Competitive Effect of Initial Public Offerings: Does Venture Capital financing matter?

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Abstract

Using a sample of initial public offerings (IPO) in France, I analyze product market rivals' returns on IPOs and whether rival's reaction differs on the status of the issued firm. I find that industry competitors experience negative stock return around IPOs. The reaction is more negative when the issued firm is backed by venture capital (VC) investors. I also investigate VC investors' characteristics impact on rival firms' stock market return. I find that syndicated deals and experienced VC firms have more negative effect on competitor's stock price. The results suggest that public competitors consider VC-backed IPOs as strong rivals able to deal optimally with the public market.

JEL Classification: G24, G23, G14.

Keywords: private equity, IPO, competitive effect, event study.

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1 Introduction

Going public or staying private is an important strategic decision in firm's lifetime. A direct consequence of going public is improving firm liquidity by raising capital from much larger number of investors. In going public process, firms need to increase publicity and information release to convince larger group of investors about the quality of its projects and thus reducing its valuation uncertainty. Public trading, can in itself, add value to the firm, as it may inspire more faith in the firm from other investors, creditors, suppliers, and customers, allowing to infer the firm quality from its stock price.

Another strategic benefit of going public stems from public investor's lower risk aversion and resulting in greater aggressiveness of public firms in the product market (Chod and Lyandres (2011) [13]). Firms' decision to go public may came also as response to favorable market conditions (Ritter and Welch (2002) [30]). Thus, going public decision is a signal of firm's product quality, of its ability to deal optimally with public market conditions, and of the positive prospect for the industry as a whole. Therefore firm's IPOs may affect product market strategies and competitor's valuation.

Venture capitalists are successful in timing the decision to take the companies public (Lerner 1994 [24]). they choose to exit their company by IPO when its valuation is at peak and when the industry valuations are highest. As "closed-end" vehicles with a limited contractual lifetime, the PE funds' exit decision is one of the most important aspects for the private equity (PE) market prospect.

The exit decision doesn't depend only on entrepreneur and VC investor motivations; firm and product market situations are also considered. In their theoretical paper, Bayar and chemmanur (2011) [12] add competition as a new variable when modeling the exit decision. They argue that the product market is important as "after going public, the VC backed firm has to stand-alone and to fend for itself, while an acquired firm benefit from considerable support from the acquirer". They conclude that the stand-alone firm will be able to face competition and to establish itself in the product market with viable business models, while acquired firm needs additional support from the acquirer.

VC investors fund only a minority of firms after strong selection and screening process. The selected firm is then actively monitored by the VC investors, they sit on the board of directors, work on raising additional funds, recruit management and provide strategic analysis. Thus, the quality of firms brought public with VC backing is likely to be higher than that of non-VC backed ones. Empirical findings showed that venture-backed IPOs convey superior information relative to non venture-backed ones, that venture capital firms access to top tier investment bankers and underwriters (Megginson and Weiss 1991 [27]), and that after IPO, venture-backed IPO firms perform better than non venture-backed (Brav and Gompers 1997, [8], Ivanov and Xie 2010 [23]). This may enhance public market's valuation about VC IPO prospect and VC backed firms' ability to gain larger product market share.

Understanding the competitive impact of IPOs is crucial not only for entrepreneurs, but also for VC investors, as well as for investment banks and other financial intermediaries involved in the taking public process. Firms that go public need to evaluate the market reaction towards their listings to estimate the optimal time for an IPO. At the same time, rivals firms need to appreciate the competitive effect/advantage of the new listings in order to address the risk of dilution in their market shares.

The aim of this paper is to examine rival's reaction after an IPO in their product market, and examine if rival's reaction differ whether or not the issued firm is PE backed. Using data for companies listed in the French stock exchange, I first select pairs of VC and non VC-backed IPO companies issued between 1994 and 2011. Second, for each new issued company I build a portfolio of rival public firms operating in the same sector. Then I compute the cumulative abnormal returns for different windows around the IPO date. The event study results show that rivals react negatively to IPOs in their sector, the negative reaction is more important when the firm is VC backed, when the deal is syndicated and when the VC investor is more experienced.

