Chapter 11 and Beyond: Equity Performance

by

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Executive Summary

Before going deeper into the paper, I wish to say that the opportunities for gain in the high-risk, distressed investments are extraordinary. ROI's of 500% to 1000% are not uncommon. However, the risks are also extraordinary and of even greater magnitude.

Casual empiricism suggests that stock market may overreact to bankruptcy announcements causing the prices of stocks to plummet during the bankruptcy period. Such low priced stocks of bankrupt companies have attracted numerous (apparently) unsophisticated investors. The naïve reasoning has been, if the stock that at one time was selling for $20, $30 or $50 a share is now selling for few cents, how much lower can it sink? Perhaps lightening will strike and the stock will eventually get back to its earlier levels. Even if this stock does not recover, perhaps the next one will. The cold hard results of this study reveal the dangers of such irrational reasoning. The truth is that the value of such stocks can (and usually does) drop to zero, generating a holding period return of -100% on the investment.

While a very few bankrupt stocks may produce stratospheric gains, the risk of loss inherent in most such situations is likely to be far greater than those potential gains. One is exposed to the uncertainty of the final resolution of the bankruptcy process, total time for completion of the process (averaging 22 months), the quality of the reorganization plan and the successful implementation of the plan. A high percentage of the reorganized firms fail a second time.

Distressed securities can be defined narrowly as those publicly held and traded debt and equity securities of firms that have defaulted on their debt obligations and/or have filed for protection under Chapter 11 of U.S. Bankruptcy code. With corporate bankruptcies becoming a routine during 1980's and 90's, there has been a tremendous increase in firms emerging from bankruptcy. Firms usually cancel the old stock and distribute an entirely new issue of common stock on emergence from bankruptcy. If the value of debt claim exceeds the value of the firm, then the Absolute Priority Rule (APR) is followed and it makes the old shareholders' claims worthless, but in most of the cases, this priority rule is violated.

My primary purpose is to test the efficiency of the markets for stocks of firm emerging from chapter 11. I plan to test whether short term – i.e. less than 1 year – excess returns by these bankrupt firms after emerging from bankruptcy are significant. To measure excess returns, I compare returns on these stocks to the return on the market, as captured by S&P 500 Index.

My primary source of information on these firms emerging from bankruptcy is New Generation Research with help of Professor Ed. Altman. I supplemented this data with data available on Dow Jones News Retrieval, Wall Street Journal Index, Standard and Poor's Daily Stock Price Record (SPDSPR), the Center for Research in Security Prices (CRSP), and Bloomberg.

At the end of cleaning all the data I was left with 56 firms in my final sample with clean and enough information about their securities. This sample primarily focuses on firms which did not suspend their prior equity post emergence. Some firms did issue

new equity, but all of them kept trading under the same old name and the same ticker as they did prior to bankruptcy.

The results of the study were inline with what I had expected to begin with. Excess returns for 3, 6, and 9 months in this case is either very close to 0% or in the negative range. It is only over 12 month period that we see some significant excess return by these stocks. But again, we will have to be skeptical of any results we derive because of very high standard deviation in the dataset. Medians were in negative region for each set of returns and the t-statistic in this case was also not significant which basically says that the mean excess return on these stocks is not significantly different from 0%. Also, the confidence interval constructed at 95% level also paints a bleak picture for these stocks.

The results of this study reveal the dangers of investing in common stock of bankrupt companies. In the current sample, median excess return for these firms was negative and the mean also rather close to 0%. While very few stocks in bankrupt firms may offer the potential for stratospheric gains, on a selective basis, the risk of loss is likely to be greater. Based on the results of this study, I conclude that the market for the stocks of bankrupt companies is certainly not an attractive investment arena for unsophisticated and naïve investors.

Introduction and Literature Review

At the outset, I wish to say that the opportunities for gain in the high-risk, distressed investments are extraordinary. ROI's of 500% to 1000% are not uncommon. However, the risks are also extraordinary and of even greater magnitude, but as the Marine Corp always says – "No guts, no glory." Investors who have worked in the distressed investment environment for years and are familiar with dos and don'ts of distressed investing through experience and qualification are better equipped to play in this ground than any individual investor.

Casual empiricism suggests that stock market may overreact to bankruptcy announcements causing the prices of stocks to plummet during the bankruptcy period. Such low priced stocks of bankrupt companies have attracted numerous (apparently) unsophisticated investors. The naïve reasoning has been, if the stock that at one time was selling for $20, $30 or $50 a share is now selling for few cents, how much lower can it sink? Perhaps lightening will strike and the stock will eventually get back to its earlier levels. Even if this stock does not recover, perhaps the next one will. The cold hard results of this study reveal the dangers of such irrational reasoning. The truth is that the value of such stocks can (and usually does) drop to zero, generating a holding period return of -100% on the investment.

While a very few bankrupt stocks may produce stratospheric gains, the risk of loss inherent in most such situations is likely to be far greater than those potential gains. One is exposed to the uncertainty of the final resolution of the bankruptcy process, total time for completion of the process (averaging 22 months), the quality of the

reorganization plan and the successful implementation of the plan. A high percentage of the reorganized firms fail a second time.

Based on the results of this study and the general nature of uncertainty surrounding the complex bankruptcy process, I recommend that unsophisticated individual investors not invest in the complex stocks of bankrupt firms. To make abnormal returns in this area, an investor would require superior financial analysis skills and a thorough understanding of the intricacies and legal wrangling of the bankruptcy process and perhaps very importantly, great deal of luck.

The U.S. economy has been in trouble since 2000, and the number of bankruptcies has steadily risen since that time, with the number having tapered off slightly in 2003. Unemployment has continued to rise steadily during this time while the cost of goods and services has continued to shrink. Europe is in recession and has been there prior to U.S. implosion, and Japan is in an unannounced recession, though both Europe and Japan are showing signs of improvement. It appears that the only economies that are booming are those that compete with the rest of the world in terms of cheap labor, consumer products, and an export-directed economy. This means that Eastern Europe and China are providing goods and services to the rest of the developed world. This all means that there may be niche opportunities in these distressed markets to acquire low priced investment opportunities. Companies that are in Chapter 11 often sell divisions, or themselves, in order to gain cash for creditors, or in case of divisions, to divest themselves of non-core business in order to keep the core business operating and restructure the balance sheet. These investments horizons offer amazing investment

opportunities for sophisticated investors. For the purpose of this paper and to stay within the scope and boundary, I will only focus on the performance of equity of firms emerging from chapter 11 and not look into the entire firm or the division for sale.

