

Law Firm Expertise and Global Venture Capital Investments

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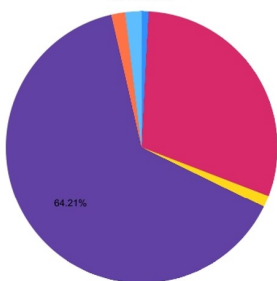
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Motivation #1

A large proportion of PE, VC deals employs legal services compared to other advisory services, especially when the size of deals is not taken into account.

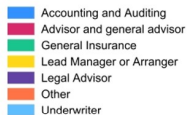
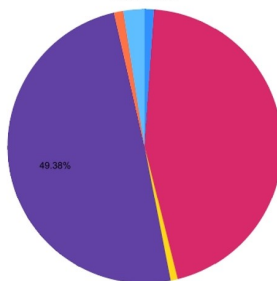
Number of services by service types

2005-2020



Total value of serviced deals by service types

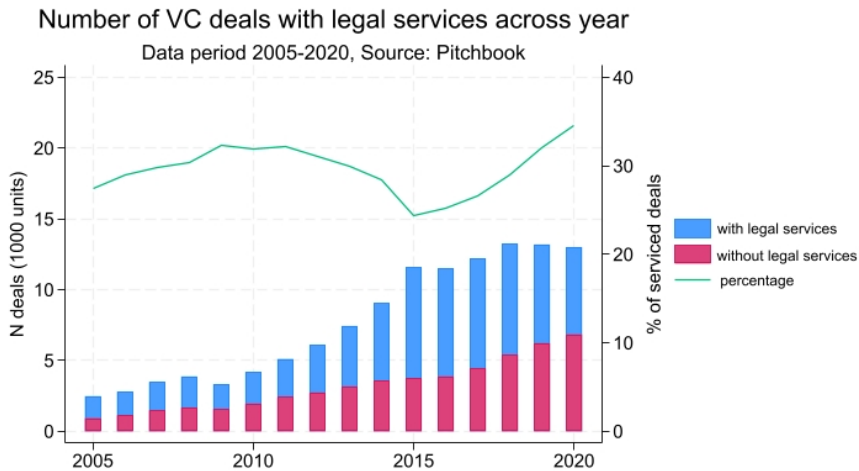
2005-2020



Source: Pitchbook

Motivation #2

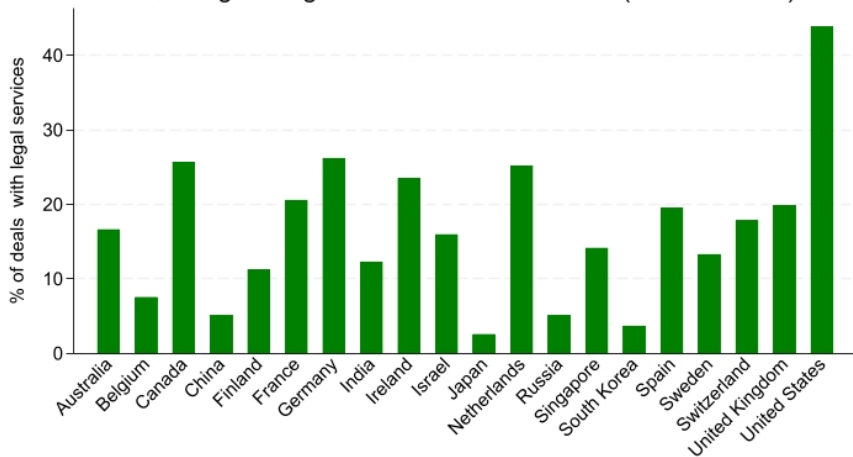
The market for legal services evolves quickly as the VC market expands. We observe a significant increase in the number of VC deals, but the percentage of deals covered with legal services fluctuates around 30%.



Motivation #3

The US VC market leads the whole world with the highest ratio of deals covered with legal advice, followed by Canada, Germany, and Netherlands.