The structure of the paper is as follows: Section 2 reviews the relevant literature related to the paper. Section 3 introduces the data sources, variables and the methodology. Section 4 shows and discuss the results. Section 5 concludes.

2 Literature review

This paper is related to two strands of literature. The first is the literature on the going public decision and the interactions between the financial and product markets. Stoughton, Wong, and Zechner (2001) [36], consider going public as an enhancement of company's image and publicity and that only better-quality firms will go public, Thus signaling to the market, the firm's high product quality. Another, frequently mentioned motive for going public is to provide optimal access to capital markets in order to obtain new finance. when deciding between going public or remaining private, the firm examine the trade-off between the strategic cost of revealing firm's proprietary information, and the return in the public market (Maksimovic and Pichler (2001) [26] and Spiegel and Tookes(2009)[34]). On one hand, public issuance involves the release of information that is potentially valuable to competitors and may hurt firm's future product market performance. On the other hand, private financing involves a limited number of investors who may require higher returns due to the relative illiquidity of their investment.

Chod and Lyandres (2011) [13], consider product market competition as an important factor in the going public decision. The intuition is that, as owners of public firms tend to hold more diversified portfolios than owners of private firms. Public firms tend to be less concerned with idiosyncratic profit variability and, hence, tend to pursue more aggressive product market strategies, than private firms. Thus the benefit of going public is more likely to outweigh the cost of doing so in industries characterized by more intense competitive interaction and larger idiosyncratic demand uncertainty. Therefore firms pursue aggressive product market strategy when they go public. In equilibrium this reduces the aggressiveness of its rivals.

A positive IPO competitive effect may be interpreted by the market timing hypothesis, Lowry (2002) shows that high IPO volume occurs when private's firm demand for capital is high, adverse selection cost of equity is low and investors are overoptimistic. Thus firm decision to go public may be a response to favorable market conditions as whole (Ritter and Welch (2002)[30]). Therefore, an IPO could signal a change in the prospect for the industry,

and bring positive valuation effects for rival firms too.

These papers give interesting intuitions about the impact of IPOs on competitors' market share. Furthermore, If public investors consider the positive effects of IPO, (firms with good quality seeking for additional capital) as being more dominant than the negative effects, (communicating sensitive information valuable to competitors), then the competitor's market returns should decrease. In contrast, if investor view the information diffused in the public market, as helpful to firm's rivals to be more competitive, and this effect as dominant, then the competitors' market return is expected to increase.

The second strand of literature is related to the VC financing and exit decision. Studies focusing on type of exit interpret IPOs and acquisitions as success events, and considering it failure if the company closed down or remains alive after many years. In IPOs, investors sell some of their equity holdings and the entrepreneur continues managing the stand alone firm. In exits by sale, the private firm is acquired; the PE investors divest their entire equity holdings in the firm, with the entrepreneur giving up control of the firm to the acquirer who satisfies the target firm's funding requirements.

VC contracting studies connect exit decision with investors and entrepreneur degree of control, (Kaplan and Stromberg (2003), Cumming (2005), Cumming and Johan (2007c), Cumming (2008)), they find that promising ventures are associated with higher degree of entrepreneur control, while venture capitalist will ask for more control rights for less valuable project. In addition to that, Cumming (2008[16]) find that less VC controls are associated with greater probability of IPO exit. Furthermore, for promising firm, when the successful exit route is more guaranteed, VC investors will be more confident to give up control right to entrepreneur. And given entrepreneur' personal benefits for being the CEO of the stand-alone firm after the IPO, the IPO exit is then more preferred. Thus exit by IPO is more likely for more promising firms.

Schwienbacher (2008) [33] analyzes how startups financed by venture capital choose their innovation strategy based on exit preferences. The author argues that the entrepreneur' personal benefit from remain in control after the exit stage (IPO exit), and the fact that

innovative project makes the firms more attractive for an IPO, may create strong motivations to enhance firm' innovation strategy. Thus, IPO exit are more likely for innovative ventures (Gompers, 1995; Cochrane, 2005; Darby and Zucker, 2002; Cumming and MacIntosh, 2003).

