10-2022

Are California Venture Capitalists the Best Venture Capitalists?

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Recommended Citation

Hull, & Y. Goldblatt, L. (2022). Are California venture capitalists the best venture capitalists? *Cogent Economics & Finance*, 10(1). https://doi.org/10.1080/23322039.2022.2150132

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Abstract

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Keywords

venture capital, geography, proximity

Disciplines

Business | Finance and Financial Management | Management Sciences and Quantitative Methods

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This article is available from the publisher's website.

Cogent Economics & Finance

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/oaef20

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To cite this article: Tyler Hull & Luna Y. Goldblatt (2022) Are California venture capitalists the best venture capitalists?, Cogent Economics & Finance, 10:1, 2150132, DOI: 10.1080/23322039.2022.2150132

To link to this article: https://doi.org/10.1080/23322039.2022.2150132

Published online: 30 Nov 2022.

Hull & Y. Goldblatt, *Cogent Economics & Finance* (2022), 10: 2150132
https://doi.org/10.1080/23322039.2022.2150132

cogent economics & finance

FINANCIAL ECONOMICS | RESEARCH ARTICLE

Are California venture capitalists the best venture capitalists?

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Received: 29 January 2022
Accepted: 17 November 2022

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Reviewing editor:
David McMillan, University of Stirling, United Kingdom

Additional information is available at the end of the article

Abstract: We test if California VCs significantly outperform VCs from other US states. We additionally test in which instances California VCs outperform the other VC concentrated states of Massachusetts and New York. We find that VCs from California, Massachusetts, and New York have significantly greater probabilities of successfully exiting their investments than VCs from other states. Additionally, we show that California VCs are even more adept than VCs from Massachusetts and New York at 1. Early-stage investments, 2. Helping their entrepreneurial firms receive future rounds of financing, and 3. Helping their backed entrepreneurial firms receive higher IPO valuations and achieve superior post-IPO accounting ratios. Additional results suggest that VCs from California, Massachusetts, and New York are not only adept at selecting firms in which they invest in and continue to invest in, but they also enhance the value of the firms they select by means of monitoring their investments.

Subjects: Social Sciences; Economics, Finance, Business and Industry; Corporate Finance; Business, Management and Accounting; Entrepreneurship and Small Business Management; Entrepreneurial Finance; Geography

Keywords: venture capital; geography; proximity

1. Introduction

Venture capitalists (VCs hereafter) show patterns of high geographical concentration. In 2021, California VC funds raised account for 49% of total funds raised in the United States, followed by New York (21%) and Massachusetts (9%).[1] Despite the general idea suggested by the literature that starting a business in California is the best investment decision, little research has formally

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PUBLIC INTEREST STATEMENT

We test the long-standing notion that venture capitalists (VCs) from California are the best venture capitalists. Our findings suggest that VCs from the states of California, Massachusetts, and New York all equally have significantly higher likelihoods of helping the firms that they invest in have an eventual successful exit. These same VC states also exhibit similar superior post IPO returns. Analyzing deeper, we find that California VCs significantly outperform even the VC specialized states of Massachusetts and New York when 1. Investing in early-stage investments, 2. Helping their backed investments receive future financing rounds, and 3. Helping their backed entrepreneurial firms receive higher IPO valuations and achieve superior post-IPO accounting ratios.

analyzed whether VCs from California are better venture capitalists. H. Chen et al. (2010) explore geographic concentrations of VC firms and find that VC firms in San Francisco, Boston, and New York City have higher success rates than VC firms elsewhere. It is our objective to dig deeper into the topic of geographical concentration and to sort out in which instances California-based VCs outperform VCs from other US states and even outperform VCs from other known VC concentrated states (Massachusetts and New York).[2]

