

**Internet Appendix to:**  
**“Venturing Beyond the IPO: Financing of Newly Public Firms by Venture Capitalists”**

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This Internet Appendix provides additional tables and figures, which are not available in the printed version of the paper “Venturing Beyond the IPO: Financing of Newly Public Firms by Venture Capitalists”. The material contained in this document supports and expands on the evidence provided in the main text of the paper.

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\* Peter Iliev: Pennsylvania State University; Michelle Lowry: Drexel University. Internet Appendix for “Venturing Beyond the IPO: Financing of Newly Public Firms by Venture Capitalists,” Journal of Finance [DOI STRING]. Please note: Wiley-Blackwell is not responsible for the content or functionality of any supporting information supplied by the authors. Any queries (other than missing material) should be directed to the authors of this article.

**Table IA.I**  
**Characteristics of Post-IPO VC Financings vs NonVC PIPEs**

Across the set of VC-backed IPOs between 1995 and 2010, as described in Table I, the sample consists of 268 company-years with a post-IPO VC financing and 180 company-years with a PIPE (where the PIPE did not include VC participation). The upper portion of the table shows company characteristics as of the end of the fiscal year preceding each type of financing. The lower portion of the table describes the involvement of VCs prior to the IPO, with variables measured at that point in time. Some of these VC-related measures are based on fewer observations, due to missing data. In each case, the last column shows  $p$ -values denoting the significance level associated with a  $t$ -test of the difference between the two samples.

	Post-IPO VC Financing	Post-IPO PIPE	Difference	$p$ -value
<i>Company Characteristics before Financing</i>				
10 Bid-Ask Spread Groups	6.646	6.489	0.143	0.605
Negative CFO	0.8	0.867	-0.044	0.28
R&D-to-Assets	-0.565	-0.601	0.044	0.604
Sales	0.277	0.323	-0.043	0.216
ROA	189.144	65.545	112.949	0.058
CAPX-to-Assets	0.066	0.064	-0.005	0.6
Tobin's Q	4.047	4.292	-0.503	0.32
Time to IPO	4.343	4.123	0.245	0.422
Firm Age	9.192	7.722	1.133	0.305
Debt-to-Asset Ratio	0.194	0.168	0.012	0.653
Prior Syndicated Loan	0.404	0.344	0.026	0.616
Tangibility	0.158	0.161	-0.023	0.226
Cash-to-Assets	0.492	0.545	-0.006	0.857
Startup Company	0.857	0.883	-0.003	0.943
Total Assets	279.871	222.705	28.195	0.701
Initial Return	0.258	0.343	-0.126	0.034
Volatility	0.061	0.059	0	0.929
<i>Pre-IPO VC Involvement</i>				
Avg Pre-IPO VC Industry Experience	25.859	18.397	10.314	0.001
Pre-IPO VC Director Dummy	0.939	0.921	0.046	0.123
#Pre-IPO VC Funds with Low Success	0.66	0.648	0.041	0.791
#Pre-IPO VC Funds with High Success	0.893	0.771	0.11	0.432
#Pre-IPO VCs that are Young	1.149	1.285	-0.112	0.43
Total VC Ownership as of IPO	36.957	30.693	7.84	0.002
Pre-IPO Funding (USD millions)	93.346	74.143	21.688	0.186
Top-10 pre-IPO VC Dummy	0.336	0.228	0.158	0.001

**Table IA.II**  
**Comparing Sources of Post-IPO Financing – Firm-Level Regressions with Firm Volatility × VC Fund Past Performance Interaction Terms**

This table is analogous to Panel A of Table II in the main paper, except that it includes interaction terms between firm volatility and measures of VC fund past performance. The sample consists of VC-backed IPOs between 1995 and 2010, as described in Table I. Firms are included in the sample until they obtain the designated type of financing, or in the event they do not obtain this type of financing, until the earlier of delisting or five years after the IPO. Each column presents results of a linear probability model estimation, where the dependent variable is equal to one if the firm raised the specified form of financing within the year (post-IPO VC investment, PIPE (in which no VC belongs to the funding syndicate), SEO, and syndicated loan in columns (1) to (4), respectively). Additional controls (as tabulated in Table II) and Fama-French 49 industry fixed effects are included in each regression. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix III. Robust *t*-statistics clustered at the firm level are shown in parentheses.

