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"Choosing Between Promising and Crowded Industries: How Does the Venture Capital Industry Fare in Each?"

by

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Choosing Between Promising and Crowded Industries: How Does the Venture Capital Industry Fare in Each?

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Abstract

Incredible profits from Initial Public Offerings have been highly emphasized. This paper refutes these profits as being standard and supports the market's return to normalcy by stratifying annual and cumulative returns for different industries: Biotechnology; Communications; Computer Related companies; Medical, Health and Life Science industries; Non-High-Technology companies; and Semiconductor and Other Electronics Industries. This paper tests whether an entrepreneur has greater potential for success in continually promising fields or whether one should slug it out in a risky but potentially very rewarding industry. A comparison of success is made between already competitive businesses and those, which are young and growing.

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I.   Introduction

Respected financial structures, particularly in the past decade, have considered entrepreneurs to be people who have solely one quest in life: to get rich fast, without any intention of actually fostering and developing a company, in order to generate a steady stream of income. They were seen as people looking for shortcuts, people who ultimately lost it all in their quest to make a fast billion, and now that financial markets are falling, have reinvented themselves in their quest to make a slow million (Lawrence Rout, Editor's Note, Small Business Special Report, Wall Street Journal, R4, March 27, 2002).

In his writing on the last decade's entrepreneurs, Bailey (2002) emphasizes the need to recognize that an entrepreneur is not just another word for instant millionaire; building a company is not just about cashing in stock options as quickly as possible. He even invokes the events of September 11, that "have helped remind us where moneymaking belongs: among the greater riches of family, spirituality and country" (R6).

However, only a few years ago, one often heard about the incredible profits of IPO's. The success of eBay Inc., an online auction house that went public in September 1998 at $18 a share and was trading at $241.25 in December 1998; a 1,240 percent increase from its offering price was often cited and recited (Stross, 2000). Another success story that was frequently mentioned is the online search engine developer Inktomi Corp., which had a price of $129.38 per share at 1998 year-end close, 618.8 percent higher than the offering price of $18 in July 1998. Theglobe.com, another online community site, had a 605 percent gain on its first day of trading. However, it was forced to end its operations in August 2001, demonstrating a recent example conforming to more realistic statistics, as well as the need to study the venture capital industry and its performances based on available data spanning through the last three decades, rather than misleading, immediate returns which are unsustainable even in the short run. Still

others quote and recite the success of Red Hat, which became a billion-dollar Internet company despite its free, downloadable product (Wayner, 2000).

Other companies that were often mentioned in the news with total returns, including price change and dividends for the year 1999, were Qualcomm, a communication technology company with 2,622 percent; BroadVision, an internet company with 1,507 percent; Omnipoint, a telecommunication–wireless company with 1,199 percent; SDL, an industrial tech and office products company with 1,006 percent; Abgenix, a biotechnology company, with 713 percent; EchoStar Comm., a cable and broadcasting company with 706 percent; and Alleiance Telecom, a telecommunication–carries company with 666 percent. With these types of numbers dominating the media and widely acclaimed success stories, it is easy to fall into the trap of expecting high returns and easy riches in the venture capital markets.

This paper investigates the actual performance of 2,895 Initial Public Offerings of companies that were backed by venture capital from 1968 until the end of 1998. It seeks to refute the idea that investors demand very high annualized and cumulative rates of return to compensate for the risks they are taking by financing ventures. It argues, based on historical statistics, that the total returns of the venture capital market are reasonable given the level of risk. This is done by concentrating on sections of varied types of industries, which have been supported by venture capital.

Venture capital traditionally has been a low profile, private industry. Although the national media has given increased attention to the venture capital process during the 1980s and the 1990s, misconceptions about the industry continue to proliferate. The unique database used in this study includes currently active and inactive public companies. The data enable one to ascertain the relationships among a company's cumulative rate of return, share price at the IPO date, IPO size, current total shares, and the role of venture capital for different stages of financing, and for different industries. In this paper we concentrate on the annualized and cumulative returns of venture capital in different sectors.

The remainder of the paper is organized into the following sections. Section II presents a brief review of the literature. Section III is devoted to reporting the empirical results. Section III.1 presents the

empirical findings for annualized and cumulative rates of return for all firms and for firms stratified as currently active or inactive. Furthermore, the data for all firms, active and inactive, are stratified to three major industries, the Information Technology industry, the Medical, Health and Life Science industry, and the Non-High Technology industry. Section III.2 presents the empirical results for annualized and cumulative returns for major industry groups for current actively and inactively traded companies. Section III.3 further stratifies the data into 6 different sectors: Biotechnology; Communications; Computer Related companies; Medical, Health and Life Science industries; Non-High-Technology companies; and Semiconductor and Other Electronics Industries. Section IV concludes.

II.   Review of the Literature

In this paper we seek to explore whether investors demand very high annualized and cumulative rates of return to compensate for the risks they are taking by financing new ventures.[1] For example, Roberts and Stevenson (1992) write about target returns of 50 or 60 percent annually and claim that such returns are not uncommon. Rich and Gumpert (1992) offer the following assessment:

> "Because risk and reward are closely related, investors believe companies with fully developed products and proven management teams should yield between 35 percent and 40 percent on their investment, while those with incomplete products and management teams are expected to bring in 60 percent annual compounded returns."