In their model, Bayar and Chemmanur (2011)[12] consider the firm's ability to face competition as an additional variable in the exit decision. They predict that higher quality firms, which are more viable in the face of product market competition, are more likely to go public, while lower quality firms are more likely to be acquired. Thus, they hypothesis that on average, more established firms with business models viable against product market competition are more likely to go public through an IPO rather than to be acquired.

A large body of VC literature has examined the influence of VC investor on IPOs performance, in terms of long-term stock returns (Ritter 1991 [30], Brav and Gompers 1997 cite Brav, etc.), underpricing and returns around the lock-up period (Brav and Gompers 2003 [9], Bradley et al. 2001 [7], Espenlaub et al. 2001 cite Espenlaub, etc.). Researchers focus also on the certification role of venture capitalists (VC) in IPOs (Megginson and Weiss 1991 [27] Jain and Kini 1995 [22], Brav and Gompers 1997 [8], Amit et al. 1998 [2] , Cumming and MacIntosh 2003 [15], Puri and Zarutskie 2011 [28], etc.). VC's play a powerful role in IPOs by attracting higher public market participants, giving an optimistic valuation about the future of the issued firm (Chemmanur and Krishnan (2011) [11]).

The literature globally finds that the presence of VC investors certifies that VC-backed firms have a higher quality than non VC-backed firms, are less likely to fail, and have higher returns. Thus the IPO market investors assess a larger prior probability that the VC IPOs are viable in the product market, therefore, public market' valuations will be optimist about VC backed firms IPOs' prospect, and its ability to compete successfully in the product market.

The characteristics of VC investment may affect portfolio companies' performance. Syndication is common in the VC financing, it may lead to better project selection (Lerner (1994) [24]). VC investors involved in the joint deal bring more experience and expertise to the venture, which reduce its probability of failure. Furthermore, syndicated deals with more

experienced VC investors are more likely to perform better, to compete more aggressively in the product market, and thus induce negative impact on rival's stock return.

In sum, competitors' stock prices return fall after IPO announcement, if new information conveys more positive prospects for the issuing firm than for the growth of the product market and when the risk of publishing strategic information is lower than the benefit of raising additional capital to finance additional project. While competitor's stock price return will increase, if they consider the prospect of the sector, after the IPO, as more dominant than the advantage that the issued firm can get from becoming public. Furthermore, if investors believe that VC investors help their target to improve their business strategy, and that the VC investors choose to list the more valuable firms with high quality, then I expect rival companies to fare less well after VC backed IPOs, compared to non VC backed IPOs.

Empirical evidence of firm's IPOs effect on rival evaluation is mixed. Using 2,493 IPOs between 1989 and 2000, Akhigbe, Borde, and Whyte (2003) [1] find no significant valuation effect of IPOs on rival firms. Hsu, Reed, and Rocholl (2010) [19], report that firm's IPO, in US public market between 1980 and 2001 results in abnormally negative returns to the firm's competitors. Cotei and Farhat (2011) [14] use a quite similar IPOs sample' period (from 1983 to 2001), they compare VCs IPO and non VCs IPO using the Fama-French multiple risk-factor model, they find that the three days cumulative abnormal returns (CAR) around the IPO date is positive for the VCs IPOs and no significant reaction to non VC IPOs.

In this paper, I analyze the going public' competitive effect in the French market. I control for the endogeneity of VC financing, by matching comparable VC IPOs and non VC IPOs. I use the market model to estimate competitor' abnormal returns, and take into account competitor's conflicting events; finally I investigate the influence of VC characteristics on competitor' cumulative abnormal returns

3 Data and methodology

3.1 Data description and sample selection

The data used in this study come from several databases. I obtain the list of IPOs for the French market from 1994 to 2011 from Thomson One Banker. In common with others IPOs studies, I eliminate equity offerings of financial institutions (SIC codes between 6000 and 6999), and IPOs with offer price less than 5 euros. Furthermore, the firm should issue ordinary common shares and should not be a spin off. The IPO date was double checked on filling documents, on company's website and on Datastream database.

