



Paper to be presented at
DRUID15, Rome, June 15-17, 2015
(Coorganized with LUISS)

WHEN DOES REPUTATION FROM OTHERS REALLY HELP? ASSESSING CONTINGENCY OF REPUTATION ON VENTURE-SPECIFIC UNCERTAINTY AND AFFILIATES-SPECIFIC STRATEGIC INTENTS

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Abstract

In this study we look at the effect of multiple reputable affiliates on value of entrepreneurial ventures as perceived by external investors during IPO events. We consider two types of conditions upon which entrepreneurial ventures can derive greater benefits from reputable affiliates: high venture-specific uncertainty and affiliates-strategic intents that are aligned with the ventures' ones. We propose that in situations of exceptionally high venture-specific uncertainty, affiliation with reputable parties is a signal of quality to external investors only when the affiliates provide their ventures with substantive resources (venture capitalists) rather than certification (underwriters). However, contrasts engendered from misalignment in strategic intents between the venture management and its affiliates can negatively affect the efficacy of reputation as a quality signal. Results from a sample of U.S. IPOs in the clean technology sector support our hypotheses.

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ABSTRACT

In this study we look at the effect of multiple reputable affiliates on value of entrepreneurial ventures as perceived by external investors during IPO events. We consider two types of conditions upon which entrepreneurial ventures can derive greater benefits from reputable affiliates: high venture-specific uncertainty and affiliates-strategic intents that are aligned with the ventures' ones. We propose that in situations of exceptionally high venture-specific uncertainty, affiliation with reputable parties is a signal of quality to external investors only when the affiliates provide their ventures with substantive resources (venture capitalists) rather than certification (underwriters). However, contrasts engendered from misalignment in strategic intents between the venture management and its affiliates can negatively affect the efficacy of reputation as a quality signal. Results from a sample of U.S. IPOs in the clean technology sector support our hypotheses.

INTRODUCTION

In recent years there has been a growing interest in understanding how connections with reputable affiliates affect organizations' behaviors and performances (Fischer & Pollock, 2004; Gulati & Higgins, 2003; Stuart, Hoang, & Hybels, 1999). The context of companies undergoing initial public offerings (IPOs) has offered a perfect setting to observe how reputable affiliates can influence IPO valuations from external investors (Chen, Hambrick, & Pollock, 2008; Gulati & Higgins, 2003). It has been shown that companies can obtain higher IPO valuations if they are affiliated with highly reputable venture capitalists (VCs) and underwriters, which are both considered the most influential financial intermediaries in IPO events (Carter & Manaster, 1990; Krishnan, Ivanov, Masulis, & Singh, 2011; Lee, Pollock, & Jin, 2011; Lee & Wahal, 2004; Nahata, 2008; Pollock, Chen, Jackson, & Hambrick, 2010; Stuart et al., 1999).

However, most of the extant literature has looked at benefits from affiliation with highly reputable parties without considering the context upon which these affiliations take place. There has been little empirical research examining the specific circumstances under which a focal company may derive greater advantages from different types of reputable affiliates (Gulati & Higgins, 2003; Lee et al., 2011; Stuart et al., 1999). We know that the effect of affiliates' reputation is contingent on equity market conditions (Gulati & Higgins, 2003), timing of VC involvement in the entrepreneurial venture, VC firms' industry-specific experience and geographic proximity (Lee et al., 2011).

To date, little attention has been paid to whether venture-specific uncertainty and affiliate-specific strategic intents can represent significant contingencies of the beneficial effects from affiliation with multiple reputable parties.

On the one hand, signaling via affiliates' reputation can occur via different forms: the value of reputation can be linked to its certifying function (Carter & Manaster, 1990;

Fombrun, 1996; Hsu, 2004) as well as to the substantive resources that a focal company may have absorbed from reputable affiliates (Fischer & Pollock, 2004; Pollock et al., 2010). The type of signal provided through reputation may be relevant for the effectiveness of the signaling process, especially if the level of uncertainty related to a focal company is particularly high.

Moreover, the value of affiliates' reputation as signaling mechanism may be undermined if the affiliates are not inclined in endorsing the focal company. Therefore, affiliates' characteristics and strategic intents may represent important barriers influencing their willingness to use reputation as signal of quality to third parties (Stuart et al., 1999).

In this study, we examine whether the value generated by highly reputable affiliates is contingent on the level of venture-specific uncertainty and the affiliate-specific strategic intents.

We propose that in situations of exceptionally high venture-specific uncertainty, affiliation with reputable parties is a positive signal of quality to external investors only when the affiliates are perceived as supplier of substantive resources to the venture. On the contrary, affiliates whose beneficial effect on the entrepreneurial venture comes through certification do not have an impact on IPO valuations for highly uncertain ventures. Besides, we predict that when affiliates' strategic intents are aligned with those of the entrepreneurial venture, the positive effect of their reputations on the venture's value as perceived externally will be even larger. Whereas, contrasts engendered from misalignment in strategic intents between the two parties can negatively affect the affiliates' willingness to use their own reputations to influence external perceptions about an affiliated venture.

We investigate our research questions on a sample of U.S. IPOs in the clean technology (cleantech) sector between 1990 and 2014.

Our results confirm that external investors positively value affiliation with reputable financial intermediaries like venture capitalists or underwriters. However, if valuation of an entrepreneurial venture is particularly uncertain due to short track record before the IPO event, third parties would only consider reputation of affiliates providing substantive resources (i.e. venture capital firms) as signal of quality. We also find that the ability of affiliates to positively influence external perceptions is conditional on their commitment in keeping shares into the venture after the IPO and on the presence of contractual clauses enabling the forcing of an IPO event.