	Post-IPO Financing equal to:			
	VC Financing (1)	PIPE (2)	SEO (3)	Syndicated Loan (4)
<i>Information Asymmetry Measures</i>				
Bid-to-Ask Decile	0.0019 (1.64)	0.0005 (0.59)	-0.0099*** (-4.28)	0.0005 (0.26)
Negative CFO	0.0187*** (2.76)	0.0166*** (2.92)	0.0076 (0.54)	0.0260* (1.93)
R&D-to-Assets	0.0101 (0.40)	0.0565** (2.38)	-0.0362 (-1.06)	-0.0223 (-0.95)
Volatility	0.3277** (2.14)	0.0680 (0.60)	-0.7924*** (-3.78)	-0.3887* (-1.70)
<i>VC Information Advantage Measures</i>				
Pre-IPO VCs Industry Experience	0.0081*** (2.62)	-0.0029 (-1.07)	0.0014 (0.25)	-0.0008 (-0.16)
Pre-IPO VC Director Dummy	-0.0038 (-0.39)	-0.0081 (-0.88)	-0.0219 (-1.05)	-0.0175 (-0.84)
<i>VC Agency Measures</i>				
#Pre-IPO VC Funds with Low Success	0.0057 (1.01)	-0.0039 (-0.84)	-0.0044 (-0.57)	-0.0003 (-0.06)
#Pre-IPO VC Funds with Low Success × Volatility	-0.0928 (-0.83)	0.0008 (0.01)	0.0797 (0.64)	-0.0080 (-0.09)
#Pre-IPO VC Funds with High Success	0.0061 (1.19)	0.0016 (0.54)	-0.0133* (-1.70)	-0.0043 (-0.77)
#Pre-IPO VC Funds with High Success × Volatility	-0.1392 (-1.52)	-0.0552 (-0.98)	0.1713 (1.39)	0.0128 (0.13)
#VCs with Low Age at IPO	-0.0007 (-0.27)	0.0017 (0.82)	-0.0011 (-0.27)	-0.0003 (-0.09)
<i>VC pre-IPO Involvement</i>				
Total VC Ownership at IPO	0.0004*** (3.17)	-0.0001 (-1.35)	0.0007*** (2.61)	-0.0001 (-0.47)
Log(Pre-IPO VC Funding+1)	0.0040** (2.11)	0.0034** (2.07)	0.0119** (2.35)	-0.0021 (-0.41)
Top 10 pre-IPO VC	0.0108 (1.35)	0.0003 (0.05)	-0.0047 (-0.35)	0.0071 (0.65)
<i>Control Variables</i>				
Adj. R <sup>2</sup>	0.033	0.040	0.063	0.113
Observations	5,327	5,506	4,244	4,547

**Table IA.III**

**Comparing Sources of Post-IPO Financing, Firm-Level Regressions with Year Fixed Effects**

This table is analogous to Panel A of Table II in the main paper, except that it includes year fixed effects and excludes variables measuring market conditions. The sample consists of VC-backed IPOs between 1995 and 2010, as described in Table I. Firms are included in the sample until they obtain the designated type of financing, or in the event they do not obtain this type of financing, until the earlier of delisting or five years after the IPO. Each column presents results of a linear probability model, where the dependent variable is equal to one if the firm raised the specified form of financing within the year (post-IPO VC investment, PIPE (in which no VC belongs to the funding syndicate), SEO, and syndicated loan in columns (1) to (4), respectively). Additional controls (as tabulated in Table II) and Fama French 49 industry fixed effects are included in each regression. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix C. Robust *t*-statistics clustered at the firm level are shown in parentheses.

