CORPORATE VENTURE UNIT STRUCTURE, PRACTICES AND PERFORMANCE:
ADOPTION OF VENTURE CAPITAL MODELS TO THE CORPORATE CONTEXT

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Abstract

In this study we develop a model of corporate venture (CV) unit performance based on the selective adoption of the venture capital (VC) model to the corporate context. A longitudinal survey of 95 CV units across 3 continents (North America, Europe and South East Asia) provided mixed empirical support for the assertion. Higher performance was associated with increased levels of communication with the VC community, and with greater autonomy vis-à-vis the other business units and management of the parent company. However, the use of carried interest compensation, and the syndication of deals did not have any effect on performance. Differences were found between the predictors of strategic and financial dimensions of CV unit performance. We also showed that the relationship between VC practices and CV unit survival was partially mediated by venture unit performance. Implications for theory and practice are discussed.
INTRODUCTION

Corporate venturing (CV) is a well-established approach to new business development in large corporations that has attracted considerable research attention over the years (e.g. Block & MacMillan, 1993; Burgelman, 1984; Chesborough, 2000; Kanter, 1985; Sykes, 1990). The term refers to the practice of establishing a separate “corporate venture unit” controlled by the firm with the purpose of investing in and developing new business opportunities for financial and/or strategic gain (Birkinshaw, 1997; Block & MacMillan, 1993). Current estimates suggest that more than 200 large corporations are active in corporate venturing; 500+ participating corporations and investments in excess of $20 billion occurred in 2000 (Maula & Murray, 2002).

The track record of corporate venturing is, however, rather mixed. Gompers and Lerner (1999) identified three major “waves” of greater activity. Each period of decline is typically caused by a combination of external market factors, changes in corporate strategy, and indifferent venture unit performance (Valikangas & Burgelman, 2004). The academic literature has described both successful (Kanter, 1985) and unsuccessful (Chesbrough, 2000) corporate venturing cases, and various attempts have been made to identify key elements of success (Block & MacMillan, 1993; Siegel, Siegel, & MacMillan, 1988), though without conclusive results.

A relatively recent advance in the way corporate venture units are structured and managed is the adoption of practices from the world of venture capital. Since the mid-1990s, corporations have to varying degrees emulated the practices of VC firms, including the creation of a separate governance structure, syndication of investments, and the use of high-powered equity incentives for venture unit managers. This approach has been advocated widely in the business press (Brody & Ehrlich, 1998; Donahoe, Schefter, & Harding, 2001) and has been highlighted by a number of
prominent examples including Lucent’s New Venture Group, Xerox Technology Ventures and Intel Capital (Chesbrough, 2000).

The attraction of this “VC model” to corporate venturing is twofold: (1) it appears to address many of the managerial challenges associated with establishing and developing new business opportunities, and (2) it is demonstrably successful for VC firms, with long-run rates of return far in excess of the S&P 500 (Burgel, 2000). Yet, there are obvious risks and limitations to this approach. In broad terms, the transfer of practices from one context to another is risky, because their effectiveness may depend on aspects of the original context that are not present in the new context (Huber, 1990; Levitt & March, 1988; Szulanski, 1996). More specifically, there are several notable differences between the objectives of a venture capital firm and a corporate venturing unit, the most obvious being that VC firms are concerned exclusively with maximising financial performance to professional investors whereas CV units typically have to accommodate both financial and strategic objectives for a heterogeneous range of stakeholders.

In this paper, we build on the insights offered by the practices of VC firms in order to develop a general model of CV unit performance. The primary research question is: What (if any) structural and managerial factors are associated with corporate venture unit success? We develop our model by adapting the economic arguments concerning the structure and practices of VC firms to the corporate context. We end up with a hybrid model of corporate venture unit performance that has roots in both the economics and strategic management literatures. This model is then tested using data collected from 95 venture units in the period 2001-3.

The paper’s contribution is twofold. It provides the first systematic analysis of the internal factors affecting corporate venture unit performance in the current wave of venturing activity post 1996. This analysis is based on both primary data including a substantial survey instrument as well employing secondary sources of industry data. Other large-sample studies have been reliant
on Venture Economics data and have thus been unable to explore specific aspects of internal structure and management; or they have focused on single or multiple case studies thereby reducing the ability to draw any general inferences to the larger population of venture units. Second, by synthesizing and integrating theoretical arguments from the fields of economics and strategic management, we develop a new conceptual model of the corporate venture unit which we link to both cross-sectional and longitudinal performance.

**BACKGROUND LITERATURE**

**Corporate Venturing**

A corporate venture unit is a separate entity (separate in an organizational sense, although rarely from a legal perspective) controlled by the parent firm for the purpose of investing in and developing new business opportunities for financial and/or strategic gain (Birkinshaw, 1997; Block & MacMillan, 1993). Such units may engage in a variety of speculative forms of non-core investment from making small investments in independent start-ups, to incubating internal business ideas, to spinning out businesses. A common distinction made in the literature is between “externally directed” corporate venture units (also called corporate venture capital or CVC) that invest in independent start-up and early-stage companies and “internally directed” corporate venture (ICV) units that focus on new opportunities within the existing boundaries of the firm (Sharma & Chrisman, 1999). Both types are included in our definition. The objectives of corporate venture units may vary considerably, although they typically include both strategic and financial dimensions (Chesbrough, 2002; Gompers & Lerner, 1998; Siegel et al., 1988).

The first two waves of corporate venturing (the first in the late 1960s, the second in the mid 1980s) were directed primarily towards internal business opportunities, and research
accordingly focused on issues of internal management processes and strategic fit with the parent company (e.g. Block & MacMillan, 1993; Burgelman, 1984; Fast, 1978; Kanter, 1985). The third wave of corporate venturing, which began in the mid 1990s and dropped off precipitately in 2001, saw an increase in the relative importance of external venturing, as well as a proliferation of different structures and approaches (Campbell, Birkinshaw, Morrison, & Batenburg, 2003; Chesbrough, 2002). This shift was driven at least in part by the application of practices from the world of venture capital, which had become highly visible and successful during the mid 1990s (Gompers & Lerner, 1998). To make sense of this trend, it is necessary first to describe the characteristics of the typical venture capital firm (hereafter the “VC model”).

**Practices of Venture Capital Firms**

The dominant organizational form used by independent Venture Capital firms in the organized private equity market is the Limited Liability Partnership (LLP) (Fenn, Liang & Prowse, 1995). Hellmann and Puri (2000:968) described venture capitalists as “professional investors who specialize in the financing of young private companies”. The process of venture capital investment is cyclical, whereby VC partners: initially raise a venture fund; then proceed to invest in and to monitor their portfolio of venture firms; thereafter to exit successful deals and to return capital to the limited partners; and ultimately renew the fund through the raising of additional funds (Gompers & Lerner, 1999) usually on a three to four year rotation.

The organizational form of VC firms has received a great deal of attention, primarily in the corporate finance and financial economics literatures (Barry, 1994; Wright & Robbie, 1998). In essence, VCs are structured as partnerships in which institutional investors are limited partners and professional private equity managers are general partners. The structure provides substantial autonomy to the general partners over investment decisions (Fenn et al., 1995). The potential for
misaligned principal-agent incentives that this arrangement may otherwise create is countered through (1) the comprehensive provisions of the partnership agreement, (2) the pre-determined, finite time period of the fund, typically of ten years (which necessitates that managers have a favourable track record in order to raise new funds), and (3) the high component of equity-based compensation of the general partners (Fenn et al., 1995; Sahlman, 1990). This structure provides the context for practices thought to benefit portfolio companies (Hellmann & Puri, 2000:960): “mentoring, strategic advice, monitoring, certification to outside stakeholders, corporate governance, professionalization of the company, and recruitment of senior management”.