Furthermore, Timmons (1999) provides a summary of rates of return sought by venture capital investors by stage of investment. He finds that for seed and startup financing the annual rates of return range between fifty percent to more than one hundred percent. For first stage financing, the annual rates of return range between 40 percent and 60 percent, and for turnaround financing, more than fifty percent. The basis for such high rates of return is the result of asking venture capital investors to report the rates they apply when discounting the projected cash flows of proposed new ventures.

However, Poindexter (1976) studies 92 venture capital firms and finds the average return during the 1960s and early 1970s to be about 14 percent. Hoban (1976) examines returns by venture capital firms for a sample of over 100 investments during the years 1960 to 1968. He finds that, before

deducting management fees, the average return through 1975 was 23 percent. Once one accounts for management fees, the return is estimated at 18-19 percent.

Ibbotson and Brinson (1987) find an average return of 16 percent for the stock price performance of public venture capital firms over the period 1959-1985. Martin and Petty (1983) find a much higher average rate of return – 27 percent – from studying 11 venture capital firms over a short period of five years from 1974 through 1979. Bygrave and Timmons (1992), examine returns that are based on valuations by the fund managers. The study is limited to funds in existence for at least five years. The time period for this study is 16 years, from 1974 through 1989. They find that the maximum return on a capitalized-weighted basis was 32 percent. The minimum was a negative return of 3 percent. The compound annual return over the period was approximately 13.5 percent. Venture Economics (1997, page 272) estimates that the internal rate of return (IRR) performance of venture capital funds between 1986-1996 has roughly paralleled the performance of the stock market. The 10-year holding period IRR ending in 1996 was 20.7 percent – most of it generated in the last five years – over which the median was 23.7 percent.

Shachmurove (2001) investigates the annualized returns of initial Public offerings of companies that were backed by venture capital from 1968 until 1998 stratified by current actively and inactively traded companies, as well as by stages of financing, which include seed, research and development, start-up, first-stage, second-stage, third-stage, bridge, acquisition, and management leveraged buyout funds. The main findings are that while annualized returns are different for current actively and inactively traded firms throughout many stages of financing, they are much lower than the ones reported by the media and the venture capital literature. Shachmurove E. and Shachmurove (2004) compare the annualized returns of the venture capital industry by stages of financing, during the 1980s and 1990s. The comparisons between the decades for different stages of financing provide some reasoning for the increased media coverage of the industry.

Another important consideration of venture-backed public companies is the industry of choice. In a pioneering study, based on one hundred start-up firms, Murphy (1956) concludes: "In both my surveys,

the conclusion remained the same. The man who chose the promising field did better than the man who elected to slug it out in one already crowded. Or, when the same man tried both, he often failed in the highly competitive business and went on to success in the growing one." The importance of industry choice in achieving start up success has also been studied by others: Hoad and Rosko (1964), Cooper and Komives (1972), Reynolds (1986), Bruno, Leidecker and Harder (1986), Ronstadt, Hornaday, Peterson, and Vesper (1986), Phillips and Kirchoff (1988), and Vesper (1990).

III. Empirical Results

III.1 Empirical Results for Annualized and Cumulative Returns for All Firms

The data consist of all venture-backed public companies (2,895) from the end of 1968 to August 1998.[2] The data is further stratified into three major groupings of industries. These three groups are Information Technology (IT) with 1,440 companies; Medical, Health and Life Science (MHLS) with 645 companies, and Non-High Technology (NHT) with 807 companies. In this particular stratification, three companies out of the 2,895 cannot be identified as part of these three, mutually exclusive groups.

Table 1 defines the terminology of statistics for Tables 2-5. The last five rows of Tables 2-5 give the annualized and cumulative returns of the top five firms, such that max-4 denotes the cumulative returns of the fifth company from the top, max-3 details the corresponding value of the fourth firm from the top, etc. Table 2 presents the results for all 2,895 firms for both annualized and cumulative returns and for firms stratified as current actively and inactively traded. The 1,401 active firms are defined as those which were traded on the stock market at the end of the period, while inactive firms (1,494 firms) are those which no longer exist for a variety of reasons, ranging from bankruptcy to mergers or acquisitions. It is interesting to note that the means for all annualized returns are negative. Moreover, the mean of cumulative returns for inactive firms is –71.88 percent. The annualized return at the 75-th percentile is only 12.6 for active firms. The Table is also revealing as far as the excitement that venture-backed capital is generating; the cumulative return at the 90th percentile is 167.5 percent for all firms and equal to 365 percent for currently active firms.

III.2   Empirical Results for Annualized and Cumulative Returns for 3 Major Industry Groups

Table 3 stratifies the data by the three sectors: the first sector is the Information Technology (IT) industry with 1,440 companies, next the Medical, Health, and Life Science (MHLS) industries with 645 companies, and finally, the Non-High Technology (NHT) sectors with 807 firms. Some noteworthy statistics are revealed by the data. The means of annual returns for all three groups are negative. Interestingly, annualized returns for these three groups are very similar (-43.72 percent, -44.30 percent and –48.86 percent for IT, MHLS and NHT, respectively). However, once one looks at cumulative returns, the IT industry shows a distinct difference from the other two sectors (57.41 percent for IT), versus negative cumulative returns for the other two sectors. Furthermore, when testing for the null hypotheses of cumulative mean equal to zero, only the IT sector shows that the mean cumulative return is statistically different than zero. For the other two industries the null hypotheses of zero returns cannot be rejected.

