A Look at Relative Strength Measures

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Just as a rising tide lifts all boats, a rising market tends to lift all stocks. Well, almost all stocks. Upward price individual stock performance during a strong market may represent only average performance while a minor stock price decline during a major bear market represents strong relative price performance.

Price momentum is normally measured by comparing the stock price change to that of a market index or against a segment of stocks.

Relative strength has grown in popularity as a stock selection tool as a number of research studies and successful investors have highlighted the benefit of seeking out stocks with high relative strength, especially when combined with other fundamental selection variables. Charles Rotblut examines a number of promising studies in a May ***AAII Journal*** **article**.

Price momentum is often used as a signal that the market has recognized the stock price is reacting to either proven performance or an increase in expectations. Investors look for stock price performance better than that of other stocks with the belief that the rising price will attract other investors, who will drive up the price even more. The usefulness of relative strength is premised on the belief that relative strength persists. If a stock has displayed significant positive relative strength against the market, it would be expected to continue to display positive relative strength.

Calculating Relative Strength

Relative strength can be calculated over whatever time period is desired. In practice, it is usually calculated over a week-to-week, month-to-month, and year-to-year basis. The basic calculation of relative strength is accomplished simply by dividing the value of the investment you are measuring—the price of a stock, for example—by the value of an index for the market or appropriate industry:

Relative strength:

stock price / index value

When the ratio is increasing over time, the stock price is rising at a faster rate than the index or even falling at a slower rate than that of the market decline. A declining ratio indicates that the stock price is performing more weakly than that of the index value.

Another popular adjustment to more easily handle factors such as stock splits is to divide performance of the stock by performance of the index value:

Relative strength index:

(Ending stock price / Beginning stock price)
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(Ending index value / Beginning index value)

This formula sets the base level at one. Figures above one reflect performance (relative strength) above the benchmark while below-market performance (relative weakness) is portrayed by relative strength index figures below one. A relative strength index of 1.05 indicates performance 5% better than the index. The trick to interpreting relative strength is to understand that it does not tell you the direction of price movement, but only whether it is better or worse than the index. A stock that is down 5%, when the market is down 10%, will have a relative strength index of 1.056 (0.95 / 0.90) indicating performance 5.6% better than the market. A stock that is up 5% when the market has gained 10% will have a relative strength index of 0.955 (1.05/1.10) indicating that it underperformed the market benchmark by 4.5%.

Beyond the actual number, investors look at the trend, whether the actual relative strength index values are increasing or decreasing over time. Market movement can easily mask true stock movement or industry performance. The relative strength index can help to factor out the overall market movement.

Relative Strength Rank

Another method of interpreting relative strength is to use it as a ranking indicator. Relative strength rank compares a company's price change against all other firms. This percentile rank against all other firms ranges from a low of 1 to a high of 99. A company with a relative strength rank of 25% outperformed one quarter of all firms tracked but was outperformed by three-quarters of the firms. The higher the percentage rank, the better the relative strength.

Just as with the relative strength index, momentum, or acceleration, of the relative strength is important. A stock with increasing relative strength rank is more desirable than one with a steady or declining rank.

Relative Strength Considerations

An investor using a trend-following indicator such as the relative strength index will typically miss the very start of the trend and give up some of the gains at the top as the stock leadership shifts before it becomes apparent. The goal with trend indicators such as relative strength is to stay with the trend until there is a clear signal that the trend has reversed. However, identifying this signal can be difficult, furthering the notion that stock analysis is an art as well as a science. The relative strength period will determine how sensitive the index is to changes in leadership. A shorter period of analysis will be more sensitive than a longer period, but will also tend to lead to more frequent trading and provide more false signals.

Relative strength can be very erratic over short-term time frames and at critical market junctures. Strong stocks that have led the market advance often experience the largest declines, as investors rotate from one sector into another sector such as defensive stocks. The catalyst may be an economic event such as a sharp shift in interest rates, inflation, or even the relative value of the dollar. Financial securities may quickly become more or less attractive to industrial export-driven securities.

Relative Strength Combinations

While relative strength is a worthwhile analytical technique on its own, its value increases when combined with other stock selection criteria. Notably, combining contrarian value measures such as low price-to-sales ratios, price-to-book-value ratios, or price-earnings ratios with a requirement of high and increasing relative price strength tends to lead to better stock price performance than when the factors are used independently.

Relative strength screens point to stocks exhibiting strong price momentum, with the premise that this strength will continue in the future. Many of these stocks may be richly priced when compared to factors such as earnings.

On the other hand, contrarian investing is based on the premise that the market is prone to overreacting to news, good and bad, thereby providing the opportunity to purchase mispriced securities at attractive prices. Patience is required when selecting stocks using purely contrarian rules such as a low price-to-book-value ratio. It often takes time for the market to come around and recognize the value in the firm. Price momentum measures such as strong and increasing relative strength seem to help highlight well-priced stocks likely to advance further. The Value on the Move stock screens at **AAII.com** are an example of combining a value metric PEG ratio with relative price strength. One version of the screen looks at the PEG ratio calculated with the historical earnings growth rate (Value on the Move–PEG With Hist Growth Screen, **http://www.aaii.com/stock-screens/screendata/ValueHistGrowth**) while a related screen considers the PEG ratio calculated with the estimated earnings growth rate (Value on the Move–PEG With Est Growth Screen, **http://www.aaii.com/stock-screens/screendata/ValueEstGrowth**). Both screens look for companies with 26-week relative strength rank of 70% or greater.