Geography and Financial Contracts

by

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Abstract
This paper shows that geographical and regional elements can form an essential component of contract design in addition to more "traditional" ingredients including information and agency problems, as well as legal and other formal institutions. Contracts between U.S. venture capitalists (VCs) and entrepreneurial companies include significantly fewer investor-friendly cash flow contingencies if the company is located in California and in particular in Silicon Valley. Contract solutions also carry over between markets. Contracts tend to be less investor-friendly if a VC is located in California or if a non-California VC has had large exposure to investments in California. In further tests, we control for previously discussed agency and contract theory variables, and also find that a larger concentration of VCs and venture-backed companies in a region is associated with more entrepreneur-friendly contracts. We also find that contracts include fewer cash flow contingencies when the geographical distance between the VC and the company is shorter. This latter finding supports the view that parties that are geographically close, can contract more efficiently, as monitoring can be performed better, and soft information can be acted upon. However, the "California effect" persists even after we control for these important factors. Finally, we show that control rights are not substitutes for lower cash flow rights. In fact, California contracts are more entrepreneur friendly on both counts.

1. Introduction and Literature Review

A large literature on financial contracts and security design examines how the allocation of cash flows and control rights is related to the characteristics of the contracting parties and to the institutional environment and the legal system[1] This paper suggests that contract design in the venture capital (VC) industry may not only depend on "traditional" ingredients, but may also be a function of the geographical distance between the investor and the borrower and, importantly, their actual locations. The distance result can be motivated by lower monitoring costs and the presence of soft information. However, our finding that contracts depend on geographical location is hard to reconcile with most existing theoretical models on contract design. This outcome is very closely related to the literature on clustering of VCs[2], but we are able to show that even if we control for clustering, regional customs may matter. Our sample includes only VC contracts from U.S. venture-backed companies. Therefore, the regional differences we document cannot be an attributed to variations in tax rates or bankruptcy codes or differences in the legal systems.

We study 1,800 VC contracts drawn between entrepreneurial firms and their lead investors. The structure of these contracts is important because it determines the incentives given to entrepreneurs and VCs. The VC industry is interesting to study in its own right due to its overall importance to the U.S. economy, but it also represents a good empirical testing ground for contract theories (Hart, 2001).[3] VCs are sophisticated investors, well versed in incentive contracts, who provide financing to young, high growth companies for which agency and information problems are severe. The contracts that VCs receive in exchange for their investments are complex and non-standardized, and have been shown to share many of the features predicted by contract theory (Sahlman, 1990; Gompers, 1988; Kaplan & Stromberg 2003, 2004; Bengtsson & Sensoy, 2008; Cumming, 2008).

The VC industry is also a good testing ground for our purposes because it is probably the largest and most developed capital market where geographical and cultural factors can play an essential role. Unlike public debt and equity markets, the U.S. VC market is not nationally integrated but exhibits a large degree of fragmentation. VCs often invest locally (Chen et al, (2009), Gupta & Sapienza, 1992; Norton & Tenenbaum, 1993; Stuart & Sorensen, 2001; Bengtsson, 2008) and also form strong syndication networks with other local VCs (Hochberg, Ljungqvist and Lu, 2007). Geographical and cultural factors may arise from the presence of formal and informal networks between venture-backed companies. Gompers, Lerner & Scharfstein (2005), show that many new venture-backed companies are spawned from local public companies that were once

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[1] There are too many papers to be listed here, however, in the specific context of finance security design papers can include Townsend (1979) Allen and Gale (1988), Harris and Raviv (1989, 1995), Madan and Soubra (1991), Boot and Thakor (1993), Fluck(1998), Zender (1991) and in the specific context of venture capital or start up firms also Admati and Pfleiderer (1994) and Ravid and Spiegel (1997).

[2] For the most recent and most comprehensive work in this direction see Chen et al. (2009).

[3] Some basic statistics illustrates the importance of VC: annual VC investments in 2007 reached $30.7 billion, 344 venture-backed companies went public in the period 2002-2007, and venture-backed companies provided 10.4 million jobs and $2.3 in revenues in 2006. Many of today's high profile companies received VC financing, including Microsoft, Amgen, Google, Facebook, and FedEx.

venture-backed. Tian (2009) shows that shorter distances between the VCs and the funded firms can lead to better outcomes, supporting the monitoring hypothesis. Lindsey (2008) presents evidence that strategic alliances between venture-backed companies are commonplace, especially for companies that share a VC investor. The fact that many venture investors were themselves previously active as entrepreneurs (Zarutskie, 2008) may be another channel through which cultural and geographical as well as other informal factors can affect the VC industry.

The most pronounced geographical segmentation of the U.S. VC market is the difference between the "East Coast" and the "West Coast". Saxenian (1996) suggests that differences in corporate and investor culture drive the vastly different fortunes of Silicon Valley and Route 128 in Massachusetts. Both regions were home to major high-tech companies at the start of the recent computer age. In fact, the high technology employment in the two regions was roughly similar in the mid 70's. Yet, in the 1990s and beyond Silicon Valley has become vastly more successful (figure 1, p. 3 ibid). This is attributed to less strict firm boundaries, informal networks (T-shirts) in Silicon Valley, vs. a more formal culture which is less conducive to changes and progress (dress shirts) in Route 128.[4]

Our work shows that the less formal culture in California in general and in Silicon Valley in particular is associated with a more entrepreneur-friendly allocation of cash flow rights in VC contracts. An analysis of control rights provides further evidence that location matters in contract design. Contracts used by Silicon Valley VCs are more entrepreneur-friendly since they allocate fewer board seats and protective covenants to investors. In interviews with executives at VC firms as well as lawyers representing VC firms, we have been repeatedly told that contracts on the West Coast are less harsh towards entrepreneurs because VCs there take a more partner-like approach to investing vs. a banker-like approach which is common on the East Coast.

We also show that contract solutions carry over between regional markets, with contracts having fewer investor-friendly cash flow rights if a VC is located in California or if a non-California VC has had large exposure to investments in California. This finding is consistent with VC investors acquiring knowledge about contract design when they invest in one market, and then applying this knowledge to other markets.

The results on location hold after we account for all observable differences with regards to round, company, VC and founder characteristics and even variables that capture the concentration of the regional VC market, similar to Chen et al. (2009). We use different proxies for the concentration of VCs and venture-backed companies and show that more concentrated markets have contracts that include fewer investor-friendly cash flow rights. This result is similar to the finding of Degryse and Ongena (2005) that bank interest rates are lower when a borrowing firm has access to more competing lenders that are located nearby.

Finally, we show that also distance between the VC and the funded company matters for contract design, as predicted by several theories on soft information and monitoring costs and as documented for

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[4] An economic explanation to regional differences in culture is provided by Landier (2006). His model demonstrates how differences in investors' evaluation of failed entrepreneurs could arise as multiple equilibria in a fully rational setting.

example, by Tian (2009). The contract has a more entrepreneur-friendly allocation of cash flow rights when the distance to the lead VC investor is shorter and when the entrepreneurial firm is located in a geographical area where more VC activity is clustered. However, the California and Silicon Valley effects remain even after we account for the distance and concentration effects.

Our findings also have important implications for the empirical testing of models of VC contract design, which explain why different types of convertible securities are used in VC investments (See Berglof, 1994; Hellman; 1998, 2006; Cornelli & Yosha, 2002; Casamatta, 2003; Schmidt, 2003; Repullo & Suarez, 2004). We suggest that cultural and geographical factors should be included as controls in any analysis of VC cash flow and control rights, and when distance is studied it is important to separate Silicon Valley and California from other locations

We also contribute to the growing literature on geography and home bias, which in recent years has received increasing attention. Grinblatt and Keloharju (2001) find that portfolios of retail investors are biased towards local companies. Huberman (2001) finds that this higher fraction of local stocks in investor portfolios is primarily due to familiarity with these stocks. In contrast, Ivkovich and Weisbennar (2005) show that retail investors are better informed about local investments and these local investments are associated with higher returns. Coval and Moskowitz (2001) document a similar local bias in the portfolios of mutual fund investors and also show that geographically proximate institutions have information advantages. If both retail and institutional investors bias their portfolios towards local stocks, then a large fraction of the trading volume is likely to originate locally. Kedia and Zhou (2007) show that a large presence of local market makers significantly reduces both quoted as well as effective spreads. Similarly, Malloy (2005) documents how geographically proximate analysts have lower forecast errors and Uysal, Kedia, and Panchapagesan (2008) show that local acquirers have higher returns in mergers and acquisitions. Schultz (2003) shows that geography provides an information advantage in the context of an IPO syndicate.