I finally exclude firms with doubtful IPO date, and firms issued in other foreign public markets. I then use Tomson One Banker database to distinguish VC IPOs exit. I define competitors of IPO firms as public companies operating in the same four-digit SIC code. I restrict competitors to those that are public at least one year before the IPO date. I use Tomson One Banker to get competitors list; and Datastream for financial information, competitor's and market daily stock prices. To avoid conflicting events, I check in Factiva database if competitors made important announcements 30 days around the IPO day, I drop competitors who announced earnings, dividends, stock splits, mergers and acquisitions and strategic alliances. Finally, each IPO firm is matched with a portfolio of competitors (same 4-digit SIC code and same year).

To better evaluate the effect of VC-backed IPOs, I create a comparable sample of non-VC-backed IPOs using propensity score matching. In this approach, propensity scores are used to select "control" units that are most like the "treatment" units across a variety of characteristics considered important to the analysis (Dehejia and Wahba (2002) [17]). The "treatment" and "control" units for the purpose of this analysis are VC-backed and non-VC-backed firms, respectively.

I use a propensity score matching method, since IPOs of VC-backed firms are likely to have different characteristics from IPOs of non VC-backed ones. For example, VCs concentrate their investments in firms with high growth potential, and they seek to exit from

their investment within 3-5 years. Among different propensity score matching techniques, I use the nearest-neighbor method because it allows to exclude observations with certain deal characteristics that may bias or induce spurious results.

The first step in propensity score matching is to estimate a logistic regression predicting whether an IPO involves a VC-backed or a non-VC-backed firm. The dependent variable is equal to 1 if the issued firm is VC backed, and is 0 otherwise. The explanatory variables used in the matching criteria are: four-digit SIC code, IPO year and the size of the issued firm measured by its total asset.

The SIC codes control for industry patterns in VC investing, since VCs focus largely on innovative and technological firms in selective industries. IPO year controls for time trends and year variation in financing activity. Firm's asset control for IPO' firm size. To match the two sub-samples, I first estimate the propensity scores for deals involving VC-backed and non-VC-backed firm. Next, I stratify all targets into blocks defined by quantiles of the propensity score distribution, and perform balancing based on differences in means t-tests between VC-backed and non-VC-backed targets within each block. Finally, for each "treatment" observation, I seek the nearest match from the "control" sample with replacement

Over the period 1994 to 2011, I reported 72 VC-backed IPOs versus 174 non VC-backed IPOs. For these newly listed companies, I construct 72 portfolio of rivals for VC-backed IPOs and 174 for non VC-backed IPOs; competitor' portfolio contains at least one competitor and a maximum of 94 competitors. Overall, I have 581 competitor operating in 98 different four-digit sic codes.

3.2 Descriptive statistics

Table 1 reports the IPO sample across years for VC IPOs and non VC IPOs. 29% of IPOs, in the sample, occurs during 1999-2000. This is consistent with the internet bubble and the "hot period" defined by Ritter (2007) [30]. The market then underwent a cold period where the number of IPOs dropped to only 4 IPOs in 2004. Then a renewal of activity during

2005-2008, but again a strong decrease after this.

[Insert Table 1 about here]

Concerning sectors, Table 2 provides a summary of macro industry description, for both VC and non VC IPOs, the highest number of IPOs belongs to the high technology sector, where 132 firms (45%) went public during the study period.

[Insert Table 2 about here]

Table 3 reports descriptive statistics for IPOs and rival firms. The mean (median) proceeds raised by VC IPOs is 130 euros (20 euros) million compared to 21 euros (4 euros) million for non VC backed IPOs. The mean (median) return on asset ratio of venture backed IPOs is 0.03 (-0.05), whereas that of non-venture backed IPOs is 0.06 (0.08). The full sample of IPOs has a mean (median) return on asset ratio of 0.02 (0.06) and mean (median) total assets of 103 euros (17 euros) million.

There are a total of 246 rival portfolios with 581 competitors operating in 98 different SIC codes. The exact composition of rival portfolios varies with the timing of the event. The average number of rivals per IPO event is 42, the median is 39, the minimum is 1 and the maximum is 94.

