The Geography of Venture Capital Contracts

by

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Abstract

We show that geographical elements and regional culture can play an essential role in contract design in addition to the influence of more "traditional" determinants such as information and agency problems or the nature of legal institutions. Across 1,800 financial contracts written between U.S. entrepreneurial companies and U.S. Venture Capital (VC) investors, we show that contracts include significantly fewer investor-friendly cash flow contingencies if the company is located in California or if the lead VC is more exposed to the California market. The regional differences in contract design can, to some degree, be explained by the level of concentration of local VC markets. We also show that when the geographical distance between a VC and a company is greater, contracts give high-powered incentives to entrepreneurs by including more investor-friendly cash flow contingencies. This latter finding supports the view that geographical proximity enhances monitoring and soft information. However, the "California effect" persists even after we control for distance and VC market concentration.

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1. Introduction and Literature Review

A large body of literature on financial contracts and security design examines how the allocation of cash flow contingencies and control rights is related to the characteristics of the contracting parties, the institutional environment, and the quality of the legal system.[1] This paper suggests that contract design may depend not only on such "traditional" ingredients but also on geographical distance between the investor and the borrower and, importantly, on their specific locations. The distance effect 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 of contract design, since we study contracts from one country exclusively (the United States). The differences that we document therefore cannot be attributed to variations in tax or bankruptcy codes, or to differences in securities laws or legal enforcement costs. Instead, the finding that location matters suggests that regional culture and local customs may play a role in contract design.

We study 1,800 venture capital (VC) contracts drawn between entrepreneurial firms and their VC investors. The VC industry is interesting in its own right given its importance to the U.S. economy, but it also represents a useful empirical testing ground for contract theories (Kaplan & Stromberg, 2003; Hart, 2001).[2] VCs are sophisticated investors, well-versed in incentive contracts, who provide financing to young, high-growth companies that typically suffer from severe agency and information problems. The contracts that VCs receive in exchange for their investments are complex and non-standardized, and have been shown to share many of the

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

[2] Some basic statistics illustrate the economic importance of the VC industry: Annual VC investments in 2007 reached $30.7 billion, 344 venture-backed companies went public from 2002–2007, and venture-backed companies provided 10.4 million jobs and $2.3 in revenue in 2006. Many of today's high-profile companies were once backed by VCs, including Microsoft, Amgen, Google, Facebook, and FedEx.

features predicted by contract theory (Sahlman, 1990; Gompers, 1988; Kaplan & Stromberg 2003, 2004; Bengtsson & Sensoy, 2008; Cumming, 2008).

The VC industry is also a promising testing ground for our purposes because it is probably the largest and most developed capital market in which 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 considerable degree of fragmentation. VCs often invest locally (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, 2008). Geographical and cultural factors may arise from the presence of formal and informal networks between venture-backed companies. Gompers, Lerner and Scharfstein (2005) show that many new venture-backed companies are spawned from local public companies that were once venture-backed. 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) adds another possible 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 “West Coast” and the “East Coast. Saxenian (1996) suggests that differences in corporate and investor culture drive the vastly different fortunes of Silicon Valley and the Route 128 corridor in Massachusetts. Both regions attracted major high-tech companies at the start of the recent computer age. In fact, the industry structure and high-technology employment in the two regions were roughly similar in the mid 70s. Yet, since the 1990s, Silicon Valley has been vastly more successful (figure 1, p. 3, ibid). In Saxenian’s view this is attributable to looser boundaries between firms and the informal office culture (T-shirts) and networks in Silicon

Valley versus a more formal culture (dress shirts) that is less conducive to change and progress in the Route 128 area.[3]

Our empirical work shows that the less formal culture in California, and in particular in Silicon Valley, is associated with a less investor-friendly allocation of cash flow contingencies in VC contracts. This difference in contract design is found if either the company or the lead VC, who acts as the primary investor in the investment round, is located in this region. An analysis of control rights provides further evidence that location matters—contracts used by Silicon Valley lead VCs are less investor-friendly since they allocate fewer board seats and protective covenants to investors. Importantly, these results are unlikely to reflect differences in company or entrepreneur quality, but are instead likely to be motivated by regional differences in contracting style. In interviews with executives at VC firms as well as lawyers representing such 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 as opposed to the banker-like approach that is common in other regions, in particular on the East Coast.

