



# **HOW DO CORPORATE VENTURE CAPITALISTS CREATE VALUE FOR ENTREPRENEURIAL FIRMS?**

**by Elena Loutskina**

## **ABSTRACT**

The dissertation analyzes how corporate venture capitalists (CVCs) create value for entrepreneurial firms backed by them and how value creation by CVCs differs from that of independent venture capitalists (IVCs). I find that there are two ways in which CVCs uniquely create value for entrepreneurial firms. First, they invest significant amounts in firms that are unlikely to receive private equity financing from IVCs. Second, CVCs seem to play an important role in signaling the true value of firms backed by them to the equity market participants allowing them to access this market at an earlier stage in their life-cycle and obtain higher IPO market valuations compared to firms backed by IVCs alone.

# **How Do Corporate Venture Capitalists Create Value for Entrepreneurial Firms?**

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US corporations started to establish internal venture capital funds (often referred to as corporate venture capital) back in the 1960s. Over the years, corporate venture capital investments accounted for around 7% of venture capital industry reaching 10% in recent years. In the year 2000, corporations invested in almost 1900 entrepreneurial companies with a total dollar investment of around \$16 billion. Corporate venture capitalists (CVCs) present an interesting case study, since, even though they share a number of features with independent venture capital firms (IVCs), they are significantly different from IVCs in many ways. First, CVCs are structured as subsidiaries of corporations and can only have one (corporate) investor as opposed to IVCs, who are traditionally structured as limited partnerships where general partners invest in entrepreneurial firms on behalf of limited partners who provide the funds for investment. Second, the performance-based compensation structure enjoyed by IVC managers is normally not found in CVC funds, where managers are mostly compensated by fixed salary and corporate bonuses, so that corporate venture capitalists may be less concerned than IVCs with the immediate financial returns from their entrepreneurial firms. Third, the presence of a corporate parent may provide CVCs with a unique knowledge of the industry and the technology utilized by the entrepreneurial firm.<sup>1</sup>

The venture capital literature has argued that venture capitalists, in general, create value for the entrepreneurial firms they invest in several ways. For example, Hellman and Puri (2000,

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<sup>1</sup> See Gompers and Lerner (2000) for a detailed discussion of the differences in governance and compensation structures between CVCs and IVCs.

2002)) has documented that IVCs are able to create product market value for entrepreneurial firms, by “professionalizing” firm management and helping them develop contracts with suppliers and customers.<sup>2</sup> At the same time, a number of papers in the venture capital and IPO literature have argued that the pricing of IPO shares in venture backed firms is significantly different from that in non-venture backed firms, either in terms of the extent of underpricing (see, e.g., Megginson and Weiss (1991); Barry, Muscarella, Peavy and Vetsuypens (1990); or Lee and Wahal (2000)) or in terms of share valuation with respect to intrinsic value (Chemmanur and Loutskina (2003)). Further, venture backing seems to affect the ease of entrepreneurial firms to access the capital markets (see, e.g., Loughran and Ritter (2004)), and terms under which they are able to access these markets. A natural question that arises here is how the significant governance and other differences between the two kinds of venture capitalists affect the value creation by CVCs and IVCs for the entrepreneurial firms backed by them. The objective of this study is to answer this question by empirically analyzing differences in value creation by corporate venture and independent venture capitalists, and thereby to develop a better understanding of the unique ways in which CVCs are able to create value for entrepreneurial firms backed by them.

We hypothesize that CVCs may differ from IVCs in creating value for portfolio firms in three important ways. First, CVCs may invest in different kinds of firms compared to IVCs, and may provide funding to firms at different stages in their life cycle. The terms under which they provide funding may differ across CVCs and IVCs. These differences may arise from the differences in institutional structure and the objectives of these two kinds of intermediaries: while IVCs are primarily concerned with the financial returns from their portfolio firms, CVCs

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<sup>2</sup>The assumption that venture capitalists can help entrepreneurial firms perform better in the product market has also become standard in the theoretical literature on venture capital: see, e.g., Repullo and Suarez (2001) or Chemmanur and Chen (2003)).

may also be concerned with other benefits to the corporate parent that may arise from the investment, such as exposure to a pioneering technology and early establishment of alliances in the product market. Further, the industry and technology expertise of CVCs may allow them to screen firms better, which may allow them to invest larger amounts in riskier and more R&D intensive firms (with longer time to achieving profitability) compared to IVC investments. Finally, there may be differences in bargaining power between CVCs and IVCs, so that the terms of financing of entrepreneurial firms may differ across these two intermediaries.

