Geography and Style in Private Equity Contracting: Evidence from the U.S. Venture Capital Market.

by

Ola Bengtsson* and S. Abraham Ravid**

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Abstract

This paper presents novel evidence that a geographically based style matters for the design of financial contracts, in addition to more traditional ingredients. We analyze cash flow contingencies included in 1,804 private equity contracts between U.S. venture capitalists (VCs) and U.S. startup companies. These contingencies affect both pricing and incentives. We document a pronounced "California effect", namely, that California based entrepreneurs receive less harsh contract terms. We find a similar effect if the VC is located in California, or if a non-California VC had a large exposure to the California market. We further show that contracts are less harsh if the geographical distance between the VC and the company is shorter, which supports the view that geographical proximity can lower monitoring costs. However, the "California effect" remains large and significant even after we control for distance and other factors. Our findings cannot be explained by differences in state laws, bankruptcy and tax regimes, or by VCs substituting less harsh cash flow contingencies for harsher control rights or for more performance-based CEO compensation. In fact, California contracts are more entrepreneur-friendly in all these dimensions.

*University of Illinois and **Rutgers University. Contact information: ola@illinois.edu; s.ravid@chicagobooth.edu. We are grateful to *VCExperts* and Joseph Bartlett for access to the contract data, to Sonali Das, Emily Feng, Bonny Lee, Cathy Chenxi You, Brian Steinmetz and Vikas Patel for their research assistance. We thank Brian Broughman, Jesse Fried, Debarshi Nandy, Larry Ribstein, Per Stromberg, and seminar participants at BIARI, CELS, University of Illinois, Northwestern University Conference on Economics and Law of the Entrepreneur, Three Crowns Conference, Canadian Conference on the Economics of Innovation, FMA, Brandeis, NYU and Penn State, in particular the discussants Robert Bartlett and John Coates for valuable comments. All remaining errors are our own.

I. Introduction

What explains the allocation of cash flows and control rights in real-world financial contracts? A large and established contract-theoretical literature proposes that this allocation depends on the agency and information problems that are specific to each investment[1]. Another strand emphasizes the importance of the institutional framework—corporate law, legal enforcement, taxation and bankruptcy procedures—that governs the relationship between the contracting parties (LaPorta et al 1998; Lerner and Schoar, 2005; Qian and Strahan, 2007; Djankov et al, 2008). We document that a geographically based style, which cannot be explained by institutional differences, can also be a major determinant of financial contract designs. Our evidence of this somewhat surprising contract determinant comes from the U.S. private equity market, a setting with sophisticated, experienced investors who have much to gain from using well-designed contracts (Hart, 2001; Kaplan and Strömberg 2003). Our finding can be interpreted in two related ways. One interpretation is that local norms may allow the parties to use a contracting style that saves on negotiation, monitoring and enforcement costs. This is done, for example, in the diamond industry where the parties rely on handshake contracts, (see also Greif 1993). Another interpretation is that local norms shape the whole market structure, creating multiple equilibria with different contracting styles.

We introduce and analyze a sample of 1,804 private equity contracts between U.S. venture capitalists and U.S. start-up companies. The sample, which is collected from mandatory legal filings (Certificates of Incorporation), is several times larger than those analyzed in published papers on U.S. VC contracts (Kaplan and Stromberg 2003, 2004; Cumming, 2008; Broughman & Fried, 2010). Our main focus is on six key investor-friendly cash flow contingencies, the inclusion of which affects how the exit proceeds from the company are split between the entrepreneur and the VCs. We aggregate these contractual terms into a harshness index that capture the extent of the VC's downside protection. The economic importance of downside protection follows from its role in shaping the entrepreneur's incentives, as well as on its impact on the pricing of VC investments.

[1] There are too many papers to be listed here, however, in the specific context of finance security design papers we 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).

We conduct several analyses of our data and derive a geographically based style in U.S. private equity contracting: a statistically and economically significant "California effect". In particular, companies headquartered in California, and in particular in Silicon Valley, receive less harsh contracts (i.e. include fewer investor-friendly cash flow contingencies). The magnitude of this effect is very large. For example, forty seven percent of non-California contracts allow VCs to receive cumulative dividends whereas only eleven percent of California contracts include such provisions. Similarly, seventy two percent of non-California contracts give VCs the right to redeem shares in the contract, whereas only thirty two percent of California contracts include such redemption rights clause.

In order to ascertain that the "California effect" is not due to excluded variables (e.g. company or investor characteristics), we include contract theoretical variables, some that have been used before and others that are analyzed here for the first time. We show that the amount invested, company age and VC experience matter in the choice of contracts. However, the "California effect" remains economically and statistically significant even after we control for and explain this variation. Indeed, the difference between California and non-California contracts is larger than any difference based another explanatory variable, including the dummies that capture the company's industry. The inclusion of other explanatory variables in our tests allows us to confirm the findings of earlier work, but on a much larger sample, and also rule out the influence of obvious omitted factors.

Examining the data further, we find that the "California effect" exists not only for company locations but also for VC locations. VCs whose main office is in California write less harsh contracts, regardless of whether they invest in companies headquartered in California or whether the headquarters are located in other states. We also document a similar "California effect" in tests that are not based on locations, but rather on the VC's *exposure* to the California market—through its prior syndication with California VCs or investments in California companies. Specifically, we show that non-California companies receive less harsh contracts from non-California VCs with more California exposure than from non-California VCs with less California exposure. Since these investments have no direct association with California, we can rule out the influence of any California-specific formal institutions or company characteristics. Moreover, by including fixed effects for

company location and VC location in these regression models, we can control for influence of state-wide factors more generally. These results pertaining to California-exposure are consistent with our thesis that there exists a contracting style that also influences how VCs structure investments in other locations.

As further evidence of a contracting style, we show that the "California effect" is a widespread phenomenon in VC contracting. It holds for four of the six cash flow contingencies that we include to measure overall contract harshness, and also for the contractual allocation of control rights.[4] California contracts include fewer investor-friendly covenants and are less likely to give the VC a majority of the board seats. This result is inconsistent with the idea that VCs simply trade off less harsh cash flow contingencies for stronger control rights when they invest in California. We also find a "California effect" for the cash compensation of CEOs of U.S. venture-backed companies. California CEOs receive less harsh compensation contracts in the sense that the fixed pay (salary) is higher and the performance-based pay (bonus) is lower. Thus, VCs do not appear to trade off less harsh cash flow contingencies for more contingent compensation contracts when they invest in California.

An obvious candidate explanation to the "California effect" is that the nature and enforcement of formal institutions may differ across regions. [5] Because all our contracts come from U.S. VCs and U.S. companies, our results cannot be explained by any country-wide difference. One could argue that the nature and enforcement of formal institutions may differ across U.S. states, with California being in some way special. We provide several pieces of evidence that contradict this explanation.

First, the effect is unchanged after controlling for the incorporation state of the company (and the incorporation state dummies are insignificant). Thus, the "California effect" is not driven by differences pertaining for example, to the efficiency and sophistication of Delaware courts, where many venture-backed companies are incorporated. Second, the effect is stronger for Silicon Valley companies even though such companies are governed by the same state-wide institutions as other California companies. Third, and perhaps most convincing, the "California effect" holds also for companies outside California that have a non-California

[4] The only aspect of VC contracts that is more investor-friendly for California companies is a lower frequency of a provision called "pay-to-play". This cash flow contingency is favorable to the entrepreneur if a VC were to not continue financing the company.

[5] Lerner and Schoar (2005), Kaplan, Martel and Stromberg (2007) and Bottazzi, DaRin and Hellmann (2008) show that legal and institutional differences can explain cross-country differences in VC contracts.

lead VC with previous exposure to California. In addition to these empirical results, our interviews with legal scholars, lawyers and VC partners confirm the view that the "California effect" in private equity contracting cannot be explained by regional differences in corporate law, legal enforcement, taxation and bankruptcy procedures.

Another candidate explanation to the "California effect" is possible regional differences in company quality or bargaining power of the entrepreneur, which could determine the design of financial contracts. Our analysis presents two findings that contradict this explanation. First, the effect survives a battery of VC, company and round characteristics that have been shown to be good proxies for company quality. Specifically, the "California effect" holds after controlling for the experiences of the company's founding team and the lead VC (Gompers et al, 2009; Sorenson, 2007), and the amount and pre-money valuation of the investment round. Second, the regional difference in contract design is not matched with a similar difference in historical outcomes of venture-backed companies. While Silicon Valley companies are more likely to have a successful exit than companies located in other parts of the country, but other California companies are not. Therefore, the pronounced "California effect" that exists also outside Silicon Valley is difficult to reconcile with geographical differences in company quality.

We also test whether the "California effect" can be explained by a more concentrated, and thereby possibly more competitive, regional VC market. We construct different proxies for the regional concentration of VCs and venture-backed companies and find that, similar to Degryse and Ongena (2005) in a different context, concentration indeed matters. However, we continue to find that the "California effect" remains large and significant even in specifications that control for the regional VC market concentration.

We finally check for geographical proximity (See Lerner, 1995, Tian, 2009). Indeed, contracts signed between two more distant transaction parties are harsher than contracts signed by two parties who are located near to each other, consistent with prior work. A closer distance is, however, much less important than the "California effect". To illustrate, consider a startup company located in Illinois who must choose between financing offers from VCs in different locations. Our results show that the contract would be less harsh if the

entrepreneur chooses a VC located in Illinois, unless the out-of-state VC is headquartered in California. Overall, the economic significance of the distance effect is about a third of the "California effect".