The idea behind all these papers is that business and social interactions between executives (golf games, Rotary club etc.) may provide each side with better information and a more favorable view of each other. Local media are also more likely to pay attention to local companies and thus make information easily available to local market actors. For active investors such as VCs, home bias is particularly pronounced because geographical proximity could lower pre-investment screening costs as well as post-investment monitoring costs. All venture-backed companies have VCs represented on the Board of Directors and VCs frequently visit their portfolio companies to interact with the founders and the management (Gorman & Sahlman, 1989).

These observations have led to a small developing literature which explores the geographical impact on VC contracts and which is the closest to our work. Lerner (1995) finds evidence consistent with the notion that VC oversight of private firms is related to geographical distance—VCs that are headquartered close to a portfolio company are significantly more likely to take a seat on the board of directors. Two recent papers

mentioned earlier, consider these issues from different angles. Chen et al. (2009) show that VCs tend to concentrate in specific cities, and furthermore, open satellite offices in the same areas as well. VC investors in these focus areas are also more successful, but their success may be driven by non-local investments. Tian (2009) shows that geographical proximity between VCs and companies they fund leads to better outcomes. We add to this literature by looking in depth into a larger sample of contracts, and by investigating the distance, concentration and cultural components of the contract. Unlike studies of international differences in VC contracts (Lerner & Schoar, 2005; Kaplan, Martel & Stromberg, 2007; Bottazi, DaRin, & Hellmann, 2008) and VC investment decisions (Cumming et al, 2008), our paper is the first to study differences within the U.S. As noted, this means that our results cannot be explained by differences in the legal system, rule-of-law, accounting transparency, bankruptcy procedures, taxation, etc.[7] Interviews with lawyers and legal scholars have confirmed that there are no institutional reasons for why U.S. VC contract should vary with company or VC location.[8]

Our paper also contributes to the small literature that attempts to empirically test the validity of different contract design theories. In addition to VC studies, contract design theory has been tested in two other broad areas, namely, bio-technology and movie studies. Bio-technology papers focus on the distribution of various rights between the contracting firms (see for example, Lerner and Merges, 1998). The film industry is characterized by interesting and complex contracting. There is generally less data available on contract design than for VC or bio-technology contracts, however, outcomes are much more well-known. Chisholm (1997) analyzes several dozen actor contracts and shows that more experienced actors are more likely to receive a share contract, supporting some life cycle compensation theories. Palia et al. (2008) focus on co-financing agreements and test theories of the boundaries of the firm, whereas Goetzmann et al. (2008) discuss screenplay sales contracts, focusing on soft information. In other industries there is sparse empirical work on contract design due to data limitations. Banerjee and Duflo (2000), for example, show that better reputation (in Indian software companies) leads to a lower prevalence of fixed payment contracts, which provides more incentives to firms than "contingent" contracts. They discuss software projects, and the "contingent" contract is essentially a time and materials contract, that is, a contract with no specific price estimate. While each industry is characterized by different institutions, most studies find support for some of the major features predicted by the theory. In addition to our distance and location variables, we include in our tests all contractual variables previously studied for VC contracts, which are closes to us in terms of methodology, in particular, Kaplan and Stromberg (2003).

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[7] Gilson and Schizer (2002) discuss how the prevalent use of convertible preferred equity in VC investments could to some degree be motivated by the U.S. tax code.

[8] The only potentially relevant between-state institutional difference is the enforcement of non-compete employment agreements. As discussed in Section 3, this difference cannot explain our results why contracts are different in California and Silicon Valley.

The rest of the paper is organized as follows—the next section describes our data and the coding of VC contract terms. The third and fourth sections test contract design in the presence of geographical and cultural elements and the last section contains discussion and conclusions.

2. The Data
Sample

We study a sample of contracts between U.S. early-stage private companies and their VC investors. An overview of the sample is presented in table 1. The contract data is collected and coded with the help of *VCExperts*, and covers 1,800 investment rounds in almost 1,500 unique companies (this type of classification of VC contracts is common in the literature, see for example Kaplan et al. 2007). Our sample is about 10 times as large as the sample used by Kaplan and Stromberg (2003, 2004) or Cumming (2008), but similar in size (and different in composition) to Chen et al. (2009) and Tian (2009). Our deals are recent, with 83% of investment rounds being closed in 2006 and 2007. The majority of companies are from high-technology or life science industries.

We use zip-code data to measure the exact location of VC and company in our sample. The data exhibits, as expected, a strong "California" element—California houses about 35% of the sample companies and 35% of the VCs that were lead investors in the round. In California, the Silicon Valley is the largest single cluster with about 13% of companies and 25% of VCs, many of them well known, including New Enterprise Associates, Sequoia Capital, U.S. Venture Partners and Kleiner, Perkins, Caufield & Byers all headquartered along Sand Hill Road. The second largest cluster is Massachusetts with 16% of all companies and 19% of all VCs, many of whom are located along Route 128. Other large VC markets are Texas (Austin) and North Carolina (Raleigh, Durham, Chapel-Hill triangle). Consistent with earlier studies (Gupta & Sapienza, 1992; Norton & Tenenbaum, 1993; Stuart & Sorensen, 2001; Bengtsson, 2008, Tian ,2009), we find that VCs prefer to invest in companies that are located close to their headquarters. One in five companies is located no more than 10 miles from their lead VC and 42% of companies are located no more than 50 miles apart.[10]

We match each contract with an investment round in *VentureEconomics* and obtain variables that measure company and lead VC characteristics. We also hand-collect data on the characteristics of the founding team. For about half of our sample, we obtain data from *VCExperts* and *VentureEconomics* on the pre-money valuation of the company. The average sample company raised $11 million dollars at a pre-money valuation was $48 million. For a subset of our sample we also have data on the contractual allocation of board seats and protective covenants which give VCs the veto rights over important business decisions. We use these data in the analysis later.

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[10] A rule-of-thumb in VC investing is the "20 minute rule", according to which a VC should be no further away than a 20 minute drive from a portfolio company. Our data shows that this rule is generally obeyed, but also frequently violated.

Contract Terms and Contract Harshness

Each of the 1,800 unique contracts is coded along six important contractual dimensions, namely, cumulative dividends, liquidation preference, participation, anti-dilution rights, redemption, and pay-to-play. The six contract terms jointly define the cash flow rights that are attached to the preferred stock that VCs receive in exchange for their investment. In other words, the contract terms determine the additional cash flow rights provided to the holder of one share of preferred stock. As shown by Kaplan and Stromberg (2003) most terms that are included in VC contracts are favorable to the VC and especially favorable if company performance is bad.[11]

Although VC contracts include also other contractual rights, the six cash flow rights we study are among the most important for determining the payoff distribution between preferred and common shareholders. Also, unlike some contractual rights which are included in all contracts, the rights we study have considerable cross-sectional variation. Our interviews with VCs and lawyers who specialize on VC contracts lend support to the view that these cash flow rights are important and often subject to negotiation. Indeed, a number of notable law firms (e.g. Fenwick and West and Wilson Sonsini) in their quarterly summaries of VC contract terms list summary statistics on precisely the terms we study.

