolio company, the greater will be the social interaction between the two parties.

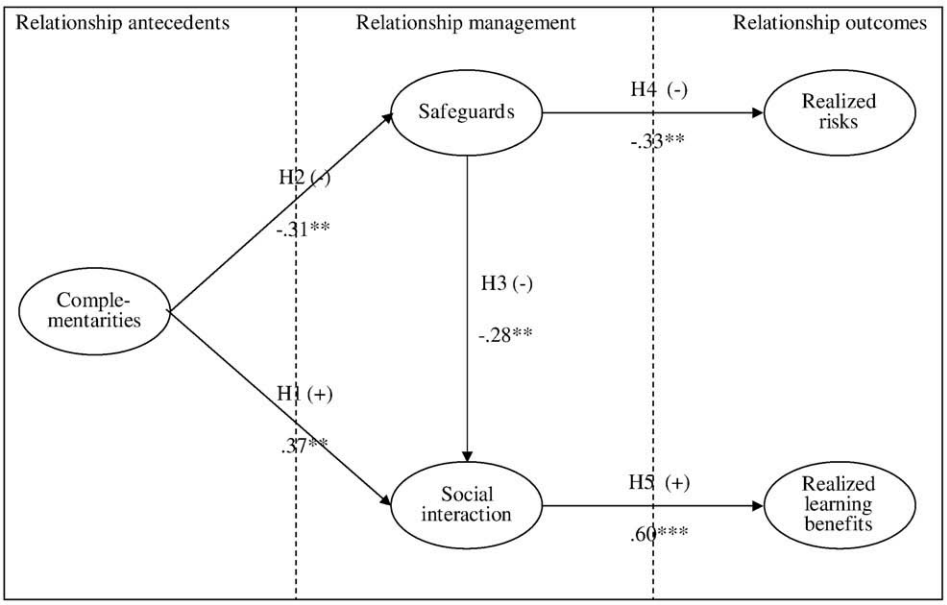

Fig. 1. Hypothesized model of the CVC investor relationship risks and rewards for a portfolio company. Note: This is a simplified version of the actual model. Error terms, control variables, and the indicator variables of the latent constructs are omitted from the diagram. An exogenous unobserved error variable was attached to each of the endogenous variables to account for the variance not explained by the exogenous variables. The error coefficients were fixed to unity to enable model identification. Path coefficients are standardized maximum likelihood parameter estimates. ***$p \leq .001$, **$p \leq .01$, *$p \leq .05$; one-tailed tests.

3.2. Complementarities influence the use of relationship safeguards

If someone knows that he or she is going to have to swim with a hungry shark, some protection is advisable. In the context of CVC investments, recent large scale empirical research has shown that young, high potential ventures avoid accepting investments from corporate investors unless the businesses are complementary and their intellectual property can be protected (Dushnitsky, 2004; Katila et al., 2008). There are a number of different types of safeguards that may help attenuate potentially negative consequences of the relationship (Ariño et al., 2008). For instance, when negotiating the investment, the investee firm can limit its exposure to the corporate investor by restricting the ownership share given to the corporate investor; declining to give a board seat to the corporate investor; and/or only accepting an investment from a corporate investor when the investee firm has reached an advanced stage of its development. Such safeguards are not costless as they may reduce the firm's access to external resources including new opportunities. Agency theory predicts that the use of such safeguards is more prevalent when the perceived risk of moral hazard is high (Eisenhardt, 1989; Jensen and Meckling, 1976; Sapienza and Gupta, 1994) and when the smaller firm has more bargaining power through the possession of attractive assets (Dushnitsky, 2004). Complementarity (versus substitution) between two businesses essentially implies that the interests of the two firms are aligned. Both firms need each other to gain greater benefit (Amit and Zott, 2001; Brandenburger and Nalebuff, 1996; Grant and Baden-Fuller, 2004; Milgrom and Roberts, 1992). This reduces the risk of moral hazard. The lower the risk of moral hazard, the lower the need to use relationship safeguards. Conversely, low complementarity necessitates the use of stronger safeguards to the extent that resource relatedness gives rise to potential substitution effects. Summarizing, we predict a negative relationship between complementarity and the use of relationship safeguards:

Hypothesis 2. The greater the level of complementarities between the corporate investor and the portfolio company, the lower will be the use of relationship safeguards by the portfolio company.