We contribute to the current literature by first confirming that VCs from states with large VC activity (California, Massachusetts, and New York) have greater probabilities of successfully exiting their investments than VCs from other states. Namely, we find that investments from these states are 8.6% more likely to successfully exit their investments (this is a relative increase in exit success of 18.4%). We are the first to document this effect at the VC state level and thus add to the work of H. Chen et al. (2010) which focuses on VC hub effects. We go beyond this finding to show that California VCs are even more adept than VCs from Massachusetts and New York at the following: 1. Investing in early-stage investments, 2. Successfully helping their backed entrepreneurial firms receive future rounds of financing, and 3. Helping their backed entrepreneurial firms receive higher IPO valuations and achieve superior post-IPO accounting ratios. These exploratory contributions highlight the need for additional research on why California VCs add value beyond what can be offered at the VC states of Massachusetts and New York.

2. Literature review

Our paper is related to several strands of the empirical corporate and entrepreneurial finance literature. First, it is related to the literature on the general advantages and disadvantages of industry clustering and its differential effects across states. Second, our paper is related to the literature on the unique conditions that California is endowed with that helps foster the VC industry. Third, our paper is related to the literature on influential factors in the outcomes of VC performance which we use as control variables. Fourth, our paper is related to the literature on the determinants and measurements of post-IPO performance.

There are many documented benefits of industry clustering, increased labor market mobility (Bruce et al., 2006; Freedman, 2008), greater knowledge spillover between firms (Audretsch & Dohse, 2007; Marshall, 1920), network development (Bubna et al., ; Hochberg et al., 2007; Lindsey, 2008), ease of deal procurement (Sørensen, 2007), and lower information asymmetry between those involved in the deal (Kaplan & Schoar, 2005; Sorenson & Stuart, 2001).

However, Griffith et al. (2007) find that only 42% of deals in Silicon Valley have VCs located in the same region. Relatedly, H. Chen et al. (2010) finds that when VC investors and portfolio companies are clustered together, they experience lower marginal investment monitoring costs and lower expected rates of return for investors. Furthermore, Fritsch and Schilder (2008) suggest that regional proximity is unnecessary due to the possibility of syndicating with VCs local to the deal, and Sorenson and Stuart (2001) suggest that clustering may not be attributed to higher ex-ante returns in that region. As it is not clear whether California VCs make superior investments and whether VC clustering is contributing to certain industries, we are motivated to test the performance of VCs from California, and simultaneously we wish to explore whether any California effect is very different from other states with specialized VC industries, such as Massachusetts and New York.

A deeper look into the literature provides some rationale for why VCs from California may have superior performances, such as market concentration (Bengtsson & Ravid, 2009), better access to VC capital (K. Chen et al., 2011; Zhang, 2007), VC specialization (Gompers et al., 2009; Gompers & Lerner, 1998), and lastly that geographic concentration allows for easier deal monitoring (Lerner, 1995). Obrimah (2018) suggests that regional VC market efficiency also facilitates VC investment success.

In addition to California, the states of Massachusetts and New York have developed concentrated VC clusters. As these three states have the most developed venture capital centers within

the United States, we would expect that VCs located in these states would be better able to add value to the firms that they invest in. H. Chen et al. (2010) document this at the city level, but no prior work has attempted this at the state level. Furthermore, no prior work has made it clear if there are instances in which California retains an investing advantage even over these other VC-rich states. It is our goal to fill these gaps in the literature.[3]

3. Data and methodology

3.1. Data

We use a sample of venture capital-backed deals from the database VentureXpert, with a deal initiation date that ranges from 1984 to 2018.[4] We limit the sample to venture capital deals within the United States. The final sample has 111,291 venture capital investment rounds, of which 47% have successful exits and 78% receive a future financing round. A large proportion of these deals have capital infusion from VC state investors, 47%, 19%, and 21% from California, Massachusetts, and New York states, respectively.[5] Our main variable of interest is whether a VC is located in California (*CA VC*) or if a VC is located in California, Massachusetts, or New York (*CA, MA, or NY VC*), at times both of these variables will be used in order to see if the California VC dummy has additional predictive power beyond the *CA, MA, or NY VC* dummy. In some specifications, we also make use of Massachusetts or New York VC dummy(*MA or NY VC*). An additional variable of interest will be a dummy for early-stage investment (*Early stage*).[6]