The exact meaning and economic importance of each cash flow term is described below. Table 2A provides an overview of the contract terms and reports their frequency in our sample. We code each contract term as 0 or 1 based on how favorable it is to the VC, where a value of 1 means that the contract is "harshest" for the existing owners of the company, or alternatively more favorable for the VC who invests in a round. While the six contract terms we study are functionally similar, they could be included or excluded in the contract independently of each other. We aggregate the six binary variables to an index labeled Aggregate Contract Harshness (ACH). ACH could take the values 0-6 where 0 is a contract that includes a minimum of investor-friendly cash flow rights and 6 is a contract that includes all possible investor-friendly cash flow rights. As reported in table 1, the average value of ACH is 2.59 and the median is 3. Since we are interested in the joint contractual allocation of cash flow rights, our primary variable of study is ACH. We also study each cash flow right in separate empirical tests.

Detailed Description of Cash Flow Rights in VC Contracts

Cumulative Dividends

When the cumulative dividends provision is in force, the VC receives dividends every year until the company is sold or liquidated. Cumulative dividends accumulate and are not paid out in cash to the VC until the company has a liquidation event.[12] The dividends are expressed in percentage terms and are typically

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[11] The exception is pay-to-play which when included does not favor the VC. We code pay-to-play inversely.

[12] A liquidation event could be a merger, acquisition, bankruptcy or other dissolution of the company. Almost all VC contracts include "auto-conversion rights" which if the company goes public forces an automatic conversion of the VC's preferred stock to common stock (thus annulling all special contract terms).

compounding, which means that investors also earn dividend on accumulated unpaid dividends. Cumulative dividends are senior to common stock, and the seniority to other classes of preferred stock is specified in the contract. To illustrate how cumulative dividends work, consider the following example: suppose that the VC invests $2 million and receives 8% in compounding cumulative dividends. If the company is sold after 5 years for $10 million, then the VC receives $(1.08^5 - 1) \times \$2$ million = $0.94 million in dividends.

As shown in Table 2, 66% of all contracts include no cumulative dividends (harshness=0). When cumulative dividends are included (harshness=1), the most common dividend rate is 8%. Our statistics are similar to those found in the Kaplan and Stromberg (2003) sample, where 44% of all financing rounds have cumulative dividends and the median dividend rate is the same as in our paper, 8%.

Liquidation Preference

Liquidation preference is the multiple of the investment amount a VC receives when the company has a liquidation event. Liquidation preference is senior to common stock, and the seniority to other classes of preferred stock is specified in the contract. Thus, for an investment of $2 million, a liquidation preference of 2X means that the VC gets $2 \times \$2$ million = $4 million in liquidation preference. Unlike cumulative dividends, the amount that the VC receives in liquidation preference does not increase over the time.

The majority of all contracts, 93%, have a 1X liquidation preference (harshness=0) and only 7% have above 1X. The liquidation preference is not reported by Kaplan and Stromberg (2003).

Participation

Almost all VC investors receive convertible preferred stock. If the preferred stock is not participating, the VC effectively holds a convertible and has the option, at the time of the liquidation event, of receiving either the liquidation preference or converting the preferred stock to common stock. The fraction of common stock that the VC receives is determined by dividing the VC's investment amount by the post-money valuation of the round.

To illustrate how (non-participating) convertible preferred stock works, suppose the VC invests $2 million at $4 million post-money valuation with a 1X liquidation preference. When the company is sold, the VC can either claim $2 million in liquidation preference or 50% (2/4) of the common stock. The VC would choose to convert if and only if the proceeds from the company are above $4 million. If the preferred stock is participating, the VC does not have to choose between the liquidation preference and between converting the preferred stock to common stock but instead receives both. Building on the example, participating preferred stock would give the VC both $2 million and 50% of the common equity. If the company is sold for $3 million then the VC receives $2 million in liquidation preference and $0.5million in common stock (50% of the remaining $1 million).

Participation can either be unconditional, as described above, or conditional on the amount of VC cash flows. If the participating preferred stock is "capped" the VC always gets the common stock but receives the liquidation preference only if the VC's cash flows are below a specified multiple or return hurdle, calculated with the VC's investment as base. To illustrate the effects of capped participation, suppose that the participation is capped at a 3X gross investment multiple. If the company is sold for $4 million the VC would receive with participation $3 million. Because the gross multiple is 1.5 (3/2) the VC also gets the liquidation preference. However if the company is sold for $18 million the VC would receive with participation $2 million in liquidation preference and $8 million in common stock (50% of $16 million), i.e. a total of $10 million. Because this would correspond to a gross return of 5X (10/2), which is above the specified 3X, the VC does not receive the liquidation preference. The total cash flows to the VC are instead $9 million (50% of $18 million).

In our sample, 32% of contracts have (non-participating) convertible preferred stock (harshness=0) and 68% have either capped or uncapped participating preferred stock (harshness=1). Participation is less common in the Kaplan and Stromberg sample with 39% of all contracts having capped or uncapped participating preferred stock.

Anti-Dilution

If anti-dilution is included in the contract, the VC is issued more preferred stock if and only if the share price of a follow-up financing round is below the share price that the VC paid in the earlier financing round. Hence, anti-dilution only comes into effect when the company raises a follow-up round at a lower valuation. Anti-dilution comes in two forms, weighted average and full ratchet. Compared with weighted average anti-dilution, full ratchet is more generous to the VC by issuing more preferred stock, especially if the new financing round is small relative to the previous round.

Anti-dilution seems to be almost a boiler-plate provision in VC contracts with only 2% of all contracts having no anti-dilution (harshness=0). Weighted average is most common and found in 89% of all contracts (harshness=0), while only 9% of contracts have full ratchet anti-dilution (harshness=1). The Kaplan and Stromberg sample has a somewhat wider distribution of anti-dilution with 5% of contracts having no anti-dilution, 73% weighted average and 21% full ratchet.

Redemption

Redemption gives the VC the right to sell back his preferred stock to the company after a specified number of years. The redemption follows a specified schedule where for example 1/3 of the stock is sold 5 years after the investment, 1/3 after 6 years and the remaining 1/3 after 7 years. In practice, the redemption option is only exercised by the VC if the company is not close to a liquidation event. In this situation the company is unlikely to repay the VC the investment amount so redemption effectively forces the company into bankruptcy.

Redemption is not included in 42% of the sample contracts (harshness=0) and included in 58% (harshness=1). Redemption is more common in the Kaplan and Stromberg sample and found for 79% of the contracts that they study.

Pay-To-Play

The final contract term that we code is pay-to-play, which unlike the other terms is not favorable to the VC. When pay-to-play is included in the contract, a VC that chooses to not invest in follow-up financing rounds of the company is forced to give up some or all of the control and cash flow rights that are attached to the preferred stock. Thus, pay-to-play only matters when the VC does not invest in a follow-up round.

Pay-to-play is not included in 68% of the sample contracts. Because the VC benefits from not including pay-to-play in the contract, these contracts are coded as most "harsh" (harshness=1). Pay-to-play either involves the VC losing some contractual rights, typically anti-dilution, or all contractual rights forcing her to convert to common stock. Pay-to-play is not reported by Kaplan and Stromberg (2003).

Control Rights

Although the focus of our study is on cash flow rights, we also have data on control rights for a fraction of the 1,800 contracts in our sample. These control rights are board seats, which give the VCs residual decision rights, and covenants, which similar to debt contracts give VCs the right to veto specific decisions. Because the power associated with control rights is more complex than the payoff implications from cash flow rights, we limit our attention on first round contracts only.[13] The legal documents which are the basis for our study outline do not always list the allocation of board seats. For 285 contracts we have data on how many board seats were given to VCs (preferred shareholders) and 141 have complete board data, which allows us to identify cases for which the VCs held a majority of the board seats. Similarly, the allocation of covenants is mentioned for 334 contracts.

3. Contract Terms and Location

We now proceed to an analysis of geography and contract terms. We first study the relationship between contracts and geographical location and then proceed to include distance and concentration.