**Adoption of the VC Model by Corporate Venture Units**

While the VC model has proven attractive to CV units, its application to a corporate context creates some challenges. First, there is no consistent definition of the critical and transferable elements of the VC model. Thus far, the VC model has been discussed primarily in what Hellmann and Puri (2000:960) term “a largely informal literature [that] discusses the benefits and costs of venture capital financing” (emphasis added). Consequently, it is difficult to draw robust conclusions about whether elements of a VC-like approach to investment practice actually influence CV unit performance. For example, Zider (1998: 132) states that “Although the collective imagination romanticizes the industry, separating the popular myths from the current realities is crucial to understanding how this important piece of the U.S. economy operates.”

A second challenge in applying the VC model to corporate venturing is the fact that relatively little of a systematic nature is known about the determinants of successful CV unit performance. The handful of relevant historical studies on CV unit performance (e.g. Fast, 1978; Rind, 1981; Sykes, 1990; Siegel et al., 1988) employed small samples, seldom used consistent definitions of corporate venturing activities, and used self-reported performance measures almost exclusively.
More focused evaluations of the appropriateness of the VC model to corporate venturing have used case studies, or have cited CV units either employing elements of the VC model or not doing so (e.g. Brody & Ehrlich, 1998; Chesbrough, 2000; Donahoe et al., 2001; Sears, 2001).

More recently there has been a surge in large-sample research examining the strategic outcomes (e.g. organizational learning, innovation, and recognition of technological opportunities) of CVC units (e.g. Dushnitsky & Lenox, 2002; Maula, Keil, & Zahra, 2003; Schildt, Maula, & Keil, forthcoming). This research suggests that many strategic benefits may accrue to companies with external venturing arms. It does not, unfortunately, cast much light on the role of organizational structures and practices in achieving such outcomes. Similarly, large-scale studies into the returns of portfolio firms conducted by Gompers and Lerner (1998) and Maula (2001; Maula & Murray, 2002) suggest that both independent VC firms and external CV units contribute significantly to adding value to portfolio firms, but do not examine the role of internal organizational structures and practices therein.

So, while attractive in principle, the applicability of the VC model to CV units remains open to careful theoretical and empirical analysis. This provides the motivation for the current paper.

THEORY AND HYPOTHESES

In this section we build a model of corporate venture unit performance by applying the insights gained from the venture capital industry about how to structure and manage new ventures. The fundamental proposition is that the greater the extent to which a corporate venture unit adopts the structures and practices of the “typical” (LLP) VC firm, the better its performance will be relative to that of other CV units. As we develop specific hypotheses from this proposition, we incorporate relevant insights from the strategic management literature, relating to, for example,
the strategic relatedness of venture activities, the nature of the relationship with the parent company, and equity considerations in compensation systems.

The model has three elements. First is an autonomous governance structure, defined in terms of the separation of the day-to-day management of the venture unit from its owners. The second is the use of high-powered financial incentives to align the interests of the unit managers, the owners, and the entrepreneurs (i.e. the individuals in charge of the young businesses in the CV unit’s portfolio). The third is engagement with the VC community as a means of gaining access to deal flow, new business ideas and potential co-investors, and as a means of increasing the learning, legitimacy and visibility of the venture unit. Each of these elements is seen as necessary but not sufficient for the CV unit to be successful. For example, a venture unit with access to a good deal flow is still likely to fail if its investment decisions are continuously being second-guessed by executives in the parent company. Equally, an effective governance model coupled with good deal flow could still result in failure if the interests of the managers running the venture unit are not aligned with those of their parent company.

As already noted, it is highly unlikely that “blind” replication of the VC model will be successful. Venture units are different from VCs by definition in that they are created and controlled by a large firm. As such, they have certain obligations (e.g. investing in areas that are of strategic value to the firm) and constraints on their activities (e.g. rewarding employees on the firm’s traditional pay scale) that independent VCs are not subject to. CV units are also likely to experience a somewhat different set of conflicts with portfolio firms and co-investors than do independent venture capitalists (Hellmann & Puri, 2000; Lerner, 1994). Furthermore, CV units vary significantly on a number of other dimensions, most notably their objectives and their organizational arrangements (Chesbrough, 2002; Campbell et al., 2003). It would therefore be unduly simplistic and probably inappropriate for CV units to adopt all elements of the VC model.
Our argument, instead, is for the selective adoption of the VC model. As we describe below, certain VC practices can be applied very effectively to specific types of CV units, whilst others are probably inappropriate. The hypotheses that follow are shown graphically in Figure 1.

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**Autonomous Governance Structure**

The VC governance form includes the creation of a specific fund of money invested by a number of independent investors who, as a result of their limited liability status, are legally prevented from active involvement in the affairs of the fund. Consequently, the general partners are free to apply their expertise in investing this money without any direct intervention by the limited partners. As a consequence, VCs are able to respond quickly to investment opportunities in an often highly competitive environment (Brody & Ehrlich, 1998).

The application of the VC governance system to CV units would imply that such units are authorised to act independently on day-to-day investment and management decisions, with high autonomy from both corporate parent executives to whom the unit reports (“vertical” autonomy) and from members of the corporate parent’s other divisions (“horizontal” autonomy). An autonomous governance structure provides a mechanism for venture unit managers to manage the tensions and conflict of interests between themselves and their corporate parent. These include the venture’s need for long-term support *versus* the parent’s need for short-term results; the need for freedom *versus* the need for control, and the propensity towards risk taking *versus* the corporation’s tendency towards risk aversion (Simon, Houghton, & Gurney, 1999:146). Also, disruptive technologies and radical innovations typically rate very poorly on traditional performance metrics (Christensen, 1997). These tendencies will compromise the ability of the
venture unit managers to perform effectively in an entrepreneurial domain unless CV unit governance structures provide them with the requisite levels of protection and independence.

Nevertheless, empirical data suggests that CV units have traditionally experienced rather limited autonomy over their decision-making (Brody & Ehrlich, 1998; Siegel et al., 1988). In order to enable operational effectiveness, some scholars have emphasised separation of the venture unit (Christensen, 1997; Drucker, 1985; Galbraith, 1982; Kanter, 1985), some have argued for closer linkages to the parent (Buckland, Hatcher, & Birkinshaw, 2003; Hamel, 2001), and others have focused on contingencies on which the level of separation depends (Burgelman, 1984; Chesbrough, 2002). Part of the reason for these different points of view appears to be the lack of consistency over level of analysis. Some individual ventures may require a high level of separation, while others may need to be more closely integrated with the activities of the parent company. We argue, therefore, that an autonomous governance structure provides venture unit managers with the freedom to decide on the appropriate level of integration on a venture-by-venture basis within their portfolio, thereby allowing the unit itself to take into account relevant contingencies (e.g. the strategic relatedness of investments).