To summarize our results, we document a surprising "California effect" in private equity contracting that is very large, robust and wide-spread. We test and rule out explanations based upon the traditional determinants of financial contract design and prior geography literature. In particular, the California difference in VC contracts remains after we consider state-wide formal institutions, differences in company quality, the concentration of the regional VC market, and the distance between VC and company.

In a general sense, the "California effect" in VC contracting is consistent with studies showing that California has a less formal norms as compared with other entrepreneurial regions in the U.S. Saxenian (1996) provides a rich analysis of the fate of Silicon Valley and the Route 128 area in Massachusetts. Both these regions were home to major high-tech companies at the start of the recent computer age in the mid 1970s. Yet, in the 1990s and beyond Silicon Valley has become vastly more successful (figure 1, p. 3 ibid). Saxenian's conclusion is that the VC market in Silicon Valley succeeded because its local norms offered a more partner-like relationship with entrepreneurs, whereas the VC markets elsewhere took a more banker-like approach to investing. Interviews with entrepreneurs, VCs and lawyers who specialize in VC transactions suggest that such regional differences in norms are indeed very important for the structuring of VC investments.

A "friendly equilibrium" with entrepreneur receiving less harsh contract terms is possible in a rational economic framework. As discussed earlier, a simple contract is cheaper to negotiate, monitor and enforce than a contract with many intricate protections. If local norms are conducive to such a contracting style, as Saxenian's study suggests they are in California, many of the costly contract terms can be excluded. The norms could affect how financial contracts are structured within a contracting equilibrium, or could give rise to multiple, possibly equally efficient, equilibria (Landier, 2001). This "friendly equilibrium" idea is supported by the fact that the effect we find applies broadly to all contract dimensions, namely, cash flow contingencies, control rights and CEO performance-based compensation. Moreover, a VC's mode of contracting is partly formed by its experiences and interactions with other VCs. This can explain why we find that California VCs use more entrepreneur-friendly contracts even when they invest outside California, and why non-California

VCs use more entrepreneur-friendly contracts if they have more exposure to the California market. As we discuss in the next section, there are also substantial frictions that impede the harmonization of VC contracts across regions.

The rest of the paper is organized as follows—the next section provides a literature review where we relate our results to existing studies. The third section describes our data and the coding of VC cash flow contingencies. The fourth section discusses our results pertaining to the "California effect" and the fourth section our results on distance. The sixth section presents evidence of the "California effect" in control rights and CEO compensation contracts. The seventh contains discussions of our main findings. The paper ends with a brief summary and conclusion.

2. Literature review - Our Contribution in Perspective

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; Kaplan and Stromberg 2003). As discussed in the introduction, our first, and in our view most important, contribution is documenting a wide spread California contracting effect.

At the same time, our findings extend ideas in other papers, which suggest that the VC setting can be susceptible to regional contracting styles because of a large degree of geographical fragmentation in the U.S. VC market. VCs often invest locally (Gupta and Sapienza, 1992; Norton and Tenenbaum, 1993; Stuart and Sorensen, 2001; Kaplan and Stromberg, 2003; Bengtsson, 2008; Chen et al, 2009) and also form strong syndication networks with other local VCs (Hochberg, Ljungqvist and Lu, 2007). Geographical factors may arise from the presence of formal and informal networks between venture-backed companies (Gompers, Lerner & Scharfstein, 2005; Lindsey, 2008), and trust between VCs and entrepreneurs (Bottazzi et al, 2009). Tian (2009) shows that shorter distances between the VCs and the funded firms can lead to better outcomes, supporting the monitoring hypothesis. The fact that many venture investors were themselves previously active as entrepreneurs (Zarutskie, 2008) may be another channel through which geographical factors can survive in the VC industry.

Our second contribution is to enhance recent work on the importance of geography in finance. 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 Weisbenner (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. We add to existing studies of geography by documenting a "California effect" in private equity contracting, and by relating the harshness of a VC contract to the distance between VC and company.

Our third contribution is to present new evidence on the structure of financial contracts used in VC investments. In addition to the geographical factors, we identify several new contract theoretical variables, extending papers such as Kaplan and Stromberg (2003). Venture-backed companies are important promoters of entrepreneurship, innovation and economic growth.[7] Despite the fact that VCs infused about $360 billion to the economy in 42,000 deals between 1999 and 2008, few studies examine the contractual features of such investments (Sahlman, 1990; Gompers, 1988; Kaplan and Stromberg 2003, 2004; Bengtsson and Sensoy, 2009; Cumming, 2008). Our findings have important implications for the empirical testing of models of private equity contract design, which explain why different types of convertible preferred equity are used in VC

[7] Some basic statistics illustrates the importance of VC industry: 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, Intel, FedEx and Google.

investments (See Berglof, 1994; Hellmann; 1998, 2006; Cornelli and Yosha, 2002; Casamatta, 2003; Schmidt, 2003; Repullo and Suarez, 2004).

Our paper also contributes to the small literature that attempts to empirically test the validity of more general contract design theories. In addition to VC studies, contract design theory has been tested in two other broad industries, namely, bio-technology and motion pictures. 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 boundaries of the firm. In other industries there is sparse empirical work on contract design due to data limitations. However, 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. While each industry is characterized by different institutions, most studies find support for some of the major features predicted by the theory. Our study supports the view that contractual features provide important incentives and it is the first to augment these ideas by showing that contracting choices can also be influenced by geographical factors.

3. The Data

Sample

A major challenge for empirical research on VC investments is to obtain reliable data on privately-held firms. We overcome this data limitation and collect detailed information about VC contracts from mandatory legal filings. In order to study geographical differences unrelated to country-wide formal institutions we further restrict our sample to companies with a lead VC headquartered in the U.S. We identify the lead VC as the investor making the largest investment in the round. By virtue of being the largest investor, the lead VC is likely to be the most active investor during the contract negotiations with the entrepreneur.

An overview of our sample is presented in table 1. Our contract data is collected and coded with the help of *VCExperts*, and covers 1,804 investment rounds in 1,501 unique companies (this type of classification of VC contracts is common in the literature, see for example Kaplan, Martel and Stromberg, 2007). Importantly, we restrict our sample to one VC per round because all VCs in that round get the same contract terms. Our sample is the largest sample of VC contracts studied by researchers to date, and is about 10 times as large as the sample used by Kaplan and Stromberg (2003, 2004) or Cumming (2008). Our deals are recent, with 83% of investment rounds being closed in 2006 and 2007. The fact that we collect the data from mandatory legal filings is important because it means that our sample is not subject to any self-reporting bias. The representativeness of our sample is illustrated by the fact that we have many contracts from all U.S. regions and industry segments which are typically targeted by VCs.

Summary statistics are presented in table 2A. We match each contract with an investment round in *VentureEconomics* and obtain the headquarter locations of the startup company and the lead VC. We then use zip-code data to map 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 24% of VCs, many of them well known, including New Enterprise Associates, Sequoia Capital, U.S. Venture Partners and Kleiner, Perkins, Caufield and Byers all headquartered along Sand Hill Road. Consistent with earlier studies, 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 5 miles from their lead VC and 46% of companies are located no more than 50 miles apart.[8]

We obtain other company and lead VC variables from *VentureEconomics*, and supplement with hand collected data on the characteristics of the founding team. In addition we use data from *VentureEconomics* create various measures of the aggregate size of the VC market in a particular geographical area. For about half of our sample, we obtain data from *VCExperts* and *VentureEconomics* on the pre-money valuation of the

[8] 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 (which motivates our 5 mile and 10 mile cutoffs). Our data shows that this rule is generally obeyed, but also frequently violated.

company. The average sample company raised $11 million dollars at a pre-money valuation was $48 million.[9] 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.

Cash Flow Contingencies and Downside Protection Index

Each of the 1,804 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 investment. In other words, the contract terms determine the additional cash flow contingencies 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.[10] Inclusion of these terms implies that VCs capture in expectation a higher fraction of the company's exit proceeds than is implied by their fractional equity ownership. As a result, the price that VCs pay for their investment is relatively lower if the contract includes more of the cash flow contingencies that we study. Broughman and Fried (2010), show that contractual contingencies are important determinants of how exit proceeds are split, even though these provisions are sometimes subject to minor renegotiations.

Although VC contracts include other contractual rights as well, the six cash flow contingencies we study are among the most important for determining the payoff distribution between preferred and common shareholders. Also, unlike many other terms in VC contracts, the terms we study exhibit cross-sectional variation. This is important because our goal is to analyze cross-sectional differences in the design of VC contracts. Our interviews with VCs and lawyers who specialize on VC contracts lend support to the view that these cash flow contingencies are critical and often subject to negotiation. Indeed, a number of notable law

[9] The relatively high average round amount and pre-money valuation reflect the fact that we focus our data collection on relatively large VC investments.

[10] The exception is pay-to-play which when included does not favor the VC. We code pay-to-play inversely to maintain consistency with our coding of the other contingencies.

firms (e.g. Fenwick and West and Wilson Sonsini) list in their quarterly synopsis of VC contract terms summary statistics based precisely on the terms we study.