3.2. Measures of success

Following the literature (Chemmanur et al., 2016; Sørensen, 2007, etc.), we consider a venture capital investment to be successful if the investment leads to an exit via an IPO or a merger or acquisition.[7] A secondary measure of success is whether the investment leads to a successful future round of financing.[8] Exit data is provided by VentureXpert, which we supplement with data from SDC's IPO and M&A databases, ensuring a more comprehensive coverage of investment firm exits.

3.3. Controls

Following the literature, we create and control for the following variables: *Avg. VC experience, Round number, Investor number*, and *Deal value*.[9] We also use dummy variables to control for the initial investment year, the investment home state, investment industry, and investment stage of the entrepreneurial firm.[10] All results are clustered by the aggregate number of transactions that occur within each state.[11]

4. Results

4.1. California VC effect

To evaluate the effect that a California VC or a VC from a VC-specialized state has, we perform logit regressions predicting both exit success and future financing rounds. Columns 1 and 2 assess the California effect, while Columns 3 and 4 assess a Massachusetts or New York state effect. In these four columns, the base sample is all investments that do not involve any of the three main VC states to ensure comparability across these specifications. In Columns 5 and 6 the full sample is used which allows for a more direct comparison of California versus a Massachusetts or New York state effect. These results suggest that VCs from California, Massachusetts, and New York do outperform most other states in terms of helping the firms they back receive future financing and having successful exit outcomes. The variable coefficients in Columns 1 and 3 indicate that California VCs may have a greater impact than VCs from Massachusetts and New York on helping their portfolio companies reach their next round of investment. The variable coefficients in Columns 2 and 4 indicate that California, Massachusetts, and New York VCs all have similar positive impacts on exit success likelihoods. Columns 5 and 6 make use of the full sample and include the *CA, MA, or NY VC* dummy variable. These results indicate that the three VC states are 10% more likely to have next round of financing and 17% more likely to successfully exit their investments.

This is an economically significant increase in the probability of exit success. In Column 5, the positive significant coefficient for the *CA VC* dummy indicates that California VCs are 4.4% more likely to help their entrepreneurial firms reach future rounds of financing over and above the other 2 main VC states, further confirming that California VCs are more adept than VCs from Massachusetts and New York at helping their investments receive future rounds of financing. The insignificant coefficient on the California dummy in Column 6 suggests that California VCs have similar exit rates as VCs from Massachusetts and New York.

In Panel B of Table 1 we enhance the previous analysis by adding an *Early-stage* dummy variable and interacting this variable with the VC state variables. Columns 1 and 2 indicate that California VC is skilled at helping their investments and the early-stage interaction variable indicates that California VCs are relatively more skilled at adding value to early-stage investments. In Columns 3 and 4, VCs from Massachusetts or New York help their investments have future financing rounds and successfully exit, but the early interaction terms indicate that VCs from these states are not particularly adept at helping early-stage firms. Columns 5 and 6 use the full sample and document that the three VC states perform equally well in exiting their investments, but the early interaction terms clearly point out that Californian VCs can more easily add value to early-stage entrepreneurial firms than VCs from Massachusetts and New York in both next round financing and exit success probabilities.[12]

To ensure the robustness of our results, in the online appendix, we add many literature-inspired controls and showcase that our results are robust to the inclusion of these control variables. Specifically, we include non-preferred industry and detailed industry-level experience measures from Hull (2021), a VC reputation measure suggested by Nahata (2008), a VC network centrality measure suggested in Hochberg et al. (2007), dummy variables for "safe" and "innovative" investments as defined in Obrimah (2016) and lastly opportunity set risk and efficiency metrics from Obrimah (2018). The above-mentioned results are shown to be robust to all of these controls individually and jointly as shown in Table IA 2 of the online internet appendix.