This governance model suggests two specific hypotheses for corporate venture units, one concerning the level of corporate HQ involvement in the venture unit’s decision-making process (i.e. its vertical autonomy), the other concerning the level of involvement from the company’s business units in the decision-making process (its horizontal autonomy):

*Hypothesis 1. The greater the autonomy of a CV unit over investment decisions, the higher the performance of the unit.*

*Hypothesis 2. The lesser the involvement of parent company business units in CV unit decision-making, the higher the performance of the unit.*
High Powered Financial Incentives

An important task for venture units is to establish appropriate incentives to ensure alignment between venture unit staff and parent company managers. Again it is worth reviewing the VC approach to incentives in order to establish whether it provides a useful model for CV units.

The investment performance of general partners in VC funds is rewarded primarily through a carried interest in the equity of the fund’s portfolio firms. Carried interest refers to the practice whereby the general partners are rewarded (after achieving a minimum performance ‘hurdle’) with a fixed proportion of the total capital gain created by their investment activities: this figure is usually 20%. The logic behind the use of equity-linked incentives in VC firms is based on agency theory (Jensen & Meckling, 1976), and more specifically on the argument that principal-agent conflict can be mitigated through incentive alignment between the general partners, the limited partners and the entrepreneurs (Fenn et. al., 1995; Gompers & Lerner, 1998; Lerner, 2001; Sahlman, 1990). The awarding of substantial equity-linked incentives to the general partners – along with the finite life-span of the fund - is thought to help counter investment decisions that would unnecessarily raise the risk of the portfolio or result in slovenly management of the fund. High-powered incentives have also been thought to introduce a high degree of clarity of focus to VC activities, enabling investments decisions to be taken relatively smoothly in VC firms (Brody & Ehrlich, 1998). Another argument for such incentives is that, in order to attract highly skilled investment professionals away from alternative employment of their skills, substantial up-side financial rewards need to be offered (Lerner, 2001; Sykes, 1992).

CV units have traditionally applied similar reward systems to their venture professionals as to the rest of the corporation (Block & Ornati, 1987; Lerner, 2001; Siegel et al., 1988; Sykes, 1992). That is, all business units (including venture units) are compensated following the standard compensation practices of the parent. As a result, venture unit staff typically receive a
base salary supplemented by (in some instances) capped bonuses based on the performance of the VC unit’s ventures. The principle driving standardized compensation systems is that of equality which “makes administration simpler, causes less discontinuity in the transfer of personnel from one job to another, and it promotes fairness” (Sykes, 1992:262). Internal rather than external equity considerations thus tend to drive CV unit compensation systems.

Many advocates of the VC model presume that, were CV units to adopt VC-like incentive systems, the performance benefits of (1) interest alignment, (2) focus on value, and (3) improved attraction and retention of skilled investment professionals, would accrue to such venture units. Additionally, it is asserted that CV units employing equity-based (or similar) incentive systems would become more attractive as potential investment partners to VC firms as these systems act as signifiers of reasonable goal alignment between themselves and the CV units (Breyer & Golden, 2001; Lerner, 2001; Sears, 2001).

It is questionable, however, whether VC-like incentive systems can be satisfactorily applied to CV units (Block & Ornati, 1987; Block & MacMillan, 1993; Brody & Ehrlich, 1998; Gompers & Lerner, 1998). In addition to corporations’ preferences for standardized compensation systems, a number of further arguments against the use of high-powered financial incentives in corporate venture contexts have been raised by researchers. Firstly, it is more difficult to attribute results to specific individuals or to specific teams within a corporate business context (compared to VC firms) given that staffing responsibilities change frequently (Block & MacMillan, 1993; Brody & Ehrlich, 1998) and a multitude of corporate parent decisions may affect the direction and survival of a corporate venture unit (Sykes, 1992). Secondly, the impact of carried interest systems on behaviour in CV contexts is likely to be attenuated as, unlike the partners of a VC firm who are required to contribute a proportion of their own wealth to the fund, the financial risks incurred by CV managers do not result in the loss of personal assets. In effect, corporate venture managers
are hazarding corporate rather than any personal assets in their investment activities. Thirdly, individuals who engage in corporate venturing may weight security of employment against the riskiness of financial returns differently to VC general partners (Rumelt, 1987). Lastly, and perhaps most critically, focusing on financial return may also encourage moral hazard, reducing attention paid to the strategic value of investments.

In combination, these factors suggest that the VC incentive model may be less efficacious in the corporate venturing context than within its original independent venturing context. Accordingly, we do not expect the wholesale adoption of high-powered financial incentives to work in the area of corporate venturing. Instead, we see these incentives as appropriate in a subset of cases - specifically, where the unit’s goals are predominantly financial. Conversely, those units that focus predominantly on strategic objectives are likely to find such incentives harmful. Stated more formally, we expect that a unit’s emphasis on financial goals will moderate the relationship between the use of carried interest compensation and venture unit performance:

Hypothesis 3. The greater the focus on financial goals in the CV unit, the greater the impact of equity-based compensation on the performance of the unit.

Engagement with the VC Community

The third element of the CV model that we examine is the corporate venture unit’s engagement with the VC community. As before, our logic is that specific VC ways of working have proven to be highly effective in identifying and generating value from new ventures, and that, with careful consideration, these may selectively be appropriate for adoption by CV units.

A key practice to consider is the syndication of investments amongst VCs. Syndication is the practice whereby a lead VC investor invites other VCs and associated professional investors (such as corporations and institutional limited partners) to co-invest in a portfolio company. New
and different co-investors may become involved in successive rounds of finance up until the time of a market exit for the investment. Syndication of investment opportunities between members of the VC community is commonplace, and syndication with central players has been demonstrated to improve VC firm returns (for a review, see Wilson, Maula, & Keil, 2004).

Syndication serves a number of functions for VC firms (Lerner, 1994; Manigart et al., 2004; Wright & Lockett, 2003). By tapping into multiple sources of expertise VC syndicates may make better decisions on which firms to invest in. And by pooling their skills, knowledge and reputational assets, they can add more value to portfolio firms, particularly to those that exit via IPO (Gompers & Lerner, 1999; Lerner, 1994; Manigart et al., 2004). Additionally, reciprocal syndication allows VC firms to be exposed to more investment opportunities (“deal flow”) than would otherwise be the case (Lerner, 1994; Wilson et al., 2004). Syndication also enables risk sharing through increased portfolio diversification (Brody & Ehrlich, 1998).

How appropriate is the VC model of syndication to corporate venture units? We consider here two ways in which it may apply. The first is direct replication of the model, that is: participation by the CV unit in syndicated deals with VCs. The second is frequent communication with members of the VC community, which enables the CV unit to gain some of the above benefits but without the same level of participation or reciprocal commitment.

Consider first the case of CV units actively investing in syndicated deals. The benefits to CV units are likely to be very similar to those experienced by the independent VC, namely enhanced deal flow, improved venture selection, increased value-added in portfolio companies and improved exit outcomes. Additionally, involvement in such a community of investors may provide the CV unit with the opportunity to search more distant knowledge domains with reduced transaction costs (Ahuja & Lampert, 2001; March & Simon, 1958; Martin & Mitchell, 1998). Moreover, there is evidence that CVC and independent VC organizations contribute
complementary forms of value-added to portfolio firms, resulting in enhanced benefits to all parties (Maula, 2001; Maula & Murray, 2002).