Coverage of legal services in 20 countries (≥ 1000 deals)



Literature review #1

- Legal services are important in the M&A context:
 - ▷ Top-tier law firms increase the wealth of bidder shareholders by an average of 2.00-3.07% (\$30.80-47.28 million) (Schweizer and Wu, 2021)
 - ▷ Top-tier target legal advisers are associated with higher premia in completed deals, but significantly lower completion rates (Krishnan et al., 2012; Krishnan and Masulis, 2013)
 - Help the target employ more effective defensive tactics
 - ▷ Industries that hire top-10 law firms are often challenged by antitrust authorities (Krishnan and Masulis, 2013)
- Legal services are also important in the IPO context:
 - ▷ Law firm fixed effects provide significant explanatory power in the models of IPO under pricing and class action lawsuits (Cohen et al., 2018)
 - ▷ Moran and Pandes (2019) show that:
 - A top-tier law firm improves pre-IPO price formation by certifying the underwriter's pricing report
 - There is lower incidence of elite law firm involvement, and it is associated with a larger difference in average first-day returns firms during the dot-com period (conflicts of interests are more pronounced)

Literature review #2

- We argue that the engagement of a top-law firm would reduce asymmetric information
 - ▷ provide sound legal advice on clients' fiduciary responsibilities
 - ▷ reduce the cost of communication and facilitating a higher level of trust via their execution of lawful due diligence
 - ▷ form better contract terms and enforcement and acting as principal negotiators between VCs and portfolio companies
- Whether the involvement of top law firms would
 - ▷ affect deal outcomes (completion likelihood and VCs' investment position)?
 - ▷ influence investment returns and exit outcomes?
 - ▷ impact VCs' investment strategies

Data #1

- Global round-by-round VC deals from the Pitchbook database
 - ▷ Data period: from 2005 to 2020
 - ▷ Deal classification: “Venture capital”
 - ▷ The round number is disclosed
 - ▷ The deal is labeled either “failed” or “completed”
- The final sample includes 181,944 deals made by 75,640 investors to 92,774 portfolio companies in 22 countries
- We merge the Pitchbook deals data with the “deal service provider relation file”
 - ▷ We define annual rankings based on the ratio between the total value of the transactions a law firm participated in and the overall value of all VC deals in the last 5 years
 - ▷ We define top 10 law firms as those that belong in the top 10 percentile of the annual rankings

Data #2

Table 1. The distribution of VC deals and top law firms by year

Year	N	% Top 10 law firm	% Top 10 buy-side	% Top 10 sell-side
2005	3,121	0.190	0.004	0.189
2006	3,520	0.197	0.005	0.196
2007	4,229	0.237	0.007	0.234
2008	4,858	0.246	0.010	0.240
2009	4,319	0.260	0.019	0.250
2010	5,216	0.282	0.037	0.263
2011	6,511	0.288	0.038	0.266
2012	7,195	0.300	0.043	0.282
2013	9,176	0.269	0.039	0.252
2014	12,269	0.226	0.058	0.203
2015	15,687	0.177	0.045	0.158
2016	17,725	0.155	0.040	0.137
2017	19,347	0.163	0.053	0.140
2018	21,968	0.179	0.064	0.153
2019	23,015	0.193	0.078	0.159
2020	23,862	0.203	0.093	0.160
Total	181,944	0.205	0.054	0.181

Data #3

Table 2. The distribution of VC deals and top law firms by country

Country	N	% Top 10	% Top 10 buy-side	% Top 10 sell-side
Australia	1,094	0.019	0.009	0.012
Belgium	444	0.016	0.007	0.009
Brazil	701	0.138	0.050	0.104
Canada	4,420	0.133	0.044	0.102
China	33,961	0.008	0.003	0.004
Denmark	165	0.030	0.006	0.024
Finland	389	0.018	0.010	0.010
France	7,020	0.090	0.037	0.063
Germany	4,184	0.048	0.024	0.026
India	4,206	0.043	0.023	0.024
Ireland	653	0.026	0.003	0.023
Israel	2,177	0.056	0.015	0.043
Italy	317	0.050	0.022	0.035
Mexico	108	0.120	0.046	0.093
Netherlands	1,284	0.068	0.013	0.058
Poland	161	0.012	0.006	0.012
Singapore	351	0.003	0.003	0.003
Spain	1,528	0.152	0.017	0.140
Sweden	983	0.022	0.009	0.016
Switzerland	531	0.070	0.024	0.053
United Kingdom	16,911	0.072	0.025	0.054
United States	100,356	0.334	0.085	0.300
Total	181,944	0.205	0.054	0.181

Data #4

Table 3. Summary statistics

- *Incomplete*: A dummy variable equal to one if the VC investment transaction is incomplete, and zero otherwise
- *Percentage acquired*: The percentage of stake acquired in the round of financing

