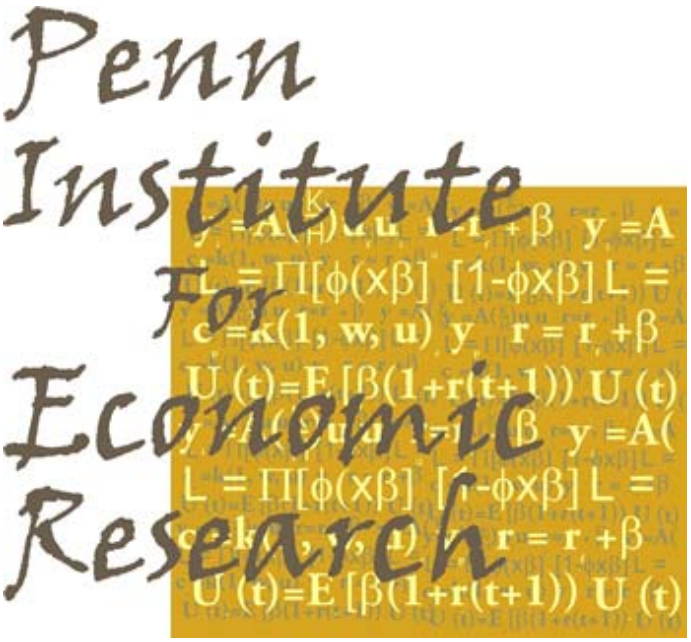

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"Economic Geography, Venture Capital and Focal Points of Entrepreneurial Activity"

by

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Economic Geography, Venture Capital and Focal Points of Entrepreneurial Activity

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Abstract
Economic geography receives limited consideration in the venture capital literature. This study utilizes thirty years of data concerning companies that initially were backed by venture capital. These firms are located in Entrepreneurial Focal Points in the United States, namely: California, Massachusetts, New York, Pennsylvania and Texas. How well do these companies operate once they go public? Do the scrutiny measures, expertise and financial backing that firms gain from the venture capitalists increase their annual and cumulative returns? The results show that returns on investment are adequate given their substantial risk.

JEL Classification: C12, D81, D92, E22, G12, G24, G3, M13, M21, O16, O3

Key Words: Annualized and cumulative returns, Venture Capital, Venture-Backed Public Companies, Active and Inactive firms, Pennsylvania, Massachusetts, California, Texas, New York

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Economic Geography, Venture Capital and Entrepreneurial Focal Points

I. Introduction

This paper uses thirty years of data concerning the venture capital industry, stratified by location, to investigate the annual and cumulative returns of companies located in the main centers of venture capital activities and which were initially backed by venture capitalists. These entrepreneurs keep a stake in the companies once the companies go public. How well do these companies operate once they go public? Do the scrutiny measures, expertise and financial backing that firms gain from the venture capitalists increase their annual and cumulative returns?

This paper shows that based on historical statistics, the total returns of these firms are reasonable given the level of risk involved in investment in these companies. This is done by concentrating on the main centers of gravity as far as enterprises backed by venture capital funds. These centers are located in the states of California, Massachusetts, New York, Pennsylvania, and Texas. The pioneering works of the 2008 Nobel Laureate, Paul Krugman, who reintroduces economic geography to economics and finance, motivate this paper. In his work Krugman begins from the observation that economic activity is not randomly uniformly distributed across space.

A broadly held perception is that the required rates of return for investing in public companies that were backed by venture capitalists are high. For example, the top performing active Californian firms in the data used in this study had an annual return of 1,813 percent and the maximum cumulative return for one of the Californian firms is an incredible 35,621 percent during the period of the study. Numbers similar to these

obscure the facts that there are many other companies which stop their operations all together and become inactive, or have significantly lower returns while active.

The paper is organized into the following sections. Section II presents a brief review of the literature while Section III describes the data. Section IV presents the empirical findings for annualized and cumulative rates of return for all firms and for firms stratified as currently active or inactive for the states of California, Massachusetts, New York, Pennsylvania, and Texas. Section V concludes.

