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How important is innovation for venture capitalists' (VCs') market reputation?

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ABSTRACT

I find empirical evidence that venture capitalists' (VCs') principals reward unanticipated or unexpected improvements in VCs' ability to deliver relatively innovative ventures to market with market reputation. I also find the combination of a focus on innovation and exits via third party acquisitions yields the best risk-return trade-offs, and is associated with the highest estimates of idiosyncratic ability within the cross-section of the venture capital market. These findings provide evidence that a focus on innovation is associated with ability and rewarded with market reputation within the venture capital market. Given I find IPO exit rates are not measures of unanticipated improvements in VCs' ability to deliver relatively innovative ventures to market, the market reputation channel in this study differs from but is complementary to the IPO channel motivated in Nahata (2009).

1. Introduction

Within the venture capital literature, there is a preponderance of evidence that venture capitalists' investment activities help spur innovation (see for example, Da Rin, Nicodano, & Sembenelli, 2006; Gompers & Lerner, 2004; Kortum & Lerner, 2000). In Kortum and Lerner (2000) for instance, venture capital activity is associated with an increase in the rate of innovation, as measured by increase in patent activity. Consistent with the link between venture capital and innovation, venture capital activity has been linked with economic growth and development within emerging countries (see for example, Keuschnigg, 2004). Combined, the observed interrelationships between venture capital, innovation, and economic growth indicate venture capitalists' principals (investors providing capital) derive utility from the financing of innovation. At the present time, however, we do not have any formal empirical evidence that a focus on innovation within the venture capital market translates into market reputation.

In a market within which intrinsic project risk increases with a project's innovativeness or innovation quality, while venture capitalists' (VCs') principals derive utility from innovation, VCs' will at the same time and to varying degrees seek to diversify their portfolios via investments in "relatively safe" projects. This diversification into relatively safe projects enables the delivery of a minimum return to investors and helps mitigate the probability that a VC firm will fail to attract follow on capital due to inferior portfolio performance. If the objective of diversification is the achievement of a minimum return, but with the financing of innovation the raison d'être for venture capital, it is expected that VCs' performance will be assessed along two dimensions: the innovation dimension and the portfolio performance or diversification dimension. Within this context, unexpected diversification will not be rewarded by VCs' principals. Unexpected innovation will, however, have a beneficial impact on VCs' market reputation.

In this study, I provide evidence of a link between a focus on the financing of innovation and venture capitalists' market reputation. I also demonstrate that venture capitalists' (VCs') market reputation consists of two components: an expected component that is derived from "expectations about VCs' ability to deliver relatively safe ventures to market" and an unexpected component that is derived from "unanticipated changes in VCs' ability to deliver

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relatively innovative ventures to market". Consistent with these findings, market reputation functions that incorporate measures of unexpected innovation are more convex in relation to market reputation functions that do not incorporate these measures.

My finding that VCs' market reputation can be disaggregated into an expected component derived from investments in relatively safe ventures and an unexpected component derived from investments in relatively innovative ventures holds within the entire cross-section of the VC market. If my findings are robust, I expect an increase in the proportion of all portfolio projects that are innovative ventures will be more beneficial for unexpected market reputation within the state of California – the state that has the highest concentration of innovative venture capital activity within the United States. Consistent with this expectation, and inferences in Hochberg, Ljungqvist, and Lu (2007), I find syndicate size is a proxy for unexpected reputation and significantly more beneficial for market reputation within the state of California. These location-specific findings provide additional evidence that VCs are able to develop market reputation by achieving higher than expected innovation within their venture capital portfolios.

The empirical results I obtain relate directly to the finding in Nahata (2009) that VCs' market shares of IPOs are measures of market reputation. Consistent with the findings in Nahata (2009), I find ability to deliver relatively safe ventures to market is evident in IPO activity, indicating IPO activity is a measure of expected reputation. My finding that unexpected market reputation is associated with higher than expected exits via third party sales provides evidence of an alternative and complementary path to the development of market reputation within the venture capital market. Given I find neither expected nor unexpected IPO exits are able to convey the information contained in unexpected exits via third party sales, my empirical results are complementary to findings in Nahata (2009).