4.2. Proxying for VC proximity

The above analyses suggest that there is a relationship between California, Massachusetts, and New York VC investors and the successful exit of their investment companies. However, it is less clear if this increased performance is due to these VC states having a greater ability in selecting deals or in actively adding value to the investments they finance, by means of monitoring.

4.2.1. Geographic proximity

Prior studies such as Hallen et al. (2014) have used geographic proximity as a proxy for VC monitoring ease. In the same spirit, we use Metropolitan Statistical Area (MSA) data to construct distances between VCs and their investments.[13] Building on the findings of Table 1, in Table 2 we include an *Investment distance* variable which is the number of miles (measured in thousands) between the VC and investment firm. Columns 1 and 2 of Table 2 recreate the results of Columns 3 and 4 of Table 1 but with the inclusion of the *Investment distance* variable. These results show that controlling for distance does not significantly impact our results. In Columns 3 and 4, we do the same exercise, but we now include interactions between *Investment distance* and both the *CA VC* and *CA*, MA or *NY VC* dummy variables. From these results, we see a negatively significant coefficient for the interaction of *Investment distance* and *CA*, MA, or *NY VC*, which indicates that the three main VC states' positive effect is less effective the farther away an investment is from their backing VCs.[14]

4.2.2. Exogenous changes in VC proximity

The above results support the idea that VCs monitor their investments and have a greater difficulty doing so the more distant they are from their investments. However, geographic distance is endogenous and as such does not provide evidence of a causal relationship. To find evidence that value-enhancing VC monitoring takes place, we follow the work of Giroud (2013) and

Table 1. Panel logistic regression predicting the effect of VCs being from California and the main VC states, *, **, and * denote statistical significance at the 1 %, 5 %, and 10% levels, respectively**

	(1)	(2)	(3)	(4)	(5)	(6)
	Next round financing	**Exit success**	**Next round financing**	**Exit success**	**Next round financing**	**Exit success**
CA VC	0.140***	0.168***			0.046*	-0.001
MA or NY VC			0.079***	0.155***		
CA, MA or NY VC					0.095***	0.169***
Round number	0.063***	0.031***	0.078***	0.036***	0.078***	0.036***
Deal value	0.177***	0.197***	0.152***	0.199***	0.152***	0.199***
Investor number	0.083***	0.011***	0.137***	0.043***	0.137***	0.043***
Avg. VC experience	0.111***	0.042***	0.108***	0.031***	0.108***	0.031***
Company State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
company stage FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.1400	0.0830	0.1110	0.0822	0.1330	0.0800
Observations	87,709	87,709	58,668	58,668	111,291	111,291
CA VC	0.078***	0.133***			0.012	-0.033
CA VC*Early stage	0.149***	0.091**			0.077**	0.083*
MA or NY VC			0.056*	0.154***		
MA or NY VC*Early stage			0.061	0.003		
CA, MA or NY VC					0.065**	0.165***
CA, MA or NY VC*Early stage					0.074	0.007
Early stage	0.277***	-0.453***	0.142	-0.556***	0.218***	-0.480***
Round number	0.064***	0.032***	0.078***	0.036***	0.065***	0.031***
Deal value	0.176***	0.197***	0.152***	0.199***	0.167***	0.196***
Investor number	0.084***	0.011***	0.137***	0.043***	0.091***	0.017***

(*Continued*)

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Table 1. (*Continued*)

	(1)	(2)	(3)	(4)	(5)	(6)
	Next round financing	**Exit success**	**Next round financing**	**Exit success**	**Next round financing**	**Exit success**
Avg. VC experience	0.111***	0.042***	0.108***	0.031***	0.108***	0.042***
Company State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
company stage FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.1400	0.0831	0.1110	0.0822	0.1330	0.0801
Observations	87,709	87,709	58,668	58,668	111,291	111,291