II. Review of the Literature

Economic geography has moved to the forefront of research due to the works of the 2008 Nobel laureate, Paul Krugman, who was awarded the Prize for his "analysis of trade patterns and location of economic activity." Although economic geography is a focus of both international economists and industrial organization researchers, it has received limited consideration in the venture capital literature.

In order to gain an understanding of economic geography, the study of location is essential. The reemergence of economic geography theory can be attributed to the pioneering works of Krugman (1991A, 1991B, 1998), Fujita and Krugman (2004), and Venables (1996, 1998, 2003). Bruno, Leidecker and Harder (1986) analyze patterns of failure among Silicon Valley High Technology Firms. Midelfart, Overman, and Venables (2002) estimate a model of locations in different nations and Behrens (2005) investigates the relationship between industrial location patterns and market size.

Returns of venture capital firms are studied by Murphy (1956), Poindexter (1976), Hoban (1976) Martin and Petty (1983), Ibbotson and Brinson (1987), Roberts and Stevenson (1992), Rich and Gumpert (1992), Bygrave and Timmons (1992), Timmons

(1999) and Venture Economics (1997). The issues related to the questions of what motivate entrepreneurial activities have been studied by, among others, Constant and Shachmurove 2006; Constant, Shachmurove and Zimmermann 2007; and Kellman, Roxo and Shachmurove 2003. Shachmurove (2007) relates entrepreneurial activities to innovations and international trade. The venture capital industries are studied using survey data in Shachmurove (2001, 2006). This paper uses actual data rather than survey data and concentrate on the entrepreneurial centers of gravity in the United States, namely the states of California, Massachusetts, New York, Pennsylvania, and Texas.

III. Data

The data are from Securities Data Company Platinum 2.1, Venture Financing 1968-2008, Thomson Financial Securities Data, and from Venture Economics Information Services, Venture Financing 1968 –2008.[1] The primary source for the data is the Securities and Exchange Commission (SEC), including EDGAR, the SEC's electronic database of corporate reports. Thomson Financial Securities is a leading provider of real-time economic, technical and fundamental analysis of securities to clients globally via various screen services[2] (Kimelman, 1998). This is one of the major

[1] The exact references to the data are: Securities Data Company Platinum 2.1, Venture Financing 1968 2004, Thomson Financial Securities Data, 22 Thomson Place, Boston, MA 02210, and from Venture Economics Information Services, Venture Financing 1968 –2004, Newark, NJ 07102. The primary source for the data is the Securities and Exchange Commission (SEC), including EDGAR, the SEC's electronic database of corporate reports.

[2] Venture Economics' Investor Services Group (VEIS) serves institutional investors by providing monitoring and benchmarking services for their private equity portfolios. This includes the calculation and monitoring of performance of their private equity funds. From these relationships as well as the relationships with the general parent community in the private equity industry fostered by 30 years of research and publication of the Venture Capital Journal, Buyouts, Investment Benchmarks and Pratts Guide to Venture Capital, VEIS has solicited and received cash flow information from over 1,000 private equity partnerships.

financial sources of accounting and financial data for researchers (Rocha and Kupfer, 2002, and Bagnoli, Kross, and Watts, 2002).[3]

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Weiner and Ulbricht (2005) systematically investigate and compare today's two major counterparts as a source of accounting and financial data: Compustat North America by Standard & Poor's and Thomson Financial Data. Their investigation is conducted for U.S. and partly Canadian data over an extensive period from 1985 to 2003. They examine more than 650 data items available in both databases and address the question of whether or not the decision for one or the other source may have an impact on the outcome of research projects. It is probably assumed that this impact is minor, but it also leaves room to question certain results. Weiner and Ulbricht (2005) show that the

[3] Thomson provides data regarding the IPO price and shares, along with the initial investments into the company; Thomson also offers the split adjusted offer shares and size, along with annualized and cumulative return information between the IPO and the time in which the data is analyzed.

use of both databases lead to comparable results, except in few cases, e.g. when a size bias exists. Furthermore, after 1998 the number of firms covered by Thomson Financial Data exceeds the one covered by Compustat by about one fourth. Based on that criterion, this paper uses the Thomson Financial Securities Data, which enables the use of a sample, which is large enough to prove statistically significant.