Aggregate Contract Harshness

Table 3A panel A provides the first data classification which suggests a strong geography component. In panel A we present univariate comparisons showing that both VC and company location matters for contract design. VCs in California tend to offer much better terms, and companies based in California also tend to

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[13] In a follow-up VC contracts, the allocation of decision rights depend on how many board seats and covenants are given to VCs investing in the current round *and* to those investing in earlier rounds.

receive better terms. The effects are even stronger if either the VC or the company are located in Silicon Valley. Kaplan and Stromberg (2003) also find that a California location of the VC affects contract terms. In their case, California contracts use less explicit performance benchmarks and also have lower claims for the VC and less redemption rights, consistent with our findings.

The geographical impact on contract design is economically large—a contract between a company and VC that are both located in the Silicon Valley is about one ACH unit more entrepreneur-friendly than a contract between a company and VC that are both located outside the Silicon Valley. This regional difference in contract design is notably larger than the differences based on a sort on proxies for agency and information problems (which conceptually should matter for contract design). As shown in Table 3A panel C, a contract offered to a company that has a serial successful founder, secured a high round amount, and is financed by an experienced lead VC has only 0.7 unit of ACH less than a company that has no serial successful founder, secured a low round amount, and is financed by an inexperienced lead VC.

Table 4 is a first multivariate exploration of the harshness of contract design and it focuses on the "California effect". We run an ordered logit regression with ACH as the dependent variable and include all commonly used contract-theoretical variables as well as variables relating to the location of the company and the VC. The analysis confirms the results of the univariate comparison with a strong California effect on contract design. This effect seems to be largely a Silicon Valley effect—in other words, among California companies, Silicon Valley location provides an extra boost to the leniency of the contract. As shown in regression model 8, contracts become more investor-friendly as the VC is located further away from the Silicon Valley. Several contract theoretical variables are also significant, with results similar to other studies. Contracts are harsher for older companies (Kaplan & Stromberg, 2003), for greater round amounts and for more experienced VCs (Bengtsson & Sensoy, 2008).

While the California effect is also noted in Kaplan and Stromberg (2003) we try to further explore the question of whether it is based upon corporate culture or whether it has to do with legal or institutional factors. In order to do that, we consider the previous experience of the VC. For VCs headquartered outside California, we code two new explanatory variables. The first variable is the VC's California investment experience, which measures how many times the VC has previously invested in companies located in California. The second variable is the VC's California syndication experience, which measures how many times the VC has previously invested in a round that was syndicated with a VC headquartered in California. We find that any California connection significantly improves contract terms for the entrepreneur. This is perhaps the most convincing piece of evidence which favors the explanation of a different "contracting style" in California as described by Kaplan and Stromberg (2003, p.299).

Conversations with VCs and attorneys specializing on VC contracts trying to gauge the source of the "California effect" seem to point to a geographical dispersion of opinions which is not tied to specific legal or tax provisions. Quotes from two reputable VC attorneys illustrate the industry perception that there are

important regional differences in contract design. Eduardo C. LeFevre (of Foley & Lardner LLP) says: "There is also a growing awareness of the differences between "East Coast" and "West Coast" financings, primarily with respect to regional differences in valuation, liquidation preference, and number of later stage financings". Alan Bickerstaff (of Andrews Kurth LLP) adds: "The terms of VC financings are fairly customary, with nuances unique to each deal and geographic region. For example, East Coast VCs tend to require founders personally to make certain representations and warranties whereas this practice is virtually nonexistent in West Coast deals."[14] In fact, a VC attorney told us that when the National Venture Capital Association tried to come up with a common template for VC contract provisions, "Western" VCs thought that what "Eastern" VCs were proposing was way too harsh. This also agrees with the thrust of Saxenian (1996) argument.

Before we proceed with the analysis, it is important to emphasize again, that because all companies and lead VCs that we study are located in the U.S., our results cannot be explained by differences in tax code, bankruptcy procedures, legal infrastructure and enforcement of financial contracts.[15] Interviews with legal scholars and practicing VC lawyers confirm the view that there is no institutional factor which suggests the design of VC contracts should vary between US states. To the best of our knowledge, the only potentially relevant institutional difference between U.S. states is the ability to enforce non-compete clauses in employment contracts. Such contracts are notably more difficult to enforce in California courts. This difference is, however, very unlikely to explain our results since we observe important differences in contract design between Silicon Valley and other locations in California, for which state laws are identical. Also, between-state differences in the enforcement of non-competes cannot explain why after controlling for company location, we observe a differences based on VC location and VC exposure to the California market.

Separate Cash Flow Rights

The final step of the analysis of location affects on the allocation of cash flow rights is a study of each contract term separately. Table 3B panel A reports the results for comparisons based on company and VC location. The analysis shows that individual contract terms are overall more entrepreneur-friendly in Silicon Valley. The notable exception is pay-to-play which is more common if the VC or company is located in Silicon Valley (pay-to-play is not VC favorable and coded as 1 if it is not present). Thus, while the average Silicon Valley contract includes fewer investor-friendly cash flow contingencies, the lower likelihood of a pay-to-play provision implies that such contingencies are not void if VCs choose not to invest in a follow-up financing round. The most pronounced difference between terms of Silicon Valley contracts and other contracts is in the prevalence of cumulative dividends and redemption rights. The VC attorney David K. Levine (of Snell &

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[14] "Analyzing VC Deal Terms. Leading Lawyers on Structuring Term Sheets, Developing Negotiation Strategies, and Assessing Risks" (Aspatore Books, 2008), p.90 and p.101.

[15] In untabulated regressions we have also controlled for the state in which the company is legally incorporated (which is most commonly Delaware, followed by California). As expected, we find that all reported results hold and that the estimated coefficients on incorporation state dummies are not significant.

Wilmer LLP) confirms this specific finding: "[i]t may be a bit more common for VCs based on the East Coast to require dividends that accrue (or cumulate) but such cumulative dividends provisions are quite rare in West Coast based deals."[16]

Table 5A adds probit regressions where each separate contract term in turn is the dependent variable. In addition to "VC in Silicon Valley" and "Company in Silicon Valley", our independent variables include the full set of contract-theoretical control variables. Interestingly, as shown in regression models 7-11, Silicon Valley is relatively similar to other geographical areas when we compare other important deal dimensions such as round amount, number of VCs in the round and valuation. This suggests again a difference in culture and style rather than in tangible legal premises. We find, however, that companies headquartered in Silicon Valley tend to give VCs a larger ownership stake in a round, which is suggestive evidence that investors at least to some degree compensate for the use of contracts with less investor-friendly cash flow rights by demanding higher ownership stakes.

Control Rights

As noted, for a subset of our sample we also have data on the contractual allocation of board seats and protective covenants which give VCs the veto rights over important business decisions[18]. Table 5B presents regressions identical to the specifications in table 5A but with different measures of number of control rights as dependent variables. The analysis demonstrates that VCs headquartered in Silicon Valley receive fewer board seats (model 1) and are thereby less likely to have a board majority (model 3). VCs headquartered in Silicon Valley furthermore use contracts with fewer covenants (model 4) such as the right to block the company from making changes to its business model (model 7), take on new debt (model 8), incur capital expenditure (model 9), enter into a joint venture or strategic alliance (model 10) or initiate a recapitalization or reorganization (model 11).[19] These results on control rights are important because they demonstrate that VCs headquartered in Silicon Valley do not agree to fewer investor-friendly cash flow rights in order to compensate for more investor-friendly control rights. This is further evidence that contract design reflects regional differences in style and culture, with Silicon Valley investors using contracts that are less harsh towards entrepreneurs.

Cash Flow Rights and VC Market Concentration

Our results thus far have demonstrated a significant cultural effect in VC contracts. However, it may be that California effect can be attributed either to the concentration of VCs in California or to shorter distances

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[16] Ibid p.129.

[18] The importance of board provisions for firm control has been discussed extensively. See for example, Bebchuk et al. (2002) or Chhaochharia and Grinstein (2009).

[19] The total number of covenants used as dependent variable in model 4 includes a total of 18 protective provisions. Debt and CapEx covenants typically specify a dollar amount over which the covenant is binding.

between VCs and companies in the state. Both of these issues have been explored in earlier work. We now proceed to analyze this more formally.

