DID THEY BUILD THAT? THE ROLE OF PRIVATE EQUITY AND VENTURE CAPITAL IN SMALL AND MEDIUM–SIZED BUSINESSES

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ABSTRACT

We study the effects of PE and VC financing among 6,815 small and mid-size business establishments from 1995-2009. We find that, over a five year period after a financing event, PE backed establishments generate 129% more revenue growth and 257% more employment growth than their non-PE backed counterparts. VC backed companies generate 846% more revenue growth and 608% more employment growth than their non-VC backed counterparts. This study also reveals that minority, female, and foreign owners are 12.6%, 3.6%, and 38.8%, respectively, less likely to receive PE financing; and 34.7%, 22.5%, and 45.6%, respectively, less likely to receive VC financing.

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Introduction

In a recent address, President Barack Obama is quoted as saying "If you've got a business, you didn't build that. Somebody else made that happen."[2] While jarring to most business owners, it does raise a question that is posed frequently when discussing the economic benefits of private equity and venture capital investment: Does private equity and venture capital contribute to economic growth and create jobs? Recent studies have examined the relationships between private equity leveraged buyouts and job creation/destruction (Davis, Haltiwanger, Jarmin, Lerner, and Miranda, 2011; Amess and Wright, 2012) and offer somewhat mixed views. However, these studies are focused on large firms where the opportunities for cost cutting are significant and access to capital, mostly via public sources where costs are relatively cheap, is almost surely guaranteed.

Research by Neumark, Wall and Zhang (2011) finds that small businesses create more jobs than the rest of the sample. However, the benefits of private equity investment in small and mid-sized businesses are not completely understood, in part because access to private equity capital for most small and mid-sized businesses is elusive and, as a result, data are sparse.[3] In fact, according to a recent report by the *Pepperdine Private Capital Markets Project*, just 15% of businesses that attempted to tap private equity in the second quarter of 2012 were successful.[4] At the end of the financing spectrum where small and mid-sized companies reside, businesses are often desperate to obtain growth capital, including growth equity, venture capital, and mezzanine financing.

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[2] President Barack Obama address, Roanoke Virginia, July 13, 2012. http://www.whitehouse.gov/the-press-office/2012/07/13/remarks-president-campaign-event-roanoke-virginia.
[3] The Small Business Association defines small and mid-sized businesses as businesses with the average annual sales of $12 million with less than 500 employees. http://www.sba.gov/content/table-small-business-size-standards.
[4] Private Capital Access Survey Responses, Q2 2012. http://bschool.pepperdine.edu/appliedresearch/research/pcmsurvey/content/Q2_2012_PCA.pdf.

The consequences to those that are not successful raising capital are often severe. Citing the same Pepperdine research, for those businesses seeking capital, an unsuccessful raise is expected to yield the following results: slower growth (71%); hiring fewer employees than planned (54%); and reducing the number of employees (23%). These data suggest that private equity and venture capital play more important roles regarding growth and job creation in the small and medium-sized business space.

The impact of venture capital (VC) financing on firms' growth has been recently examined. Engel and Keilbach (2002), Davila, Foster, and Gupta (2003), and Alemany and Marti (2005) empirically show that VC-backed firms have significantly higher revenues and employment growth rates than non VC-backed firms. Venture capital is difficult to access, however. According to the *Pepperdine Private Capital Markets Project*, just 9% of businesses that attempted to tap venture capital in the second quarter of 2012 were successful.[5]

In this study, we utilize the Institute for Exceptional Growth Companies database (IEGC) that includes employment time series data on over 44 million business establishments during 1990-2009 from the NETS database, coupled with private equity and venture capital deals information from the Pitchbook database, as well as data from Dun and Bradstreet from 1995-2009. We focus on the establishment level to examine the impact of PE and VC financing on sales and employment growth rates for such establishments. These databases allow us to thoroughly investigate the role of PE and VC for small and mid-sized businesses that are vital to the economy.[6] To better understand their roles, our study proposes to investigate two relationships: 1) The owners' and establishments' characteristics displayed that result in

[5] Private Capital Access Survey Responses, Q2 2012. http://bschool.pepperdine.edu/appliedresearch/research/pcmsurvey/content/Q2_2012_PCA.pdf.

[6] Small businesses represent 64% of net new private-sector jobs, 49.2% of private sector employment, and 46% of private-sector output. SBA Office of Advocacy, Frequently Asked Question, September 2012. http://www.sba.gov/sites/default/files/FINAL%20FAQ%202012%20Sept%202012%20web.pdf.

increased rates of successful PE or VC financing; and 2) The revenue and jobs growth (or destruction) that occurs with PE or VC financing at these establishments.

We construct matched samples between establishments that received PE or VC financing with those that never received PE or VC financing based on three different methods: a match-pair method, a matching with the entire IEGC database, and a propensity scoring method. Across three different methods, we find consistent evidence that minority (non-Caucasian), women, and foreign business owners' establishments are significantly less likely to receive PE and VC financing. This finding is consistent with existing literature (Carter and Allen, 1997; Robb and Fairlie, 2007; Cole and Mehran, 2011). We also find that PE financing is not significantly impactful, either negatively or positively, in affecting the establishments' sales and employment growth rates in the year of financing. However, we find that PE financing increases establishments' sales and employment growth rates for three consecutive years after funding. We find that VC financing immediately increases establishments' sales and employment growth rates. These findings indicate that both PE and VC financing act as a growth catalyst for small and mid-sized businesses. Therefore, PE and VC play an important role in stimulating both economic and employment growth in the economy. Our findings are robust throughout additional tests based on the entire IEGC sample and propensity score matching method.

The rest of this paper is organized as follows. In section II, we discuss existing literature that is relevant to our study. Section III describes the IEGC database comprised of NETS, Dun and Bradstreet (D&B), and Pitchbook data, matching process, sample distribution, and univariate analysis. Section IV briefly explains the methodology of regression estimations, hypotheses, and structural regression models. Section V discusses the first stage and second stage regression

results. We examine the results from additional tests and robustness checks in section VI. And section VII concludes with a summary of the main contribution of this study.

I. Literature review

A few existing studies have examined the impact of business owners' demographics on firms' growth. Robb and Fairlie (2007) find that the level of start-up capital among black business owners appears to limit their ability to grow and succeed. Lower levels of access to start-up capital frequently results in lower sales and profits, less employment, and higher business failure rates. Cole and Mehran (2011) find that female business owners' firms are more likely to be credit constrained because they are more likely to be discouraged from applying for credit and more likely to be denied credit when they do apply. Carter and Allen (1997) find that the focus on the financial aspects of the business amount and effort required to obtain financial resources overwhelms the women entrepreneurs' lifestyle intentions and, thus, their chances for growth. Our study also examines the impact of owners' demographic characteristics on their ability to successfully obtain PE or VC financing.

The literature on the role of private equity continues to evolve with growth in the industry. Much of the research concerns performance, governance and ownership structure, operations, and value; however more recently there has been increased focus on the intersection of jobs and financing, in part because of more plentiful data for analysis. Amess and Wright (2012) examine a data set of 533 leveraged buyouts (LBOs) from 1993-2004 and conclude that LBOs have no net employment effects. Davis, Haltiwanger, Jarmin, Lerner, and Miranda (2011) (DHJLM 2011 hereafter) examine this topic more thoroughly by analyzing 3,200 targets and their 150,000 establishments from Capital IQ, Dealogic, Thomson Reuters SDC, VentureXpert,

and the Longitudinal Business Database (LBD) at the U.S. Census Bureau. They conclude that LBOs result in significant job creation and destruction, which ultimately creates a loss of less than one percent of initial employment.

Boucly, Sraer, Thesmar (2011) examine the impacts of LBOs on French firms and find that corporate behavior is affected. Targets become more profitable and grow faster than their peer group. They also increase capital expenditures. This research contrasts with previous studies that report less investment and/or downsizing. Tykvova and Borell (2012) examine a sample of European companies and report that LBO targets operate at reasonable debt limits, suggesting capacity for increased capital expenditures and growth opportunities. Lerner, Sorensen, and Stromberg (2011) investigate whether LBOs affect the firms focus on long-term innovations. They find that patents applied for by firms in private equity transactions are more cited and show no significant shifts in the fundamental growth of innovations.

Literature on venture capital (VC) mostly focuses on the role of VC to generate information and to act as an intermediary between business owners and external investors. Gompers and Lerner (1999a) examine the role of venture capital firms on certifying initial public offerings (IPOs) of firms in which they invest. The role of venture capitalists is to generate information about these privately held firms prior to going public. Gompers and Lerner (1999b) study the determinants of venture capital fundraising in the United States. They find that capital gains taxes and easing pension funds investment restrictions have positive impacts on the supply of venture capital funding. Gompers and Lerner (1999c) and Metrick (2007) provide a complete coverage of characteristics, investment behavior, and roles venture capitalists play in private firms.

A few studies examine the role of VC on firms' sales and employment growth. Engel and Keilbach (2002) find that German firms that receive venture capital (VC) financing display higher sales growth rates. They find that VC helps business owners commercialize their products rather than to foster new innovations. Davila, Foster, and Gupta (2003) examine 193 VC-backed firms and compare them with 301 non VC-backed U.S. firms and discover the positive impact of VC financing on firms' subsequent valuation and employment growth. Alemany and Marti (2005) examine the role of VC on small businesses in Spain and find that employment, sales, gross margin, total assets, intangible assets, and corporate taxes grow faster in VC-backed firms than non VC-backed firms over three consecutive years.

Other studies focus on returns, diversification, reputation of private equity, and venture capital.[7] However, there still exists a significant gap with regard to understanding the role of private equity and venture capital on small and mid-sized companies' growth and employment where access to growth capital is uncertain at the establishment level. Our research fills this gap.

III. Sample data

This study utilizes the Institute for Exceptional Growth Companies (IEGC) database, which includes the National Establishment Time-Series (NETS) database provided from Walls & Associates.[8] Walls & Associates in collaboration with Dun and Bradstreet (D&B) marketing information creates the entire NETS database and contains 350 longitudinal data variables such as annual net sales, employment, business owners' demographic, and geographic locations, for

[7] Lerner and Schoar (2004) investigate the liquidity of private equity and venture capital investments. Phalippou and Gottschalg (2009) point out that private equity funds underperform the S&P 500 by 3%. Metrick and Yasuda (2010) contrast the performance and fee structure in private equity funds from buyouts versus venture capital. Lerner (2011) indicates a declining trend of private equity in recent years. Ivashina and Kovner (2011) find that firms who received private equity financing also receive favorable loan terms. Demiroglu and James (2010) find that the reputation of private equity group determines the success of LBO transactions.

[8] Information for the NETS database variables are available online from the Institute for Exceptional Growth Companies (IEGC) at http://youreconomy.org/downloads/NETSDatabaseDescription2011.pdf.

44,241,504 business establishments between January 1990 and January 2010.[9] Several studies have utilized and have validated the accuracy of the NETS database (Neumark, Wall, and Zhang, 2011; Toffel and Short, 2011; Levine and Toffel, 2010).[10] We compare the NETS database with U.S. Census data. Panel A of Appendix A presents a comparison of total employment from the Business Dynamic Statistics data from the U.S. Census with the NETS database. We find that NETS contains a higher number of establishments and therefore reports larger employment numbers from 1995 to 2010[11]. Neumark, Wall, and Zhang (2011) explain that employment from the NETS database is larger than U.S. Census data because NETS counts each job in each business establishment and the NETS has better coverage of small business owners than the U.S. Census.

We also compare the total net sales receipts between the Statistics of U.S. Businesses and NETS for 1997, 2002, and 2007[12]. Panel B of Appendix A shows that the total sales receipts from NETS is smaller than sales receipts from the Statistics of U.S. Businesses despite NETS containing more establishments. These findings suggest that the NETS database may overestimate the numbers of employment and it may underestimate the net sales receipt per establishment. To address these concerns, we conduct two additional robustness tests to verify our results in Section IV.

[9] Walls & Associates estimates establishment sales by using the firm-level reported sales (when available) and employment to allocate sales to all of the firm's establishments (even though some may be "intermediate production and distribution facility"). The point is that these establishments will not directly have sales; but the estimates are intended to capture their overall contribution to revenue of the firm. Employment for each establishment in the NETS database is an actual number of employees rather than an estimated number of employees. January 1990 represents 1989 calendar year data and January 2010 represents 2009 calendar year data.

[10] See http://youreconomy.org/downloads/NETS_References.pdf for a complete list of existing studies that utilize the NETS and D&B database.

[11] The Business Dynamic Statistics data from the U.S. Census is compiled every mid-March while the NETS is compiled every January.

[12] The Statistics of U.S. Businesses collects total sales receipts every 5 years. The first year collected relevant to our study is 1992.

The IEGC merged the NETS database with the Pitchbook data, which contains information on whether these establishments received private equity (PE) or venture capital (VC) investment, was acquired by other firms, or is in the process of going public.[13] The Pitchbook data consists of private financing deals on over 35,000 establishments during 1995 to 2009 and it indicates whether a business establishment receives PE or VC financing (see Appendix B).

The Pitchbook and NETS merged ("POF" data) is supplied by the Institute for Exceptional Growth Companies (IEGC).[14] It consists of 26,838 observations across 16,482 establishments because some establishments received multiple rounds of financing (see Table 1). We find 16,802 observations are financed from private equity and 7,555 observations are financed from venture capital from 1995 to 2009. The rest of 2,481 observations are either acquired or are in the process of going public. Over 57% of these establishments are privately held companies and 23% were acquired or merged with other firms.

3.1 Matching process

We merge the POF data back to the main IEGC data to find matched establishments (control establishments) of these 16,802 establishments that received PE financing and 7,555 establishments that received VC financing. The control establishments must not have received PE or VC financing during the entire period of 1995 to 2009. Therefore the control establishments should not be found in the Pitchbook database. The matching process is conducted each year at the establishment level rather than at the parent companies level since

[13] Information for the Pitchbook data is available at http://pitchbook.com/PitchBook_Research.html.
[14] Walls and Associates merged NETS and Pitchbook data based on the establishment name, location, and HQDUNS (headquarter DUNS number). They also matched based on the timing of the NETS and Pitchbook data (i.e. January 1996 NETS data is merged with 1995 year end Pitchbook data since the NETS data is updated every January and the Pitchbook data is updated at the end of the calendar year). The merging process is explained and available at http://growtheconomy.org/data.lasso and http://growtheconomy.org/faq.lasso.

both the NETS and Pitchbook data are at the establishment level. DHJLM (2011) indicate that the establishment level data provides a clean analysis for job creation or destruction at each business establishment. The matching process is conducted with replacements since the control establishments have the similar opportunities to obtain PE or VC financing as the PE or VC financed establishments.

We create matches for the PE financed establishments with the control establishments based on the 2-digit Standard Industrial Classification (SIC) code, annual net sales, and number of employees during the same corresponding years when establishments received PE financing. We match-pair the VC financing establishments with non VC financing (control) establishments based on the 2-digit SIC code, annual net sales, number of employees, and state where establishments are located during the same corresponding years at which establishments received VC financing. We include states as one of the matching criteria for VC since VC investment portfolio companies are usually regionally confined while PE portfolio companies are nationwide. We require both PE and VC control establishments to have different D-U-N-S headquarters numbers indicating that the control establishments are under different parent companies (firms) than the PE and VC financed establishments. We name this match-pair as the match-pair sample.

We also match the PE or VC financed establishments with the establishments in the entire IEGC data as our robustness check. Establishments that receive either PE or VC financing are matched with establishments from the entire NETS database that do not receive PE or VC financing during a corresponding year. This yearly matching process yielded sample observations of 58,962,957 for PE match and 58,952,482 for VC match (see Table 7). These samples are larger than the entire NETS observations of 44,241,504 (even after deleting missing

data) since non-PE or non-VC financed establishments in the IEGC data are likely to persist in the sample more than one year and therefore are re-matched with PE or VC financed establishments across different years. We name this matched sample as the entire NETS sample and we discuss the results of our analysis using the entire NETS sample in section VI (additional robustness tests).