Bagnoli, Kross, and Watts (2002), uses the fact that managers of thousands of firms have voluntarily disclosed the expected date of their firm's next quarterly earnings announcement to Thomson Financial Data Services Inc. They find that these disclosures are approximately 500% more accurate than the simple time-series expected report dates used in prior accounting research. These disclosures are also informative. On average, managers who miss their own expected date eventually report earnings that fall about one penny per share below consensus forecasts for each day of delay. Investors respond by sending the price of late-announcing stocks down at the missed expected report date and continue to send them down as the reporting delay lengthens, consistent with this "day late, penny short" result.

Schirm (2003) investigates the rationality of two survey forecasts of selective U.S. macroeconomic performance measures that were widely followed in the financial markets during the 1990-2000 period. He compares the rationality of survey forecast data from Money Market Services, Inc., and Thomson Financial. Schirm (2003) extends prior research that has evaluated the rationality of Money Market Services data for earlier time periods while also evaluating similar consensus forecast data from Thomson Financial Data that were widely reported in both Barron's and the Wall Street Journal

during the 1990s. For our purposes, we find the Thomson Financial Data has a broader range of observations.

The database includes information on both active and inactive corporations. Inactive companies are firms that were acquired or went out of business. Although one may claim that this is a highly selective sub-sample, the reader is reminded that excluding them altogether or not reporting their returns will subject the analysis to selectivity bias, since the investor does not a priori knows which firm will become insolvent. Thus, the paper presents the results for both active and inactive firms separately, as well as grouped together.

The unique database stratifies annual and cumulative returns for different locations. We present here results from 1,697 firms in five states. The classification of locations is into five states: California, Massachusetts, New York, Pennsylvania, and Texas. The next five sub-sections presents the empirical results for the five states that are major centers of gravity for venture-capital backed firms.

IV. Empirical Results

The next five sub-sections present the empirical results for the five states that are major centers of gravity for venture-capital backed firms. The results are displayed for three categories. The first one is all firms, both active and inactive firms. The second and the third categories are for active and inactive firms, respectively. Within each category, the annual and cumulative returns are given. The rows in the tables show summary statistics and tests of significant of these statistics. Below a summary of these statistics are discussed, while more detailed figures are available in the tables.

IV.1 Results for Annualized and Cumulative Returns for Firms in California

Table 1 presents the results for the firms in California. There are 956 firms from 1969 to 2004. Out of these 956 Californian start-ups, 496 were active while 460 were inactive firms at the end of the sample period. Some noteworthy statistics are revealed by the data. Venture-capital backed firms in California over this time period had negative annual returns (-43.3 percent). The cumulative return for all firms in California, which is about 59 percent, is not statistically significantly different from zero. As one expects, active Californian firms perform better than inactive ones. Active firms had an annual mean return of -9.7 percent and a cumulative mean return of 181 percent, while inactive firms have annual and cumulative returns of -80 percent and of -73 percent, respectively. When testing for the null hypotheses of annual and cumulative means equal to zero for California, both active and inactive firms have annual and cumulative returns that are statistically different from zero. Note that all estimated coefficients above are statically significant except for cumulative returns of all firms as mentioned above.

The median annual and cumulative returns for all Californian firms, whether active or inactive, are negative. The median annualized and cumulative returns for inactive firms is -100 percent, in other words, the entire capital of these companies is completely wiped out. For active firms, the median of annualized and cumulative returns are both negative with -12 percent and -43 percent, respectively. Furthermore, seventy-five percent of the inactive firms still had annual and cumulative returns of -100% while active firms have an annual return of 9.925% and a cumulative return of 82.275%. Note that the standard deviation is much greater for active compared to inactive firms. The top

performing active Californian firms had an annual return of 1,813 percent and a cumulative return of 35,621 percent.