Distressed securities can be defined narrowly as those publicly held and traded debt and equity securities of firms that have defaulted on their debt obligations and/or have filed for protection under Chapter 11 of U.S. Bankruptcy code. With corporate bankruptcies becoming a routine during 1980's and 90's, there has been a tremendous increase in firms emerging from bankruptcy. Firms usually cancel the old stock and distribute an entirely new issue of common stock on emergence from bankruptcy. If the value of debt claim exceeds the value of the firm, then the Absolute Priority Rule (APR) is followed and it makes the old shareholders' claims worthless, but in most of the cases, this priority rule is violated (e.g., Eberhart, Moore and Roenfeldt (1990), Weiss (1990)). Nevertheless, Altman and Eberhart (1994) show that, on average, higher seniority still implies higher payoffs upon emergence from bankruptcy. Creditors usually receive part of their payoff as new stock in the emerged firm.

During the bankruptcy process, the estimate of the firm's going concern value that will be used to set the payoffs to each class of claimants is debated. Depending on its priority, each class of claimant has an incentive to present a biased estimate of firm value. It is in the interest if the junior claimants to argue for upwardly biased estimates of firm value because this increases the proportion of the firm value they receive. Conversely, senior claimants – who are often the institutional investors – usually push for lower estimate of firm value so that they can retain the greater portion of the firm

and reap the rewards if the firm's subsequent equity value is higher than would be expected given the greater risk of the stock. Perhaps most important is the bias of the management; they have an incentive to value the firm above its liquidation value (to maintain their jobs) but below its true value, assuming its true value is above the estimate of its liquidation value. Therefore, if the market is persuaded by the manager's forecast, the post emergence stock performance of the firm will seem superior relative to the equilibrium expected returns and the manager's performance will look abnormally good.

My primary purpose is to test the efficiency of the markets for stocks of firm emerging from chapter 11. I plan to test whether short term – i.e. less than 1 year – excess returns by these bankrupt firms after emerging from bankruptcy are significant. To measure excess returns, I compare returns on these stocks to the return on the market, as captured by S&P 500 Index.

A decline in the value of firm's stock while it is bankruptcy generally reflects an erosion of its expected future cash flows. This decline in value could be due to a number of factors, including bankruptcy costs, the loss of reputation, drop in market share, resignation of key employees and impairment of regular operations.

Bankruptcy costs have typically been divided into two categories: direct costs consisting of legal fees and other administrative expenses and indirect cost consisting of opportunity costs such as lost sales, tarnished reputation, and lost investment opportunities. Studies by Warner (1977), Ang, Chua and McConnell (1982), Summers and Cutler (1988) and Weiss (1990) have done great deal of research and studies for

direct cost of bankruptcies. Relatively few researchers have attempted to measure the indirect cost empirically, as they are not easily observable. Altman (1984) used foregone profits as a proxy to estimate the magnitude of indirect cost. Several studies have investigated and found, in general, a positive relationship between firm size and bankruptcy cost. Even though there have been few studies, but this area still seems vastly under explored.

The announcement of a bankruptcy filing (particularly if it is not fully anticipated) should be associated with market activity, as it provides material information about reduction in the value of the firm. Several researchers have examined the impact of bankruptcy filing on the behavior of the firm's common stock on and around the announcement date. Aharony, Jones and Swary (1980), Clark and Weinstein (1983), Morse and Shaw (1988), Lang and Stulz (1992) have studied this impact of bankruptcy filing on stock price. Overall, these studies indicate that the stock prices tend to decline around the date of bankruptcy announcement. Further, the market is able to distinguish between the firms that emerge successfully from the process and firms that do not. Moreover, bankruptcy announcements have important wealth implications for other firms in the same industry.

The academic literature largely suggests that distressed securities (such as bankrupt stocks) are efficiently priced. The popular press, however, has frequently conjectured that stock prices may not reflect the true value during the bankruptcy period. Indeed, not infrequently, the proposed reorganization plan provided no consideration (or at best, only token consideration) for the pre-bankruptcy filling equity

holders (WSJ, 1992). Nonetheless, these stocks continue to share for non-trivial prices. For example, the shares of Continental Airlines continued to trade on AMEX at or about $1.50 per share even after the company had negotiated a plan with its creditors that would provide no distribution to the pre-petition equity holders. Section 1125(b) of the Bankruptcy Act requires that adequate financial and related information be supplied to all impaired parties before soliciting approval of the reorganization plan. However, since the trading in the stocks of bankrupt companies precedes the actual confirmation (or publication) of the reorganization plan, a lack of complete and uniform public information in the market may lead to inefficiencies in the accurate long term valuations of these companies. Additional uncertainty results from the negotiation aspect of the bankruptcy procedure. Due to the conflict of interest among the impaired parties, often the company is valued at different dollar amounts by different claimants. Such anomalous pricing (if it exists) raises several interesting questions: Does the stock market accurately value securities of bankrupt firms? Are brokers promoting bankrupt stocks as "good bargains" to naïve investors? Do shareholders gain or lose on balance by investing in low priced securities (stocks) of bankrupt firms?

According to past studies average time spent in bankruptcy (measured, in this case, from bankruptcy announcement date through the first trading date after emergence) is 22.39 months and median of 20.17 months. I will be examining firm's stock prices upon emergence from this long and hard procedure of bankruptcy reorganization. One main pitfall here is that most of the firms that emerge from bankruptcy don't look at all like the firm that entered bankruptcy. In other words, these

firms change their primary lines of business in bankruptcy and divest some divisions hence giving them a totally different look, which inadvertently makes their history almost useless for predicting their future and they now inherent higher estimation error. This issue is not of big concern in this scenario because I decided not to use historical data to predict their future performance. I am using returns these stocks generated in the months following emergence from bankruptcy and comparing those returns to the returns on the market during that same time, i.e. calculating excess returns these firms enjoyed over and above the market returns, as widely estimated by S&P 500 index.

Data Source

My primary source of information on these firms emerging from bankruptcy is New Generation Research with help of Professor Ed. Altman. New Generation is a firm that specializes in collecting bankruptcy data. The time frame that I took into consideration was from 1994 through 2002. So the firms that had their confirmation date from January of 1994 through December of 2002 were included in the initial dataset. I supplemented this data with data available on Dow Jones News Retrieval, Wall Street Journal Index, Standard and Poor's Daily Stock Price Record (SPDSPR), the Center for Research in Security Prices (CRSP), and Bloomberg. I used CRSP and Standard and Poor to get the prices for the stocks and the index. I used Dow Jones News Retrieval, Wall Street Journal Index and primarily Bloomberg to gain information about emergence of these stocks from bankruptcy.