[Insert Table 1 here]

Table 1 indicates that we find 13,538 (80%) matches for PE financing and 6,800 (90%) for VC financing. However, over 50% of these matches have missing data such as net sales, number of employees, and other important variables. We also applied a 1% right tail truncation due to outliers from annual sales growth and employment growth. Our final sample consists of 8,013 establishments that received PE financing across 6,815 unique establishments and 3,103 establishments that received VC financing across 1,854 unique establishments. In panel D of Table 1, we show that over 31% of establishments received multiple rounds of PE and over 69% of establishments received multiple rounds of VC financing. This implies that VC tends to provide more rounds of financing to these establishments than PE.

[Insert Table 2 here]

3.2 Sample distribution

Table 2 provides a description of our final match-pair sample and 44,241,504 business establishments from the whole IEGC database across 48 Fama-French industry classifications

(Fama and French, 1997). The majority of establishments that received PE and VC financing are classified under business services (SIC 73)[15] and wholesale (SIC 50) industries, which is consistent with the entire IEGC database. Private equity tends to finance retail, transportation, and other establishments that produce machinery while venture capital tends to finance establishments that produce computers, chips, and medical equipment. Business establishments from the IEGC database are also highly concentrated in personal services (SIC 72).

Table 3 indicates that there is geographic clustering for most establishments that received PE or VC financing. The highest concentrations of establishments that received PE financing are located in California (12.7%), Texas (9.4%), New York (6.8%), and Florida (5.4%). Similarly, establishments from the entire IEGC database are also concentrated in California, Texas, Florida, and New York. Most establishments that received VC financing reside in California (43%), Massachusetts (12.3%), Texas (4.8%), and New York (3.8%). Overall, the match-pair sample for both PE and VC financed are consistent with the IEGC database.

[Insert Table 3 here]

Table 4 presents the Pearson correlation coefficients among variables that are relevant in this study for the match-pair sample. The correlation coefficients are examined for both establishments that received financing and their corresponding control establishments that never received financing. Panel A of Table 4 presents the correlations for PE financing establishments relative to their corresponding control establishments. Several important findings include: (1)

[15] SIC 73 is defined as establishments that primarily engaged in rendering services to business establishments on a contract or fee basis, such as advertising, credit reporting, collection of claims, mailing, reproduction, stenographic, news syndicates, computer programming, photocopying, duplicating, data processing, services to buildings, and supply services.

there is a positive and significant correlation between receiving PE financing [Prob(PE)] and annual employment growth on the corresponding year (EMPGR0); (2) the numbers of establishments within the same parent companies is positively related with receiving PE financing; (3) business owners who are considered minority (non-Caucasian), female gender, and foreign status are negatively correlated with PE financing; (4) the Dun & Bradstreet maximum Paydex scores (PAYDEXMAX) are positively related with receiving PE financing; (5) establishments with government contracts and those considered as subsidiaries of larger companies are positively related with PE financing while establishments with a legal status of a corporation are negatively related with PE financing; (6) there appears to be a non-linear relationship between Dun & Bradstreet ratings (DBR1, DBR2, DBR3, and DBR4) and PE financing; and (7) there are not any significant correlations for PE financing across different major states, except Texas.

[Insert Table 4 here]

Panel B of Table 4 presents the correlations for VC financing establishments relative to their corresponding control establishments. Several important findings include: (1) there is a positive and significant correlation between receiving PE financing [Prob(PE)] and annual sales (SALEGR0) and employment growth on the corresponding year (EMPGR0); (2) business owners who are considered minority (non-Caucasian), female gender, and foreign status are negatively correlated with obtaining VC financing; (3) the Dun & Bradstreet maximum Paydex scores (PAYDEXMAX) are positively related with receiving PE financing; (4) establishments with government contracts and establishments with a legal status of a corporation are positively

related to VC financing while subsidiaries of larger companies are negatively related to the presence of VC financing; (5) there appears to be a non-linear relationship between Dun & Bradstreet ratings (DBR1, DBR2, DBR3, and DBR4) and VC financing; (6) VC financing is negatively related with the previous 3-years' sales growth (SALEGRW) and peers' sales growth (PEERSALEGRW); and (7) VC financing is positively correlated with California and Massachusetts (CA and MA) and negatively related with New York and Texas (NY and TX).

[Insert Table 5 here]

3.3 Univariate analysis

Table 5 presents the impact of PE and VC financing on establishments' annual sales and employment growth rates from two years *prior* to ten years *after* receiving financing. Compared to the control establishments that never received financing, the establishment group that eventually received PE financing is not statistically different from the control establishments during the two years prior to receiving PE financing. However, these establishments have significantly higher annual sales and employment growth rates immediately after receiving funding until three years after receiving PE funding.

Comparing the establishments with VC financing relative to their control establishments that never received financing, we find that establishments that received VC financing have significantly higher annual sales and employment growth rates from two years *prior* until five years *after* receiving VC funding. The most growth in establishments' sales and employment occurs during the year in which establishments receive VC financing (year zero). This implies

that both PE and VC financing significantly increases the establishments' ability to capitalize on their growth opportunities and it also increases employment levels. When we compare the magnitude and the length, VC financing provides a significantly larger and longer impact on establishments' growth than PE. This finding is consistent since VC funding rounds are usually given in earlier stages of firms' life cycles than PE rounds. Additionally, Table 1 indicates that VC has more multiple funding rounds than PE. Therefore each VC funding rounds is more critical to the establishment's growth than PE.

[Insert Figure 1 here]

We trace the impact of PE financing on the level of annual net sales (inflation adjusted to 1984 dollars) and number of employees starting from two years *prior* to five years *after* receiving financing. Figure 1 presents the average annual net sales for establishments that received PE or VC financing relative to their control establishments. The average net sales for establishments that receive PE financing is approximately the same as their control establishments during one and two years *prior* to receiving financing. However, net sales for establishments that receive PE financing surpass their control establishments during the period over which they are PE backed. The average increase in net sales for establishments with PE financing during the entire five years after financing is approximately $11.8 million compared to a $4.9 million increase in sales for control establishments without PE financing. This implies that establishments with PE financing achieve 129% more net sales growth than their control establishments over the 5-year period following a PE investment. Five years after the financing

event, establishments with PE financing have approximately $6.9 million higher annual net sales per establishment relative to their control establishments.

The average net sales for establishments with VC financing for two years and one year prior to financing is lower than their control establishments. However, net sales for establishments that receive VC financing surpass their control establishments during the VC financing period. During the five year period after a financing event, establishments with VC financing experience an average increase of $27.3 million in their net sales compared to an average increase of $2.6 million for their control establishments. Establishments with VC financing have approximately $24.7 million higher annual net sales per establishment relative to their control establishments five years after their financing event. This highlights the role of PE and VC financing for small and medium-sized establishments to generate higher annual net sales.

Figure 2 presents the number of employees for establishments that received PE or VC financing relative to their control establishments from two years prior up to five years after financing. Similar to annual net sales, the average employment for establishments that receive PE financing is approximately the same as their control establishments during one and two years prior to receiving financing. However, employment for establishments that received PE financing surpassed their control establishments during the PE financing inception period. Five years after a PE financing event, establishments with PE financing have 50 more employees compared to 14 more employees for their control establishments. This implies that establishments with PE financing have 257% more jobs growth than their control establishments over the five years after a PE financing event. At the end of five years after the financing event, establishments with PE financing employ 36 more employees per establishment than their control establishments.

[Insert Figure 2 here]

The average number of employees for establishments with VC financing during two years and one year prior to financing is lower than their control establishments. However, employments for establishments that received VC financing surpassed their control establishments during VC financing inception period. Establishments with VC financing have over 127 more employees per establishment compared to their control establishments at the end of five years after the financing event. Figure 2 displays the critical role PE and VC financing plays to provide significantly higher employment opportunity in the economy for small and medium-sized establishments.

Table 6 provides the univariate analysis for establishments that received PE or VC financing compared to their corresponding control establishments that never received PE or VC financing. Panel A of Table 6 indicates that PE financing is less likely to be given to minority owners, female owners, and owners with foreign status. Establishments with PE financing tend to have higher D&B PayDex scores than those that do not. Interestingly, we find establishments with PE financing tend to have lower D&B credit ratings. We believe establishments with higher D&B credit ratings have more financing options, including a higher likelihood of obtaining funding from lenders such as banks where cost of capital is cheaper. We also find that the ages of establishments with PE funding tend to be younger and have higher numbers of establishments (KIDS) than non PE financing (control sample). Establishments with government contracts and subsidiary status tend to have a higher frequency of PE funding than those who do not. Establishments with PE funding are also less likely to have the legal form of a corporation.

Prior to financing event, the annual net sales and number of employees are not statistically significant, which indicates that our matching process yields a very close control establishment for each establishment that received PE financing. On average, the annual net sales of our sample with PE financing is $16.163 million and the average number of employees is 160 employees.[16] Comparing our sample with DHJLM (2011), we find that our sample firms have a significantly lower number of employees.[17] This difference in firms' sizes between our sample and DHJLM (2011) is very critical when we compare our results with theirs.

[Insert Table 6 here]

Panel B of Table 6 presents the univariate analysis for VC financing versus establishments that never received any financing from PE or VC. VC financing is less likely to be given to minority owners, female owners, foreign owners, and female chief executive officers (CEOs). We find that establishments with VC financing do not necessarily have higher numbers of establishment (KIDS) and are significantly younger. Consistent with practice, this finding indicates that VC funding rounds usually come earlier in establishments' lives than PE rounds.

Establishments with VC financing tend to have higher D&B PayDex scores than those that do not. We also find establishments with VC financing tend to have lower D&B credit ratings. We believe establishments with higher D&B credit ratings have a higher likelihood to obtain funding from lenders such as banks and mezzanine rather than from venture capital. The annual net sales and number of employees are not statistically significant prior to the financing

[16] The median annual net sales is only $8.8 million and the median for number of employees is only 65 employees.
[17] In Figure 4 of Davis et al. (2011), it shows that over 90% of private equity target firms buyouts have 500+ employees.

event, which indicates that our matching process yields a close match between a control establishment and each establishment that received VC financing.

We find that most establishments with VC financing are corporations and those with government contracts. Establishments with a subsidiary status are less likely to receive VC financing since subsidiaries may be able to obtain financing from their parent companies instead of VC financing.

IV. Multivariate regressions

This study examines business owners' demographics that influence the likelihood of a business establishment to receive private equity or venture capital funding. It also focuses on the impact of PE and VC funding on the establishments' subsequent growth rates, indicated by annual sales and employment. We estimate the regression analysis through two-stage regressions. In the first stage, we examine factors that influence the likelihood of receiving PE or VC funding using the probit regression.

There is a potential self-selection bias inherent for establishments with certain business owners' characteristics such as non-minority, domestic, and male owners, who may affect the likelihood of receiving funding from PE or VC. There are also some potential unobservable factors such as the amount of competing business proposals received by PE and VC, owners' initial capital, owners' family support, and so forth. Given that there is a potential self-selection bias and unobserved factors that may influence the likelihood of receiving funding, the second stage analysis for the impact of PE and VC financing on establishments' growth rates is conducted with the Heckman regression technique (Heckman 1979; Heckman and Robb, 1985).

4.1 Econometric specification

Greene (2011) provides the correction for endogeneity of establishments' likelihood of receiving PE or VC funding. We briefly summarize the model required. The second stage establishment growth rates regression is stated in the following structural form:

$$Y = \beta' X + \delta S + \varepsilon, \varepsilon \sim N(0, \sigma_\varepsilon^2)$$

where *S* is the dummy variable taking a value of 1 if establishments receive PE or VC funding and zero otherwise, and δ is a coefficient that determines whether establishments growth rate is different after accounting for PE or VC financing. If it is not, then it implies that the independent variables *X* are sufficient to explain the growth rate across establishments, or that there is no differential growth rate across the two different establishments.

However, since these same variables also determine whether the establishment receives PE or VC financing, we have an endogeneity issue, which is resolved by adding a correction to the model above. The error term ε is affected by a censoring bias in the sub-samples of establishments with PE or VC financing and establishments that do not receive PE or VC financing. When *S*=1, i.e., when the establishment receives PE or VC financing, then the residual ε has the following expectation:

$$E(\varepsilon \mid S = 1) = E(\varepsilon \mid S^* > 0) = E(\varepsilon \mid u > -\gamma' X) = \rho\sigma_\varepsilon \left[\frac{\phi(\gamma' X)}{\Phi(\gamma' X)} \right]$$

where $\rho = Corr(\varepsilon, u)$, and σ_ε is the standard deviation of ε. This implies that

$$E(Y \mid S = 1) = \beta' X + \delta + \rho\sigma_\varepsilon \left[\frac{\phi(\gamma' X)}{\Phi(\gamma' X)} \right]$$

For estimation purposes, we write this as the following regression equation:

$$Y = \delta + \beta' X + \beta_m \lambda$$

where $\lambda = \phi(\gamma'X)/\Phi(\gamma'X)$, and $\beta_m=\rho\sigma_\varepsilon$. Thus, $\{\delta, \beta, \beta_m\}$ are the coefficients estimated in the regression. The λ is also known as the inverse Mill's ratio.[18]

Likewise, for establishments that do not receive PE or VC financing, we have the following result from Greene (2011):

$$E(Y \mid S=0) = \beta' X + \rho\sigma_\varepsilon \left[\frac{-\phi(\gamma' X)}{1-\Phi(\gamma' X)} \right]$$

This also may be estimated by linear cross-sectional regression.

$$Y = \delta + \beta' X + \beta_m \ \lambda$$

where $\lambda = -\phi(\gamma'X)/[1-\Phi(\gamma'X)]$ is the inverse Mill's ratio for establishments that do not receive PE or VC financing, and $\beta_m=\rho\sigma_\varepsilon$.

The estimation model will take the form of a stacked linear regression comprising both equations. This forces β to be the same across all establishments without necessitating additional constraints, and allows the specification to remain within the simple OLS form. If β is significant after this endogeneity correction, then the empirical evidence supports the hypothesis that the PE or VC financing is a driver of differential growth rates among business establishments.

[18] The inverse Mills' ratio (sometimes also called the "selection hazard") is used in regression analysis to take account of a possible endogeneity bias. If a dependent variable is censored, i.e., not all establishments who applied for PE and VC financing are approved for financing, it causes a concentration of observations at zero values. This problem was first acknowledged by Tobin (1958). Tobin showed that if this is not taken into consideration in the estimation procedure, an ordinary least square estimation (OLS) produces biased parameter estimates. With censored dependent variables, there is a violation of the Gauss-Markov assumption of a zero correlation between independent variables and the error term. Heckman (1976, 1979) proposed a two-stage estimation procedure using the inverse Mills' ratio to take account of the endogeneity bias on women participation in the labor market. In the first step, a regression for observing a positive outcome of the dependent variable is modeled with a probit (or logit) model. The estimated parameters are used to calculate the inverse Mills' ratio, which is then included as an additional explanatory variable in the OLS estimation.

4.2 Hypothesis and structural models

In the first stage regression, we hypothesize that owners' demographics (i.e. minority, women, and foreign owners) influence the likelihood of an establishment of receiving PE or VC funding after controlling for other establishment characteristics and indicator variables for state, industry, and year.

H1: The likelihood of a business establishment to receive PE or VC funding is dependent on owners' demographics (i.e. minority, women, and foreign owners) of the corresponding establishment.