The standard deviation of annual return of active Californian firms is 124 percent compared to the 42 percent for inactive firms. The standard deviation for the cumulative returns of active firms is an astounding 1,689 percent compared to the 109 percent for inactive firms. Not surprisingly, the top five companies ranked by their annual as well as their cumulative returns show that active firms perform much better than inactive firms do. Furthermore, the range is huge for the active firms whereas the corresponding value for the inactive firms is much smaller (1.913 percent versus 295 percent for annualized returns and 35,721 percent versus 1,465 percent for cumulative returns).

IV.2 Results for Annualized and Cumulative Returns for Firms in Massachusetts

Table 2 presents the results for the Massachusetts based firms. The data for the state of Massachusetts consists of 292 firms from 1969 to 2004. Out of these 292 Massachusetts start-ups, 140 were active while 152 were inactive firms at the end of the sample period. Annually, all venture-capital backed firms in Massachusetts over this time period had negative annual return (-47.9 percent). As one expects, active Massachusetts firms perform better than inactive ones, although providing negative returns of negative 13 percent and a cumulative return of positive 67 percent. Inactive firms had annual and cumulative returns of -80 percent and -75 percent, respectively. When testing for the null hypotheses of cumulative mean equal to zero, both active and inactive firms have cumulative returns that are statistically different from zero. However, the null hypotheses of zero cumulative returns for all firms surveyed in Massachusetts cannot be rejected.

The median annual return and median cumulative return for all Massachusetts firms whether active or inactive are negative. The median annualized and cumulative returns for inactive firms are negative 100 percent. In other words, the entire capital investments of these companies are completely wiped out. For active firms, the median annualized and cumulative returns are both negative with -7 percent and -26 percent, respectively. Furthermore, seventy-five percent of the inactive firms have annual and cumulative returns of -100 percent while active firms have an annual return of 12 percent and a cumulative return of 90 percent. The top performing active Massachusetts firms had annual and cumulative returns of 174 percent and, and astonishingly 2,540 percent, respectively.

The standard deviation of annual return of active Massachusetts firms is 5 percent compared to the 26 percent for inactive firms. The standard deviation for the cumulative returns of active firms is 309 percent compared to the 92 percent for inactive firms. This is an indicator of how risky the active firms are. The top five companies ranked by their annual as well as their cumulative returns show that active firms perform better than inactive firms. Interestingly, the performances of the top inactive firms are high for both annual and cumulative returns. The range is larger for the annualized returns of inactive firms compared to active firms (319 percent versus 274 percent for annualized returns) whereas the range is smaller for the cumulative returns of inactive firms when compared to active firms (758 percent versus 2,640 percent for cumulative returns). This is again an indicator of how risky the active firms are and the potential to some to become inactive firms.

IV.3 Results for Annualized and Cumulative Returns for Firms in New York

Table 3 presents the results for the firms in New York. There are 165 firms from 1969 to 2004. There are 79 active firms and the 86 firms are inactive firms. Annually, all venture-backed firms in New York over this period have statistically significant mean negative annual returns (-53.8 percent). However, the cumulative return for all firms is not statistically different than zero. The mean annual return for active firms is negative 13 percent and a mean cumulative return of 78 percent while inactive firms have an annual return of -91 percent and a cumulative return of -94 percent. When testing for the null hypotheses of cumulative mean equal to zero for the state of New York, both active and inactive firms have cumulative returns that is statistically different than zero. However, the null hypotheses of zero returns for all firms surveyed in New York cannot be rejected.

The median annual return and median cumulative return for all New York firms whether they are active or inactive are negative. The median annualized and cumulative returns for inactive firms is -100 percent while active firms perform better with an active annual return of –5 percent and a cumulative return of about 38 percent. Seventy-five percent of inactive firms still have annual and cumulative returns of negative 100 percent, while active firms have an annual return of 8 percent and a cumulative return of 88 percent. The top performing New York firm has annual and cumulative returns of 742 percent and 2,078 percent, respectively.

