MARKET DYNAMICS

Major Trends Report – Performance Analysis

Background

The Major Trends report was started in early July '99. It consisted of two parts, a list of stocks in major long-term uptrends and a list of stocks in major long-term downtrends. The stocks were classified into up or down trends by using relative strength in a long-term point and figure format. These charts were produced using the Market Dynamics Charting System. The report was updated weekly and distributed to all Market Dynamics users by e-mail – real-time.
The purpose of the report was to give Market Dynamics users a reference source on a large number of stocks that classified those stocks into general categories of stocks with major upside potential and potential problem stocks. The two parts of the report expanded rapidly as new stocks were added to the system and after a few months each list was composed of more than 500 stocks. The maintenance of these lists was time consuming and each entry on each list required a review every week. Thre lists were so large that few users made much use of them and the lists were discontinued in May 2000 and a buylists file that covers about 200 stocks was substituted for the Major Trends report.

Objectives of report

I had a dual purpose with the Major Trends Report; to provide a reference that classified a large number of stocks into categories of uptrends and downtrends, and to provide data that could be used to test the effectiveness of such a classification system. Enough time has now passed since the introduction of the Major Trends Report to begin the performance testing. Since the report was based on long-term classification methods, I concluded that a full year of history was needed to give the methodology a meaningful test.

Analysis of Performance

Background

The stocks were classified into the categories of major uptrends or major downtrends based on the analysis of long-term relative strength charts in a point and figure format. The three-box P&F method pioneered by Chartcraft using daily data relative to the S&P 500 was used to construct these charts. The most important factor in that analysis was the position the relative strength posting versus 45-degree bullish support lines and 45-degree bearish resistance lines. When I prepared the reports I strived to consistently apply the discipline of the 45-degree bullish support and 45-degree bearish resistance lines. The lists were drawn from a database of stocks that reflected a variety of institutional portfolio holdings and probably covered 2000 stocks at the time this list was prepared.
For purposes of performance analysis it was assumed that each stock would be held from the starting date to the ending date with no changes in the list. No commissions were charged and trades were as of the closing price of the start and end dates. Dividends were ignored. Stocks that were "bought-out" or otherwise dropped out of existence were ignored. This probably caused the performance of the uptrends

list to be understated by some unknown amount. The start date was September 13, 1999 and the ending date was September 13, 2000. The study was structured and programmed by W. Clay Allen CFA.

Performance of S&P 500

The S&P 500 moved from 1344.13 on 9/13/99 to 1484.91 on 9/13/2000. This represents a gain of +10.47%.

Performance of the uptrends list

The following statistics show the data for the major uptrends list covering the same time frame.

Average percent price change = +46.01%

Standard deviation = 150.98

Skewness = 9.11

Kurtosis = 155.55

Percent outperforming the S&P 500 = 56%

Percent underperforming the S&P 500 = 44%

Number of stocks in the Uptrends list = 363

Performance of the Downtrends list

The following statistics show the data for the major downtrends list covering the same time frame.

Average percent price change = +5.68%

Standard deviation = 59.18

Skewness = 2.89

Kurtosis = 16.95

Percent outperforming the S&P 500 = 35%

Percent underperforming the S&P 500 = 65%

Number of stocks in the downtrend list = 524

Conclusions regarding the results of the study

Classification system produced meaningful results

The major uptrends list was almost +40% ahead of the major downtrends list. Using samples of this size, a difference between the means of this magnitude could almost never happen by pure chance. The presumption is that these two samples were drawn from different populations. In other words, the selection system effectively separated these stocks into two groups with very different performance characteristics. The downtrends list underperformed the S&P 500 and the uptrends list outperformed the S&P 500 by a wide margin. The confidence in these results is strengthened by the large numbers of stocks in each sample.

Analysis of uptrends list – 80/20 rule?

Inspection of the uptrends list suggests that the best 20% of the portfolio accounted for almost all the excess return. Another example of the 80/20 rule. Practically this means that a portfolio manager must strive to retain his/her winning positions in the portfolio for as long as possible. Retention of the major winners is key to success and the 45-degree bullish support line seems to help accomplish this goal.

Standard deviation of uptrends much higher than downtrends but does not explain away excess returns

The standard deviation of returns for the major uptrends list was almost 2.5 times the standard deviation for the major downtrends list. This is a significant difference in risk but it does seem to be enough to account for the differences in returns.

Both samples skewed but uptrends more

The major uptrends list was skewed to the positive by a significant amount – much more than the major downtrends list.

Both samples showed high degree of kurtosis

Kurtosis is a measure of the degree to which the population is characterized by increased numbers of items in the extremes of the distribution (i.e. tails).
The major uptrends list showed a pronounced degree of kurtosis, which implies fat tails for the distribution. The kurtosis index for the uptrends list was more than 9 times the kurtosis for the downtrends list, which indicates an extreme divergence between the behaviors of these two lists. The main use for relative strength seems to be the identification of the major winners and the number of extreme movers in the major uptrends list confirms this result.

% Outperforming vs % underperforming in the downtrends list suggests that underperformance may be more persistent

The major uptrends list had a balance of only 56% outperforming to 44% underperforming. The 35% outperforming to 65% underperforming for the major downtrends list suggests that underperformance may be a more persistent factor in the market. This probably means that a portfolio manager should remove stocks that are in a long-term trend of underperformance and avoid "bottom fishing". It should be remembered that these two lists remained fixed for the duration of this study

Hypothetical – removal of the left tail (worst 20%) from the uptrends list using trend following methods

In order to test the influence of the tails of the distribution, I removed the worst 20% of the uptrends list and the average return jumped from 46% to almost 69%. The long-term relative strength charts in point and figure format represent a trend following system. The stocks that are in the extreme tails of the distribution are the most "trendy" of the whole distribution, so trend following methods should work well for stocks in the tails. This implies that the major uptrend stocks in the right/positive tail of the distribution show up best on charts utilizing this trend following methodology.

Hypothetical – removal of the right tail (best 20%) from the downtrends list using trend following methods

I tested the same idea by removing the best 20% of the downtrends list and the average change dropped from +5.5% to -15.5%. This is a substantial drop in the average return. This emphasizes the importance of the tail on the other side of the distribution.

Summary and Recap of findings

This study seems to suggest a powerful methodology for evaluating the long-term trend characteristics of a stock using relative strength in a point and figure format. The study directly suggests that portfolio managers avoid underperforming issues. The importance of the fat tails in the distribution of the returns from common stocks provides further emphasis on the need to avoid stocks in the left/negative tail and to hold stocks in the right/positive tail. Most importantly the study suggests that relative strength persists for long periods of time since these findings were based on a one-year holding period.
While this study focused on collections of stocks in the tails of the distribution there are also implications for the stocks in the middle/peak of the distribution. This study conforms to the description of the distribution of the returns for securities that was first described by B. Mandlebrot* in the early '60's.
The fat-tailed, narrow peaked distribution of returns for stocks generates very important implications for portfolio management. Trend following tools should be used for stocks in the tails and trading range methods for stocks in the middle/peak of the distribution. The ability to classify stocks into categories of major trends vs trading ranges is a key to successful portfolio management.
This represents a single test and while the results are encouraging further testing will be required to build confidence in the methodology.

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***Fractals and Scaling in Finance**
Benoit B. Mandelbrot
Springer, 1997

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