Bernstein et al. (2016) and use plane flight changes as random changes in VC's involvement in the investment company. If VC monitoring is important and VCs monitor their investment by travelling to the investment company, we predict that VCs will be better able to monitor their investments after a direct flight is created between the VC and the investment company. However, a new direct flight would also likely make it easier to screen for and select better investment firms. As we wish to focus on the question of whether the three main VC states monitor their investments, we limit our sample to only the observations that have VCs from the states of California, Massachusetts, and New York, and that have new direct flights, between their own state and the MSA of the investment company. We also require that the initial investment occurs prior to the new direct flight. The above sample selection does lead to a reduction in the overall sample size, but ultimately allows for a cleaner test where the effect of VC monitoring can be isolated from VC screening.

To achieve a sample where it is possible to observe exogenous variation, the whole sample (111,291 obs.) cannot be used. First, we limit the sample to deals which involve a VC from only one of the three specialized states (57,068 obs.). Second, to witness a change in monitoring and not merely selection, we limit the sample to deals that occur prior to a direct flight induction between the investment company's MSA and the state of the investing VC (2,774 obs.).[15] To better isolate the treatment effect, the sample is then limited to only first round VC investments (900 obs.). After utilizing appropriate controls, the main regression sample has 875 observations. Although 875 is a large reduction from the full sample, this subsample is 97% of the sample that is feasible to use in connection with this source of exogenous variation (900 obs.).

We also assume that monitoring is not a one-time event but something that takes place throughout the life of the investment. As such, we also test whether deals with a new direct flight that occurs right after (i.e., within one or two years of) the VC investment are more successful than when a new direct flight is introduced later. The intuition is that a heightened monitoring ability should have a greater impact the earlier it occurs in the VC investment cycle. This setting allows us to compare investments by the same VC, in the same location, which were chosen using arguably the same investment criteria, with the only meaningful difference being if the deal benefits from an earlier or later heightened ability to monitor the investment by means of easier travel between the VC and the investment company. We create two dummy variables for investments that shortly after the first investment had new direct flights connecting the investment firm's MSA to the state of the investing VC. The first variable is *Direct flight(Year≤1)* which is a dummy which equals 1 if a new relevant direct flight is introduced less than 1 year after the VC's initial investment and the second is a similarly constructed 2-year version of the variable called *Direct flight(Year≤2)*.

We report the logistic estimations in Table 3. Our result in Columns 1 and 3 uses the dependent variable of *Next round financing* and Columns 2 and 4 use the dependent variable of *Exit success*. Columns 1 and 2 use the *Direct flight(Year≤1)* dummy and Columns 3 and 4 use the *Direct flight (Year≤2)* dummy. The columns also include interactions between the MA VC and NY VC dummies and the direct flight dummies, with the base case being CA VC investment.[16]

Table 3 results indicate that VC investments that were soon followed by a new direct flight are more successful investments than when a direct flight is initiated later in the life of the investment. This effect is present for California, Massachusetts, and New York VCs. The *NY VC* dummy terms in Columns 1 and 3 have a negative significant coefficient indicating that for this sample, California and Massachusetts VCs have similar likelihoods of helping their investments receive a future round of financing, which is significantly greater than New York VCs. In Columns 2 and 4, the *Exit Success* regressions, there is no significant difference between the three VC states. All the columns show a positive significant coefficient for the direct flight dummies but not the interaction terms. This suggests that for these three VC states, VCs benefit from a relatively early heightened ability to monitor their investments which comes from the availability of direct flights soon after their initial

Table 2. Logistic regression predicting the VC state effect with the inclusion of a distance measure, *, **, and * denote statistical significance at the 1 %, 5 %, and 10% levels, respectively**