The exact meaning and economic importance of each cash flow term is described below. Table 2B provides an overview of the contract terms and reports their frequency in our sample. We code each contract term as 0 or 1, 2 based on how favorable it is to the VC, where a value of 2 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 may be included or excluded in the contract independently of each other. We aggregate the six binary variables to an index labeled Downside Protection Index (DPI). DPI can take the values 0-11 where 0 is a contract that includes a minimum of investor-friendly cash flow contingencies and 11 is a contract that includes all possible investor-friendly cash flow contingencies[11]. As reported in table 2A, the average value of DPI is 4.96. Since we are interested in the joint contractual allocation of cash flow contingencies, our primary variable of study is DPI. We also study each cash flow right in separate empirical tests.

A Detailed Description of Cash flow Contingencies 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 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

[11] The construction of the index is similar to the construction of indices such as Gompers Ishii Metrick (2003) or Bebchuk, Cohen and Ferrell (2009). Similar to these studies, our index relies on the relatively naïve aggregation method of counting functionally distinct features.

[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).

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.

In our sample, 66% of all contracts include no cumulative dividends (harshness=0). When cumulative dividends are included, the most common dividend rate is 8%. We coded a provision for a divided of 8% or below as 1 and above 8% (6% of the sample) as 2. The distribution of cumulative dividends in our sample is similar to the distribution found in the Kaplan and Stromberg's (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 6% have above 1X. We coded 17 contracts (1%) that had a liquidation preference greater than 2 as 2 (the harshest). 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 24% have capped participating preferred stock (harshness=1). For 44% of the contracts the participation is not capped (harshness=2). 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=1), while only 9% of contracts have full ratchet anti-dilution (harshness=2). 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. 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 contingencies that are attached to the preferred stock. Thus, pay-to-play only matters when the VC does not invest in a follow-up round.

It could be argued that pay-to-play should not be included in DPI because this contract term only affects how cash flows are split if the VC does not invest in follow-up rounds. VCs typically continue as

investors, so that pay-to-play may have limited implications in practice. Our empirical analysis of separate cash flow contingencies shows that our main result – that California contracts are less investor-friendly – would actually be stronger if we did not include pay-to-play in DPI.

Pay-to-play is not included in 83% 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=2). Pay-to-play either involves the VC losing some contractual rights, typically anti-dilution, and converting to preferred (harshness=1), or losing all contractual rights forcing her to convert to common stock (harshness=0). Pay-to-play is not reported by Kaplan and Stromberg (2003).[13]

The Importance of Cash flow Contingencies in VC Contracts

Before presenting our empirical results pertaining to contract design and geography, we need to make a few remarks about the economic importance of cash flow contingencies in VC contracts. As discussed above, each of the cash flow contingencies that we study translates in its own unique way into downside protection for the VC. Specifically, the contract always gives the VC both a payoff from its fractional equity holding and an additional payoff implied by the various cash flow contingencies. Harsher cash flow contingencies are associated with a larger such additional payoff, and particularly so in states of the world where company performance is bad.

The first implication of harsher cash flow contingencies is that such a contract, similar to a standard debt contract, gives the entrepreneur stronger monetary incentives (Kaplan and Stromberg, 2003). The additional payoff to the VC represents a relatively large fraction of the total proceeds from an unsuccessful company outcome but a relatively small fraction from a successful outcome. If the company were to go public with sufficiently high IPO proceeds, then the VC would not be entitled to any additional payoff (because of a contractual provision called "Automatic Conversion"). All else equal, a higher DPI implies

[13] We should note that we also tried a binary code, i.e. where contracts were coded as either "harsh" or not harsh. This yielded a 0-6 scale. The results were very similar. These tables are available upon request from the authors.

that the entrepreneur has more to gain from taking actions that increase the likelihood of company success.[14] The distribution of payoffs in different states of the world also affects the VC's incentives to monitor and provide value-adding services (Casamatta, 2003; Schmidt, 2003; Repullo and Suarez, 2004). The stronger downside protection associated with higher DPI means that the VC has less to gain from taking such actions. Thus, the harshness of a VC contract is important because it affects both the entrepreneur's and the VC's incentives.

The second implication of harsher cash flow contingencies is a lower implied pricing of the VC investment (because the VC is entitled to a higher expected payoff). Existing studies of VC investments pricing typically rely on reported data on pre-money valuations. Since this metric does not account for the pricing implications of contractual cash flow contingencies, it understates the actual price VCs pay and thereby also understates the venture-backed company's cost of capital. The results on contract harshness that we document in this paper imply that the understatement of VC investment pricing is subject to considerable geographical variation. In particular, the "California effect" means that the "correct" pricing of investments associated with the California VC market is closer to the pre-money valuation than the pricing of investments in other regions. As an illustration, suppose that an empirical study finds that companies headquartered in the Silicon Valley receive on average the same pre-money valuation as companies headquartered in New York City. Our findings suggest that the full economic price of New York companies is actually lower, since California contracts have a much lower DPI.[15]

[14] The weaker incentives associated with a lower DPI could, to some degree, be counterbalanced by giving the entrepreneur more performance-based cash or equity compensation. However, as we discuss in section 6, our result that California companies have weaker incentives due to less harsh cash flow contingencies cannot be explained by such substitution towards tougher incentives in compensation contracts.

[15] It is beyond the scope of this paper to estimate the implication of different cash flow contingencies on the pricing of VC investments. Such estimation would be based on a complex simulation model which relies on detailed assumptions about the round-by-round investment dynamics and the distribution of ultimate company performance measures.

4. Cash Flow Contingencies and "California Effect"

We now proceed to an analysis of geography and cash flow contingencies. We first study the relationship between contract harshness and geographical location, and then proceed in section 5 to include study the relationship between contract harshness and geographical distance.

Downside Protection Index, Univariate Analysis

Table 3 provides the first data classification which documents the strong geography component which we call the "California effect". In panel A we present univariate comparisons of our downside protection index, showing that both VC and company location matter for contract design. VCs in California tend to offer much better terms for entrepreneurs, and companies based in California also tend to receive better terms. 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 "California effect" on contract design is economically large, and particularly so if the company and VC are both located in Silicon Valley—such contracts are more than one DPI unit less investor-friendly than a contract between a company and VC that are both located outside the Silicon Valley. This geographical difference represents about two thirds of one standard deviation of the cross-sectional variation of DPI. The "California effect" in VC contract design is notably larger than any difference based on plausible proxies for agency and information problems (which conceptually should matter for contract design). As shown in Panel B, differences in company age, founder background, round amount and VC experience (number of investments) each amount to only about a half DPI unit. Although these proxies are all significant in the direction predicted by theory, their magnitude is about half of the "California effect".

We further explore whether the uniqueness of the California effect reflects a difference with a few other states or reflect a broader empirical pattern. As shown in appendix table A, the difference exists for 40 out of the 43 U.S. states that are represented in our sample (not counting California). Also, appendix table B shows that the difference holds across all major industry groups and across sorts based on company age.

Panel C in table 3 shows that the differences between contracts are not due to one specific term but hold for four of the six cash flow contingencies that make up DPI. The VC attorney David K. Levine (of Snell and Wilmer LLP) confirms one of these 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] We do not observe differences in liquidation preference, which is not surprising given that this contingency exhibits a low degree of cross-sectional variation.

Interestingly, we find that California contracts are *more* likely not to include entrepreneur-friendly pay-to-play provisions. While it is difficult to compare the real-world importance of different cash flow contingencies, the California difference for pay-to-play is relatively small compared to the difference for all other contingencies. Also, our interviews with VCs and lawyers suggest that pay-to-play is less important than the other contingencies because it only matters if VCs do not invest in follow-up rounds (which they typically do). Further, it is consistent to an extent with our "handshake" interpretation. Pay to play needs to be monitored and enforced, and if informal relationships can resolve the issue, it may not be needed. We infer that even though California contracts have more investor-friendly pay-to-play provisions, the overall "California effect" is that VC contracts are less investor-friendly (thus more entrepreneur-friendly).

Downside Protection Index, Multivariate Analysis

Table 4A is a first multivariate exploration of the harshness of contract design. We run OLS regressions with DPI 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. All regression models also include industry and year fixed effects. The analysis confirms the results of the univariate comparison with a strong "California effect" on contract design. As shown in regression model 6, this effect seems to be larger for Silicon Valley—in other words, among California companies, Silicon Valley location provides an extra boost to the leniency of the contract.

[16] "Analyzing VC Deal Terms. Leading Lawyers on Structuring Term Sheets, Developing Negotiation Strategies, and Assessing Risks" (Aspatore Books, 2008) p.129.

Downside Protection Index, Robustness

In un-tabulated regressions we conduct a variety of robustness of the "California effect". Our results on company and VC location are robust to limiting the sample to one observation per company and VC respectively. Our results are further robust to controlling for the pre-money valuation, which is a good proxy for unobserved company quality. We do not include pre-money valuation in our main specifications because it may be endogenously related to DPI (e.g., entrepreneurs trade off nicer terms against more favorable valuation). Our results on company and VC location hold after we include law firm fixed effects, and our results on company California location hold after we include lead VC fixed effects. The result of these fixed effect regressions shows that the "California effect" cannot be explained by law firms or VCs using standardized contract templates.