In a survey paper, Krishnan and Masulis (2011) find most measures of venture capital reputation (age of a venture capitalist, capital under management, or total capital disbursed by a VC firm) that have been proposed or utilized in studies such as Gompers (1996), Campbell and Frye (2009), or Atanasov, Ivanov, and Litvak (2012) are not robust predictors of future performance. This likely is the case because the variables enumerated are endogenous measures of past success that are difficult to adjust for time dependence within the cross-section of the venture capital market. The most robust predictor of future performance in Krishnan and Masulis (2011) is a VC's share of IPO activity during the immediately preceding 3 calendar years – the Nahata (2009) measure of market reputation – a reputation measure that is analogous and complementary to the measure of innovation reputation that I motivate in this study; that is, VCs' unexpected success at achieving acquisition exits.

In Aggarwal and Hsu (2013), "innovation originality" is a measure of the extent to which backward citations of a company's patents lie mostly within certain industry or technological segments and is more persistent among venture capital backed companies that are exited via third party acquisitions in relation to those exited via IPOs. My finding that unexpected innovation results in an increase in market reputation that is evident in unexpected increases in exits via third party acquisitions, but not evident in exits via IPOs is consistent with findings in Aggarwal and Hsu (2013). Combined, these findings provide evidence that exit choices within venture capital or private equity markets are not independent of firms' innovation characteristics. Consistent with this inference, studies such as Bayar and Chemmanur (2012), Brau, Francis, and Kohers (2003), Poulsen and Stegemoller (2008) find choice of exit mechanism – private market sale vis-a-vis IPO – are influenced by product market characteristics, the presence of a dominant firm in an industry, growth potential, degree of information asymmetry, industry degree of leverage, etc.; that is, are significantly influenced by industry or innovation characteristics.

In so far as measures of idiosyncratic ability are concerned, my empirical results show the combination of a focus on innovation and exits via third party acquisitions yields the best risk-return trade-offs and is associated with the highest estimates of idiosyncratic ability within the cross-section of the venture capital market. This finding is consistent with conclusions in Lerner, Sorensen, and Stromberg (2011) that the innovation output of venture capital backed firms acquired in private equity deals increases over time. The findings in Aggarwal and Hsu (2013) that the originality (innovativeness) of venture capital backed firms acquired in the private market improves, while innovation output of those acquired via IPOs increases but is not sustained are consistent with the association of unexpected innovation or exits via third party acquisitions with idiosyncratic ability.

The rest of the paper proceeds as follows. I develop the framework for the study in Section 2; report results from empirical tests in Section 3; and discuss study conclusions in Section 4.

2. Theoretical and empirical foundations

In this section, which consists of five sub-sections, I discuss the theoretical and empirical foundations of empirical tests that I implement in the next section (Section 3). In the first subsection, Section 2.1, I discuss the structure of fund-raising within the venture capital market in so far as it relates to VCs' principals' expectations about future portfolio performance (or risk) and VCs' ability. In Section 2.2, I demonstrate that the presence of determinism (maintenance of ability ranking) at the timing of VCs' initial entrance into the venture capital market and at the timing of evaluation of portfolio performance at some future date is not contradictory to a market characterized by information asymmetry about VCs' true abilities. Specifically, I demonstrate that changes in the distribution of fund sizes within the venture capital market are evidence of revisions in estimates of true ability, regardless of the presence of determinism (absence of changes) in ability ranking at two different points in time. In Section 2.3, I apply the framework developed in Sections 2.1 and 2.2 to the specification of empirical models. In Section 2.4, I discuss empirical proxies for study variables. Section 2.5 discusses the data.

2.1. Fund risk, fund size, and estimates of ability

In the fund literature, it is well known that fund managers do not raise new funds from investors without statements that relate to the "focus" of the new funds, with focus within the venture capital market usually stated in terms of investment stage or industry characteristics (see for example, Gompers, 1995; Gompers & Lerner, 2004; Sahlman, 1990). Given fund-raising is accompanied by statements of fund focus, optimal fund size is not independent of fund focus. In Kannianien and Keuschnigg (2003) for instance, optimal fund size is a function of the optimal number of projects. For a review of venture capital contracting, see Kaplan & Stromberg (2003).

While it has yet to be modeled, optimal fund size must be assumed to be a function of investors' estimates of the ability of the fund manager relative to the stated fund focus. That is, holding fund focus constant, fund size either is an increasing or decreasing function of managerial ability (there is evidence that fund managers sometimes keep funds small to maintain their comparative advantage; see for example, Kaplan & Schoar, 2005).

Since the receipt of capital inflows into a new venture capital fund is predicated on agreements with investors that relate to fund focus, fund managers are expected to demonstrate best efforts at