The medians for both annualized and cumulative returns of all three industries are negative. It is worth observing that the medians for both the IT and NHT industries are a negative 100 percent. Furthermore, at the third quartile point, both annualized and cumulative returns are negative for IT and MHLS, they are a mere 3.7 percent and 25 percent, respectively, for annualized and cumulative returns for the more traditional Non-High Technology industry. As can be expected, the standard deviation (SD) for annualized returns for the IT industry is more than twice the values of standard deviations for the other two and about five times that for the SD of cumulative returns. The top five companies ranked by their annualized returns also show that the IT industry has performed much better than both the MHLS and NHT industries. For example, the maximum value for annualized returns is 3,296.1 percent versus the corresponding values of MHLS of 149.7 percent and NHT of 178.1 percent. Furthermore, the statistic for the range is huge for the Information Technology industry whereas the corresponding values for MHLS and NHT are much smaller (3,396.1 percent versus 249.7 percent and 278.1 percent for annualized returns for MHLS and NHT, respectively).

Table 4 presents the basic statistics for annualized and cumulative returns from the IPO date until the last date in the database (08/19/1998) only for current actively traded companies. There are 751 active IT companies in the sample, 303 active MHLS firms and 347 active NHT enterprises. The annualized returns for all three industries are negative, although for the IT industry it is not significantly different than zero. Table 4 does reveal that there are different cumulative rates of return, as one stratifies the data based on industry classification. The cumulative returns from date of IPO to the present was 175.92 percent for IT, 61.66 percent for MHLS and 94.24 percent for NHT, with a huge standard deviation of 1,482.2 percent for IT, and much less corresponding values for MHLS and NHT (245.64 percent and 285.83 percent, respectively).

Although the maximum annualized return since IPO was impressive for the IT industry (3,296.1 percent), the corresponding values for MHLS and NHT are much lower (149.7 percent and 135.4 percent, respectively). Interestingly, the medians for both IT and MHLS are negative for both annualized and cumulative returns, but have positive values for the medians of annualized and cumulative returns for the NHT industry. At the third quartile point the annualized returns for current actively traded companies are very modest, 11.4 percent for IT and MHLS, and 15.9 percent for the NHT industry. At the ninetieth percentile points, annualized returns are 42.7 percent for IT, 31.5 percent for MHLS and 36.5 percent for NHT. Only at the 95th percentile points, the value for annualized returns for IT (118.2 percent) is much higher than the corresponding values for MHLS (50.4 percent) and NHT (57.9 percent).

Table 5 duplicates Table 4, but only for current inactively traded firms. There are 689 inactive IT firms, 342 MHLS firms, 460 inactive NHT (and 3 companies that cannot be categorized to these three groups and thus omitted from the analysis). Note that restricting the discussion to currently active traded firms, as in Table 4, biases the reported returns. As one may expect, inactive firms performed much worse when compared to active firms. For all industries both the means for annualized and cumulative returns are negative. Strikingly, these negative mean returns are close in magnitude to one another (-81.77 percent, -77.65 percent, -81.20 percent for annualized returns for IT, MHLS and NHT, respectively, and -71.77 percent, -67.07 percent, and -75.44 percent for cumulative returns, for the corresponding

industries). Even at the third quartile points the annualized and cumulative returns for current inactively traded companies are all negative. Furthermore, for current inactively traded companies, even if one picks the venture capital backed firms at the ninetieth percentile point of the distribution, the annualized and cumulative returns are still negative for all industries. Moreover, in the 95th percentile point, annualized returns are modest, 9.6 percent for IT, 12.8 percent for MHLS, and 10.75 percent for NHT. Only at the 99th percentile point does the IT industry performs much better than the MHLS and the NHT industries.

III.3   Empirical Results for Annualized and Cumulative Returns for 6 Major Industry Groups

In this subsection, the data are further stratified to 6 different sectors. These sectors are: Biotechnology; Communications; Computer Related companies; Medical, Health and Life Science industries; Non-High-Technology companies; and Semiconductor and Other Electronics Industries. The results for actively and inactively traded companies are summarized in Table 6.

As before, we have 1,401 actively traded companies. The sector previously identified as Information Technology (IT), which has 751 actively traded firms is now broken into three sectors: 437 Communication companies, 166 Computer Related companies, and 148 Semiconductors and Other Electronics industries. However, the new classifications enable one to reduce the number of firms classified before as non-high technology from 347 to 328 actively traded firms.   The 303 actively traded firms classified before as Medical, Health and Life science industries (MHLS) are now only 193 firms in this category, where the additional 129 firms are now classified as Biotechnology industry. The 689 inactive IT firms are now broken into three sub-sectors: 403 Communication companies, 176 Computer Related companies, and 110 Semiconductors and Other Electronics industries. The new classifications enable the reduction of the number of firms classified before as Non-High Technology from 460 to 425 inactively traded firms. The 342 inactively traded firms classified before as Medical, Health and Life Science Industries (MHLS) are now only 270 firms in this category, where additional 108 firms are now classified as Biotechnology industry.

