

SUBSTANCE, SYMBOLISM AND THE “SIGNAL STRENGTH” OF VENTURE CAPITALIST PRESTIGE

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ABSTRACT

This study explores the symbolic and substantive benefits of VC prestige for IPO firms. Using a sample of 714 VC-backed IPOs between 1990 and 2000, we develop a multi-dimensional measure of VC prestige. Our results suggest that VCs provide substantive and symbolic benefits, especially VCs that are involved early in the firm's development. We also find that VC's industry experience enhances the firm's post-IPO operating performance.

INTRODUCTION

Because the survival and success of new firms are laden with uncertainty and risk (Stinchcombe, 1965), investors often depend on interorganizational endorsements via affiliations with other prominent organizations as signals of a firm's quality and potential at the time of its initial public offering (IPO) (Carter & Manaster, 1990; Gulati & Higgins, 2003; Lee & Wahal, 2004; Pollock, et al., 2004; Stuart, et al., 1999). However, few studies explore whether there are substantive differences in quality or performance for firms with prominent affiliations, or whether the potential benefits that accompany these ties are realized. Further, little research considers the extent to which the timing affects an affiliation's interpretation and its potential for providing substantive benefits.

The symbolic and impression management literature (e.g., Elsbach, 1994; Meyer & Rowan, 1977; Pfeffer, 1981; Wade, et al., 1997; Westphal & Zajac, 1998; Zajac & Westphal, 2004) suggests that firms use public accounts and behaviors to manage external impressions and resource allocations that are either loosely coupled or completely decoupled (Meyer & Rowan, 1977; Weick, 1976) from the firm's motivations, beliefs and actions. In general, this stream focuses on the antecedents and consequences of these symbolic behaviors; little research considers the degree to which symbolic behaviors may actually reflect substantive, underlying resources, values, or motivations, or the conditions under which the linkage between substance and symbolism is likely to vary.

This study examines the theoretical gaps in the existing literatures on the relationship between substance and symbolism by addressing three questions: 1) Do affiliations with

prestigious VC firms provide substantive as well as symbolic benefits? 2) Does the timing of prestigious VC firms' involvement in the portfolio firm affect the extent to which they provide substantive or symbolic benefits? and 3) Do prestigious VC firms' industry-specific experience and geographic proximity moderate these effects? By addressing these questions, we explore whether markets differ in their reactions to signals provided through associations with prestigious VCs under different conditions, and whether these signals vary in their accuracy, or "signal strength". We also contribute to the literature on the VCs' market role by developing a comprehensive, multi-dimensional measure of VC reputation that captures VC experience, resources and performance. In the following sections we develop our hypotheses and test our arguments using a sample of 714 VC-backed IPOs from 1990-2000.

THEORY AND HYPOTHESES

The Substantive Benefits of VC Involvement

Signaling by legitimate and reputable third parties is based on two assumptions. The first assumption is that this association provides resources and capabilities that enhance a firm's survival and performance. The second assumption is that the willingness of the third party to risk reputational and financial capital implies that they have private information about the firm's investment potential. Prior research shows that these ties increase organizational survival rates (Jain & Kini, 2000) and investor willingness to participate in a firm's stock offering at higher prices (Carter et al., 1998; Megginson & Weiss, 1991), and that failing to acquire such ties can lead to lower levels of legitimacy (Pollock & Rindova, 2003; Zuckerman, 1999).

It is widely believed that prestigious VC involvement with a firm yields more than just certification or endorsement benefits (Barry, et al., 1990; Gompers & Lerner, 1997; Sahlman, 1990). In addition to the provision of the financial capital, VCs serve as valuable sounding boards when firms are formulating and implementing corporate strategies, and are often involved in helping firms recruit experienced personnel and acquiring needed resources (Jain & Kini, 2000). VCs also provide a network of accounting firms, law firms, management consulting firms, and executive search firms (Fried & Hisrich, 1995), and have knowledge about the technological landscape, market opportunities, and the potential for integration or knowledge-sharing with other portfolio firms they manage. Thus, the companies to which prestigious VCs transfer their resources are more able to enhance the quality of their management team, strategy and resource based than other, less experienced and less-prestigious VCs.

The involvement of prestigious VCs should thus result in higher valuations when a company goes public and better operating performance during the post-IPO period. Further, if VCs have substantive effects on the firms they invest in, the length of time high-prestige VCs are involved with a company should have a positive relationship with the firm's post-IPO operating performance. Early involvement by a high-prestige VC creates opportunities to put the firm on a positive evolutionary trajectory (Noda & Collis, 2001). The VC will not have to combat or undo any negative path dependencies that may have developed, and the start-up firm will have opportunities to benefit from the full range of resources the VC can bring to bear.

H1: VC prestige is positively associated with both initial market valuations and post-IPO operating performance

H2: Early round investment by high-prestige VCs will have a greater influence than late round investment by high-prestige VCs on both initial market valuations and post-IPO operating performance

The Symbolic Benefits of VC Involvement

Most research on the effects of prestigious affiliations focuses on their ability to influence relatively short-term market measures as indicators of performance. Even if one assumes a semi-strong form of market efficiency, research shows that market responses can be manipulated through symbolic behavior (Pfeffer, 1981; Westphal & Zajac, 1998; Zajac & Westphal, 2004), and that markets tend to be less efficient in pricing in the short-term when conditions of uncertainty and complexity are high (Thomas, 2002).