Sample Selection

After compiling the initial list of 226 firms, a more rigorous procedure of eliminating firms had to be undertaken. I removed all the firms which were either liquidated, merged with some other firms, or were acquired by some other firms. There were also a substantial number of firms which did not have enough data and hence were eliminated from the sample. At the end of this I was left with 59 firms in the sample with clean data. I once again went through cleaning the data and took away 3 more firms which had returns in thousands of percent; they were definitely outliers and were skewing the results positively with very heavy weights. At the end of it all I was left with 56 firms in my final sample with clean and enough information about their securities. This sample primarily focuses on firms which did not suspend their prior equity post emergence. Some firms did issue new equity, but all of them kept trading under the same old name and the same ticker as they did prior to bankruptcy.

First Trading Date

Because the emergence procedure varies across firms, so does the appropriate starting point for the tests. Additional shares may or may not be issued and the "new" stock often trades under old name. There are firms which operate through the bankruptcy procedure and also issue new stock at emergence. I had to come to a common grounding with all the data before I could meaningfully run any tests. Basically, if the old stock is cancelled and new is issued, then the first trading date is simply the day stock starts trading again. If entirely new stock is issued, then the first trading date is the day new share is traded. Finally, if not new equity is issued, then the

first trading date for my purposes will be the date of emergence from chapter 11. My source for emergence date is primarily New Generation and Dow Jones News Retrieval.

The Center for Research in Security Prices (CRSP) does not always pick up the stock when it first begins trading. So, I hand-collected data from Standard and Poor's Stock Price Record for the firms where the first trading date of Standard and Poor's precedes the first trading date on CRSP. The reason for this gap is that all these firms begin trading on a "when-issued" basis (i.e., trading of stock before it is issued). When-issued trading begins after the reorganization plan is confirmed. The exchanges and Nasdaq allow when-issued trading when they are certain the shares will be mailed out by the firm and it will be possible to do settlement shortly afterwards. Therefore, though there can be some liquidity and settlement day differences between when-issued and "regular" stock trading (e.g., Lamoureux and Wansley (1989)), the first trading date can be for when-issued or regular, whichever comes first.

Discussion of Results

In this section I first present and discuss the descriptive statistics for the bankrupt firms and then try to reinforce the results with help of some graphs and charts for the data.

Descriptive Statistics

The results of the study were inline with what I had expected to begin with. The sample to arrive at these results consisted of 56 firms which were indeed derived from a

total of 226 firms to begin with. Such survivorship problems are not unusual in bankruptcy studies.

First I began with calculating 3, 6, 9, and 12 month returns for these firms from date of emergence from bankruptcy. I calculated these raw returns and did not include any stock splits or dividends into the calculation because those issues don't seem to be a problem in calculating returns for the stocks of bankrupt firms.

Stock Return = (Beginning value – Ending Value) / Beginning Value

As a proxy for the market, I decided to use S&P500 Index. I calculated 3, 6, 9, and 12 month return on the market for the time corresponding with the returns of those stocks. To calculate this return, I used the index level and derived at the return with help of the following formula:

S&P500 Return = (Index Beginning Level – Index Ending Level) /

Index Beginning Level

So, for every bankrupt firm, I calculated 4 returns for their stock and 4 returns for the market at the same time. So it gave me 56 observations of 3, 6, 9, and 12 month stock returns and also, 56 observations of 3, 6, 9, and 12 month return on the index.

Finally, I decided to calculate excess return these stocks earned over the market. It didn't seem to serve any purpose by try to evaluate their raw returns, and it was essential to study their excess returns so that I could get an idea of how they performed relative to the broader market. The purpose of this was that, maybe these stocks earned 20% return (hypothetically), but if during the same time, market earned a return of 25%, then these stocks didn't earn enough. If we would have just looked at raw returns, then

that 20% return is pretty healthy, but on comparing it to the market, it paints a rather bleak picture of itself. In the end I had 56 observations of 3, 6, 9, and 12 month excess returns these firms earned over and above market, as captured by S&P500 Index. The formula used to calculate is as follows:

Excess Return = Bankrupt Stock Return – S&P500 Index Return

The table below shows a snapshot of the mean return for 3, 6, 9, and 12 months earned on the stock and the market. It also shows the corresponding excess return stock earned over and above the market (S&P500 Index). As we can see from this table below, average return earned by these stocks merely matches that earned by the market during the same time; it even falls short of market at times. The only return which seems to be significant enough is that earned by the stocks over 12 months from emergence date. These stocks earned an average of 19.23% during this time, while the market earned a little more than 9% during the time. These firms on average see a jump in their returns between month 9 and 12. The market also enjoys a jump in its return during that time. The only reasons I could think of was that there was something very positive going on in the market during that time. As lot of firms had these returns in years 1998-2000, these were a rather brilliant years for stocks. So that might have had a lot to do with the returns that we see in these stocks.

Month	Stock Return	S&P Return	Excess Return
3	2.37%	2.08%	0.29%
6	5.33%	5.84%	-0.51%
9	2.86%	6.79%	-3.92%
12	19.23%	9.34%	9.89%

As we can see from the table above, these stocks did not earn anything in excess over the market during the time. For 3 month return, it hardly made 0.3% over and above the market. Then for 6 month and 9 month returns, it fell short of the market by 0.5% and 3.9% respectively. Finally, for 12 month return it did do relatively well compared to the other months and earned a healthy 9.89% over the market. But whether that is enough or not considering that these firms are more risky now, is an argument that is up for debate.

Returns on the Stock

Month	Mean	Std. Deviation	Minimum	Maximum	Range	Confidence Level (95%)	Confidence Interval (95%)
3	2.37%	32.01%	-75.00%	84.62%	159.62%	0.085710506	-0.06, 0.107
6	5.33%	48.06%	-100.00%	164.08%	264.08%	0.128715277	-0.072, 0.179
9	2.86%	70.01%	-100.00%	231.21%	331.21%	0.187494539	-0.154, 0.212
12	19.23%	92.27%	-100.00%	399.28%	499.28%	0.247087556	-0.049, 0.433

The table above gives all vital descriptive statistics for the stocks. As we can see and as discussed earlier, these stocks didn't earn a healthy return during this time period. What makes it a lot more interesting is if we look at the standard deviation of the mean returns. It ranges from 32% for 3 month returns to 92% for 12 month returns. We would have to be rather skeptical of any results we derive from these numbers because of rather high standard deviation. It also gives us an idea of how high the range of these results was; people in 12 months could have made almost 500% of their investment or at same time, lose 100% of their investment. I have also calculated confidence interval at 95%, which basically says that 95% of similarly selected samples will have population mean in this range. So for example, population mean for 12 month

return is expected to be between -4.9% and 43.4% 95% of the times and similarly, between 6% and 10.7% for 3 month population mean.