	Post-IPO Financing equal to:			
	VC Financing (1)	PIPE (2)	SEO (3)	Syndicated Loan (4)
<i>Information Asymmetry Measures</i>				
Bid-to-Ask Decile	0.0029** (2.29)	0.0016 (1.54)	-0.0117*** (-4.82)	-0.0063*** (-3.12)
Negative CFO	0.0201*** (2.99)	0.0174*** (3.09)	0.0058 (0.42)	0.0190 (1.41)
R&D-to-Assets	0.0071 (0.28)	0.0577** (2.41)	-0.0401 (-1.19)	-0.0191 (-0.80)
<i>VC Information Advantage Measures</i>				
Pre-IPO VCs Industry Experience	0.0088*** (2.63)	-0.0017 (-0.59)	0.0031 (0.53)	-0.0083 (-1.64)
Pre-IPO VC Director Dummy	-0.0054 (-0.55)	-0.0072 (-0.77)	-0.0206 (-1.00)	-0.0126 (-0.61)
<i>VC Agency Measures</i>				
#Pre-IPO VC Funds with Low Success	0.0019 (0.57)	-0.0046* (-1.93)	0.0028 (0.59)	0.0024 (0.71)
#Pre-IPO VC Funds with High Success	-0.0019 (-0.74)	-0.0002 (-0.09)	-0.0023 (-0.57)	-0.0031 (-0.98)
#Pre-IPO VCs that are Young	-0.0007 (-0.25)	0.0002 (0.11)	-0.0010 (-0.24)	0.0000 (0.01)
<i>VC pre-IPO Involvement</i>				
Total VC ownership at IPO	0.0004*** (2.86)	-0.0002 (-1.45)	0.0007*** (2.58)	0.0001 (0.50)
Log(Pre-IPO VC Funding+1)	0.0040** (2.04)	0.0014 (0.84)	0.0112** (2.17)	0.0033 (0.66)
Top 10 pre-IPO VC	0.0118 (1.47)	0.0022 (0.38)	-0.0107 (-0.82)	0.0019 (0.17)
<i>Control Variables</i>				
Adj. R <sup>2</sup>	0.048	0.061	0.098	0.142
Observations	5,327	5,506	4,244	4,547

**Table IA.IV**  
**Comparing Sources of Post-IPO Financing – Firm-Level Regressions Focusing on Role of Top-10 VCs and Pre-IPO VCs**

This table presents results of regressions analogous to those in column (1) of Table II, Panel A. To facilitate comparison, the first column replicates this regression. Subsequent columns focus on post-IPO VC financing by particular types of VCs. The sample consists of VC-backed IPOs between 1995 and 2010, as described in Table I. Firms are included in the sample until they obtain the designated type of financing, or in the event they do not obtain this type of financing, until the earlier of delisting or five years after the IPO. Each column presents results of a linear probability model, where the dependent variable is equal to one if the firm raised the specified form of financing within the year (post-IPO VC investment by any VC in column (1), by a VC ranked within the Top 10 according to Nahata (2008) in column (2), by a VC not ranked within the Top 10 in column (3), by a VC that also funded the firm prior to the IPO in column (4), and by a VC that did not fund the firm prior to the IPO in column (5)). Additional controls (as tabulated in Table II) and Fama-French 49 industry fixed effects are included in each regression. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix C. Robust *t*-statistics clustered at the firm level are shown in parentheses.