The structural model for the first stage regression is described as the following:

$$Probability(PE\ financing)_i = \alpha_0 + \sum \alpha_i\, Owners\ Demographics + \sum \alpha_j\, Establishment\ Characteristics + \sum \alpha_k\, States\ Dummies + \sum \alpha_m\, Industries\ Dummies + \sum \alpha_n\, Year\ Dummies + \varepsilon_i \quad (1)$$

$$Probability(VC\ financing)_i = \alpha_0 + \sum \alpha_i\, Owners\ Demographics + \sum \alpha_j\, Establishment\ Characteristics + \sum \alpha_k\, States\ Dummies + \sum \alpha_m\, Industries\ Dummies + \sum \alpha_n\, Year\ Dummies + \varepsilon_i \quad (2)$$

where ε_{it} is the probability regression error term. We estimate the first stage regression using the probit regression with heteroskedasticity correction and clustering based on the matched-pair of establishments.

In the second stage, we hypothesize that the establishment subsequent growth rates, measured by annual sales and annual employment growth rates, are affected by the establishment receiving PE or VC financing after controlling for the endogeneity of the likelihood for PE or

VC financing, establishment characteristics, and indicator variables for states, industries, and years.

H2: Business establishment growth is dependent on whether the establishment was able to secure funding from PE or VC.

The structural model for the second stage regression for establishment annual sales and employment growth (GR) is described as the following:

$$GR_{it} = \beta_{0t} + \beta_{1t}\, Probability(PE\ financing) + \sum \beta_{jt}\, Establishment\ Characteristics + \lambda_t + \sum \beta_{kt}$$
$$States\ Dummies + \sum \beta_{mt}\, Industries\ Dummies + \sum \beta_{nt}\, Year\ Dummies + \varepsilon_{it} \qquad (3)$$

$$GR_{it} = \beta_{0t} + \beta_{1t}\, Probability(VC\ financing) + \sum \beta_{jt}\, Establishment\ Characteristics + \lambda_t + \sum \beta_{kt}$$
$$States\ Dummies + \sum \beta_{mt}\, Industries\ Dummies + \sum \beta_{nt}\, Year\ Dummies + \varepsilon_{it} \qquad (4)$$

where, λ_t is the inverse Mill's ratio and ε_{it} is the regression error term. We estimate the second stage regression using the ordinary least square (OLS) regression with a heteroskedasticity correction and clustering based on the matched-pair of establishments (YEID).

V. Regression results

5.1 First stage probit regression

Table 7 presents the probit regression results for the first stage regression to examine characteristics that influence business establishments' likelihood of receiving PE or VC funding.

We examine both the match-pair sample and the entire NETS sample. Reported slope coefficients are stated as the marginal impact for each corresponding independent variable and the robust and clustered z-ratios are presented in parenthesis under the slope coefficients.

[Insert Table 7 here]

The first two columns of Table 7 present the probit regression results for the entire NETS sample. In the first column, we include establishments with multiple rounds of PE financing and in the second column, we only examine establishments that receive PE financing once (single round). Regarding establishments with a single round of PE financing, we find that owners who are considered as minority, female, and foreign are less likely to receive PE funding by 12.57%, 3.57%, and 38.82%, respectively. These results are both statistically and economically significant. We also find establishments with higher D&B paydex scores are more likely to receive PE funding by 0.43%. We interpret the positive impact of the paydex score as a measure of establishments' ability to pay their vendors. Thus, higher paydex scores imply healthier cash flow balances.

We find establishments with higher D&B credit ratings (DBR1, DBR2, DBR3 relative to omitted dummy DBR4) are less likely to receive PE funding. Older establishments (AGE) and establishments with higher net sales are also less likely to receive funding from PE. The negative impact of D&B credit rating, age, and net sales is interpreted as a measure of establishments' ability to obtain loans from financial institutions. Therefore, establishments with higher D&B ratings, higher sales, and older establishments have more choices, many of which are cheaper, in obtaining external capital. Establishments with higher numbers of employees tend to have a

higher likelihood of receiving PE financing. Establishments with government contracts and subsidiaries of a larger establishment are more likely to receive PE financing. Across different states, we find establishments in Florida have 2.61% less likelihood of securing PE financing while the rest of other major states (CA, NY, and TX) are more likely to receive PE financing.

The results of the first and second columns are the same except for women CEOs (WCEO). When we focus on a single round of PE financing, women CEOs are not statistically less likely to receive PE financing than male CEOs. Overall, we believe that our results are not driven by establishments with multiple rounds of PE financing.

In the third and fourth columns, we examine a match-pair sample of establishments that were able to secure PE financing and compare them with their corresponding control establishments that never received PE or VC financing. The results in the third and fourth columns are relatively the same as the first two columns. Therefore, we believe that our results are robust.

The fifth and sixth columns of Table 7 show the results for VC financing for the entire IEGC sample. In general, we find similar results as the PE financing. Focusing on establishments that receive one round of VC financing (sixth column), we find that owners who are considered as minority, female owners, and owners with a foreign status are less likely to receive VC funding by 34.7%, 22.45%, and 45.64% respectively. These magnitudes are significantly larger for VC funding compared to PE funding indicating that VC funding is even more directed toward homogeneous business owners (domestic white male).

In contrast to PE financing, we find that establishments with higher D&B credit ratings (DBR2 and DBR3 relative to omitted dummy DBR4) are more likely to receive VC funding. Establishments with legal status of corporations are more likely to receive funding from VC

while they are less likely to receive funding from PE. The states dummy variables indicate that VC financing are geographically more favorable in California and Massachusetts. This is consistent with the clustering of VC presence in both of these states as indicated in Table 3.

In the seventh and eighth columns of Table 7, we examine the establishments that received VC financing based on the match-pair sample. The results are consistent with the entire IEGC sample and therefore, we believe our results are robust. We also conduct the logistic regression and overall results remain unaffected by the types of probability distribution.

5.2 Second stage growth rates regression

In the second stage regressions, we examine the impacts of the probability of receiving PE or VC financing on establishments' annual net sales and employment growth immediately after until five consecutive years after financing. We focus on the subsample of establishments that received PE or VC financing for only one round during the entire period of our sample to cleanly measure the impact of PE or VC financing on net sales and employment growth rates on these establishments. Tables 8 and 9 display the second stage regression.

[Insert Table 8 here]

Table 8 shows that PE financing is not immediately affecting establishments' sales growth. However, we find that it increases establishments' sales growth rates in one year, two years, and three years after receiving PE funding by 9.59%, 3.93%, and 5.3% respectively. This is consistent with our univariate analysis presented in Panel A of Table 5.

The impact of PE financing on employment growth rate is also similar to the sales growth rate. PE financing is not immediately affecting employment growth rate. Its positive impact on employment growth rates are 8.91%, 4.08%, and 5.88% during three consecutive years after receiving PE financing. This result is different compared to DHJLM (2011) results. We believe that the difference is driven by the size of establishments in our sample compared to DHJLM (2011) sample. Our sample contains smaller firms with smaller numbers of employees. Therefore, PE has less room for cost cutting and job destruction in small establishments compared to larger establishments with more than 500 employees. Furthermore, because capital is constrained for small and mid-sized businesses, access to private equity and venture capital often propels business owners into a new growth opportunity set. Finally, managerial and operational expertise provided by private equity and venture capital firms are likely to be more impactful in small and mid-sized businesses, which frequently operate with founding business operators that may or may not have formal business training.

Interestingly, establishments with women CEOs (WCEO) have significantly lower sales and employment growth rates. This may indicate that women CEOs tend to be more conservative when considering higher growth rate opportunities. Establishments with higher net sales and employment levels have higher growth in the current year but have less growth in future years. This indicates that larger establishments eventually have lower growth rates in the future.

[Insert Table 9 here]

Table 9 presents the results for VC financing on establishment growth rates. VC financing immediately increases establishments' net sales and employment by 45.36% and

28.28% respectively. We find that the magnitudes of VC financing on establishments' sales and employment growth rates are not only immediate but also significantly larger than PE financing. However, the impact of VC financing on establishments' sales lasts only for one year after the establishment received VC financing and its impact on establishments' employment lasts only for one year after obtaining financing. This is likely caused by staged investment deployment strategies and large cash burn rates of many startups.

[Insert Table 10 here]

VI. Additional robustness tests

We conduct two robustness tests for our results. Again, we focus on the single round of PE or VC financed establishments by deleting the establishments that received multiple rounds of PE or VC financing to clearly examine the impact of PC or VC financing on establishments' growth. In our first robustness check we examine the impact of PE and VC financing on establishments sales and employment growth rates using the entire IEGC sample. Table 10 presents the regression results for PE financing using the entire IEGC sample. We find that PE financing reduces establishments' net sales and employment growth rates by 0.92% and 0.82% during the contemporaneous year of the PE financing event. However, PE financing increases establishments' sales growth by 1.86% and 0.79% during two consecutive years after financing. It also increases employment growth rates by 2.27%, 0.92%, and 0.44% during three consecutive years after financing.

[Insert Table 11 here]

Table 11 presents the regression results for VC financing using the entire IEGC sample. We find VC financing immediately increases sales and employment growth rates by 5.02% and 6.11%. The positive impact of VC financing on establishments' sales and employment growth rates decreases but remains significant for three consecutive years after its inception. Overall, the results from the entire IEGC sample are consistent with our match-pair results, except we find that the magnitudes of PE and VC financing on establishments' growth for the entire IEGC sample is not as large as the results on the match-pair sample.

In the second robustness test we repeat our matched-pair using the propensity scoring method (Rosenbaum and Rubin, 1983). The propensity scoring method has been used in finance and accounting literature (Tucker, 2010; Lennox, Francis, and Wang, 2012) and is appropriate for our analysis since we only observe establishments who successfully obtained PE or VC financing. We define F = 1 if an establishment receives PE or VC financing and F = 0 if an establishment does not receive PE financing. Let Y_1 (sales and employment growth) be the outcome with PE or VC financing and Y_0 (sales and employment growth) be the outcome without PE or VC financing. The average effect of PE or VC financing on business establishment growth can be written as:

$$\Delta = E(Y_1 \mid F = 1) - E(Y_0 \mid F = 1)$$

While we observe establishments that obtain PE or VC financing ($Y_1 \mid F = 1$), we are unable to observe establishments that do not obtain PE or VC financing ($Y_0 \mid F = 1$).

The goal of propensity scoring is to construct probabilities of successfully obtaining PE or VC financing for establishments that did not receive PE or VC financing. First, we conduct the probit regression for the entire IEGC sample to estimate the probability of each establishment

of receiving PE or VC financing. This probit regression is similar to the first stage regression for the entire IEGC sample that is reported in the second and the sixth columns of Table 7. Then, we construct matched-pair establishments that receive PE financing with establishments that never received PE or VC financing based on the closest estimated probabilities (propensity scores) of receiving PE financing in each year. We name this match-pair as the propensity scoring PE sample. We construct similar match-pair establishments based on the propensity scores for receiving VC financing and name it as the propensity scoring VC sample.

[Insert Table 12 here]

We analyze the impact of PE financing on establishments' sales and employment growth rates for both propensity scoring PE and VC samples. Table 12 presents the impact of PE financing on the propensity scoring PE sample. We find similar results as our matched-pair results. PE financing does not have an immediate impact on establishments' growth rates. However, it significantly and positively affects their growth rates for three consecutive years after financing. Table 13 presents the impact of VC financing on the propensity scoring VC sample. We also find similar results that VC financing immediately and positively increases establishments' growth rates. We find that the impact of VC financing on net sales remains positive and significant during two consecutive years after financing, while its impact on employment remains positive and significant during three consecutive years after the financing event. Overall, our results remain robust throughout three different samples, the match-pair sample, the entire IEGC sample, and the propensity scoring sample.

[Insert Table 13 here]

VII. Conclusions

Academics, business owners, and policy makers continuously put a significant focus on the impact of private equity (PE) and venture capital (VC) financing on firms' revenue growth and job creation. While most of the existing studies focus on the impact of leveraged buyouts (LBOs) for large establishments by private equity firms on job creation and destructions, the literature on the impacts of PE and VC financing on subsequent growth for small to mid-sized establishments is still underdeveloped. This paper examines the impact of PE and VC financing on establishments' subsequent net sales and employment growth rates for small and mid-sized establishments where capital is constrained and professional management is often scarce. Using the Institute for Exceptional Growth Companies (IEGC) database, this study is able to clearly examine the net sales and employment growth impacts at the establishment level and for small and mid-sized companies.

Policy makers also put forth significant efforts to foster equal opportunity for both minorities and women to have equal access to capital (Hinson, 2010). This paper also aids policy makers on this topic by revealing data on the likelihood of successfully obtaining funding from PE and VC for minorities, women, and foreign owned establishments.

Using the NETS data, D&B data, and Pitchbook data during 1995 to 2009, we construct three different matched-pair samples for establishments who received funding from PE or VC with those who never received financing from both PE and VC. Our results indicate that minorities, women, and foreign owned establishments are significantly less likely to receive

private equity (PE) funding. These groups are even less likely to receive funding from venture capital (VC).

After controlling for endogeneity and self-selection biases for probabilities of obtaining capital from PE and VC, we find that establishments that received funding from PE and VC have significantly higher net sales and employment than their control establishments. The immediate impact of PE financing on establishments' growth is insignificant. This is likely the result of a potentially considerable gap in time between implementing strategic changes and observing the results. PE financing increases establishments' growth rates for three years after their PE financing event, however. The impact of VC financing on establishments' growth is immediate and larger than PE financing.

Our findings are relevant for policymakers, capital providers, and business owners. First, these magnitudes of demographics on the likelihood of receiving PE and VC funding indicate that minority, women, and foreign-owned establishments face significant challenges to obtain PE and VC funding to grow their businesses. Second, both PE and VC financing sources are very important for these establishments to grow their businesses and to create employment opportunities. These financing events therefore have a positive impact on economic growth.

We recognize that the NETS database may overestimate the number of employment and underestimate the net sales receipts. However, because both the establishments with PE and VC funding and their control establishments are drawn from the same database, we believe that both the funded establishments and their control groups exhibit the same biases. We conduct two robustness checks using the entire IEGC sample and propensity matching and our results remain robust.

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Appendix A

Comparison between NETS database and U.S. Census data

Panel A. Aggregate employment from Business Dynamics Statistics and NETS

	Business Dynamics Statistics		National Establishment Time-Series (NETS)	
Year	# Establishments	# Employees	# Establishments	# Employees
1995	5,839,774	98,519,864	12,179,705	144,895,620
1996	5,933,926	100,380,503	12,385,686	145,260,373
1997	6,043,242	103,203,936	13,090,106	149,713,844
1998	6,108,927	106,268,299	13,573,482	154,267,365
1999	6,174,381	109,060,036	13,699,191	156,118,765
2000	6,219,280	112,624,575	13,658,564	160,220,069
2001	6,348,830	114,349,926	14,267,011	167,211,842
2002	6,399,351	112,123,655	16,071,016	173,173,276
2003	6,460,594	112,720,028	17,192,608	169,037,299
2004	6,542,356	114,002,472	17,365,470	165,715,082
2005	6,679,753	115,520,906	18,054,411	164,486,072
2006	6,781,915	118,921,117	19,710,914	167,984,002
2007	6,888,393	119,913,218	20,550,939	169,757,863
2008	6,862,476	120,083,046	22,325,361	169,478,700
2009	6,678,469	113,900,772	22,617,871	171,922,743
2010	6,619,139	111,175,010	22,015,210	161,957,103

Note: Business Dynamics Statistics is updated every mid-March while NETS is updated every January. The Business Dynamics Statistics is downloaded directly from: http://www2.census.gov/ces/bds/estab/bds_e_all_release.xls.