To facilitate the discussion of Table 6, we first analyze the actively traded firms. It is interesting to note that the mean annualized return is positive only for the Semiconductors and Other Electronics, but is not statistically different from zero. The mean of annualized return is statistically significant and negative for Biotechnology (-7.17 percent), MHLS (-6.05) and NHT (-6.1), not statistically significantly different from zero for Communications, and negative and significant at 10 percent for Computer Related industries (-21.45). Except for NHT and Semiconductors industries, 50 percent of the actively traded firms of the other four industries are losing money both as measured in annualized and cumulative returns. Even in the NHT and the Semiconductors industries, the median for annualized (3.3 percent for NHT and 2.5 percent for Semiconductors) and cumulative returns (24.65 and 18.65 percent, respectively) are very modest. The picture is brighter once one looks at the means of cumulative returns. First, they are all positive. Second, while the mean of cumulative returns in the Computer Related industries is not statistically significantly different from zero, all other means of cumulative returns are positive and statistically different from zero. For two sectors, Communication and Semiconductors, these numbers are above 200 percent (218.76 percent for Communication and 222.16 percent for Semiconductors). If one is lucky enough to pick a firm at the top 25 percent of the distribution of cumulative returns, these returns exceed 60 percent, excluding the Computer Related industries.

Turning to the inactive firms presented in the second part of Table 6, the results for firms in this category are discouraging. Not only are all the means and medians of annualized and cumulative returns for all industries negative, these results also hold for the 90th percentile. In other words, one could only talk about any positive returns on his investment in this category if he was lucky enough to hold one of the companies among the best ten percent in these currently inactive enterprises.

IV.   Conclusion

The incredible profits of IPOs were often emphasized in the media as a popular investment for the public. This paper takes a few steps towards refuting such an assertion and supporting the market's return to normalcy. This paper investigates the actual performance of 2,895 Initial Public Offerings of companies that were backed by venture capital from 1968 through 1998. In this paper we find that it is incorrect to

assume that investors demand very high annualized and cumulative rates of return to compensate for the risks they are taking by financing ventures in different sectors of the economy. The mean rates of return are found to be, in practice, very moderate, and often, negative.

The paper finds that there are different annualized and cumulative rates of return as one stratifies the data based on company industry groupings. In this respect, this paper supports the findings of a study done almost a half a century ago, by Murphy (1956) based on one hundred startup firms. Murphy concludes that rates of return by sectors do differ substantially. However, our results dispute the findings of many other studies since both annualized and cumulative rates of return are much lower than those quoted in the finance literature and in the media.

Further research is currently underway to stratify the data using more detailed industry classifications, as well as by decades of operation. It also aims to ascertain the actual well being of publicly traded venture-backed firms.

Notes

1.	The venture capital literature is by now vast. Early studies include Mansfield (1969), Mansfield (1983). Tax policies issues related to venture capital financing were studied by, among others, Mansfield. (1986) and Summers (1989). More recent literature includes, among others, Gompers (1996), Gompers and Lerner (1999), Lerner (1995), Smith and Smith (2000) and Shachmurove (2001).

2.	The data are from Securities Data Company Platinum 2.1, Venture Financing 1968-1998, Thomson Financial Securities Data, 22 Thomson Place, Boston, MA 02210, and from Venture Economics Information Services, Venture Financing 1968 –1998, 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.

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Table 1: Key for Tables 2-5

Label on Output	Description of Statistic
N	Number of observation
MEAN	Arithmetic mean
STD DEV	Standard deviation
SKEWNESS	Pearson coefficient of skewness
USS	Uncorrected sum of squares
CV	Coefficient of variation
T: MEAN = 0	t-statistic testing the mean equal to zero
SGN RANK	Centered signed rank statistic testing the mean equal to ze ro
NUM -=0	Number of non zero observations
SUM WGTS	Sum of the weights for the observations on this variable
SUM	Sum of the data value for the variable
VARIANCE	Variance (squared value of the standard deviation)
Kurtosis	Measure of kurtosis
CSS	Corrected sum of squares
STD MEAN	Standard error of the mean
PROB >¦ T¦	p value of the t-statistic
PROB >¦ S¦	p value of the signed rank statistic
100% MAX	Maximum data value
75% Q3	Third quartile point
50% MED	Median
25% Q1	First quartile point
0% MIN	Minimum data value
RANGE	Range
Q3-Q1	Quartile range
MODE	Mode
99%	Ninety-ninth percentile point
95%	Ninety-fifth percentile point
90%	Ninetieth percentile point
10%	Tenth percentile point
5%	Fifth percentile point
1%	First percentile point

	All Firms Annualized Return	All Firms Cumulative Return	ACTIVE Annualized Return	ACTIVE Cumulative Return	INACTIVE Annualized Return	INACTIVE Cumulative Return
TABLE 2: Annualized and Cumulative Returns - All, Active and Inactive Firms						
N	2895	2895	1401	1401	1494	1494
Mean	-45.34	26.29	-7.64	130.98	-80.69	-71.88
Std Dev	99.58	776.74	126.20	1101.18	41.26	111.69
Skewness	16.34	35.30	15.71	25.34	2.33	7.82
T:Mean=0	-24.50	1.82	-2.27	4.45	-75.58	-24.88
Kurtosis	483.99	1546.19	368.64	781.78	6.20	77.87
Pr>|T|	0.0001	0.0687	0.0235	0.0001	0.0001	0.0001
100% Max	3296.1	35621	3296.1	35621	219.3	1365.4
75% Q3	0.2	1.9	12.6	99.6	-100	-100
50% Med	-100	-100	-5.8	-24.1	-100	-100
25% Q1	-100	-100	-44.5	-84.4	-100	-100
0% Min	-100	-100	-100	-100	-100	-100
99%	173.8	1354.5	359.8	2006	61	408.8
95%	42.2	390.2	72.7	609.3	10.3	75
90%	21.9	167.5	39.7	365	-8.5	-38
10%	-100	-100	-100	-100	-100	-100
5%	-100	-100	-100	-100	-100	-100
1%	-100	-100	-100	-100	-100	-100