	N	All	Complete transactions	Incomplete transactions
<i>Incomplete</i>	181,944	0.008	-	-
<i>Percentage acquired</i>	71,184	-	0.250	-
<i>Top 10 law firm</i>	181,944	0.205	0.206	0.092
<i>Top 10 buy-side law firm</i>	181,944	0.054	0.055	0.002
<i>Top 10 sell-side law firm</i>	181,944	0.181	0.181	0.092

Result #1 Deal incompleteness

Table 4. Top law firms and the likelihood of deal incompleteness

Dependent variable	<i>Incomplete</i>				
	(1)	(2)	(3)	(4)	(5)
<i>Top 10 buy-side law firm</i>		-0.012*** (0.002)	-0.014*** (0.002)		
<i>Top 10 sell-side law firm</i>		-0.007*** (0.002)		-0.008*** (0.002)	
<i>Top 10 law firm</i>	-0.009*** (0.002)				-0.009*** (0.001)
Constant	0.009*** (0.000)	0.009*** (0.000)	0.008*** (0.000)	0.009*** (0.000)	0.009*** (0.000)
Observations	181,944	181,944	181,944	181,944	181,944
Round FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Deal type FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.014	0.014	0.013	0.013	0.014

Result #2 The percentage of ownership

Table 5. Top law firms and the percentage of ownership

Dependent variable	<i>Percentage acquired</i>				
	(1)	(2)	(3)	(4)	(5)
<i>Top 10 law firm</i>	0.024*** (0.002)				0.024*** (0.003)
<i>Top 10 buy-side law firm</i>		0.032*** (0.002)		0.029*** (0.002)	
<i>Top 10 sell-side law firm</i>			0.016*** (0.001)	0.013*** (0.001)	
Constant	0.241*** (0.001)	0.246*** (0.000)	0.244*** (0.000)	0.242*** (0.000)	0.241*** (0.001)
Observations	71,129	71,129	71,129	71,129	71,129
Round FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Deal type FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.138	0.137	0.135	0.138	0.138

Result #3 Legal system characteristics at the country level

Cross-sectional analyses

- The impact of top law firm expertise on VC investment decision varies significantly with legal system characteristics specific to each country
- Less pronounced when the following proxies become larger:
 - ▷ *Civil justice* — The world justice project
 - ▷ *Court structure* — The World Bank doing business report
 - ▷ *Rule of law* — The world governance indicators project
 - ▷ *Properties rights* — The Heritage foundation
 - ▷ *Judicial effectiveness* — The Heritage foundation
 - ▷ *Judicial quality* — The World Bank doing business report
 - ▷ *Dispute resolution* — The World Bank doing business report report
 - ▷ *Democracy* — Polity V project (2018)

Result #4 The transaction valuation

Table 6. Top law firms and the pre-money valuation

Dependent variable	<i>Log(Pre-money valuation)</i>			
	(1)	(2)	(3)	(4)
<i>Top 10 law firm</i>	0.581*** (0.045)			
<i>Top 10 buy-side law firm</i>		0.715*** (0.031)		0.621*** (0.028)
<i>Top 10 sell-side law firm</i>			0.507*** (0.036)	0.443*** (0.029)
Constant	2.429*** (0.016)	2.556*** (0.003)	2.476*** (0.011)	2.430*** (0.009)
Observations	74,838	74,838	74,838	74,838
Round FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Deal type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R-squared	0.518	0.511	0.512	0.524

Result #4 Cross-round (Immediate) returns

Table 7. Top law firms and the cross-round returns

- Cumulative returns = $\frac{\text{Pre-money valuation (lead)} - \text{Post-money valuation (current)}}{\text{Post-money valuation (current)}}$
- Round gap = The number of days between the current round to the next round
- Annualized returns = $(1 + \text{Cumulative returns})^{(365/\text{Round gap})} - 1$

Dependent variable	Annualized returns			
	(1)	(2)	(3)	(4)
<i>Top 10 law firm</i>	0.119*** (0.034)			
<i>Top 10 buy-side law firm</i>		0.123*** (0.036)		0.096** (0.038)
<i>Top 10 sell-side law firm</i>			0.147*** (0.038)	0.139*** (0.039)
Constant	0.788*** (0.013)	0.822*** (0.004)	0.782*** (0.013)	0.775*** (0.013)
Observations	34,251	34,251	34,251	34,251
Round FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Deal type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R-squared	0.081	0.090	0.091	0.091