Panel B. Aggregate net sales receipts from Statistics of U.S. Businesses and NETS

	Statistics of U.S. Businesses		National Establishment Time-Series (NETS)	
Year	# Establishments	Receipts (in $1000)	# Establishments	Receipts (in $1000)
1997	6,894,869	18,242,632,687	12,931,953	15,646,277,989
2002	7,200,770	22,062,528,196	15,849,268	19,601,571,421
2007	7,705,018	29,746,741,904	20,311,659	19,433,716,504

Note: Statistics of U.S. Businesses is updated every mid-March while NETS is updated every January. The Statistics of U.S. Businesses is downloaded directly from: http://www2.census.gov/econ/susb/data/1997/us_4digitsic_receipt_1997.xls, http://www2.census.gov/econ/susb/data/2002/us_6digitnaics_receipt_2002.xls, and http://www2.census.gov/econ/susb/data/2007/us_6digitnaics_receipt_2007.xls.

Appendix B

A sample of the Pitchbook financing database

The Pitchbook financing data indicates whether a particular establishment receives private equity (PE) or venture capital (VC) financing (without dollar amount of PE or VC investments) and its type of ownership. Yeid is the establishment unique identifier from the NETS database. Financing95 implies whether an establishment receives Private Equity (PE) Backed or Venture Capital (VC) Backed financing during year 1995, Financing96 implies whether an establishment receives PE or VC financing during year 1996, etc. Ownership02 implies types of ownership for each establishment during year 2002. Ownership03 implies types of ownership for each establishment during year 2003, etc. The Pitchbook financing and ownership data is available from 1995 to 2009.

Yeid	Financing95	Financing96	Financing98	Financing99
1362			Private Equity Backed	
2846		Private Equity Backed		
3502				Private Equity Backed
15757			Private Equity Backed	
68629				VC Backed
75231	Private Equity Backed			
80424			VC Backed	

Yeid	Ownership02	Ownership03	Ownership04	Ownership05	Ownership06	Ownership07
10000332				Privately Held		
10001797						Privately Held
10001826						Publicly Held
10002734		Privately Held	Privately Held		Acquired/Merged	
10003352						
10012789				Privately Held	Publicly Held	
10014872	Privately Held					

Appendix C

Variables Definitions

Variables	NETS Field Name	Definitions
PROB(PE)	Financing (Pitchbook)	An indicator variable that takes on a value = 1 if the establishment receives funding from Private Equity
PROB(VC)	Financing (Pitchbook)	An indicator variable that takes on a value = 1 if the establishment receives funding from Venture Capital
EMPGR#	Emp	Percentage change of employment in current year upon receiving funding relative to previous year (in decimal)
SALEGR#	Sales	Percentage change of Sales in current year upon receiving funding relative to previous year (in decimal)
KIDS	Kids	Number of Establishments with This Establishment under the headquarter D-U-N-S number (HQDuns)
MINORITY	Minority	Minority Owned Indicator-Last (Y = Minority or non-Caucasian Owned, N = Non-Minority or Caucasian Owned)
FOREIGN	ForeignOwn	Foreign Owned-Last (Y = Yes, Space = No)
WCEO	GenderCEO	An indicator variable that takes on a value = 1 if the CEO is a woman or 0 otherwise
WOWNER	WomanOwned	Controlling interest in establishment held by woman-Last (Y = Yes, N = No)
Paydex	PayDexMax or PayDexMin	D&B Maximum PayDex score or Minimum PayDex score. PayDex score 80 indicates that, on average, the business pays its bills in a "Prompt" manner.
D&B Rating	D&B Rating	Duns & Bradstreet credit rating. Higher D&B rating indicates worse credit rating
DBR1	D&Brating	An indicator variable that takes on a value = 1 if the D&B rating is 1 (best) or 0 otherwise
DBR2	D&Brating	An indicator variable that takes on a value = 1 if the D&B rating is 2 (second best) or 0 otherwise
DBR3	D&Brating	An indicator variable that takes on a value = 1 if the D&B rating is 3 (second worse) or 0 otherwise
DBR4	D&Brating	An indicator variable that takes on a value = 1 if the D&B rating is 4 and lower (worst) or 0 otherwise
AGE	Age	Number of years since the establishment was founded
LOGSALE	Sales	Natural logarithmic of inflation adjusted annual net sales ($)
LOGEMP	Emp	Natural logarithmic of number of employees
CORP	LegalStat	Legal Status-Last (G = Proprietorship, H = Partnership, I = Corporation, J = Non-Profit, Blank = NA)
GCONTRACT	GovtContra	Government Contracts/Grants Indicator-Last (Y=Yes, N= No)
SUBSIDIARY	Subsidiary	“Yes” indicates corporation that is more than 50 percent owned by another corporation; may also have branches/subsidiaries
CA	State	An indicator variable that takes on a value = 1 if the state is California (CA) or 0 otherwise
FL	State	An indicator variable that takes on a value = 1 if the state is Florida (FL) or 0 otherwise
MA	State	An indicator variable that takes on a value = 1 if the state is Massachusetts (MA) or 0 otherwise
NY	State	An indicator variable that takes on a value = 1 if the state is New York (NY) or 0 otherwise
TX	State	An indicator variable that takes on a value = 1 if the state is Texas (TX) or 0 otherwise

Figure 1

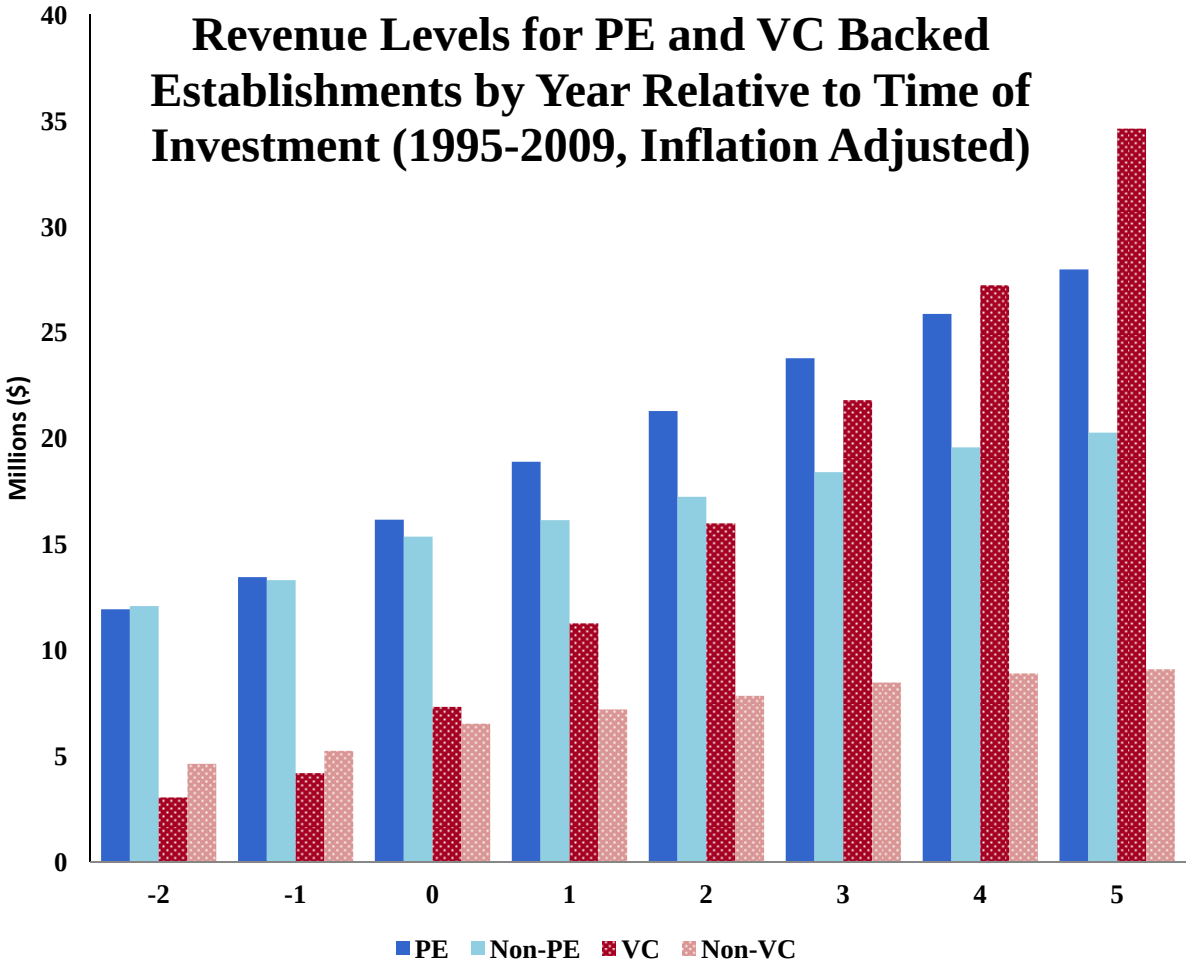
Revenue Levels for PE and VC Backed Establishments by Year Relative to Time of Investment (1995-2009, Inflation Adjusted)
Millions ($)
40
35
30
25
20
15
10
5
0
-2
-1
0
1
2
3
4
5
PE
Non-PE
VC
Non-VC

Figure 2

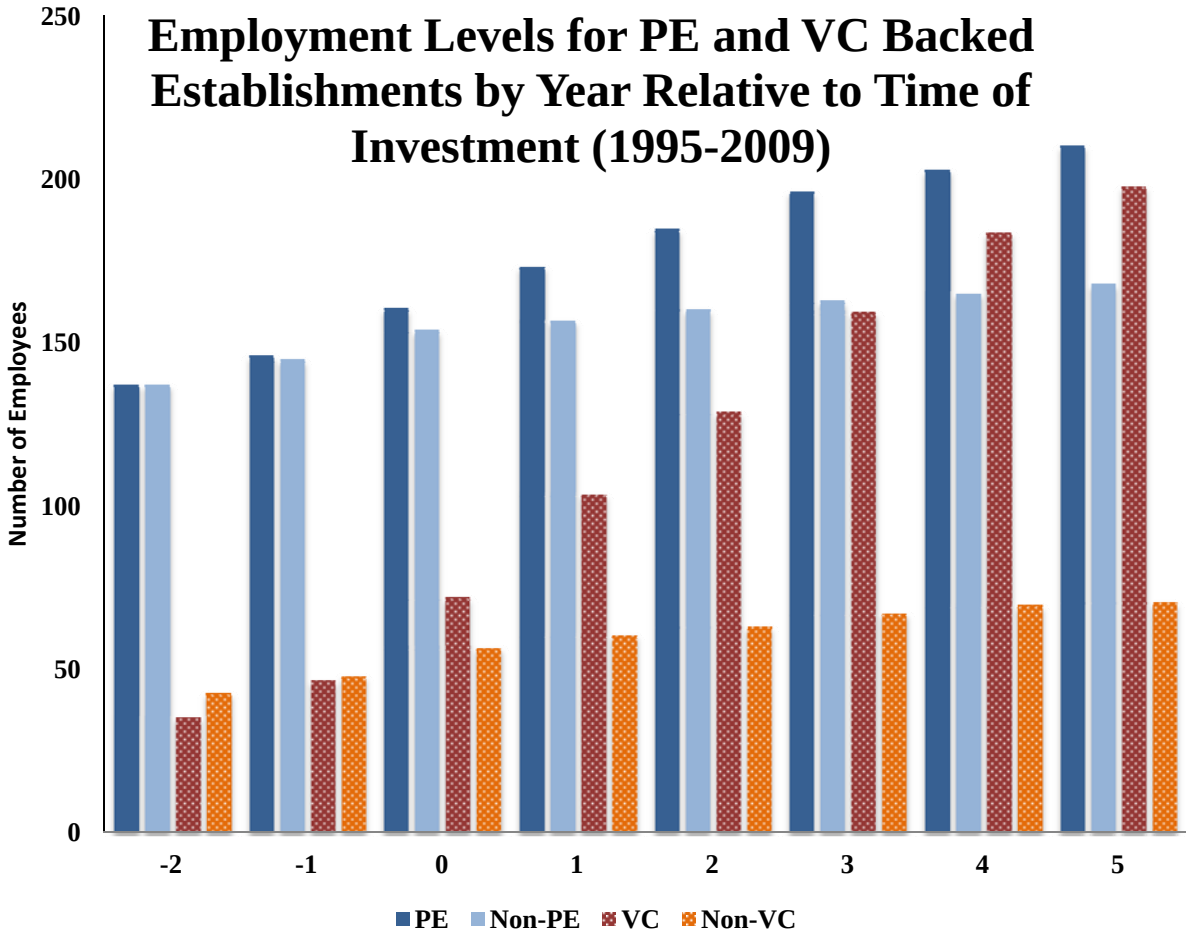
Employment Levels for PE and VC Backed Establishments by Year Relative to Time of Investment (1995-2009)
Number of Employees
250
200
150
100
50
0
-2
-1
0
1
2
3
4
5
PE
Non-PE
VC
Non-VC

Table 1

Data distribution and sample formation

A. Financing	**Observations**	**Percentage**
Received PE Funding	16,802	62.6%
Received VC Funding	7,555	28.2%
Others*	2,481	9.2%
B. Ownership	**Observations**	**Percentage**
Privately Held	15,508	57.8%
Acquired/Merged	6,232	23.2%
Publicly Held	1,149	4.3%
Others**	3,949	14.7%
Total observations	26,838	100%
Number of establishments	16,482	
C. Sample formation	**PE Sample**	**VC Sample**
Initial data	16,802	7,555
Match pair results	13,538	6,800
Missing values	5,445	3,666
Sample prior to 1% truncation	8,093	3,134
Final match-pair sample	8,013	3,103
Number of establishments	6,815	1,854
D. Rounds of financing	**PE Sample**	**VC Sample**
One round	5,521	979
Two rounds	1,530	971
Three rounds	605	628
Four rounds	214	334
Five rounds	72	134
More than five rounds	71	57

*Others in financing imply acquired by other firms or in the process of going public.
** Others in ownership imply the establishments cease to exist.