The mean (median) assets of rival is 1895 euros (43) million whereas the mean (median) age since trading is 7.5 (6). Regarding the VC sub-sample, 50% of deals are syndicated. Finally, VC investors in the sample have managed on average 17 funds (on average) since their creation.

[Insert Table 3 about here]

3.3 Methodology

I use event study methodology to capture the industry rivals' share price reaction. For each IPO date (event date) in the sample, I use the market model to estimate normal returns. The five steps of this methodology are the following:

– I start by estimating the market model for each firm's stock returns during an estimation period prior to the IPO date (i.e. t=0). The model parameters are thus estimated using OLS regressions over a period of 260 days; the calculations are starting 40 days prior the IPO date. Then I estimate the following market model for each stock:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \epsilon_{it} \tag{1}$$

Where r_{it} denotes the daily return for firm i on day t, r_{mt} represents the corresponding daily return for the value-weighted local price index, which is the SBF 120, α_i and β_i are firm-specific parameters and ϵ_{it} are independent and identically distributed (i.i.d) errors.

– Then, I use the estimated coefficients from this model, (α_i and β_i), to predict daily returns for each firm i over the "event window" - i.e. in the days immediately surrounding the IPO date:

$$R_{it} = \alpha_i + \beta_i R_{mt} \tag{2}$$

Where R_{it} denotes the predicted daily returns for each incumbent firm i on day t. For this stage of the study I used different event windows:

– I calculate the abnormal returns (AR) for each incumbent firm i on each day of the event window by subtracting the predicted return R_{it} from the actual return r_{it}.

– I finally compute the cumulative abnormal returns (CAR) for each firm rival i which is the sum of the daily abnormal return over the event window (i.e. from m days before the event to n days after it):

$$CAR_{imn} = \sum_{t=-m}^{t=n} R_{it} \tag{3}$$

4 Empirical results

I first start by analyzing univariate analysis results', by investigating competitor's cumulative abnormal returns. Then I examine the results of the regressions models.

4.1 Cumulative abnormal return

The first hypothesis states that competitors react negatively to IPOs in their sectors. The negative reaction is expected to be more important when the issued company is backed by VC investors. I state that the competitive effect of IPOs can be obtained by analyzing rivals' stock market returns at and around the issuing date. In this part, I will analyze competitors' cumulative abnormal return. This is an evidence of the short-term competitive effect of an IPO.

Table 4 presents the mean CARs rivals for the VC IPOs and non VC IPOs, rivals firms have significant negative cumulative abnormal returns around IPOs date for the different event windows. The reaction to IPOs starts before the issued day, as the IPOs events are announced in advance, competitors' reaction can be observed even 10 days before the IPO effective date. Furthermore, the negative reaction is more important for the VC IPOs, and the difference between VC IPOs' CAR and non VC IPOs' CAR is highly significant both statistically and economically, for example, rival' CARs in the period between 10 days before and 5 days after the IPO are equal to -2.52% for the VC IPOs, compared to a CAR' decrease of -1.43% for the non VC IPOs. Which suggests that when a VC-backed IPO is achieved, rival firms in the same sector consider it as negative news, and view the new issued firm as able to compete more aggressively.

[Insert Table 4 about here]

4.2 Regression results

To examine the CAR cross-sectional variation, I model the competitor' CAR as a function of issued firm status (VC-backed firm or non VC-backed firm), competitor's characteristic, and

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IPO size. I also control for sector and crisis periods, by estimating the following regression model:

$$
\begin{aligned}
\text{CAR} \;=\; & \beta_0 + \beta_1(\text{VC backed firm or non VC backed firm}) + \beta_2(\text{competitor's characteristics}) \\
+ \;& \beta_3(\text{control variables}) + \epsilon
\end{aligned}
\tag{4}
$$

– VC-backing dummy: dummy equals one if the issued firm is backed by a venture capital investors, zero otherwise.

