VII.   Internet Appendix

Brokers and Finders in Startup Offerings

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Data description and variable construction

A. Grouping Form D Filings

This analysis uses data from Form D filings with the SEC from 2010 to 2019. I use the structured data the SEC extracts from Form Ds that is available on its website.[29] Issuers file original and amended filings to update their fundraising efforts, especially if they raise 10% or more of the total proceeds they reported on their last Form D. I combine original and amended filing numbers to isolate the first group of filings for each issuer. Table A shows an example of how I isolate a set of filings for each issuer. I generate the *Original Accession Number* field to track all the filings that amend an original filing, as the first filing number in a sequence is not reported on all subsequent amendments. The filing date alone is not sufficient to isolate the last amended filing because multiple amended filings can be filed on the same day. For this issuer, the amount raised is $2.5 million, corresponding to the last amended filing.

TABLE A1: **Isolating Orginal and Amended Filings**

Accession Number	Prior Accession Number	Original Accession Number	Filing Date Number	Offering Amount	Amount Raised	Funding Flows
143634310000001		143634310000001	20jan2010	2.50	0.54	0.54
143634310000002	143634310000001	143634310000001	20jun2010	2.50	0.81	0.27
143634310000003	143634310000002	143634310000001	20oct2010	2.50	0.85	0.04
143634310000005	143634310000003	143634310000001	28nov2010	2.50	0.99	0.14
143634311000001	143634310000005	143634310000001	11jan2011	2.50	2.40	1.41
143634311000002	143634311000001	143634310000001	24may2011	2.50	2.50	0.10

B. Broker Registration Status

Form D has a field for the firm to list all participating intermediaries. Specifically, I have data on the names of the intermediaries (individuals or firms) and their CRDs (unique individual or firm identifiers assigned by FINRA). I categorize intermediaries as registered or unregistered brokers by taking the following steps.

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[29] https://www.sec.gov/dera/data/form-d

First, I use the Form D data on intermediaries to create two data sets. The first one (*Data set one*) has all the intermediary names with CRDs, and the second (*Data set two*) has all the intermediary names without CRDs. I clean the names without CRDs by eliminating junk names such as "No Sales Compensation Received."

To assign registration status to intermediaries with CRDs, I first create a database of the 25,000 investment advisory and brokerage firms listed on the SEC's IAPD website (`https://adviserinfo.sec.gov/`) and FINRA's BrokerCheck (`https://brokercheck.finra.org/`). I repeat the same process for the 1.3 million individual investment advisors and brokers (commonly called registered representatives) listed on these websites. For each individual or firm, I know when they first registered and whether they are currently registered. Then, I merge the CRD numbers from *Data set one* to the data on individuals and firms registered with the SEC or with FINRA. I match 99% of all CRDs from Form D to the data on registration status.

To assign registration status to *Data set two* (intermediaries without CRDs), I hired an RA to search the SEC's IAPD website and FINRA's BrokerCheck to classify the 3,000 names in the second data set. These might be names of currently registered brokers whose CRD numbers the firm omitted from Form D for some reason. The RA classified 500 of these names as registered at the time of the offering.

Registered broker is an indicator that equals one if at least one participating intermediary was registered with the SEC or with FINRA at the time of the offering. *Past broker* is an indicator that equals one for brokers that were previously registered with FINRA but whose registration status was not active at the time of the offering. Unregistered brokers are past brokers and other intermediaries that are not registered with the SEC or FINRA at the time of the offering.