	Post-IPO Financing from:				
	Any VC (1)	Top 10 VC (2)	Non-Top 10 VC (3)	Pre-IPO VC (4)	Non-PreIPO VC (5)
<i>Information Asymmetry Measures</i>					
10 Bid-to-Ask Spread Groups	0.0022** (1.97)	0.0014*** (2.65)	0.0008 (0.83)	0.0024*** (2.71)	-0.0002 (-0.24)
Negative CFO	0.0200*** (2.97)	0.0010 (0.36)	0.0189*** (3.07)	0.0107** (2.11)	0.0093** (2.05)
R&D-to-Assets	0.0069 (0.27)	0.0106 (0.84)	-0.0037 (-0.16)	0.0130 (0.64)	-0.0061 (-0.37)
<i>VC Information Advantage Measures</i>					
Pre-IPO VCs Indus Experience	0.0083*** (2.69)	0.0038*** (3.01)	0.0045 (1.58)	0.0062*** (2.69)	0.0021 (1.00)
Pre-IPO VC Director Dummy	-0.0039 (-0.40)	-0.0029 (-1.14)	-0.0010 (-0.11)	-0.0056 (-0.80)	0.0017 (0.25)
<i>VC agency measures</i>					
#Pre-IPO VCs w/ Low Success	0.0015 (0.46)	0.0027 (1.12)	-0.0012 (-0.55)	0.0015 (0.53)	-0.0000 (-0.02)
#Pre-IPO VCs w/ High Success	-0.0010 (-0.38)	-0.0017* (-1.67)	0.0007 (0.29)	-0.0009 (-0.40)	-0.0001 (-0.08)
#Pre-IPO VCs that are Young	-0.0009 (-0.36)	-0.0033*** (-2.90)	0.0023 (0.95)	0.0005 (0.24)	-0.0015 (-0.92)
<i>VC Pre-IPO Involvement</i>					
Total VC ownership at IPO	0.0004*** (3.15)	0.0002*** (3.24)	0.0003** (2.15)	0.0005*** (4.52)	-0.0001 (-0.64)
Log(Pre-IPO VC Funding + 1)	0.0040** (2.10)	0.0004 (0.69)	0.0036** (2.00)	0.0024 (1.58)	0.0016 (1.37)
Top 10 Pre-IPO VC	0.0108 (1.35)	0.0180*** (3.95)	-0.0072 (-1.04)	0.0114* (1.76)	-0.0006 (-0.12)
<i>Timing Relative to IPO</i>					
Time to IPO	-0.0011 (-1.43)	-0.0006** (-2.07)	-0.0005 (-0.68)	-0.0010* (-1.69)	-0.0001 (-0.17)
Years Since IPO	0.0009 (0.37)	-0.0009 (-0.92)	0.0018 (0.80)	-0.0012 (-0.67)	0.0021 (1.32)
Firm Age	-0.0000 (-0.19)	0.0000 (0.46)	-0.0000 (-0.32)	-0.0001 (-0.60)	0.0000 (0.25)
Additional Controls	Yes	Yes	Yes	Yes	Yes
Adj R <sup>2</sup>	0.032	0.020	0.019	0.029	0.003
Observations	5,327	5,327	5,327	5,327	5,327

**Table IA.V**

**Which VCs Choose to Invest, Among Firms that Receive Post-IPO VC Financing**

This table is analogous to Panel A of Table III, columns (3) to (6), except that it is limited to the subsample of firms that receive post-IPO VC financing. The sample consists of VC-backed IPO firms between 1995 and 2010 (as described in Table I) that received post-IPO VC financing, matched with potential VC investors. Columns (1) and (2) restrict the sample to those VCs that are ranked within the Top 10 and to those VCs ranked outside the Top 10, respectively (following the ranking of Nahata (2010)). Columns (3) and (4) restrict the sample to those VCs that did and did not fund the firm prior to the IPO, respectively. Across all columns, the dependent variable is equal to one if the VC funded the firm within the first five years after the IPO and zero otherwise. Linear probability models include year and industry fixed effects, and standard errors are clustered by firm. Robust *t*-statistics clustered at the firm level are shown in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, or 10% levels, respectively. Variables are defined in Appendix C.

	Firms with Post-IPO VC Investments			
	Top-10 VCs (1)	Lower Rank VCs (2)	Pre-IPO VCs (3)	Other VCs (4)
<i>VC Info Advantage Proxies</i>				
VC Industry Experience	0.8913*** (2.62)	0.2049*** (5.32)	1.9344 (1.29)	0.2100*** (5.77)
VC is a Director on Co's Board	22.9932*** (2.87)	14.5189*** (5.31)	18.6509*** (4.84)	
<i>VC Agency Proxies</i>				
#VC Funds with low success	-0.1870 (-0.95)	-0.0070 (-0.36)	-1.0576 (-1.09)	0.0062 (0.41)
#VC Funds with high success	-0.6467** (-2.02)	0.0161 (0.59)	-1.4188 (-1.45)	0.0286 (1.28)
VC Firm are Young	0.1220 (0.10)	0.0146 (0.90)	-2.4417 (-0.84)	0.0177 (1.15)
<i>VC Pre-IPO Involvement</i>				
VC Financed Firm pre-IPO	7.5011* (1.70)	11.4739*** (8.16)		
VC Ownership at IPO	1.1827*** (3.76)	0.8453*** (5.70)	0.7734*** (3.89)	
Total # of VCs involved pre-IPO			-1.4063*** (-2.61)	
# of Rounds VC involved in			-0.5413 (-0.57)	
<i>VC Controls</i>				
Top 10 VC			5.8828 (1.20)	0.6917*** (2.97)
Additional Controls	Yes	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.252	0.173	0.229	0.002
Observations	2,153	233,786	1,082	234,857