3.3. Use of relationship safeguards influences social interaction between the venture and the corporate investor

Paradoxically, the use of safeguards may, in itself, adversely affect the realization of relationship benefits. Ghoshal and Moran (1996) observed that the presence of relationship safeguards instills a negative disposition toward those imposing the safeguards, prompting the distrusted (corporate) partner to reduce commitments to collaboration. Given that relationship safeguards are essentially instruments that decrease the exposure of the investee firm to the potential threat of the corporate investors, they can potentially create a barrier between the two firms by making explicit the competitive nature of their interests (Larsson et al., 1998). This is likely to reduce social interaction between the partners given that safeguards are in effect replacing trust (as an intermediary mechanism) by tangible defense mechanisms including the threat of litigation. Therefore, the use of relationship safeguards is predicted to be negatively related to the social interaction between the portfolio company and the corporate investor (Khanna et al., 1998):

Hypothesis 3. The greater the use of relationship safeguards by the portfolio company, the lower will be the social interaction between the corporate investor and the portfolio company.

3.4. Use of relationship safeguards influences the realized risks

In the context of CVC–investee dyads, the most commonly feared risks of the entrepreneurial ventures are related to corporate investors misappropriating the intellectual property of the (more vulnerable) investee firm (Katila et al., 2008). Dushnitsky (2004) provides case evidence from five industries documenting corporate investors stealing ideas and intellectual property from entrepreneurial ventures. Furthermore, the negative consequences of corporate investors on the decision making autonomy and speed of action of the investee firm are often mentioned as a further potential risk from accepting corporate investors (e.g. Block and MacMillan, 1993).

However, although accepting that a CVC relationship will invariably have important operational consequences (both intended and otherwise) for the investee firm, we argue that the negative impact of this decision can be at least partially mitigated by the use of (the already noted) relationship safeguards (Ariño et al., 2008; Lui and Ngo, 2004). Therefore, the use of relationship safeguards is predicted to be negatively related to the realization of risks in relationships with CVC investors.

Hypothesis 4. The greater the use of relationship safeguards by the portfolio company, the lower will be the realized relationship risks experienced by the portfolio company.

3.5. Social interaction influences learning benefits

Young ventures can benefit substantially by tapping into the knowledge and experience of large incumbent firms (Sapienza et al., 2004). Corporate partners often possess substantial R&D resources, which may be accessed by investee firms in order to speed up their own technological learning. To the extent that the portfolio firm and the incumbent corporation share some overlapping technological knowledge, knowledge acquisition and assimilation may be facilitated by the dyad (Kale and Singh, 2007; Khanna et al., 1998; Yli-Renko et al., 2001). By virtue of their usually strong international presence, large incumbents may

also act as an important source of new knowledge to young firms especially in relation to geographically distant markets (Zahra et al., 2000). Through its participation in the investee firm, the CVC and its parent corporation may also act as an important source of wide ranging expertise and experience in the portfolio venture's business domain. The acquisition of technological, market, and management knowledge are very important and attractive forms of value-added that the portfolio firm is able to access preferentially from its corporate investor (Maula et al., 2005).

However, although established corporations often possess superior knowledge of markets, technology, and business practices that would be useful for the less experienced investee firms, the existence of complementary knowledge, while necessary, is not sufficient for the full realization of potential learning benefits. The extent to which a TBNF can acquire knowledge from its investors will depend on it first appreciating the existence of this knowledge, on the ability of the firm subsequently to recognize and assess the value of the knowledge, and on the willingness of the dyadic firms to share information (Nahapiet and Ghoshal, 1998). These conditions are each assisted by social interaction (Cohen and Levinthal, 1990; Dyer and Singh, 1998; Kale et al., 2000; Lane and Lubatkin, 1998). We follow Nahapiet and Ghoshal (1998) in arguing that social capital facilitates knowledge acquisition by affecting the conditions necessary for the exchange and combination of existing intellectual resources. Lane and Lubatkin (1998) pointed out that dyadic learning relationships involve a pattern of interactions that affects the learning of both members of the dyad. Here, we focus on one specific dimension of social capital, i.e. social interaction, which has been found to be an important facilitator of knowledge transfer (Bresman et al., 1999; Tsai and Ghoshal, 1998; Yli-Renko et al., 2001). Social interaction facilitates the exchange of information and assists in the identification of opportunities for cooperation (Dyer and Singh, 1998; Lane and Lubatkin, 1998; Zahra et al., 2000). We hypothesize that social interaction increases knowledge acquisition and mediates the effect of the initial conditions, i.e. the existence of complementarities, on the subsequent knowledge acquisition:

Hypothesis 5. The greater the level of social interaction between the corporate investor and the portfolio company, the greater will be the learning benefits to the portfolio company.