We create a variable that measures the number of active VCs in the state where the company is located. Figure 1 illustrates the number of active VCs in each state, where a darker area represents a larger concentration. Figure 2 illustrates the aggregate contract harshness (ACH) of the average contract, with a darker area representing a more investor-friendly contract. A comparison between figures 1 and 2 clearly illustrates a negative relationship between ACH and the number of active VCs in a state.

We confirm this idea in multivariate regressions shown in table 6. We regress ACH on company, VC and round variables and also include a measure of VC concentration. VC concentration is positively correlated to ACH, regardless of whether it is measured by the number of active VCs in a state, the number of active VCs in a region (using the Census 9-region classification of the U.S. states), the number of venture-backed companies in a state-industry segment or the total dollar amount raised by venture-backed companies in a state-industry segment.

The result holds even after we control for whether the company or VC was located in California (models 4-8). Importantly, the coefficients on the California dummies remain negative and significant. Thus, companies that are located in California include fewer investor-friendly contract terms partly because there are more active VCs or more VC funding in this state, but other regional or cultural differences still seem to affect contract design.[20]

4. Contract Terms and Distance between Company and VC

Our final set of tests considers another aspect of the location effect on contract design, namely, whether the relative distance between company and VC also influences how contracts are written. Papers on soft information (see Stein, 2002, Petersen and Rajan, 2002, or Berger et al. 2005, Petersen, 2004 or Uzzi, 1999) suggest that in the presence of soft information and monitoring costs, smaller local banks may be better suited to serve local customers. In our setting, if the VC and the entrepreneur are on close personal terms, they may only need the proverbial handshake rather than a complicated contract with harsh cash flow contingencies. The evidence in Lerner (1995) is consistent with the idea that distance affects how the VC interacts with their portfolio companies.

We first use a zip-code database to look up the longitude and latitude of the main office for each sample company and VC, and then calculate distance in miles using the Haversine formula, which takes into account the curvature of the Earth. Some evidence suggesting that distance matters is found in the univariate comparisons of table 3 panel B. Companies that are located geographically closer to their lead VC are

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[20] In untabulated regressions, we include square measures of our variables that capture VC and company concentration. The coefficients on the California dummies remain significant after controlling for such potential non-linearity between ACH and VC/company concentration.

significantly less likely to include investor-friendly contract terms. As an illustration, the average ACH is 2.46 when company and VC are located in the same state, as compared with 2.72 when the company and VC are located in different states. For a company outside California, a contract from a within-state VC has an ACH of 2.87 whereas a contract from an out-of-state non-California VC has an ACH of 3.03. However, this company would get an average ACH of 2.44 from a California VC. In other words, contracts are more investor-friendly when the company and VC are located close to one another, except that contracts are always more friendly if the VC is headquartered in California.

Table 7 confirms the distance results in a multivariate setting. Regression models 1-5 include sample companies located in California and models 6-10 to companies located in other states. The regressions are similar to those presented in table 4 and include all controls used previously, but for space considerations we only show the geography and California effects. The California effect is as significant as it is in table 4.[22] However, distance seems to be important as well.

Finally, we return to table 3 panel B to explore the relationship between distance and individual contract terms. The effect of distance holds for all contract terms except liquidation preference and pay-to-play. Companies located in California are less likely to sign contracts with investor-friendly cumulative dividends, anti-dilution and redemption rights if they receive financing from California VC. For companies located in other states, cumulative dividends and participation rights are more common if they receive financing from a VC located in another state, unless that state is California. Taken together our results are consistent with a geographical distance effect which can be traced back to soft information, but also with the California effect we document.

5. Conclusions

This paper shows that geographical and cultural elements can form an essential component of contract design in addition to more "traditional" ingredients such as clauses designed to address information and agency problems, and to provisions reflecting legal and other formal institutions. The location element cannot be explained by previously studied concentration and distance effects. The VCs we study are sophisticated investors, and yet, culture and geography seem to significantly affect their decisions. Importantly, unlike international studies of geographical differences in VC contracts (See Lerner & Schoar, 2005; Kaplan, Martel & Stromberg, 2007; Bottazi, DaRin, & Hellmann, 2008), our paper focuses on companies that are located in the U.S. Therefore, our results cannot be attributed to differences in the legal system, rule-of-law, accounting transparency, bankruptcy procedures, taxation, etc.

The results presented in this paper can be illustrated using a simple hypothetical example. Consider two software companies. Each one signs a financial contract (term sheet) that accompanies a VC investment.

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[22] All previously reported regression results related to VC and company location are qualitatively similar if we also include different distance variables in the specifications.

The first company is headquartered in Silicon Valley and has received financing from a nearby Silicon Valley VC, whereas the second company is headquartered in Philadelphia and has received financing from a VC operating out of Boston. Suppose that with the exception of geographical locations, the observable characteristics of the company, entrepreneur and VC firm are identical. Also, since both companies operate in the U.S., there are no state-level laws, tax codes or bankruptcy procedures that affect how the term sheets have to be structured. In this example, will the financial contracts for these two companies be similar?

The evidence presented in this paper strongly suggests that the answer to this question is *no*. In fact, we expect the contract in Silicon-Valley to be much more entrepreneur friendly for at least three reasons. The first factor is the regional culture and customs of California and Silicon Valley, which we have discussed extensively in the paper. The second reason is the concentration of the VC market in which the company operates. Silicon Valley is the home of a large number of VCs and venture-backed companies, and our results show that such higher concentration is associated with more entrepreneur-friendly contracts. The third factor is the shorter distance between lender and borrower which facilitates soft information and lowers monitoring costs. This latter finding is also consistent with studies which show that local banks can better serve small businesses.

Our results also suggest that VC contracts from the Silicon Valley give entrepreneurs not more cash flow rights, but also stronger decision rights.

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Table 1 – Sample Overview

The sample is venture capital (VC) financing contracts from U.S. companies that receive financing from (at least one) U.S. VC. Each contract is matched by company name and round date with an investment round listed in Venture Economics. Company and VC locations refer to headquarters. Industry classification is based on the 10-level VentureEconomics classification. Retail Industry includes Communications and Media; Consumer Related; Industrial and Energy; and Other Products. High-Tech Industry includes Computer Hardware; Computer Software and Services; and Internet Specific. Life Science Industry includes Biotechnology; and Medical and Health.

Number of Unique

Contracts	1,800	
Companies	1,498	
Lead VCs	628	

Industry

Retail Industry	570	*32%*
High-Tech Industry	722	*40%*
Life Science Industry	508	*28%*

Year of Round

2005	218	*12%*
2006	670	*37%*
2007	847	*47%*
2008	65	*4%*

Company Location (Census 9-Region Division)

Pacific	690	*38%*
California	621	*35%*
Silicon Valley	228	*13%*
East North Central	70	*4%*
East South Central	10	*1%*
Mid Atlantic	220	*12%*
Mountain	57	*3%*
North East	329	*18%*
South Atlantic	255	*14%*
West North Central	40	*2%*
West South Central	129	*7%*

Table 2A - Overview of Contract Terms

See Table 1 for overview of sample. This table describes individual contract terms and reports their frequency.

Cumulative Dividends

Dividends that the investor earns annually until the company is sold or liquidated. Cumulative means that the dividends are not paid out annually but when the company is sold or liquidated. Cumulative dividends are senior to common stock.

	Included = 1	Non Included = 0
Number of Contracts	621	1179
Fraction of Sample	35%	66%

Liquidation Preference

The multiple of the investor's investment that is paid back to the investor when the company is sold or liquidated. Liquidation preference is senior to common stock.

	Above 1X = 1	1X or Below = 0
Number of Contracts	126	1674
Fraction of Sample	7%	93%

Participation

With participation the investor receives both a liquidation preference and a fraction of common stock when the company is sold or liquidated. With no participaiton the investor chooses between a liquidation preference and a fraction of common stock.