Second, CVCs and IVCs may differ in their ability to create product market value for entrepreneurial firms subsequent to investment. On the one hand, specialization by IVCs in making investments in certain industries may help them develop contracts superior to that of CVCs in the product market (e.g., with suppliers and intermediaries) which may be beneficial to entrepreneurial firms backed by them. On the other hand, the effect of the superior industry expertise of CVC -parent may outweigh the effect of such industry contacts, allowing CVCs to create greater product market value for entrepreneurial firms backed by them. Such differences in value creation may potentially be reflected in differences in post-IPO operating performance for CVC and IVC backed firms.

Third, CVCs and IVCs may have different abilities to help portfolio firms access the capital markets, and the terms under which they access these markets. On the one hand, IVCs, being more frequent players in the IPO market, can be expected to have stronger relationships with top-tier investment banks, institutional investors, and financial analysts which may allow them to better communicate firm value to the capital market. On the other hand, backing by a corporate parent may convey a credible signal to the financial market about the future prospects of the entrepreneurial firm. Such differences between CVCs and IVCs may translate into different

probabilities of a successful exit for CVC and IVC backed firms. These differences may also result in systematic differences in the IPO market valuation between CVC-backed and IVC-backed firms.<sup>3</sup>

In this paper, we make use of data regarding a large sample of CVC and IVC backed firms to identify some of the aspects of value creation for entrepreneurial firms by corporate venture capitalists discussed above. Our dataset consists of round by round financing data starting with the very first investment made by venture capitalists in a private firm, extending through the firm's IPO stage, and ending with post-IPO operating performance and financial market data for five years subsequent to the IPO. Our data set contains not only the characteristics of entrepreneurial firms, but also various aspects of the CVCs and IVCs investing in those firms.

Our empirical analysis consists of six parts. First, we study various characteristics of CVC backed firms and compare them with those of IVC backed firms. Second, we study the probability of a successful exit (IPO or acquisition) for CVC backed firms, and compare this to that of IVC backed firms. Third, we study the five year post-IPO operating performance of CVC backed firms, and compare this to that of IVC backed firms. Fourth, we compare the quality and the extent of participation by financial market players such as underwriters, institutional investors, and coverage by analysts in the IPOs of CVC and IVC backed firms. Fifth, we compare equity valuation in the IPOs of CVC backed and IVC backed firms. Finally, we compare the long-term post-IPO stock returns of CVC backed and IVC backed firms.

Our paper provides a number of new results on the sources of value creation by CVCs. First, we document (for the first time in the literature) that the investment patterns of CVC are significantly different from that of IVCs. CVCs tend to invest into younger and riskier firms and

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<sup>3</sup> Of course, these differences in exit probabilities and market valuations may also reflect differences in the kinds of firms invested in by CVCs and IVCs, and differences in the product market value created by these two kinds of intermediaries.

in earlier rounds compared to IVCs. These firms tend to be in less mature industries which require significantly larger R&D and capital expenditures, and which are more competitive (have no dominant firm in product market). Further, CVCs are more likely to select portfolio companies in industries closely related to that of their corporate parent. Finally, CVCs invest significantly large amounts of money per round than IVCs (even compared to IVC investments in the same firm) and at higher valuation than IVCs (i.e., the fraction of stock ownership given to CVCs in exchange for each \$1 million invested is lower).

Second, we find that the probability of a successful exit (IPO or acquisition) is higher in CVC backed firms compared to IVC backed firms. Further, the probability of having an IPO rather than acquisition is greater for a CVC backed firm. However, we find that the time from first venture capital investment to exit is greater for CVC backed firms, consistent with our earlier findings that CVCs invest in younger firms, in less mature industries and in earlier rounds (which may take longer time to reach profitability).