	ALL IT Annual Return	ALL IT Cumulative Return	ALL MHLS Annual Return	ALL MHLS Cumulative Return	ALL NHT Annual Return	ALL NHT Cumulative Return
TABLE 3:			Annualized and Cumulative Returns - All Firms, By 3 Major Industries			
MHLS=	Medical/Health/Life Science					
IT=	Information Technology					
NHT=	Non-High Technology					
N	1440	1440	645	645	807	807
Mean	-43.719	57.40958	-44.2964	-6.59767	-48.8607	-2.4798
Std Dev	129.899	1080.273	52.47116	203.5494	56.9937	214.8797
Skewness	14.7469	26.2836	0.343066	4.341905	0.561158	6.406126
USS	2.7E+07	1.68E+09	3038678	26710510	4544723	37220641
CV	-297.12	1881.695	-118.455	-3085.17	-116.645	-8665.2
T:Mean=0	-12.772	2.016657	-21.4402	-0.82319	-24.354	-0.32784
Num ^= 0	1440	1440	645	645	807	807
M(Sign)	-379	-379	-165.5	-165.5	-173.5	-173.5
Sgn Rank	-374350	-220953	-76499.5	-47249	-114477	-54757
Sum Wgts	1440	1440	645	645	807	807
Sum	-62956	82669.8	-28571.2	-4255.5	-39430.6	-2001.2
Variance	16873.7	1166990	2753.223	41432.35	3248.282	46173.3
Kurtosis	335.105	828.3525	-0.87377	22.43001	-0.79332	67.50773
CSS	2.4E+07	1.68E+09	1773076	26682433	2618115	37215679
Std Mean	3.42313	28.46769	2.06605	8.014749	2.006273	7.564125
Pr>|T|	0.0001	0.0439	0.0001	0.4107	0.0001	0.7431
Num > 0	341	341	157	157	230	230
Pr>=|M|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Pr>=|S|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
100% Max	3296.1	35621	149.7	1532.1	178.1	3105
75% Q3	-2.15	-13.25	-0.9	-6.3	3.7	25
50% Med	-100	-100	-37.5	-78.1	-100	-100
25% Q1	-100	-100	-100	-100	-100	-100
0% Min	-100	-100	-100	-100	-100	-100
Range	3396.1	35721	249.7	1632.1	278.1	3205
Q3-Q1	97.85	86.75	99.1	93.7	103.7	125
Mode	-100	-100	-100	-100	-100	-100
99%	359.8	1835.9	83	1069.2	82.4	900
95%	57.45	446.1	34.3	300	36	316.7
90%	23.9	191.25	19	122.3	22.6	174.8
10%	-100	-100	-100	-100	-100	-100
5%	-100	-100	-100	-100	-100	-100
1%	-100	-100	-100	-100	-100	-100
max-4	614.1	5761.5	97.9	1316.2	117.8	1076.2
max-3	718.1	5962.5	99.9	1325	122.3	1226.8
max-2	742.2	8483.3	100.9	1336.1	126.4	1568.3
Max -1	1813.3	11000	105.2	1361.5	135.4	1824.8
Max	3296.1	35621	149.7	1532.1	178.1	3105

	ACTIVE IT Annual Return	ACTIVE IT Cumulative Return	ACTIVE MHLS Annual Return	ACTIVE MHLS Cumulative Return	ACTIVE NHT Annual Return	ACTIVE NHT Cumulative Return
Table 4:		**Annualized and Cumulative Returns - Active Firms, By 3 Major Industries**				
N	751	751	303	303	347	347
Mean	-8.80866	175.9222	-6.64587	61.66106	-5.9951	94.24294
Std Dev	168.0103	1482.204	36.10421	245.6371	45.93007	285.8259
Skewness	12.47061	19.30619	0.224475	3.4047	-0.53101	5.16839
USS	21228859	1.67E+09	407044	19373986	742383.2	31348941
CV	-1907.33	842.5335	-543.257	398.3667	-766.127	303.2863
T:Mean=0	-1.43679	3.252616	-3.20417	4.369566	-2.43144	6.14203
Num ^= 0	751	751	303	303	347	347
M(Sign)	-81.5	-81.5	-24.5	-24.5	17.5	17.5
Sgn Rank	-54998	-7235.5	-5584.5	880	250	9847.5
Sum Wgts	751	751	303	303	347	347
Sum	-6615.3	132117.6	-2013.7	18683.3	-2080.3	32702.3
Variance	28227.45	2196928	1303.514	60337.6	2109.571	81696.47
Kurtosis	218.9787	442.5479	2.089344	13.4105	0.861877	41.54917
CSS	21170587	1.65E+09	393661.2	18221954	729911.6	28266980
Std Mean	6.130782	54.08638	2.074132	14.11148	2.465655	15.34394
Pr>|T|	0.1512	0.0012	0.0015	0.0001	0.0155	0.0001
Num > 0	294	294	127	127	191	191
Pr>=|M|	0.0001	0.0001	0.0057	0.0057	0.0678	0.0678
Pr>=|S|	0.0001	0.2224	0.0002	0.5651	0.8938	0.0001
100% Max	3296.1	35621	149.7	1532.1	135.4	3105
75% Q3	11.4	87.5	11.4	83	15.9	139.6
50% Med	-13.9	-45.3	-5.9	-23.3	2.5	20.2
25% Q1	-100	-100	-27.2	-62.5	-16.6	-55.6
0% Min	-100	-100	-100	-100	-100	-100
Range	3396.1	35721	249.7	1632.1	235.4	3205
Q3-Q1	111.4	187.5	38.6	145.5	32.5	195.2
Mode	-100	-100	-100	-100	-100	-100
99%	464	3225.2	99.9	1316.2	117.8	1226.8
95%	118.2	719.4	50.4	492.9	57.9	478.6
90%	42.7	395	31.5	259.2	36.5	360.4
10%	-100	-100	-47.3	-87.2	-100	-100
5%	-100	-100	-67.1	-97.2	-100	-100
1%	-100	-100	-100	-100	-100	-100
max-4	614.1	5761.5	97.9	1196.8	110.7	993.5
max-3	718.1	5962.5	99.9	1316.2	117.8	1226.8
max-2	742.2	8483.3	100.9	1336.1	122.3	1568.3
Max -1	1813.3	11000	105.2	1361.5	126.4	1824.8
Max	3296.1	35621	149.7	1532.1	135.4	3105