	Included = 1	Not Included = 0
Number of Contracts	1224	576
Fraction of Sample	68%	32%

Anti-Dilution

The investor is issued additional shares if the company raises a new financing round at a lower valuation than what the investor paid (down round). "Full Ratchet" gives the investor more additional shares than "Weighted Average", especially if the new financing round is small.

	Full-Ratchet	Not Included / Weighted Average
Number of Contracts	162	1638
Fraction of Sample	9%	91%

Redemption

The investor has the right to sell his shares back to the company after a specified time period (typically 5-8 years).

	Included = 1	Not Included = 0
Number of Contracts	1044	756
Fraction of Sample	58%	42%

Pay-To-Play

Pay-to-play provisions specify what contractual rights that the investor loses if he does not invest in a follow-up financing round of the company (sometimes only anti-dilution, sometimes all rights).

	Not Included = 1	Included = 0
Number of Contracts	1224	576
Fraction of Sample	68%	32%

Table 2B - Summary Statistics

See Table 1 for overview of sample. Aggregate Contract Harshness (ACH) is the sum of contract terms discussed in Table 2B and has a range 0-6. Higher ACH means that the contract is more friendly to the VC investing in the round, and especially if company exit valuation is low. Variables with unreported median and standard error are dummy variables.

Deal Conditions	# of Obs	Mean	Median	St.Dev
Aggregate Contract Harshness (ACH)	1800	2.59	3.00	1.16
Total Round Amount ($ million)	1800	10.79	7.00	12.46
Round Number	1800	2.80	3.00	1.55
Syndicated Round	1800	0.90		
Pre-Money Valuation ($ million)	894	48.99	28.47	63.43
Fraction of Shares of VCs	894	0.22	0.22	0.11
Company and VC Location				
Company in California	1800	0.35		
VC in California	1800	0.35		
Company in Massachusetts	1800	0.16		
VC in Massachusetts	1800	0.19		
Company in Texas	1800	0.07		
Number of Other VCs in California	1800	0.98	1.00	1.22
Company in Silicon Valley	1800	0.13		
VC in Silicon Valley	1800	0.24		
Distance from Silicon Valley (miles)	1176	42.27	47.61	11.76
VC California Investment Experience	1176	0.21	0.15	0.19
VC California Syndication Experience	1176	0.32	0.30	0.21
Distance Between VC and Company				
VC and Company Within 5 Miles	1800	0.11		
VC and Company Within 10 Miles	1800	0.21		
VC and Company Within 50 Miles	1800	0.42		
VC and Company in Same State	1800	0.49		
Distance (miles)	1800	701.00	182.00	94.00
Aggregate Size of VC Market				
Number of VCs in State	1800	374	113	421
Number of VCs in Region	1800	474	205	442
Number of VC-backed companies in Industry X State	1800	177	119	195
Amount of VC financing in Industry X State ($ millions)	1800	1780	1090	1680
Company and Founder Characteristics				
Company Age	1800	4.13	4.00	2.73
Serial Founder	1800	0.22		
Serial Founder with IPO	1800	0.06		
Serial Founder with Merger	1800	0.08		

Table 3A - Univariate Analysis of Aggregate Contract Harshness

See table 1 for sample description. Mean of Aggregate Contract Harshness (ACH), which is the sum of contract terms discussed in Table 2B and has a range 0-6. Higher ACH means that the contract is more friendly to the VC investing in the round, and especially so on if company exit valuation is low. Rank test of equality of populations. Significance at 10% marked with *, 5% **, and 1% ***.

VC and Company Location				Difference	Test
Company in California	2.07	Company outside California	2.86	0.79	***
Company in Silicon Valley	1.92	Company not in Sil. Valley	2.69	0.77	***
VC in California	2.15	VC not in California	2.83	0.68	***
VC in Silicon Valley	2.05	VC not in Silicon Valley	2.76	0.71	***
VC and Company in Silicon Valley	1.84	VC and Company not in Silicon Valley	2.81	0.97	***

Distance Between VC and Company				Difference	Test
Distance ≤10 Miles	2.49	Distance >10 Miles	2.62	0.12	*
Distance ≤ 50 Miles	2.53	Distance >50 Miles	2.64	0.11	*
Same State	2.46	Different State	2.72	0.26	***
Same State if Company in California	2.00	Different State if Company in California	2.22	0.22	**
VC inside California if Company outside California			2.44		
Same State if Company outside California and VC outside California	2.87	Different State	3.03	0.16	**

Company, Founder, VC Characteristics				Difference	Test
Serial Founder with IPO	2.29	No Serial Founder with IPO	2.61	0.32	***
VC Experience (> median)	2.44	VC Experience (≤ median)	2.74	0.30	***
Round Amount Above $7M	2.42	Round Amount Below or Equal to $7M	2.76	0.35	***
Serial Founder with IPO VC Experience (> median) Round Amount Above $7M	2.22	No Serial Founder with IPO VC Experience (≤ median) Round Amount Below or Equal to $7M	2.91	0.68	***

Table 3B - Univariate Analysis of Individual Deal Terms

See table 1 for sample description. Contract terms are described in Table 2B. Higher variable values means that the contract is more friendly to the VC investing in the round, and especially so on if company exit valuation is low. Rank test of equality of populations. Significance at 10% marked with *, 5% **, and 1% ***.

Panel A: VC and Company Location

		Cum. Dividend	Liq. Preference	Participation	Anti-Dilution	Redemption	Pay-to-Play
i.	Company in Silicon Valley	0.06	0.06	0.67	0.05	0.16	0.92
ii.	Company outside Silicon Valley	0.38	0.07	0.68	0.09	0.64	0.82
	Difference ii-i	0.33***	0.01	0.01	0.04**	0.48***	-0.010***
iii.	VC in Silicon Valley	0.11	0.06	0.62	0.05	0.34	0.87
iv.	VC outside Silicon Valley	0.42	0.07	0.70	0.10	0.66	0.82
	Difference iv-iii	0.31***	0.02	0.07***	0.05	0.31***	0.05*
v.	VC and Comp. in Silicon Valley	0.03	0.06	0.65	0.04	0.13	0.92
vi.	VC and Comp. outside S. Valley	0.44	0.07	0.70	0.10	0.69	0.81
	Difference vi-v	0.41***	0.01	0.04	0.06**	0.56***	-0.11***

Panel B: Distance Between VC and Company

		Cum. Dividend	Liq. Preference	Participation	Anti-Dilution	Redemption	Pay-to-Play
	Company in California						
i.	VC in Same State	0.07	0.06	0.62	0.05	0.30	0.89
ii.	VC in Different State	0.18	0.07	0.69	0.09	0.37	0.83
	Difference ii-i	0.10***	0.01	0.06	0.04**	0.07*	-0.06**
	Company Outside California						
iii.	VC in Different State (non-CA)	0.46	0.05	0.66	0.12	0.75	0.83
iv.	Same State	0.55	0.08	0.74	0.09	0.75	0.80
v.	VC inside California	0.28	0.07	0.68	0.07	0.57	0.80
	Difference iv-iii	0.09***	0.03	0.08**	-0.03	0.00	-0.02
	Difference iii-v	-0.18***	0.02	0.02*	-0.05	-0.18***	-0.03

Table 4 - Regression Analysis of VC/Company Location on Aggregate Contract Harshness