Third, we document (for the first time in the literature) that CVC-backed firms underperform IVC-backed firms in terms of operating performance for the first five years after the IPO. Even after we control for firm industry, size, and year of the issue, CVC backed IPOs underperform IVC backed IPOs by 23.2% in terms of profit margin and 26.9% in terms of sales margin. Consistent with this, we find that CVC-backed firms have a greater probability of being delisted (due to liquidation) in the years immediately after IPO. However, the extent of underperformance of CVC-backed firms declines with the number of years after IPO: while the average underperformance in the first year post IPO is 23.2 % in terms of profit margin and 26.9% in terms of sales margin, this underperformance declines to 2.7% and 0.4% respectively in the fifth year post-IPO. Further, the post IPO sales growth of CVC backed firms is higher than

IVC backed firms: this difference in sales growth is highest in the first year post-IPO (35,5% on average) and becomes smaller with the number of years after IPO (this difference is only 7.7% in the fifth year post IPO). Finally, we find that CVC backed firms have significantly higher R&D and capital expenditures than IVC backed firms, consistent with our earlier evidence that CVCs invest in firms in more R&D and capital intense industries. Overall, our results suggest that CVCs are able to take younger firms that are further away from profitability public, and that these CVC backed IPO firms have greater growth options than firms taken public by IVCs.

Fourth, we compare the extent and quality of participation by various market players in the IPO of CVC and IVC backed firms. In particular, we compare the reputation of the underwriters involved; the number of institutional investors participating in IPO and institutional investor holding as a fraction of IPO shares sold; extent of analysts coverage immediately post-IPO; and the reputation of IVCs participating in CVC and IVC backed IPOs. Contradictory to what one might expect from the fact that IVCs are more frequent players in the IPO market compared to CVCs, we find that the extent and quality of participation by various market players is higher for CVC-backed IPOs than for IVC backed IPOs: thus, underwriter reputation, participation by institutional investors, and analyst coverage are higher for CVC-backed IPOs compared to IVC-backed IPOs. Even more surprisingly, the reputation of IVCs co-investing with CVCs in CVC-backed IPO firms is similar (i.e., not lower than) the reputation of IVCs investing in IPO firms backed by IVCs alone. However, our regression analysis indicates that, even after controlling for the presence of reputable IVCs co-investing in CVC-backed IPOs, these IPOs are characterized by higher reputation underwriters, greater analyst coverage, and large post-IPO institutional investor holdings. The fact that despite bringing younger firms further away from profitability (on average) to the IPO market, CVCs are able to attract greater participation by more reputable



market players indicates a signaling role for CVC-backing in IPOs: i.e., backing by CVCs with superior industry knowledge seems to effectively communicate that IPO firm has good future prospects to various market players.<sup>4</sup>

Fifth, we compare IPO and secondary market (at first trading day closing price) valuations of CVC and IVC backed IPOs. We find that various price to value multiples (where value is computed using comparable firm multiples or using discounted cash flow models using realized earnings) are higher for CVC backed IPO firms than for IVC backed IPO firms (regardless of whether they are computed using the IPO price of the secondary market first day closing price). Our multivariate analysis indicates that the increased presence of various high quality market players such as high reputation underwriters, greater institutional holdings, and greater analyst coverage results in higher equity market valuations of IPO firms. However, the higher IPO and secondary market valuation associated with CVC backed firms persist even after controlling for the presence of various high quality market players, indicating that in addition to attracting higher quality market players to the IPOs of firms backed by them, CVC-backing also has a direct role in signaling firm value to the equity market.

Finally, our comparison of the long-term post-IPO stock returns of CVC and IVC backed firms indicated that CVC-backed firms outperform IVC-backed firms over the five year period after the IPO. The fact that CVC-backed IPOs do not underperform IVC-backed IPOs in terms of long-run stock return indicates that the higher valuation we documented earlier for CVC-backed firms is not the result of a temporary overvaluation of these firms at the time of IPO: one should expect such a temporary overvaluation to be corrected over a five year period, yielding long run stock return underperformance for CVC backed firms relative to IVC backed firms.

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<sup>4</sup> See, e.g., Leland and Pyle (1977) for a signaling model where the extent of ownership by firm insiders with private information conveys the true value of a firm to outside investors in the equity market.

Overall, our findings indicate that there are two ways in which CVCs uniquely create value for entrepreneurial firms. First, CVC create product market value by investing significant amounts in younger and riskier firms involving pioneering technologies: since many such firms would not have received private equity financing from IVCs, these firms may not have been able to grow and mature without CVC funding. Second, CVCs seem to play an important role in signaling the true value of firms backed by them to three different constituencies: first, to IVCs, prompting them to co-invest in these firms pre-IPO; second, to various financial market players such as underwriters, institutional investors, and analysts, allowing them to access the equity market at an earlier stage in their life-cycle compared to firms backed by IVCs alone; and third, directly to IPO market investors, allowing CVC-backed firms to obtain higher market valuation for these IPOs (in combination with the increased participation by various reputable market players) compared to the valuation of firms backed by IVCs alone.