Active firms have greater standard deviation compared to inactive firms. The standard deviation of annual return of active firms is 113 percent compared to the 25 percent for inactive firms. The standard deviation for the cumulative returns of active

firms is 256 percent compared to 20 percent for inactive companies. The top five firms ranked by their annual as well as their cumulative returns show that active firms perform better than inactive firms. The range-statistic is high for the active firms whereas the corresponding value for the inactive firms is much smaller (842 percent versus 100 percent for annualized returns and 2,178 percent versus 103 percent for cumulative returns).

IV.4 Results for Annualized and Cumulative Returns for Firms in Pennsylvania

Table 4 presents the results for the firms in Pennsylvania. There are 87 firms that were backed by venture capital from 1969 to 2004. There are 43 active and 44 inactive firms. All firms in Pennsylvania over this time period had negative annual returns of about -47 percent. The cumulative return for all firms in Pennsylvania, which is about 31.7 percent, is not statistically significant. Active Pennsylvanian firms perform better than inactive with mean annual return of -22 percent and a cumulative return of 107 percent, while inactive firms are both negative, with an annual return of -71 percent and a cumulative return of -42 percent. When testing for the null hypotheses of mean cumulative return equals to zero, active firms have cumulative returns that is statistically different than zero. However, the null hypotheses of zero returns for all the firms and for inactive firms in Pennsylvania cannot be rejected.

The medians for annual and cumulative returns for all Pennsylvanian firms whether they are active or inactive are all negative. The medians for annualized and cumulative returns for inactive firms are -100 percent while active firms have an annual return of –13 percent and a cumulative return of -36.5 percent. Seventy-five percent of inactive firms have annual and cumulative returns of -37 percent and -86 percent,

respectively, while active firms have an annual return of 12 percent and a cumulative return of 110 percent. These figures indicate how risky these corporations are. On the other side of the spectrum, the highest performing Pennsylvanian firm has annual returns of 98 percent and cumulative returns of 1,807 percent.

The standard deviation of annual return of active Pennsylvanian firms is 52 percent compared to the 49 percent for inactive firms. The standard deviation for the cumulative returns of active firms is 368 percent compared to the 188 percent for inactive firms. The ranges for both annual and cumulative returns for active firms are higher than the corresponding statistics for inactive firms (198 percent versus 174 percent for annualized returns and 1907 percent versus 1068 percent for cumulative returns).

IV.5 Results for Annualized and Cumulative Returns for Firms in Texas

Table 5 presents the results for the firms in Texas. There are 197 venture-backed firms from 1969 to 2004, 88 active and 109 inactive firms. The mean annual return for all firms is negative 51.6 percent. The cumulative return is not statistically different from zero. Active Texan firms have mean annual return of -8 percent and a cumulative return of 234 percent while inactive firms had an annual return of -87 percent and a cumulative return of -75 percent. When testing for the null hypotheses of cumulative mean equal to zero, both active and inactive firms have cumulative returns that are statistically different than zero. However, the null hypotheses of zero returns for all the firms surveyed in Texas cannot be rejected.

The medians of annual and cumulative returns for active Texan firms are positive at 0.6 percent and 1.2 percent while those for inactive firms are at negative -100 percent. Moreover, seventy-five percent of inactive firms have annual and cumulative returns of

negative 100 percent, while active firms have an annual return of 13 percent and a cumulative return of 132 percent. The top performing active Texan firm has annual and cumulative returns of 150 percent and 11,000 percent, respectively.

The standard deviation of annual return of active Texan firms is 51 percent compared to the 34 percent for inactive firms. The standard deviation for the cumulative returns of active firms is 1,231 percent as compared to the relatively low number of 128 percent for inactive firms. The range is high for the active firms whereas the value for the inactive firms is smaller (250 percent versus 162 percent for annualized returns and 11,100 percent versus 1,235 percent for the cumulative returns).