*See table 1 for sample description. Ordered logit regressions where the dependent variable is Aggregate Contract Harshness (ACH), which is the sum of contract terms discussed in Table 2B and has a range 0-6. Higher ACH means that the contract is more friendly to the VC investing in the round, and especially so on if company exit valuation is low. Sample in specifications 6-7 includes only companies in California, and in specifications 8-11 only VCs in California. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4	5	6	7	8	9	10	11
Dependent Variable:	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH
Company Age	0.442***	0.440***	0.437***	0.418***	0.434***	0.418**	0.409*	0.450***	0.452***	0.434***	0.412***
	[0.098]	[0.097]	[0.097]	[0.096]	[0.097]	[0.210]	[0.210]	[0.113]	[0.113]	[0.114]	[0.114]
Round Number	0.01	0.011	0.013	0.012	0.017	0.052	0.054	0.007	0.008	0.008	0.02
	[0.041]	[0.041]	[0.041]	[0.040]	[0.041]	[0.075]	[0.075]	[0.050]	[0.050]	[0.050]	[0.050]
Serial Founder	-0.14	-0.147	-0.143	-0.11	-0.147	-0.157	-0.195	-0.047	-0.045	-0.035	-0.039
	[0.161]	[0.158]	[0.158]	[0.157]	[0.159]	[0.280]	[0.277]	[0.189]	[0.190]	[0.187]	[0.187]
Serial Founder with IPO	-0.078	-0.15	-0.148	-0.156	-0.162	-0.162	-0.128	-0.531*	-0.520*	-0.510*	-0.495*
	[0.227]	[0.233]	[0.232]	[0.231]	[0.231]	[0.336]	[0.333]	[0.275]	[0.276]	[0.271]	[0.272]
Serial Founder with Merger	0.129	0.135	0.139	0.155	0.14	0.221	0.263	0.144	0.151	0.157	0.19
	[0.195]	[0.191]	[0.190]	[0.190]	[0.192]	[0.301]	[0.296]	[0.238]	[0.238]	[0.238]	[0.238]
Number of VCs in Round	0.013	0.015	0.015	0.018	0.036	0.001	0.001	-0.009	-0.009	-0.013	-0.007
	[0.021]	[0.022]	[0.022]	[0.022]	[0.024]	[0.035]	[0.035]	[0.027]	[0.027]	[0.027]	[0.027]
Total Round Amount ($ million)	-0.302***	-0.298***	-0.290***	-0.281***	-0.284***	-0.152	-0.143	-0.383***	-0.387***	-0.300***	-0.281***
	[0.063]	[0.063]	[0.063]	[0.063]	[0.064]	[0.104]	[0.104]	[0.080]	[0.080]	[0.080]	[0.081]
VC Number of Investments	-0.200***	-0.182***	-0.179***	-0.161***	-0.183***	-0.142**	-0.114*	-0.211***	-0.208***	-0.164***	-0.167***
	[0.035]	[0.035]	[0.035]	[0.036]	[0.036]	[0.056]	[0.059]	[0.044]	[0.044]	[0.044]	[0.045]
VC Partnership	0.061	0.054	0.046	0.06	0.052	-0.078	-0.062	0.185	0.175	0.153	0.136
	[0.120]	[0.120]	[0.120]	[0.121]	[0.120]	[0.222]	[0.222]	[0.148]	[0.148]	[0.146]	[0.148]

Specification	1	2	3	4	5	6	7	8	9	10	11
Company in California	-1.292*** [0.106]	-0.996*** [0.117]	-1.167*** [0.169]	-1.134*** [0.127]	-0.901*** [0.126]			-1.064*** [0.159]	0.339 [0.932]	-0.709*** [0.189]	-0.872*** [0.167]
VC in California		-0.620*** [0.112]	-0.781*** [0.145]	-0.696*** [0.121]	-0.608*** [0.111]	-0.485** [0.193]	-0.254 [0.241]				
Company in Massachusetts				-0.257 [0.160]							
VC and Company in California			0.36 [0.224]								
VC in Massachusetts				-0.201 [0.152]							
Company in Texas				-0.635*** [0.199]							
Number of Other VCs in California					-0.134** [0.055]						
Company in Silicon Valley						-0.553*** [0.178]	-0.497*** [0.179]				
VC in Silicon Valley							-0.353 [0.215]				
Distance from Silicon Valley (miles)								0.672*** [0.121]	0.742*** [0.137]		
Distance from S V X Company in California									-0.378 [0.258]		
VC California Investment Experience										-1.383*** [0.350]	
VC California Syndication Experience											-1.181*** [0.309]
Observations	1800	1800	1800	1800	1800	621	621	1176	1176	1176	1176
Sample	Full	Full	Full	Full	Full	Company California		VC not in California			
Pseudo R-squared	0.06	0.07	0.07	0.07	0.07	0.04	0.04	0.05	0.05	0.05	0.05
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5A - Regression Analysis of VC/Company Location on Separate Contract Terms and Other Deal Characteristics

See table 1 for sample description. Specifications 1-6 are logit regressions where the dependent variables are separate deal terms (see Appendix A for description) that take the value 1 if present and 0 if not present, specification 7 is an OLS regression where the logged total dollar amount of the round is the dependent variable, specification 8 is an ordered logit regression where the dependent variable is the number of VCs in the round, specification 9 is a logit regression where the dependent variable takes the value 1 if the round was syndicated (and 0 otherwise), specification 10 is an OLS regression where the dependent variable is the logged pre-money valuation of the round, and specification 11 is a tobit regression where the dependent variable it the total stake given VCs in the round. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***. Sample in specification 10-11 includes only rounds where valuation data is disclosed.

Specification	1	2	3	4	5	6	7	8	9	10	11
Dependent Variable:	Dividend	Liq.Pref	Particip.	Anti-Dil	Redemp.	P-T-P	Amount	# of VCs	Syndic.	Valuat.	Stake
Company Age	0.157	0.842***	0.156	0.622***	0.109	0.454***	0.124***	-0.038	-0.029	0.268***	-0.028***
	[0.114]	[0.286]	[0.109]	[0.216]	[0.109]	[0.144]	[0.040]	[0.084]	[0.141]	[0.069]	[0.007]
Round Number	-0.01	0.189**	0.082*	0.095	0.045	-0.262***	0.091***	0.563***	0.380***	0.250***	-0.021***
	[0.050]	[0.090]	[0.048]	[0.076]	[0.049]	[0.062]	[0.017]	[0.037]	[0.072]	[0.028]	[0.003]
Serial Founder	-0.21	0.327	-0.164	-0.417	-0.013	0.336	0.06	0.115	0.109	0.053	-0.016
	[0.209]	[0.298]	[0.194]	[0.297]	[0.196]	[0.258]	[0.074]	[0.161]	[0.295]	[0.102]	[0.011]
Serial Founder with IPO	-0.659**	-0.035	-0.126	0.756*	-0.098	-0.523	0.235*	0.261	0.573	0.337**	-0.006
	[0.327]	[0.452]	[0.283]	[0.447]	[0.294]	[0.355]	[0.120]	[0.271]	[0.541]	[0.157]	[0.015]
Serial Founder with Merger	-0.002	-0.323	0.415	-0.001	0.19	-0.318	0.215**	0.347*	0.338	0.281**	0.014
	[0.280]	[0.449]	[0.276]	[0.462]	[0.268]	[0.341]	[0.100]	[0.205]	[0.459]	[0.137]	[0.014]
VC Number of Investments	-0.125***	-0.204**	-0.064	-0.024	-0.036	-0.166***	0.071***	-0.012	-0.056	0.092***	0.002
	[0.044]	[0.081]	[0.043]	[0.069]	[0.044]	[0.058]	[0.016]	[0.034]	[0.062]	[0.024]	[0.003]
VC Partnership	0.082	-0.078	-0.057	0.142	-0.033	0.142	0.06	-0.108	-0.223	0.041	-0.011
	[0.154]	[0.250]	[0.145]	[0.242]	[0.144]	[0.185]	[0.058]	[0.113]	[0.230]	[0.080]	[0.008]
Company in Silicon Valley	-1.849***	-0.167	0.1	-0.359	-1.976***	0.740***	0.112	-0.108	0.740**	-0.148	0.030***
	[0.336]	[0.338]	[0.189]	[0.374]	[0.224]	[0.285]	[0.072]	[0.126]	[0.317]	[0.097]	[0.009]
VC in Silicon Valley	-1.391***	-0.066	-0.322**	-0.559**	-0.967***	0.388**	0.065	0.033	-0.03	0.166**	-0.015*
	[0.196]	[0.259]	[0.144]	[0.283]	[0.143]	[0.191]	[0.051]	[0.110]	[0.216]	[0.079]	[0.008]
Observations	1800	1800	1800	1800	1800	1800	1800	1800	1800	894	894
Sample	Full	Full	Full	Full	Full	Full	Full	Full	Full	Valuation Data	
Pseudo R-squared	0.12	0.09	0.03	0.06	0.12	0.08	0.13	0.06	0.07	0.31	
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round Amount, Number of VCs	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No