Overall, our paper sheds light on important contingencies that might affect the signaling value of affiliation with reputable partners. By looking at the moderating effects of venture-specific uncertainty and affiliate-specific strategic intents, we address the calls in literature for more research on the contingent value of reputation (Gulati & Higgins, 2003; Lee et al., 2011; Pollock et al., 2010; Stuart et al., 1999). Specifically, we contribute to a research stream in strategic management literature on which types of interorganizational ties are relevant and under which circumstances (Gulati & Higgins, 2003). Under conditions of high venture-specific uncertainty entrepreneurial ventures should consider affiliation with parties providing substantive resources rather than serving a mere certifying function. Moreover, the ability of such affiliates to positively influence external perceptions is conditional on how aligned are their strategic intents with venture management's ones.

THEORY AND HYPOTHESES

Reputable affiliates at IPO

Reputation refers to the ability of reducing perceived uncertainty by resorting on previous histories of engaging in particular sets of behaviors (Rindova, Williamson, Petkova, & Server, 2005). Firms can benefit from this intangible asset both directly, as their own source of competitive advantage, and indirectly, through affiliates' reputation (Milgrom & Roberts, 1982; Rindova et al., 2005).

Extant literature has identified two main mechanisms that make affiliates' reputation a signal of quality to rely on under uncertainty. First, reputable affiliates provide certification because of their accepted ability to discern quality under uncertain conditions (Carter & Manaster, 1990; Fombrun, 1996; Stuart, 1998). In addition, highly reputable organizations are believed to be cautious in the selection of their exchange partners because of the risk to dissipate their good reputation at stock (Podolny, 1994; Stuart et al., 1999). Second, prestigious affiliates bring with them substantive resources (e.g. experience, social and human capital, etc.) that can boost a venture's perceived value in the eyes of external parties (Bygrave & Timmons, 1992; Fischer & Pollock, 2004; Pollock et al., 2010).

Affiliation with highly reputable parties plays a very important role in contexts of high information asymmetries (Milgrom & Roberts, 1982; Spence, 1974). For instance, Podolny and Stuart (1995) revealed that inventions in uncertain technological areas were more likely to be spread when they had been previously adopted by prominent organizations. Information asymmetries are of particular concern for entrepreneurial ventures suffering from liability of newness or smallness (Singh, Tucker, & House, 1986). In such cases, relying on attributes of a venture's affiliates is often the only possibility for third parties to estimate a venture's value and potential under uncertainty (Stuart et al., 1999).

An initial public offering is a highly significant and non-repeatable event during one organization's life (Fischer & Pollock, 2004) where forms of market failure due to information asymmetries may be present. Indeed, if parties inside the issuing firm and external investors have different information sets on the actual value of the firm, the IPO process can be prone to imperfections concerning timing, price or future proceeds of the venture (Habib & Ljungqvist, 2001). Affiliation with highly reputable financial intermediaries is a key aspect in these situations of ambiguity regarding valuation of the IPO firm (Grinblatt & Hwang, 1989).

In the specific context of IPOs, previous studies in finance and organizational strategy have shown that two types of financial intermediaries play a significant role: venture capital firms and underwriters (Carter & Manaster, 1990; Gulati & Higgins, 2003; Stuart et al., 1999).

Presence of VC investors in a firm's equity structure positively affects the likelihood of reaching an IPO (Hsu, 2006; Shane & Stuart, 2002) as well as IPO costs and valuation (Megginson & Weiss, 1991). However, VCs are heterogeneous in terms of reputational capital (Fitza, Matusik, & Mosakowski, 2009; Gompers & Lerner, 2004; Hsu, 2004); in fact they need to continuously invest in it to remain competitive in the venture capital market (Petkova, Wadhwa, Yao, & Jain, 2014; Sahlman, 1990). Many studies show that highly reputable VCs are more likely to bring their portfolio firms public (Krishnan et al., 2011; Nahata, 2008; Sorensen, 2007) and obtain better valuations at IPO (Krishnan et al., 2011; Lee et al., 2011; Lee & Wahal, 2004; Nahata, 2008; Pollock et al., 2010; Stuart et al., 1999).

Similarly, also prestigious underwriters can influence IPO pricing and performance by reducing investors' uncertainty in the evaluation (Carter & Manaster, 1990; Gulati & Higgins, 2003; Megginson & Weiss, 1991; Pollock et al., 2010). Underwriters usually prefer low-risk IPOs over risky deals (Gulati & Higgins, 2003; Tinic, 1988) due to potential legal liabilities

and losses of reputational capital (Beatty & Ritter, 1986; Carter & Manaster, 1990). As a matter of fact, while VCs typically approach IPO events as risky but lucrative opportunities, underwriters tend to be very selective of IPO-stage firms since it is the post-IPO deals that will generate the highest returns for them (Gulati & Higgins, 2003). Among the post-IPO services offered by underwriters there are: coverage of the firm by prominent analysts (Krigman, Shaw, & Womack, 2001), actions aimed at stabilizing post-IPO stock prices (Ellis, Michaely, & O'hara, 2000), stabilization of the newly public firm's investors network (Fischer & Pollock, 2004) and help in securing post-IPO financing (Ritter & Welch, 2002). Other researchers have also focused on the impact of other financial intermediaries such as auditors and law firms on the IPO process (Balvers, McDonald, & Miller, 1988; Titman & Trueman, 1986).