4. Methods

4.1. Sample

The hypotheses were tested using a sample of U.S. CVC-financed TBNFs. The survey data were collected from CEOs and founders of the sample companies in December 2000.[4] The sample companies were identified from the Venture Economics database. A TBNF was defined as a firm less than 6 years old (Zahra et al., 2000) and operating in one of the following sectors: biotechnology, medical/health science, internet specific, communications, computer software and services, computer hardware, or semiconductors/other electronics. In the sampling frame of the research project, all surveyed ventures had also received funding from at least one independent VC firm. Companies that had been acquired, had gone public, or had subsequently ceased operations were excluded. We further required that the most recent CVC investment in the portfolio company had been made within the last 2 years to ensure that the relationship was still active. Finally, we excluded ventures that were found to be originally spin-offs from the corporation currently acting as a corporate investor. This exclusion was done to limit the research to young and independent ventures that had accepted CVC financing from an organization with which they had had no previous association.

The sampling frame consisted of the entire population of 810 privately-held TBNFs fulfilling the selection criteria at the time of the survey (November 2000–January 2001). Of the 135 questionnaires received, 91 met all selection criteria and were sufficiently complete. This translates to a response rate of 17%, which can be considered acceptable given that it was requested that the four-page questionnaires be completed by the CEO. This response rate is quite typical for similar survey samples (e.g. McDougall et al. (1994) 11% and Zahra et al. (2000) 24%).

In our final sample, the average age of the TBNFs was 2.9 years (median 2.76 years). On average, they had 118 employees (median 82), revenue USD 4.78 million (median USD 2.00 million), cumulative amounts of external equity finance of USD 55.18 million (median USD 43.00 million), and diluted ownership share by the largest CVC investor 9.63% (median 7.00%). Board seat was held by 31% of the largest CVC investors.

Non-response bias was analyzed by testing statistically potential differences in firm age, distribution of geographic locations, and distribution of industry sectors between the respondents and non-respondents. The potential differences in the number of employees and the revenues of early and late respondents were also tested (Armstrong and Overton, 1977). No significant differences were detected in any of these tests. Regarding completeness of survey responses, a small amount of items (3.2%) used in this paper had missing values. They were handled in the confirmatory factor analysis and structural equation modeling using maximum likelihood estimation in Amos 16.0.

4.2. Construct operationalization and validation

In the absence of objective measures for most of our constructs of interest, they were operationalized as multi-item scales. Whenever possible, these constructs and their measurement items were derived from prior research. Several methods were used

[4] We would argue that while the technical nature of complementarities may have changed over time, the generic relationship issues between dyad partners are likely to be more stable.

to ensure validity and reliability. We pre-tested the four-page survey instrument with several CEOs and CVC personnel. All statement-style items were measured on a scale from 1 (strongly disagree) to 7 (strongly agree). Confirmatory factor analysis was used to test the construct validity. All items had standardized factor loadings of .52 or higher, well above typically recommended thresholds. All constructs had construct reliabilities above .74 and average variance extracted above .63 each well above the recommended minimum .50 (Fornell and Larcker, 1981) suggesting good internal consistency and convergent validity. Discriminant validity was established based on the measurement model following the guideline of Fornell and Larcker (1981) to examine whether the variance extracted for construct is higher than the squared correlation between the constructs. We found that to be the case in each pair of constructs in our measurement model, which suggests appropriate discriminant validity. We also examined the possibility of common method variance using Harman's single factor test (Podsakoff et al., 2003). This analysis suggested that it was not a serious threat to the validity of the results. Finally, a strong and significant correlation between our learning benefits construct (see Table 1) and a related follow-up survey question provided additional support concerning the reliability and stability of the measures. (Information is available from the authors on request). The operationalization of the multi-item constructs is presented in Table 1. Descriptive statistics and correlations are presented in Table 2.

4.2.1. Complementarities

As defined earlier, complementarities exist between the CVC investor and its portfolio firm when the deployment of the resources of one party enhances the marginal effectiveness of the resources of the other party (Bendersky, 2003; Milgrom and Roberts, 1992). Resource based literature stresses the strategic importance of exploiting *complementarities* in resources and capabilities. In addition to resources and capabilities, complementarities can also stem from the synergistic production or consumption of product or service offerings from two companies (Amit and Zott, 2001; Brandenburger and Nalebuff, 1996). Amit and Zott (2001) argued that complementarities are present whenever having a bundle of goods together provides more value than the total value of having each of the goods separately. Similarly, Brandenburger and Nalebuff (1996) stated that "a player is your complementor if customers value your product more when they also have the other player's product than when they have your product alone." In the present study, firm complementarities both in resources and capabilities as well as in the products and services offered to customers are included (specific items are listed on Table 1).