Table 2

Sample distribution across Fama-French 48 industries

	PE Match-Pair Sample		VC Match-Pair Sample		IEGC Sample	
Industries	Obs	Pct	Obs	Pct	Obs	Pct
Agriculture	47	0.59%	1	0.03%	1,542,504	3.49%
Food	131	1.65%	0	0	49,000	0.11%
Soda	34	0.44%	1	0.03%	15,268	0.03%
Beer	8	0.10%	0	0	9,236	0.02%
Smoke	1	0.01%	0	0	1,422	0.00%
Toys	76	0.95%	10	0.32%	74,526	0.17%
Fun/Entertainment	86	1.07%	15	0.52%	944,726	2.14%
Books	163	2.05%	17	0.55%	188,488	0.43%
Household	125	1.56%	15	0.52%	123,324	0.28%
Clothes	57	0.72%	0	0	58,336	0.13%
Health	240	3.01%	49	1.58%	2,026,970	4.58%
Med. Equipment	121	1.51%	125	4.03%	29,624	0.07%
Drugs	88	1.10%	82	2.67%	14,518	0.03%
Chemical	111	1.39%	18	0.61%	41,922	0.09%
Rubber	228	2.85%	5	0.19%	44,439	0.10%
Textiles	52	0.65%	2	0.10%	66,707	0.15%
Build. Material	227	2.83%	8	0.26%	287,098	0.65%
Construction	204	2.56%	17	0.58%	3,979,342	8.99%
Steel	93	1.17%	4	0.16%	29,113	0.07%
Fab. Prod	125	1.57%	2	0.10%	50,751	0.11%
Machine	299	3.73%	31	1.03%	198,394	0.45%
Elec. Equipment	99	1.25%	43	1.39%	40,227	0.09%
Autos	115	1.44%	2	0.10%	44,396	0.10%
Aero	47	0.59%	2	0.10%	10,382	0.02%
Ships	9	0.11%	0	0	3,642	0.01%
Guns	15	0.19%	8	0.26%	3,899	0.01%
Gold	0	0	0	0	1,689	0.00%
Mines	10	0.12%	0	0	16,040	0.04%
Coal	11	0.14%	0	0	7,008	0.02%
Oil	118	1.47%	4	0.13%	90,910	0.21%
Utility	94	1.19%	13	0.42%	141,177	0.32%
Telecom	249	3.12%	207	6.70%	324,494	0.73%
Personal Service	213	2.67%	40	1.32%	5,311,252	12.01%
Business Service	1584	19.77%	1535	49.47%	11,238,461	25.40%
Computer	145	1.81%	161	5.22%	90,948	0.21%
Chips	188	2.35%	241	7.77%	47,264	0.11%
Lab. Equipment	87	1.09%	56	1.80%	28,263	0.06%
Paper	109	1.36%	1	0.03%	46,584	0.11%
Boxes	29	0.37%	0	0	19,826	0.04%
Transport	277	3.47%	17	0.55%	1,263,342	2.86%
Wholesale	888	11.09%	190	6.16%	6,024,325	13.62%
Retail	458	5.73%	97	3.13%	2,305,084	5.21%
Meals	176	2.21%	4	0.16%	1,375,659	3.11%
Banks	112	1.40%	11	0.39%	533,852	1.21%
Insurance	166	2.08%	13	0.42%	679,215	1.54%
Real Estate	63	0.80%	5	0.19%	1,880,311	4.25%
Security Trading	145	1.81%	17	0.58%	816599	1.85%
Others	90	1.12%	34	1.10%	2,120,947	4.79%
TOTAL	8,013	100%	3,103	100%	44,241,504	100%

Table 3

Sample distribution across states

	PE Match-Pair Sample		VC Match-Pair Sample		IEGC Sample	
State	Obs	Pct	Obs	Pct	Obs	Pct
AK	7	0.09%	0	0%	102,369	0.23%
AL	78	0.97%	10	0.32%	586,615	1.33%
AR	31	0.39%	1	0.03%	387,834	0.88%
AZ	165	2.06%	24	0.77%	797,076	1.8%
CA	1018	12.70%	1335	43.02%	5,446,061	12.31%
CO	199	2.48%	82	2.64%	888,817	2.01%
CT	151	1.88%	39	1.26%	580,122	1.31%
DC	13	0.16%	9	0.29%	122,076	0.28%
DE	12	0.15%	1	0.03%	114,652	0.26%
FL	430	5.37%	66	2.13%	3,748,447	8.47%
GA	275	3.43%	72	2.32%	1,474,127	3.33%
HI	10	0.12%	0	0%	144,420	0.33%
IA	30	0.37%	0	0%	514,544	1.16%
ID	21	0.26%	8	0.26%	262,907	0.59%
IL	407	5.08%	50	1.61%	1,573,483	3.56%
IN	156	1.95%	10	0.32%	771,531	1.74%
KS	64	0.80%	9	0.29%	428,538	0.97%
KY	60	0.75%	6	0.19%	541,637	1.22%
LA	61	0.76%	4	0.13%	660,716	1.49%
MA	330	4.12%	382	12.31%	919,728	2.08%
MD	137	1.71%	49	1.58%	843,879	1.91%
ME	20	0.25%	2	0.06%	197,229	0.45%
MI	186	2.32%	10	0.32%	1,355,604	3.06%
MN	225	2.81%	40	1.29%	850,169	1.92%
MO	152	1.90%	15	0.48%	784,270	1.77%
MS	30	0.37%	4	0.13%	444,808	1.01%
MT	18	0.22%	1	0.03%	171,942	0.39%
NC	206	2.57%	75	2.42%	1,184,547	2.68%
ND	16	0.20%	0	0%	123,605	0.28%
NE	43	0.54%	2	0.06%	275,494	0.62%
NH	50	0.62%	13	0.42%	225,248	0.51%
NJ	313	3.91%	65	2.09%	1,192,497	2.7%
NM	20	0.25%	9	0.29%	248,623	0.56%
NV	51	0.64%	7	0.23%	346,506	0.78%
NY	546	6.81%	119	3.83%	2,747,781	6.21%
OH	304	3.79%	37	1.19%	1,392,733	3.15%
OK	74	0.92%	0	0%	497,207	1.12%
OR	88	1.10%	24	0.77%	632,558	1.43%
PA	311	3.88%	75	2.42%	1,652,734	3.74%
PR	5	0.06%	0	0%	78,656	0.18%
RI	18	0.22%	2	0.06%	134,535	0.3%
SC	82	1.02%	5	0.16%	530,805	1.2%
SD	16	0.20%	1	0.03%	135,338	0.31%
TN	156	1.95%	15	0.48%	836,547	1.89%
TX	756	9.43%	149	4.80%	3,722,027	8.41%
UT	99	1.24%	31	1.00%	434,731	0.98%
VA	193	2.41%	60	1.93%	1,044,544	2.36%
VI	1	0.01%	0	0%	4,916	0.01%
VT	21	0.26%	3	0.10%	109,283	0.25%
WA	148	1.85%	168	5.41%	974,621	2.2%
WI	187	2.33%	14	0.45%	714,349	1.61%
WV	15	0.19%	0	0%	188,281	0.43%
WY	8	0.10%	0	0%	99,737	0.23%
Total	8,013	100%	3,103	100%	44,241,504	100%

Table 4

Correlation coefficients

A. PE Match-Pair Sample

No	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	PROB(PE)	1													
2	SALEGR0	0.0186	1												
3	EMPGR0	0.0283*	0.8169*	1											
4	KIDS	0.0408*	-0.0046	-0.0033	1										
5	MINORITY	-0.0773*	-0.0008	-0.003	-0.0166	1									
6	FOREIGN	-0.0548*	-0.0137	-0.0154	-0.0029	-0.0525*	1								
7	WCEO	-0.0125	-0.0074	-0.0054	-0.0039	-0.0101	0.0024	1							
8	WOWNER	-0.0618*	-0.0079	-0.0133	-0.0210*	0.1930*	-0.0477*	0.0828*	1						
9	PAYDEXMAX	0.0488*	0.0071	0.0149	-0.0086	-0.0177	-0.0252*	0.0008	-0.0123	1					
10	DBR1	-0.0348*	-0.0013	-0.0034	0.0704*	-0.0001	-0.0101	0.0035	0.0127	0.0669*	1				
11	DBR2	-0.1381*	-0.0111	-0.0192	-0.0159	0.0212*	-0.0240*	-0.0146	0.0462*	0.1823*	-0.1044*	1			
12	DBR3	-0.0113	-0.0041	0.0051	-0.0270*	0.0331*	0.007	-0.0082	0.0011	-0.0442*	-0.1364*	-0.3718*	1		
13	DBR4	0.1405*	0.0138	0.0127	0.0122	-0.0494*	0.0175	0.0188	-0.0449*	-0.1372*	-0.1647*	-0.4489*	-0.5867*	1	
14	AGE	-0.0975*	-0.0650*	-0.0636*	0.0922*	-0.0570*	-0.0029	-0.0231*	-0.0328*	0.0057	0.0809*	0.1361*	-0.0601*	-0.0884*	1
15	LOGSALE	-0.0021	0.0395*	0.0134	0.0708*	-0.0322*	0.1181*	-0.0282*	-0.0921*	-0.0246*	0.0705*	-0.0092	0.0402*	-0.0575*	0.2167*
16	LOGEMP	0.0488*	0.0149	0.0279*	0.0946*	-0.0391*	0.1021*	-0.0256*	-0.0951*	-0.0432*	0.0601*	-0.0312*	0.0214*	-0.0171	0.2302*
17	SALEGRW	-0.0068	-0.0504*	-0.0386*	-0.0094	0.0055	0.0066	0.008	-0.0019	0.0093	-0.0029	-0.0085	-0.0148	0.0224*	0.0084
18	PEERSALEGRW	-0.0124	-0.0584*	-0.0476*	-0.0033	-0.0012	0.0079	0.0041	-0.0067	-0.003	-0.0018	-0.0063	-0.0134	0.0187	0.0310*
19	CORP	-0.0607*	-0.0293*	-0.0404*	0.0253*	0.016	0.0558*	-0.0046	0.018	-0.0284*	0.0328*	0.0413*	-0.0085	-0.0393*	0.1180*
20	GOVCON	0.0697*	-0.0112	-0.0124	0.0567*	0.0325*	0.0335*	-0.0123	-0.0018	-0.0248*	0.0433*	0.0091	-0.0028	-0.0216*	0.1143*
21	SUBSIDIARY	0.1645*	-0.0217*	-0.0169	0.0014	-0.1213*	0.3268*	-0.0111	-0.1104*	-0.0066	-0.0398*	-0.1646*	-0.0531*	0.2045*	0.0582*
22	CA	-0.0096	0.0073	0.0068	0.0117	0.0330*	0.0096	0.0029	0.0290*	0.007	-0.0177	0.0047	0.0107	-0.0074	-0.0748*
23	FL	-0.0044	-0.0085	-0.0098	-0.0062	0.0195	-0.0243*	0.01	0.0049	-0.0033	-0.015	-0.0106	0.0032	0.0116	-0.0605*
24	NY	-0.0027	-0.0023	-0.0067	-0.0013	-0.0052	0.0112	0.0111	-0.0156	-0.0072	0.0017	-0.0091	0.007	0.0003	0.0202
25	TX	0.0357*	0.0026	0.0053	-0.0001	0.0187	-0.0173	-0.0017	-0.0073	-0.0105	0.0001	-0.0111	0.0108	-0.0009	-0.0632*

No	Variables	15	16	17	18	19	20	21
15	LOGSALE	1						
16	LOGEMP	0.8333*	1					
17	SALEGRW	-0.0004	-0.0039	1				
18	PEERSALEGRW	0.013	0.0248*	0.8872*	1			
19	CORP	0.1036*	0.0961*	0.0186	0.0233*	1		
20	GOVCON	0.1644*	0.1812*	-0.0074	-0.0154	0.0679*	1	
21	SUBSIDIARY	0.2174*	0.2372*	0.0265*	0.0260*	0.0976*	0.0748*	1
22	CA	-0.0061	-0.0173	0.0089	-0.0018	0.0185	0.0098	-0.0288*
23	FL	-0.0500*	-0.0387*	0.0042	0.0082	-0.01	-0.0339*	-0.02
24	NY	0.0044	0.0059	0.0385*	0.0240*	0.0024	-0.0242*	-0.0052
25	TX	-0.0231*	-0.0340*	-0.0291*	-0.0217*	-0.0424*	-0.0330*	0.0047

* indicates statistically significant at 1% level. See Appendix C for variables definitions.

B. VC Match-Pair Sample

No	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	PROB(VC)	1													
2	SALEGR0	0.1175*	1												
3	EMPGR0	0.0396*	0.3468*	1											
4	KIDS	0.0128	-0.0013	0.0195	1										
5	MINORITY	-0.1394*	0.0019	0.001	-0.0169	1									
6	FOREIGN	-0.0845*	0.0136	-0.0013	0.0439*	-0.0447*	1								
7	WCEO	-0.0272	-0.0123	-0.0056	-0.0034	0.0037	0.0286	1							
8	WOWNER	-0.1307*	-0.0131	-0.0067	-0.0018	0.1912*	-0.0345*	0.0914*	1						
9	PAYDEXMAX	0.1282*	0.0328*	0.0237	-0.0209	-0.0335*	-0.009	-0.0672*	-0.0348*	1					
10	DBR1	-0.0338*	-0.0014	-0.0028	0.0480*	0.0078	-0.0072	-0.0067	0.0082	0.0520*	1				
11	DBR2	-0.2287*	-0.0315	-0.0225	0.0107	0.0419*	0.0238	-0.0133	0.0297	0.1460*	-0.0658*	1			
12	DBR3	0.1483*	0.0057	-0.005	-0.0139	0.0051	0.0008	-0.009	-0.0154	-0.0002	-0.1097*	-0.3631*	1		
13	DBR4	0.0414*	0.0192	0.0231	-0.0081	-0.0396*	-0.0172	0.021	-0.0103	-0.1276*	-0.1211*	-0.4009*	-0.6683*	1	
14	AGE	-0.4291*	-0.1029*	-0.0566*	0.0975*	0.0107	0.0107	0.0078	0.0502*	-0.0364*	0.0877*	0.2715*	-0.0766*	-0.1599*	1
15	LOGSALE	-0.0032	0.0938*	0.0239	0.1075*	-0.015	0.0769*	-0.0145	-0.0504*	-0.0604*	0.0640*	0.0608*	0.1166*	-0.1794*	0.1682*
16	LOGEMP	0.0735*	0.0821*	0.0735*	0.1356*	-0.0066	0.0608*	-0.0146	-0.0403*	-0.0683*	0.0681*	0.0284	0.1340*	-0.1724*	0.1420*
17	SALEGRW	-0.0944*	-0.0565*	-0.0335*	0.029	-0.0053	0.0075	-0.0069	0.001	-0.014	-0.0028	0.0298	-0.0313	0.0084	0.0548*
18	PEERSALEGRW	-0.0957*	-0.0676*	-0.0395*	0.0418*	-0.0077	0.0212	-0.0058	-0.0106	-0.0145	0.0114	0.0371*	-0.022	-0.0103	0.0759*
19	CORP	0.2112*	0.0027	-0.0014	0.0281	0.0054	0.0464*	-0.0017	0.0078	0.0301	0.0340*	0.0165	0.1076*	-0.1278*	0.0192
20	GOVCON	0.0908*	0.0159	0.0017	0.0593*	0.0521*	0.0008	-0.0229	0.0075	-0.0006	0.0426*	0.0306	0.0599*	-0.0944*	0.0312
21	SUBSIDIARY	-0.0569*	0	0.0263	0.0432*	-0.0796*	0.3942*	0.0118	-0.0559*	-0.0161	-0.0063	-0.0238	-0.0047	0.0248	0.0584*
22	CA	0.2770*	0.0023	-0.0045	-0.025	-0.0356*	0.0214	-0.0166	-0.0312	0.0802*	0.0009	-0.0670*	0.0442*	0.0084	-0.1789*
23	MA	0.1426*	0.0139	0.001	0.0045	-0.0487*	0.014	0.0102	-0.0549*	0.0029	-0.0131	-0.0377*	0.0232	0.0102	-0.0624*
24	NY	-0.0746*	-0.0193	-0.0114	0.0099	-0.0108	0.009	0.0627*	0.0191	-0.0367*	-0.0087	-0.0138	-0.0054	0.0184	0.0593*
25	TX	-0.0611*	0.0022	-0.0004	-0.0031	0.0385*	-0.0083	0.0017	0.0315	-0.0227	-0.0029	0.0212	-0.0151	-0.0008	0.0024

No	Variables	15	16	17	18	19	20	21
15	LOGSALE	1						
16	LOGEMP	0.8070*	1					
17	SALEGRW	-0.0143	-0.0108	1				
18	PEERSALEGRW	0.0112	0.0098	0.9102*	1			
19	CORP	0.1510*	0.1730*	-0.0171	-0.008	1		
20	GOVCON	0.1439*	0.1676*	-0.024	-0.0142	0.1230*	1	
21	SUBSIDIARY	0.1948*	0.1920*	0.0433*	0.0517*	0.0611*	0.0301	1
22	CA	0.0184	0.02	-0.0418*	-0.0232	0.0967*	-0.0244	-0.0298
23	MA	-0.0014	0.0078	-0.0136	-0.0241	0.0551*	0.0350*	0.0314
24	NY	0.0114	-0.0027	-0.0014	-0.0064	-0.0292	-0.03	-0.0083
25	TX	0.0146	0.021	0.0316	0.0278	-0.0393*	-0.0005	0.0198

* indicates statistically significant at 1% level. See Appendix C for variables definitions.