Most of the listed studies consider only one typology of prestigious affiliate at time, neglecting how investors' perceptions can be simultaneously influenced by different types of affiliates. As an exception, Pollock et al. (2010) has looked at the consequences of having multiple prestigious affiliates at the moment of the IPO valuation. Resorting on the theoretical distinction between certification and substantive benefits from prestigious affiliates explained above, Pollock and colleagues show that, prestigious VCs and underwriters present limits in the amount of prestige they can provide to signal a company's value to external investors. However, the paper in question assumes that the effect of affiliation with highly reputable VCs and underwriters is uniform at all times. It does not clarify yet under which specific circumstances an entrepreneurial venture may derive greater benefits from different types of prestigious affiliates. For instance, external investors may place greater attention to presence of prestigious affiliates in situation of higher firm-related uncertainty (Pollock et al., 2010). Or, as suggested by Stuart et al. (1999), different affiliates may generate different signaling impacts on third parties because of different characteristics and strategic intents.

Among the few studies looking at how contextual factors can influence the value of affiliation with multiple reputable parties, Stuart et al. (1999) looked at alliance partners and equity investors but their measure of technological and commercial prominence is quite far from more recent measures of reputation (e.g. Lee et al. (2011)). Gulati and Higgins (2003) posed that the effects of prominent affiliations vary across different types of affiliates (i.e. VCs, underwriters and strategic alliances) as well as different levels of equity market uncertainty. Although they consider various typologies of affiliates and their effect on perceived uncertainty at the time of the IPO, their focus is on exogenous uncertainty deriving from the stock market outlook as only instance of contingency. Finally, Lee et al. (2011) take one step further introducing the moderation effects of timing, geographic proximity and industry specialization on the relationship between VC reputation and investor perceptions.

To date, there has been little empirical research on the various types of contingencies that may affect the benefits from affiliation with highly reputable affiliates. Specifically, we still do not know whether venture-specific uncertainty and affiliate-specific strategic intents are important contextual factors that can influence the signaling value of reputation.

Venture-specific uncertainty

In the IPO context, high venture-specific uncertainty often reflects situations where the story of a venture until it goes public is too short to help potential investors assessing its true value and future potential. If the transformation from private to publicly traded company happens too quickly in a venture's life then the entrepreneurial venture and its management may not be ready for the systematic change in strategy needed. For instance, changes with respect to goals, time horizons, managerial flexibility, financial resources deployment and tolerance to performance volatility may be possible sources of risk causing irreversible reverberations on the venture's long-term performance and survival (Fischer & Pollock,

2004). When uncertainty about timing of an IPO is particularly high, external investors would be more likely to rely on affiliates' reputation to infer its future prospects (Podolny, 1994; Spence, 1974; Stuart et al., 1999).

It is not clear yet whether the beneficial effect of affiliates' reputation under conditions of extraordinary uncertainty varies across different types of signal that affiliates can release. The question we are trying to answer is: when level of uncertainty about an IPO venture is unusual, would third parties count more on reputable affiliates depending on the certification or substantive value of their reputation? (Lin, Ensel, & Vaughn, 1981; Pollock et al., 2010; Stuart et al., 1999).

We posit that the higher is the level of venture-specific uncertainty, the more external investors would value presence of affiliates whose reputation is linked to the supply of substantive resources rather than to certification per se. In these situations, the fact that a venture with short track records is endorsed by one or more reputable affiliates which could have transmitted the resources needed to succeed in the future is more important than affiliation with a reputable party providing certification through its excellent selection abilities.

On the one hand, highly reputable VCs supply their portfolio ventures with substantive resources (e.g. financial, social and human capital, etc.) until the IPO occurs, when they usually start exiting the investment (Fischer & Pollock, 2004; Gompers & Lerner, 2004; Megginson & Weiss, 1991). Hence, having one or more reputable VCs backing a venture at IPO will impact external investors' valuation even more in situation of high venture-specific uncertainty. On the other hand, the benefit drawn by assistance of highly reputable underwriters thorough the IPO process is mainly linked to certification since the substantive benefits they provide mostly concern post-IPO events. Therefore, the value of having one or

more reputable underwriters undertaking the IPO would not be contingent on firm-specific uncertainty.

Hypothesis 1: When venture-specific uncertainty is high, affiliation with highly reputable parties providing substantive resources (VCs) has a larger impact on the success of an entrepreneurial *venture's IPO*

Hypothesis 2: When venture-specific uncertainty is high, affiliation with highly reputable parties providing certification (underwriters) has no impact on the success of an entrepreneurial *venture's IPO*

Affiliate-specific strategic intents

Extant literature has overlooked also how affiliates' characteristics can impact boundary conditions around reputation transfer (Stuart et al., 1999). For instance, affiliates' strategic intents might affect their willingness to influence external perceptions about quality of their affiliated companies.

We argue that when strategic intents between an entrepreneurial venture and its affiliates are aligned, the second will be more incentivized to use their own reputation as signal of quality to external investors. To test for contingency of affiliates' strategic intents we restrict our focus to venture capitalists only, excluding underwriters for which situations of interests' misalignment with the IPO ventures are less likely.

At IPO, an entrepreneurial venture can issue fresh shares, raising proceeds to invest and expand. Or existing shareholders like VC investors may wish, and sometimes have contractual registration rights, to exploit the event to sell shares of company common stocks they own. In the latter situation, venture management and shareholders' interests will not be completely aligned towards the medium/long-term development of the venture and this, in turn, could generate frictions between the two parts. As a matter of fact, underwriters and

venture management may be concerned that allowing VCs to sell their shares in the IPO can be perceived as a signal of insiders' reservations about the company's prospects.