Social interaction was defined using three indicators. The first item, frequency of social interaction, was adopted from Sapienza (1992) and Sapienza and Gupta (1994). The two other items (knowledge of investor's people on a personal level and closeness of

Table 1
Operationalization of multi-item constructs

Construct		Standardized factor loadings	Composite reliability	Average variance extracted
Complementarities			.80	.64
CL1	Our products/services are highly complementary with the products/services of our largest corporate investor	.90		
CL2	Our capabilities/skills are highly complementary with the capabilities/skills of our largest corporate investor	.82		
CL3	The corporate investor is attempting to promote an industry standard by investing in our technologies	.52		
Social interaction (α=.78)			.80	.63
SI1	How often you are in contact with this investor? (7-point scale from "every day" to "less often than once a quarter")	.56		
SI2	We know this investor's people on a personal level	.79		
SI3	We maintain close social relationships with this investor	.89		
Safeguards (composite index)			–	–
SG1	Ownership share given for the corporate investor is less than 10% (dummy)	–		
SG2	No board seat for the corporate investor (dummy)	–		
SG3	First investment of the corporate investor was made in a *late stage* of development (dummy)	–		
Realized risks (α=.75)			.74	.60
	We have actually experienced…			
RR1	… this corporate investor transferring our ideas or intellectual property to it's parent corporation	.56		
RR2	… this corporate investor reducing our autonomy	.85		
RR3	… the slow decision making of this corporate investor slowing down our development	.68		
Realized learning benefits (α=.82)			.82	.65
	From this investor, we have obtained valuable…			
RL1	… market knowledge	.84		
RL2	… information on competition	.86		
RL3	… technical know-how	.63		

Standardized factor loadings from the measurement model.

Table 2
Descriptive statistics and correlations

Variable		Mean	S.D.	Min	Max	CL1	CL2	CL3	SI1	SI2	SI3	SG1	SG2	SG3	RR1	RR2	RR3	RL1	RL2	RL3
CL1	Complementarities (products)	5.06	1.97	1	7															
CL2	Complementarities (capabilities)	4.82	2.13	1	7	.74														
CL3	Complementarities (standards)	3.89	2.35	1	7	.43	.40													
SI1	Social interaction (frequency)	3.31	1.27	1	7	.34	.29	.31												
SI2	Social interaction (knowing)	5.11	1.90	1	7	.21	.25	.29	.39											
SI3	Social interaction (social relationships)	3.57	1.97	1	7	.35	.41	.34	.47	.71										
SG1	Safeguards (low ownership)	.69	.46	0	1	−.25	−.10	−.27	−.27	−.23	−.21									
SG2	Safeguards (no board seat)	.57	.50	0	1	−.20	−.06	−.10	−.32	−.14	−.26	.48								
SG3	Safeguards (late stage)	.10	.30	0	1	−.18	−.11	.03	−.02	−.10	−.08	−.02	−.01							
RR1	Realized risks (intellectual property)	1.88	1.64	1	7	.20	.18	.10	−.06	.00	.06	−.15	−.13	−.03						
RR2	Realized risks (reducing autonomy)	2.15	1.72	1	7	.32	.11	.31	.24	.25	.18	−.24	−.19	−.13	.50					
RR3	Realized risks (slowing down)	3.04	2.31	1	7	.34	.02	.15	.20	.06	.07	−.16	−.29	−.11	.43	.60				
RL1	Realized learning (market)	4.23	1.96	1	7	.17	.24	.38	.31	.37	.31	−.01	.01	.02	.06	.20	.07			
RL2	Realized learning (competition)	3.79	1.92	1	7	.13	.20	.35	.30	.42	.45	−.16	−.06	−.02	.04	.12	.06	.73		
RL3	Realized learning (technology)	3.75	1.90	1	7	.19	.32	.31	.23	.31	.29	.05	.05	−.09	−.05	.04	−.14	.57	.51	
IN1	Industry (biotechnology)	.02	.15	0	1	.15	.16	.07	.08	.07	.15	.10	.13	−.05	.11	.03	.00	−.02	−.02	−.02
IN2	Industry (communications)	.12	.33	0	1	.04	.11	.05	−.12	.00	.10	.10	.12	−.01	−.08	−.14	−.12	.03	.04	−.08
IN3	Industry (computer hardware)	.03	.18	0	1	.03	−.04	.09	.10	.02	−.02	−.01	−.09	.15	.26	.22	.24	−.09	−.08	−.17
IN4	Industry (computer SW and services)	.18	.38	0	1	−.12	−.02	.24	.00	.05	.01	.18	.17	−.06	−.06	.13	−.01	.06	.01	.25
IN5	Industry (internet specific)	.49	.50	0	1	.14	.02	−.10	.04	.00	−.12	−.39	−.25	.04	.05	.05	.09	−.21	−.15	−.23
IN6	Industry (medical/health)	.04	.21	0	1	−.15	−.27	−.15	−.14	−.13	−.12	.03	.08	−.07	−.07	−.06	.00	.11	.16	−.06
IN7	Industry (semiconductors/ other elect.)	.11	.31	0	1	−.10	.00	−.17	.05	−.02	.10	.23	.02	.00	−.05	−.18	−.13	.21	.13	.29

All correlations above .21 are significant at .05 level.

the relationship) have been used earlier by Tsai and Ghoshal (1998) and Yli-Renko et al. (2001) in measuring social interaction in organizational relationships.