We show further that contract design in the VC industry carries over between regional markets, with contracts including fewer investor-friendly cash flow contingencies if a non-California lead VC has had considerable exposure to investments in California. This result is consistent with VC's acquiring knowledge about how to structure contracts optimally when they invest in one market and then applying this knowledge to other markets. A similar result is found by Kaplan, Martel, and Stromberg (2007), who show that non-U.S. VCs learn how to structure contracts from co-investing with U.S. VCs.

The results pertaining to location effects 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. We use distinct proxies for the

[3] A theoretical model that endogenizes regional differences in culture is provided by Landier (2006). His model demonstrates how differences in investors' evaluation of entrepreneurial failure could arise as multiple equilibria in a fully rational setting.

concentration of VCs and venture-backed companies and show that more highly concentrated markets feature contracts that include fewer investor-friendly cash flow contingencies. 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 a greater number of competing lenders that are located nearby. In our setting, competition between VCs allows entrepreneurs to negotiate contracts that are less investor-friendly in their design.

Finally, we show also that distance between the lead VC and the funded company matters in contract design, as predicted by several theories addressing soft information and monitoring costs. Contracts involving VCs and entrepreneurs allocate more investor-friendly cash flow contingencies and thereby provide for more high-powered payoff incentives to the entrepreneur the greater is the distance between the firm and the lead VC investor. Interestingly, however, the "California effect" remains even after we account for the distance and concentration effects.

This paper contributes to several streams in the literature. We add to the small number of studies that explore geographical impact on VC contracts. 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 the role of geography *within* a country. 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.[4] Interviews with lawyers and legal scholars have confirmed that there are no institutional reasons why U.S. VC contracts should vary by company or VC location.[5]

Our findings also have important implications for the empirical testing of models of VC contract design to explain why various types of convertible securities are used in VC investments (see Berglof, 1994; Hellman; 1998, 2006; Cornelli & Yosha, 2002; Casamatta, 2003; Schmidt,

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

[5] The only potentially relevant between-state institutional difference is in the enforcement of non-compete employment agreements. As discussed in Section 3, this cannot explain the difference we have found between contracts in California and Silicon Valley.

2003; Repullo & Suarez, 2004). Because geographical factors have real-world relevance for how VC contracts are designed, they should be included as controls in any empirical analysis of 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 body of finance literature on geography and home bias, issues that 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 due primarily 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 make fewer forecast errors and Uysal, Kedia, and Panchapagesan (2008) show that local acquirers enjoy higher returns in mergers and acquisitions. Schultz (2003) shows that geography provides an information advantage in the context of an IPO syndicate.

The common theme among all these papers is that business-related activities and social interactions (golf games, Rotary club meetings, etc.) between executives may provide each side with better information and a more favorable view of one another. 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 their boards of

directors and VCs frequently visit their portfolio companies to interact with the founders and management (Gorman & Sahlman, 1989). 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. We add to this niche in the literature by looking in depth into a large sample of contracts, and investigating the distance, concentration, and cultural components of contracts.

Finally, our paper contributes to the small body of literature that attempts to empirically test the validity of different contract theories and provide real-world evidence on contract design. In addition to being the subject of VC studies, contract theory has been tested in two other broad areas, namely, biotechnology and movie studies. Biotechnology papers focus on the distribution of various rights between contracting firms (see, for example, Lerner & Merges, 1998). The film industry is characterized by interesting and complex contracting. There is generally less data available on film industry contract design than on VC or biotechnology contracts, but outcomes are much better known. Chisholm (1997) analyzes several dozen actor contracts and shows that more experienced actors are more likely to receive a share contract, supporting some lifecycle 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 the scarcity of data. Banerjee and Duflo (2000), for example, show that better reputation (in Indian software companies) leads to lower prevalence of fixed-payment contracts, which provides greater 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 support some of the major features predicted by the theory. In addition to our distance and location variables, we therefore include in our tests all contractual variables previously studied in

connection with VC contracts, which are closest to us in terms of methodology. In particular, we include variables used in Kaplan and Stromberg (2003) and Bengtsson and Sensoy (2008).