TABLE A2: **Variable Definitions and Data Sources**

Variable Name	Definition	Data Source
Outcome Variables		
I(Acquisition or IPO)	Indicator equals one for issuers that went public or were acquired as of Q3 2021	VentureXpert, PitchBook, and Crunchbase
I(Raised Future Round)	Indicator equals one if an issuer files a new Form D three or more years following its first filing	SEC Filings (Form D)
I(Inactive)	Indicator equals one for issuers that do not have an active registration as of Q3 2021 in the state they report as their principal place of business	State corporate registries. For example, the corporate registry for Michigan is LARA.
I(Used Broker)	Indicator equals one for issuers that reported using a broker on their Form D filing	SEC Filings (Form D)
I(VC Investment)	Indicator equals one for issuers that received institutional venture capital funding. I match issuers in PitchBook that received funding from an institutional VC firm on issuer name, state, and quarter of deal to Form D. The indicator is one for Form D issuers with a match.	PitchBook
I(Non-Accredited Investor)	Indicator equals one for offerings comprising non-accredited investors	SEC Filings (Form D)
Proceeds Raised ($ Millions)	Funding raised by the issuer as reported on Form D	SEC Filings (Form D)
# Investors	The number of investors that participated in the offering.	SEC Filings (Form D)
# State Notices	The number of state notices the issuer filed with its Form D. This shows where investors participating in the offering are located.	EFD Filings
Issuer & Issue characteristics		
I(Has Patent)	Indicator equals one for issuers that we matched to at least one patent in the USTPO data using assignee name and location. This indicator is only one for issuers that obtained the patent before filing Form D.	2019 USTPO Patent Assignment data
I(Older than 5)	Indicator equals one if firm was incorporated (formed) more than five years from the Form D filing date.	SEC Filings (Form D)
I(Promoter)	Indicator for issuers with at least one promoter, a blockholder holding at least 10 percent of any class of securities, a founder or external manager of the issuer, or person receiving ten percent or more of offering proceeds	SEC Filings (Form D)
# Executives	Number of officers and directors listed on the Form D filing, including the signature field	SEC Filings (Form D)
I(Rg. Broker Zip)	Indicator that equals one if an issuer has a registered broker located in its zip code that intermediates at least one private offering in the same year the issuer files Form D.	SEC Filings (Form D)
I(Unrg. Broker Zip)	Indicator that equals one if an issuer has an unregistered broker located in its zip code that intermediates at least one private offering in the same year the issuer files Form D.	
I(VC Zip)	Indicator that equals one if an issuer has a venture capital group located in its zip code that funds at least one startup in the same year the issuer files Form D. VC location data is from PitchBook.	PitchBook and Form D
Zipcode Level Characteristics		
% High Income	Fraction of tax filers earning over $200,000	IRS Summary of Income data

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TABLE A3: **How Representative Is Form D Data?**

This table tests whether the geographic distribution of issuers filing Form D data mirrors the geographic distribution of all U.S. small businesses using a chi-squared goodness of fit test. To approximate the geographic distribution of all U.S. businesses, I use one-year estimates of the American Community Survey comprising a 1% sample of respondents from 2010 to 2019. Next, I identify entrepreneurs in the state as self-employed respondents, running their own incorporated business and reporting living in the state. Using the average number of entrepreneurs in a state from 2010 to 2019, I calculate the fraction of entrepreneurs by state. I also calculate the fraction of entrepreneurs in each state receiving VC funding using PitchBook data on VC-funded startups. Finally, using the fraction of startups from the census and PitchBook, I calculate the expected number of issuers in each state using data on the total number of issuers in my sample. *Chi-Square Form D* is the test statistic from comparing the actual distribution of issuers to the expected distribution of issuers according to census data. Similarly, *Chi-Square PitchBook* is the test statistic from comparing the expected distribution of issuers according to PitchBook to the distribution of issuers according to the census. Chi-Square (49, 0.01) is the 1% critical value from a chi-squared distribution with 49 degrees of freedom.

State	Sample Issuers	Expected Issuers PitchBook	Expected Issuers Census
ALABAMA	118	67	419
ALASKA	2	8	45
ARIZONA	482	248	237
ARKANSAS	70	42	264
CALIFORNIA	6823	10402	2274
COLORADO	1188	740	407
CONNECTICUT	313	301	381
DELAWARE	142	198	80
DISTRICT OF COLUMBIA	181	170	193
FLORIDA	1003	645	944
GEORGIA	528	448	690
HAWAII	32	39	102
IDAHO	69	42	170
ILLINOIS	1015	714	1533
INDIANA	306	244	669
IOWA	69	61	500
KANSAS	136	66	356
KENTUCKY	153	98	414
LOUISIANA	38	60	493
MAINE	42	59	153
MARYLAND	507	429	425
MASSACHUSETTS	1894	2106	729
MICHIGAN	301	320	1235
MINNESOTA	398	285	818
MISSISSIPPI	15	15	265
MISSOURI	214	207	613
MONTANA	32	33	174
NEBRASKA	47	78	311
NEVADA	200	124	64
NEW HAMPSHIRE	81	78	92
NEW JERSEY	397	451	911
NEW MEXICO	56	58	146
NEW YORK	2519	3184	2677
NORTH CAROLINA	690	456	698
NORTH DAKOTA	15	12	153
OHIO	505	434	1281
OKLAHOMA	66	72	358
OREGON	398	298	319
PENNSYLVANIA	712	834	1470
RHODE ISLAND	35	67	125
SOUTH CAROLINA	131	119	331
SOUTH DAKOTA	39	12	151
TENNESSEE	415	301	416
TEXAS	2913	1360	1529
UTAH	448	333	326
VERMONT	38	47	72
VIRGINIA	535	504	555
WASHINGTON	1463	996	528
WEST VIRGINIA	2	15	192
WISCONSIN	278	192	727
WYOMING	33	15	73
Chi-Square Form D	**22,257.38**		
Chi-Square PitchBook	**39,865.63**		
Chi-Square (49, 0.01)	**74.92**		

