

THE EFFECT OF GEOGRAPHIC LOCATION ON VENTURE CAPITAL INVESTMENTS:
A COMPARISON OF SILICON VALLEY AND NEW YORK CITY

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ABSTRACT

The venture capital (VC) market has not only bolstered the U.S. economy, but also driven innovation, especially in the technology industry. Because VC deals are customized to the investor-startup relationship, geography and culture can greatly affect this practice. Understanding why geographic location affects contract design is important so we can see where companies are most successful, what characteristics allow them to thrive, and how these characteristics can be applied to other regions. Across 1,821 financial contracts, I investigate the effect of geographic location by comparing the financing terms of contracts conducted in Silicon Valley with those in New York. We find that Silicon Valley contracts contain significantly fewer investor-friendly downside protections than contracts in New York. There could be two reasons for this: investors in this region either (a) do different types of deals or (b) have different types of investment styles. Using the quantitative process of matching and providing qualitative evidence from previous studies, I infer that Silicon Valley's investors do deals differently, not because the deals differ, but because the investors do. This is consistent with a treatment effect of location on investment practices.

Title of Document:

THE EFFECT OF GEOGRAPHIC DISTRIBUTION ON
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1. Introduction

Venture capital (VC) has driven innovation and wealth creation for the past two decades by empowering young, high-growth companies that otherwise would not be able to obtain capital from traditional sources such as public markets and banks. In venture capital, investors give early-stage companies a sum of money in exchange for equity and an active role in the company. The terms of the investment are negotiated on a contract referred to as a “term sheet.” Recently, it seems that the average investment amount has been growing. From 2012-2013, investment levels rose 2% to \$48.5 billion, with the US economy accounting for 68% of global VC activity (Ernst & Young 2014).

Venture capital provides a fascinating insight into contract theory design because the deals that investors make with entrepreneurs are complex, personalized, and non-standardized. Because of this, VC deals seem less like a transaction and more like a relationship. According to a general partner at New Enterprise Associates, “venture firms play a role well beyond providing capital — as coaches, mentors and business partners, providing advice and connections to potential strategic partners” (Ernst & Young). Because of the individualized nature of this practice, previous studies have stated that venture capital is the largest and most developed capital market in which geography and culture can influence investment behavior (Bengston and Ravid 2009). This is particularly interesting because concentrated clusters of VC firms and start-up companies have developed across the United States. Sand Hill Road in Menlo Park, California is home to the nations top VC firms, including Andreessen Horowitz, Sequoia Capital, and Kleiner Perkins Caufield & Byers. In Boston, the Route 128 corridor is known “America’s Technology Highway,” for the explosion in personal computing in the 1900’s made

it a hub of innovation. In New York, the Flatiron District is known as “Silicon Alley,” for it is home to many high-tech companies and VC firms.

Surprisingly, regional cultures can determine the success or failure of business ecosystems. In her book *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, AnnaLee Saxenian compares the rise of two technological hubs, Silicon Valley in California and Route 128 in Massachusetts, which had similar origins, but different outcomes. Initially, both regions had the same three ingredients: 1) fresh intellect and new ideas flowing from local universities, 2) support from a government-funded defense industry, and 3) ample venture capital (Kelly). The regions were known for producing different technological products: semiconductors in Silicon Valley and minicomputers along Route 128. When domestic and international competitors began offering direct substitutes of these products at lower prices, both of the regional markets faced economic downturn. Yet, over time, Silicon Valley recovered and regained momentum, while Route 128 did not.

Saxenian believes these differences stem from “industrial systems.” She defines industrial systems as “historically evolved relationship[s] between the internal organization of firms and their connections to one another and to the social structures and institutions of their particular localities” (Kelly). According to Saxenian, companies in the Route 128 region followed a hierarchical management structure that emphasized “proper channels,” which stifled change as market competition increased. On the other hand, companies in Silicon Valley resisted this from the start. Instead, these companies had a philosophy emphasizing rapid innovation, collaboration, and openness. The industrial system framework could even be applied to the local universities at the time, which seemed to have different intentions – MIT charged young

entrepreneurs large fees to access their research, while Stanford encouraged individuals to use their labs and resources, even sponsoring the continued education of some engineers.