We claim that in conditions of low insider selling, when there is higher alignment of interests between the IPO venture and its affiliates, highly reputable VCs have greater incentive to influence external investors' perceptions through signaling with their reputation. On the contrary, when existing owners sell large amount of shares at IPO and the proceeds to selling shareholders are high compared to the net proceeds received by the venture, hostile situations between the two parts lower VCs' incentives to use their reputation as signal to external parties.

Furthermore, VC-backed ventures often grant registration rights to their equity investors. This kind of liquidity agreements is common in venture capital contracts because they facilitate shareholders in the conversion of their investments into cash. In their typical forms, registration rights are negotiated between the venture and its investors during the contracting process and they entitle investors to require the company to register their shares for sale to the public. In some cases, registration rights allow the holders to force the company to publicly sell its shares. Often, investors' registration rights or their desire for liquidity creates complex relationship issues as the venture and underwriters try to determine the appropriate offering size and price range (Allison, Hall, McShea, VanYe, & LLP., 2008).

We posit that the existence of registration rights, which enable shareholders to force liquidation of their shares, negatively moderates the beneficial effect of affiliates' reputation on IPO valuation because of greater misalignment of interests between the two parts.

Hypothesis 3: When affiliate-specific strategic intents are aligned with those of the venture because of low insiders selling, affiliation with highly reputable parties has a *larger impact on the success of an entrepreneurial venture's IPO*

Hypothesis 4: When affiliate-specific strategic intents are aligned with those of the venture because of absence of registration rights, affiliation with highly reputable parties has a larger impact on the success of an entrepreneurial venture's IPO

DATA AND METHODS

Sample and Data Sources

The sample included all VC-backed IPOs of entrepreneurial ventures in the U.S. Clean Technology sector between 1990 and 2014. We restricted the sample to U.S. ventures that were listed on U.S. stock exchanges to exclude valuation uncertainty tied to international financial conditions. We used the "Company Technology Application" classification provided by VentureXpert to pick ventures associated with clean technologies.

The cleantech sector has experienced in the last years a continued growth in both number of IPO deals and dollar amount of such offerings, indicating a long-term market approval of the continuing changes in domestic and global energy consumption. The successful public market financings of cleantech companies is very important in order to increase future access to capital for renewable energy generation assets, as well as related clean technologies and services across the sector.

IPO listings were drawn from the Securities Data Corporation Global New Issues and the Cleantech Group's i3 databases, data on VC funding rounds were obtained from Securities Data Corporation's VentureXpert. We gathered accounting and market valuation data from Compustat and CRSP databases. All the other relevant variables were hand-collected from companies' IPO prospectuses. Following previous research (Chen et al., 2008; Pollock et al., 2010), we excluded any IPOs that were spin-offs or carve-outs from corporations to ensure that we were examining only independent entrepreneurial ventures. From the total of 211 cleantech IPOs in the United States in the study period, we selected only those involving

entrepreneurial ventures that received at least one VC financing round in the first 10 years of life. Of these 89 entrepreneurial ventures, complete information was available for 73 VC-backed IPOs, which constitute our final sample.

Dependent Variable

IPO Valuation. Consistent with previous research (Megginson & Weiss, 1991; Pollock et al., 2010) we measured IPO success as the natural logarithm of a company's market capitalization at the end of the IPO's first day of trading. Market capitalization is defined as the share price at the end of first trading day multiplied by the number of shares outstanding after the IPO.

Independent Variables

Number of highly reputable VC firms. VC reputation was measured as a composite index developed and validated by Lee et al. (2011). This index captures both the quality and prominence dimensions of reputation (Rindova et al., 2005) and has been considered the most comprehensive measure of reputation (Petkova et al., 2014). The index is based on six measures of VCs' past actions and performance: the number of ventures invested in by the VC the past five years, amount of dollars invested in the past five years, total amount of funds raised in the past five years, number of funds raised in the past five years, number of portfolio ventures taken to IPO during the past five years and VC age. After computing the reputation index for 11,769 private equity investors, we ranked each VC on a 100-point scale for each year between 1990 and 2013. A VC was considered highly reputable in any given year if it was ranked in the top 5% of all VCs for that year. Since a portfolio venture may be invested in by more than one VC in each investment round, we counted the total number of reputable VCs backing the venture at the time of the IPO. We used information from the last round of

investment and the stakeholders' information section in the prospectus to discern the VCs actually present in the company's ownership structure at the moment of the IPO. This measure allows accounting for the effect that multiple VCs with high reputation can have on venture exits rather than simply examining the prestige of the lead VC. The lead VC approach, used in prior literature (i.e. Nahata (2008)), does not account for the possibility that a venture could benefit from the reputation of VCs that are not lead VCs but which could still have significant decision making power within a syndicate.

Number of highly reputable underwriters. Underwriter prestige was measured using the well-known Carter and Manaster (C-M) ranking system (Carter, Dark, & Singh, 1998; Carter & Manaster, 1990; Pollock et al., 2010). The measures are based on analyses of investment banks' positions in the "tombstone" announcements for IPOs. We used the IPO prospectuses to identify the lead and co-managing underwriters for each IPO. Information was available for all the lead underwriters in the sample. Following prior studies we counted underwriters as prestigious if they received a C-M score of 8.75 or higher (Chen et al., 2008; Megginson & Weiss, 1991; Pollock et al., 2010).