Returns on the Market

Month	Mean	Std. Deviation	Minimum	Maximum	Range	Confidence Level (95%)	Confidence Interval (95%)
3	2.08%	5.35%	-15.06%	10.46%	25.51%	0.014334851	0.0067, 0.034
6	5.84%	9.39%	-18.30%	20.46%	38.76%	0.025157237	0.033, 0.082
9	6.79%	13.78%	-23.80%	24.23%	48.03%	0.036907754	0.031, 0.103
12	9.34%	18.30%	-25.31%	38.31%	63.62%	0.049005901	0.045, 0.141

The table above shows the descriptive statistics for the market, as captured by S&P500 Index in this scenario. The mean returns in this case is relatively low, just like stock returns in the previous case, but much more like what we would have expected from the market. Standard deviation is also much controlled in this case and not high like we had for stock returns. Range is also, much more under control here with people being able to lose 25% in 12 months or make 38% during that time, unlike abnormally high returns or losses in the case of stock return. Even the confidence interval derived in this case at 95% level has positive range unlike stock return in previous case. Basically, it is saying that 95% of similar samples will have mean between this range. For example, for 12 month return, population mean will be between 4.5% and 14.1%, 95% of times. The data on the market return is much more compact and more suitable to make judgments and predictions unlike stock return data.

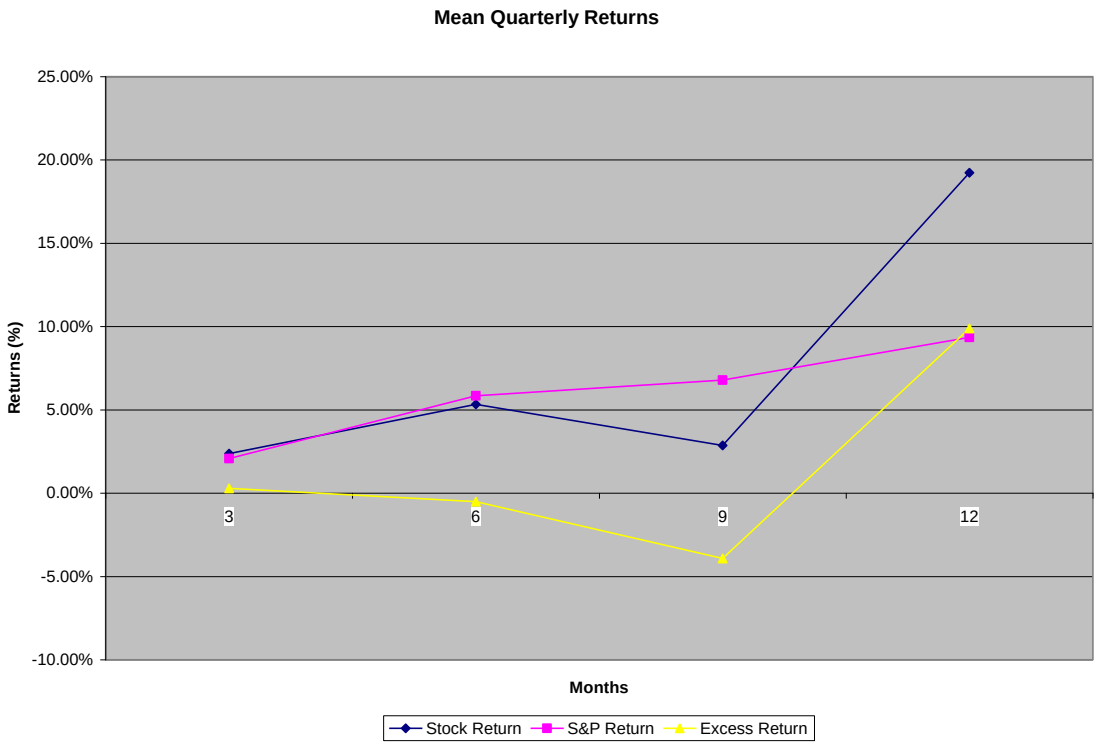
Excess Returns

Month	Mean	Std. Deviation	Minimum	Maximum	Range	Confidence Level (95%)	Confidence Interval (95%)
3	0.29%	31.31%	-68.49%	80.97%	149.46%	0.083860917	-0.079, 0.084
6	-0.51%	48.68%	-118.21%	150.88%	269.09%	0.130371263	-0.132, 0.122
9	-3.92%	71.07%	-121.10%	228.69%	349.79%	0.190333987	-0.225, 0.146
12	9.89%	97.02%	-137.49%	411.28%	548.77%	0.259816563	-0.155, 0.352

The table above gives us an important set of descriptive statistics for the excess returns these bankrupt stocks earned over and above the return that was earned by S&P500 Index, which is a proxy for the market. These set of statistics are primarily driven by the returns earned by the stocks which were lot more volatile rather than market returns which were lot more compact. Excess returns for 3, 6, and 9 months in this case is either very close to 0% or in the negative range. It is only over 12 month period that we see some significant excess return by these stocks. But again, we will have to be skeptical of any results we derive because of very high standard deviation in this dataset, ranging from 32% for 3 month excess return to 97% for 12 month return. Carrying on from there, we can also see how huge the range for these returns was; an investor could have either lost 68.5% or made 81% excess return in 3 month period and also, could have lost -137.5% or earned an healthy 411% over 12 month time period. Medians, which are not shown in the summary of statistics above were in negative region for each set of returns, which paints a rather bleak picture by saying that there lot more negative returns than positive returns that these stocks earned over their peers in the market. The t-statistic in this case was also not significant which basically says that the mean excess return on these stocks is not significantly different from 0%. Also, the