V. Conclusion

This study uses a unique database to stratify thirty years of data, from 1969 to 2004. The database includes 1,697 companies, which were backed by the venture capital industry. There are 846 active and 851 inactive firms. For each firm, the annual and cumulative returns are used to generate descriptive and inferential statistics. The data have been grouped into the major states of the United States. These states serve as the center of gravity and as a hub to venture capital investment in the United States. The states are California, Massachusetts, New York, Pennsylvania, and Texas. The paper refutes the assertion that the rates of returns for firms, which were backed by venture capital, are high. The paper demonstrates that returns on investment are in line with the risks associated with such firms. In this respect, the paper is another confirmation that financial markets are efficient.

References

Bruno, Albert V., Leidecker, Joel K., and Harder, Joseph W. (1986), "Patterns of Failure Among Silicon Valley High Technology Firms", in Rosenstadt et. al., Frontiers of Entrepreneurial Research.

Bygrave, William D., and Timmons, Jeffery A. (1992). *Venture Capital at a Crossroads*. Boston: Harvard Business School Press.

Constant Amelia, Shachmurove, Yochanan (2006) "Entrepreneurial Ventures and Wage Differentials between Germans and Immigrants," International Journal of Manpower, (Lead Article), Volume 27, Issue Number 3, pp. 208-229, July 2006.

Constant Amelia, Shachmurove, Yochanan and Kraus Z. Zimmermann (2007) "What Makes an Entrepreneur and Does it Pay? Native Men, Turks, and Other Migrants in Germany," International Migration, pages 71–100, Volume 45, Issue 4, October.

Hoban James P. (1976). Characteristics of Venture Capital Investing. Ph.D. Dissertation, University of Utah.

Ibbotson, Roger G., and Gary P. Brinson (1987). Investment Markets. New York: McGraw-Hill.

Kellman, Mitchell, Shachmurove, Yochanan and Roxo Trevor (2003), "Entrepreneurial Failure and South Africa's Performance in the World Trading Environment," The Journal of Entrepreneurial Finance and Business Ventures, (Lead Article) Volume 8, Issue 3, pp. 1-15, December.

Martin, John D., and Petty, William (1983). "An Analysis of the Performance of Publicly Traded Venture Capital Companies." Journal of Financial and Quantitative Analysis. 1983, 18: 401-10.

Murphy, Thomas P. (1956). A Business of Your Own, New York: McGraw-Hill.

Poindexter, J. B. (1976). The Efficiency of Financial Markets: The Venture Capital Case. Ph.D. Dissertation, New York University.

Rich, Stanley R., and David Gumpert (1992). "How to Write a Winning Business Plan." The Entrepreneurial Venture. Edited by William A. Sahlman and Howard H. Stevenson. Boston: Harvard Business School Publication, 127-37.

Roberts, Michael J., and Howard H. Stevenson (1992). "Alternative Sources of Financing." in The Entrepreneurial Venture, edited by William A. Sahlman and Howard H. Stevenson. Boston: Harvard Business School Publications, 171-78.

Shachmurove, Yochanan (2001). "Annualized Returns of Venture-Backed Public Companies Categorized by Stage of Financing: An Empirical Investigation of IPOs in the Last Three Decades," The Journal of Entrepreneurial Finance, 2001 6(1): 44 – 58.

Shachmurove, Yochanan (2006). "An Excursion into the Venture Capital Industry Stratified by Locations and Industries 1996-2005," The Journal of Entrepreneurial Finance and Business Ventures, Volume 11, Issue 3, pages 79 – 104, December 2006.

Shachmurove, Yochanan (2007) “Innovation and Trade: Introduction and Comments,” in Eytan Sheshinski, Robert J. Strom and William J. Baumol (eds.), Entrepreneurship, Innovation, and the Growth Mechanism of the Free-Enterprise Economies, Princeton University Press, pages 247 -260.

Timmons, Jeffrey A. (1999). New Venture Creation: Entrepreneurship for the 21st Century 5th Edition, Boston: Irwin/McGraw-Hill.

Venture Economics (1997). Investment Benchmarks: Venture Capital.