– Competitor's characteristics: Size in terms of the logarithm of competitors' total assets in the year before the IPO year, Age in terms of logarithm of competitor' number of years from the first trading day to the date of the IPO event,

– Control variables: Crisis year dummy (dummy equals one if the IPO occurs in a crisis year, zero otherwise), High-tech sector dummy (dummy equals one if the IPO occurs in high-tech sector, zero otherwise), IPO size (the logarithm of IPO proceeds), and issued firm'return on asset mesured by the ratio of operating income to assets at the IPO year.

The dependent variable is the cumulative abnormal return for each individual competitors for the [-5, 5] window. Table 5 presents the results. Consistent with finding in the univariate analysis, competitors have lower cumulative abnormal returns when the IPO is venture capital backed. In fact, competitor firms face a 1% decline in their stock market return when the IPO is a VC backed one. Which suggests that rivals consider VC IPOs as a threat, since the issued firms backed by VC investors will be able stand alone, to raise new public funds and to compete successfully in the product market. I also found that bigger competitors, in terms of their total assets, resist more than smaller ones. Firms with an important asset are more established in the market and may better resist to new entrants. This is consistent with Hsu et al. (2010) [19] , they found that firms' abnormal stock return increase after controlling for competitor' size. I also control for competitor's age, it is positively related to competitor's stock market reaction. This implies that the magnitude of rivals' negative

reaction is more important for young firm.

The negative coefficient estimate of IPO size (-.1%) suggests that larger IPOs lead to more negative rival's CAR. in fact, When a new issued firm raises important proceeds, it signals the availability of new funds to develop ambitious future projects. The rival's stock market return is also significantly affected by issued firm sector and IPO period. When the issued firm is operating in a high-tech sector, the competitor's CAR declines by 0.8%. This reaction may suggests that competition in the high-tech sector is more sensitive to IPOs. I also find negative impact of crisis period, during the crisis years the competitor's CAR decline by 3.2%. It suggests that the competitive impact of the new issued firm is more pronounced during turmoil periods.

[insert Table ?? about here]

In the model (4) model (5) in the table ?? I focus on VC IPOs sub-sample. I investigate if rival's reaction to VC-backed IPO depends on venture capital investment characteristics as the experience and syndication. I expect these characteristics to have negative impact on competitor's CAR.

$$\text{CAR} \;=\; \beta_o + \beta_1(\text{VC investor characteristics}) + \beta_2(\text{control variables}) + \epsilon \qquad (5)$$

– VC investors characteristics: syndication dummy equals one if the issued firm received funding from more than one VC investor. Experience is the number of funds managed by the VC investor. When the deal is syndicated, experience is measured by the mean of the total number of funds managed by the VC investors.

As expected, issued firms backed by experienced VC investors impact more negatively competitor' CAR. In fact, the issued firm is expected to perform better if it is backed by experienced VC and thus to be more competitive, which may explain competitor's negative reaction. The 1.4% negative coefficient estimate of syndication dummy suggest that the quality of syndicated deals are well perceived by public market investors. Thus competitor's stock market reaction is more negative when the issued firm is syndicated I also find the same

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results as previously for the control variables and rivals' characteristics. Crises and high tech sector dummy variables impact negatively and significantly rivals' cumulative abnormal returns, whereas the increase of competitors' size and age decrease the negative competitive effect of VC-backed IPOs.

5 Conclusion

From a methodological perspective, this paper is related to the literature on capital market transactions and their valuation effects on firms operating in the same industry. I investigate competitor' stock market reaction to IPOs with and without VC backing, I take into consideration the endogeneity of VC financing. The results of this paper should be of interest to different agents including public investors, issued company, VC investors and their competitors. Though VC represents only a small group of institutional investors, a large proportion of IPOs in the recent years were backed by VC investors [1]. Thus, the exit decisions of VC could have a significant impact in the marketwise. The results of the present paper confirm that VC-backed IPOs impact more negatively competitor's CAR than non VC-backed IPOs. This result confirms VC' financing creation of value ability. I also find that competitor's reaction is influenced by VC investor's characteristics. Rival's stock market price reacts more negatively when the VC investors are experienced, and when the IPO firm is syndicated. In this current study I limit the measure of competitive effect on the short term stock price reaction. A further part of this research will be the analysis of competitor' long- term operating performance after VC-backed IPO, and the control for the degree of competition in the IPO sector.