TABLE A4: **Sample Selection for Regressions**

This table reports my sample-selection process. My initial sample comprises all Form D filings in the SEC Edgar database from 2010 to 2019. In the table, the first column describes the data-filtering procedure and the second column reports the number of observations lost after each filter. I filter public firms from my sample by removing any firm that filed a 10-K or 10-Q with the SEC for the first time prior to filing Form D. I use the Edgar master file of firm filings to identify public firms. Non-residential real estate comprises issuers listing their industry group as Other Real Estate, Other, Commercial, and Construction. *Non-equity offerings* is an indicator that equals one if an issuer did not check the equity security box on Form D. Other amended filings are other amendments to the first filing besides the last one, which I use to determine the amount of funding raised. See Appendix A for an example of how I isolate the last filing from an issuer's first set of filings.

Filter	Number of Observations
Form D (D/A) filings 01/01/2010 – 12/31/2019	391,175
Less Offerings by :	
Pooled Investment Funds	(183,704)
Financial Firms	(72,477)
Non-US based Issuers or missing zipcode	(20,025)
Public firms	(8,220)
Non-residential Real Estate	(30,603)
Non-equity offerings	(29,513)
Other amended filings	(18,546)
Final Sample (one observation per filing)	28,087
Unique Issuers (CIK)	28,087

TABLE A5: Executives Listed on Form D: Evidence from PitchBook

This table investigates which executives are listed on Form D using detailed data on executives in PitchBook. We first merge FormD to PitchBook using the issuer's CIK number in PitchBook. For issuers without CIK numbers, we match on issuer name and state where the issuer is headquartered. Next, we collect data on people working for these issuers according the Pitchbook. For each person in PitchBook, we create an indicator that equals one if someone with the same first and last name was ever listed on a Form D filing by the same issuer. We keep the ten most frequently listed titles in PitchBook for company executives and tabulate, by executive title, the number of executives that were listed in PitchBook but never on Form D, *PitchBook*, and the number of executives that were listed in PitchBook and on Form D, *Pitchbook-FormD*. *Total* shows the total number of people with each title and *PercentFormD* shows the percentage of executives with each title that were both in PitchBook and Form D.

Full PitchBook Title	PitchBook	PitchBook-FormD	Total	PercentFormD
Chief Financial Officer	4568	4944	9512	52.0
Co-Founder, Chief Executive Officer & Board Member	6081	320	6401	5.0
Co-Founder	1974	3403	5377	63.0
Chief Technology Officer	607	4649	5256	88.0
Chief Operating Officer	1227	3251	4478	73.0
Chief Executive Officer	2591	1874	4465	42.0
Co-Founder & Chief Executive Officer	3405	840	4245	20.0
Chief Executive Officer & Board Member	3116	714	3830	19.0
Co-Founder & Board Member	2130	340	2470	14.0
Co-Founder & Chief Technology Officer	983	1454	2437	60.0
All	26682	21789	48471	45.0

TABLE A6: **Association between Issuer Distance to Brokers and VCs and Broker Use: OLS**

Regression Estimates (Census Tract)