	INACTIVE IT Annual Return	INACTIVE IT Cumulative Return	INACTIVE MHLS Annual Return	INACTIVE MHLS Cumulative Return	INACTIVE NHT Annual Return	INACTIVE NHT Cumulative Return
Table 5:	**Annualized and Cumulative Returns - All Inactive Firms, By 3 Major Industries**					
N	689	689	342	342	460	460
Mean	-81.771	-71.7675	-77.6535	-67.0725	-81.1963	-75.4424
Std Dev	41.72441	117.8617	40.86136	130.3948	40.94826	84.19276
Skewness	2.72791	7.624169	1.629246	7.543265	2.238582	7.18577
USS	5804750	13106019	2631634	7336524	3802339	5871700
CV	-51.0259	-164.227	-52.6201	-194.409	-50.4312	-111.599
T:Mean=0	-51.4421	-15.9832	-35.1448	-9.51256	-42.5285	-19.2185
Num ^= 0	689	689	342	342	460	460
M(Sign)	-297.5	-297.5	-141	-141	-191	-191
Sgn Rank	-113706	-99134.5	-28303.5	-25016	-51050.5	-43895.5
Sum Wgts	689	689	342	342	460	460
Sum	-56340.2	-49447.8	-26557.5	-22938.8	-37350.3	-34703.5
Variance	1740.926	13891.39	1669.65	17002.82	1676.76	7088.421
Kurtosis	9.261937	73.01551	1.410859	66.53529	5.151652	79.81596
CSS	1197757	9557275	569350.8	5797961	769633	3253585
Std Mean	1.589573	4.490174	2.209529	7.050946	1.909223	3.925508
Pr>|T|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Num > 0	47	47	30	30	39	39
Pr>=|M|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Pr>=|S|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
100% Max	219.3	1365.4	70.4	1325	178.1	1076.2
75% Q3	-100	-100	-68.5	-96.9	-100	-100
50% Med	-100	-100	-100	-100	-100	-100
25% Q1	-100	-100	-100	-100	-100	-100
0% Min	-100	-100	-100	-100	-100	-100
Range	319.3	1465.4	170.4	1425	278.1	1176.2
Q3-Q1	0	0	31.5	3.1	0	0
Mode	-100	-100	-100	-100	-100	-100
99%	85.2	471.3	52.1	451.3	45.4	242.6
95%	9.6	60	12.8	75	10.75	73.25
90%	-13.9	-43.4	-5.2	-17.6	-5.5	-21.3
10%	-100	-100	-100	-100	-100	-100
5%	-100	-100	-100	-100	-100	-100
1%	-100	-100	-100	-100	-100	-100
max-4	98.2	532.8	40.3	427.5	45.4	242.6
max-3	102.2	658.3	52.1	451.3	62.2	256.3
max-2	103.2	1135	58.4	967.9	74.1	297.1
Max -1	195	1213.8	65.8	1069.2	88.3	316.7
Max	219.3	1365.4	70.4	1325	178.1	1076.2