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[1]Lerner and Gompers (2003) document that venture-backed IPOs account for 50.33% of all IPOs in 2000 (P.16).

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Table 1: **Sample composition 1 - The number of IPOs in the period 1994-2010**

VC-IPOs represent VC-backed IPOs' firm, whereas non VC-IPOs are non VC-backed IPO' firms.

IPO Year	VC IPOs number	Freq	Non VC IPOs Number	Freq	Total IPOs Number	Freq
1994	0	0%	3	1.72%	3	1.22%
1996	1	1.39%	7	4.02%	8	3.25%
1997	2	2.78%	12	6.90%	14	5.69%
1998	2	2.78%	20	11.49%	22	8.94%
1999	6	8.33%	24	13.79%	30	12.20%
2000	8	11.11%	33	18.97%	41	16.67%
2001	2	2.78%	13	7.47%	15	6.10%
2002	1	1.39%	11	6.32%	12	4.88%
2003	0	0%	6	3.45%	6	2.44%
2004	3	4.17%	1	0.57%	4	1.63%
2005	11	15.28%	7	4.02%	18	7.32%
2006	14	19.44%	12	6.90%	26	10.57%
2007	14	19.44%	12	6.90%	26	10.57%
2008	1	1.39%	6	3.45%	7	2.85%
2010	5	6.94%	7	4.02%	12	4.88%
2011	2	2.78%	0	0%	2	0.81%
Total	**72**	**36%**	**174**	**64%**	**246**	**100%**

Table 2: **Sample composition 2 - Macro description of IPO firms**

VC-IPOs represent VC-backed IPOs' firm, whereas non VC-IPOs are non VC-backed IPO' firms.

Macro industry	VC IPOs number	Freq	Non VC IPOs Number	Freq	Total IPOs Number	Freq
Consumer Products and Services	8	11.11%	23	13.22%	31	12.60%
Consumer Staples	1	1.39%	3	1.72%	4	1.63%
Energy and Power	2	2.78%	4	2.30%	6	2.44%
Healthcare	15	20.83%	18	10.34%	33	13.41%
High Technology	27	37.50%	83	47.70%	110	44.72%
Industrials	7	9.72%	25	14.37%	32	13.01%
Materials	0	0%	1	0.57%	1	0.41%
Media and Entertainment	2	2.78%	2	1.15%	4	1.63%
Retail	3	4.17%	8	4.60%	11	4.47%
Telecommunications	7	9.72%	7	4.02%	14	5.69%
Total	**72**	**36%**	**174**	**64%**	**246**	**100%**

Table 3: **Descriptive Statistics**

This table shows the descriptive statistics of the different variables used in this paper. The number of competitor firms is 536, within this sample 201 companies are VC-backed IPO' competitors, and 335 are non VC-backed IPO' competitors. Overall, we have 200 IPOs in which 72 are VC-backed IPOs and 128 are non VC-backed IPOs. Proceeds are the amount raised by the issued firm in million euros. Assets are the competitor's total assets (in million euros) in the year before the IPO date.The age is competitor' age (in years) from the first trading day in datastream to the date of the IPO event. M/B dummy equals 1 if the competitor' market-to-book ratio (M/B) is above the M/B of the industry . Syndication dummy equals one if the VC-backed firm is syndicated, and zero otherwise. PE specialization is a dummy variable that equals one if the VC investors has a sectoral specialization, and zero otherwise. VC experience is the total number of funds raised by the VC investor since its creation..