**Table IA.VI**

**Relation between Post-IPO VC Financing and Prior Firm Returns**

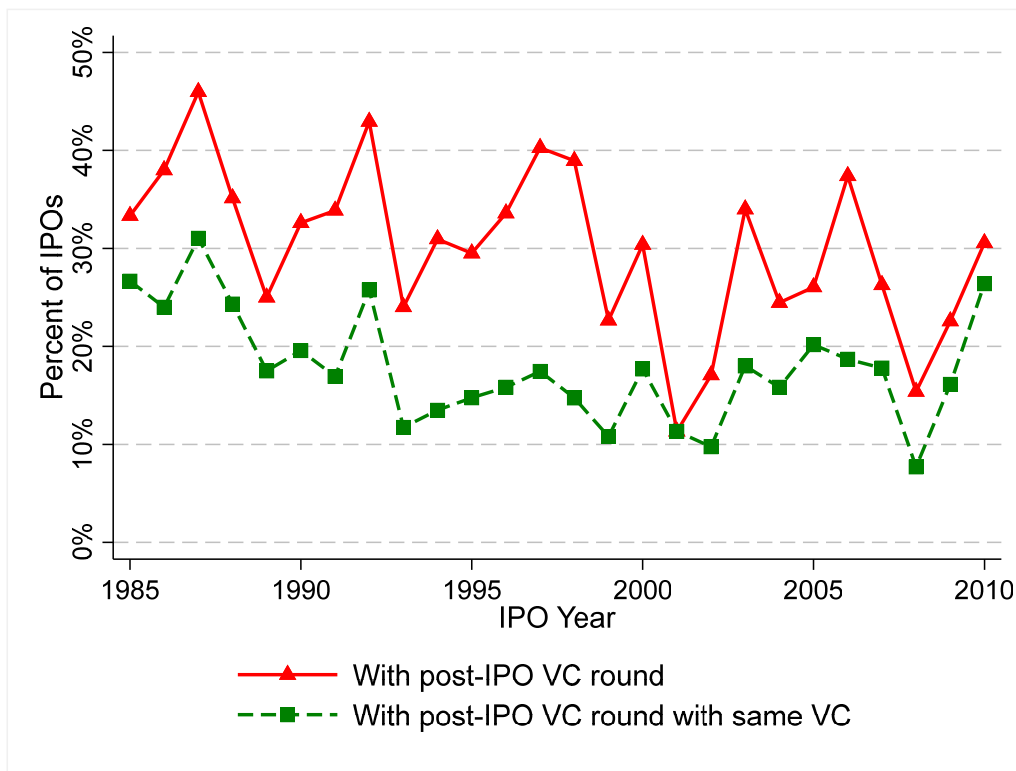
The sample in columns (1) to (3) consists of VC-backed IPOs over the 1995 to 2010 period (as described in Table I) that received post-IPO VC financing. Calendar time portfolio regressions are estimated, where a firm belongs to the portfolio for a maximum of 12, 36, or 60 months prior to the post-IPO VC financing. The sample in columns (4) to (6) consists of firms that did not receive post-IPO financing within this period, defined as follows: we choose the firm that went public within one year with the closest global proceeds and the closest IPO date. Control firms are chosen with replacement. Columns (7) to (9) present results of regressions based on a portfolio that is long the post-IPO VC investment firms and short the matched firms. For the 12-month regressions, we form a rolling portfolio where the firm enters the portfolio 13 months prior to the VC-round date (or fewer if the firm has been public for less than 13 months) and exits the month prior to the post-IPO VC financing date (a maximum of 12 months). The 36- and 60-month regressions are defined analogously. Monthly common stock returns on these portfolios, net of the risk-free rate, are regressed on the three Fama-French factors and the Carhart momentum factor. Robust *t*-statistics are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Firms with post-IPO VC inv't			Matched Firms			Long-short portfolio		
	12 months	36 months	60 months	12 months	36 months	60 months	12 months	36 months	60 months
Constant	0.351 (0.43)	0.153 (0.27)	0.450 (0.80)	0.089 (0.17)	0.184 (0.43)	0.506 (1.15)	0.262 (0.31)	-0.031 (-0.05)	-0.056 (-0.10)
Market-Rf	1.120*** (5.15)	1.196*** (7.91)	1.227*** (8.30)	1.070*** (7.97)	1.137*** (10.47)	1.155*** (11.03)	0.050 (0.22)	0.059 (0.36)	0.073 (0.45)
SMB Factor	0.996*** (4.02)	1.026*** (5.41)	0.992*** (5.33)	1.134*** (6.88)	1.120*** (8.41)	1.086*** (8.11)	-0.138 (-0.61)	-0.094 (-0.55)	-0.094 (-0.55)
HML Factor	-0.137 (-0.44)	-0.482** (-2.11)	-0.490** (-2.19)	-0.292 (-1.18)	-0.408** (-2.01)	-0.399** (-1.99)	0.155 (0.53)	-0.074 (-0.34)	-0.091 (-0.41)
RMW Factor	-0.811** (-2.21)	-0.925*** (-3.15)	-0.920*** (-3.18)	-0.889*** (-3.53)	-0.651*** (-3.13)	-0.677*** (-3.19)	0.078 (0.26)	-0.274 (-1.18)	-0.243 (-1.06)
CMA Factor	-0.963** (-1.99)	-0.336 (-0.83)	-0.379 (-0.97)	-0.543 (-1.50)	-0.540* (-1.93)	-0.483* (-1.78)	-0.420 (-1.00)	0.203 (0.59)	0.104 (0.30)
Adj. R <sup>2</sup>	0.381	0.579	0.583	0.638	0.703	0.690	-0.021	-0.017	-0.016
Observations	221	224	227	221	224	227	221	224	227