Relationship safeguards refer to various instruments that the existing owners and the CEO of an entrepreneurial venture can use in order to protect their enterprise from the potential moral hazard of a corporate investor's self-interested and aggressive actions. In comparison to other constructs in this paper that are operationalized using reflective indicators (i.e. indicators are seen as functions of the latent variable), we operationalize this construct using formative indicators (i.e. the latent variable is a linear combination of the indicators) because TBNFs can opt to use different combinations of relationship safeguards and those choices determine the latent variable relationship safeguards (Diamantopoulos and Siguaw, 2006; MacCallum and Browne, 1993). In the index, we included three indicators of relationship safeguards, i.e. whether or not the external ownership of the CVC is limited to a small share (max 10%); whether or not the corporate investor is given a board seat; and whether or not the corporate investment is accepted only in a late stage of the development of the investee firm.[5] Given the identification challenges in including the indicators in the structural equation model as separate items (identification problems are typical in the empirical implementation of formative variables (MacCallum and Browne, 1993), we enter the measure in the model as a single observed, index variable. Summing the three dummy variable indicators results in an index ranging from 0 to 3. This determines the different levels of protection available to the young enterprise from the corporate investors' actions.

Relationship risks were operationalized as the level of 'realized risks' (i.e. problems that have occurred) in the CVC relationship. We employed indicators of some of the most central risks described in prior literature concerning the problems experienced by entrepreneurial ventures in collaborating with CVC investors. As pointed out by Dushnitsky (2004) and Katila et al. (2008), misappropriation of the intellectual property is one of the greatest fears of entrepreneurs when raising finance from corporate investors. We included this as a statement of whether or not the focal venture had actually experienced the corporate investor succeeding or attempting to transfer the entrepreneur's ideas or intellectual property to the parent corporation. In addition, in line with prior literature (e.g. Block and MacMillan, 1993), we measured the 'realized problems' when the corporate investor reduces the autonomy and thus flexibility of the portfolio company or impeded the development of the venture by slow decision making.

Knowledge acquisition refers to the learning benefits realized in the investor relationship. For example, start-up companies may

[5] The measure is based on a similar classification commonly used in VC statistics: a response 'Late stage' instead of 'Early stage' or 'Expansion' in a survey question. The question specifically focuses on the stage of development at the time of the first investment from the CVC investor.

Table 3
Model statistics

Model	χ^2	*df*	*p*	CFI	IFI	RMSEA	AIC	Normed χ^2
1. Null model	501.30	91	.00	.00	.00	.22	527.30	5.51
2. Measurement model	97.23	56	.00	.90	.91	.09	193.23	1.74
3. Hypothesized model	104.71	61	.00	.89	.90	.09	190.71	1.72
4. Robustness test model 1	102.67	59	.00	.89	.90	.09	192.67	1.74
5. Robustness test model 2	103.94	60	.00	.89	.90	.09	191.94	1.73

CFI = comparative fit index, which compares the proposed model to the null model, adjusted by degrees of freedom; IFI = incremental fit index; RMSEA = root mean square error of approximation; AIC = Akaike information criterion, normed chi-square = chi-square adjusted by degrees of freedom.

learn from their corporate investor's greater commercial and technical experience about markets, customer needs, competition, and/or technological issues. The knowledge acquisition construct was defined using five indicators with items from Yli-Renko et al. (2001) and Kale et al. (2000) and modified to fit the context of the present study. The construct is consistent with the 'grafting' process of organizational learning of Huber (1991).

Control variables had to be limited given our limited sample size. However, given the emphasis on industry variables in recent related studies (Dushnitsky, 2004; Katila et al., 2008), we controlled for industry effects by adjusting all items by subtracting an industry sector's mean score from a respondent firm's score on all of the study's variables (Zahra et al., 2000). In addition, we ran robustness analyses using age and size as controls.

5. Results

In testing the hypotheses concerning the antecedents and management of risk and rewards of corporate investments, we first tested the model fit. The χ^2 and goodness-of-fit statistics are provided in Table 3. Overall, the hypothesized model appears to fit relatively well. The normed χ^2 statistic for the hypothesized model is 1.72, well within the recommended range 1.0–2.0 (Hair et al., 1998). The comparative fit index (CFI) was .89, and (IFI) .90, close to common thresholds of .90 and suggesting a relatively good fit. The root mean square error of approximation (RMSEA) was .09, suggesting a not very close but still acceptable fit (Browne and Cudeck, 1993). We also examined the model fit on the parameter estimate level (Byrne, 2001). No correlations above 1.00 or negative variances were found. Standard errors were also reasonable and the direction and significance of the parameters were in accordance with the underlying theory and hypotheses in all hypothesized parameters.