There are, however, certain costs associated with participating in syndicated investments for the CV unit. The primary cost is a loss of flexibility and control over the venture, because decisions about further rounds of investment and exit/sale have to be made by the entire syndicate. A related problem is the potential conflict of interest faced by the CV unit in how it handles the development of its portfolio companies: what is good for its syndication partners is not necessarily the same as what is good for the CV unit’s corporate parent. And for their part, experienced VC firms are highly selective about which corporate partners they will work with. Unless there are real benefits to partnering with a corporation (e.g. enhanced deal flow, access to specialist due diligence, added value to portfolio companies, reputational effects), VCs would typically prefer to avoid the complications it brings (Breyer & Golden, 2001).

In sum, the practice of syndication is not without challenges, but to the extent that the CV unit is comfortable with working with other co-investors, its benefits can be substantial and multi-faceted. Stated more formally:

_Hypothesis 4. The more frequently a CV unit engages in deal syndication with external partners, the higher the performance of the unit._

The second approach to engaging with the VC community is to build relationships with VCs and to participate in a range of other activities, such as sharing investment proposals, subcontracting due diligence work, and discussing industry trends and opportunities. This approach involves a lower level of commitment on the part of the CV unit, but it may also provide multiple benefits to CV units. It may generate opportunities for CV units to build relationships with companies in which they may wish to invest. It may also create greater awareness of the capabilities required to
be an effective venture capitalist. By participating in the VC network, the CV unit may also establish its own legitimacy as an investor to the VC community. This may similarly enhance its standing within the parent company organization.

In order to create ongoing relationships of this type there must be benefits to the VCs with whom the CV unit seeks to partner and network. The benefits can be purely transactional – for example one CV unit working in the consumer goods sector paid its VC partner to conduct due diligence on the opportunities it was considering investing in. But a stronger relationship is likely to emerge through reciprocity – the belief on the part of the VC that it can also benefit from its relationship with a corporate VC unit. One European telecom company, for example, had little difficulty in developing relationships with a number of VCs in Silicon Valley on the basis of its well-known brand and its leading-edge technological capabilities. However, in order to establish its longer-term legitimacy, and to get access to “deal flow”, this company ended up committing some investment funds to VC firms and making occasional syndicated investments.

Critically, to become a fully-fledged member of the VC community, the CV unit has to take part in the practices of that community, foremost among these being the participation in syndicated deals. However, there are costs to syndication as noted above, and for many CV units the need for full ownership of its investments is paramount. In such cases, a more marginal form of participation in the VC community is still relatively easy to arrange, and it offers valuable learning and legitimacy benefits with few obvious costs. This suggests the following hypothesis:

Hypothesis 5. The greater the level of communication with players in the VC community by the CV unit, the higher the performance of the unit.
Adoption of VC Model, Unit Performance and Survival

The final hypothesis is concerned with the longitudinal performance of CV units, which we assess in terms of their survival over a three-year period. It is well-established in the literature that CV units do not typically survive very long. As observed earlier, there have been three distinct waves of corporate venturing activity (Gompers & Lerner, 1998, 2001) since the late 1960s, and there exist only a handful of cases that have spanned more than one wave. The reasons for this high failure rate have frequently been discussed, though typically without detailed supporting evidence. Reasons put forward include changed economic conditions (Gompers & Lerner, 1998), loss of political will in the parent company (Fast, 1978), and downturns in company performance and company strategic re-orientations (Simon et al., 1999; Sykes, 1992). In all, the impression created by the extant literature is of CV units as fairly fragile entities, subject to many economic and organizational forces beyond their control.

The arguments developed so far suggest that those corporate venture units adopting the VC model will achieve a higher performance level than those that do not. This will likely increase their credibility with parent company executives who have to justify their continued investment in corporate venturing over other activities, and it will typically increase their likelihood of survival (Gompers & Lerner, 1998; Sykes 1990). However, even with excellent results, CV units do not always survive, because many of the other factors affecting survival are independent of the performance of the CV unit. This means that, while we would expect venture unit performance to mediate the relationship between adoption of the VC model and venture unit survival, mediation will only be partial. Accordingly, it is proposed that:

*Hypothesis 6. Venture unit performance partially mediates the relationship between the adoption of elements of the VC model by a CV unit, and unit survival.*
METHODOLOGY

Sample and Research Design

The research consisted of three main phases. The first phase, in mid-2001, comprised exploratory interviews with approximately 50 individuals in 40 corporate venturing units to make sense of the current practices in corporate venturing, and to ascertain the prevailing structures of corporate venture units, and the factors perceived to influence corporate venturing success.

Building on these insights, the second phase (late 2001) of the research consisted of surveying managers of corporate venturing units. The sampling frame consisted of corporate venturing units listed in the Corporate Venturing Directory and Yearbook 2001 or in Venture Economics (a public database of private equity investments). A number of additional venture units with which the researchers were familiar were also included in the sampling frame. Together these sources yielded 447 potential respondents to whom mail surveys were distributed. Follow-up calls and further investigation found 120 (27%) corporate venturing units to be inactive, resulting in a potential pool of 327 corporate venture unit respondents. Responses were received from 95 units: an eventual response rate of 29% from the pool of 327 active CV units.

Respondents and non-respondents were compared along a number of indices for which comparative data was available for the two groups. ANOVAs and cross-tabs, conducted to test for systematic differences between respondent and non-respondent CV units, did not indicate any significant differences along age of unit, monetary budget allocated to unit, average annual number of investments made by unit, number of employees per unit, or unit preference for 17 types of funding choice (e.g. start-up funding, first stage funding, second stage funding, and so on). Significant differences were only found for the headquarter location of CV units and their relative preference for seed funding. Specifically, the proportion of European respondents was
somewhat higher than expected, whilst fewer than expected responses were received from North American CV units ($\chi^2 = 39.563, p = .000$); the proportion of respondents who expressed a preference for seed funding was higher than that amongst non-respondents ($\chi^2 = 6.695, p = .010$). Overall, these analyses suggested that respondents were not substantively different from non-responding units in our sampling frame (that is, listed in the Corporate Venturing Directory and Yearbook 2001 or in Venture Economics).

The third phase took place in late 2003. Follow-up phone calls were made to the managers of all the CV units that had participated in the mail survey. Respondents were asked whether the corporate venturing unit for which they had completed the questionnaire was still active. If the CV unit was no longer active, respondents were asked to recall the month and year in which the unit ceased operations. Of the 95 CV units in the original questionnaire sample, we were able to speak with a person from 81 of the units (85% of the sample). Of those, 18 units (23%) were found to have closed down subsequent to the survey, while the remaining 63 (77%) were still active in one form or another.

The majority of the measures are derived from the mail survey. As no other studies (to the best of our knowledge) have examined the replication of VC structures and practices in CV contexts, the measures were developed by the researchers, drawing on prior literature where possible, as well as constructs emerging from the exploratory interviews. All multi-item scales were found (via orthogonal rotated factor analyses) to be uni-dimensional, and to demonstrate moderate to excellent levels of internal consistency (with Cronbach alphas from .69 to .88).

Common Method Bias

To guard against common-method bias, we took a number of precautions. First, we supplemented our subjective data on unit performance (gathered in self-reported, perceptual form as venture
units are typically reluctant to provide “hard” performance data) with Venture Economics data on CV unit investment history, where such data was available (for 71 CV units). This secondary data validated survey responses regarding the investment history of the venture units\(^2\). Second, the data on venture unit survival was collected two years after all other data, so the responses we received were unlikely to be influenced by the earlier round of data collection. Finally, our somewhat different patterns of findings for the strategic and financial performance regression models also bears out the conclusion that common method bias did not pose a significant threat to the survey data.