My findings in this study are concurrent with Saxenian's arguments. However, I cannot use the differences outlined in Saxenian's paper to completely explain the differences apparent in mine because she (1) compares Silicon Valley with Massachusetts, while I compare Silicon Valley with New York and (2) studies Silicon Valley during the pre dot-com bubble era, while my study focuses on modern day landscape of this region.

Bengston and Sensoy's (2009) findings are a bit more relevant to mine, for they briefly outline how modern cultural differences between the West Coast and East Coast have influenced contract design differences. They contend that West Coast VCs take a more "partner-like approach," which leads to contracts that are less harsh for entrepreneurs. My study corroborates their claim because I find that Silicon Valley contracts employ fewer downside protections. Furthermore, they state that East Coast VCs take a more "banker-like" approach that is perceived as less entrepreneur-friendly. However, although Bengston and Sensoy's study provides some insight into modern regional corporate and investor cultures through snippets of interviews with VC lawyers, it lacks the level of qualitative analysis that Saxenian's "exhaustive conversations" with leaders who pioneered this industry (Kelly).

Given the premise that geographic location may affect venture capital contract design, the rest of my paper is organized as follows: the following section provides an overview of the theoretical framework and past research on this topic. The third section describes the sample and an index I made to quantify contract design. The fourth section contains my research design, method, and results. The fifth section discusses the implications of my result, and the sixth section contains a conclusion.

2. Theoretical Development and Literature Review

Of the studies that examine venture capital deals, there is a small stream of literature that investigates the effects of geography and location on contractual design. Some studies examine contracts on an international scope, and have discovered that a nation's legal system and law enforcement greatly effect contractual design (Lerner and Schoar, 2005). In order to prevent cross-country legal system differences from affecting the results of my study, I only focused on the United States.

The handful of studies that have examined the effect of geography on contracts exclusively conducted in the United States share one unifying factor: geographic location of the company and venture capitalist does significantly affect contractual design.¹ But, these studies differ in their explanation. Past explanations can be placed into one of two categories: results driven by treatment effect, and results driven by selection effect.

A study driven by treatment effect signifies that the difference between the treated group and the untreated group is an estimate of how much the untreated group would change if the group were treated. For example, in clinical drug trials, subjects in a treated group are given a drug and subjects in an untreated group are given a placebo drug. If all other variables are controlled, we can determine the effectiveness of the drug by comparing the symptoms of the treated group with those of the untreated group. In this study, the treated group would be companies and investors located in Silicon Valley, and the untreated group would be companies and investors in New York. If there are differences between contracts done in Silicon Valley and

¹ Additionally, we can assume that the majority of deals are done between VC firms and companies located in the same region because previous studies have concluded that the probability that a VC invests in a company sharply decreases as the distance between the VC firm and the company increases (Sorenson and Stuart 2001).

² On a term sheet, three important characteristics about a company are the industry it operates in, the investment round the contract is for, and its size and age. Industry and Round are categorical variables; a company's industry may be Biotechnology or Software, and the round may be Series

contracts done in New York, the treatment effect implies that they are due to group association. This suggests that if VC firms located elsewhere was to be located in Silicon Valley, then investors would change their investment behavior. This framework is consistent with Saxenian's concept of industrial systems, for it implies that local institutions and local constructs influence investors. In 2009, a study found that "contracts include significantly fewer investor-friendly cash flow contingencies if the company is located in California or if the lead VC is more exposed to the California market" (Bengston and Ravid, 2009). This finding is consistent with treatment effect as long as both Silicon Valley and New York invest in similar types of companies.

An alternative explanation is one driven by selection effect. The selection effect implies that the difference between treated and untreated groups stem from underlying differences between the two groups, rather than from a difference in treatment. In other words, this implies that VCs do not invest a certain way simply because they are located in a certain region, but because VCs in different regions invest in different kinds of companies. In 2011, Bengston and Sensoy stated that if contracts are grouped by geographic region, they won't differ because they belong to a certain region, but because of group-level differences, in this case the experience level of the VC. (Bengston Sensoy 2011). This is consistent with a selection effect.

The question now remains: across the United States, are there differences in the design of venture capital contracts because investors in certain regions do deals differently (consistent with a treatment effect), or because they do different deals (consistent with a selection effect)? Based on the theoretical framework I have presented, I have two hypotheses to test:

Hypothesis (1): Venture capital contracts conducted in Silicon Valley contain significantly fewer investor-friendly downside protections than contracts conducted in New York do.