The rest of the paper is organized as follows—the next section describes our data and the coding of VC contract terms. The third section explores regional differences in contract design, and the fourth section discusses the role of VC market concentration on contract design. The fifth section includes tests of the role of distance in contract design. The last section summarizes our finding and concludes.

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 are collected and coded with the help of *VCExperts*, and cover 1,800 investment rounds in almost 1,500 unique companies (this method of classifying VC contracts is common in the literature; see, for example, Kaplan & Stromberg, 2003). Our sample is the largest dataset of VC contracts studied by academic researchers to date, and includes more than ten times more companies than the samples used by Kaplan and Stromberg (2003, 2004) and Cumming (2008). 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.

A substantial fraction of the contracts in our sample (90%) represents investment rounds in which more than one VC firm participated. In such syndicated rounds, one investor typically takes a lead role and conducts most of the pre-investment screening and post-investment monitoring. The lead VC also drafts the proposed contract and takes point during contract negotiations with the entrepreneur. Because contract design is influenced primarily by the lead VC, we conduct our empirical analysis at the contract level using information about the lead VC. We identify the lead VC as the investor taking the largest stake in the round. In cases where two

or more VCs take the same stake, we define the most experienced VC, measured by historical number of portfolio companies, as the lead investor. Our sample is restricted to contracts for which the lead VC was headquartered in the U.S.

We use zip-code data to measure the exact location of lead VCs and companies in our sample. The data exhibit, as expected from a study sampling U.S. VCs, 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 takes the largest single cluster with about 13% of companies and 25% of lead VCs. Many famous VCs, including New Enterprise Associates, Sequoia Capital, U.S. Venture Partners, and Kleiner, Perkins, Caufield & Byers, are headquartered along Sand Hill Road in Silicon Valley. The second largest cluster is from Massachusetts, with 16% of all companies and 19% of all lead VCs, many of whom are located along Route 128. Other large VC markets include Texas (especially Austin) and North Carolina (especially the Research Triangle of Raleigh, Durham, and Chapel Hill).

Summary statistics are reported in table 2A. Consistent with the results of earlier studies (Gupta & Sapienza, 1992; Norton & Tenenbaum, 1993; Stuart & Sorensen, 2001; Bengtsson, 2008), 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 away.[6]

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. This valuation number is a negotiated term that captures the VC's assessment of the company before the financing round is closed. The average sample company raised $11 million dollars at a pre-money

[6] One rule of thumb in VC investing is the so-called "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 not always obeyed.

valuation was $48 million. For a subset of our sample we also have data on the contractual allocation of board seats and protective covenants that give VCs certain veto rights over important business decisions. We use these data in the analysis later.

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 contingencies that are attached to the preferred stock that VCs receive in exchange for their investments.[7] In other words, the contract terms determine how many additional cash flow contingencies are given to the holder of one share of preferred stock. As shown by Kaplan and Stromberg (2003) and Bengtsson and Sensoy (2008), most terms that are included in VC contracts are favorable to the VC and especially favorable if company performance is poor.[8]

The exact meaning and economic importance of each cash flow term that we study 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 entrepreneur and the other existing owners of the company, or alternatively more favorable for the VC who invests in a round. This coding methodology is similar to that used by Bengtsson and Sensoy (2008), with main difference being that they code some contract terms as 0, 1 and 2. All empirical results presented in this paper are qualitatively the same if we use the coding approach of Bengtsson and Sensoy (2008).

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[7] Redemption rights, which permit VCs to sell their shares back to the company after a pre-determined time period, is a cash flow contingency in the sense that it represents a valuable put option issued by the company to the VC.

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

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 takes values from 0–6, where 0 is a contract that includes a minimum of investor-friendly cash flow contingencies and 6 is a contract that includes all possible investor-friendly cash flow contingencies. As reported in table 1, the average ACH value is 2.59 and the median is 3. Since we are interested in the joint contractual allocation of cash flow contingencies, our primary variable of study is ACH. We also study each cash flow contingency in separate empirical tests.

Appendix A provides a detailed description of the meaning of the six contract terms, their financial implications and exactly how they enter into our index ACH. An abbreviated description of this is provided in table 2B.

3. Contract Terms and Location of Company and Lead VC

We now proceed to our analysis of geography and contract terms. We first study the relationship between contracts and geographical location, then proceed to explore the relationship between contracts and market concentration, and finally study the role of distance in contract design.