Downside Protection Index, Agency and Contract Theory Findings

Another part of table 4A confirms key variables predicted by contract theories, extending the Kaplan and Stromberg (2003, 2004) analysis to a much larger sample and presenting some new findings. Our first result, which has not previously been documented, is a persistent negative and significant correlation between contract harshness and amounts financed in that round. If money raised can be interpreted as a proxy for quality, then this finding shows that better quality firms receive better terms. This is consistent with several types of models; in particular, if we assume that there is some competition for the better firms, less harsh contract terms will be a natural equilibrium outcome. This interpretation is supported by some empirical work. Nahata (2008) finds that companies that raise more funding are more likely to have a successful IPO or an acquisition exit.

Our second result is that successful serial founders receive less harsh contracts. This finding is significant only for companies financed by a non-California VC. A similar finding is presented by Kaplan and Stromberg (2003, table 4) who show that serial founders get better liquidation rights (less harsh contracts, in our terminology). Venture-backed companies founded by more experienced entrepreneurs are also more likely to have a successful outcome (Gompers et al 2010), and therefore require less downside protection.

Our third, and at first glance somewhat surprising, result is that older companies receive harsher contracts. Since our regressions control for various company characteristics and quality, as well as for VC characteristics, this result may be interpreted as requiring more downside protection for companies that had taken longer to mature, and by extension, can take longer to exit. This finding is not reported elsewhere except in Bengtsson and Senssoy (2010) which uses the same data set. This finding is also consistent with the result in Gompers et al (2010) that younger companies provide higher rates of return.

Our fourth finding is that contracts are less harsh for more experienced VCs. Bengtsson and Sensoy (2009) investigate this effect in detail. In their model, more experienced VCs optimally substitute contractual harshness with a better ability to monitor and perform non-contractual enforcement. Another possibility which is consistent with our California effect is that more experienced VCs can receive equilibrium outcomes with less harsh contracts.

Downside Protection Index, VC Proximity and Exposure

While the "California effect" is also noted in Kaplan and Stromberg (2003) for a much smaller sample, our data allow us to explore the question whether it applies to only California locations, or reflects a much broader contracting style. To this end, we create proxies that capture how closely related the lead VC is to the California market, in terms of either geographical proximity or prior investment exposure.[17] We use data from *VentureEconomics* to create these proxies.

Table 4B presents regression results that include the same control variables as in table 4A. In these models, the sample is restricted to companies that are headquartered outside California and have a lead VC that is also headquartered outside California. The advantage of these restrictions is discussed below. Regression model 1 shows that contracts are more investor-friendly if the VC is located further away from Silicon Valley. In model 2, we include "VC California Investment Experience", which measures how many times the VC has previously invested in companies located in California. We find that VCs that have a greater prior California

[17] We note that a VC who ranks high on our California proximity and exposure variables may have a satellite office in California. Such office location should not affect any formal institutions or company characteristics when the VC invests in non-California companies. Our data does not include any information about satellite office locations.

exposure are more likely to adopt a "California style" in VC contracting. We obtain a similar result in model 3 for "VC 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. These results show that the California contracting style is not only a one-state phenomenon, but also affects VCs who are physically close, or had more exposure, to California VC market. This is perhaps the most convincing piece of evidence that favors the explanation of a different contracting style in California as conjectured by Kaplan and Stromberg (2003, p.299).

Essentially, since the specifications in table 4B include only investments with non-California locations, we can rule out explanations related to any California-specific formal institution or company characteristics. We can even go one step further and rule out that *any* state-specific factors explain the "California effect"—we find that our results remain qualitatively similar in specifications 4-6 where we include fixed effects based on both the company's and the lead VC's locations.

Separate Cash Flow Contingencies

Table 5 adds probit regressions where each separate cash flow contingencies in turn is the dependent variable. In addition to "Company in California", our independent variables include the full set of contract-theoretical control variables. We confirm the univariate results that contracts for California contracts are less likely to include cumulative dividends, participation, anti-dilution and redemption but more likely to include an investor-friendly version of pay-to-play provisions (i.e. no pay-to-play). Again, common contract theoretical variables, such as VC experience (number of investments), company age and round number matter as well.

California companies also raise larger amounts and receive financing from a greater number of VCs (models 7 and 8). These differences cannot explain our results on DPI because our regressions in table 4A control for round amount and number of VCs. Importantly, regression model 10 shows that the pre-money valuation is not higher for companies in California. These results indicate that the "California effect" in contract harshness is not explained by differences in company quality across geographical areas. We discuss

this idea in more detail in section 7. We should also note that company age, round number and VC experience have similar sign and significance as they had in regressions for the overall index.

Downside Protection Index and VC Market Concentration

Our results thus far have demonstrated a significant cultural effect in VC contracts. However, it may be that the "California effect" can be attributed either to the concentration of VCs in California. Both of these issues have been explored in earlier work on other types of firms, but we are the first to study the role of market concentration on private equity contract design.[18]

We create a variable that measures the number of active VCs in the state where the company is located. In table 6, we regress DPI on company, VC and round variables and this include a measure of VC concentration. VC concentration is positively correlated to DPI, 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 3-6). Importantly, the coefficients on the California dummies remain negative and significant. 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. Put differently, the "California effect" can only partly be explained by a greater concentration of VCs in that state.[19]

5. Cash Flow Contingencies 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

[18] This is consistent with the idea of clustering- see Chen et al (2009), or Delgado et al. (2009) among others.
[19] 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 DPI and VC/company concentration.

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.

Comparisons of average DPIs for different distances are found in table 7. As shown in panel A, DPI is lowest for companies that are at closer distance to the VC. The differences based on distance seem somewhat small, however, when we consider the "California effect", the picture becomes much clearer. In panel B we restrict our analysis to California companies. The average DPI is 4.55 if the VC is located outside California but only 4.25 if the VC is located in California. This result can be interpreted either as a distance result or as part of the "California effect" that we document. In panel C we restrict our analysis to non-California companies. Without any California connections, and if the company and the VC are from different states, contracts feature a harshness index of 5.48. If the company and the VC are in the same state, DPI drops to 5.29. However, if out-of-state VC is located in California then DPI is 4.75, thus lower than for a same state VC. These magnitudes imply that the "California effect" dominates the distance effect on VC contract design.

Table 8 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 4A and include all controls used previously, but for space considerations we only show the distance variables and the company California location dummy. The "California effect" is as significant as it is in table 4A. However, distance seems to be important as well.

6. Other Contract Dimensions and the "California Effect"

Control Rights

Although the focus of our study is on cash flow contingencies, we also have data on control rights for some of the contracts in our sample. These control rights are board seats, which give the VCs residual decision rights, and covenants (i.e. protective provisions), which, similar to debt covenants, give VCs the right to veto specific decisions. Because control right become very complex in follow-up VC contracts, we limit our attention to first round contracts only.[20]

This sub-sample includes 285 contracts with the necessary information regarding covenants, as well as data on the allocation of board seats between VCs (preferred shareholders) and other (common) shareholders. Table 9 presents regressions with different measures of control rights as dependent variables. We include, but do not report, the same battery of control variables in these regression models as in our previous tests.

Regression model 1 shows that contracts for California companies are less likely to include investor-friendly covenants, which give the VC veto rights over important financial and operational decisions. We also test for each covenant separately and note that the California dummy was negative throughout and several of the most important cases show statistical significance. In particular, they include the right to issue more debt, the right to sell assets, change the company's business model and to engage in an inside transaction. The only covenant that is more likely for California companies is the right to issue junior preferred equity. In regression models 14-15 we relate the VC's control over the board of directors to the company's California location. We find that California contracts are less likely to receive a board majority (although this result is only weakly significant).

These results on control rights are important because they demonstrate that the "California effect" does not reflect a substitution between cash flow and control rights. VCs who finance California companies do not agree to fewer investor-friendly cash flow contingencies in order to compensate for more investor-friendly

[20] 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. For example, suppose a follow-up VC contract give the investing VCs no board seats or covenants. This would not mean that these VCs have no control rights because they could have received sufficient board seats and covenants in an earlier round contract..

control rights. Our findings also further support that the "California effect" reflects a broad pattern of less investor-friendly contract design.

CEO Compensation Contracts

We next explore whether the design of executive compensation contracts in venture-backed companies is also subject to geographical variation. Because the mandatory legal filings that make up our contract dataset are agreements between shareholders, they do not include any information about salaries and bonuses. To explore this issue, we use a different dataset that comes from proprietary surveys conducted biannually by *VentureOne*, a large data provider of private equity data.[21] This compensation dataset covers 3,363 CEO compensation contracts from 1,736 unique U.S. venture-backed companies surveyed between 2002 (first survey year) and 2007 (last year for which we have data). Importantly, although the surveys provide information on a broad range of compensation-relevant variables for each sample company, they do not disclose the company's identity. We therefore cannot match our compensation dataset with our contract dataset. However, the size and breadth of both datasets mean that there likely is to be considerable overlap in coverage.

Table 10 presents our results on CEO compensation contracts. In addition to the explanatory variable of our interest – a dummy that takes the value 1 if the company is located in California and 0 otherwise – the regressions include controls for company size, operating performance, VC fundraising success, and industry fixed effects (based on *VentureOne's* 15 segment classification). The regressions also include survey year fixed effects, and dummies capturing whether the CEO is a founder and the Chairman of the Board.