Nested model tests were used to assess the fit of the hypothesized model and to test its robustness by comparing it to alternative plausible models. Nested models are alternative models with added or deleted hypothesized paths. A significant difference in χ^2 indicates that the less parsimonious model (i.e. more hypothesized paths) provides a better fit with the data. The results of the χ^2 difference tests are provided in Table 4. Five nested models were compared: (1) a null model, in which no relationships were posited; (2) a measurement model; (3) the hypothesized model; (4) an alternative model with paths added between safeguards and learning benefits and between social interaction and realized risks; and (5) an alternative model with a path added between safeguards and learning benefits.

In the testing sequence, the first comparison was between the measurement model and the null model. The test indicated that the measurement model provided a better fit than the null model. The second comparison was a comparison of the hypothesized model and the measurement model. The hypothesized model was preferred. The third comparison was a robustness test in which the hypothesized model was compared to a model in which additional direct paths were added to the hypothesized model between safeguards and learning benefits as well as between social interaction and realized risks. The hypothesized model was preferred. The fourth comparison was another robustness test comparing the hypothesized model with a model in which an additional path was added between the use of safeguards and the learning benefits. Again, the hypothesized was preferred. Having tested all the relevant model alternatives, we concluded that the hypothesized model provides the best fit and terminated the testing.

Testing the fit of the hypothesized model and finding no signs of mis-specification allowed the five hypotheses to be tested. Model 1 in Table 5 presents the standardized maximum likelihood parameter estimates and their statistical significance levels for the hypothesized structural equation model.

Hypothesis 1 predicted a positive relation between complementarities and social interaction. This hypothesis received strong support (β=.38 at $p<.01$ level using 1-tailed test). Hypothesis 2 predicting a negative relation between complementarities and the use of safeguards was also strongly supported (β=−.31 significant at $p<.01$). Hypothesis 3 predicting a negative relation between

Table 4
Nested model testing sequence and difference tests

More parsimonious model		Less parsimonious model	$\Delta\chi^2$	Δdf	*p*	Preference
1. Null model	vs.	2. Measurement model	404.07	35.00	<.01	2
3. Hypothesized model	vs.	2. Measurement model	7.48	5.00	>.10	3
3. Hypothesized model	vs.	4. Robustness test model 1	2.04	2.00	>.10	3
3. Hypothesized model	vs.	5. Robustness test model 2	.77	1.00	>.10	3

Table 5
Tests of hypotheses

Hypothesis			Path	Model 1 (SEM)	Model 2 (path model)	Model 3 (SEM)
				Coefficient	Coefficient	Coefficient
H1	Complementarities	→ (+)	Social interaction	.37**	.34***	.43**
H2	Complementarities	→ (−)	Safeguards	−.31**	−.30**	−.28**
H3	Safeguards	→ (−)	Social interaction	−.28**	−.28**	−.20*
H4	Safeguards	→ (−)	Realized risks	−.33**	−.27**	−.34**
H5	Social interaction	→ (+)	Realized learning benefits	.60***	.52***	.55***

***$p \leq .001$, **$p \leq .01$, and *$p \leq .05$, are hypothesized paths one-tailed tests. Model 1 is a structural equation model with latent constructs with industry-adjusted indicator variables. Model 2 is a path model with industry-adjusted summated scales. Model 3 is a structural equation model with latent constructs without industry-adjusted indicator variables.

the use of safeguards and social interaction received strong support (β=−.28 at p<.01). Similarly, Hypothesis 4 predicting a negative relation between the use of safeguards and the realization of relationship risks received strong support (β=−.33 at p<.01). Finally, Hypothesis 5 predicting a positive relation between social interaction and realized learning benefits also received strong support (β=.60 at p<.001).

As a robustness test because of our limited sample size, we also estimated a path model using summated scales (means of the construct items) instead of latent variables. The results are presented in Model 2 in Table 5. All the coefficients were equally significant or more significant than coefficients in the structural equation model (Model 1) thereby providing further support for our hypotheses. As another robustness test, we tested the impact of the industry adjustment on our results. We reran the hypothesized structural equation model without the adjustment and obtained very similar results providing good support for all hypotheses (Model 3 in Table 5). To further enhance our confidence in the results, we ran additional regression analyses adding venture age and size as additional control variables in addition to controlling for industry. All results of our hypotheses were robust and remained significant at least at p<.05 level. Regarding age and size as control variables, there was just one instance of statistical significance: venture size had a positive effect on learning benefits.