Aggregate Contract Harshness

Table 3A provides the first data classification suggesting a strong geography component. In panel A we present univariate comparisons showing that both lead VC and company location matters for contract design. VCs in California tend to offer fewer investor-friendly terms, and companies based in California also tend to receive fewer investor-friendly terms. The effects are even stronger if either the lead VC or the company is located in the Silicon Valley. Kaplan and

Stromberg (2003) also find that contract terms are different for a California location of the company. In their case, California contracts use less-explicit performance benchmarks, have lower claims for the VC, and include fewer redemption rights, results that are consistent with our findings. We add to the geography result of Kaplan and Stromberg by showing that, in addition to a California effect for company location, there exists an important California effect for the location of the lead VC. Also, we show that the California effect is particularly pronounced for a Silicon Valley location.

The geographical impact on contract design is economically large—a contract between a company and lead VC that are both located in the Silicon Valley is almost one ACH unit less investor-friendly than a contract between a company and lead VC that are both located outside Silicon Valley. This regional difference in contract design represents about one standard deviation of the cross-sectional distribution of ACH, and is notably larger than differences based on a sort on empirical proxies for agency and information problems (and therefore 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, has 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, has secured a low round amount, and is financed by an inexperienced lead VC.[10]

Figure 1 provides a coarse illustration of the pattern of regional differences in contract design. We calculate the aggregate contract harshness (ACH) of the average contract for each U.S. state. A darker color represents contracts that are more investor friendly, and we note that VC contracts include fewer investor-favorable cash flow contingencies on the West Coast than on the East Coast.

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

[10] See Bengtsson and Sensoy (2008) for an empirical motivation of these variables.

to the location of the company and the lead VC. All regressions control for the company industry (as per VentureEconomics 10-level classification) and year of the sample round. We include company age, number of previous financing rounds, and the dollar amount raised in the sample round. We also include variables that capture whether any of the company's founders has previously started a venture-backed company and whether this company was successfully taken public or acquired by another corporation. These company, round, and founder characteristics capture, in different ways, the overall quality of the company and the magnitude of the agency problem that its lead VC investor faces. Kaplan and Stromberg (2003, 2004) show that these factors affect the design of real-world VC contracts. Because VC contracts are also affected by VC characteristics (Bengtsson & Sensoy, 2008), we include the number of VCs, and the lead VC's investment experience and type (i.e., private partnership VC, corporate VC, financial VC, etc).

The multivariate analysis confirms the results of the univariate comparison, showing a strong California effect on contract design. This effect seems to be largely a Silicon Valley effect—in other words, among California companies, a 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 lead VC is located farther from the Silicon Valley.

We also note that some important control variables have significant coefficients that are directionally consistent with results from previous studies. Consistently with Kaplan and Stromberg (2003, 2004), for example, we find that companies with greater maturity include more investor-friendly cash flow contingencies. We also validate the findings of Bengtsson and Sensoy (2008), whose sample to a large extent overlaps with ours, that companies raising larger amounts of VC financing from more-experienced VCs have fewer investor-friendly cash flow contingencies.

With the goal of further examining the extent of the California effect, we show that investor-friendly cash flow contingencies are used less frequently not only by California VC

firms but also by non-California VCs that have greater exposure to the California market. Restricting the sample to lead VCs headquartered outside California, we use previous investment experience to create two new explanatory variables. The first variable is the lead 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 lead 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 favoring an explanation in terms of a different "contracting style" in California as described by Kaplan and Stromberg (2003, p.299). The result that contract design carries over between markets is also consistent with the argument in Kaplan, Martel, and Stromberg (2007) that VCs learn about a certain contracting style by co-investing with other VCs who use and understand that contracting style.

Regional Culture and Customs Explanation

Conversations with VCs and attorneys specializing in VC contracts that were intended to gauge the source of the California effect seem to point to a geographical dispersion of opinions that 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" (Falls, 2008, p. 90 and p. 101). 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's (1996) argument. Thus, our results are consistent with explanations of geographical differences in contract design that refer to regional culture and customs.