Specification 1 shows that companies located in California are less likely to pay the CEO a cash bonus based on his performance. Specification 2 shows that bonus represent a smaller fraction of the CEO's total cash compensation. This difference reflects partly a lower bonus amount (Specification 3), and partly a higher salary amount (Specification 4). Overall, these findings show that California companies give their CEOs contracts which are less performance sensitive even though they receive higher fixed cash compensation. These results

[21] We thank VentureOne, Brendan Hughes and John Hand for access to the proprietary survey data.

remain qualitatively the same if we restrict the sample to one survey per company, or if we restrict the sample to the period overlapping with our contract data period, 2005-2007.

We explain only the cash portion of CEO compensation contracts. Kaplan and Stromberg (2003) study equity incentives for entrepreneurs and show that contracts from California include weaker performance-based equity incentives for entrepreneurs. Similar to our findings on control rights, these results on compensation are important because they demonstrate that the "California effect" does not reflect a substitution between less harsh cash flow contingencies in investment contracts and tougher executive compensation contracts. California companies are less harsh for both types of contracts.

7. Discussion of the "California Effect" and Further Robustness Checks

Differences in Legal Institutions

Unlike studies that compare financial contract design across countries, all companies and VCs in our sample are located in the U.S. This means that our results cannot be explained by differences in tax code, bankruptcy procedures, legal infrastructure and enforcement of financial contracts. Interviews with legal scholars and practicing VC lawyers confirm this view. A substantial part of contract enforcement depends on which U.S. state the company has chosen for its legal incorporation. Broughman and Fried (2010) provide evidence that the state of incorporation can matter for the enforcement of contractual terms in VC investments. They study only California-based companies and show that the voting rights and fiduciary duties are somewhat different between Delaware and California incorporations. Importantly, these legal differences do not explain our results. In un-tabulated robustness tests we include the state of incorporation in our regressions of DPI on locations. We find that our results pertaining to California locations remain unchanged in such regression models, and that DPI does not vary with the state of incorporation. This strengthens our belief that legal differences (or differences in how contract terms are reported in the mandatory legal filings we study) cannot explain the large "California effect" that we document.

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. Although there is no direct relationship between non-competes and the contract terms we study, it is theoretically possible that there could exist some substitution between these features. This difference in non-competes, however, is very unlikely to explain our results because we also find that contracts are less harsh in Silicon Valley, for which state laws are identical to other California locations. 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.

Differences in Company Quality

Another possible explanation for the “California effect” is that this particular geographical area attracts the best entrepreneurs and the best ideas, which could be associated with less harsh VC contracts. This reason is behaviorally equivalent to a "California effect". However, it is not likely to explain our findings. First, all our multivariate tests include a number of important control variables, such as company industry and age, founder experience, investment amount, and VC experience. All these variables, and in particular the last two controls are likely to absorb various aspects of company quality—better companies raise more VC financing and match with more experienced VCs. As discussed in section 4, the “California effect” is larger than the coefficient on any observable company, founder or VC characteristic. Secondly, our analysis of other deal dimensions in table 5 shows that companies in California do not have higher pre-money valuations in a multivariate regression with controls. Thirdly, a comparison of company outcomes for historical VC investments shows that whereas companies located in Silicon Valley have higher likelihood of IPO or acquisition, there is no difference between other California locations and other U.S. states (see appendix table C for details). This contrasts our results on contract design that contracts in California is considerably less investor-friendly than other U.S. states, with a much smaller difference between Silicon Valley and rest of California. This finding supports the view that there are indeed multiple equilibria with similar outcomes- in other words, less harsh contracts with matched companies and harsher contracts with similarly matched companies can lead to similar outcomes.

Differences in Regional Style

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 institutions or differences in company quality. Quotes from two reputable VC attorneys illustrate the industry perception that there are important regional differences in contract design. Eduardo C. LeFevre (of Foley and 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."[22] 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. These practitioner explanations agree with the thrust of Saxenian's (1996) argument that regional styles play an important role in how local VC markets operate. This type of framework is also consistent with the management styles idea (see Bertrand and Schoar, 2003, and Schoar 2007), although our effect applies to a geographical region and not an individual.

8. Conclusions

This paper shows that style based geographical elements can form an essential component of private equity contract design in addition to more traditional determinants such as information and agency problems, and legal and other formal institutions. We support the idea that multiple equilibria with different harshness can arise and all would provide the desired outcome. We also find support for the role of various contract theoretical variables, including some that we study for the first time in the VC context.

The "California effect" we document is economically and statistically very significant. Its economic importance follows from the effect of cash flow contingencies on the entrepreneur's incentives and the pricing

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

of VC investments. We show that contracts involving California companies or California VCs include considerably fewer investor-friendly cash flow contingencies. Indeed, this regional difference is larger than any difference based on a plausible contract determinant, such as investment size, founder background or VC reputation.

We show that the "California effect" cannot be explained by state-wide differences in formal institutions, or by differences in company quality. Importantly, unlike studies of cross-country differences in private equity contracts (See Lerner and Schoar, 2005; Kaplan, Martel and Stromberg, 2007; Bottazzi, DaRin, and Hellmann, 2008), we document our patterns in the U.S. VC market.

Although market concentration and distance also influence the harshness of VC contracts, the "California effect" remains strong after controlling for them. We also reject the idea that the relative California friendliness of cash flow rights is traded off against harsher control rights or more performance-based CEO compensation contracts. In fact, we find that California contracts provide weaker control rights to VCs and less performance-based CEO compensation.

In conclusion, our findings show that even though VCs are sophisticated investors, geographic-based style is very important in contract formation.

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Table 1 - Sample Overview

The sample comprises venture capital (VC) financing contracts from U.S. companies for which the lead VC had its main office in the U.S. Each contract is matched by company name and round date with an investment round listed in VentureEconomics. Industry classification is based on VentureEconomics 10 industry groups. Company locations refer to headquarters and are here reported based on the Census 9-region division.

Number of Unique		
Contracts	1,804	
Companies	1,501	
Lead VCs	626	
Industry	Number of Contracts	Fraction
Biotechnology	233	*13%*
Communications and Media	155	*9%*
Computer Hardware	43	*2%*
Computer Software and Services	388	*22%*
Consumer Related	31	*2%*
Industrial/Energy	70	*4%*
Internet Specific	382	*21%*
Medical/Health	275	*15%*
Other Products	62	*3%*
Semiconductors/Other Elect.	165	*9%*
Year of Round		
2005	218	*12%*
2006	670	*37%*
2007	851	*47%*
2008	65	*4%*
Company Location		
East North Central	69	*4%*
East South Central	10	*1%*
Mid Atlantic	219	*12%*
Mountain	55	*3%*
North East	330	*18%*
Pacific	694	*38%*
South Atlantic	256	*14%*
West North Central	40	*2%*
West South Central	131	*7%*

Table 2A - Summary Statistics

See table 1 for overview of sample. Downside Protection Index (DPI) is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. Distance calculations reflect geographical distance between company headquarters and VC main office. All company, VC and deal variables, except DPI, are constructed using VentureEconomics data. Number of VCs in State/Region is a count of all VCs that made an investment in the same year as the contract. Number of VC-backed companies and Amount VC financing are calculated based on companies that received financing in the same year as the contract. Founder characteristics are handcollected by the authors. Serial Founder takes the value 1 if any of the company's founder has previously started a venture-backed company. Serial Founder with IPO takes the value 1 if any of the company's founder has previously started a venture-backed company which had IPO. Serial Founder with Merger takes the value 1 if any of the company's founder has previously started a venture-backed company which had a merger. Variables with only reported mean are dummies.

Deal Conditions	Mean	St.Dev	Min	Max	Median
Downside Protection Index (DPI)	4.96	1.63	0.00	10.00	5.00
Total Round Amount ($ million)	10.82	12.40	0.01	110.00	7.00
Round Number	2.80	1.55	1.00	5.00	3.00
Number of VCs in Round	4.10	2.62	1.00	24.00	3.00
Pre-Money Valuation ($ million)	48.74	63.37	0.13	573.94	28.47
Fraction of Shares of VCs	22.5%	11.1%	0.0%	91.9%	22.4%
Company and VC Location					
Company in California	34.6%				
VC in California	34.5%				
Number of Other VCs in California	0.98	1.22	0.00	8.00	1.00
Company in Silicon Valley	12.7%				
VC in Silicon Valley	23.6%				
Distance from Silicon Valley (miles) for non-California VC	42.27	11.75	7.15	59.26	47.61
VC California Investment Experience for non-California VC	20.7%	19.6%	0.0%	100.0%	15.4%
VC California Syndication Experience for non-California VC	31.8%	20.5%	0.0%	100.0%	29.2%
Distance Between VC and Company					
VC and Company Within 5 Miles	21.3%				
VC and Company Within 10 Miles	42.3%				
VC and Company Within 50 Miles	45.2%				
VC and Company in Same State	48.7%				
Distance (1,000 miles)	0.71	0.94	0.00	2.70	0.18
Aggregate Size of VC Market					
Number of VCs in State	375.11	421.02	0.00	950.00	113.00
Number of VCs in Region	475.31	441.63	0.00	1237.00	205.00
Number of VC-backed companies in Industry X State	177.52	194.50	1.00	615.00	119.00
Amount of VC financing in Industry X State ($ millions)	1780.00	1680.00	0.00	7030.00	1090.00
Company and Founder Characteristics					
Company Age	4.13	2.74	0.00	10.00	4.00
Serial Founder	22.3%				
Serial Founder with IPO	5.9%				
Serial Founder with Merger	8.1%				

Table 2B - Contract Terms

See Table 1 for sample overview. Each contract term contributes with 0, 1 or 2 to the Downside Protection Index, where 2 is the harshest to the entrepreneur / most favorable to the VC.