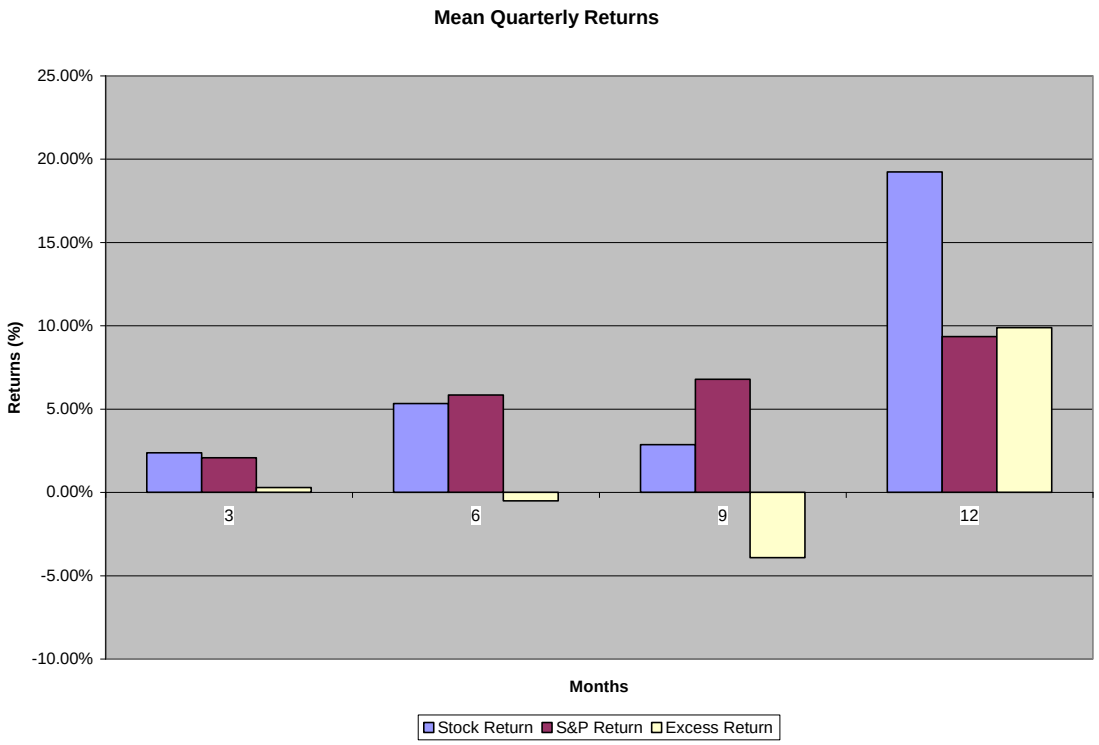
confidence interval constructed at 95% level also paints a bleak picture for these stocks. It is safe to say that 95% of similarly constructed samples would have their mean in these ranges. It also is saying that we can be 95% sure that the true population mean falls in this range. For example, true population mean falls in -15.5% to 35.2% range with 95% confidence.

Below there are set of charts which reiterate the same story about these stocks. These charts, very effectively show what we have been discussing in words until now.



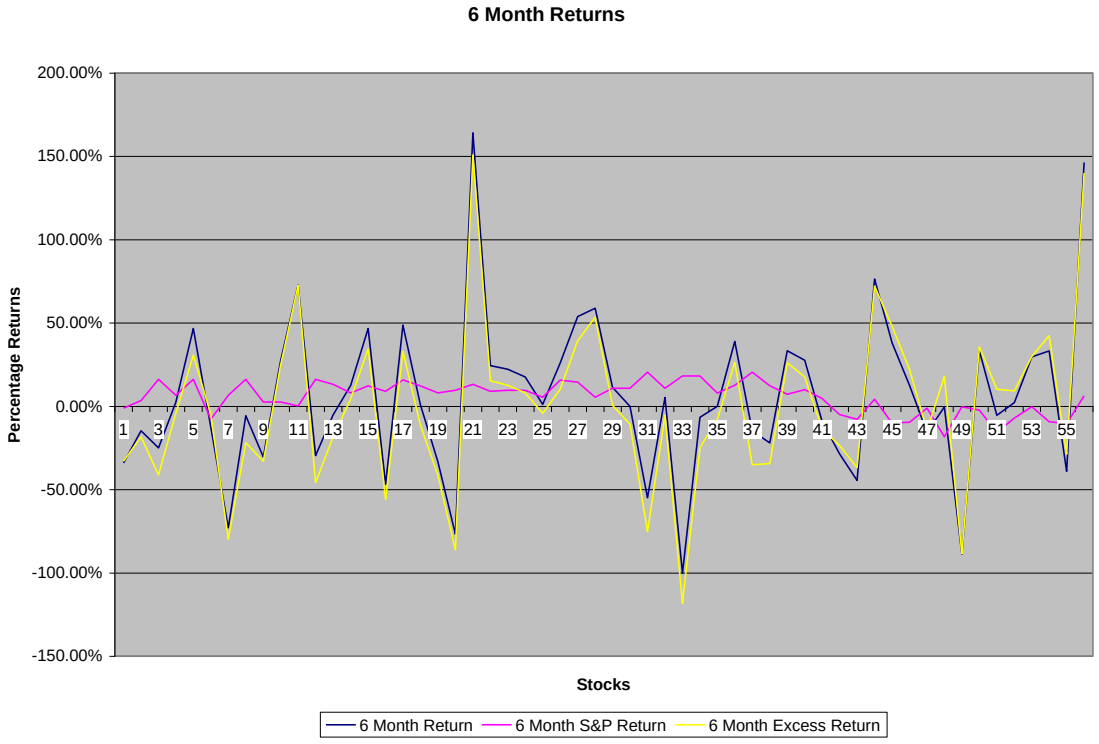
The chart above shows the average return for the 3 sets of data. It shows average return on the stocks, S&P500 and the excess return for 3, 6, 9, and 12 month period. As