**Figure IA.1**

**Fraction of VC-backed firms that receive VC financing after the IPO, using Thomson Financial data.**

This table is analogous to Figure 1, except that the sample includes the broader set of 2,459 firms that went public between 1985 and 2010, and it depicts the fraction of these firms that Thomson Financial lists as receiving additional VC financing within the first five years after the IPO (irrespective of whether we are able to confirm these financings via SEC filings). The solid red line plots the percent of firms that receive VC financing between eight days and five years post-IPO, and the green dashed line plots the percent of firms that receive VC financing during this same interval from a VC that also funded the company prior to the IPO.

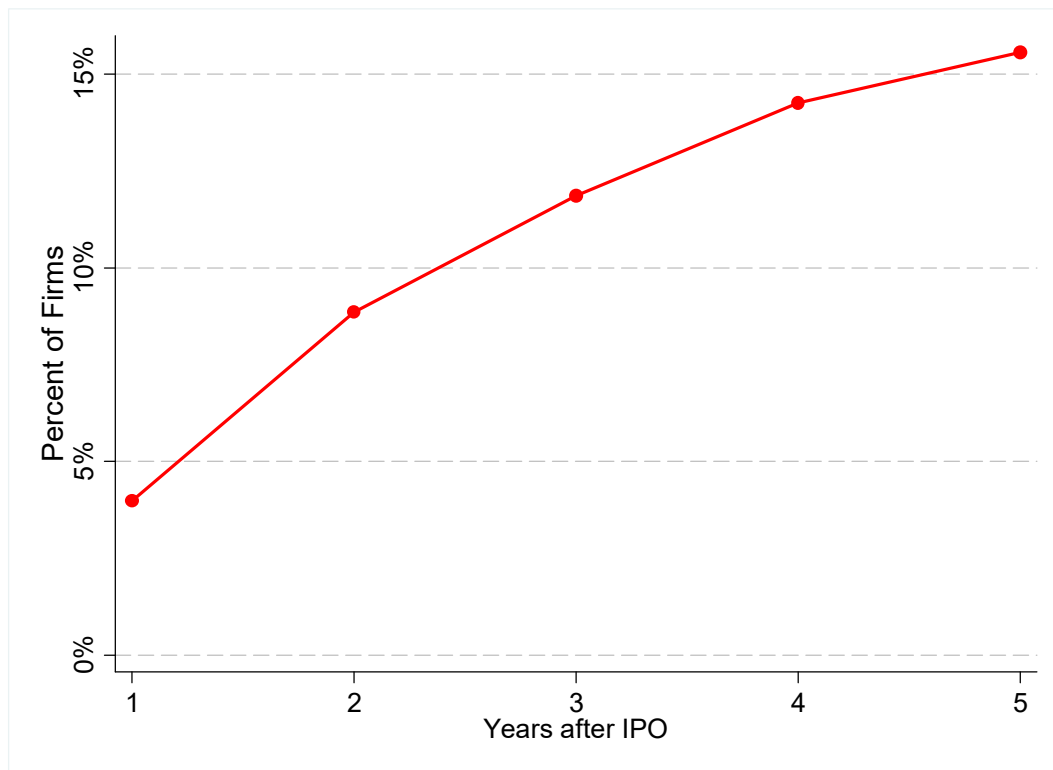




**Figure IA.2**

**Frequency of post-IPO financing in the first five years after IPO.**

The sample consists of VC-funded IPOs between 1995 and 2010. We require all firms to have CRSP and Compustat data. The solid line plots the percent of firms that receive VC financing each year following the IPO, reported in VenturXpert and verified through SEC filings. Year 1 is defined as the period between eight days and one year following the IPO. Each subsequent year is defined as the following 365-day period.

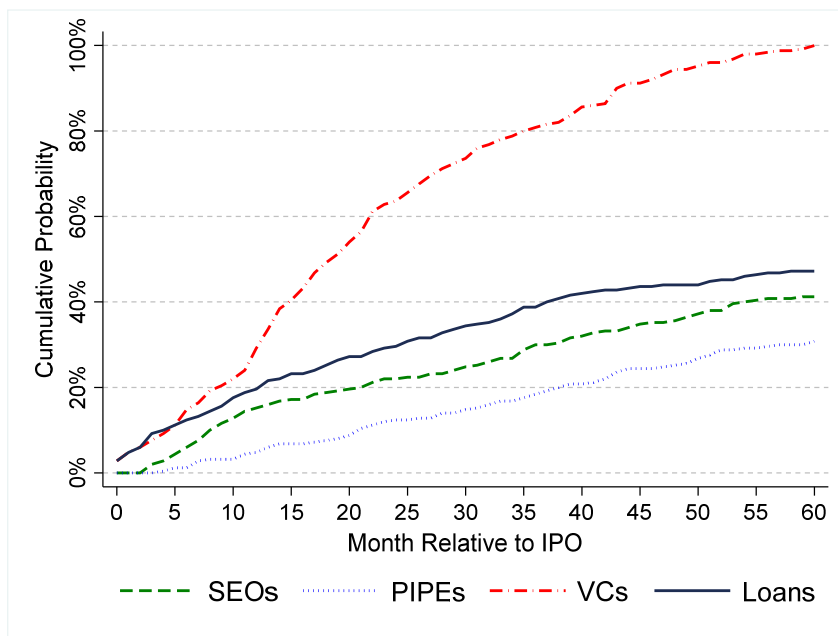


**Figure IA.3**

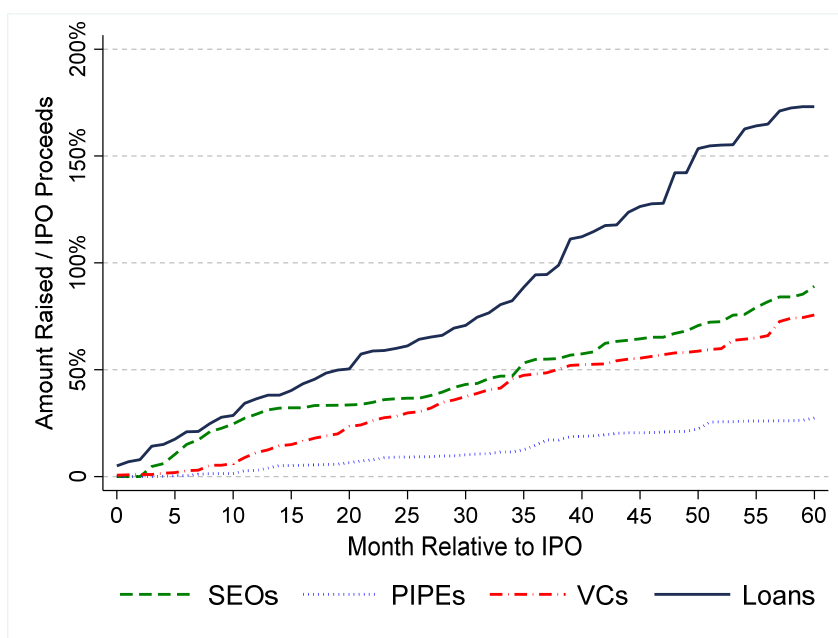
**Investments from other sources, among firms with post-IPO VC investments.**