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.

	Above 8% = 2	8% or Below = 1	Not Included = 0
Number of Contracts	112	509	1,183
Fraction of Sample	*6%*	*28%*	*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 2X = 2	Between 1X-2X = 1	1X = 0
Number of Contracts	17	106	1,681
Fraction of Sample	*1%*	*6%*	*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 "Capped" participation the investor only receives the liquidation preference if his investment IRR is below a certain hurdle. With no participation the investor holds convertible preferred stock.

	Not Capped = 2	Capped = 1	Not Included = 0
Number of Contracts	799	426	579
Fraction of Sample	*44%*	*24%*	*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 = 2	Weighted Average = 1	Not Included = 0
Number of Contracts	157	1613	34
Fraction of Sample	*9%*	*89%*	*2%*

Redemption: The investor has the right to sell his shares back to the company after a specified time period. A typical redemption right provision gives the investor the right to sell back 1/3 of his shares after 5 years, 1/3 after 6 years and the remaining 1/3 after 7 years.

	Included = 1	Not Included = 0
VC Contract Round	1,051	753
Contract Round	*58%*	*42%*

Pay-To-Play: Specifies what contractual rights that the investor loses if he does not invest in a follow-up financing round of the company. With "Convert to Preferred" the investor loses some contractual rights (typically anti-dilution rights) that are attached to his preferred stock. With "Convert to Common" the investor loses all contractual rights that are attached to his preferred stock.

	Not Included = 2	Convert to Preferred=1	Convert to Common=0
VC Contract Round	1,502	65	237
Contract Round	*83%*	*4%*	*13%*

Table 3 - Univariate Analysis of Downside Protection and Separate Contract Terms, California Effect

*See table 1 for sample description. Panels A and B show average Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. Panel C shows frequency of separate contract terms. Dividend means that VC gets cumulative dividends. Liquidation Preference means that VC gets more than 1X liquidation preference. Participation means that VC gets participating preferred (and not convertible preferred). Redemption means that VC has right to sell back shares to company. Anti-Dilution means that VC gets full-ratchet anti-dilution. In order to allow for a consistent interpretation of contract harshness, Pay-To-Play which is unfavorable to the VC, is coded inversely so a higher frequency captures a harsher contract term. Rank test of equality of populations. Significance at 10% marked with *, 5% **, and 1% ***.*

Panel A: Average Downside Protection Index				Difference	Test
Company not in California	5.28	Company in California	4.35	0.93	***
Company not in Sil. Valley	5.06	Company in Silicon Valley	4.23	0.84	***
VC not in California	5.24	VC in California	4.41	0.83	***
VC not in Silicon Valley	5.16	VC in Silicon Valley	4.29	0.88	***
VC and Company not in Silicon Valley	5.22	VC and Company in Silicon Valley	4.07	1.14	***

Panel B: Average Downside Protection Index				Difference	Test
> Median Company Age	5.15	< Median Company Age	4.73	0.42	***
Other Founder	4.99	Serial Founder with IPO	4.40	0.59	***
< Median Round Amount	5.21	> Median Round Amount	4.69	0.52	***
< Median VC # of Inv.	5.21	> Median VC # of Inv.	4.70	0.51	***

Panel C: Frequency of Separate Contract Terms

	Cumulative Dividends	Liquidation Preference	Participation	Anti-Dilution	Redemption	Pay-To-Play
Company not in California	47%	7%	70%	10%	72%	81%
Company in California	11%	7%	64%	6%	32%	87%
Difference	36%***	0%	5%**	4%***	40%***	-6%***
VC not in California	45%	7%	70%	10%	68%	82%
VC in California	14%	6%	64%	5%	39%	86%
Difference	31%***	1%	6%**	5%***	30%***	-4%**

Table 4A - Regression Analysis of Downside Protection Index, California Effect

*See table 1 for sample description. OLS regressions where the dependent variable is Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. Specifications 1-5 includes all companies, and specifications 6-7 include only companies in California. All specifications include industry controls (10 groups based on VentureEconomics classification) and contract year. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4	5	6	7
Dependent Variable:	DPI	DPI	DPI	DPI	DPI	DPI	DPI
Company in California	-0.896***	-0.688***	-0.747***	-0.813***	-0.636***		
	[0.082]	[0.092]	[0.126]	[0.099]	[0.099]		
VC in California		-0.426***	-0.485***	-0.497***	-0.416***	-0.380***	-0.166
		[0.090]	[0.123]	[0.098]	[0.089]	[0.134]	[0.165]
VC and Company in California			0.131				
			[0.177]				
Company in Massachusetts				-0.319**			
				[0.147]			
VC in Massachusetts				-0.211			
				[0.132]			
Company in Texas				-0.407**			
				[0.165]			
Number of Other VCs in California					-0.075		
					[0.048]		
Company in Silicon Valley						-0.225*	-0.176
						[0.124]	[0.124]
VC in Silicon Valley							-0.334**
							[0.148]

Table 4 continued [control variables]

Specification	1	2	3	4	5	6	7
(log) Company Age	0.364***	0.358***	0.358***	0.339***	0.355***	0.242*	0.242*
	[0.077]	[0.076]	[0.076]	[0.076]	[0.076]	[0.138]	[0.138]
Round Number	0.031	0.033	0.034	0.034	0.037	0.047	0.046
	[0.034]	[0.033]	[0.033]	[0.033]	[0.033]	[0.050]	[0.050]
Serial Founder	-0.105	-0.105	-0.104	-0.075	-0.107	0.05	0.026
	[0.128]	[0.125]	[0.125]	[0.123]	[0.125]	[0.198]	[0.195]
Serial Founder with IPO	-0.193	-0.24	-0.239	-0.222	-0.242	-0.279	-0.252
	[0.186]	[0.189]	[0.189]	[0.185]	[0.188]	[0.247]	[0.244]
Serial Founder with Merger	0.031	0.035	0.036	0.062	0.04	-0.09	-0.066
	[0.162]	[0.159]	[0.158]	[0.157]	[0.159]	[0.226]	[0.221]
Number of VCs in Round	0.000	0.001	0.001	0.003	0.014	0.007	0.007
	[0.018]	[0.018]	[0.018]	[0.018]	[0.020]	[0.025]	[0.025]
(log) Total Round Amount ($ m)	-0.285***	-0.283***	-0.280***	-0.265***	-0.274***	-0.198***	-0.197***
	[0.051]	[0.051]	[0.051]	[0.050]	[0.051]	[0.075]	[0.075]
(log) VC Number of Investments	-0.180***	-0.165***	-0.164***	-0.146***	-0.166***	-0.119***	-0.098**
	[0.029]	[0.030]	[0.030]	[0.030]	[0.030]	[0.042]	[0.043]
VC Partnership	0.097	0.084	0.08	0.086	0.083	-0.068	-0.056
	[0.100]	[0.099]	[0.099]	[0.098]	[0.099]	[0.156]	[0.155]
Observations	1804	1804	1804	1804	1804	625	625
Sample	Full	Full	Full	Full	Full	Company	California
R-squared	0.16	0.17	0.17	0.18	0.18	0.13	0.13
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4B - Regression Analysis of Downside Protection Index, California Effect, VC Exposure

*See table 1 for sample description. OLS regressions where the dependent variable is Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. All specifications include only companies headquartered outside California and lead VCs headquartered outside California. Control variables are (log) Round Amount, Number of VCs in Round, (log) Company Age, Serial Founder, Serial Founder with IPO, Serial Founder with Merger, VC Partnership, (log) VC Number of Investment, and 10 industry dummies (VentureEconomics classifications) and year dummies. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***. All specifications include industry controls (10 groups based on VentureEconomics classification) and contract year . Specifications 4-6 include controls for company state and VC state. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4	5	6
Dependent Variable:	DPI	DPI	DPI	DPI	DPI	DPI
Distance from Silicon Valley (miles)	0.417**			0.417**		
	[0.189]			[0.189]		
VC California Investment Experience		-1.615***			-1.615***	
		[0.403]			[0.403]	
VC California Syndication Experience			-0.959***			-0.959***
			[0.305]			[0.305]
Observations	975	975	975	975	975	975
Sample	Non-California Company + Non-California Lead VC					
R-squared	0.12	0.12	0.12	0.25	0.26	0.25
Company, Founder, VC Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company State Controls	No	No	No	Yes	Yes	Yes
VC State Controls	No	No	No	Yes	Yes	Yes

Table 5 - Regression Analysis of Separate Contract Terms and Other Deal Characteristics, California Effect