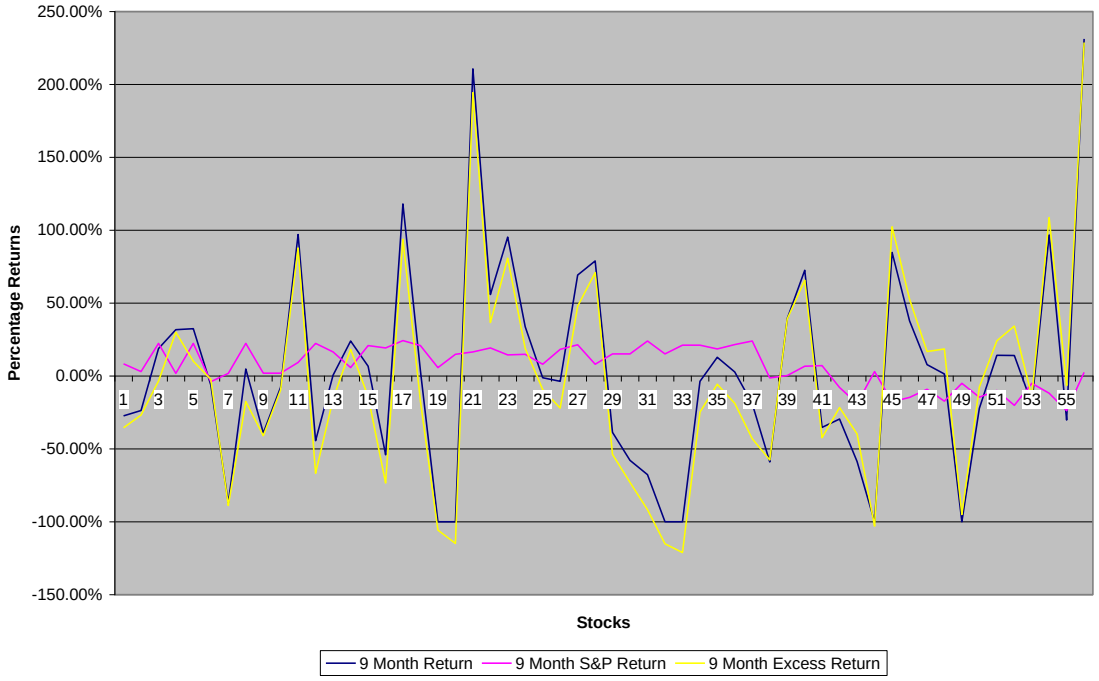
we can see, we have a steady upward sloping S&P500 graph and then there is the stock return line which is same as S&P500 line or below the market like until after 9 months. It is only between 9 and 12 months that stock return is in north of S&P return, hence earning a positive excess return.

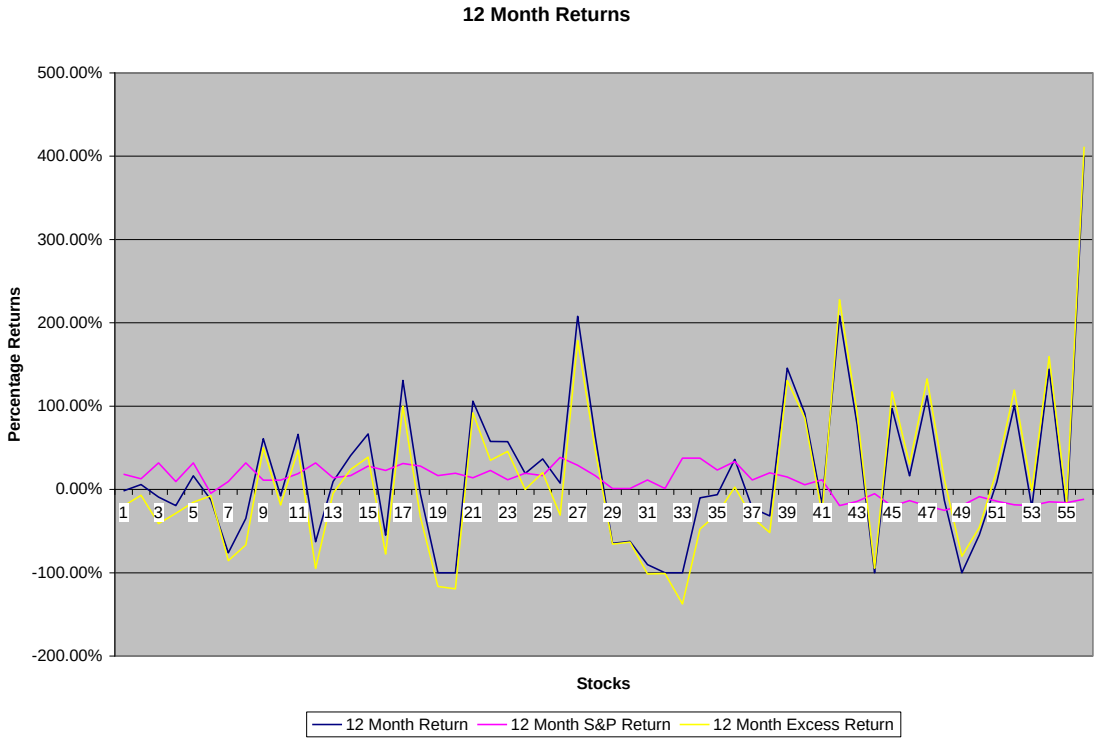


The chart above shows the same result as done by the chart before that, but with a set of histograms, which at time can be easier to understand and relate to in circumstance like we have here. This picture also shows that it is only 12 month time period where these stocks on average earned positive excess return.

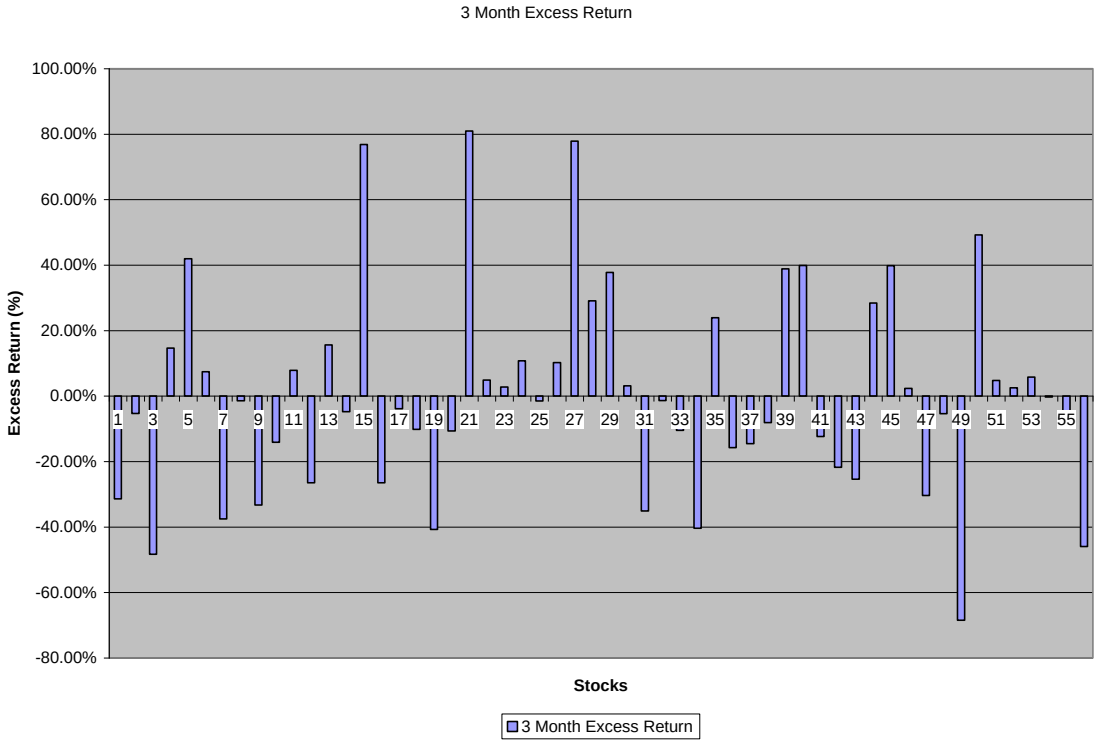
This chart above shows how 3 month stock return, market return and excess return move relative to each other. As we can see, it is safe to say that market was rather stable during this time as compared to very volatile stock returns. Stock return and excess return in this case are basically moving together and market return doesn't play much of a role in making stock returns different from the excess return. This picture shows us with relative ease how volatile the returns these stocks that emerge from bankruptcy earn can be relative to the steady returns earned by the market during the same time period.