Time-to-IPO. We measured time-to-IPO as the length of time in years between the first round of VC financing and the date of the venture's IPO. The mean time-to-IPO in the sample was 4.505 years.

Insiders selling. In an IPO, a company can sell fresh shares, raising cash to invest and expand. Or the company's existing owners can take advantage of the situation and sell their stakes to the public, raising cash for the owners but not the company. We measured insiders selling as the amount raised in the IPO by sales of existing shareholders.

Registration rights. We created a dummy to measure whether "demand registration rights" were mentioned in the prospectus section related to the description of the capital stock. Demand registration rights enable the investors to force the venture to register their shares for

sale to the public and can affect the future cost of raising capital of a company as well as its success.

Control Variables

Company characteristics. We followed prior research and included several measures to control for firm's quality, scale and resources. We included pre-IPO sales (annual net revenues in the year prior to the IPO), pre-IPO income (net profits/losses in the year prior to the IPO), pre-IPO sales growth (percentage change in revenues from two years prior to the IPO to one year prior to the IPO), Average executives tenure (mean number of years that executives listed in the IPO prospectus had been with the company at the time of the IPO), Average executives age (mean age of executives listed in the IPO prospectus at the time of the IPO), Founder survived (dummy variable, coded 1 if at least one founder survived until the IPO), Founder-CEO (dummy variable, coded 1 if a founder was CEO at the IPO), CEO seats in other boards (dummy variable, coded 1 if a CEO seats in other companies' boards at the time of the IPO), Number of directors and executive officers (we counted directors and executive officers owning stocks at IPO from the prospectus), Directors and executives hired in the IPO year (count of the number of directors and executives hired in the year leading to the IPO), Percentage of shares sold by directors and executive officers in the IPO and Total amount of funding received (millions of dollars received by the venture from the first round of financing until the IPO) .

Industry and year dummies. Years and Cleantech sub-sectors dummies were included to control for unobservable industry and time fixed-effects.

Estimation Method

In general, sample selection might cause biased estimates due to unobserved factors if the criteria chosen to select the sample are not independent of the outcome variable. In this specific case, since entrepreneurial ventures going public are not randomly selected from the population, then the results that we would obtain using an OLS regression would suffer from selection bias.

We used the Heckman two-stage approach to correct for such potential selection bias (Heckman, 1979). Following previous research (Gulati & Higgins, 2003; Lee et al., 2011) we matched our VC-backed IPOs with a control sample of entrepreneurial ventures with the following characteristics: (1) they were active in the clean technology sector; (2) they received the first round of VC investment later than the earliest VC round among the IPO firms; (3) they did not go public or registered for IPO between 1990 and 2014; and (4) they received the last round of VC investment earlier than the latest VC round among the IPO firms. This led to a control sample of 1579 VC-backed ventures operating in the Cleantech sector which did not go public during the study period.

In the selection model we estimated the likelihood of completing an IPO using the following predictors: total amount of VC funding received by the venture, number of VC firms investing in the venture, founding year, industry sub-sector and geographical location. In this first-stage regression (not reported in the regression tables for matter of space) all the included regressors were found to significantly predict the likelihood of completing an IPO ($p < 0.001$). Estimates from the parameters of the first-stage model were then incorporated into a second-stage regression to predict IPO valuation.

RESULTS

Summary statistics and correlations between the main variables are provided in Table 1 and 2.

Insert Tables 1 and 2 about here

Table 3 presents the results from the two-stage Heckman selection models in which the first stage regression (not reported) predicted the likelihood that a venture goes public and the second stage predicted IPO valuation. Model 1 includes only control variables, Model 2 adds the main effects of reputation for the two types of affiliates and finally in Models 3-6 the interaction terms are included to test for the four hypotheses.

Insert Tables 3 about here

Hypothesis 1 predicted that affiliation with highly reputable VCs is particularly valuable for entrepreneurial ventures affected by high venture-specific uncertainty. Model 3 in Table 3 tests this hypothesis. Our findings reveal a negative and significant interaction between the number of reputable VC investors in a venture at the IPO and the time-to-IPO, our proxy of venture-specific uncertainty. In order to test for the relevance of such interaction, we first checked that the coefficients of Number of highly reputable VC firms was significantly different from zero at high (one SD more than the mean), medium and low (one SD less than the mean) values of time-to-IPO. Then, we tested whether the coefficient of Number of highly reputable VC firms when time-to-IPO is high was significantly different from when it is low, rejecting the hypothesis of equality of coefficients at a 0.1% significance level.

In Figure 1 we plotted the predicted values of two different entrepreneurial ventures from our sample: one that goes public after one year from the first VC round and another that takes seven years to reach the IPO (one SD more than the average time-to-IPO in the sample).

Insert Figure 1 about here

It is possible to notice that the marginal effect of having one or more highly reputable VCs is larger for the entrepreneurial venture characterized by shorter time-to-exit (blue line) and, in turn, higher venture-specific uncertainty.

The results also support Hypothesis 2 suggesting that the effect of affiliation with highly reputable underwriters on IPO valuation is not contingent on venture-specific uncertainty. Indeed, the coefficient of the interaction between time-to-IPO and the number of highly reputable underwriters in Model 4 is negative but not significant.

Hypothesis 3 and 4 predicted that connections with highly reputable affiliates would be related to IPO success especially when strategic intents of the two parts are aligned. We measured alignment of strategic intents looking at the amount of insiders selling and existence of demand registration rights at IPO. Hypothesis 3 was supported as shown in Model 5, where the coefficient of the interaction between insiders selling and the number of reputable VCs backing a venture was negative and significant. Also Hypothesis 4 was confirmed as the interaction between the dummy signaling presence of demand registration rights in the prospectus and the number of reputable VCs appears negative and significant.