Panel A is analogous to Figure 2, except that it is limited to the subsample of firms that receive post-IPO financing. The sample consists of VC-backed IPOs between 1995 and 2010 (as described in Table I and Figure 1) that also received post-IPO VC financing. We determine the percent of firms that raise capital during the first 60 months after the IPO from a VC, via a PIPE (where no VC belongs to the funding syndicate), through an SEO, and through a syndicated loan. Panel A plots the percent of firms that receive these types of financing across firms that received post-IPO VC financing. Panel B graphs the amount of money raised as a fraction of IPO proceeds through each of these forms of financing, across firms that received post-IPO VC financing.

Panel A: Percent of firms raising various forms of financing, conditional on raising post-IPO VC financing



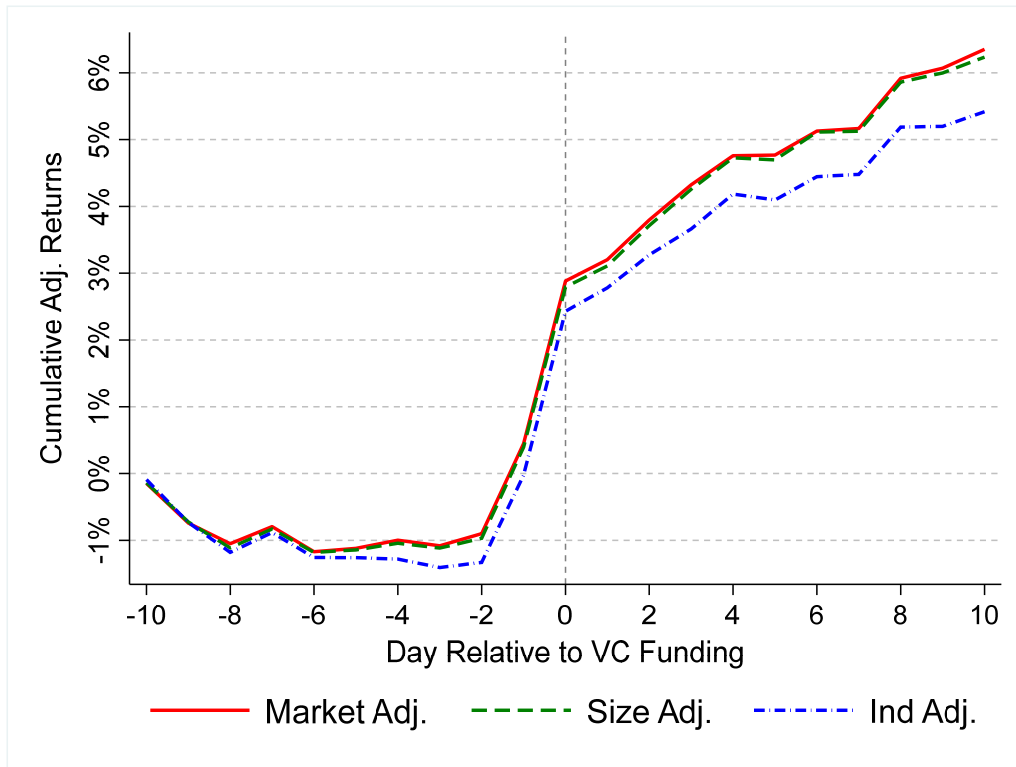
Panel B: Amount raised through various forms of financing, conditional on raising post-IPO VC financing



**Figure IA.4**

**Cumulative abnormal returns in the days surrounding post-IPO VC investments.**

This figure depicts abnormal returns similar to those shown in the first row of Table VI. The sample consists of VC-backed IPOs between 1995 and 2010, as described in Table I and Figure 1, that received post-IPO VC financing (during the day 8 to year 5 period following the IPO). The green dashed line plots the cumulative abnormal returns (CARs) defined as in Table VI as the raw firm return minus the return on the matched size decile over the same period. The solid red line plots CARs defined as the raw firm return minus the return on the equally weighted market index. The dotted-dashed blue line plots CARs defined as the raw firm return minus the return on a matched industry index, where industry is defined at the Fama-French 49 level.



## References

Nahata, Rajarishi, 2008, Venture capital reputation and investment performance, *Journal of Financial Economics* 90, 127 - 151.