Research on symbolic behavior suggests that, under uncertain conditions, cognitively constrained and boundedly rational individuals often rely on a variety of heuristics to aid them in decision-making (Kahneman & Tversky, 1982; March & Simon, 1958) that may not accurately reflect the actual activities of organizations or the motivations of their leaders. As previously noted, one heuristic frequently used by investors as an indicator of firm quality is to look at institutionally legitimated actors (such as VCs) the organization affiliates with in order to determine its relative capabilities and status (Haunschild, 1994; Podolny, 1994). However, VCs invest in a large number of companies that fail before they even have the opportunity to go public (Sahlman, 1990), and even among the firms that eventually go public, a significant proportion fail within the five years following their IPOs (Fischer & Pollock, 2004; Jain & Kini, 2000). This suggests that the "signal quality" of VC involvement may be somewhat equivocal. Indeed, Fischer and Pollock (2004) found that VC backing and underwriter reputation were unrelated to IPO firm failure in the five years following their IPOs, and that VC ownership concentration following an IPO was positively related to IPO firm failure in some instances.

Because the range and mix of factors that can influence the performance and survival of entrepreneurial firms is complex, cognitively constrained individuals look for simplified indicators that help them make decisions. Third party actors, such as underwriters and VCs, are likely aware of the impact their mere association can have on an IPO, and may use this to their financial advantage. In other words, what if the information signaled through these ties is that these actors know their imprimatur can increase the value of a stock, regardless of the underlying quality of the company? If VC prestige only serves a symbolic purpose, and is decoupled from substantive indicators of firm quality, the following hypotheses are suggested:

H3: VC prestige is positively associated with initial market valuations, but is unrelated to post-IPO operating performance

H4: There will be no difference in the effect of early versus late round investment by high prestige VCs and the relationship between VC prestige and initial market valuations or post-IPO operating performance

The Moderating Effects of Geographic Distance and Industry Experience

Recent research suggests that moderators can limit the endorsement effects of prestigious affiliates (Gulati & Higgins, 2003). We suggest two factors that may influence the signal strength of endorsement by high-prestige VCs. First, geographic distance between the VC and the firm can affect the degree of VC involvement. VCs spend considerable time on on-site activities that facilitates the effectiveness and value of VC involvement (Sapienza, 1992). Frequent interactions between VCs and their portfolio firms builds trust, increases the degree of resource transfer (Fried et al., 1995; Westphal, 1999), and enhances the quality of learning by the portfolio firm (Busenitz, et al., 2004). In fact, Sorenson and Stuart (2001) show that the likelihood a VC invests in a new target company is negatively related to the geographic distance between the company and the VC firm's headquarters. Thus, the more geographically proximate a firm is to the VC, the easier it is for the VC to stay involved with portfolio firms. Conversely, firms that are located farther away are less likely to receive the same level of attention and so VC firms will have less influence over their development and post-IPO operating performance.

A VC's experience with the start-up's industry can also influence its ability to provide useful and relevant advice. Firm needs and competitive dynamics vary greatly by industry. The lower a VC's experience with a particular industry, the less advice it will be able to give, and the more limited the network ties and other resources it will be able to mobilize on the firm's behalf. The preceding suggests the following hypotheses:

H5a: The more geographically distant the focal firm is from its VCs, the lower the influence of VC prestige on initial market valuations and post-IPO operating performance

H5b: The greater the VCs' experience with the focal firm's industry, the greater the influence of VC prestige on initial market valuations and post-IPO operating performance

If VC involvement is purely symbolic, these moderators would not be expected to have an effect on either market or operating performance, as investors may be unable to differentiate between firms on these factors in uncertainty conditions. Thus, failure to support Hypotheses 5a-b may indicate the effects of prestigious VC endorsements are more symbolic than substantive.

DATA AND METHODS

Our initial sample of IPOs comes from a dataset of IPOs provided by Jay Ritter (see <http://bear.cba.ufl.edu/ritter/ipodata.htm>). The data include offering dates, offering prices, file price ranges, closing prices, SIC codes, and underwriter prestige rankings. We supplemented the IPO data on VC investments from the Venture Economics database of Securities Data Corporation (SDC) (for a description, see Lerner 1995; Gompers 1995, 1996; Gompers & Lerner, 1998). We gathered information on the number of VC firms with an investment in each IPO at the time of the offering, the round dates and dollar value of each investment, the founding date and size of each VC firm, the number of funds managed, and the amount of capital raised by each VC firm annually from 1990 to 2000. Accounting data were obtained from the COMPUSTAT database. Missing data reduced our final sample to 714 IPOs in the market valuation models and to 643 IPOs for the post-IPO operating performance models.