Result #5 Likelihood of survival

Table 8. Top law firms and the likelihood of survival

- Survival*: A dummy variable equal to one if the company either exits through an IPO or a merger and acquisition, or it receives financing in the next round, and zero otherwise

Dependent variable	<i>Survival</i>			
	(1)	(2)	(3)	(4)
Top 10 law firm	0.092*** (0.014)			
Top 10 buy-side law firm		0.071*** (0.018)		0.049*** (0.016)
Top 10 sell-side law firm			0.104*** (0.013)	0.099*** (0.013)
Observations	148,278	148,278	148,278	148,278
Control vars	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Deal Type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R-squared	0.240	0.229	0.233	0.233

Result #6 Likelihood of success

Table 9. Top law firms and the likelihood of success

- *Success*: A dummy variable equal to one if a portfolio company exits through an IPO or a merger and acquisition, and zero otherwise

Dependent variable	<i>Success</i>			
	Full sample		Year ≤ 2015	
	(1)	(2)	(3)	(4)
Top 10 law firm	0.080*** (0.017)	0.056*** (0.013)	0.122*** (0.011)	0.085*** (0.012)
Observations	79,124	67,036	34,536	28,580
Control vars	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Deal Type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R-squared	0.141	0.152	0.083	0.094

Other results

The involvement of top law firms affects the investment strategies of VCs:

- Top law firms' involvement increases time to exit, either IPO or M&A
- Top law firms are associated with a larger number of investors in a given financing round and the likelihood of syndication
- Top law firms are associated with a larger number of financing rounds and the likelihood of staging

Concerns and robustness tests

Sample selection concerns

- Propensity scores matching, using a 1:5 matching ratio with replacement ✓
- Heckman 2-step procedure, 2 approaches:
 - ▶ We follow Krishnan and Masulis (2013) to construct the IV for the first-step regression ✓
 - We examine a prior 3-year rolling window of VC investments for each calendar year
 - We focus on investments that involve the appointment of a top buy-side or sell-side legal advisor but no top 10 general advisor
 - We then identify the top 10 industries for the buy-side and the sell-side based on the number of such occurrences

Concerns and robustness tests

Sample selection concerns

- Heckman 2-step procedure, 2 approaches (cont'):
 - ▷ We employ Huang, Hui and Li (2019)'s circuit judge ideology to construct IVs ✓
 - Judge ideology tends to increase litigation occurrence, raising the need for top law firm expertise
 - *Liberal court* indicator: The probability that a three-judge panel randomly selected from a circuit court has at least two judges appointed by Democratic presidents
 - Only U.S. data is employed
- Control for investor/company characteristics and macro/political factors
 - ▷ Macro factors: *GDP growth, EPU, Democracy, Investment freedom, Market return* ✓
 - ▷ Investor characteristics: *Log(VC Age), VC AUM* ✓
 - ▷ Company characteristics: *Log(Company Age), Industry FEs, Stage FEs* ✓

Concerns and robustness tests

Other concerns

- Reputable VCs tend to attract top law firms vice versa ✓
 - ▷ We follow Nahata (2008) and quantify VC reputation as the cumulative market capitalization of IPOs by the VC
 - ▷ We aggregate the IPO proceeds for each VC from 1990 to a given year and scale the proceeds by the cumulative IPO proceeds of all VCs
- Alternative measurements of top law firms ✓
 - ▷ Top 5, 15, 20pct

Summary of findings

- The involvement of top law firms is associated with
 - ▷ a significantly lower likelihood that VC deals would fail or get canceled (\downarrow 0.9%)
 - ▷ a larger investment (\uparrow 2.4% in acquired ownership)
 - Both impacts are less pronounced in countries with a better legal environment (by various proxies)
 - ▷ a higher immediate return generated from the current financing round to the next (\uparrow 11.9%)
 - ▷ a higher likelihood of surviving (\uparrow 9.2%)
 - ▷ a higher pre-money valuation of portfolio companies ($\uparrow e^{0.581} - 1 = 78.7\%$)
- The company's exit likelihood \uparrow 5.6%, after taking into account company and round characteristics
- The main results survive alternative robustness checks
 - ▷ Sample selection (Heckman 2-step procedure, PSM), omitted variables, measurement sensitivity, VC reputation

Thank You!