This hypothesis is important to test because it will indicate whether contract design differs between Silicon Valley in California and Silicon Alley in New York, two of the nation's largest hubs of innovation. There are two possible outcomes. If there are no significant differences, then we infer that geographic location, and therefore regional culture, does not affect how investors do deals. If there are significant differences, this means that factors such as geographical location, regional culture, and local customs may indeed affect how investors do deals.

Hypothesis (2): If Hypothesis (1) is true, it occurs because:

Hypothesis (2a): Investors in these regions do different deals. This is consistent with the selection effect framework.

Hypothesis (2b): Investors in these regions do deals differently. This is consistent with the treatment effect framework.

This hypothesis is important to test because past studies are divided on why Hypothesis (1) occurs. (Bengston and Sensoy, 2011) is congruent with Hypothesis (2a), while (Bengston and Ravid, 2009) is congruent with Hypothesis (2b). In the outcome that Hypothesis (1) and (2a) are true, this indicates that Silicon Valley use fewer downside protections than do New York VCs, not because they are located in Silicon Valley, but because VCs in this region invest in companies with characteristics associated with fewer downside protection provisions. In the outcome that Hypothesis (1) and (2b) are true, this indicates that even when Silicon Valley VCs and New York VCs do deals with companies with similar characteristics, Silicon Valley VCs use fewer downside protections in their contracts. This reflects a difference in how these VCs do deals, eliciting research into factors that explain this difference, such as local culture.

3. Description of sample and the Downside Protection Index

My sample was collected from a *VC Experts* dataset. The dataset comprised of over three thousand PDF files containing information about U.S. start-up companies that have received

venture capital financing. Using Python, I developed a script that iterated over each PDF, scraped and parsed relevant data, and exported the results to multiple CSV files. The cleaned and structured data included information about financings conducted by 2,621 VC firms in 3,311 start-up companies over 4,896 investment rounds. This sample is larger than those in (Bengtsson and Ravid, 2009), and (Bengtsson and Sensoy, 2011) because mine includes more years. See Table 1 for descriptive statistics about the sample.

In order to investigate why contractual design differs, I focused on downside protections. On a financial contract, a downside protection is a type of cash flow provision that protects the VC's investment upon liquidation of a portfolio company. If the company's performance was poor, investors will be allocated cash depending on the terms of the investment, otherwise known as the downside protections. I focused on downside protections because they shed insight into investment behavior, including risk tolerance and entrepreneur-friendly nature. This is important because VC's investing behaviors are hypothesized to vary by region.

The provisions that I consider are liquidation preference, liquidation multiple, participation rights, anti-dilution rights, redemption rights, cumulative dividends, and reorganization rights. In order to perform quantitative analysis on these categorical variables, I coded each term on a scale from 0 to 2 based on their nature, 2 being the most investor-friendly and the least entrepreneur-friendly. This method is similar to that used by Bengtsson and Sensoy (2001), but my sample size is larger ($N = 1821$) and includes two additional terms (reorganization and liquidation multiple). 99% of contracts have each of these terms, with the exception of liquidation preference, which only 74% of contracts contain, and anti-dilution, which only 94% of contracts contain. Table 2 displays summary statistics for each term.

The liquidation preference term determines the order in which the preferred stock holders – the VCs – are paid. If an investment has a senior preference, is it paid in full before those with a junior preference. If a preference is “pari passu,” VCs participating in different rounds in will be paid at a pro-rata, equal rate. Of the 74% contracts that included a liquidation preference term, 41% were pari passu (0), 0.39% were junior (1), and 33% were senior (2).

Liquidation multiple determines the multiple of the investment amount that is returned to the VC. For example, if a VC invests \$1 million, a 2X liquidation multiple means that the VC will get \$2 million upon company liquidation. 91% of contracts had a 1X multiple (0), 6% had a multiple between 1-2X (1), and 1% had a multiple greater than 2X (2).

The conventional convertible and participating preferred terms are related to stockholder participation. Each investor receives a liquidation multiple and a fraction of common stock (i.e., common equity). Upon liquidation, if the VC has conventional convertible stock, he must chose between receiving his liquidation multiple or his percentage of the common stock, depending on what begets a higher return. If the holder has participating preferred stock, he receives both. 46% contracts included conventional convertible stock (0) and 54% included participating preferred stock (2).