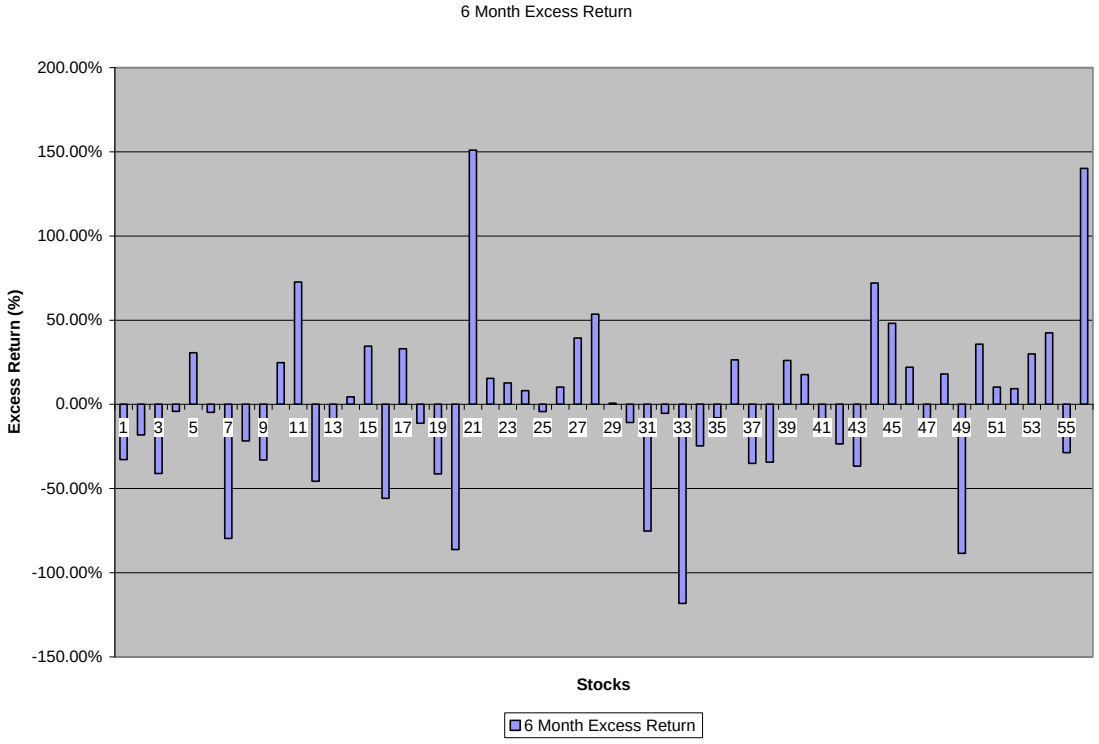

6 Month Returns
200.00%
150.00%
100.00%
50.00%
0.00%
-50.00%
-100.00%
-150.00%
Percentage Returns
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
Stocks
6 Month Return
6 Month S&P Return
6 Month Excess Return

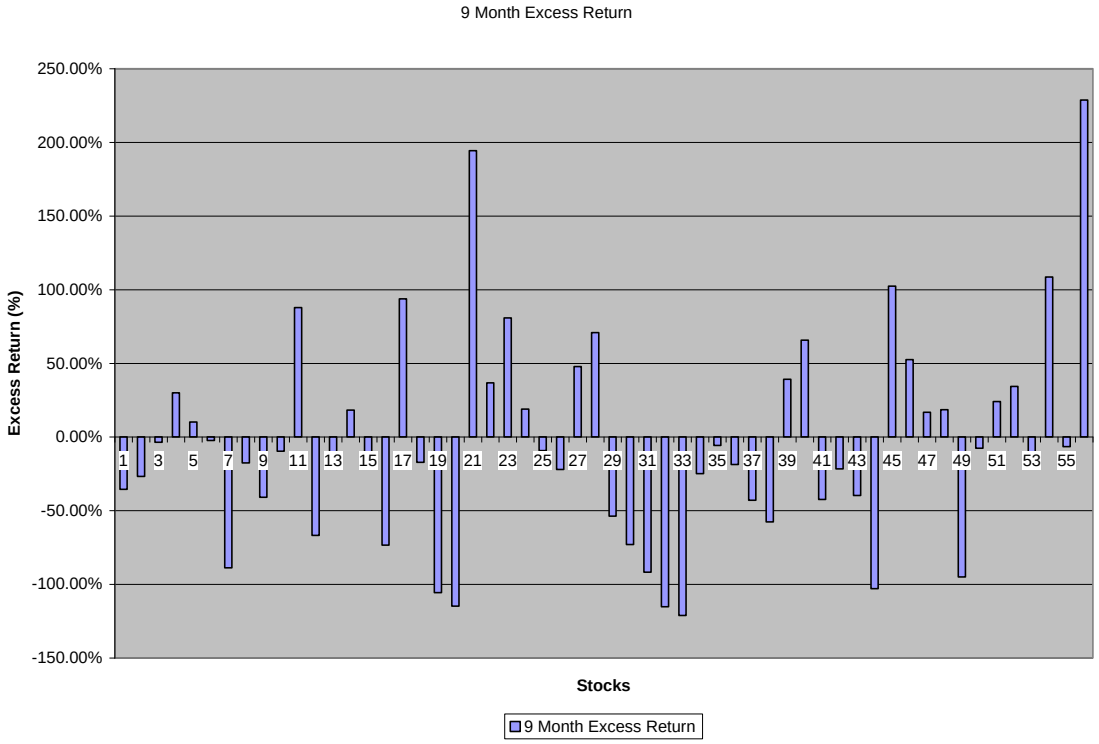

9 Month Returns
250.00%
200.00%
150.00%
100.00%
50.00%
0.00%
-50.00%
-100.00%
-150.00%
Percentage Returns
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
Stocks
9 Month Return
9 Month S&P Return
9 Month Excess Return