Table 5

Panel A: The impact of PE on employment (EMPGR) and sales (SALEGR) growth

Year		Sales growth/year			Employment growth/year		
After Receiving Funding (Year)	Obs (N)	PE Funding	No Funding	p value	PE Funding	No Funding	P Value
-2	7584	0.1027	0.0877	0.1021	0.0641	0.0690	0.7540
-1	7807	0.1276	0.1012	0.3023	0.0661	0.0563	0.0961
0	8013	0.2014	0.1547	0.0183	0.0981	0.0628	0.0001
1	7104	0.1693	0.0503	0.0000	0.0805	0.0187	0.0000
2	5693	0.1269	0.0687	0.0000	0.0662	0.0225	0.0000
3	4226	0.1171	0.0674	0.0149	0.0626	0.0162	0.0000
4	3054	0.0878	0.0637	0.2912	0.0337	0.0139	0.0520
5	2231	0.0811	0.0352	0.0176	0.0366	0.0173	0.1137
6	1629	0.1322	0.0313	0.0026	0.0494	0.0079	0.0110
7	1265	0.0609	0.0214	0.1132	0.0178	0.0143	0.7945
8	1006	0.0688	0.0648	0.4789	0.0154	0.0265	0.5772
9	804	0.0650	0.0708	0.8869	0.0221	0.0321	0.6303
10	576	0.1237	0.0575	0.2776	0.0426	0.0065	0.0581

Panel B: The impact of VC on employment (EMPGR) and sales (SALEGR) growth

Year		Sales growth/year			Employment growth/year		
After Receiving Funding (Year)	Obs (N)	VC Funding	No Funding	P value	VC Funding	No Funding	P Value
-2	2487	0.3945	0.1423	0.0000	0.3215	0.1117	0.0000
-1	2875	0.3750	0.1323	0.0000	0.3222	0.1246	0.0000
0	3103	0.7457	0.2444	0.0000	0.5506	0.1810	0.0000
1	2446	0.5392	0.1039	0.0000	0.4402	0.0691	0.0000
2	1808	0.4184	0.0886	0.0000	0.2424	0.0432	0.0000
3	1292	0.3639	0.0796	0.0000	0.2384	0.0647	0.0001
4	947	0.2490	0.0509	0.0000	0.1538	0.0357	0.0006
5	687	0.2714	0.0226	0.0020	0.0766	0.0145	0.0051
6	511	0.1228	0.1110	0.8068	0.0692	0.0302	0.1797
7	380	0.1620	0.0111	0.0093	0.0363	0.0009	0.0706
8	278	0.1038	0.0084	0.0153	0.1282	0.0045	0.0269
9	200	0.0529	0.1120	0.5246	0.0025	0.0695	0.2126
10	116	0.1109	0.0069	0.1074	0.0529	-0.0082	0.2076

Table 6

Univariate analysis for match-pair sample

A. PE Funding Variables	PE funding	No funding (control sample)	p-value
MINORITY	0.0241	0.0541	0.0000
FOREIGN	0.0499	0.0767	0.0000
WOWNER	0.0625	0.0961	0.0000
WCEO	0.0018	0.0031	0.1134
PAYDEXMAX	75.21	74.50	0.0000
PAYDEXMIN	68.15	67.83	0.0687
D&B Rating (DBR#)	3.259	2.978	0.0000
KIDS	24.63	9.48	0.0000
AGE	26.96	32.14	0.0000
Net Sales ($ Million)*	16.162	15.366	0.9385
Number of employees	155.4	147.1	0.3333
CORP	0.7871	0.8352	0.0000
GCONTRACT	0.2255	0.1694	0.0000
SUBSIDIARY	0.4067	0.2514	0.0000
B. VC Funding Variables	VC funding	No funding (control sample)	p-value
MINORITY	0.0220	0.0848	0.0000
FOREIGN	0.0184	0.0482	0.0000
WOWNER	0.0530	0.1285	0.0000
WCEO	0.0009	0.0035	0.0323
PAYDEXMAX	76.48	74.41	0.0000
PAYDEXMIN	69.18	67.18	0.0000
D&B Rating (DBR#)	3.324	3.089	0.0000
KIDS	1.9491	1.5827	0.3016
AGE	7.46	21.43	0.0000
Net Sales ($ Million)*	7.323	6.528	0.3674
Number of employees	58.98	61.43	0.7417
CORP	0.9404	0.7970	0.0000
GCONTRACT	0.2233	0.1521	0.0000
SUBSIDIARY	0.1113	0.1489	0.0000

* Inflation adjusted annual net sales based on the CPI index (ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt)
See Appendix C for variables definitions.

Table 7

Stage 1 Regression: Probability of receiving PE and VC funding

	ENTIRE NETS SAMPLE		MATCH-PAIR SAMPLE		ENTIRE NETS SAMPLE		MATCH-PAIR SAMPLE	
	PROB(PE)	**PROB(PE)**	**PROB(PE)**	**PROB(PE)**	**PROB(VC)**	**PROB(VC)**	**PROB(VC)**	**PROB(VC)**
MINORITY	-0.1216	-0.1257	-0.1495	-0.1713	-0.4154	-0.347	-0.3216	-0.2799
	(6.42)***	(6.03)***	(5.49)***	(6.48)***	(13.38)***	(8.30)***	(7.12)***	(4.70)***
WOWNER	-0.0509	-0.0357	-0.0442	-0.0361	-0.2224	-0.2245	-0.1819	-0.2289
	(4.28)***	(2.81)***	(2.57)**	(1.99)**	(11.12)***	(7.73)***	(4.98)***	(4.52)***
FOREIGN	-0.4239	-0.3882	-0.2642	-0.2402	-0.4876	-0.4564	-0.3229	-0.2929
	(26.81)***	(22.28)***	(12.84)***	(10.53)***	(14.76)***	(9.32)***	(5.28)***	(3.44)***
WCEO	-0.1515	-0.0817	-0.1063	-0.0380	-0.4102	-0.1389	-0.0382	-0.0227
	(2.68)***	(1.36)	(1.20)	(0.40)	(4.00)***	(0.97)	(0.22)	(0.06)
PAYDEXMAX	0.0043	0.0043	0.0058	0.0055	0.0109	0.0105	0.0081	0.0085
	(10.60)***	(9.53)***	(9.84)***	(8.19)***	(14.67)***	(9.84)***	(6.69)***	(4.19)***
DBR1	-0.1585	-0.1004	-0.1610	-0.1015	0.1848	0.1774	-0.0553	-0.0953
	(7.41)***	(4.21)***	(6.91)***	(3.61)***	(4.28)***	(2.56)**	(0.92)	(0.62)
DBR2	-0.0368	-0.0118	-0.1652	-0.1280	0.1454	0.1492	0.1210	0.0690
	(4.10)***	(1.19)	(13.90)***	(9.38)***	(7.90)***	(5.63)***	(4.06)***	(1.32)
DBR3	-0.0991	-0.1200	-0.0691	-0.0361	0.3808	0.3899	0.0652	0.0743
	(13.55)***	(14.81)***	(7.05)***	(3.16)***	(35.35)***	(24.98)***	(3.70)***	(2.39)**
LOGKIDS	0.2629	0.2292	0.0785	0.0609	0.2666	0.2146	0.1296	0.1806
	(95.55)***	(72.16)***	(19.40)***	(13.11)***	(44.87)***	(23.35)***	(5.99)***	(5.27)***
AGE	-0.00428	-0.0038	-0.0028	-0.0028	-0.0701	-0.0606	-0.0332	-0.0317
	(27.35)***	(22.23)***	(13.49)***	(12.40)***	(63.89)***	(41.39)***	(10.90)***	(8.90)***
LOGSALE	-0.0812	-0.0835	-0.0458	-0.0414	-0.0499	-0.0172	-0.0609	-0.0701
	(19.75)***	(18.62)***	(9.94)***	(8.81)***	(8.41)***	(1.98)**	(6.18)***	(5.20)***
LOGEMP	0.0747	0.0727	0.0428	0.0433	0.2261	0.2032	0.1230	0.1392
	(16.06)***	(14.29)***	(7.39)***	(7.04)***	(33.75)***	(20.77)***	(9.99)***	(7.65)***
CORP	0.0001	-0.00872	-0.0908	-0.1001	0.7998	0.7275	0.3884	0.2896
	(0.02)	(1.06)	(7.81)***	(7.99)***	(45.65)***	(32.24)***	(12.03)***	(7.99)***
GCONTRACT	0.2368	0.2517	0.0780	0.0849	0.6294	0.7573	0.1568	0.1026
	(5.17)***	(4.44)***	(6.47)***	(6.31)***	(5.52)***	(4.09)***	(5.83)***	(2.38)**
SUBSIDIARY	0.4883	0.4916	0.1775	0.1863	0.0672	0.0671	-0.0530	0.0286
	(61.33)***	(54.97)***	(16.10)***	(15.26)***	(3.85)***	(2.57)**	(1.62)	(0.56)
CA	0.0413	0.0325	-0.0012	-0.0108	0.5193	0.4899	0.2739	0.2457
	(4.46)***	(3.16)***	(0.09)	(0.74)	(48.71)***	(32.17)***	(11.90)***	(7.22)***
MA					0.6548	0.6103	0.2867	0.2960
					(38.99)***	(25.14)***	(8.40)***	(5.01)***
FL	-0.0261	-0.0236	-0.0109	-0.0381				
	(2.03)**	(1.68)*	(0.54)	(1.73)*				
NY	0.0479	0.0389	0.0101	-0.0231	0.1026	0.1352	0.0371	0.0526
	(3.87)***	(2.83)***	(0.55)	(1.15)	(4.43)***	(4.31)***	(0.79)	(0.83)
TX	0.0627	0.0575	0.0398	0.0350	0.0425	-0.007	-0.0158	-0.0177
	(5.75)***	(4.76)***	(2.43)**	(1.95)*	(1.94)*	(0.21)	(0.42)	(0.32)
INTERCEPT	0.0075	0.0108	0.1750	0.1298	-0.1934	-0.1516	-0.1357	-0.1588
	(0.25)	(0.12)	(2.30)**	(1.58)	(0.19)	(0.77)	(0.70)	(0.61)
Observations	58,962,957	58,960,582	16,026	11,042	58,952,482	58,949,786	6,206	1,958
Establish with PE or VC financing	10,475	8,100	8,013	5,521	4,776	2,080	3,103	979
Pseudo r-squared	0.463	0.386	0.091	0.0762	0.667	0.551	0.3944	0.363
State dummies	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES	YES	YES

Robust z statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
See Appendix C for variables definitions.

Table 8

Stage 2 Match-Pair Sample Regression: Impact of receiving PE funding on establishments' subsequent growth

	SALEGR0	SALEGR1	SALEGR2	SALEGR3	SALEGR4	SALEGR5	EMPGR0	EMPGR1	EMPGR2	EMPGR3	EMPGR4	EMPGR5
PROB(PE)	0.0292	0.0935	0.0393	0.0530	-0.0005	0.0287	0.0321	0.0891	0.0408	0.0588	-0.0213	0.0184
	(1.12)	(4.75)***	(1.74)*	(2.51)**	(0.02)	(0.93)	(1.36)	(4.93)***	(2.11)**	(2.99)***	(0.91)	(0.69)
WCEO	-0.2731	-0.1302	-0.1682	-0.0360	-0.1438	-0.1468	-0.1703	-0.1048	-0.1594	-0.0615	-0.0468	-0.0592
	(3.17)***	(2.55)**	(0.63)	(0.61)	(1.51)	(1.88)*	(2.11)**	(2.04)**	(2.73)***	(1.31)	(1.23)	(1.31)
PAYDEXMAX	0.0004	-0.0008	-0.0015	0.0001	-0.0025	-0.0012	0.0023	-0.0016	0.0004	0.0018	-0.0013	-0.0014
	(0.22)	(0.66)	(0.85)	(0.10)	(1.09)	(0.80)	(1.68)*	(1.48)	(0.32)	(1.56)	(0.77)	(1.22)
DBR1	-0.0270	0.0112	0.0338	0.1262	0.0558	0.0365	-0.0202	0.0112	-0.0104	-0.0078	0.0736	-0.0175
	(0.40)	(0.40)	(0.54)	(1.59)	(0.67)	(0.65)	(0.32)	(0.45)	(0.45)	(0.28)	(1.02)	(0.65)
DBR2	-0.0394	0.0290	0.0264	0.0103	0.0757	0.0070	-0.0317	0.0177	0.0357	-0.0076	0.0644	0.0158
	(0.96)	(1.16)	(0.72)	(0.49)	(1.35)	(0.24)	(1.04)	(0.85)	(1.29)	(0.39)	(1.38)	(0.66)
DBR3	0.0651	0.0240	0.0252	0.0700	0.0663	0.0082	-0.0187	-0.0005	0.0376	0.0520	0.0686	-0.0024
	(2.14)**	(0.96)	(0.95)	(2.61)***	(1.63)	(0.26)	(0.69)	(0.02)	(1.60)	(2.09)**	(2.54)**	(0.09)
LOGKIDS	-0.0042	0.0129	-0.0010	0.0110	0.0084	0.0051	-0.0144	0.0146	0.0042	0.0126	0.0139	0.0078
	(0.35)	(1.36)	(0.09)	(0.82)	(0.68)	(0.55)	(1.34)	(1.66)*	(0.49)	(1.07)	(1.26)	(0.98)
AGE	-0.0027	0.0001	0.0001	-0.0000	0.0004	0.0003	-0.0021	0.0001	0.0002	-0.0003	0.0002	0.0003
	(5.14)***	(0.26)	(0.18)	(0.08)	(0.80)	(0.53)	(4.90)***	(0.49)	(0.54)	(0.72)	(0.47)	(0.72)
LOGSALE	0.1236	-0.0203	0.0329	-0.0084	-0.0015	0.0250	-0.0020	0.0311	0.0042	0.0106	0.0023	0.0230
	(5.21)***	(1.39)	(2.08)**	(0.65)	(0.08)	(0.76)	(0.13)	(2.26)**	(0.34)	(0.78)	(0.14)	(0.97)
LOGEMP	0.0883	-0.0663	-0.0235	-0.0297	-0.0411	-0.0634	0.0424	-0.1188	-0.0615	-0.0496	-0.0341	-0.0506
	(3.30)***	(3.23)***	(1.30)	(1.81)*	(1.61)	(1.60)	(2.35)**	(5.72)***	(3.70)***	(2.88)***	(2.22)**	(1.74)*
CORP	-0.0853	-0.0173	-0.0185	-0.0274	0.0664	-0.0306	-0.1088	-0.0199	-0.0047	-0.0249	0.0695	0.0165
	(2.21)**	(0.60)	(0.59)	(0.67)	(1.64)	(0.68)	(2.96)***	(0.76)	(0.21)	(0.64)	(2.79)***	(0.60)
GCONTRACT	-0.0293	0.0457	0.0324	0.0384	-0.0431	-0.0505	-0.0445	0.0500	0.0381	0.0560	-0.0321	-0.0637
	(0.82)	(1.39)	(1.00)	(1.21)	(1.16)	(1.69)*	(1.50)	(1.57)	(1.41)	(1.80)*	(1.10)	(2.57)**
SUBSIDIARY	-0.1370	-0.0749	0.0423	0.0097	0.0150	0.0287	-0.1211	-0.0511	0.0568	0.0341	0.0116	0.0052
	(3.79)***	(3.56)***	(1.22)	(0.22)	(0.41)	(0.85)	(4.05)***	(2.70)***	(1.83)*	(0.81)	(0.45)	(0.22)
INVERSE	-0.1383	-0.2607	-0.0930	-0.0057	-0.2109	-0.0928	-0.1528	-0.2140	-0.0256	0.0744	-0.1613	-0.1155
MILL RATIO	(1.38)	(5.42)***	(0.94)	(0.06)	(2.04)**	(1.09)	(2.09)**	(5.13)***	(0.37)	(0.75)	(1.78)*	(2.23)**
INTERCEPT	-1.0526	0.9461	0.9157	0.2975	0.7145	0.0155	0.1998	0.3445	0.1931	-0.1840	0.3950	-0.0134
	(3.52)***	(4.95)***	(3.97)***	(1.64)	(2.99)***	(0.04)	(0.97)	(1.93)*	(1.25)	(1.02)	(2.13)**	(0.04)
Observations	11042	9680	7468	5252	3588	2480	11042	9680	7468	5252	3588	2480
Establish with PE financing	5521	4848	3734	2626	1794	1240	5521	4848	3734	2626	1794	1240
R-squared	0.0223	0.0262	0.0174	0.0201	0.0173	0.0385	0.0190	0.0292	0.0223	0.0204	0.0166	0.0368
State dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

These regressions are conducted over a subsample of establishments who received PE finance only for **one round** against their control group establishments.
Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. See Appendix C for variables definitions.