	(1)	(2)	(3)	(4)
	Next round financing	**Exit success**	**Next round financing**	**Exit success**
Investment distance	0.000	−0.008	0.035	0.054*
CA, MA or NY VC * Investment distance			−0.068**	−0.078**
CA VC * Investment distance			0.034	−0.004
CA VC	0.046	−0.006	0.008	0.001
CA, MA or NY VC	0.088**	0.163***	0.150***	0.228***
Round number	0.067***	0.028***	0.067***	0.027***
Deal value	0.184***	0.196***	0.183***	0.195***
Investor number	0.086***	0.016***	0.086***	0.017***
Avg. VC experience	0.102***	0.042***	0.102***	0.042***
Company State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
company stage FE	Yes	Yes	Yes	Yes
Pseudo R-squared	0.1340	0.0779	0.1340	0.0780
Observations	87,147	87,144	87,147	87,144

investment. These results provide further evidence that these VCs aid their investments through monitoring activities and are not merely selecting higher-quality firms.

4.3. Post-IPO performance

To further explore the California VCs effect, in the following section, we analyze whether California VC experiences more favorable IPO premium and post-IPO performance measures. To do this, we must limit the sample to a subset of firms that have a successful IPO exit. We analyze IPO performance measures using Percent Price Premium (*PercPrem*) and 3-year Cumulative Abnormal Return (*CAR)* as defined in Bruton et al. (2010) and Agrawal et al. (1992), respectively. Additionally, we use two accounting-based performance measures as dependent variables: Altman Z-score (*Alt Z*), a measure of the firm's likelihood of bankruptcy (higher levels indicate lower likelihoods of bankruptcy); and the Tobin's Q ratio (*Tobin's Q*), measured as the market value of assets divided by replacement value of assets. Consistent with Krishnan et al. (2011), these two dependent variables are measured at the end of the third year after their IPO. The results of these tests are presented in Table 4.

The results in Column 1 show that having an investor from California, and not Massachusetts or New York, leads to a 0.01% higher percentage price premium, significant at the 1% level.[17] Column 2 shows that in terms of post-IPO 3-year cumulative abnormal returns, California, Massachusetts, and New York VCs are associated with 23.5% higher returns, significant at the 1% level, with no discernable incremental effect for California VCs. However, Columns 3 and 4 show that only California VCs are associated with safer Altman Z-scores and higher levels of Tobin's Q ratio.

5. Discussion

This study is the first to document specific areas of expertise associated with California-based VCs versus other VC concentrated states. The exploratory nature of this study suggests additional research should be done to identify the unique features that allow for this increased ability to add value to entrepreneurial firms. The study documents that this effect exists and that it is separate and distinct from the literature-inspired controls for VC detailed industry-level experience, out-of-industry investment, VC reputation, VC network effects, local VC market efficiency, or a VC's opportunity set.

Overall broad support shows that VCs from California, Massachusetts, and New York are significantly more likely to have the firms that they back experience successful exits and to have significantly higher post-IPO cumulative abnormal returns. These findings extend the work on the importance of the VC's geographical location performed by H. Chen et al. (2010) by documenting an economically significant VC state effect. Our findings are consistent with Obrimah (2018) which suggests the superior efficiency of VC markets in the states of California, Massachusetts, and New York. Another very important contribution is that we isolate instances in which VCs from California, Massachusetts, or New York appear to perform similarly as well as one another, as well as instances where California VCs outperform even these other specialized VC states. Contrary to the popular belief that California VCs are just simply superior all-around investors, we see that California VCs appear to have a well-developed specialty beyond all other states in dealing with and adding value to specifically early-stage firms. While the literature has generally recognized that early-stage firms are riskier investments

Table 3. Logistic regression predicting the VC state effect with the exogenous change in distance, *, **, and * denote statistical significance at the 1 %, 5 %, and 10% levels, respectively**