*See table 1 for sample description. Specifications 1-6 are logit regressions where the dependent variables are separate deal terms that take the value 1 if present and 0 if not present. In order to allow for a consistent interpretation of contract harshness, we code Pay-To-Play (specification 6), which is unfavorable to the VC, as 1 when excluded and 0 when included. Specification 7 is an OLS regression where the logged total dollar amount of the round is the dependent variable, specification 8 is a negative binominal 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:	Cum.Div.	Liq.Pref.	Particip.	Anti-Dil	Redemp.	Pay-Play	Amount	# of VCs	Syndic.	Valuat.	Stake
Company in California	-1.955***	-0.031	-0.262**	-0.608***	-1.714***	0.551***	0.128***	-0.065**	0.072	0.049	0.004
	[0.168]	[0.213]	[0.127]	[0.233]	[0.130]	[0.169]	[0.047]	[0.032]	[0.178]	[0.069]	[0.007]
(log) Company Age	0.212*	0.867***	0.185*	0.597***	0.178	0.448***	0.127***	-0.002	-0.043	0.248***	-0.029***
	[0.117]	[0.280]	[0.109]	[0.214]	[0.113]	[0.147]	[0.040]	[0.028]	[0.146]	[0.069]	[0.007]
Round Number	-0.028	0.167*	0.065	0.105	0.013	-0.231***	0.091***	0.174***	0.347***	0.261***	-0.021***
	[0.052]	[0.091]	[0.049]	[0.077]	[0.050]	[0.063]	[0.017]	[0.011]	[0.071]	[0.029]	[0.003]
Serial Founder	-0.267	0.4	-0.122	-0.461	-0.089	0.346	0.071	0.039	0.196	0.044	-0.016
	[0.211]	[0.294]	[0.193]	[0.304]	[0.191]	[0.256]	[0.072]	[0.048]	[0.293]	[0.104]	[0.011]
Serial Founder with IPO	-0.33	-0.081	-0.095	0.866*	0.23	-0.612*	0.216*	0.109	0.549	0.352**	-0.005
	[0.335]	[0.451]	[0.284]	[0.451]	[0.274]	[0.359]	[0.119]	[0.076]	[0.545]	[0.156]	[0.015]
Serial Founder with Merger	0.05	-0.398	0.35	0.055	0.254	-0.256	0.199**	0.034	0.192	0.276**	0.012
	[0.293]	[0.441]	[0.274]	[0.467]	[0.258]	[0.343]	[0.100]	[0.059]	[0.453]	[0.136]	[0.014]
(log) VC Number of Investments	-0.211***	-0.213***	-0.094**	-0.043	-0.089**	-0.142**	0.082***	0.004	-0.037	0.108***	0.001
	[0.044]	[0.078]	[0.042]	[0.069]	[0.043]	[0.059]	[0.016]	[0.010]	[0.060]	[0.024]	[0.002]
VC Partnership	0.13	-0.061	0.038	0.268	0.087	0.131	0.039	-0.014	-0.253	-0.004	-0.008
	[0.156]	[0.253]	[0.145]	[0.246]	[0.151]	[0.184]	[0.058]	[0.034]	[0.234]	[0.077]	[0.008]
Observations	1804	1804	1804	1804	1804	1804	1804	1804	1804	894	894
Sample	Full	Full	Full	Full	Full	Full	Full	Full	Full	Valuation Data	
R-squared / Pseudo R-squared	0.14	0.1	0.04	0.07	0.14	0.08	0.14		0.07	0.33	
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 6 - Regression Analysis of Downside Protection Index, Market Concentration

*See table 1 for sample description. OLS regressions where the dependent variable is Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. Number of VCs in State/Region is a count of all VCs that made an investment in the same year as the contract. Number of VC-backed companies and Amount VC financing are calculated based on companies that received financing in the same year as the contract. Control variables are (log) Round Amount, Number of VCs in Round, (log) Company Age, Serial Founder, Serial Founder with IPO, Serial Founder with Merger, VC Partnership, (log) VC Number of Investment, and 10 industry dummies (VentureEconomics classifications) and year dummies. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4	5	6
Dependent Variable:	DPI	DPI	DPI	DPI	DPI	DPI
Company in California			-0.385***	-0.484***	-0.309**	-0.422***
			[0.148]	[0.143]	[0.139]	[0.120]
VC in California			-0.430***	-0.424***	-0.440***	-0.442***
			[0.090]	[0.090]	[0.090]	[0.090]
(log) Number of VCs in State	-0.203***	-0.094**	-0.092***			
	[0.020]	[0.037]	[0.034]			
(log) Number of VCs in Region				-0.092*		
				[0.047]		
(log) Number of VC-backed companies in Industry X State					-0.167***	
					[0.045]	
(log) Amount of VC financing in Industry X State						-0.116***
						[0.032]
Observations	1804	1804	1804	1804	1804	1804
Sample	Full	Full	Full	Full	Full	Full
R-squared	0.05	0.07	0.07	0.07	0.07	0.07
Year and Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company, Founder, VC Variables	Yes	Yes	Yes	Yes	Yes	Yes
Region Controls	No	Yes	No	No	No	No

Table 7 - Univariate Analysis of Downside Protection, Distance between Company and VC

*See table 1 for sample description. Panel A shows average Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. Panel A shows frequency of separate contract terms. Dividend means that VC gets cumulative dividends. Liquidation Preference means that VC gets more than 1X liquidation preference. Participation means that VC gets participating preferred (and not convertible preferred). Redemption means that VC has right to sell back shares to company. Anti-Dilution means that VC gets full-ratchet anti-dilution. In order to allow for a consistent interpretation of contract harshness, Pay-To-Play which is unfavorable to the VC, is coded inversely so a higher frequency captures a harsher contract term. Rank test of equality of populations. Significance at 10% marked with *, 5% **, and 1% ***.*

Panel A: Average Downside Protection Index. All Contracts				Difference	Test
Distance >10 Miles	4.99	Distance ≤ 10 Miles	4.83	0.16	*
Distance > 50 Miles	5.02	Distance ≤ 50 Miles	4.88	0.14	*
Distance > 100 Miles	4.97	Distance ≤ 100 Miles	4.94	0.03	
Different State	5.11	Same State	4.80	0.32	***

Panel B: Average Downside Protection Index, Contracts From California Companies				Difference	Test
Different State	4.55	Same State = California VC	4.25	0.29	**

Panel C: Average Downside Protection Index, Contracts From non-California Companies				Difference	Test
Different State	5.48	Same State	5.29	0.19	*
California VC	4.75			-0.54	***

Table 8 - Regression Analysis of Downside Protection Index, Distance between Company and VC

*See table 1 for sample description. OLS regressions where the dependent variable is Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor. Sample in specification 1-5 includes only company in California, and in specifications 6-10 includes only company in other states. Control variables are (log) Round Amount, Number of VCs in Round, (log) Company Age, Serial Founder, Serial Founder with IPO, Serial Founder with Merger, VC Partnership, (log) VC Number of Investment, and 10 industry dummies (VentureEconomics classifications) and year dummies. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4	5	6	7	8	9	10
Dependent Variable:	DPI	DPI	DPI	DPI	DPI	DPI	DPI	DPI	DPI	DPI
VC in California						-0.467***	-0.526***	-0.506***	-0.540***	-0.448**
						[0.129]	[0.131]	[0.139]	[0.138]	[0.184]
VC and Company Within 5 Miles	-0.196					-0.068				
	[0.192]					[0.141]				
VC and Company Within 10 Miles		-0.238*					-0.265**			
		[0.142]					[0.120]			
VC and Company Within 50 Miles			-0.422***					-0.107		
			[0.120]					[0.113]		
VC and Company in Same State				-0.403***					-0.186*	
				[0.133]					[0.111]	
Distance (miles)					0.395***					-0.011
					[0.122]					[0.157]
Observations	625	625	625	625	625	1179	1179	1179	1179	1179
Sample	Company California					Company non-California				
Pseudo R-squared	0.10	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
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

Table 9 - Regressions Analysis of Control Rights (Covenants and Board Seats), California Effect

*Subsample that includes 285 contracts from first VC financing rounds. Specification 1 is a negative binominal regression where the number of covenants is the dependent variable. Specifications 2-13 are logit regressions where each dependent variable takes the value of 1 if a certain covenant is included, and 0 otherwise. Specification 14 is an negative binominal regression where the number of preferred board seats is the dependent variable. Specification 15 is a logit regression where the dependent variable takes the value 1 if the VC has a majority of the board seats if outside board members support the VCs. Specification 16 is a logit regression where the dependent variable takes the value 1 if the VC has a majority of the board seats regardless of whether the outside board members support the VCs. Control variables are (log) Round Amount, Number of VCs in Round, (log) Company Age, Serial Founder, Serial Founder with IPO, Serial Founder with Merger, VC Partnership, (log) VC Number of Investment, and 10 industry dummies (VentureEconomics classifications) and year dummies. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	Dependent Variable	Company in California		Company, Round and VC Variables	Location and Year Controls	Observations	Pseudo R-squared
Number of Covenants							
1	Number of Covenants	-0.300***	[0.106]	Yes	Yes	285	0.02
Inclusion of Individual Covenants							
2	Issue Debt	-1.021***	[0.284]	Yes	Yes	285	0.06
3	Issue Junior Security	0.550*	[0.289]	Yes	Yes	285	0.07
4	Sell Assets	-0.839***	[0.314]	Yes	Yes	285	0.06
5	Buy Assets	-0.371	[0.321]	Yes	Yes	285	0.04
6	Investment	-0.679	[0.742]	Yes	Yes	285	0.31
7	Change Business	-0.614*	[0.359]	Yes	Yes	285	0.05
8	Change Competitive Ability	-0.923	[0.813]	Yes	Yes	285	0.16
9	Hire Management	-0.298	[0.518]	Yes	Yes	285	0.13
10	Change Compensation	-0.599	[0.385]	Yes	Yes	285	0.07
11	Inside Transaction	-1.013**	[0.459]	Yes	Yes	285	0.11
12	Monitoring	-0.526	[0.848]	Yes	Yes	285	0.13
13	Company Exit	-0.06	[0.860]	Yes	Yes	285	0.08
Allocation of Board Seats							
14	# of Preferred Board Seats	-0.059	[0.097]	Yes	Yes	285	0.04
15	VC Board Majority With Outsiders	-0.552*	[0.317]	Yes	Yes	285	0.14