Table 1: Annualized and Cumulative Returns for California

	All		Active		Inactive	
	Annual Return	Cumulative Return	Annual Return	Cumulative Return	Annual Return	Cumulative Return
N	956	956	496	496	460	460
Mean	-43.30	58.86	-9.67	181.27	-79.57	-73.14
Std Dev	100.15	1224.88	123.78	1688.90	42.47	108.70
Skewness	8.53	26.04	7.92	18.98	2.39	8.60
CV	-2.31	20.81	-12.80	9.32	-0.53	-1.49
T:Mean=0	-13.37	1.49	-1.74	2.39	-40.18	-14.43
Kurtosis	132.23	747.17	100.22	394.17	6.53	95.57
Std Mean	3.24	39.62	5.56	75.83	1.98	5.07
Pr>|T|	0.00	0.14	0.08	0.02	0.00	0.00
100% Max	1813.3	35621	1813.3	35621	195	1365.4
75% Q3	-3.08	-11.05	9.93	82.28	-100.00	-100.00
50% Med	-91.95	-100	-12.05	-42.7	-100	-100
25% Q1	-100	-100	-100	-100	-100	-100
Range	1913.3	35721	1913.3	35721	295	1465.4
Q3-Q1	96.925	88.95	109.93	182.28	0	0
0.99	307.77	1615.11	468.30	2956.80	77.41	304.45
0.95	53.38	474.48	96.08	724.40	11.51	79.04
0.9	24.85	170.3	43.75	411.25	-13.78	-46.5
Max -1	718.1	5962.5	718.1	5962.5	103.2	1076.2

Table 2: Annualized and Cumulative Returns for Massachusetts

	All		Active		Inactive	
	Annual Return	Cumulative Return	Annual Return	Cumulative Return	Annual Return	Cumulative Return
N	292	292	140	140	152	152
Mean	-47.85	-6.87	-13.32	67.03	-79.66	-74.94
Std Dev	58.96	235.05	53.88	309.60	43.62	92.28
Skewness	1.06	6.49	0.46	5.17	3.05	5.65
CV	-1.23	-34.22	-4.05	4.62	-0.55	-1.23
T:Mean=0	-13.87	-0.50	-2.92	2.56	-22.52	-10.01
Kurtosis	1.59	57.67	1.68	34.46	14.11	36.05
Std Mean	3.45	13.76	4.55	26.17	3.54	7.49
Pr>|T|	0.00	0.62	0.00	0.01	0.00	0.00
100% Max	219.3	2540	173.8	2540	219.3	658.3
75% Q3	-1.87	-11.57	11.17	90.27	-100	-100
50% Med	-57.2	-94.85	-6.95	-25.65	-100	-100
25% Q1	-100	-100	-31.95	-83.575	-100	-100
Range	319.3	2640	273.8	2640	319.3	758.3
Q3-Q1	98.13	88.43	43.13	173.85	0.00	0.00
0.99	148.88	787.33	155.12	1429.18	29.42	382.46
0.95	29.80	348.19	72.89	478.38	2.00	15.29
0.9	16.06	157.47	27.55	259.67	-11.03	-49.73
Max -1	173.8	1709.4	159.8	1709.4	30.9	471.3