Alternative Explanations

A possible alternative explanation of our results is that the observed differences in contract design reflect not regional differences per se but differences in company quality. Previous studies of VC contracts show that higher quality venture-backed companies, which present investors with lower risks, are able to negotiate contracts with fewer investor-friendly cash flow contingencies (Kaplan & Stromberg, 2003, 2004; Bengtsson & Sensoy, 2008). If such companies are systematically more likely to be located in California, then it is possible that regional differences in company characteristics explain the California effect in contract design. Although it is hard to rule out selection in the VC setting econometrically (because of data limitations and the absence of good instruments), we have two reasons to believe that our results cannot be fully explained by company quality.

First, all our regressions control for company age, round amount, and the founders' track record, all which are likely to be relatively good proxies for company quality. The results also hold after controlling for VC experience, which due to selection in the VC market also is a proxy for company quality (Sorensen, 2008).

Second, the magnitude of the California effect is, as discussed, so large that the differences in company quality must be substantial in order to fully explain it. In unreported

empirical tests, we test whether successful outcomes are more common for companies located in California. To do these tests, we use *VentureEconomics* to extract data on all U.S. venture-backed companies that were initially funded between 1983 and 2002.[12] We find that neither IPOs nor acquisitions are more common for companies located in California than for those located in other U.S. states, after controlling for the control variables used in our analysis of contracts. Given that companies in California historically have not been more successful, it is in our view highly unlikely that company quality can explain the significantly less investor-friendly contract design associated with California.

Before we proceed with the analysis, it is also important to emphasize 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 or enforcement of financial contracts.[13] Interviews with legal scholars and practicing VC lawyers confirm the view that no institutional factor suggests that 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-compete clauses cannot explain why, after controlling for company location, we observe differences based on VC location and VC exposure to the California market.

[12] We exclude companies funded after 2002 because venture-backed companies typically need between four and six years from initial funding to successful exit.

[13] 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). The irrelevance of incorporation for contract design is illustrated by our findings that all reported results remain unchanged and the estimated coefficients on incorporation-state dummies are not significant.

Separate Contract Terms

The next step of the analysis of location and contract design is to study each cash flow contingency 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 less investor-friendly in Silicon Valley. The notable exception is pay-to-play, which is more common if the lead 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 the terms of Silicon Valley contracts and those of other contracts is in the prevalence of cumulative dividends and redemption rights. The VC attorney David K. Levine (of Snell & Wilmer LLP) confirms this specific finding: “It 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” (Falls, 2008, p. 129).

Table 5A adds probit regressions in which 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 as a group 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 fewer investor-friendly cash flow contingencies by demanding higher ownership stakes.

Control Rights

Finally, we analyze whether regional differences in the use of cash flow contingencies also extend to the allocation of control rights between VCs and entrepreneurs. As noted, for a subset of our sample we also have data on the contractual allocation of board seats and negative covenants, which give VCs collective veto rights over important business decisions. Table 5B presents regressions similar to the specifications in table 5A but with different measures of a number of control rights as dependent variables.[15] We include dummies that capture whether the company or VC was headquartered in Silicon Valley.

Our analysis of control rights demonstrates that VCs receive fewer board seats (model 1) when the lead VC is headquartered in Silicon Valley, 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).[16] 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 contingencies 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 overall less harsh towards entrepreneurs. In untabulated regressions we replace the Silicon Valley dummies with California dummies and obtain qualitatively similar results.

[15] Note that sample size varies across specifications in this table because of incomplete data on board membership.

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

4. Contract Terms and VC Market Concentration

Our results thus far have demonstrated a significant regional effect in VC contracts, which, again, cannot be attributed to legal and institutional differences, as all contracts are signed by U.S. companies and U.S. lead VCs. It may be, however, that California is unique not because of cultural factors or regional customs, but rather because this market has the highest concentration of VCs and venture-backed companies. We now proceed to analyze this explanation more formally.

We create a variable that measures the number of active VCs in the state where the company is located. Figure 2 illustrates the number of active VCs in each state, where a darker area represents a higher concentration. Figure 1 illustrates the aggregate contract harshness (ACH) of the average contract, with a darker area representing a more investor-friendly contract. A comparison of figures 1 and 2 clearly illustrates a inverse relationship between ACH and the number of active VCs in a state. Hence, VC contracts include on average more investor-friendly cash flow contingencies in U.S. states that have less-concentrated VC markets.