	IPO Firms (n=246)		Rivals Firms (n=581)	
	Mean	Median	Mean	Median
Full Sample				
Proceeds	46	6.9	-	-
firms' return on asset	0.02	0.06	-	-
Assets	-	-	1895	43
Age since trading	-	-	7.79	6
non VC sub-sample				
Proceeds	21	4	-	-
firms' return on asset	0.06	0.08	-	-
Assets	-	-	1889	46
Age since trading	-	-	7.5	6
VC sub-sample				
Proceeds	110	19	-	-
firms' return on asset	0.03	-0.05	-	-
Assets	-	-	1895	43
Age since trading	-	-	8.42	7
Syndication dummy	.055	1	-	-
VC experience	17	13	-	-

Table 4: **Competitors' cumulative abnormal returns (CAR) for VC IPOs and non VC-IPOs**

This table reports competitors' cumulative abnormal returns (CAR) for VC IPO and non VC IPOs. CARs are estimated after controlling for conflicting events occurred 20 days around IPO event. The Wilcoxon z-statistic and T-statistic test are reported and *** indicates significance at the 1%.

Event Windows	Non VC-backed rivals' CAR	VC-backed rivals' CAR	T-statistic
$[-3, 3]$	-0.050%*** (-2.53)	-0.778%*** (-11.67)	5.51***
$[-5, 1]$	-0.397%*** (-3.12)	-0.775%*** (-13.31)	2.41***
$[-5, 5]$	-0.818%*** (-11.35)	-1.363%*** (-10.71)	2.82***
$[-10, 1]$	-0.731%*** (-7.06)	-1.432%*** (-17.92)	3.79***
$[-10, 5]$	-1.138%*** (-12.35)	-1.954%*** (-20.40)	3.71***
$[-10, 7]$	-1.430%*** (-13.3)	-2.526%*** (-22.24)	4.6***
$[-10, 10]$	-2.060%*** (-16.34)	-2.008%*** (-16.49)	0.18

Table 5: **The effect of IPO events on competitor's CAR**

This table reports rival'CAR during. The $[-10, 7]$ event window. I compute the CAR for each firm rival i by adding the AR over the event window. VC-backing dummy equals one if the issued company is backed by a VC firm, zero otherwise. Log(IPO Proceeds) is the logarithm of the amount raised by the issued firm. Log(Assets) is the logarithm of competitor's total assets in the year before the IPO date.The log(age) is competitor' age (in years) from the first trading day in datastream to the date of the IPO event. VC*Age is an interaction variable between VC dummy and rival' age. M/B dummy equals 1 if the competitor' market-to-book ratio (M/B) is above the M/B of the industry, zero otherwise. Syndication dummy equals one if the VC-backed firm is syndicated, and zero otherwise. VC specialization is a dummy variable that equals one if the VC investors has a sectoral specialization, and zero otherwise. VC experience is the total number of funds managed by the VC investor since its creation. Investment Duration is the number of years form VC' first investment to exit date. High-tech sector dummy equals one if the IPO occurs in a high-tech sector, zero otherwise. Crisis year dummy equals one if the IPO occurs in a crisis year, zero otherwise. I estimate the regressions using OLS with robust standards errors. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

CAR	(1)	(2)	(3)	(4)	(5)
VC dummy	-.011***	-.009**	-.014***		
	(-2.80)	(-1.93)	(-3.09)		
firm returns on asset		-.042*	-.012	-.011	-.018
		(-2.47)	(-0.83)	(-0.46)	(-0.76)
Log(Age since trading)		.001		.012**	
		(0.43)		(2.05)	
Log(Total asset)			.0005		.003**
			(0.67)		2.40
Log(Proceeds)	-.001*	-.0006	-.001	-.001	-.001
	(-1.31)	(-0.66)	(-1.04)	(-0.62)	(-0.62)
High-tech sector dummy	-.008**	-.004	-.004	-.001	-.0008
	(-2.06)	(-0.92)	(-1.07)	(-0.23)	-0.11
Crisis years dummy	-.032***	-.014**	-.029***	-.031**	-.041***
	(-6.93)	(-2.08)	(-5.15)	(-2.19)	(-3.18)
VC experience				-.0008***	-.0009***
				(-3.18)	(-3.76)
Syndication dummy				-.014**	-.013**
				(-1.79)	(-1.81)
Intercept	.011***	-.0006	.002	-.027	-.036*
	(2.78)	(-0.07)	0.20	(-1.64)	(-1.83)
R-squared	0.014	0.007	0.013	0.047	0.06
Observations	4468	2854	3483	726	808