	ACTIVE Biotechnology Annual Return	ACTIVE Biotechnology Cumulative Return	ACTIVE Communications Annual Return	ACTIVE Communications Cumulative Return	ACTIVE Computer Related Annual Return	ACTIVE Computer Related Cumulative Return
N	129	129	437	437	166	166
Mean	-7.16977	42.95426	-9.38764	218.7606	-21.4476	21.92349
Std Dev	37.26232	186.5121	190.5125	1880.6	168.6811	274.3979
Skewness	-0.01275	2.631247	12.50511	16.08926	8.572917	4.391562
USS	184356.8	4690719	15863144	1.56E+09	4771159	12503333
CV	-519.714	434.2109	-2029.4	859.6612	-786.481	1251.616
T:Mean=0	-2.1854	2.615737	-1.03009	2.431719	-1.6382	1.029397
Num ^= 0	129	129	437	437	166	166
M(Sign)	-11.5	-11.5	-61.5	-61.5	-33	-33
Sgn Rank	-1036	-32	-19981.5	-3228.5	-4411	-2719.5
Sum Wgts	129	129	437	437	166	166
Sum	-924.9	5541.1	-4102.4	95598.4	-3560.3	3639.3
Variance	1388.481	34786.76	36295.03	3536658	28453.33	75294.22
Kurtosis	1.325141	8.401836	209.1445	292.6037	87.96266	22.80043
CSS	177725.5	4452705	15824632	1.54E+09	4694799	12423547
Std Mean	3.280764	16.42147	9.113451	89.96131	13.0922	21.29741
Pr>|T|	0.0307	0.01	0.3035	0.0154	0.1033	0.3048
Num > 0	53	53	157	157	50	50
Pr>=|M|	0.0523	0.0523	0.0001	0.0001	0.0001	0.0001
Pr>=|S|	0.0143	0.9404	0.0001	0.2193	0.0001	0.0001
100% Max	105.2	1051.3	3296.1	35621	1813.3	1813.3
75% Q3	12.3	61.4	13.7	93.6	3.8	18.8
50% Med	-8	-25	-25.1	-57.6	-28.65	-68
25% Q1	-26.6	-63.9	-100	-100	-100	-100
0% Min	-100	-100	-100	-100	-100	-100
Range	205.2	1151.3	3396.1	35721	1913.3	1913.3
Q3-Q1	38.9	125.3	113.7	193.6	103.8	118.8
Mode	-100	-100	-100	-100	-100	-100
99%	100.9	694.3	464	3300	742.2	1807.1
95%	53.7	475	159.8	713.2	41.6	495.6
90%	34.5	266.7	60.1	426.2	18.7	164.1
10%	-49.9	-93.1	-100	-100	-100	-100
5%	-68.1	-99.4	-100	-100	-100	-100
1%	-100	-100	-100	-100	-100	-100
max-4	66	66	66	66	66	66
max-3	72.7	72.7	72.7	72.7	72.7	72.7
max-2	83	83	83	83	83	83
max-1	100.9	100.9	100.9	100.9	100.9	100.9
Max	105.2	105.2	105.2	105.2	105.2	105.2

Table 6Ai: Annualized and Cumulative Returns - Active Firms, By 6 Industry Sections

	ACTIVE Medical/Health/ Life Science Annual Return	ACTIVE Medical/Health/ Life Science Cumulative Return	ACTIVE Non-High- Technology Annual Return	ACTIVE Non-High- Technology Cumulative Return	ACTIVE Semiconductors/ Other Elect. Annual Return	ACTIVE Semiconductors/ Other Elect. Cumulative Return
N	193	193	328	328	148	148
Mean	-6.05389	68.85233	-6.0997	99.2561	7.077027	222.1615
Std Dev	34.00714	268.8134	47.04569	292.6826	63.19953	774.7488
Skewness	0.410068	3.501774	-0.51378	5.047431	4.930372	5.37664
USS	229118.6	14788991	735951.7	31243216	594557	95539296
CV	-561.741	390.4202	-771.279	294.8762	893.0237	348.7323
T:Mean=0	-2.47311	3.558331	-2.34815	6.141822	1.362285	3.4885
Num ^= 0	193	193	328	328	148	148
M(Sign)	-13.5	-13.5	18	18	13	13
Sgn Rank	-2140	617	280.5	9219.5	773.5	2095
Sum Wgts	193	193	328	328	148	148
Sum	-1168.4	13288.5	-2000.7	32556	1047.4	32879.9
Variance	1156.485	72260.66	2213.297	85663.1	3994.181	600235.7
Kurtosis	3.128587	13.21509	0.70527	39.55989	39.06549	32.62763
CSS	222045.2	13874047	723748.1	28011835	587144.6	88234649
Std Mean	2.447887	19.34961	2.597664	16.16069	5.194969	63.68396
Pr>|T|	0.0143	0.0005	0.0195	0.0001	0.1752	0.0006
Num > 0	83	83	182	182	87	87
Pr>=|M|	0.061	0.061	0.0531	0.0531	0.0395	0.0395
Pr>=|S|	0.0056	0.4286	0.8706	0.0001	0.1392	0.0001
100% Max	149.7	1532.1	135.4	3105	550	5962.5
75% Q3	9.5	84.4	16.65	145.1	14.5	138.25
50% Med	-3	-16.3	3.3	24.65	2.5	18.65
25% Q1	-26.1	-60.9	-16.7	-55.95	-9.1	-53.4
0% Min	-100	-100	-100	-100	-100	-100
Range	249.7	1632.1	235.4	3205	650	6062.5
Q3-Q1	35.6	145.3	33.35	201.05	23.6	191.65
Mode	-100	-100	-100	-100	-100	-100
99%	99.9	1361.5	117.8	1226.8	275.9	5130.1
95%	43.9	712.5	59.9	495.1	58.7	1278.1
90%	28.6	232.1	38.2	381.8	38.6	436.5
10%	-42.2	-84.7	-100	-100	-33.6	-78.1
5%	-64.9	-94.5	-100	-100	-64.6	-99.1
1%	-100	-100	-100	-100	-100	-100
max-4	66	66	66	66	66	66
max-3	72.7	72.7	72.7	72.7	72.7	72.7
max-2	83	83	83	83	83	83
max-1	100.9	100.9	100.9	100.9	100.9	100.9
max	105.2	105.2	105.2	105.2	105.2	105.2

Table 6Aii: Annualized and Cumulative Returns - Active Firms, By 6 Industry Sections