This table presents coefficients from cross-sectional OLS regressions, with standard errors in parentheses. A unit of observation is an issuer filing its first Form D between January 2010 and December 2019. The dependent variable, **I(Used Broker)**, is an indicator that equals one for offerings that involve any broker (registered or unregistered) and zero for non-brokered offerings. In Columns (2) and (4), the outcome variable equals one only for offerings that involve an unregistered broker and zero for non-brokered offerings. In Column (3), it equals one for offerings that involve a registered broker and zero for non-brokered offerings. The key independent variables in Columns (1) to (4) are **I(Unrg. Broker Tract)**, an indicator that equals one if an issuer has an unregistered broker in its census tract, which we obtain by geocoding the address of each issuer; **I(Rg. Broker Tract)**, an indicator that equals one if an issuer has a registered broker in its tract; and **I(VCs Tract)**, an indicator that equals one if an issuer has a VC in its tract. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**I(Used Broker)**			
Used Broker = 1	Any broker	Unregistered	Registered	Unregistered
Used Broker = 0	Direct	Direct	Direct	Registered
	(1)	(2)	(3)	(4)
I(Unrg. Broker Tract)	0.115***	0.103***	0.024***	0.217***
	(0.009)	(0.007)	(0.006)	(0.038)
I(Rg. Broker Tract)	0.015***	-0.016***	0.032***	-0.154***
	(0.005)	(0.003)	(0.004)	(0.039)
I(VC Tract)	-0.013***	-0.012***	-0.003	-0.049
	(0.004)	(0.002)	(0.003)	(0.036)
Ln(Firm Size)	0.005***	-0.008***	0.014***	-0.117***
	(0.002)	(0.001)	(0.002)	(0.015)
I(Has Patent)	-0.004	-0.002	-0.003	-0.058
	(0.005)	(0.003)	(0.004)	(0.058)
I(Older than 5)	0.032***	0.012***	0.023***	-0.008
	(0.005)	(0.003)	(0.005)	(0.041)
I(Promoter)	0.104***	0.027***	0.094***	-0.040
	(0.011)	(0.007)	(0.011)	(0.055)
% High Income	-0.008***	-0.005***	-0.004**	-0.012
	(0.002)	(0.001)	(0.002)	(0.018)
I(Used advertising)	0.152***	0.092***	0.083***	0.050
	(0.012)	(0.010)	(0.010)	(0.048)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.14	0.12	0.12	0.30
# Firms	28087	26774	27230	1460
Observations	28087	26774	27230	1460

TABLE A7: **Association between Issuer Distance to Brokers and VCs and Broker Use: OLS Regression Estimates (Young Firms : Incorporated Less than Five years before the Offering)**

This table presents coefficients from cross-sectional OLS regressions, with standard errors in parentheses. A unit of observation is an issuer filing its first Form D between January 2010 and December 2019. The dependent variable, **I(Used Broker)**, is an indicator that equals one for offerings that involve any broker (registered or unregistered) and zero for non-brokered offerings. In Columns (2) and (4), the outcome variable equals one only for offerings that involve an unregistered broker and zero for non-brokered offerings. In Column (3), it equals one for offerings that involve a registered broker and zero for non-brokered offerings. The key independent variables in Columns (1) to (4) are **I(Unrg. Broker Zip)**, an indicator that equals one if an issuer has an unregistered broker in its zip code; **I(Rg. Broker Zip)**, an indicator that equals one if an issuer has a registered broker in its zip code; and **I(VCs Zip)**, an indicator that equals one if an issuer has a VC in its zip code. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**I(Used Broker)**			
Used Broker = 1	Any broker	Unregistered	Registered	Unregistered
Used Broker = 0	Direct	Direct	Direct	Registered
	(1)	(2)	(3)	(4)
I(Unrg. Broker Zip)	0.032***	0.024***	0.010**	0.132***
	(0.006)	(0.004)	(0.004)	(0.045)
I(Rg. Broker Zip)	0.020***	0.003	0.018***	-0.116***
	(0.004)	(0.003)	(0.003)	(0.041)
I(VC Zip)	-0.016***	-0.012***	-0.006*	-0.063
	(0.004)	(0.003)	(0.003)	(0.041)
Ln(Firm Size)	0.007***	-0.008***	0.015***	-0.137***
	(0.002)	(0.001)	(0.002)	(0.018)
I(Has Patent)	-0.002	-0.003	-0.000	-0.107
	(0.006)	(0.004)	(0.005)	(0.074)
I(Promoter)	0.106***	0.024***	0.093***	-0.043
	(0.012)	(0.008)	(0.011)	(0.060)
% High Income	-0.008***	-0.005***	-0.003*	-0.021
	(0.002)	(0.001)	(0.002)	(0.023)
I(Used advertising)	0.147***	0.093***	0.077***	0.040
	(0.012)	(0.010)	(0.010)	(0.053)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.13	0.10	0.12	0.32
# Firms	24054	23024	23345	1148
Observations	24054	23024	23345	1148

TABLE A8: **Association between Brokered Offerings and Outcomes: OLS Regression**

Estimates (Failure)