Finally, to provide some additional evidence of the relevance of our dependent variables realized risks and realized learning benefits (in addition to prior research that has linked such measures to venture outcomes, e.g. Yli-Renko et al., 2001), we ran a regression analysis explaining the response to a statement "We are very happy about having this investor." In a regression analysis with robust standard errors, the realized risks had a negative significant coefficient −.26 significant at .01 level. Similarly in line with expectations, the coefficient of learning benefits was positive .50 and significant at .001 level.

6. Discussion

Recent research on CVC has focused attention on the possible tensions arising from the significant value of young and innovative ventures to established firms that might wish to invest via CVC operations (Maula and Murray, 2002). The risk of misappropriation of the IPR of the investee firm by its powerful corporate partners remains a real and present concern to entrepreneurs including our sampled TBNFs. Two recent large scale longitudinal studies using secondary data from several databases have shown that industry level variables (proxying for the resource needs, risks of misappropriation, and industry level safeguard factors) do significantly influence the young firm's choice of investors (Dushnitsky, 2004; Katila et al., 2008). However, given the reliance on secondary data and primarily industry level variables, these studies are limited in their treatment of entrepreneurial ventures and their relationships with their CVC investors. The owner-managers of TBNFs, as active decision makers and negotiators, also have several alternative choices as to how they might structure and manage their relationships with corporate investors. The choices made are dictated by the entrepreneurial venture's simultaneous need to extract strategic value from the relationship while still managing the risks of misappropriation of its key intellectual assets. Using primary data collected from CEOs of 91 CVC-backed companies, we were able to examine closely how CEOs of start-up companies balance the risks and rewards from collaboration with corporate investors. Developing the argumentation of the existing studies by Dushnitsky (2004) and Katila et al. (2008), we show that complementarity plays a key role in determining the investee firm's relationship with its CVC investor(s).

We conducted a unique analysis which allows us to demonstrate what happens after the choice of the investor has been made. Using the "sharks" analogy by Katila et al. (2008), we contribute to existing research that has so far only examined the question *when* do entrepreneurs decide to "swim with sharks." Our research adds to the existing literature by examining *how* entrepreneurs can *safely* swim with sharks when they have decided to undertake this potentially dangerous activity. Critically, our model offers the entrepreneurial venture ("the swimmer") advice on how not to get eaten once in the water.

In our study of relationships of entrepreneurial ventures with CVC investors, we find that complementarities between the investee firm and the parent company of the CVC investor have a positive influence on the social interaction between the investee firm and the CVC. On the other hand, a lack of complementarity (i.e., substitution) increases the use of relationship safeguards by the investee firm. However, the use of relationship safeguards while giving additional protection to the investee firm is not without costs: their use is negatively related to both realized relationship risks and social interaction. Social interaction is positively related to realized learning benefits. In other words, the social interaction that is needed for learning benefits to occur is limited by the use

of safeguards. In sum, although some problems from the lack of complementarity can be mitigated by adding safeguards, the use of safeguards reduces the potential benefits from the relationship. These findings are consistent with previous research in this area (Kale et al., 2000; Khanna et al., 1998).

Above all, what the model (and the shark analogy) indicates is that both parties to the dyad face a series of dynamic trade-offs. The prize (realized benefits) is the economic exploitation of complementarities for both the entrepreneurial venture's and the corporation's advantage. As such, complementarities are different for each party and importantly are specific to the relationship and the assets of the partners. The beneficial outcomes of complementarity are increased and realized through social interaction. But the smaller, younger partner needs safeguards and, in their employment, trust is diminished. This in turn also reduces social interaction and thus potential benefits. Yet, reducing safeguards also increases risks. The entrepreneurial venture and to a lesser extent the corporation both face trade-offs. However, for the young firm, conflict with a powerful CVC investor can be life threatening. The model does not seek to provide an optimal solution. Rather, its paths model the trade-offs and make specific the choices and their consequences. Risk tolerant entrepreneurial ventures may seek greater benefits by increasing social interaction at the 'cost' of lesser safeguards.

Our theoretical model has also highlighted the subtle but crucial distinction between complementarity and relatedness. Complementarity exists when the deployment of resources by one party enhances the marginal effectiveness of the resources of the other party. Many of the downside risks for TBNFs in CVC relationships are caused by potential or emergent *substitution* effects between the CVC investor and the portfolio firm. Whereas complementarities tend to enhance the dynamic that yields positive relationship outcomes, the potential for substitution may give rise to a learning race in which the young firm is likely not to be the winner. Our results show that the managers of TBNFs would be well advised to be mindful of the distinction between complementarity and substitution, and to seek CVC investors that can bring genuinely complementary resources to their collaboration.