Table 3: Annualized and Cumulative Returns for New York

	All		Active		Inactive	
	Annual Return	Cumulative Return	Annual Return	Cumulative Return	Annual Return	Cumulative Return
N	165	165	79	79	86	86
Mean	-53.84	-11.53	-13.23	77.91	-91.14	-93.68
Std Dev	89.18	256.03	113.39	349.05	24.65	20.45
Skewness	5.34	5.97	4.44	4.23	2.73	3.53
CV	-1.66	-22.21	-8.57	4.48	-0.27	-0.22
T:Mean=0	-7.75	-0.58	-1.04	1.98	-34.29	-42.49
Kurtosis	41.72	42.54	26.82	20.78	6.29	12.34
Std Mean	6.94	19.93	12.76	39.27	2.66	2.20
Pr>|T|	0.00	0.00	0.00	0.00	0.00	0.00
100% Max	742.2	2077.8	742.2	2077.8	0.4	2.5
75% Q3	-4.9	-33.6	7.9	87.55	-100	-100
50% Med	-100	-100	-4.9	-37.5	-100	-100
25% Q1	-100	-100	-100	-100	-100	-100
Range	842.2	2177.8	842.2	2177.8	100.4	102.5
Q3-Q1	95.1	66.4	107.9	187.55	0	0
0.99	225.44	1131.94	476.45	1880.46	0.23	2.42
0.95	29.2	347.38	84.22	426.97	-26.675	-43.85
0.9	9.52	108.72	31.7	358.64	-53.15	-86
Max -1	401.5	1824.8	401.5	1824.8	0.2	2.4

Table 4: Annualized and Cumulative Returns for Pennsylvania

	All		Active		Inactive	
	Annual Return	Cumulative Return	Annual Return	Cumulative Return	Annual Return	Cumulative Return
N	87	87	43	43	44	44
Mean	-46.96	31.74	-22.36	106.68	-71.00	-41.49
Std Dev	55.86	298.93	51.87	367.99	49.15	188.03
Skewness	0.49	3.66	-0.14	3.04	1.46	4.47
CV	-1.19	9.42	-2.32	3.45	-0.69	-4.53
T:Mean=0	-7.84	0.99	-2.83	1.90	-9.58	-1.46
Kurtosis	-0.93	15.90	-0.40	10.74	1.00	21.35
Std Mean	5.99	32.05	7.91	56.12	7.41	28.35
Pr>|T|	0.00	0.32	0.01	0.06	0.00	0.15
100% Max	97.9	1807.1	97.9	1807.1	74.1	967.9
75% Q3	1.9	23.25	12.25	110.15	-36.975	-86.25
50% Med	-51.6	-96.8	-13	-36.5	-100	-100
25% Q1	-100	-100	-53.65	-97.55	-100	-100
Range	197.9	1907.1	197.9	1907.1	174.1	1067.9
Q3-Q1	101.9	123.25	65.9	207.7	63.025	13.75
0.99	85.09	1085.39	91.64	1426.62	65.67	780.81
0.95	38.14	727.89	39.18	813.72	15.76	103.09
0.9	16.3	188.06	23.22	520.24	1.34	49.52
Max -1	83	967.9	83	901.2	54.5	532.8

Table 5: Annualized and Cumulative Returns for Texas

	All		Active		Inactive	
	Annual Return	Cumulative Return	Annual Return	Cumulative Return	Annual Return	Cumulative Return
N	197	197	88	88	109	109
Mean	-51.59	63.16	-7.84	233.71	-86.90	-74.53
Std Dev	57.84	839.65	50.83	1230.71	34.22	128.48
Skewness	0.77	11.71	-0.04	8.05	2.54	8.18
CV	-1.12	13.29	-6.48	5.27	-0.39	-1.72
T:Mean=0	-12.52	1.06	-1.45	1.78	-26.51	-6.06
Kurtosis	-0.30	149.57	1.02	69.50	5.41	74.57
Std Mean	4.12	59.82	5.42	131.19	3.28	12.31
Pr>|T|	0.00	0.29	0.15	0.08	0.00	0.00
100% Max	149.7	11000	149.7	11000	62.2	1135
75% Q3	0.6	1.8	12.65	131.88	-100	-100
50% Med	-100	-100	0.55	1.15	-100	-100
25% Q1	-100	-100	-25.03	-68.98	-100	-100
Range	249.7	11100	249.7	11100	162.2	1235
Q3-Q1	100.60	101.80	37.68	200.85	0.00	0.00
0.99	111.19	1221.60	126.38	4301.00	23.09	245.54
0.95	40.42	450.88	67.19	696.66	-1.16	15.30
0.9	15.6	243.88	40.53	451.32	-22.2	-65.32
Max -1	122.9	3300	122.9	3300	23.8	245.8