**Dependent Variables**

*Strategic value.* A seven-item scale (α = .80) examined the perceived strategic value delivered by the unit, including the creation of “options” on new technologies (Chesbrough, 2000, 2002; Maula et al., 2003) and raising awareness – both inside the parent company and externally – of venturing activities conducted by the company.

Respondents were asked to indicate how well the venture unit had delivered on the following objectives (responding to each item on a 5-point scale where 1 = “below expectation”, 3 = “equal to expectation” and 5 = “above expectation”): (1) creation of new companies that increase demand for our products or technology; (2) window on emerging technologies; (3) Increased visibility/ awareness of corporation; (4) creation of options on emerging technologies; (5) increased recognition in rest of corporation of the importance of new business development; (6) creation of spinout companies; and (7) search for next core business for the corporation.

*Financial performance.* This measure examined perceptions of how well the unit had delivered on three key financial objectives identified within the exploratory interviews. As per the Strategic Value measure, respondents indicated how well their venture unit had delivered on
particular objectives (on the same 5-point Likert scale), namely: (1) financial return to the corporation (e.g. IRR); (2) contribution to top-line growth; and (3) increased valuation of corporate stock (a = .72).

**Survival status.** This categorical measure recorded whether CV representatives classified their units as “active” or “inactive” in the telephone survey (late 2003).

**Independent Variables**

**Autonomy (“vertical autonomy”).** The measure for autonomy assessed the extent to which CV managers (or other parties, such as members of the corporate board or parent company executives) were responsible for making 10 types of investment decisions.

Respondents were requested to indicate the extent to which they or other parties were responsible for making decisions on the investment activities of the corporate venture unit. The items were arrived at on the basis of prior studies and the investment activities reported by corporate venture unit managers during the semi-structured interviews. The mean value of responses to 10 items (reverse scored) was calculated. Higher scores indicate that more investment decisions are taken by the venture unit managers themselves (a = .88).

**Business unit decision involvement (“horizontal autonomy”).** Business unit decision involvement examined how extensively business units within the parent company were involved in decision-making on the venture unit’s investments. Three items identified possible arenas for CV unit decision involvement with business units: (1) working collaboratively on the business venture; (2) obtaining business unit approval for investments; and (3) structuring internal ownership of ventures. CV managers were posed the following question for each arena: “If a potential business venture is in the domain of an existing business unit, to what extent do you do
the following?” Higher scores indicate that other business units are more involved in the decisions of the venture unit (a = .69).

**Carried interest.** The extent to which the high-powered incentives characteristic of the VC compensation model for general partners were replicated within CV units was examined through an item asking managers how frequently they used carried interest in portfolio businesses to reward and incentivize venture unit managers. Response options were: 1 = “never”, 2 = “only in exceptional cases”, 3 = “occasionally”, 4 = “frequently”, and 5 = “almost always”.

**Financial emphasis.** This measure sought to differentiate those venture units that focus little on financial objectives from those venture units that focus extensively on financial objectives. The measure is calculated from a weighted mean of 3 items (weighted as a result of the items incorporating two response formats).

The first item of this measure asked respondents to answer “how important is the objective of financial return to the corporation?” along a response scale of 1 to 3 where: 1 = “not at all”, 2 = “minor importance”, and 3 = “major importance”. The second and third items followed a different format. They asked: “How do you measure the performance of your venturing unit?” Respondents had to answer this question in respect of (1) internal rate of return (IRR), and (2) financial gain of portfolio companies. Responses were recorded along a 5-point Likert scale, anchored on the left-hand side by 1 (“not at all”) and on the right by 7 (“to a great extent”). Higher scores indicate that a venture unit focuses more on financial objectives (a = .75).

**VC communication.** VC communication assessed the extent to which a CV unit maintained links with the VC sector, asking how frequently venture unit managers (or other members of the unit) communicated with members of the VC community.

Respondents were asked how frequently they (or other members of the venture unit) communicated with parties – namely, partner VC companies, other companies or individuals in
the VC community, and CV units in other companies - associated with the VC sector. The mean score per unit on 3 items was calculated, with a higher score indicating more frequent communication by the venture unit with the VC community (a = .82).

**Deal syndication.** The extent to which a venture unit engaged in the syndication of deals as a regular practice was examined through two questions asking (a) the percentage of equity held by the unit in a “typical” investment project, and (b) the number of other equity partners (including VCs and other companies) in a typical investment project. The mean of responses to the 2 items constituted the measure (a = .79).

**Control Variables**

*Age of unit.* Age of unit (in years) acted as a proxy for the impact of learning and experience effects on venture unit performance. Additionally, age was controlled to isolate history effects whereby more recently established units may have been more likely to have emulated elements of the VC model.

*Region.* A dummy variable was used to distinguish CV units that were headquartered in the United States from those that were headquartered elsewhere. This variable acknowledged the predominance of both VC and CV activity in the US, and recognized the possibility of international differences in CV unit structures and practices.

*Internal orientation.* The internal orientation measure controlled for the relative emphasis placed by a venture unit on internally-generated investments (versus investments in independent start-ups) in case this factor exerted a main effect on venture unit performance.

Responses to 3 items were averaged, namely: (1) “we invest in internally-generated business ideas to promote organic growth”; (2) “we invest in internally-generated business ideas with a view to spinning them out as separate businesses”; and (3) “we invest in internally-
generated business ideas to leverage under-utilised corporate assets (e.g. intellectual property)”. The response options were (on a scale of 1 to 5): 1 = “never”, 2 = “only in exceptional cases”, 3 = “occasionally”, 4 = “frequently”, and 5 = “almost always” (a = .73).

Data Analysis

Ordinary least squares regression and logistic regression were used to test the hypotheses. To reduce the potential impact of multicollinearity, all non-categorical independent and control variables were centred. VIF indices were all well below 3.00 (a common threshold for variance inflation), indicating that multicollinearity was not of significant concern to the analyses.

FINDINGS

Table 1 presents the descriptive statistics and first-order correlations for the dependent, independent and control variables. It is worth noting from the table that many corporate venturing units have only been in existence for a few years (mean of approximately four-and-a-half years and standard deviation of just over five years).

The first set of hypotheses (H1 to H5) specifies direct relationships between the adoption of VC structures and practices, and venture unit performance. Tables 2 and 3 present the results of the OLS regression of strategic value on the independent and control variables, and financial performance regressed on the same variables, respectively. Before discussing the findings of the tests on the hypothesized relationships, two comments on the control variables follow. Firstly, the full strategic value model (model 7, Table 2) demonstrates that the only control variable significantly influencing the strategic value delivered by CV units is - internal orientation. The
more internally-oriented CV units were perceived by CV unit managers to have delivered greater strategic value to their parent companies ($\beta = .167, p = .014$). The age of the CV unit and the region in which it was head-quartered did not significantly impact perceived strategic value. Secondly, in respect of financial performance, the only control variable to demonstrate a significant impact thereon (in the full model; model 7, Table 3) was the age of the unit. Older CV units were associated with better financial performance ($\beta = .030, p = .038$).