	(1)	(2)	(3)	(4)
	Next round financing	**Exit success**	**Next round financing**	**Exit success**
Direct flight(Year≤1)	0.735**	0.393*		
Direct flight(Year≤2)			0.575*	0.603**
MA VC * Direct flight (Year≤1)	−0.154	−0.089		
NY VC * Direct flight (Year≤1)	−0.174	−0.194		
MA VC * Direct flight (Year≤2)			−0.925	−0.532
NY VC * Direct flight (Year≤2)			−0.545	−0.026
MA VC	−0.428	−0.357	−0.242	−0.320
NY VC	−0.671**	−0.279	−0.584**	−0.319
Deal value	0.269***	0.219***	0.267***	0.221***
Investor number	0.304***	0.093**	0.303***	0.092**
Avg. VC experience	0.160**	0.054	0.158**	0.055
Company State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
company stage FE	Yes	Yes	Yes	Yes
Pseudo R-squared	0.1630	0.0810	0.1630	0.0830
Observations	860	875	860	875

Table 4. California VC effect on post-IPO performance, *, **, and * denote statistical significance at the 1 %, 5 %, and 10% levels, respectively**

	(1)	(2)	(3)	(4)
	PercPrem	**CAR**	**Alt Z**	**Tobin's Q**
CA VC	0.010***	−0.057	2.157***	0.565**
CA, MA or NY VC	−0.001	0.187**	0.276	−0.267
Round number	−0.000	−0.009	−0.178	−0.067**
Deal value	−0.004***	−0.024*	−0.366***	−0.011
Investor number	0.001**	0.015*	−0.126	−0.015
Avg. VC experience	−0.001*	0.013	0.095	−0.004
Market Cap	0.019***	2.253	1.274**	0.177
Company state FE	Yes	Yes	Yes	Yes
IPOYear FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Company stage FE	Yes	Yes	Yes	Yes
R-squared	0.2990	0.1320	0.1270	0.1690
Observations	5,278	4,405	3,293	3,301

(Chaplinsky & Gupta-Mukherjee, 2016; Nanda & Rhodes-Kropf, 2018), we add to this literature by showing that California VCs have a superior ability to lead these investments to have future round financing and a higher rate of exit success.

The superiority of California, Massachusetts, and New York VCs is further supported by the causal finding that exogenous changes in increased proximity lead to significant increases in exit success likelihoods. This finding contributes to the literature that has attempted to document that VCs add value beyond deal selection (Bernstein et al., 2016), and specifically adds to the literature by documenting the occurrence of monitoring value addition by the three main VC states.

We additionally add to the strand of research that explores the positive effects that VCs have on IPO valuations and post-IPO performance (Krishnan et al., 2011). We document that these three VC states exhibit superior post IPO performance over VCs from other states, and that California VC-backed investments specifically have higher IPO valuations and more favorable post-IPO Altman Z-scores and Tobin's Q ratios.[18]

Lastly, our findings point to many avenues for further exploration: What is it about California VCs that allows them to add value to early-stage firms more readily than others? Can other VC ecosystems create these same necessary conditions? Why is it that California VCs exhibit similar cumulative abnormal returns to VCs from Massachusetts and New York and yet are able to have superior post-IPO accounting measures? Additionally, future research could explore the joint effects of having VCs from multiple states, namely, whether the effects of having different VCs can act as complements or substitutes for one another.

6. Conclusion

This paper was motivated by the question of whether venture capitalists from California are indeed superior at adding value to the entrepreneurial firms that they back. We contribute to the current literature by first confirming that VCs from California, Massachusetts, and New York have greater probabilities of successfully exiting their investments than VCs from other states. We contribute beyond this finding by showing that Californian VCs outperform even VCs from Massachusetts and

New York when investing in early-stage investments, in helping their entrepreneurial firms receive future financing rounds, and, lastly, in achieving higher IPO valuations and superior post-IPO Altman Z-scores and Tobin's Q ratios.

Funding
The authors received no direct funding for this research.

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Disclosure statement
No potential conflict of interest was reported by the author(s).