This table presents coefficients from cross-sectional OLS regressions. The unit of observation is an issuer filing its first Form D between January 2010 and December 2017. The dependent variable, **I(Inactive)**, is an indicator that equals one if an issuer is no longer registered with state securities regulators where it operates (in the years following the offering and December 2019) and zero otherwise. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	I(Inactive)			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
P(Non-Accredited) X Used Broker	0.011 (0.008)	0.009 (0.011)	0.011 (0.011)	0.032 (0.020)
I(Used Broker)	0.049*** (0.009)	0.064*** (0.013)	0.040*** (0.012)	-0.014 (0.024)
Ln(Proceeds Raised)	-0.017*** (0.002)	-0.015*** (0.002)	-0.016*** (0.002)	-0.021** (0.010)
Ln(# Executives)	-0.012*** (0.002)	-0.012*** (0.002)	-0.012*** (0.002)	-0.026** (0.012)
I(Older than 5)	-0.009 (0.006)	-0.009 (0.006)	-0.006 (0.006)	-0.055** (0.028)
I(Promoter)	-0.000 (0.010)	0.004 (0.011)	0.004 (0.011)	-0.083*** (0.028)
P(Non-Accredited)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.001* (0.001)
I(Has Patent)	-0.016** (0.006)	-0.014** (0.006)	-0.017*** (0.006)	-0.004 (0.037)
I(VC Investment)	-0.054*** (0.006)	-0.055*** (0.006)	-0.053*** (0.006)	-0.100** (0.047)
% High Income	0.001 (0.002)	-0.000 (0.002)	-0.000 (0.002)	0.016 (0.015)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.50	0.51	0.50	0.43
# Firms	22344	21288	21626	1182
Observations	22344	21288	21626	1182

TABLE A9: **Association between Brokered Offerings and Outcomes (Success)**

This table presents coefficients from cross-sectional OLS regressions. The unit of observation is an issuer filing its first Form D between January 2010 and December 2017. The dependent variable, **I(Acquisition or IPO)**, is an indicator that equals one if the issuer exits via an IPO or an acquisition in the years following the offering and December 2019, and zero otherwise. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**I(Acquisition or IPO)**			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
P(Non-Accredited) X Used Broker	-0.016* (0.009)	-0.004 (0.012)	-0.030** (0.013)	0.014 (0.019)
I(Used Broker)	0.008 (0.010)	-0.040*** (0.014)	0.037*** (0.014)	-0.068** (0.027)
Ln(Proceeds Raised)	0.050*** (0.003)	0.051*** (0.003)	0.050*** (0.003)	0.033*** (0.009)
Ln(# Executives)	0.058*** (0.003)	0.057*** (0.003)	0.058*** (0.003)	0.065*** (0.014)
I(Older than 5)	0.044*** (0.009)	0.047*** (0.010)	0.046*** (0.010)	-0.033 (0.036)
I(Promoter)	-0.019 (0.012)	-0.012 (0.013)	-0.022* (0.013)	-0.074*** (0.027)
P(Non-Accredited)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.002 (0.001)
I(Has Patent)	0.059*** (0.010)	0.054*** (0.010)	0.058*** (0.010)	0.145*** (0.054)
I(VC Investment)	0.212*** (0.010)	0.212*** (0.010)	0.210*** (0.010)	0.266*** (0.059)
% High Income	0.004 (0.003)	0.005 (0.004)	0.004 (0.004)	-0.014 (0.016)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.20	0.20	0.20	0.36
# Firms	22344	21288	21626	1182
Observations	22344	21288	21626	1182

TABLE A10: **Association between Brokered Offerings and Outcomes: Excluding**

Venture-Backed Startups

This table presents coefficients from cross-sectional OLS regressions. The unit of observation is an issuer filing its first Form D between January 2010 and December 2017. In Panel A, the dependent variable, **I(Acquisition or IPO)**, is an indicator that equals one if the issuer exits via an IPO or an acquisition in the years following the offering and December 2019, and zero otherwise. In Panel B, the dependent variable, **I(Raised Future Round)**, is an indicator that equals one if the issuer files another Form D three or more years following its first filing, and zero otherwise. In Panel C, the dependent variable, **I(Inactive)**, is an indicator that equals one if an issuer is no longer registered with state securities regulators where it operates and zero otherwise. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**I(Acquisition or IPO)**			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
I(Used Broker)	0.004	-0.043***	0.037***	-0.074***
	(0.011)	(0.014)	(0.014)	(0.027)
Ln(Proceeds Raised)	0.043***	0.044***	0.043***	0.026***
	(0.003)	(0.003)	(0.003)	(0.009)
Ln(# Executives)	0.055***	0.053***	0.055***	0.067***
	(0.003)	(0.004)	(0.004)	(0.014)
I(Older than 5)	0.047***	0.050***	0.050***	-0.041
	(0.010)	(0.011)	(0.011)	(0.037)
I(Promoter)	-0.015	-0.009	-0.017	-0.058**
	(0.012)	(0.013)	(0.012)	(0.027)
I(Has Patent)	0.081***	0.077***	0.082***	0.159**
	(0.012)	(0.012)	(0.012)	(0.062)
% High Income	0.007*	0.008**	0.006*	-0.005
	(0.004)	(0.004)	(0.004)	(0.016)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.15	0.14	0.15	0.32
# Firms	18806	17835	18122	1072
Observations	18806	17835	18122	1072