	INACTIVE Biotechnology Annual Return	INACTIVE Biotechnology Cumulative Return	INACTIVE Communications Annual Return	INACTIVE Communications Cumulative Return	INACTIVE Computer Related Annual Return	INACTIVE Computer Related Cumulative Return
N	108	108	402	402	176	176
Mean	-71.6509	-59.9389	-82.4537	-78.4179	-80.3886	-51.4994
Std Dev	42.30761	132.7574	41.28754	75.82793	44.92854	197.0432
Skewness	1.136973	5.59911	2.767261	4.701531	3.000575	5.525446
USS	745979.3	2273832	3416613	4777746	1490621	7261337
CV	-59.0468	-221.488	-50.0736	-96.6972	-55.8892	-382.612
T:Mean=0	-17.6001	-4.69204	-40.041	-20.7348	-23.7372	-3.46735
Num ^= 0	108	108	402	402	176	176
M(Sign)	-45	-45	-176	-176	-74	-74
Sgn Rank	-2816.5	-2280.5	-38579	-34019	-7413	-6194
Sum Wgts	108	108	402	402	176	176
Sum	-7738.3	-6473.4	-33146.4	-31524	-14148.4	-9063.9
Variance	1789.934	17624.52	1704.661	5749.875	2018.574	38826.01
Kurtosis	-0.09462	36.77717	8.914913	23.89044	12.15939	32.44901
CSS	191522.9	1885823	683568.9	2305700	353250.4	6794551
Std Mean	4.071052	12.77458	2.059235	3.781953	3.386616	14.85269
Pr>|T|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0007
Num > 0	9	9	25	25	14	14
Pr>=|M|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Pr>=|S|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
100% Max	58.4	967.9	195	486.6	219.3	1365.4
75% Q3	-33.35	-84.25	-100	-100	-100	-100
50% Med	-100	-100	-100	-100	-100	-100
25% Q1	-100	-100	-100	-100	-100	-100
0% Min	-100	-100	-100	-100	-100	-100
Range	158.4	1067.9	295	586.6	319.3	1465.4
Q3-Q1	66.65	15.75	0	0	0	0
Mode	-100	-100	-100	-100	-100	-100
99%	30.9	451.3	85.2	306.3	87.5	1213.8
95%	11.4	102.3	8.8	38.9	12.3	170.9
90%	-3.3	-17	-19.4	-56.8	-6	-29.2
10%	-100	-100	-100	-100	-100	-100
5%	-100	-100	-100	-100	-100	-100
1%	-100	-100	-100	-100	-100	-100
max-4	66	66	66	66	66	66
max-3	72.7	72.7	72.7	72.7	72.7	72.7
max-2	83	83	83	83	83	83
max-1	100.9	100.9	100.9	100.9	100.9	100.9
max	105.2	105.2	105.2	105.2	105.2	105.2

Table 6Bi: Annualized and Cumulative Returns - Inactive Firms, By 6 Industry Sections

	INACTIVE Medical/Health/ Life Science Annual Return	INACTIVE Medical/Health/ Life Science Cumulative Return	INACTIVE Non-High- Technology Annual Return	INACTIVE Non-High- Technology Cumulative Return	INACTIVE Semiconductors/ Other Elect. Annual Return	INACTIVE Semiconductors/ Other Elect. Cumulative Return
N	270	270	425	425	110	110
Mean	-81.1819	-72.7252	-80.8245	-74.4308	-81.3218	-79.6355
Std Dev	39.2288	121.2952	41.44342	86.93182	38.3202	57.4167
Skewness	1.955282	9.071092	2.230976	7.022578	1.804423	3.547895
USS	2193397	5385686	3504597	5558706	887515.9	1056937
CV	-48.3221	-166.786	-51.2758	-116.795	-47.1217	-72.0994
T:Mean=0	-34.0045	-9.85197	-40.2052	-17.651	-22.2575	-14.5467
Num ^= 0	270	270	425	425	110	110
M(Sign)	-112	-112	-175.5	-175.5	-47	-47
Sgn Rank	-17779.5	-16548.5	-43495	-36894	-2982	-2665.5
Sum Wgts	270	270	425	425	110	110
Sum	-21919.1	-19635.8	-34350.4	-31633.1	-8945.4	-8759.9
Variance	1538.898	14712.52	1717.557	7557.142	1468.438	3296.678
Kurtosis	2.633726	94.30554	5.149566	75.60786	1.928673	13.47016
CSS	413963.7	3957669	728244.2	3204228	160059.7	359337.9
Std Mean	2.387388	7.38179	2.010301	4.216813	3.653688	5.474468
Pr>|T|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Num > 0	23	23	37	37	8	8
Pr>=|M|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Pr>=|S|	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
100% Max	70.4	1325	178.1	1076.2	61	245.8
75% Q3	-100	-100	-100	-100	-100	-100
50% Med	-100	-100	-100	-100	-100	-100
25% Q1	-100	-100	-100	-100	-100	-100
0% Min	-100	-100	-100	-100	-100	-100
Range	170.4	1425	278.1	1176.2	161	345.8
Q3-Q1	0	0	0	0	0	0
Mode	-100	-100	-100	-100	-100	-100
99%	52.1	274	45.4	242.6	14.7	162.5
95%	12.8	58	11.6	78.6	4.2	77.2
90%	-9.5	-40.3	-5.2	-21.2	-12.25	-33.15
10%	-100	-100	-100	-100	-100	-100
5%	-100	-100	-100	-100	-100	-100
1%	-100	-100	-100	-100	-100	-100
max-4	66	66	66	66	66	66
max-3	72.7	72.7	72.7	72.7	72.7	72.7
max-2	83	83	83	83	83	83
max-1	100.9	100.9	100.9	100.9	100.9	100.9
max	105.2	105.2	105.2	105.2	105.2	105.2

Table 6Bii: Annualized and Cumulative Returns – Inactive Firms, By 6 Industry Sections