Dependent Variables

Initial market valuation. Following previous research (Gulati & Higgins, 2003; Stuart et al., 1999), we operationalize the initial market valuation of the firm as the natural logarithm of the market value of the IPO firm at the end of the first day of trading, which was calculated by multiplying the shares outstanding times the stock price at the end of the first day of trading.

Post-IPO Operating Performance. We operationalized post-IPO operating performance as the firm's return on assets (ROA), adjusted for operating cash flows, for the year following the IPO (Barber & Lyon, 1996). However, ROA can be manipulated (Teoh, Welch, & Wong, 1998) and young firms, often with negative earnings, may manage earnings around the time of the IPO. To address this, Jain and Kini (1994) recommend adjusting operating income for operating cash flows, which helps address the potential use of aggressive accounting practices in order to inflate income. Thus, our measure equals a firm's operating income before taxes, depreciation and special items minus operating cash flow, divided by the firm's total assets.

Independent Variables

VC Prestige. Our VC prestige measure includes the following variables: Total dollar amount of funds raised in the past five years; the number (count) of individual funds raised in the past five years; the number of portfolio firms taken public in the past five years; the total funds invested in IPO firms in the past five years; and VC age in the focal year (calculated as the IPO year minus the year a VC firm raised its first fund). We used a rolling five-year window and calculated each VC firm's prestige annually based on the past five years' data. The rolling average allowed us to capture fluctuations in a VC's prestige over the course of the study. For firms that are less than five years old, we use all available data up to the current year. Thus the sample period used to create this variable ranged from 1985 to 1999. To create the prestige index variable, we standardized all our variables by transforming them into z-scores, so that scaling is comparable when the various measures are aggregated. Tests of construct validity using principal components analysis and Cronbach's alpha indicate the five factors used can be combined into a single index.¹ To determine the *Total VC Prestige* associated with each IPO we created a weighted average, using eaching VC's ownership stake in the company as the weighting factor.

Early and late round VC prestige. To test H2 and H4 we created separate measures for *Early(Late) round VC prestige*, which equals the average of the prestige scores of all VCs who invested in the IPO firm during the first (last) round of venture financing.

Geographic distance. This variable is measured as the miles between a VC's headquarters and the portfolio firm's headquarters (see Sorenson & Stuart, 2001). Total, early and late round geographic distance are weighted using the same methods employed for the respective prestige measures.

Industry experience. Building on the work of Sorenson et al. (2001) this measure was based on the percentage of previous investments that a VC has made in the industry in which the target firm operates as a proportion of the total investments the VC has made in all industries. We categorized industries at SIC 2-digit level. These measures we based on the entire 1985-2000

¹ Complete data on all VCs for the years 1990-2000 will be available from the authors upon publication of this study.

time period of VC experience. As with geographic distance, we created three measures to correspond to the three VC prestige measures.

Control Variables

Our **underwriter prestige** variable comes from a dataset of IPOs provided by Jay Ritter, and is based on an amended version of the Carter et al. (1990) and Carter et al. (1998) rankings and is described in Loughran & Ritter (2002). The rankings range in value from 0 to 9, with higher values indicating higher quality rankings.² To control for the effects of **firm quality** we included several measures suggested by prior research (Guterman, 1991; Pollock & Rindova, 2003): *Total assets* (the natural logarithm of total asset at the time of the IPO), *Sales growth rate* (Sales in the quarter of the IPO minus sales in the same quarter one year prior to the IPO divided by sales in the pre-IPO quarter), and *company age* (the natural logarithm of one plus the firm age at the time of the IPO). To control for **industry effects**, we included 27 industry dummies based on the IPO firm's 2-digit SIC code (99 was the omitted industry). Since our sample ranges from 1990 to 2000, to control for any potential year effects we also included **year dummies** for the years 1990-1999 (2000 was the omitted year).

RESULTS

In support of H1 over H3, our results show that both total VC prestige and early round VC prestige are positively and significantly related to both initial market valuations and to post-IPO performance, suggesting that there are substantive benefits to funding by prestigious VCs and that investors recognize their value. In support of H2 over H4, our results show that early involvement by prestigious VCs contributes significantly to post-IPO operating performance, while late-round involvement does not. Our results also show that investors recognize this difference. While the lack of a significant interaction between geographic proximity and prestige fails to support H5a, geographic proximity does have a significant and negative main effect on initial market valuation in the overall and early round models. Thus, while investors assume that the geographic proximity of the early-round VCs has a significant effect on the IPO firm's capabilities and future prospects, geographic proximity appears to have little effect on post-IPO operating performance, suggesting the benefits are more symbolic than substantive. Finally, in partial support of H5b, VC firms' industry experience had a significant, positive moderating effect when predicting initial market valuation in the total and early round models, and a marginally significant effect on operating performance in the early round models.

References and Tables available upon request.

² Preliminary analyses show that underwriter prestige and total assets are highly correlated with VC prestige. Further, late round VC prestige is likely to be related to early round VC prestige. To address these issues we created instrumental variables by regressing underwriter prestige and total assets on VC prestige and late round prestige on early round prestige, and using the residuals from these regressions as instrumental variables.