TABLE A11: **Association between Brokered Offerings and Outcomes (Tech. vs. Non-tech Firms)**

This table presents coefficients from cross-sectional OLS regressions. The unit of observation is an issuer filing its first Form D between January 2010 and December 2017. In Panel A, the dependent variable, **I(Acquisition or IPO)**, is an indicator that equals one if the issuer exits via an IPO or an acquisition in the years following the offering, and zero otherwise. In Panel B, the dependent variable, **I(Raised Future Round)**, is an indicator that equals one if the issuer files another Form D three or more years following its first filing, and zero otherwise. In Panel C, the dependent variable, **I(Inactive)**, is an indicator that equals one if an issuer is no longer registered with state securities regulators where it operates and zero otherwise. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). Panel A shows results for technology startups, which Panel B shows results for non-technology startups. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Tech Firms:	Panel A: I(Acquisition or IPO)			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
I(Used Broker)	-0.005	-0.054*	0.033	-0.085
	(0.022)	(0.031)	(0.031)	(0.063)
Ln(Proceeds Raised)	0.083***	0.082***	0.084***	0.045
	(0.006)	(0.006)	(0.006)	(0.028)
Ln(Firm Size)	0.067***	0.066***	0.067***	0.076**
	(0.005)	(0.005)	(0.005)	(0.030)
I(Older than 5)	0.053***	0.051***	0.054***	0.083
	(0.014)	(0.014)	(0.014)	(0.083)
I(Promoter)	-0.042	-0.040	-0.042	-0.063
	(0.031)	(0.032)	(0.032)	(0.120)
I(Has Patent)	0.034**	0.030**	0.033**	0.117
	(0.013)	(0.014)	(0.013)	(0.081)
I(VC Investment)	0.208***	0.209***	0.206***	0.252***
	(0.012)	(0.012)	(0.012)	(0.080)
% High Income	0.005	0.005	0.005	-0.015
	(0.005)	(0.005)	(0.005)	(0.034)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.15	0.15	0.15	0.24
# Firms	10432	10199	10251	319
Observations	10432	10199	10251	319

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Table A11 - *continued*

Non-Tech Firms:	Panel B: I(Acquisition or IPO)			
	(1)	(2)	(3)	(4)
I(Used Broker)	0.017	-0.033**	0.048***	-0.062**
	(0.011)	(0.015)	(0.015)	(0.028)
I(Used Broker)				
Ln(Proceeds Raised)	0.034***	0.034***	0.033***	0.025***
	(0.003)	(0.003)	(0.003)	(0.009)
Ln(Firm Size)	0.049***	0.048***	0.049***	0.059***
	(0.004)	(0.004)	(0.004)	(0.015)
I(Older than 5)	0.030**	0.039***	0.034***	-0.088**
	(0.013)	(0.013)	(0.013)	(0.035)
I(Promoter)	-0.016	-0.005	-0.020	-0.080***
	(0.011)	(0.013)	(0.012)	(0.026)
I(Has Patent)	0.090***	0.087***	0.091***	0.157**
	(0.016)	(0.016)	(0.016)	(0.071)
I(VC Investment)	0.199***	0.198***	0.198***	0.278***
	(0.019)	(0.019)	(0.019)	(0.091)
% High Income	0.005	0.006	0.004	-0.013
	(0.004)	(0.005)	(0.005)	(0.016)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.22	0.22	0.22	0.40
# Firms	11912	11089	11375	863
Observations	11912	11089	11375	863

TABLE A12: **Association between Brokered Offerings and Outcomes (Startups in Urban Areas)**