To illustrate the magnitude of the decline in the coefficient across different alignments in strategic intents, Figure 2 plots the IPO valuation as the number of reputed VCs increases within different levels of insider selling.

Insert Figure 2 about here

As the figure shows, being invested by highly reputable VC investors had a much greater impact on IPO valuation if there was low insider selling at IPO (red line). In situations

of high insider selling (blue line) the impact of multiple prominent VC investors on IPO valuations is even negative.

With regard to the controls, pre-IPO sales, the percentage of shares sold by internal directors and executive officers and the average tenure of executives were found to be related to IPO success. For some model specifications, also the number of directors and executives hired in the IPO year as well as total amount of funding received appeared to have an effect on IPO valuation. Concerning the main effects, both number of highly reputable VCs and underwriters were positively and significantly related to IPO valuations in all the models.

DISCUSSION

This paper demonstrates that multiple types of highly reputable affiliates have distinct impacts on entrepreneurial ventures' valuations from external investors and this, in turn, is contingent on the venture-specific uncertainty and the affiliates' strategic intents. Our analysis of cleantech VC-backed IPOs confirms that underwriters and venture capitalists are both financial intermediaries whose reputational capital positively affects IPO success (Carter & Manaster, 1990; Gulati & Higgins, 2003; Lee et al., 2011; Nahata, 2008; Stuart et al., 1999).

However, in situations of high venture-specific uncertainty, highly reputable VCs are the financial intermediaries that influence external investors' perceptions the most. Whereas, the beneficial value from highly reputable underwriters does not seem to be contingent on venture-specific uncertainty.

To explain this result we built upon the distinction between potential certification and substantive benefits of different types of affiliates as proposed in other studies (e.g. Pollock et al. (2010) , Lee et al. (2011)). We extend prior research by analyzing which types of benefits provided by reputable affiliates are more valuable when venture-specific uncertainty is high. Our findings show that in situations of high uncertainty due to short track records, affiliates

providing substantive resources have a greater impact on external perceptions than affiliates whose reputation serves as a certification mechanism. In the specific context of entrepreneurial ventures going public in the cleantech sector, being affiliated with one or more highly reputed VCs has a larger impact on IPO valuations when the time between the first round of VC finance and the IPO event is short. On the contrary, the impact of highly reputed underwriters on IPO valuations does not depend on the length of time before exit.

Future research could expand the present study by looking at contingencies of venture-specific uncertainty on other relevant external affiliates (i.e. alliance partners, board executives and directors, etc.) and the different typologies of benefits they provide to ventures at IPO. Additionally, scholars could test new measures of venture-specific uncertainty that go beyond the lack of information resulting from quick exits.

The present study also extends prior research on strategic intents and incentives of affiliates by investigating how it influences boundary conditions around reputation transfer (Stuart et al., 1999). We show that alignment of strategic intents between the entrepreneurial venture and its affiliates is a necessary condition to enable the signaling mechanism of affiliates' reputation (Milgrom & Roberts, 1982; Spence, 1974). Our results suggest that being affiliated with multiple reputable VCs at IPO events is particularly beneficial for entrepreneurial ventures when these VCs are committed in keeping their shares after the IPO and if they did not negotiated stringent liquidity agreements with the venture. On the contrary, when VCs exit from IPO ventures by selling large amount of their shares or when the IPO prospectus shows strict liquidation clauses aimed at making it exiting investments easier for investors, VC reputation does not work as signal of venture's quality to external investors. Although our study is exploratory, we believe that this last results hint to the necessity to have strategic intents that are completely aligned between two or more exchange partners in order to observe the beneficial impact of affiliates' reputation as signaling mechanism under

uncertainty. We claim that in circumstances characterized by high misalignment in the long-term interests of an entrepreneurial venture and its reputable affiliates the emergence of conflicting situations might undermine the transfer of reputational capital as well as the inclination to get it across to external parties.

TABLES AND FIGURES

Table 1. Summary Statistics (n=73)

Variable	Mean	Std. Dev.	Min	Max
IPO valuation	5.77	1.25	2.82	8.37
Number of highly reputable VC firms	1.22	1.27	0.00	6.00
Number of highly reputable underwriters	0.68	0.83	0.00	3.00
Time-to-IPO	4.52	3.41	0.40	15.90
Insider selling	46.77	325.85	0.00	2778.08
pre-IPO sales	3.57	2.41	-2.24	8.74
pre-IPO income	0.10	49.79	-263.30	191.60
pre-IPO sales growth	3.19	11.94	-1.42	78.69
Percentage of shares sold by directors and executive officers	11.72	10.45	0.00	49.30
Average executives tenure	3.84	2.43	0.00	11.77
Average executives age	50.70	3.81	42.30	59.14
Number of directors and executive officers	11.14	2.88	4.00	18.00
Founder-CEO	0.33	0.47	0.00	1.00
Founder survived	0.52	0.50	0.00	1.00
CEO seats in other boards	0.38	0.49	0.00	1.00
Directors and executives hired in the IPO year	3.77	3.02	0.00	14.00
Demand registration rights	0.59	0.50	0.00	1.00
Total amount of funding received	233.21	509.07	0.01	3603.20