Through anti-dilution, investors will be issued additional shares if a company raises a new funding round at a lower valuation (i.e., a down round). This lowers a company’s stock price. There are two types of anti-dilution: full ratchet and weighted average. Full ratchet is known as the “harsher,” more investor-friendly term because the investors in earlier rounds receive additional shares at the new lowered share price. However, under weighted average anti-dilution, a new conversion price is determined after the down round. This means that the VCs will still receive shares at a price lower than they initially paid, but higher than the lowered share

price. 89% contracts included weighted average anti dilution (0), and 5% included full ratchet anti-dilution (2).

Redemption rights give an investor the ability to sell shares back to the company after a predetermined period of time. This usually occurs if the company is not expecting an M&A or an IPO soon. 73% did not have redemption rights (0), while 26% did (2).

Cumulative dividends are predetermined amounts of money that an investor earns annually. When a company is sold or liquidated, the investor is paid the cumulative amount he earned over time. Only 14% of contracts included cumulative dividends (2), while 85% did not (0).

Finally, if a company has had multiple down rounds, reorganization rights allow investors to make large changes in a company's equity base. 93% of contracts do not give VC's reorganization rights. 6% give VC's this right through multiple iterations, including the conversion of preferred stock to junior securities, reverse splits, or common stock.

Then, I aggregated all the cash provisions in a Downside Protection Index (DPI) by adding each contract round's downside protection codes together. According to Figure 1, the distribution of the index is skewed left with a mean of 2.84, median of 2, and standard deviation from 2.42. This skewed distribution implies that contracts usually contain only a few downside protections, because they are not in the entrepreneurs' favor.

4. Research Design, Methods, and Results

My hypotheses are as follows:

Hypothesis (1): Venture capital contracts conducted in Silicon Valley contain significantly fewer investor-friendly terms than contracts conducted in New York do.

Hypothesis (2): Hypothesis (1) either occurs because investors in these regions (2a) do different deals or (2b) do deals differently.

To test my first hypothesis, I used data analysis and statistical software Stata to run a two-sample difference-in-means t-test with equal variances. My sample included the DPI scores of contracts done in Silicon Valley and in New York. The result is shown in Table 3 and Figure 2. This indicates that the mean DPI of New York contracts is 4.55, which is 0.706 standard deviations away from the mean of 2.82. The mean DPI of Silicon Valley contracts is 2.60, which is 0.09 standard deviations under the mean. Because the p-value is (< 0.01) of this t-test is less than the significance level (0.05), we are able to conclude that there is a significant difference in means between the downside protection index variable between Silicon Valley contracts and New York contracts. Therefore, we have sufficient evidence to state that Hypothesis (1) is true: venture capital contracts conducted in Silicon Valley contain significantly fewer investor-friendly downside protections than contracts in New York do.

To test Hypothesis (2), we need to determine if VCs in these regions invest in different types of deals, or if they approach the same types of deals differently. To determine which option in Hypothesis (2) is true, I restricted the sample using the statistical technique “matching.” In matching, observations from a treated and an untreated group are compared because they share similar characteristics. This is analogous to an apples-to-apples comparison. One example of an inappropriate apples-to-oranges comparison is comparing a Silicon Valley software company receiving Series A funding in 2000 with a New York media company receiving Series E funding in 2013. In this comparison, it would be difficult to isolate the causes for differences in contract design, because they have starkly different characteristics. Therefore, observations that lack a good match are removed from the matched comparison set.

The process of matching is best illustrated through an example. Suppose that there are two companies who have both received venture capital financing, and they have similar if not

identical characteristics (i.e., industry, investment round, investment amount, age). The only difference is that one deal was done in New York, and one deal was done in Silicon Valley. If these contracts do not have different DPIs, this means that investors in Silicon Valley and New York approach the same types of deals the same way. Therefore, geographic location does not affect contract design. Contracts in Silicon Valley have fewer downside protections because VCs in that area invest companies with characteristics associated with lower DPIs. If the contracts do have different DPIs, this indicates that investors in these two regions approach the same types of deals differently. This implies that other factors, such as regional culture and local customs, also affect contract design.