This table presents coefficients from cross-sectional OLS regressions. The unit of observation is an issuer filing its first Form D between January 2010 and December 2017. The dependent variable, **I(Acquisition or IPO)**, is an indicator that equals one if the issuer exits via an IPO or an acquisition in the years following the offering and December 2019, and zero otherwise. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**I(Acquisition or IPO)**			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
I(Used Broker)	0.013	-0.040**	0.049***	-0.076**
	(0.012)	(0.017)	(0.017)	(0.032)
Ln(Proceeds Raised)	0.051***	0.053***	0.052***	0.025**
	(0.004)	(0.004)	(0.004)	(0.011)
Ln(# Executives)	0.062***	0.061***	0.061***	0.061***
	(0.004)	(0.004)	(0.004)	(0.017)
I(Older than 5)	0.045***	0.046***	0.047***	-0.022
	(0.012)	(0.012)	(0.012)	(0.044)
I(Promoter)	-0.020	-0.016	-0.023	-0.082***
	(0.015)	(0.017)	(0.016)	(0.028)
I(Has Patent)	0.064***	0.060***	0.064***	0.214***
	(0.013)	(0.013)	(0.013)	(0.066)
I(VC Investment)	0.212***	0.212***	0.210***	0.188***
	(0.011)	(0.011)	(0.011)	(0.071)
% High Income	0.008*	0.009**	0.008*	-0.038*
	(0.004)	(0.004)	(0.004)	(0.020)
State x Year x Industry FE?	Yes	Yes	Yes	Yes
Adjusted R^2	0.21	0.20	0.21	0.35
# Firms	16044	15276	15519	844
Observations	16044	15276	15519	844

TABLE A13: **Causal Effect of Brokered Offerings on Offering Proceeds: OLS Regression Estimates (Top 20 CBSAs)**

This table presents coefficients from two stage least squares regressions (2SLS) with standard errors in parentheses. A unit of observation is an issuer filing its first Form D between January 2010 and December 2019. The dependent variable, **Ln(Funding Raised)**, is the log amount of funding an issuer raised. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. The instrument in Column (1) is an indicator that equals one if an issuer has an unregistered or a registered broker in its zip code. In Columns (2) and (4), it is an indicator that equals one if the issuer has an unregistered broker in its zip code. In Column (3) the instrument is an indicator that equals one if the issuer has a registered broker in its zip code. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**Ln(Proceeds Raised)**			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
I(Used Broker)	1.796*** (0.601)	3.896*** (1.333)	2.835** (1.164)	1.967 (3.297)
Ln(# Executives)	0.301*** (0.010)	0.344*** (0.015)	0.271*** (0.021)	0.602 (0.428)
I(Older than 5)	0.004 (0.029)	0.015 (0.028)	-0.016 (0.038)	0.321 (0.195)
I(Promoter)	-0.122 (0.095)	0.112* (0.060)	-0.262 (0.167)	0.258 (0.629)
I(Has Patent)	0.211*** (0.025)	0.206*** (0.028)	0.214*** (0.028)	0.215 (0.164)
I(VC Investment)	0.571*** (0.026)	0.568*** (0.026)	0.568*** (0.029)	0.948** (0.376)
% High Income	0.018** (0.009)	0.024** (0.011)	0.011 (0.009)	0.113 (0.131)
I(VC Zip)	0.167*** (0.015)	0.189*** (0.018)	0.162*** (0.017)	0.109 (0.193)
CBSA x Year FE x Industry?	Yes	Yes	Yes	Yes
Adjusted R^2	-0.40	-0.67	-0.57	-0.28
# Issuers	17577	16767	17067	848
Observations	17577	16767	17067	848
Cragg-Donald Wald F	36.45	26.15	16.74	0.92

TABLE A14: **Causal Effect of Brokered Offerings on Offering Proceeds: OLS Regression Estimates (Remove Firm Getting VC Funding)**