Table 2. Main Correlations (n=73)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1 IPO valuation	1																		
2 Number of highly reputable VC firms	0.0517	1																	
3 Number of highly reputable underwriters	0.0443*	0.1651	1																
4 Time-to-IPO	-0.1697	-0.0489	-0.1344	1															
5 Insider selling	0.2399	0.143	0.0707	-0.0303	1														
6 pre-IPO sales	0.4356*	-0.1064	0.3698*	-0.2239	0.2653	1													
7 pre-IPO income	0.1163	-0.0369	0.0667	-0.0432	0.3206*	0.1661	1												
8 pre-IPO sales growth	-0.1086	0.055	-0.0802	0.1019	-0.0395	-0.2053	-0.0623	1											
9 Percentage of shares sold by directors and executive officers	-0.3405*	-0.0389	-0.2526	0.1487	-0.0461	-0.2088	0.0222	0.0092	1										
10 Average executives tenure	-0.0441	0.0389	0.0902	0.4468*	0.1974	0.148	0.0262	-0.0611	0.0419	1									
11 Average executives age	-0.072	-0.2815	-0.0931	0.2638	-0.0423	-0.0363	-0.0056	-0.2514	-0.0087	0.1555	1								
12 Number of directors and executive officers	0.5003*	0.0824	0.2765	-0.0394	0.1548	0.3026*	0.1105	-0.2127	-0.2347	0.0116	-0.0341	1							
13 Founder-CEO	-0.1604	0.186	-0.1597	0.0495	-0.0726	-0.2784	-0.081	0.1147	0.0294	-0.0386	-0.0881	-0.1257	1						
14 Founder survived	-0.1751	0.1991	-0.2039	0.179	0.1249	-0.2998*	-0.0652	0.0389	0.1677	-0.1035	-0.1309	-0.1145	0.6166*	1					
15 CEO seats in other boards	0.3010*	-0.1473	0.2275	0.0161	0.1503	0.3941*	-0.024	-0.161	-0.2631	-0.007	0.1442	0.1907	-0.0643	-0.1326	1				
16 Directors and executives hired in the IPO year	0.4461*	-0.1241	0.2029	-0.3429*	-0.1012	0.1249	-0.2719	0.0243	-0.2543	-0.4701*	-0.1645	0.2618	-0.121	-0.066	0.1256	1			
17 Demand registration rights	0.3999*	-0.0636	0.2239	-0.145	0.1196	0.2005	0.0167	-0.244	-0.1361	-0.1036	0.1355	0.2359	0.0429	0.0223	0.0767	0.158	1		
18 Total amount of funding received	0.5117*	0.1845	0.3939*	-0.1352	0.7836*	0.4718*	0.3091*	-0.0628	-0.2419	0.1449	-0.0527	0.3824*	-0.1758	-0.0961	0.3654*	0.088	0.1754	1	

Table 3. Main Results (n=73)

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	IPO_Valuation	IPO_Valuation	IPO_Valuation	IPO_Valuation	IPO_Valuation	IPO_Valuation
Total amount of funding received	0.001** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001* (0.000)	0.000 (0.000)
pre-IPO sales	0.099+ (0.051)	0.099** (0.038)	0.097** (0.034)	0.097* (0.038)	0.072* (0.033)	0.088* (0.037)
pre-IPO income	-0.001 (0.002)	0.001 (0.002)	0.001 (0.001)	0.001 (0.002)	0.001 (0.001)	0.001 (0.001)
pre-IPO sales growth	-0.002 (0.007)	0.002 (0.006)	0.007 (0.005)	0.002 (0.006)	0.003 (0.005)	0.004 (0.005)
Percentage of shares sold by directors and executive officers	-0.032*** (0.009)	-0.022** (0.007)	-0.037*** (0.007)	-0.023** (0.007)	-0.018** (0.006)	-0.017* (0.007)
Average executives tenure	-0.105+ (0.060)	-0.133** (0.045)	-0.197*** (0.044)	-0.134** (0.045)	-0.039 (0.044)	-0.102* (0.046)
Average executives age	-0.028 (0.031)	-0.008 (0.023)	0.003 (0.022)	-0.008 (0.023)	0.002 (0.020)	-0.010 (0.023)
Number of directors and executive officers	0.004 (0.035)	0.009 (0.026)	0.004 (0.024)	0.009 (0.026)	0.028 (0.023)	-0.002 (0.026)
Founder-CEO	0.054 (0.271)	0.162 (0.202)	0.113 (0.184)	0.162 (0.201)	0.041 (0.177)	0.150 (0.196)
Founder survived	0.075 (0.230)	-0.085 (0.173)	0.078 (0.163)	-0.076 (0.175)	-0.159 (0.151)	-0.062 (0.168)
CEO seats in other boards	-0.415 (0.261)	-0.131 (0.198)	-0.240 (0.183)	-0.133 (0.198)	-0.154 (0.172)	-0.026 (0.198)
Directors and executives hired in the IPO year	0.037 (0.043)	0.070* (0.033)	0.040 (0.031)	0.069* (0.033)	0.073* (0.029)	0.078* (0.032)
Demand registration rights	0.336 (0.213)	0.125 (0.161)	0.006 (0.150)	0.128 (0.161)	0.219 (0.141)	0.451* (0.217)
Insider selling	-0.001 (0.001)	0.000 (0.000)	0.001 (0.000)	0.000 (0.000)	0.009*** (0.002)	0.000 (0.000)
Time-to-IPO	0.110** (0.036)	0.123*** (0.027)	0.211*** (0.033)	0.130*** (0.034)	0.077** (0.025)	0.110*** (0.027)
Number of highly reputable underwriters		0.483*** (0.096)	0.389*** (0.091)	0.523*** (0.153)	0.234* (0.098)	0.492*** (0.093)
Number of highly reputable VC firms		0.244*** (0.067)	0.724*** (0.137)	0.246*** (0.067)	0.338*** (0.062)	0.498*** (0.134)
Number of highly reputable VC firms X Time-to-IPO			-0.101*** (0.026)			
Number of highly reputable underwriters X Time-to-IPO				-0.012 (0.035)		
Number of highly reputable VC firms X Insider selling					-0.003*** (0.001)	
Number of highly reputable VC firms X Demand registration rights						-0.314* (0.146)
Invers Mills Ratio	-0.114 (0.233)	-0.060 (0.176)	-0.139 (0.163)	-0.049 (0.180)	0.123 (0.158)	-0.032 (0.171)
Constant	8.045*** (1.810)	6.153*** (1.374)	5.953*** (1.255)	6.152*** (1.372)	4.711*** (1.231)	5.518*** (1.363)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Cleantech sub-sector dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	73	73	73	73	73	73

Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Figure 1. Effects of venture-specific uncertainty on the ‘Reputation-IPO valuation’ relationship

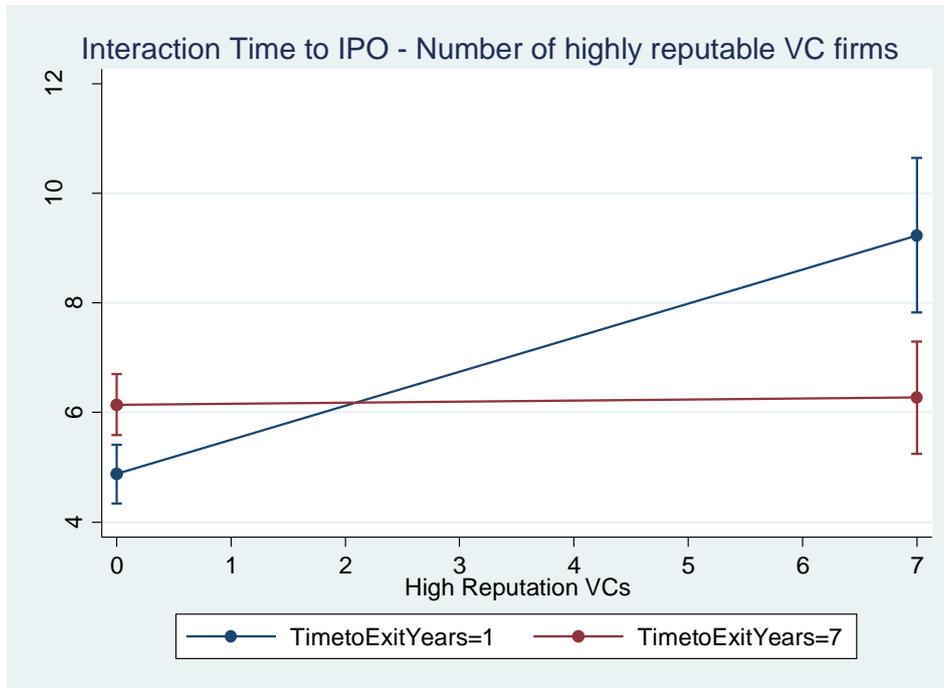
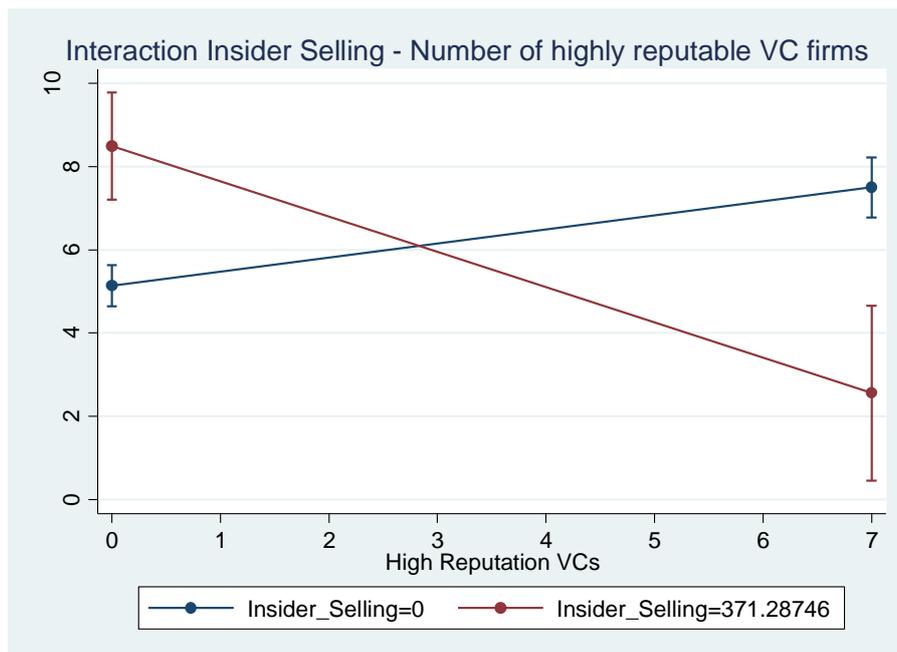


Figure 2. Effects of misalignment of interests between VCs and the entrepreneurial venture on the ‘Reputation-IPO valuation’ relationship



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