I conducted four matches and coded them as “match1, match2, match3, and match4” in my full dataset. The treated group is contracts done in Silicon Valley and the untreated group is contracts done in New York. The characteristics are the industry, round, age, and size of the company.² For each match after the first, I increased the number of parameters so that the matches became more exact, but the successive matched sample became smaller. The first match only compared observations of similar stages (i.e., Series A, B, C). The second matched observations by stage and by industry. The third matched observations by stage, industry, and age. Finally, the fourth matched observations by stage, industry, age, and investment amount. If a Silicon Valley deal and a New York deal shared similar characteristics based on the parameters of the match, I coded a “1” for each deal in their respective “match” column. If not, the deal was coded as “0.” I then conducted statistical tests of differences in means for (a) all observations

² On a term sheet, three important characteristics about a company are the industry it operates in, the investment round the contract is for, and its size and age. Industry and Round are categorical variables; a company’s industry may be Biotechnology or Software, and the round may be Series A, B, C, D, and so on. I determined Size by the investment amount. I did not use valuation, because the majority of contracts in my dataset did not provide information about the company’s valuation. Finally, I approximated age based on the year the deal was done.

(i.e., all New York and Silicon Valley contracts), (b) observations where match1=1, (c) observations where match2=1, and (d) observations where match3=1 and (e) observations where match4=1. The sample sizes for each match where: (a) 1821, (b) 444, (c) 363, (d) 349, (e) 315.

One of two outcomes was possible. If the difference in means between contracts' downside protection indexes loses its significance as the matches became more appropriate, this means that geographic location doesn't affect contract design - investors in these two regions simply have different investment behaviors and therefore do different deals. This supports the claim in Hypothesis (2a). On the other hand, if the difference in means continues to be significant as the matches become more appropriate, then this shows that investors in these regions approach the same deals differently, indicating that regional culture does play a role. This supports the claim in Hypothesis (2b).

After I conducted the difference-in-means t-tests, I received the results displayed in Table 4 and Figure 3.

For all matches, the difference in means remained significant for each test (p-value = < 0.01). The differences in means were insensitive to increasingly accurate matches on age, stage, size, and industry. This means that we can say with higher confidence that the difference is due to geographical location, because other factors that could have caused this difference have been washed out due to matching. Therefore, we can answer Hypothesis (2) and conclude that venture capital contracts conducted in Silicon Valley contain significantly fewer investor-friendly downside protections than contracts conducted in New York do because deals are done differently in Silicon Valley. This is consistent with Hypothesis (2b).

However, selection on other factors that are unmatched or unobserved, is still a possibility. Previous studies have shown that VCs experience level may affect contract design.

More experienced VCs may obtain fewer and weaker downside protection rights, for they focus their abilities on providing other value-added services to the entrepreneur (Bengtsson and Sensoy 2011). If more experienced VCs are more likely to be located in Silicon Valley, then this factor may explain the difference in means. Because my dataset did not provide information about characteristics relating to VC experience, I was unable to observe or measure the effects of this alternative explanation in my study.

5. Discussion

Our findings indicate that financial contract design is not only affected by “traditional” factors, such as investor and entrepreneur behavior, legal enforcement of a country, or institutional systems, but also by geographic location. This discovery that geographic location significantly affects contract design indicates that the local culture of a region also may be a reason why VCs do deals differently in a certain region.

While I am confident in my results, it must be noted that further exploration of the regional culture and local customs is warranted before making a conclusion. However, it is clear that even after the dot-com bubble, modern day Silicon Valley is still driven by a culture of growth, innovation, collaboration, and openness. This mindset reaches all corners of the Silicon Valley ecosystem, manifest in things such as Facebook’s “Move fast, break things” motto, the open-source movement, and term sheets that contain relatively few downside protection provisions. In particular, the latter shows that Silicon Valley VCs are generally less concerned about ensuring an abundant return on investment if a company underperforms, perhaps because they are more concerned with helping the company achieve sustainable yet explosive growth and profitability.

An interesting line of research would be to study if the general harshness of downside

protection provisions changed after dot-com bubble. If so an examination of the changes across regions may give way to a clearer explanation in regional differences. My sample only contained contracts conducted in 2000 and later, so I could not investigate this idea in my study. I would hypothesize that modern Silicon Valley investors are slightly more risk-averse and therefore use more downside protections than did investors in 1999, but still use fewer provisions relative to investors in other regions.