Our conceptualization of complementarity based on the asset productivity (Bendersky, 2003; Milgrom and Roberts, 1992) is also important because it allows the tension between collaboration and control in inter-firm relationships to be addressed with greater subtlety. It appears that previous research has treated complementarities in a too simplistic fashion by defining complementarity and relatedness as opposite ends of the overlap continuum (Kale et al., 2000; Sapienza et al., 2004). While 100% of overlap in the businesses of two firms clearly indicates substitution (opposite of complementarity), a lack of anything in common between the two firms (0% overlap) does not seem to translate to maximum complementarity. Our findings also suggest that the role of complementarities are more complicated than hitherto recognized, as active interaction is required to bring complementarities to life (Bendersky, 2003).

Our research has highlighted the important effect of dyad-specific initial conditions on how the relationship dynamic unfolds between two disparate parties. Consistent with recent theorizing on complementarities (Bendersky, 2003), we have used a more nuanced definition of complementarity, one which emphasizes the need for resource interaction in the realization of synergy benefits. Given the important effect of complementarities on the structuring of inter-firm relationships highlighted in this research, our findings emphasize the need for a more precise theoretical treatment of resource complementarities in the generation of relationship outcomes. For example, in some situations, complementarities are clearly mechanistic in nature—as in the case of the complementarity between computer hardware and software providers where the value of one cannot be realized without the presence of the other (Katz and Shapiro, 1986). In other situations, the complementarity effect might be more synergistic in nature. For example, as in the case of a string quartet where the resultant quality of sound from the instruments played in unison creates a greater aesthetic experience. In yet other situations, the sheer mass of aligned technological inputs might be helpful in generating a momentum towards legitimating a given technological standard. Complementarities in such a situation can best be described as additive and cumulative (Conner, 1995). In each situation, the implications for the use of relational devices and safeguards will likely be different. Clearly, greater insight into the effects of different kinds of complementarities on relationship configuration and outcomes could be achieved by more detailed explorations of the effect of complementarity types on the optimal configuration of inter-firm relationships in learning alliances.

This study has also some inevitable limitations. First, it is focused solely on TBNFs founded in the USA primarily because of the small number of CVC backed ventures and the low availability of information outside the USA. It would be interesting to examine how CVCs work in other markets. Second, the present study focused on dyadic relationships between TBNFs and their most important CVC investors as measured by ownership share. In reality, CVC-backed TBNFs often have multiple investors. The focus on a single relationship is justified by the need to collect in-depth information concerning the relationship in order to address the research problem and, more generally, by the relative scarcity of in-depth studies focusing on relationship qualities. Yet, it is likely that multiple CVC investors will further influence the dyadic relationships (Maula and Murray, 2002). Several authors have argued for the need to focus on the characteristics of relationships with key constituencies in order to gain a richer understanding of the factors influencing the value and management of interorganizational relationships (Lane and Lubatkin, 1998; Stuart, 2000; Yli-Renko et al., 2001). However, examination of the wider network (although demanding and restricting the depth of research on specific dyads) could add to the understanding of the role of CVCs and other external parties on the performance of TBNFs. Third, in the examination of the relationships between the TBNFs and their most important CVC investors, the dyadic relationships were examined only from the entrepreneur's viewpoint. Although this perspective helps address an important gap in received research, simultaneous inclusion of the perspectives of both sides may prompt greater insights or at least provide additional factors to be considered. However, the practical implementation of such a study is difficult because of the inherent reduction in the sample size and the increase in time and costs (Mohr and Spekman, 1994; Yli-Renko et al., 2001). Fourth, this study employs perceptual measures to operationalize the key constructs. This strategy was intentionally chosen given the focus on the performance of the relationship with the largest CVC investor.

It would be difficult to infer the performance of this relationship from other sources than from the person(s) most knowledgeable of it. Finally, we have looked at complementarities as an undifferentiated set. A more fine-grained analysis of the effects of different types of complementarities in interorganizational relationships could be a fruitful avenue for future research.

7. Conclusion

This empirical study of the CVC–investee firm dyad seeks to understand the nature of the process of value added stemming from complementarities. Unlike the majority of strategic literature dealing with CVC activity, it takes as its primary perspective the interests of the technology based new firm collaborator. To our knowledge, the present paper is the first to develop and empirically validate a model of how entrepreneurial young firms manage the risk and rewards from CVC investments. An understanding of the differing implications of complementarity and relatedness is central to our analysis. It places greater salience on the risks incurred by the entrepreneurial young firm and the trade-offs than need to be managed in order to realize the potential benefits of complementarity than has commonly been acknowledged by researchers. Social interaction positively mediates the realization of learning benefits arising from complementarities. Safeguards reduce realized risk but at the cost of lower social interaction and thus realized benefits. The process is both more complex and more nuanced that previous researchers have indicated. We hope the paper will inspire further research into the structuring and management of investor relationships by owners and managers of entrepreneurial ventures. Given the many demanding and as yet unresolved organizational challenges of CVC, such research will have material and immediate value in both commercial and academic application.

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