Table 5B - Regression Analysis of VC/Company Location on Board Seats and Covenants

*Subsample that includes 344 contracts from first VC financing rounds. Specifications 1 is an ordered logit regressions where the dependent variables is the number of preferred board seats. Specifications 2 is an ordered logit regressions where the dependent variables is the number of common board seats. Specifications 3 is a logit regression where the dependent variables takes the value 1 if preferred shareholders hold a majority of the board seats, and 0 otherwise. Specification 5 is an OLS regression where the number of covenants in the contract is the dependent variable (max number of covenants is 18). Specification 5-11 are logit regressions where the dependent variables takes the value 1 if the contract includes a covenant and 0 if the contract does not include the covenant. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4	5	6	7	8	9	10	11
	Preferred Board Seats	Common Board Seats	Preferred Board Majority	Number of Covenant	Asset Sale Covenant	Hire CEO Covenant	Change Business Covenant	Take on New Debt Covenant	Incur CapEx Covenant	Joint Venture Covenant	Recap Or Reorg Covenant
Dependent Variable:											
Company Age	0.046	0.581***	-0.594	0.238	0.253	0.375	0.18	-0.077	0.18	-0.165	0.09
	[0.186]	[0.206]	[0.451]	[0.218]	[0.188]	[0.365]	[0.196]	[0.181]	[0.300]	[0.287]	[0.236]
Serial Founder	-0.782**	-0.004	-0.701	0.281	-0.305	-0.152	0.672*	0.128	0.138	0.314	-0.373
	[0.354]	[0.371]	[0.839]	[0.426]	[0.377]	[0.737]	[0.373]	[0.356]	[0.543]	[0.519]	[0.505]
Serial Founder with IPO	1.276**	-0.497	-0.43	0.001	1.250**	1.25	-0.482	0.041	-0.582	-0.809	0.952
	[0.617]	[0.681]	[1.442]	[0.709]	[0.605]	[1.060]	[0.652]	[0.595]	[1.203]	[1.184]	[0.729]
Serial Founder with Merger	0.42	0.339	-0.221	0.515	1.036	-0.358	-0.544	0.19	0.355		1.031
	[0.650]	[0.704]	[1.426]	[0.763]	[0.643]	[1.232]	[0.767]	[0.635]	[1.247]		[0.814]
VC Number of Investments	-0.126	-0.062	0.22	0.066	-0.034	0.234	0.068	0.065	-0.355**	-0.028	0.203
	[0.096]	[0.102]	[0.228]	[0.112]	[0.096]	[0.189]	[0.103]	[0.094]	[0.167]	[0.149]	[0.128]
VC Partnership	-0.191	0.439	0.693	0.469	0.554	0.931	-0.701**	-0.219	0.252	0.446	0.08
	[0.351]	[0.348]	[1.040]	[0.396]	[0.356]	[0.811]	[0.344]	[0.334]	[0.596]	[0.585]	[0.481]
Company in Silicon Valley	-0.087	-0.16	0.975	-0.396	-0.204	-0.931	0.268	-0.109	-0.298	-0.106	-0.62
	[0.444]	[0.432]	[1.162]	[0.522]	[0.448]	[0.923]	[0.501]	[0.442]	[1.201]	[0.887]	[0.752]
VC in Silicon Valley	-0.887**	0.307	-3.570***	-1.224***	0.234	0.554	-0.845**	-1.297***	-1.937*	-1.524*	-1.468***
	[0.353]	[0.352]	[1.288]	[0.412]	[0.352]	[0.609]	[0.403]	[0.351]	[1.151]	[0.851]	[0.541]
Observations	285	251	141	334	334	334	334	334	334	334	334
Sample	Subsample with Coded Control Rights - All Contracts are First Round Contracts										
Pseudo R-squared	0.16	0.05	0.26	0.11	0.05	0.08	0.10	0.06	0.15	0.07	0.16
Unconditional mean	2.03	1.61	0.20	4.39	0.37	0.07	0.32	0.55	0.10	0.11	0.21
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round Amount, Number of VCs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6 - Regression Analysis of VC Concentration on Aggregate Contract Harshness

See table 1 for sample description. Ordered logit regressions where the dependent variable is Aggregate Contract Harshness (ACH), which is the sum of contract terms discussed in Table 2B and has a range 0-6. Higher ACH means that the contract is more friendly to the VC investing in the round, and especially so on if company exit valuation is low. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.

Specification	1	2	3	4	5	6	7	8
Dependent Variable:	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH
Company in California				-0.629***	-0.692***	-0.727***	-0.639***	-0.765***
				[0.179]	[0.213]	[0.174]	[0.167]	[0.146]
VC in California				-0.618***	-0.664***	-0.610***	-0.627***	-0.628***
				[0.112]	[0.120]	[0.112]	[0.113]	[0.112]
VC in Massachusetts					-0.167			
					[0.152]			
Company in Massachusetts					-0.032			
					[0.177]			
Number of VCs in State	-0.284***	-0.284***	-0.122***	-0.115***	-0.102**			
	[0.025]	[0.025]	[0.043]	[0.039]	[0.044]			
Number of VCs in Region						-0.128**		
						[0.056]		
Number of VC-backed companies in Industry X State							-0.167***	
							[0.053]	
Amount of VC financing in Industry X State								-0.108***
								[0.037]
Observations	1800	1800	1800	1800	1800	1800	1800	1800
Sample	Full	Full	Full	Full	Full	Full	Full	Full
Pseudo R-squared	0.05	0.05	0.07	0.07	0.07	0.07	0.07	0.07
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Company, Founder, VC Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Controls	No	No	Yes	No	No	No	No	No

Table 7 - Regression Analysis of VC/Company Distance on Aggregate Contract Harshness

See table 1 for sample description. Ordered logit regressions where the dependent variable is Aggregate Contract Harshness (ACH), which is the sum of contract terms discussed in Table 2B and has a range 0-6. Higher ACH means that the contract is more friendly to the VC investing in the round, and especially so on if company exit valuation is low. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***. Sample in specification 1-5 includes only company in California, and in specifications 6-10 includes only company in other states.

Specification	1	2	3	4	5	6	7	8	9	10
Dependent Variable:	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH	ACH
VC in California						-0.670***	-0.760***	-0.702***	-0.783***	-0.487**
						[0.144]	[0.150]	[0.157]	[0.158]	[0.219]
VC and Company Within 5 Miles	-0.334					-0.148				
	[0.252]					[0.158]				
VC and Company Within 10 Miles		-0.344*			-0.039		-0.390***			-0.504***
		[0.201]			[0.221]		[0.133]			[0.147]
VC and Company Within 50 Miles			-0.650***					-0.111		
			[0.179]					[0.123]		
VC and Company in Same State				-0.588***					-0.283**	
				[0.194]					[0.124]	
Distance (miles)					0.598***					-0.368*
					[0.201]					[0.206]
Observations	621	621	621	621	621	1179	1179	1179	1179	1179
Sample	Company California					Company non-California				
Pseudo R-squared	0.03	0.03	0.04	0.03	0.04	0.03	0.04	0.03	0.03	0.04
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Company, Founder, VC Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Figure 1 – VC Concentration by U.S. State (based on headquarter location)

Dark Grey = High VC Concentration (20 or more active VCs)
Light Grey = Low VC Concentration (Less than 20 active VCs)
White = State not in sample

Figure 2 – Contract Harshness by U.S. State (average Aggregate Contract Harshness)

Dark Grey = Harsh VC Contracts (above 3 Aggregate Contract Harshness)
Light Grey = Non-Harsh VC Contracts (3 or below Aggregate Contract Harshness)
White = State not in sample