Table 9

Stage 2 Match-Pair Sample Regression: Impact of receiving VC funding on establishments' subsequent growth

	SALEGR0	SALEGR1	SALEGR2	SALEGR3	SALEGR4	SALEGR5	EMPGR0	EMPGR1	EMPGR2	EMPGR3	EMPGR4	EMPGR5
PROB(VC)	0.4536	0.2820	0.0695	0.2679	0.1602	0.3286	0.4113	0.3353	-0.0168	0.0079	0.1627	-0.1307
	(3.49)***	(3.15)***	(0.73)	(1.22)	(1.30)	(0.78)	(3.21)***	(4.08)***	(0.23)	(0.07)	(1.41)	(0.79)
WCEO	-0.6885	-0.3990	-0.4994	0.0527			-0.6837	-0.6059	-0.3737	-0.3661		
	(2.07)**	(1.43)	(1.09)	(0.19)			(2.06)**	(3.14)***	(0.83)	(1.89)*		
PAYDEXMAX	0.0194	0.0072	0.0062	0.0128	0.0042	-0.0321	0.0211	0.0070	0.0048	0.0093	0.0018	-0.0069
	(2.92)***	(2.22)**	(0.79)	(1.58)	(0.73)	(1.00)	(3.13)***	(2.35)**	(0.62)	(1.56)	(0.33)	(0.78)
DBR1	-0.1106	-0.2816	-0.2257	-0.0917	-0.2970	1.0771	-0.0991	-0.2731	-0.2133	-0.1984	-0.2228	1.4879
	(0.28)	(1.85)*	(1.14)	(0.42)	(1.41)	(0.83)	(0.26)	(1.91)*	(1.98)**	(1.14)	(1.13)	(0.83)
DBR2	-0.1975	-0.1398	0.0733	-0.4305	-0.1745	-0.3176	-0.1838	-0.1554	-0.0465	-0.3032	-0.0616	-0.3831
	(1.60)	(1.50)	(0.48)	(1.93)*	(1.26)	(1.10)	(1.59)	(1.74)*	(0.66)	(1.75)*	(0.44)	(1.25)
DBR3	-0.0670	-0.2470	0.1752	-0.0134	-0.3034	-0.3214	-0.0121	-0.2075	0.1011	0.1285	-0.2676	-0.0885
	(0.44)	(2.47)**	(1.20)	(0.04)	(0.96)	(1.05)	(0.08)	(2.19)**	(0.74)	(0.65)	(0.85)	(0.69)
LOGKIDS	0.0599	0.0718	-0.0162	0.0726	0.0519	-0.0335	0.0353	0.0625	0.0358	0.1117	0.0127	0.0038
	(0.48)	(1.20)	(0.24)	(0.58)	(1.04)	(0.28)	(0.29)	(1.32)	(1.15)	(1.41)	(0.31)	(0.03)
AGE	-0.0505	0.0008	-0.0253	-0.0033	-0.0005	-0.0096	-0.0487	-0.0016	-0.0138	-0.0099	-0.0013	-0.0203
	(3.07)***	(0.11)	(1.92)*	(0.26)	(0.05)	(0.61)	(3.03)***	(0.23)	(1.14)	(1.03)	(0.15)	(1.26)
LOGSALE	0.2339	-0.0857	-0.2656	-0.0406	-0.2898	-0.1902	-0.0703	0.0272	-0.0137	-0.0815	-0.2923	-0.3463
	(2.98)***	(1.78)*	(1.97)**	(0.26)	(0.88)	(0.85)	(0.88)	(0.74)	(0.32)	(1.00)	(0.89)	(1.13)
LOGEMP	0.0929	-0.1813	0.2191	-0.1594	0.2850	-0.0660	0.3965	-0.2985	-0.0455	-0.0869	0.2606	0.2511
	(0.86)	(2.07)**	(1.80)*	(0.92)	(0.83)	(0.23)	(3.21)***	(3.70)***	(1.31)	(0.77)	(0.76)	(1.01)
CORP	-0.1384	0.1291	0.1096	-0.1465	-0.0692	0.1592	-0.1864	0.1325	-0.0545	-0.1490	-0.0522	-0.0217
	(0.74)	(1.22)	(0.68)	(0.35)	(0.36)	(0.66)	(0.87)	(1.29)	(0.38)	(0.36)	(0.27)	(0.09)
GCONTRACT	0.0981	0.0569	0.1437	0.3923	-0.2049	0.5169	0.0251	0.0718	0.0521	0.4192	-0.1501	0.8460
	(0.59)	(0.65)	(1.01)	(1.14)	(1.24)	(1.05)	(0.17)	(0.89)	(0.75)	(1.51)	(0.95)	(1.29)
SUBSIDIARY	-0.1226	0.0198	-0.0758	0.0039	0.5087	-0.0188	-0.0630	0.0269	0.0134	0.0931	0.5280	0.1963
	(0.62)	(0.19)	(1.05)	(0.02)	(1.28)	(0.08)	(0.34)	(0.26)	(0.34)	(0.45)	(1.33)	(0.66)
INVERSE	0.5822	-0.0241	0.4026	-0.0116	-0.0273	0.0657	0.5814	0.0287	0.2053	0.1401	-0.0046	0.2478
MILL RATIO	(2.39)**	(0.22)	(1.85)*	(0.05)	(0.17)	(0.25)	(2.46)**	(0.27)	(1.04)	(0.89)	(0.03)	(1.11)
INTERCEPT	-5.0276	1.4177	3.8214	0.5871	3.1417	6.7838	-1.5791	0.2242	0.2898	0.7278	3.3849	5.4999
	(4.71)***	(2.21)**	(1.63)	(0.34)	(0.72)	(1.44)	(1.71)*	(0.46)	(0.74)	(0.70)	(0.77)	(1.20)
Observations	1958	1378	834	562	390	292	1958	1378	834	562	390	292
Establish with VC financing	979	689	417	281	195	146	979	689	417	281	195	146
R-squared	0.0654	0.0783	0.0875	0.0596	0.1217	0.0819	0.0581	0.0819	0.0623	0.0687	0.1123	0.1570
State dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

These regressions are conducted over a subsample of establishments who received VC financing only for **one round** against their control group establishments. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. See Appendix C for variables definitions.

Table 10

Stage 2 Entire IEGC Sample Regression: Impact of receiving PE funding on establishments' subsequent growth

	SALEGR0	SALEGR1	SALEGR2	SALEGR3	SALEGR4	SALEGR5	EMPGR0	EMPGR1	EMPGR2	EMPGR3	EMPGR4	EMPGR5
PROB(PE)	-0.0092	0.0186	0.0079	0.0005	0.0014	-0.0018	-0.0082	0.0227	0.0092	0.0044	0.0029	0.0001
	(2.68)***	(5.32)***	(2.48)**	(0.17)	(0.41)	(0.40)	(2.96)***	(7.48)***	(3.60)***	(1.74)*	(1.06)	(0.03)
WCEO	-0.0051	-0.0161	-0.0154	-0.0138	-0.0127	-0.0119	-0.0070	-0.0125	-0.0115	-0.0101	-0.0093	-0.0088
	(15.01)***	(48.6)***	(49.42)***	(45.68)***	(41.15)***	(36.18)***	(22.3)***	(39.91)***	(40.07)***	(36.92)***	(32.63)***	(28.77)***
PAYDEXMAX	0.0001	0.0003	0.0003	0.0002	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001
	(26.71)***	(76.4)***	(71.55)***	(48.67)***	(34.7)***	(25.32)***	(17.81)***	(62.65)***	(68.13)***	(50.1)***	(36.42)***	(27)***
DBR1	0.0307	0.0161	0.0176	0.0173	0.0154	0.0121	0.0137	0.0109	0.0064	0.0049	0.0034	0.0026
	(82.26)***	(50.25)***	(56.41)***	(58.46)***	(53.82)***	(42.93)***	(48.89)***	(42.46)***	(27.51)***	(22.45)***	(16.25)***	(12.45)***
DBR2	-0.0049	-0.0033	0.0013	0.0022	0.0021	0.0019	-0.0055	-0.0062	-0.0015	-0.0005	-0.0006	-0.0005
	(58.71)***	(39.88)***	(16.34)***	(28.03)***	(25.98)***	(22.24)***	(75.06)***	(83.75)***	(21.61)***	(7.08)***	(8.6)***	(7.3)***
DBR3	-0.0049	0.0018	0.0053	0.0044	0.0033	0.0026	-0.0085	-0.0033	0.0013	0.0012	0.0005	0.0002
	(39.55)***	(14.58)***	(46.97)***	(40.37)***	(30.58)***	(22.28)***	(77.05)***	(31.01)***	(12.82)***	(12.87)***	(5.01)***	(1.61)
LOGKIDS	-0.0154	0.0019	0.0018	0.0004	-0.0010	-0.0018	-0.0170	0.0036	0.0034	0.0023	0.0014	0.0012
	(95.61)***	(11.84)***	(12.02)***	(2.95)***	(6.70)***	(11.30)***	(112.19)***	(25.25)***	(25.84)***	(18.75)***	(11.06)***	(9.03)***
AGE	-0.0006	-0.0004	-0.0002	-0.0001	-0.0001	-0.0001	-0.0006	-0.0003	-0.0002	-0.0001	-0.0001	-0.0001
	(222.86)***	(137.84)***	(84.27)***	(47.77)***	(28.93)***	(21.3)***	(237.6)***	(135.57)***	(79.72)***	(46.49)***	(30.21)***	(22.49)***
LOGSALE	0.0119	-0.0096	-0.0066	-0.0058	-0.0054	-0.0052	-0.0112	0.0043	0.0051	0.0039	0.0031	0.0027
	(169.8)***	(139.66)***	(99.59)***	(90.27)***	(82.48)***	(74.43)***	(185.35)***	(70.33)***	(91.43)***	(72.91)***	(58.04)***	(46.7)***
LOGEMP	-0.0028	0.0007	0.0047	0.0053	0.0051	0.0053	0.0171	-0.0195	-0.0122	-0.0092	-0.0083	-0.0076
	(40.82)***	(10.34)***	(72.13)***	(82.03)***	(78.35)***	(76.53)***	(283.32)***	(312.9)***	(216.84)***	(170.8)***	(152)***	(130.66)***
CORP	-0.0275	-0.0007	0.0045	0.0045	0.0040	0.0038	-0.0279	-0.0037	0.0019	0.0023	0.0018	0.0016
	(38.41)***	(10.43)***	(67.96)***	(69.13)***	(60.34)***	(52.28)***	(423.1)***	(57.58)***	(31.64)***	(39.87)***	(31.18)***	(25.39)***
GCONTRACT	0.0086	0.0390	0.0232	0.0283	0.02157	0.0137	0.0013	0.0301	0.0274	0.0263	0.0194	0.0188
	(7.20)***	(33.57)***	(21.34)***	(27.92)***	(23.18)***	(15.49)***	(1.35)	(31.13)***	(31.57)***	(32.98)***	(26.04)***	(25.58)***
SUBSIDIARY	-0.0334	0.0066	0.0061	0.0025	-0.0006	-0.0028	-0.0325	0.0051	0.0051	0.0026	0.0005	-0.0005
	(94.43)***	(18.59)***	(18.08)***	(7.65)***	(1.70)*	(8.06)***	(106.69)***	(16.53)***	(17.8)***	(9.6)***	(1.96)*	(1.95)*
INVERSE	-0.0476	-0.0124	0.0027	0.0009	-0.0015	-0.0021	-0.0583	-0.0163	-0.0003	-0.0002	-0.0016	-0.0021
MILL RATIO	(77.11)***	(19.95)***	(4.44)***	(1.50)	(2.59)***	(3.28)***	(107.14)***	(29.47)***	(0.58)	(0.46)	(3.31)***	(4.01)***
INTERCEPT	0.1646	0.2215	0.1122	0.0968	0.0955	0.0713	0.4377	0.0734	-0.0377	-0.0314	-0.0124	-0.0082
	(43.83)***	(58.61)***	(30.96)***	(27.37)***	(26.69)***	(18.79)***	(132.33)***	(21.8)***	(12.1)***	(10.53)***	(4.14)***	(2.58)**
Observations	58,960,582	45,852,677	36,916,257	30,135,753	25,184,485	20,934,820	58,960,582	45,852,677	36,916,257	30,135,753	25,184,485	20,934,820
R-squared	0.021	0.0145	0.0158	0.013	0.0094	0.0064	0.0154	0.011	0.0057	0.0043	0.0038	0.0033
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

These regressions are conducted over establishments who received PE financing only for **one round** against all other establishments within the entire NETS data in each year. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. See Appendix C for variables definitions.

Table 11

Stage 2 Entire IEGC Sample Regression: Impact of receiving VC funding on establishment' subsequent growth