6. Conclusion

No company or VC firm exists in a vacuum. There is a culture and a community surrounding it. Investigating how local culture and customs affect venture financings can provide insight into why some regions succeed, such as Silicon Valley, and some become stagnant, such as Route 128.

There are several important implications about start-up companies and the VC market that I can draw from my findings. Now that we can see that there are indeed differences in contract design between the Silicon Valley and New York markets, start-ups should not discount the characteristics of Silicon Valley's industrial system. Start-ups considering moving to California to make deals with Silicon Valley investors, should, in general, expect to see fewer downside protections on their term sheet than if they landed the deal with a VC in New York. On the other side of the due diligence table, East Coast VCs should look to the West and realize that that risk mitigation stifles innovation. Injecting harsh downside protections in a term sheet may protect a VC's return on investment, but it also leads to the entrepreneur to perceive the investor as harsh, potentially leading to the misalignment of goals and vision and company underperformance.

If a region wants to become hub of innovations as successful as Silicon Valley, it will require far more than changes in contract design. It will require a drastic change in its industrial system. It will require an ecosystem that values growth, innovation, collaboration, and openness. It will require a community of intelligent, gritty, out-of-the-box visionaries who are not afraid to take risks. It will require investors to focus on helping rocketship companies achieve explosive growth and profitability, not on its exit strategy. If a region sticks to rigid hierarchies and conservative mindsets, like Route 128 did, it may end up like Route 128: a relic of the past.

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Table 1: Descriptive statistics about sample

	<i>Sample Size</i>	<i>Frequency</i>
<u>Number of</u>		
VC firms	2,621	
Companies	3,311	
Investment Rounds	4,896	
<u>Region</u>		
Colorado	20	1%
DC/Metroplex	89	4%
Midwest	179	8%
New England	291	13%
New York State	154	7%
Northwest	65	3%
Philadelphia Metro	31	1%
Sacramento / Northern California	10	0%
Silicon Valley	955	41%
Southeast	146	6%
Southern California	234	10%
Southwest	134	6%
<u>Industry</u>		
Advanced Special Materials/Chemicals	6	0%
Biotechnology	384	17%
Business Products and Services	133	6%
Computers and Peripherals	46	2%
Consumer Products and Services	105	5%
Electronics / Instrumentation	67	3%
Financial Services	48	2%
Healthcare Services	36	2%
IT Services	350	15%
Industrial/Energy	81	4%
Media and Entertainment	129	6%
Medical Devices and Equipment	216	9%
Networking and Equipment	43	2%
Retailing/Distribution	21	1%
Semiconductors	121	5%
Software	420	18%
Telecommunications	104	5%
<u>Year of Round</u>		
2000 - 2003	28	1%
2004	116	6%
2005	116	6%
2006	238	13%
2007	325	18%
2008	136	7%
2009	167	9%
2010	234	13%
2011	254	14%
2012	185	10%
2013	21	1%

Table 2: Components of the Downside Protection Index**Liquidation Preference**

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
Pari Passu	738	41%	0
Junior	7	0%	1
Senior	601	33%	2
None	475	26%	
Total	1,821		

Liquidation Multiple

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
0 - 1x	1,653	91%	0
1 - 2x	117	6%	1
>2x	24	1%	2
None	27	1%	
Total	1,821		

Participation

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
Conventional Convertible	822	46%	0
Participating Preferred	975	54%	2
None	24	0%	
Total	1,821		

Anti Dilution

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
Weighted Average	1,612	89%	0
Full Ratchet	99	5%	2
None	110	6%	
Total	1,821		

Redemption

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
No	1,328	73%	0
Yes	476	26%	2
None	17	1%	
Total	1,821		

Cumulative Dividends

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
No	1,544	85%	0
Yes	255	14%	2
None	22	1%	
Total	1,821		

Reorganization

	<i>Freq.</i>	<i>Percent</i>	<i>Code</i>
No	1,686	93%	0
Yes, conversion to junior	3	0%	2
Yes, conversion to junior securities	28	2%	2
Yes, reverse splits	67	4%	2
Yes, conversion to common stock	1	0%	2
None	36	2%	
Total	1,821		