Table 10 - Regression Analysis of Employee Cash Compensation, California Effect

*The dataset in this table comes from surveys of U.S. venture-backed companies conducted by VentureOne from 2002-2007. Each survey asks the company to provide data on company performance and employee compensation. We limit our analysis to CEOs/presidents and keep only one survey per firm per year (starting from 2003, VentureOne sent out 2 surveys per year). We match our sample with data on company characteristics, VC ownership, and financing from VentureOne's financing and general support databases. "Employees at End of Previous Year" is the median number of employees for the range reported in the survey, and "Revenues in Previous Year" is the average value of the range reported in the survey. "Dummy Profitable" is reported in survey but not the actual profit number. Variables related to the company's VC financing refer to the situation prior to the survey date. Residuals are clustered by company. Significance at 10% marked with *, 5% **, and 1% ***.*

Specification	1	2	3	4
Dependent Variable:	Bonus (1=yes 0=no)	$ Bonus / $ Total Cash Pay	log $ Bonus	log $ Salary
Company in California	-0.070***	-0.016***	-0.240***	0.059***
	[0.026]	[0.005]	[0.087]	[0.013]
log (1 + #Employees at End of Previous Year)	0.034	0.007	0.143*	0.053***
	[0.022]	[0.005]	[0.074]	[0.011]
log (1 + Revenues in Previous Year in $000s)	0.050***	0.012***	0.178***	0.007
	[0.010]	[0.002]	[0.035]	[0.005]
Dummy Profitable (1=yes 0=no)	0.110**	0.013	0.262	0.031
	[0.055]	[0.013]	[0.179]	[0.024]
log (1 + VC Financing Raised in Last Round in $000s	-0.022	-0.004	-0.064	0.013**
	[0.013]	[0.003]	[0.043]	[0.006]
log (1 + VC Financing Except Last Round in $000s)	0.000	-0.002	0.024	0.086***
	[0.013]	[0.003]	[0.042]	[0.008]
Round Number of Most Recent VC Financing	0.011***	0.002**	0.040***	0.001
	[0.004]	[0.001]	[0.013]	[0.002]
Dummy Founder (1=yes 0=no)	-0.109***	-0.028***	-0.463***	-0.133***
	[0.023]	[0.005]	[0.078]	[0.012]
Chairman of Board (1=yes 0=no)	-0.026	0.013	0.058	0.039
	[0.056]	[0.014]	[0.205]	[0.037]
Regression Type	Probit	Tobit	OLS	OLS
Observations	3,363	3,363	3,363	3,363
R-squared	0.07		0.19	0.33
Survey Year Dummies	Yes	Yes	Yes	Yes
Industry (VentureOne 15 Segment) Dummies	Yes	Yes	Yes	Yes

Appendix Table A - Downside Protection Index, Difference with California

See table 1 for sample description. Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company performance is poor.

Company State	DPI	DPIstate - DPI[California]
Alabama	6.00	**1.65**
Arizona	4.81	**0.46**
California	4.35	**na**
Colorado	4.64	**0.29**
Connecticut	5.74	**1.39**
Washington DC Area	6.50	**2.15**
Delaware	7.00	**2.65**
Florida	5.42	**1.07**
Georgia	5.56	**1.21**
Hawaii	5.00	**0.65**
Iowa	3.00	**-1.35**
Idaho	5.50	**1.15**
Illinois	5.42	**1.07**
Indiana	4.75	**0.40**
Kentucky	7.00	**2.65**
Louisiana	6.00	**1.65**
Massachusetts	4.93	**0.58**
Maryland	5.57	**1.22**
Maine	5.50	**1.15**
Michigan	5.21	**0.86**
Minnesota	4.88	**0.53**
Montana	6.00	**1.65**
Mississippi	7.75	**3.40**
North Calrolina	5.13	**0.78**
Nebraska	7.00	**2.65**
New Hampshire	4.11	**-0.24**
New Jersey	5.48	**1.13**
New Mexico	5.23	**0.88**
Nevada	7.00	**2.65**
New York	5.44	**1.09**
Ohio	5.44	**1.09**
Oklahoma	5.00	**0.65**
Oregon	6.00	**1.65**
Pennsylvania	5.82	**1.47**
Rhode Island	6.00	**1.65**
South Carolina	4.00	**-0.35**
South Dakota	7.00	**2.65**
Tennessee	6.33	**1.98**
Texas	4.99	**0.64**
Utah	5.11	**0.76**
Virginia	6.25	**1.90**
Vermont	7.00	**2.65**
Washington	4.69	**0.34**
Wisconsin	4.89	**0.54**

Appendix Table B - Downside Protection Index, California Effect, By Industry and Company Age

See table 1 for sample description. Downside Protection Index (DPI), which is the sum of contract terms discussed in Table 2B and has a range 0-11. Higher DPI means that the contract is more friendly to the VC investing in the round, and especially so if company exit valuation is low. VC Investment Focus in California reflects below or above sample median "VC California Investment Experience" for non-California VCs.

		Company Location			VC Location			VC Investment Focus in Calif.		
Sample	Full	Non-Calif	Calif.	Difference	Non-Calif	Calif.	Difference	Low	High	Difference
Industry										
Biotechnology	4.79	5.25	4.06	**1.20**	5.11	4.03	**1.08**	5.54	4.81	**0.72**
Communications and Media	4.75	5.01	4.36	**0.65**	4.86	4.61	**0.25**	5.15	4.63	**0.52**
Computer Hardware	5.37	5.83	4.85	**0.98**	5.76	4.57	**1.19**	5.94	5.45	**0.49**
Computer Software/Service	5.03	5.31	4.35	**0.96**	5.36	4.37	**0.99**	5.54	5.08	**0.46**
Consumer Related	5.55	5.68	5.00	**0.68**	5.84	4.33	**1.51**	5.94	5.67	**0.27**
Industrial/Energy	4.90	5.11	4.50	**0.61**	5.30	4.37	**0.93**	5.88	4.92	**0.96**
Internet Specific	4.94	5.22	4.37	**0.86**	5.23	4.38	**0.85**	5.51	4.90	**0.61**
Medical/Health	4.91	5.35	4.07	**1.27**	5.16	4.31	**0.85**	5.71	4.87	**0.84**
Other Products	5.10	5.40	4.42	**0.97**	5.35	4.53	**0.82**	5.58	5.05	**0.53**
Semiconductors/Other Elec	5.10	5.33	4.80	**0.53**	5.36	4.81	**0.56**	5.73	4.90	**0.84**
Company Age (years)										
0	4.86	5.12	3.86	**1.26**	5.13	4.06	**1.07**	4.56	5.46	**0.90**
1	4.64	4.89	4.06	**0.83**	4.92	4.01	**0.90**	4.76	5.13	**0.36**
2	4.74	5.02	4.31	**0.72**	5.04	4.23	**0.81**	5.00	5.07	**0.07**
3	4.73	5.08	4.09	**0.99**	5.02	4.23	**0.79**	4.58	5.43	**0.85**
4	4.91	5.20	4.42	**0.78**	5.12	4.57	**0.55**	4.82	5.47	**0.66**
5	5.19	5.51	4.57	**0.94**	5.40	4.83	**0.58**	4.91	5.89	**0.98**
6	5.30	5.72	4.53	**1.19**	5.64	4.69	**0.95**	5.32	5.87	**0.55**
7	5.28	5.70	4.64	**1.05**	5.52	4.89	**0.62**	5.34	5.66	**0.32**
8	5.07	5.32	4.47	**0.85**	5.43	4.15	**1.28**	4.96	6.11	**1.15**
9	5.13	5.62	4.44	**1.18**	5.65	4.37	**1.28**	4.88	6.95	**2.07**
10 or above	5.43	5.94	4.56	**1.38**	5.74	4.36	**1.37**	5.33	6.24	**0.90**

Appendix Table C - Company Outcome by California and Silicon Valley Location

*Data from VentureEconomics. Sample includes all U.S. based venture-backed companies which received their first round of VC financing before 1980 and 2002. Significance from Wilcoxon tests at 10% marked with *, 5% **, and 1% ***.*

	Outcome Probabilities			Test of Differences in Outcome Probabilities		
	Non-California	California				
		Non-Silicon Valley	Silicon Valley	Non-CA vs. Non-SV	Non-CA vs. SV	Non-SV vs. SV
IPO	13.7%	13.6%	14.8%			
Merger	33.2%	33.3%	36.3%		***	**
Other Outcome	53.0%	53.1%	49.0%		***	***
Observations	12,242	3,141	3,072			