Hypothesis 1 posited a positive relationship between vertical autonomy and venture unit performance. This hypothesis received strong support in the financial performance model ($\beta = .361, p = .032$ in the full model), but the relationship between the variables did not attain significance in the strategic value model ($\beta = .019, p = .876$ in the full model). Hypothesis 1 is thus partially supported. Hypothesis 2 posited a negative relationship between business unit involvement in the decisions of the venture unit and unit performance. As predicted, business unit involvement in decision-making was significantly, and negatively, associated with strategic performance ($\beta = -.105, p = .006$ in the full model). Business unit involvement was not, however, found to be significantly associated with financial performance ($\beta = .003, p = .950$ in the full model). Therefore, hypothesis 2 is also partially supported.

Hypothesis 3 posited a moderated relationship between the use of carried interest compensation, the emphasis of the venture unit on financial goals, and venture unit performance: venture unit performance would be enhanced where a unit with strong financial goals adopted a carried interest compensation system. Neither the strategic value model nor the financial performance model found support for this proposition, which is consequently rejected.

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Hypotheses 4 and 5 posited direct relationships between, respectively, deal syndication and communication with VCs, and CV unit performance. Hypothesis 4 - associating deal syndication with enhanced venture unit performance - received limited support. It was supported in the strategic value model ($\beta = .182$, $p = .017$ in model 6; not significant in model 6), but not the financial performance model ($\beta = .066$, $p = .502$ in model 6). Hypothesis 5, in contrast, received strong support: communication with VCs was positively associated with strategic value ($\beta = .232$, $p = .001$ in model 5) and financial performance ($\beta = .203$, $p = .042$ in model 5).

Table 4 presents the regression analyses testing for a mediating relationship of performance between adoption of the VC model and venture unit survival (Hypothesis 6). The measure “adoption of VC model” was constructed post-hoc to comprise the mean value of the elements of the VC model that were found to impact either venture unit strategic value or financial performance, namely: vertical autonomy, horizontal autonomy, communication with VCs and deal syndication. With no a priori rationale to the contrary, we weighted these elements equally. Following Baron and Kenny (1986), a series of regression analyses were performed to test for mediation. It is evident that (Table 4a) unit strategic value fully mediates between adoption of the efficacious elements of the VC model and unit survival. This is not the case for unit financial performance (Table 4b). Accordingly, Hypothesis 6 finds moderate support.

| Insert Table 4 about here |

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**DISCUSSION**

The findings provide only moderate support for the central proposition in the study, that: the adoption of the VC model will be associated with high performance in corporate venture units. Only one element of the VC model was found to have consistent effects across both the
strategic value and financial performance models – relationships with the VC community (Hypothesis 5). Vertical autonomy (Hypothesis 1) was significant in the financial performance model; horizontal autonomy (Hypothesis 2) was significant in the strategic value model. The use of carried interest compensation had no discernable effect on performance, even in cases of CV units that were focused on financial objectives (Hypothesis 3). And the syndication of deals (Hypothesis 4) was modestly significant in the financial performance model only.

Our primary explanation for these mixed results is that there are different costs and benefits to adopting the various elements of the VC model in corporate venture units. Where an element of the VC model has a high degree of contextual fit or compatibility with existing arrangements and stakeholder interests its benefits to corporate venture units typically outweigh its costs. In contrast, where an element of the VC model has a low level of contextual fit with existing corporate practices and interests, its introduction is likely to create sources of friction that raise its cost of introduction relative to its benefits. As an illustration, carried interest compensation and the syndication of deals are both well-established practices in venture capital firms with well-understood benefits. However, their adoption in the corporate context creates material challenges: inequality in compensation and conflicts of interest in the case of carried interest; and loss of control and flexibility over ventures in the case of syndication. In contrast, the establishment of operational autonomy, and relationships with the VC community, are practices that create little conflict with existing corporate practices and thus have relatively few downside costs, so their relationship with performance is consistently positive.

Our results therefore support the logic of a selective approach to the adoption of the VC model. Even more care than we hypothesized would appear necessary, however, in adopting components of this model. Successful corporate venture units have a high level of autonomy in their governance, and they have links to the VC community, but we cannot make any generic
recommendations about the use of particular types of compensation system or the practice of syndicating deals with other investors. It seems likely that the latter two sets of practices can work in the CV unit context, but only under a very narrow set of conditions.

Two other insights from the empirical research warrant comment. First, by separating out the financial and strategic performance of CV units, we were able to show that the two dimensions of performance are driven by somewhat different factors, and that our model had substantially greater predictive power for strategic performance than financial performance. This finding is consistent with our initial framing, in that strategic roles differentiate CV units from independent VC firms. Certainly, most CV units have clear financial targets, but their *raison d’etre* is strategic, and our model reflects this emphasis. While the study suggested that different factors drive the strategic and financial outcomes of corporate venture units, we did not find any the factors to contribute to one objective at the expense of the other. In other words, achieving strategic or financial objectives does not appear to represent a “zero-sum game” for corporate venture units – both appear achievable, albeit via different mechanisms.

Intriguing differences were evident between the factors impacting strategic and financial dimensions of performance, operating autonomy being a case in point. We found business unit involvement in venturing decision-making to have significant, negative implications when a CV unit seeks to contribute to strategic value. Essentially, if a firm wishes its corporate venturing arm to add value to overall strategic effectiveness, it is incumbent on the head office to ensure that the actions of the CV unit are not confounded by interfering business units. Yet, if the corporation’s goal is to use the CV unit for primarily financial objectives, the involvement of the business unit ceases to be significant. Instead, autonomy of the venture unit from the day-to-day involvement of the parent company executives to whom it reports becomes critical to realizing financial
objectives. Thus, other business unit executives present an obstacle to strategic performance whilst the executives to whom a CV unit reports present an obstacle to financial performance.

Second, the mediation hypothesis (Hypothesis 6) received some support. Specifically, our analysis of the mediating role performance plays between the adoption of elements of the VC model and venture unit survival, indicates that strategic performance is a more important mediator (than financial performance). Put another way, strategic performance is more salient than financial performance in the parent’s decision to either support or to terminate a CV activity. In its strategic role, the CV unit provides market intelligence and environmental scanning in order to identify new product/market opportunities and threats. The persistence of strategic CV activity amongst technology-based firms may indeed be explained by its efficacy in the early identification and exploitation of novel and disruptive technologies (Maula et al., 2003). The findings on mediation also suggest that CV unit survival may not be as vulnerable to the whims of company officials and to other exogenous forces as previously suggested (e.g. by Fast, 1978). Indeed, perceptions of strategic effectiveness were shown to be critical to venture unit survival.

Finally, the mixed support for the hypotheses raises a broader issue regarding the non-uniform results of the adoption of structures and practices from the VC industry. In the language of institutional theory, the phenomenon under investigation is an example of mimetic isomorphism, whereby firms copy the practices of others that appear to be highly successful, in the hope of both enhancing the quality of their practices and also gaining legitimacy within their field of activity (DiMaggio & Powell, 1983). However, our research highlights both the costs and benefits of mimetic isomorphism, where the reasons behind the success of the target for emulation (VC firms, in this case) is a complex bundle of causally ambiguous (Levitt & March, 1988), contextually-embedded structures, practices and norms. In terms of benefits, CV units may have gained access to “deal flow” by adopting practices that allow them to relate to VCs. In
terms of costs, however, it seems that some CV units may have taken the VC model too literally, and have ended up with practices that are inappropriate to their corporate context.

Institutional theory is clear that mimetic isomorphism is a means of achieving legitimacy within a field of activity, rather than high performance per se. But in this case, the ability to build legitimacy with the VC and start-up communities does not necessarily equate to increased survival rates, because it is the parent company, not the members of these other communities, who decide the fate of the CV unit. So, as with any kind of hybrid organizational entity, the CV unit has to balance its affinity to corporate practices and VC practices. Where those practices are in conflict, CV managers need to be clear where their ultimate priorities (and loyalties) lie.