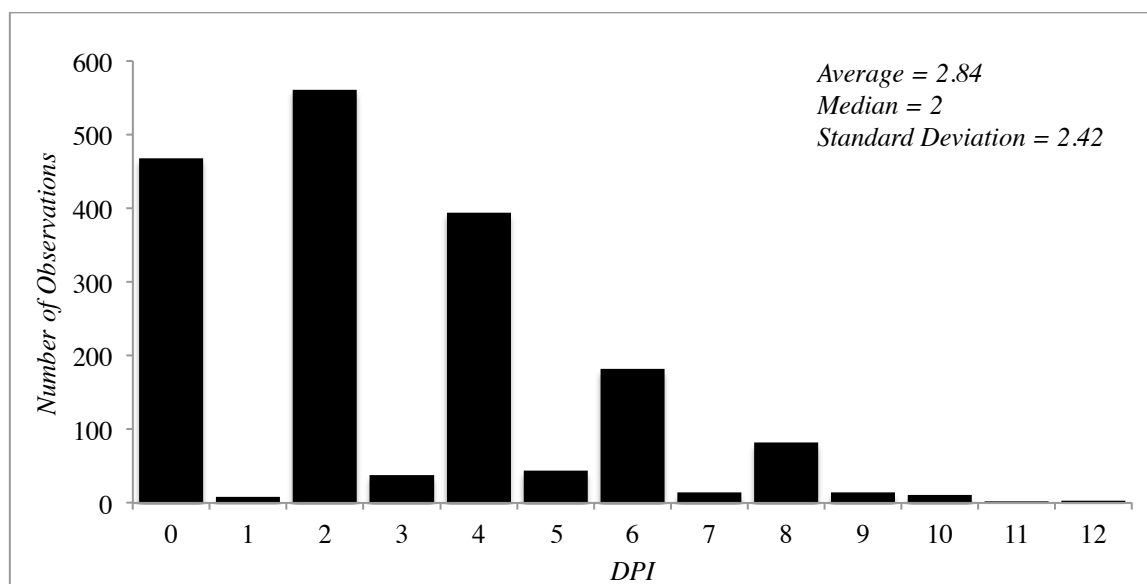
Figure 1: Distribution of the Downside Protection Index

Table 3: Two-sample t test result

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
New York	225	4.551111	.1909491	2.864236	4.174825	4.927397
Silicon	1,596	2.60401	.0563101	2.249589	2.49356	2.71446
combined	1,821	2.844591	.0567058	2.419815	2.733376	2.955806
diff		1.947101	.166209		1.621121	2.273082
diff = mean(New York) - mean(Silicon)						
Ho: diff = 0				t =	11.7148	
				degrees of freedom =	1819	
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 1.0000		Pr(T > t) = 0.0000		Pr(T > t) = 0.0000		

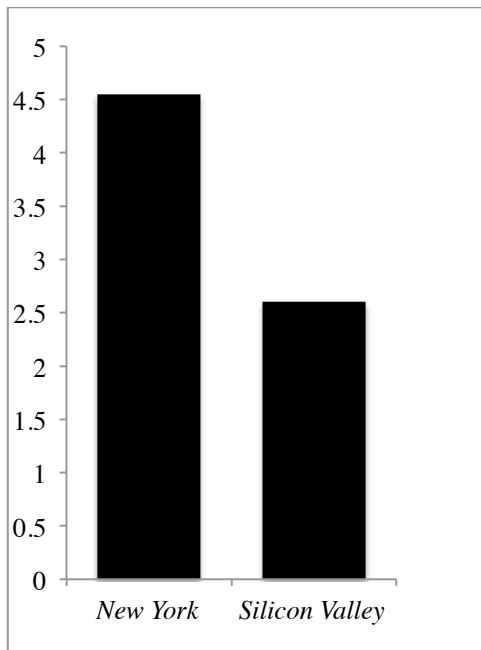
Figure 2: Mean of NY and SV DPIs

Table 4: Difference-in-means t-test results

Test	(a) All Obs	(b) Match 1	(c) Match 2	(d) Match 3	(d) Match 4
Difference in Means	1.947	2.003	2.196	1.995	2.218
T-Stat	11.715	8.314	7.945	6.924	6.732
P-Value	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Figure 3: Means of Test (a) (b) (c) (d) and (e)