Citation information
Cite this article as: Are California venture capitalists the best venture capitalists?, Tyler Hull & Luna Y. Goldblatt, *Cogent Economics & Finance* (2022), 10: 2150132.

Notes

1. It is worth mentioning that the next largest fund-raising state is Illinois which raised 3% of total VC funds invested and that the average state besides the three main VC states has raised only 0.4% of the total VC funds raised for 2021. This data comes from the National Venture Capital Association 2021 Yearbook.
2. The working paper, Obrimah (2018), also suggests that the States of California, Massachusetts, and New York are among the most efficient venture capital markets. Obrimah (2018) also suggests that Pennsylvania and Colorado are potentially more efficient VCs, in unreported tests we test if Pennsylvania and Colorado VCs should be counted as VC specialized states but find no support that these VCs exhibit exit success results beyond the average non-specialized VC state.
3. It is not our objective to explore VC and firm co-location, as this has been previously been explored (H. Chen et al., 2010; Griffith et al., 2007).
4. As exit outcomes are a key outcome variable in our study, we require that firms have at least 3 years to exit their investments, thus deals that are commenced after 2018 are excluded from our sample.
5. Additional summary statistics are contained in the online internet appendix in Table IA 1.
6. According to Hazarika et al. (2014), early stage investments are likely to be riskier, we use this variable to see if California VCs specialize in investing in a particular type of firm.
7. Results are similar when IPOs and mergers and acquisitions are considered as separate and distinct exit types and are tested separately.
8. This variable is called *Next round financing* and is equal to one if the firm has a future financing round or the firm has a successful exit, as a successful exit is also a round of financing. Thus, in many ways this will be a weaker or lower definition of exit success. Additional unreported results also exclude last round investments of successful exit investments and the results are similar.
9. Each of these variables are specific to the current investment round, exact definitions for these measures can be found in the online internet appendix.
10. As an additional robustness check we consider regression specifications which exclude the fixed effects for the initial investment year and/or the investment's home state, these tests provide the same supportive results. The chosen fixed effect model also has the lowest Bayesian Information Criterion (BIC) values and the best McFadden Adjusted R-squared values. The authors wish to thank an anonymous referee for recommending testing BIC values.
11. As an additional robustness check, we explore the sensitivity of our results to various types of clustering (no clustering, industry clustering, VC investment stage clustering) and we find that our results are not sensitive to the type of clustering used.
12. As a robustness check a dummy for if the VC and entrepreneurial firm are co-located (reside in the same state) is added to all of the tests of Table 1 and does not affect the documented results, these results are available upon request.
13. This test was suggested by anonymous referees, we are grateful for the suggestion.
14. In unreported results, the main control variables from Nahata (2008), Hull (2021), Obrimah (2018), and Hochberg et al. (2007) were also added to these same specifications and have qualitatively similar results. These results are available upon request.
15. Flight data was downloaded from the TSA website and is said to contain the population of all flight data for the United States. To document a new direct flight, we find the first instance that the investment firm's MSA has had a non-stop direct flight with the state of the investing VC. To ensure that we are focusing on direct flights that are not one-off flights, we require that the new flight must be offered monthly for the next year after the flight introduction.
16. It is worth noting that in these regressions the MA VC and NY VC dummies and their interactions with the direct flight dummies should indicate if the states of Massachusetts or New York have significantly different effects than the base case which is the California effect. This entails that an insignificant coefficient indicates that the effect is not significantly different than the California effect or the California direct flight effect.
17. Though seemingly marginal, this translates into $0.5 million in price premium for an average IPO size of $454 million in our sample.
18. These post IPO performance tests are also an important robustness check that these positive VC effects persist even after the IPO and indicate that these results are not due to grandstanding as documented by Gompers (1996).

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***Cogent Economics & Finance* (ISSN: 2332-2039) is published by Cogent OA, part of Taylor & Francis Group.**