**Broader Implications for Theory and Practice**

This paper makes a number of contributions to theory and practice regarding, in the first instance, corporate entrepreneurship and, in the second instance, early-stage investments more broadly. For corporate entrepreneurship literature, it provides a model of internal factors affecting strategic and financial dimensions of performance, as well as venture unit survival. This model addresses both internally-focused and externally-focused unit structures, paying due attention to the strong influence of VC firms on contemporary corporate venturing. Both economic and strategic management arguments are used to theoretically ground this conceptual model of the CV unit.

For literature on investment practice more broadly, particularly in start-up and early-stage environments, the study contributes towards isolating highly context-dependent investment structures and practices from those with broader generic applicability to a range of investors. Specifically, the study highlighted the benefits of high engagement with other members of an investment community to the achievement of investment objectives – this practice appearing to be context-neutral across both independent VC firms and corporate venturing contexts, in spite of
their differences along, for example, their relative emphasis placed on financial objectives. Other practices – such as the use of high-powered carried interest incentives and syndicating deals – may be more context-dependent, delivering net benefits only in specific sets of circumstances.

**Limitations and Directions for Future Research**

Finally, a number of limitations of the study are clearly discernable, some of which have already received mention within the text. These include the cross-sectional nature of the survey measures of venture unit performance that makes inferences regarding causality particularly problematic, the modest sample size that reduces the robustness of the statistical tests, and the reliance on self-report data in the absence of financial indicators of the direct and indirect impacts of corporate venture units on their parent organizations. Attempts have been made to remedy these weaknesses through, for example, the use of CV unit survival data, multiple self-report dimensions of performance and secondary data on CV units’ investment history. Future studies may also wish to incorporate multiple stakeholder views on the performance of CV units, in particular the views of parent company executives to whom the units report to supplement the views of the immediate managers of the units.

Inevitably our research poses as many questions as answers for future researchers to address. For example, we can currently say little as to the underlying mechanisms through which engagement with VC firms benefits CV units, or why vertical autonomy plays such a critical role in venture unit financial performance. We also have little to say yet on how (and whether) CV units can practicably balance strategic and financial objectives. Furthermore, we are unable to assess how dependent our findings are on the time period over which we conducted the study. For example, our finding that perceptions of financial performance did not mediate (even partially) the survival of venture units may reflect the discounting of both poor and strong financial results
achieved by CV units during the dotcom bust of 2000/2001. We therefore also advocate studies over longer and different time periods.

CONCLUSION

Corporate venturing represents an important mechanism through which firms are able to conduct activities of a more exploratory nature (March, 1991). It is, however, a complex phenomenon with multiple objectives and constraints, and a consequent variety of organizational forms and practices; the challenging nature of its examination compounded yet further by difficulties of access to information and the consequent ambiguities of available metrics. Nonetheless, we can now start to draw conclusions regarding the contextual appropriateness of VC structures and practices within the context of established companies and to advise corporations on the value of specific components of the dominant VC model. It is our hope that this study will prove valuable to progressing the debate on the under-examined topic of the appropriateness of venture capital models to corporate venturing and to the development of a more appropriate model of factors influencing the performance of contemporary corporate venture units.

REFERENCES


ENDNOTES

1 There is also a management fee, calculated as a percentage of the funds raised by limited partners. Varying between 1-2.5%, this can be a substantial income to a large fund.

2 As financial returns or other reasonably “objective” measures of corporate venturing unit performance are notoriously hard to come by, the Venture Economics database has been used extensively for research on private equity (Gompers & Lerner, 1998; Maula, 2001). The self-reported portfolio data captured by the survey was highly consistent with Venture Economics data. Specifically, both the number of venture unit investments reported by respondents and the proportion of the portfolio experiencing liquidity events reported highly significant correlations (p = .000).

3 As scholars have conflicting views over the role of autonomy in venture unit performance, models using a squared term for autonomy were also run to investigate the possibility of a curvilinear relationship. In no instances did the squared term achieve significance.

4 A number of variants on the carried interest measure were also tested. For example, one alternative tested was CV unit usage of either carried interest systems, equity-based systems, or “direct financial incentives”; another used the incidence of flat-rate salaries (reverse-scored). Findings were consistent with those reported here.

5 One possibility is that, even where companies in our sample reported high usage of carried interest mechanisms, such systems may have been so attenuated relative to those found within independent VC firms (e.g. in respect of the portion of salary that carried interest payments may comprise) so as to minimize their power as incentives.
### TABLE I
Means, Standard Deviations, and Correlations$^a$

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<td>3. Financial performance</td>
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<td>.18</td>
<td>.31**</td>
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<td>-.34**</td>
<td>-.44**</td>
<td>.09</td>
<td>.12</td>
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$^a$ n = 95

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

$^b$ Dummy variables.
TABLE 2

OLS Regression Analysis: Influence of Venture Capital Model on Strategic Value*  

<table>
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<tr>
<th>Variable</th>
<th>Hypothesis (and Predicted Direction)</th>
<th>Model 1</th>
<th>Model 2</th>
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<td>(0.114)</td>
<td>(0.102)</td>
<td>(0.109)</td>
<td>(0.115)</td>
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<td>.034</td>
<td>0.026</td>
<td>.016</td>
<td>.101</td>
<td>.083</td>
<td>.167</td>
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<td></td>
<td>(0.055)</td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.054)</td>
<td>(0.058)</td>
<td>(0.066)</td>
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<tr>
<td>Autonomy</td>
<td>H1 (+)</td>
<td>.030</td>
<td>*</td>
<td>.091</td>
<td>*</td>
<td></td>
<td></td>
<td>-106</td>
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<tr>
<td></td>
<td>(0.120)</td>
<td></td>
<td>(0.037)</td>
<td>(0.350)</td>
<td>(0.036)</td>
<td>(0.123)</td>
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<td>H2 (-)</td>
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<td>*</td>
<td></td>
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<tr>
<td>involvement</td>
<td></td>
<td>(0.050)</td>
<td>(0.041)</td>
<td>(0.037)</td>
<td>(0.039)</td>
<td>(0.039)</td>
<td>(0.039)</td>
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</tr>
<tr>
<td>Carried interest</td>
<td></td>
<td>.014</td>
<td>*</td>
<td>.014</td>
<td>*</td>
<td>.233</td>
<td>***</td>
<td>.228</td>
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<tr>
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<td>(.039)</td>
<td></td>
<td>(.027)</td>
<td></td>
<td>(.062)</td>
<td></td>
<td>(.069)</td>
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<tr>
<td>Carried interest X financial emphasis</td>
<td>H3 (+)</td>
<td>-.04</td>
<td>*</td>
<td></td>
<td></td>
<td>.177</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>VC communication</td>
<td>H5 (+)</td>
<td>.101</td>
<td>*</td>
<td>.101</td>
<td>*</td>
<td></td>
<td></td>
<td>.127</td>
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<tr>
<td></td>
<td>(0.072)</td>
<td>(0.072)</td>
<td>(0.072)</td>
<td>(0.072)</td>
<td>(0.072)</td>
<td>(0.072)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deal syndication</td>
<td>H4 (+)</td>
<td>.011</td>
<td>-.006</td>
<td>.078</td>
<td>.005</td>
<td>.150</td>
<td>.078</td>
<td>.220</td>
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<tr>
<td></td>
<td>(0.044)</td>
<td>(0.044)</td>
<td>(0.044)</td>
<td>(0.044)</td>
<td>(0.044)</td>
<td>(0.044)</td>
<td>(0.044)</td>
<td></td>
</tr>
</tbody>
</table>

| R^2 Change^b | .001 | .075 | *   | .038 | .149 | *** | .068 | *   | .276 | ** |
| F-Value       | 1.302 | .882 | 2.576 | *   | 1.063 | 4.571 | ** | 2.717 | *   | 3.063 | ** |
| Adjusted R^2  | .011 | -.006 | .078 | .005 | .150 | .078 | .220 |         |        |         |         |         |         |         |
| R^2           | .047 | .044 | .127 | .082 | .192 | .124 | .327 |         |        |         |         |         |         |         |

* n (listwise deletion) = 74. Unstandardized regression coefficients reported. Standard errors in parentheses. All tests are two-tailed.