We confirm this idea in multivariate regressions shown in table 6. We regress ACH on the company, lead VC, and round variables and also include a measure of VC concentration. VC concentration is positively correlated with ACH, whether or not 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 lead 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.[17]

One plausible explanation for the empirical association between contract design and VC market concentration is that a more active VC market increases an entrepreneur's bargaining power in contract negotiations. Degryse and Ongena (2005) show that bank interest rates are lower when a borrowing firm has access to more competing lenders that are located nearby, suggesting a role for competition in contract design. If a VC offers a contract with an onerous number of investor-friendly cash flow contingencies then the entrepreneur can reject, or threaten to reject, the financing offer and seek funding from another VC.

5. Contract Terms and Distance between Company and Lead VC

Our final set of tests considers another aspect of the location effect on contract design, namely, whether the relative distance between company and lead VC also influences how contracts are written. Papers on soft information (see Stein, 2002; Petersen & Rajan, 2002; Berger et al. 2005; Petersen, 2004; and 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 need only the proverbial handshake rather than a complicated contract with harsh cash flow contingencies. The evidence in Lerner (1995) is consistent with the idea that geographical distance affects how a VC interacts with companies in its portfolio.

We first use a zip code database to look up the longitude and latitude of the main office for each sample company and lead 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 shown in table 3A panel B. Companies

[17] 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 concentration of the VC market.

that are located geographically closer to their lead VCs are significantly less likely to include investor-friendly contract terms. Such contracts translate into more high-powered payoff incentives for entrepreneurs because the cash flow contingencies that we study increase the VC's payoff more in bad states of the world than in good states of the world.

As an illustration of our results, the average ACH is 2.46 when company and lead VC are located in the same state, as compared with 2.72 when the company and lead VC are located in different states. For a company outside California, a contract from a within-state lead VC has an ACH of 2.87 whereas a contract from an out-of-state non-California lead VC has an ACH of 3.03. However, this company would get an average ACH of 2.44 from a California lead VC. In other words, contracts are less investor-friendly when the company and lead VC are located close to one another, except that contracts are always less investor-friendly if the lead VC is headquartered in California. Thus, the data exhibits both a distance effect and a California effect but the latter seems to be economically more important.

Table 7 confirms the distance results in a multivariate setting. Regression models 1–5 include sample companies located in California and models 6–10 include 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 show only the geography and California effects. The California effect is shown to be as significant here as it is in table 4.[18] However, distance seems to be important as well.

Finally, we return to table 3B 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 a California lead VC. For companies located in other states, cumulative dividends

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

and participation rights are more common if they receive financing from a lead VC located in another state, unless that state is California. Taken together our results are consistent with a geographical distance effect that can be traced back to soft information, but also with the California effect we document.

6. Discussion and Conclusions

This paper shows that geographical elements and regional culture can play an essential role in contract design in addition the roles played by more "traditional" determinants such as information and agency problems between contracting parties and legal or other formal institutions. The VCs we study are sophisticated investors and yet culture and geography seem to significantly affect their contracting styles, even after we control for founder, company, round, and VC characteristics. Importantly, unlike international studies of geographical differences in VC contracts (see Lerner & Schoar, 2005; Kaplan, Martel & Stromberg, 2007; and Bottazi, DaRin, & Hellmann, 2008), this paper focuses on companies and investors that are located in the U.S. Therefore, our results cannot be attributed to differences in legal systems, rule-of-law, accounting transparency, bankruptcy procedures, taxation, etc.

The results presented in this paper can be summarized using a simple hypothetical example. Consider two software companies. Each one signs a financial contract that accompanies a VC investment. 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 Cleveland 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, the entrepreneur and the 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 contracts have to be structured. In this example, will the financial contracts for these two companies be different in

practice? Most financial contracting models would argue that the answer should be no, since geographical factors alone cannot motivate differences in contract design.

The evidence presented in this paper, however, strongly suggests that the answer to this question is *yes*. In fact, our analysis shows that the contract in Silicon Valley is likely to be much less investor-friendly for at least three reasons. First, contract design is affected by the concentration of the VC market in which the company operates. California is the home of a large number of VCs and venture-backed companies, and our results show that such a higher concentration is associated with less investor-friendly contracts. The second factor is the regional culture and customs of California and Silicon Valley, which we have discussed extensively in the paper. 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 that show that local banks can better serve small businesses.