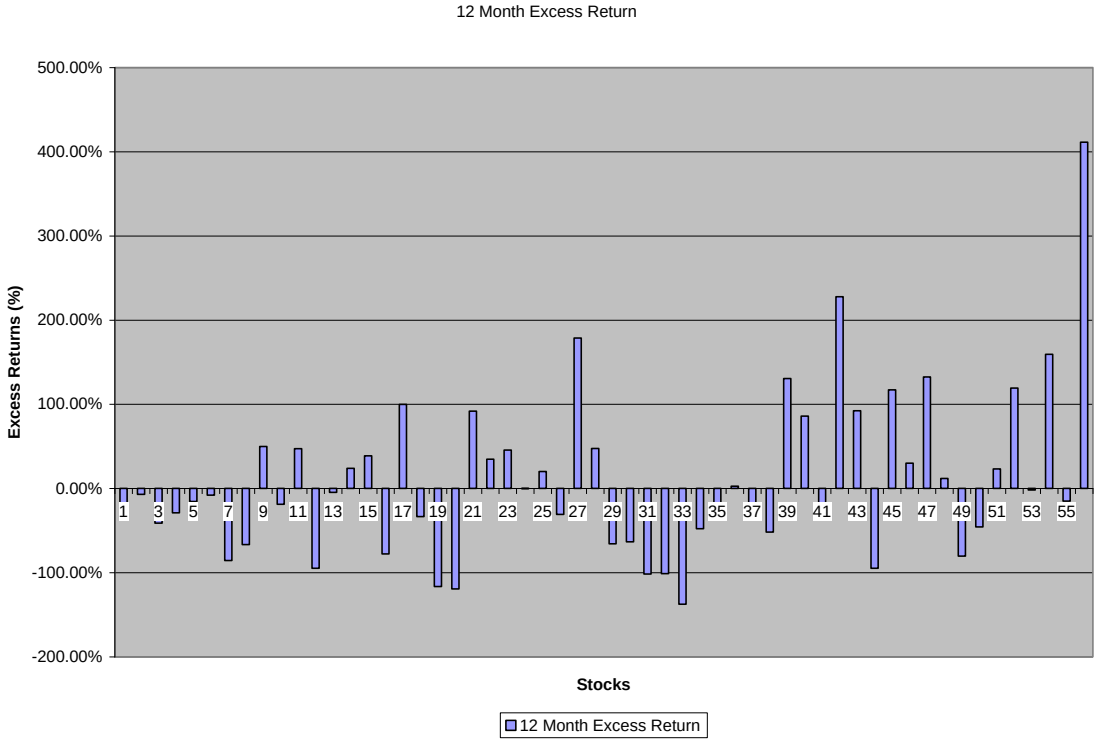


Again, as we can see from the 3 charts above that show 3 set of returns, stock return, market return and excess return, over 6, 9, and 12 month time period, we have a steady set of market return over the period with return going towards 0% or negative return between 9 and 12 month. The same set of graphs also shows that in all these scenarios, excess return basically moves with the returns earned on the stock during the same time period. Also, these datasets very effectively show that these investment opportunities, even though can offer great returns on the investments, they come with relatively large amount of risk attached to them and the possibility to enjoy high return doesn't come as free lunch for any investor.


3 Month Excess Return
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
-20.00%
-40.00%
-60.00%
-80.00%
Excess Return (%)
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
Stocks
3 Month Excess Return


6 Month Excess Return
200.00%
150.00%
100.00%
50.00%
0.00%
-50.00%
-100.00%
-150.00%
Excess Return (%)
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
Stocks
6 Month Excess Return


9 Month Excess Return
250.00%
200.00%
150.00%
100.00%
50.00%
0.00%
-50.00%
-100.00%
-150.00%
Excess Return (%)
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
Stocks
9 Month Excess Return


12 Month Excess Return
500.00%
400.00%
300.00%
200.00%
100.00%
0.00%
-100.00%
-200.00%
Excess Returns (%)
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
Stocks
12 Month Excess Return

Four graphs above again show excess return earned by each of 56 stocks over and above the market during the period of 1994-2002. All these graphs show that these stocks have a possibility of providing great return on its investments but at the same time can erode all investments. On average, excess return on these stocks is not significant enough to go ahead and blindly invest in stocks of these bankrupt firms.

Conclusion

I investigated the efficiency of the market for stocks of firms emerging from bankruptcy. I found weak evidence of positive excess returns in the short-term (less than 12 months). The low priced stocks of bankrupt companies have apparently attracted numerous unsophisticated investors. The results of this study reveal the dangers of investing in common stock of bankrupt companies. In the current sample, median excess return for these firms was negative and the mean also rather close to 0%. While very few stocks in bankrupt firms may offer the potential for stratospheric gains, on a selective basis, the risk of loss is likely much greater. Based on the results of this study, I conclude that the market for the stocks of bankrupt companies is certainly not an attractive investment arena for unsophisticated and naïve investors.

Suggestions for Further Investigation

As this paper was more of an overview of many different and complex issues, further research in this area can be useful to the investing community interested in equity of bankrupt firms. Some aspects that would lend themselves to more rigorous investigation include an examination of the data after further breakdown. This paper studies how bankrupt firms perform overall relative to the market. It can be very useful to break the dataset and see how the firm perform relative to each other, for example, small firms emerging from bankruptcy compared to large firms emerging from bankruptcy, firms that gave consideration to equity holders in reorganization plan vs. those that did not, firms that kept the same management after emergence relative to firms that brought new management on board. It can be useful to study these firms in deeper details and it might paint relatively more positive picture for investing in bankrupt firm equity.

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