** R^2 change statistics refer to the difference between a given model and the control-only model (Model 1).

*** p<.001 ** p<.01 * p<.05 +p<.10
### TABLE 3

**OLS Regression Analysis: Influence of Venture Capital Model on Financial Performance**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hypothesis (and Predicted Direction)</th>
<th>Financial Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.063 ***</td>
<td>3.083 ***</td>
</tr>
<tr>
<td></td>
<td>(.103)</td>
<td>(.103)</td>
</tr>
<tr>
<td>Age of unit</td>
<td>.027 +</td>
<td>.024 +</td>
</tr>
<tr>
<td></td>
<td>(.014)</td>
<td>(.013)</td>
</tr>
<tr>
<td>Region</td>
<td>-.045 -.074</td>
<td>-.043 -.043</td>
</tr>
<tr>
<td></td>
<td>(.144)</td>
<td>(.142)</td>
</tr>
<tr>
<td>Internal orientation</td>
<td>.091 .106</td>
<td>.077 .011</td>
</tr>
<tr>
<td></td>
<td>(.073)</td>
<td>(.072)</td>
</tr>
<tr>
<td>Autonomy</td>
<td>H1 (+)</td>
<td>.344 *</td>
</tr>
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<td>Business unit decision</td>
<td>H2 (-)</td>
<td>-.001</td>
</tr>
<tr>
<td>involvement</td>
<td>Carried interest</td>
<td>-.022</td>
</tr>
<tr>
<td>Financial emphasis</td>
<td>.136 *</td>
<td>(.056)</td>
</tr>
<tr>
<td>Carried interest X financial emphasis</td>
<td>.047</td>
<td>(.042)</td>
</tr>
<tr>
<td>VC communication</td>
<td>H5 (+)</td>
<td>.224 .015*</td>
</tr>
<tr>
<td>Deal syndication</td>
<td>H4 (+)</td>
<td>.066</td>
</tr>
</tbody>
</table>

**R² Change**

|                           | .081        | .066 *       | .000         | .099 *       | .078 .015*   | .006         | .199 +       |
|                           | 2.027       | 2.885 *      | 1.268        | 2.624 *      | 3.156 .019*  | 1.539        | 2.214 *      |
| Adjusted R²               | .041        | .096 .016    | .127         | .108 .029    | .029 .159    | .084         | .291         |

---

*a* n (listwise deletion) = 65. Unstandardized regression coefficients reported. Standard errors in parentheses. All tests are two-tailed.

*b* R² change statistics refer to the difference between a given model and the controls-only model (Model 1).

*** p<.001  ** p<.01  * p<.05  + p<.10
### TABLE 4.
Mediated Regression Analysis of VC Model, Unit Performance, and Unit Survival$^{a, b, c}$

#### 4a.

<table>
<thead>
<tr>
<th></th>
<th>Model 1: Venture Unit Strategic Value</th>
<th>Model 2: Venture Unit Survival</th>
<th>Model 3: Venture Unit Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.080 (-.073)</td>
<td>1.638 (**.417)</td>
<td>*** 1.588 (.433)</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of unit</td>
<td>.006 (.010)</td>
<td>.051 (.071)</td>
<td>.038 (.060)</td>
</tr>
<tr>
<td>Region</td>
<td>.176 (.099)</td>
<td>-.599 (.303)</td>
<td>- .341 (.335)</td>
</tr>
<tr>
<td>Internal orientation</td>
<td>.136 (.056)</td>
<td>-.115 (.303)</td>
<td>- .388 (.335)</td>
</tr>
<tr>
<td>Adoption of VC model</td>
<td>.005 (.001)</td>
<td>.014 (.007)</td>
<td>* .006 (.007)</td>
</tr>
<tr>
<td>Mediator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic value</td>
<td></td>
<td>1.532 *</td>
<td></td>
</tr>
<tr>
<td>F-Value</td>
<td>5.519 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R$^2$</td>
<td>.181</td>
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<tr>
<td>R$^2$</td>
<td>.221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$(df)</td>
<td>8.863 (5) + 13.303 (5) *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Log likelihood</td>
<td>84.421 75.999</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4b.

<table>
<thead>
<tr>
<th></th>
<th>Model 1: Venture Unit Financial Performance</th>
<th>Model 2: Venture Unit Survival</th>
<th>Model 3: Venture Unit Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.016 (-.100)</td>
<td>1.638 (**.417)</td>
<td>*** 1.518 (.441)</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of unit</td>
<td>.024 (.013)</td>
<td>.051 (.071)</td>
<td>.046 (.073)</td>
</tr>
<tr>
<td>Region</td>
<td>-.055 (.140)</td>
<td>-.599 (.560)</td>
<td>-.877 (.587)</td>
</tr>
<tr>
<td>Internal orientation</td>
<td>.163 (.078)</td>
<td>-.115 (.303)</td>
<td>-.127 (.327)</td>
</tr>
<tr>
<td>Adoption of VC model</td>
<td>.004 (.002)</td>
<td>.014 (.007)</td>
<td>* .012 (.007)</td>
</tr>
<tr>
<td>Mediator</td>
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<tr>
<td>Financial performance</td>
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<td>.372</td>
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</tr>
<tr>
<td>F-Value</td>
<td>2.842 *</td>
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<tr>
<td>Adjusted R$^2$</td>
<td>.093</td>
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</tr>
<tr>
<td>R$^2$</td>
<td>.143</td>
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<td></td>
</tr>
<tr>
<td>$\chi^2$(df)</td>
<td>8.863 (5) + 7.428 (5) *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Log likelihood</td>
<td>84.421 74.119</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

$^a$ Unstandardized regression coefficients reported. Standard errors in parentheses. Two-tailed tests.

$^b$ Adoption of VC Model is the mean score per CV unit on the Autonomy, Business Unit Involvement in Decision-Making, VC Communication and Deal Syndication scales (each weighted equally).

$^c$ OLS Regression was used in Model 1, Binary Logistic Regression was used in Models 2 and 3.

*** p<.001  ** p<.01  * p<.05  + p<.10
FIGURE 1
Theoretical Model

VC Model

Governance System:
- Vertical autonomy
- Horizontal autonomy

Carried Interest

Engagement with VCs:
- Communication with VCs
- Deal syndication

CV Unit Performance
- Strategic
- Financial

CV Unit Survival

H1, H2
H3
H4, H5
H6
H6