Appendix A. Detailed Description of Cash Flow Contingencies in VC Contracts

Below is a detailed description of the contract terms we code.

Cumulative Dividends

When a cumulative dividends provision is in force, the VC accrues dividends every year until the company in which it has invested is sold or liquidated. Cumulative dividends accumulate and are not paid out in cash to the VC until the company has a liquidation event.[19] The dividends are expressed as a percentage and are typically compounding, which means that investors also earn dividends 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 a VC invests $2 million and receives 8% in compounding cumulative dividends. If the company is sold after five 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 that a VC receives when the company suffers 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

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

investment of $2 million, a liquidation preference of 2X means that the VC gets 2 × $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 one that is above 1X. The effects of liquidation preference are not specifically reported by Kaplan and Stromberg (2003).

Participation

All VCs in our sample receive convertible preferred stock. If the preferred stock is not participating, the VC effectively holds convertible preferred stock and consequently 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 a VC invests $2 million at $4 million post-money valuation with a 1X liquidation preference. When the company is sold, the VC can claim either $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 were above $4 million.

If the preferred stock is participating, the VC does not have to choose between the liquidation preference and 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 $1 million in common stock (50% of the remaining $2 million).

Participation could either be unconditional, as described above, or conditional on the amount of the 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. If, however, 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 would not receive the liquidation preference. The total cash flows to the VC would instead be $9 million (50% of $18 million).

In our sample, 32% of all 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 comes into effect only 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 exhibits 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 by which, 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 exercised by the VC only if the company is not close to being acquired or going public. 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) while it is included in 58% (harshness=1). Redemption is more common in the Kaplan and Stromberg sample and found in 79% of the contracts 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 not to invest in follow-up financing rounds of the company is forced to give up some or all of the control and cash flow contingencies that are attached to the preferred stock. Thus, pay-to-play matters only 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's 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).

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Figure 1 – 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

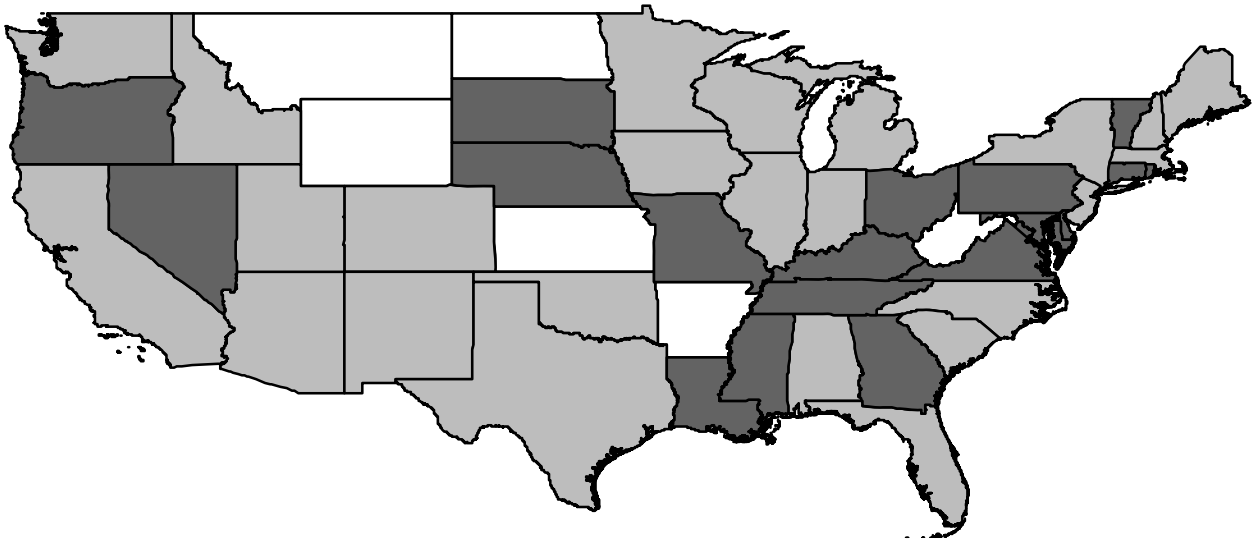

Figure 2 – VC Concentration by U.S. State (based on headquarter location)