	SALEGR0	SALEGR1	SALEGR2	SALEGR3	SALEGR4	SALEGR5	EMPGR0	EMPGR1	EMPGR2	EMPGR3	EMPGR4	EMPGR5
PROB(VC)	0.0502	0.0840	0.0224	0.0199	-0.0056	-0.0015	0.0611	0.0831	0.0261	0.0173	0.00003	0.0018
	(5.37)***	(7.05)***	(2.11)**	(1.72)*	(0.41)	(0.14)	(6.82)***	(7.54)***	(2.97)***	(1.8)*	(0.01)	(0.16)
WCEO	-0.0079	-0.0151	-0.0159	-0.0143	-0.0132	-0.0121	-0.0078	-0.0113	-0.0117	-0.0104	-0.0095	-0.0089
	(23.36)***	(45.58)***	(50.85)***	(47.54)***	(42.59)***	(36.8)***	(24.91)***	(36.12)***	(40.9)***	(37.95)***	(33.31)***	(29.19)***
PAYDEXMAX	0.0002	0.0003	0.0003	0.0002	0.0002	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001
	(54.53)***	(60.3)***	(73.89)***	(53.17)***	(38.04)***	(26.14)***	(22.31)***	(43.73)***	(68.38)***	(51.7)***	(36.95)***	(27.01)***
DBR1	0.0251	0.0133	0.0183	0.0179	0.0155	0.0119	0.0049	0.0074	0.0066	0.0051	0.0033	0.0024
	(67.5)***	(41.7)***	(59.1)***	(60.7)***	(54.41)***	(42.54)***	(17.46)***	(28.8)***	(28.26)***	(23.49)***	(15.84)***	(11.41)***
DBR2	-0.0063	-0.0048	0.0018	0.0027	0.0023	0.0019	-0.0091	-0.0081	-0.0013	-0.0003	-0.0006	-0.0006
	(67.67)***	(52.44)***	(20.2)***	(30.23)***	(25.56)***	(19.88)***	(109.88)***	(98.15)***	(17.41)***	(3.84)***	(7.33)***	(7.11)***
DBR3	-0.0020	-0.0005	0.0062	0.0054	0.0041	0.0029	-0.0094	-0.0061	0.0017	0.0017	0.0007	0.0003
	(13.75)***	(3.44)***	(46.95)***	(42.12)***	(31.23)***	(20.63)***	(73.98)***	(47.98)***	(14.59)***	(15.46)***	(6.74)***	(2.68)***
LOGKIDS	-0.0065	0.0025	0.0020	0.0009	-0.0003	-0.0013	-0.0088	0.0045	0.0037	0.0027	0.0018	0.0016
	(61.39)***	(23.54)***	(19.87)***	(9.35)***	(3.54)***	(12.99)***	(96.44)***	(48.94)***	(44.11)***	(33.68)***	(22.95)***	(19.63)**
AGE	-0.0003	0.0002	-0.0004	-0.0003	-0.0002	-0.0001	0.0005	0.0004	-0.0002	-0.0002	-0.0001	-0.00004
	(20.99)***	(11.09)***	(25.55)***	(19.21)***	(10.63)***	(4.36)***	(33.99)***	(24.93)***	(17.51)***	(13.24)***	(6.25)**	(3)***
LOGSALE	0.0157	-0.0085	-0.0068	-0.0059	-0.00529	-0.0050	-0.0064	0.0057	0.0051	0.0039	0.0032	0.0028
	(320.77)***	(180.1)***	(150.11)***	(132.67)***	(116.33)***	(103.68)***	(153.08)***	(136.13)***	(135.56)***	(107.8)***	(88.39)***	(72.58)***
LOGEMP	-0.0010	-0.0004	0.0052	0.0058	0.0056	0.0055	0.0170	-0.0208	-0.0120	-0.0089	-0.0082	-0.0075
	(12.78)***	(4.88)***	(71.76)***	(81.43)***	(75.53)***	(70.34)***	(256.66)***	(304.29)***	(193.97)***	(149.7)***	(132.7)***	(113.9)***
CORP	-0.0331	-0.0079	0.0068	0.0067	0.0051	0.0039	-0.0435	-0.0128	0.0026	0.0031	0.0020	0.0014
	(158.76)***	(37.88)***	(34.3)***	(33.79)***	(25.16)***	(17.71)***	(233.72)***	(67.57)***	(15)***	(18.9)***	(11.59)***	(7.64)***
GCONTRACT	0.0146	0.0349	0.0250	0.0303	0.02297	0.0143	0.00002	0.0251	0.0283	0.0272	0.0199	0.0192
	(12.17)***	(29.80)***	(22.78)***	(29.62)***	(24.43)***	(15.93)***	(0.02)	(25.74)***	(32.27)***	(33.88)***	(26.44)***	(25.67)***
SUBSIDIARY	-0.0142	0.0116	0.0051	0.0022	0.0001	-0.0020	-0.0091	0.0116	0.0052	0.0027	0.0012	0.0003
	(58.02)***	(47.26)***	(22.05)***	(9.86)***	(0.33)	(8.59)	(44)***	(55.49)***	(27.31)***	(15.04)***	(6.81)***	(1.66)
INVERSE	-0.0072	-0.0100	0.0033	0.0031	0.0015	0.0002	-0.0212	-0.0126	0.0010	0.0013	0.0002	-0.0002
MILL RATIO	(26.16)***	(36.44)***	(12.45)***	(11.78)***	(5.73)***	(0.57)	(87.4)***	(50.81)***	(4.51)***	(5.74)***	(1.09)	(1.01)
INTERCEPT	-0.0742	0.2114	0.1070	0.0823	0.0580	0.0580	0.2243	0.0560	-0.0460	-0.0408	-0.0237	-0.0192
	(39.34)***	(112.6)***	(59.66)***	(46.35)***	(41.9)***	(29.78)***	(135.45)***	(33.08)***	(29.87)***	(27.46)***	(15.53)***	(11.71)***
Observations	58,949,786	45,847,357	36,911,847	30,132,608	25,182,328	20,933,343	58,949,786	45,847,357	36,911,847	30,132,608	25,182,328	20,933,343
R-squared	0.0209	0.0145	0.0158	0.013	0.0093	0.0064	0.0154	0.111	0.0057	0.0043	0.0038	0.0032
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

These regressions are conducted over establishments who received VC financing only for **one round** against all other establishments within the entire NETS data in each year. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. See Appendix C for variables definitions.

Table 12

Propensity Matching PE Sample Regression: Impact of receiving PE funding on establishment' subsequent growth

	SALEGR0	SALEGR1	SALEGR2	SALEGR3	SALEGR4	SALEGR5	EMPGR0	EMPGR1	EMPGR2	EMPGR3	EMPGR4	EMPGR5
PROB(PE)	0.0165	0.0251	0.0180	0.0145	-0.0211	-0.0148	0.0151	0.0346	0.0181	0.0127	0.0721	0.2660
	(1.48)	(4.70)***	(3.79)***	(1.74)*	(0.18)	(0.06)	(1.20)	(5.33)***	(4.19)***	(1.71)*	(0.81)	(1.39)
WCEO	-0.0590	-0.0888	-0.0243	0.0051	0.1926	-0.4535	-0.1453	-0.0491	0.0031	-0.0545	0.2999	-0.1983
	(0.86)	(2.45)**	(0.98)	(0.07)	(1.17)	(1.36)	(2.75)***	(1.41)	(0.22)	(0.70)	(1.76)*	(0.87)
PAYDEXMAX	0.0011	-0.0001	0.0002	-0.0013	0.0083	-0.0029	0.0011	-0.0002	0.0003	0.0011	0.0063	-0.0013
	(1.44)	(0.39)	(0.70)	(0.26)	(2.53)**	(0.34)	(1.11)	(0.36)	(1.24)	(0.29)	(2.58)***	(0.12)
DBR1	0.0059	0.0389	0.0326	0.0280	0.1981	1.3295	0.0032	0.0242	0.0206	-0.0079	0.2824	1.2237
	(0.27)	(2.59)***	(2.43)**	(0.34)	(1.28)	(0.99)	(0.12)	(1.54)	(2.14)**	(0.14)	(1.72)*	(0.91)
DBR2	0.0067	0.0175	0.0168	-0.0558	0.1542	0.1539	0.0059	0.0035	0.0161	-0.0594	0.1693	0.1458
	(0.51)	(2.43)**	(2.87)***	(1.04)	(0.85)	(0.52)	(0.50)	(0.38)	(2.93)***	(1.27)	(1.08)	(0.51)
DBR3	0.0135	0.0060	0.0098	0.2243	0.2716	-0.1559	0.0293	0.0038	0.0078	0.1574	0.2378	-0.2056
	(1.08)	(1.01)	(1.79)*	(1.21)	(1.99)**	(1.06)	(1.95)*	(0.43)	(1.57)	(0.98)	(1.94)*	(1.35)
LOGKIDS	-0.0040	-0.0022	-0.0038	0.0781	0.0277	0.1143	-0.0086	0.0017	-0.0018	0.0764	0.0286	0.1257
	(0.89)	(1.00)	(1.73)*	(1.24)	(0.37)	(0.92)	(1.71)*	(0.55)	(0.91)	(1.32)	(0.41)	(1.02)
AGE	-0.0013	-0.0001	-0.0000	-0.0011	0.0008	-0.0061	-0.0014	-0.0003	0.0000	-0.0008	0.0008	-0.0068
	(7.39)***	(1.25)	(0.37)	(0.76)	(0.34)	(1.55)	(5.39)***	(2.91)***	(0.12)	(0.67)	(0.37)	(1.66)*
LOGSALE	0.0510	-0.0147	-0.0115	-0.0545	-0.0786	-0.6398	-0.0066	0.0239	0.0027	-0.0346	0.0170	0.0444
	(7.32)***	(4.33)***	(3.74)***	(1.41)	(0.91)	(1.00)	(0.85)	(1.51)	(0.82)	(1.11)	(0.25)	(0.74)
LOGEMP	-0.0296	0.0012	0.0019	-0.1240	-0.0947	0.3841	0.0257	-0.0469	-0.0149	-0.1251	-0.1670	-0.1210
	(3.89)***	(0.30)	(0.54)	(2.71)***	(0.78)	(0.73)	(2.80)***	(2.27)**	(4.20)***	(3.13)***	(1.43)	(0.92)
CORP	-0.0304	-0.0055	0.0019	-0.2841	-0.3296	0.2229	-0.0399	-0.0081	-0.0041	-0.2411	-0.1142	0.1651
	(2.20)**	(0.86)	(0.36)	(1.36)	(1.60)	(1.79)*	(2.41)**	(0.74)	(0.78)	(1.26)	(0.76)	(1.61)
GCONTRACT	-0.0521	0.0661	-0.0288	0.0397	0.3634	-1.3385	-0.1321	0.0440	-0.0258	0.0299	0.2406	-1.3361
	(0.98)	(1.61)	(0.88)	(0.57)	(1.78)*	(1.07)	(1.58)	(1.41)	(1.09)	(0.47)	(1.35)	(1.08)
SUBSIDIARY	-0.0248	-0.0038	-0.0055	0.1085	0.4344	0.1994	-0.0082	0.0013	-0.0049	0.0442	0.3385	0.2736
	(1.95)*	(0.62)	(1.02)	(0.76)	(2.14)**	(1.12)	(0.57)	(0.16)	(1.05)	(0.40)	(1.90)*	(1.26)
INTERCEPT	-0.5598	0.2621	0.2159	1.9931	1.2423	9.5309	0.1416	-0.1685	0.0051	1.2981	0.0054	1.3559
	(5.20)***	(4.86)***	(4.42)***	(1.71)*	(1.11)	(1.19)	(1.08)	(0.85)	(0.11)	(1.71)*	(0.01)	(0.94)
Observations	10508	9502	8500	7420	5134	3586	10508	9502	8500	7420	5134	3586
Establish with PE financing	5254	4751	4250	3710	2067	1793	5254	4751	4250	3710	2067	1793
R-squared	0.0246	0.0248	0.0220	0.0145	0.0143	0.0264	0.0169	0.0211	0.0175	0.0154	0.0114	0.0162
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

These regressions are conducted over establishments who received PE financing only for **one round** against their control establishments based on the closest propensity scores. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. See Appendix C for variables definitions.

Table 13

Propensity Matching VC Sample Regression: Impact of receiving VC funding on establishment' subsequent growth

	SALEGR0	SALEGR1	SALEGR2	SALEGR3	SALEGR4	SALEGR5	EMPGR0	EMPGR1	EMPGR2	EMPGR3	EMPGR4	EMPGR5
PROB(VC)	0.1986	0.1616	0.2802	0.1285	0.2829	0.0386	0.1431	0.1929	0.1774	0.3282	0.0963	0.0416
	(6.09)***	(5.99)***	(2.96)***	(1.36)	(0.98)	(1.04)	(2.64)***	(5.46)***	(2.12)**	(2.92)***	(0.74)	(1.24)
WCEO	-0.2607	-0.2329	0.1506	0.3357	1.1018	0.0775	-0.2982	-0.1887	0.0372	0.2899	0.5209	0.0417
	(2.63)***	(1.34)	(0.93)	(0.22)	(0.94)	(1.15)	(2.62)***	(1.16)	(0.27)	(0.99)	(1.06)	(0.68)
PAYDEXMAX	0.0038	0.0025	-0.0098	0.0704	0.0778	-0.0027	0.0063	0.0019	-0.0095	0.0117	0.0050	-0.0029
	(2.92)***	(2.56)**	(0.87)	(1.29)	(1.05)	(0.72)	(3.24)***	(1.96)*	(0.84)	(2.52)**	(0.65)	(0.80)
DBR1	-0.1602	0.1844	0.0742	1.3147	-2.1408	0.0280	-0.2380	-0.0431	0.0268	-0.0582	-0.6389	-0.0199
	(1.72)*	(1.57)	(0.48)	(1.17)	(1.08)	(0.65)	(2.72)***	(0.89)	(0.22)	(0.54)	(1.39)	(0.44)
DBR2	0.0644	-0.0351	0.0660	0.6457	-0.4058	0.0679	0.0315	-0.0623	-0.0321	-0.0420	-0.1049	0.0599
	(1.36)	(1.26)	(0.56)	(0.80)	(0.68)	(1.02)	(0.46)	(1.75)*	(0.71)	(0.56)	(0.63)	(1.04)
DBR3	-0.0183	-0.0213	0.0060	-0.0146	1.5209	-0.0181	-0.0653	-0.0244	0.0291	0.1249	0.1173	0.0007
	(0.54)	(0.77)	(0.06)	(0.04)	(1.02)	(0.66)	(1.51)	(0.86)	(0.35)	(1.02)	(0.53)	(0.02)
LOGKIDS	-0.0196	-0.0318	0.0977	-1.2629	1.0226	-0.0046	-0.0608	-0.0380	0.0814	0.0628	0.0614	0.0013
	(0.81)	(1.87)*	(1.10)	(1.11)	(1.04)	(0.31)	(2.08)**	(2.16)**	(1.02)	(0.93)	(0.55)	(0.09)
AGE	-0.0030	-0.0006	0.0003	0.0765	-0.0672	-0.0009	-0.0031	0.0022	0.0013	-0.0004	-0.0033	-0.0013
	(3.02)***	(1.01)	(0.14)	(1.15)	(1.06)	(1.11)	(2.23)**	(0.92)	(0.57)	(0.12)	(0.70)	(1.87)*
LOGSALE	0.0511	-0.0050	-0.1557	3.0448	0.6671	-0.0088	-0.0337	0.0224	-0.0151	0.0451	-0.4671	-0.0133
	(2.93)***	(0.40)	(2.04)**	(1.18)	(0.59)	(0.70)	(1.45)	(1.84)*	(0.69)	(1.23)	(1.72)*	(1.42)
LOGEMP	0.0115	-0.0491	0.0328	-3.3274	-0.5570	-0.0031	0.1224	-0.0923	-0.1290	-0.1985	0.3852	-0.0070
	(0.60)	(3.07)***	(0.36)	(1.24)	(0.58)	(0.18)	(2.92)***	(5.48)***	(1.74)*	(2.34)**	(1.51)	(0.50)
CORP	-0.0348	0.0776	0.1511	1.1362	1.8608	0.0456	-0.0305	0.0624	0.1622	0.1513	-0.0550	0.0282
	(0.91)	(3.42)***	(2.74)***	(1.14)	(0.96)	(1.41)	(0.54)	(2.11)**	(3.54)***	(1.88)*	(0.40)	(0.98)
GCONTRACT	0.1137	-0.0905	-1.7442	-3.3221	-2.7568	-0.0533	0.1645	-0.0494	0.3762	-0.2299	-2.4073	-0.0725
	(0.76)	(0.38)	(0.82)	(1.12)	(1.05)	(0.50)	(1.02)	(0.21)	(0.92)	(1.13)	(1.13)	(0.87)
SUBSIDIARY	-0.0401	-0.0246	-0.0722	-0.4645	-0.6542	-0.0423	0.0513	-0.0340	0.0153	0.0255	0.6978	-0.0277
	(0.86)	(0.75)	(0.73)	(0.75)	(0.49)	(1.20)	(0.52)	(1.14)	(0.20)	(0.16)	(1.88)*	(0.86)
INTERCEPT	-1.1621	0.3757	5.4318	-4.5309	-13.3339	0.3496	-0.4906	0.0693	1.6683	-0.4446	1.6547	0.5304
	(4.57)***	(1.33)	(1.76)*	(0.36)	(0.64)	(0.85)	(1.83)*	(0.24)	(1.61)	(0.46)	(1.82)*	(1.43)
Observations	2252	1852	1254	752	524	392	2252	1852	1254	752	524	392
Establishments with VC financing	1126	926	627	376	262	196	1126	926	627	376	262	196
R-squared	0.0754	0.0734	0.0851	0.1866	0.1037	0.1245	0.0602	0.0736	0.0688	0.1510	0.1125	0.1385
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

These regressions are conducted over establishments who received VC financing only for **one round** against their control establishments based on the closest propensity scores. Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. See Appendix C for variables definitions.