This table presents coefficients from two stage least squares regressions (2SLS) with standard errors in parentheses. A unit of observation is an issuer filing its first Form D between January 2010 and December 2019. The dependent variable, **Ln(Funding Raised)**, is the log amount of funding an issuer raised. The key independent variables in Columns (1) to (4) are indicators for how the offering was placed. In Column (1), **I(Used Broker)** is an indicator for offerings that involve any broker. In Columns (2) and (4), the same indicator variable equals one only for offerings that involve an unregistered broker. In Column (3), the indicator equals one for offerings that involve a registered broker. The instrument in Column (1) is an indicator that equals one if an issuer has an unregistered or a registered broker in its zip code. In Columns (2) and (4), it is an indicator that equals one if the issuer has an unregistered broker in its zip code. In Column (3) the instrument is an indicator that equals one if the issuer has a registered broker in its zip code. Earlier in the appendix, there is a discussion of how I identify broker registration status and define other variables. The number of observations varies across columns depending on the two placement methods I am comparing. For example, the number of observations in Column (2) is lower because it excludes registered-broker offerings. One might expect that the sum of the difference between Columns (1) and (2) and Columns (1) and (3) would equal the number of observations in Column (4). However, because state-year-industry cells with fewer than two observations are not part of the estimation, the number of observations in Column (4) is lower than one would expect. I cluster standard errors, shown in parentheses, by issuer and represent significance according to $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Dependent Variable:	**Ln(Proceeds Raised)**			
Used Broker = 1 Used Broker = 0	Any broker Direct	Unregistered Direct	Registered Direct	Unregistered Registered
	(1)	(2)	(3)	(4)
I(Used Broker)	1.417***	2.558***	2.210***	-0.212
	(0.373)	(0.765)	(0.633)	(0.697)
Ln(# Executives)	0.257***	0.287***	0.231***	0.283***
	(0.008)	(0.011)	(0.012)	(0.095)
I(Older than 5)	-0.005	-0.005	-0.003	0.107
	(0.024)	(0.025)	(0.026)	(0.098)
I(Promoter)	-0.172***	-0.018	-0.244***	-0.330**
	(0.056)	(0.043)	(0.075)	(0.136)
I(Has Patent)	0.188***	0.187***	0.186***	0.237
	(0.023)	(0.024)	(0.024)	(0.148)
% High Income	0.040***	0.038***	0.034***	0.100**
	(0.008)	(0.009)	(0.008)	(0.049)
I(VC Zip)	0.174***	0.196***	0.165***	0.001
	(0.014)	(0.016)	(0.014)	(0.086)
State x Year FE x Industry?	Yes	Yes	Yes	Yes
Adjusted R^2	-0.81	0.03	-1.66	-3.75
# Issuers	23950	22732	23128	1335
Observations	23950	22732	23128	1335
Cragg-Donald Wald F	82.64	55.78	48.90	11.44

TABLE A15: **Characteristics of Brokers Listed on Form D Filings**

This table reports summary statistics of my panel of brokers split by whether the broker is active in the private placement market. Data, collected from FINRA's BrokerCheck, are from 2005 to 2018. *RegD* is a dummy equal to one for brokers whose CRD we identified on a Form D filing and matched to FINRA's BrokerCheck. *Diff* is *Cohen's d*, the normalized difference in means of the characteristic in Column (1) to facilitate comparison across rows. *T-Stat* reports the t-statistic from a regression of each variable in Column (1) on the *RegD* dummy, with standard errors clustered by brokerage firm (*Firm CRD*).

	Other brokers		**Form D Brokers**		**Tests**	
	N = 15,938,916		**N = 55,020**			
	Mean	Std. Dev.	Mean	Std. Dev.	Diff	T-stat
Experience (Years)	10.03	10.23	20.20	10.55	0.99	54.99***
Female	0.33	0.46	0.14	0.35	-0.42	-34.19***
Non White	0.13	0.33	0.07	0.25	-0.19	-15.51***
Registration						
FINRA Registered	0.53	0.50	0.79	0.41	0.52	40.07***
Investment Adviser	0.26	0.42	0.60	0.49	0.83	44.22***
Barred	0.01	0.08	0.01	0.11	0.07	3.19***
Disclosures						
Misconduct (flow in one year)	0.00	0.07	0.03	0.17	0.34	22.84***
Misconduct (stock)	0.03	0.17	0.14	0.34	0.62	24.34***
Exams and Qualifications						
No. Qualifications	3.40	1.41	4.53	1.45	0.81	49.04***
No. State Registrations	1.10	0.60	1.46	0.55	0.61	41.84***
Uniform Sec. Agent St. Law (63)	0.71	0.44	0.82	0.39	0.24	17.44***
General Sec. Rep. (7)	0.63	0.51	0.87	0.33	0.47	45.30***
Inv. Co Products Rep. (6)	0.40	0.49	0.30	0.46	-0.21	-14.12***
Uniform Combined St. Law (66)	0.23	0.40	0.28	0.45	0.13	7.10***
Uniform Inv. Adviser Law (65)	0.15	0.34	0.36	0.48	0.62	27.30***
General Sec. Principal (24)	0.12	0.30	0.35	0.48	0.77	30.61***
Security Industry Ess. Exam	0.72	0.42	0.93	0.26	0.49	49.74***

Figure A1: **Form D Signatures and Firm Size**

This figure shows the correlation between the number of executives listed on Form D and log assets for public firms filing Form D, which are not part of my analysis. The correlation between Ln(Assets) and # Signatures is 0.60.