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

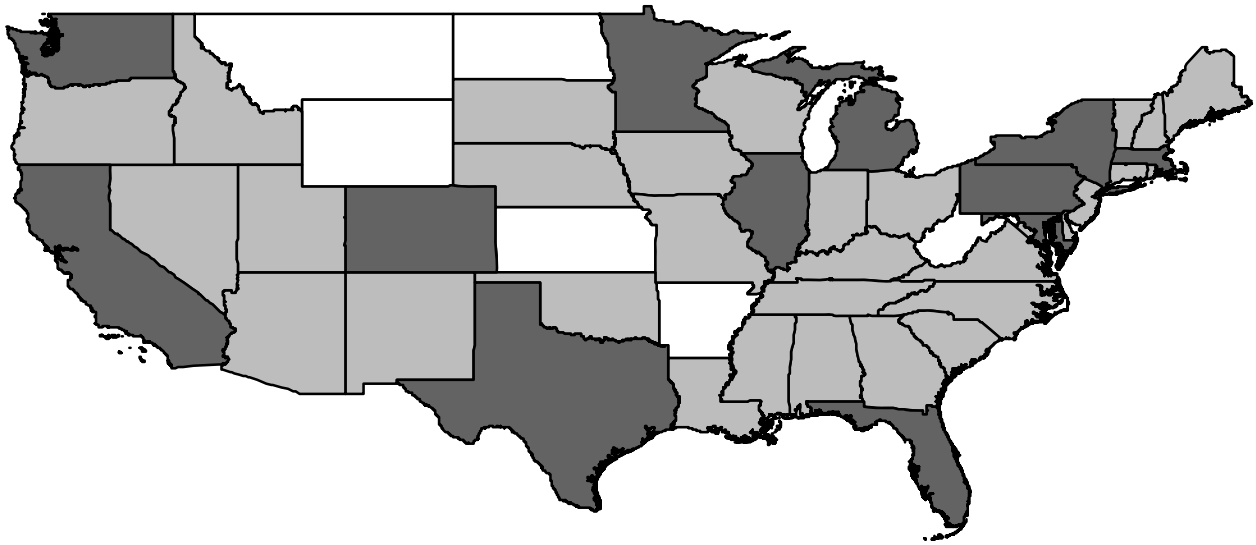

Table 1 - Sample Overview

The sample comprises venture capital (VC) financing contracts from U.S. companies that receive financing a U.S. lead VC. Each contract is matched by company name and round date with an investment round listed in VentureEconomics. 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 - 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 so if company performance is poor. 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) for non-California VC	1176	42.27	47.61	11.76
VC California Investment Experience for non-California VC	1176	0.21	0.15	0.19
VC California Syndication Experience for non-California VC	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 2B - Overview of Contract Terms

See table 1 for overview of sample. This table describes individual contract terms and reports their frequency. A coding of 1 means that ACH is 1 unit higher than for a coding of 0.

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 participation 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 (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 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 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 if company performance is poor. Rank test of equality of populations. Significance at 10% marked with *, 5% **, and 1% ***.*

Panel A: 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	***

Panel B: 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	**

Panel C: 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 performance is poor. 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

	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 if company performance is poor. 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 in California	-1.292***	-0.996***	-1.167***	-1.134***	-0.901***			-1.064***	0.339	-0.709***	-0.872***
	[0.106]	[0.117]	[0.169]	[0.127]	[0.126]			[0.159]	[0.932]	[0.189]	[0.167]
VC in California		-0.620***	-0.781***	-0.696***	-0.608***	-0.485**	-0.254				
		[0.112]	[0.145]	[0.121]	[0.111]	[0.193]	[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***	-0.497***				
						[0.178]	[0.179]				
VC in Silicon Valley							-0.353				
							[0.215]				
Distance from Silicon Valley (miles)								0.672***	0.742***		
								[0.121]	[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]

Table 4 continued

Specification	1	2	3	4	5	6	7	8	9	10	11
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]
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. Specification 1 is an ordered logit regressions where the dependent variables is the number of preferred board seats. Specification 2 is an ordered logit regressions where the dependent variables is the number of common board seats. Specification 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 4 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
Dependent Variable:	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
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 if company performance is poor. 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 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