Smith Group
ASSET MANAGEMENT

MARKET PERSPECTIVES EXCERPT

The Downside of Risk

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A large number of academic studies related to finance, that are of a quantitative nature, focus on defining and describing how risk can be measured. The availability of data and computing power make the limits of this spectrum as wide as the imagination allows. One particular area of focus over the last 5 years has been on how to protect investor capital during periods when the market is declining. That may seem passé given the market is on a nearly 4 1/2 year bull run, but it looms large in the conscious of many investors, as well it should. We spend quite a bit of time thinking about how to predict the behavior of stocks in all kinds of market environments. But down markets carry more weight, considering the heavy impact those periods can have on long-term portfolio performance.

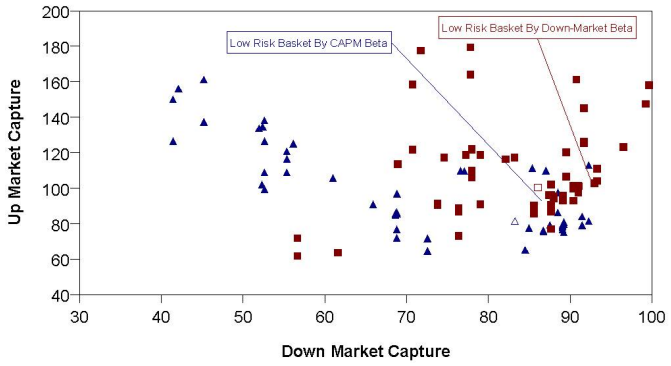
One way of describing risk in down markets is using a statistical measure known as the 'down market capture ratio'. This statistic measures the portion of market performance that a portfolio captures in down periods. The question it answers is, "When the market is falling does this portfolio fully participate in the drop?" As an example, say that the market is down 20% and your portfolio was down 10% over the same period. This would equate to a 50% down market capture ratio, which would obviously be a good outcome.

"... an improvised beta actually detracted from the objective of avoiding downside risk..."

We recently explored different ways of predicting the behavior of stocks in down market periods in order to affect a lower down market capture ratio in a portfolio of securities. The traditional way of describing a stock's behavior over all market conditions is in terms of the Capital Asset Pricing Model (CAPM) beta. It measures the historical sensitivity to market moves. But we theorized that isolating only the down market periods to compute an improvised 'down market' beta would improve the return profile during market declines, as measured by the down market capture ratio.

Exhibit #1 illustrates the capture ratio statistics for two baskets of securities; the ***first uses the typical CAPM beta to select the least risky 20% of the Russell 1000 (blue triangle)***, while the ***second uses our improvised down-market beta to select the 20% of stocks demonstrating the least risk (red square)***. It then displays the rolling five year down market capture ratio of both portfolios on the horizontal axis and the up market capture ratio on the vertical axis, which is the same calculation applied to periods when the market is rising. Because our objective is to reduce downside risk we will focus on the horizontal axis. Each square or triangle represents a different 5-year period during the 15 year test period.

Exhibit #1 Rolling 20 Quarter Scatter Chart
Downside Risk Article - SR Q5 Beta Return
15 Years Ended March 31, 2013
Benchmark: Russell:1000 Index



Both selection methods produce portfolios that do not fully participate in falling markets, as shown by readings below 100 on the horizontal scale. But over the last 20 years, the down market capture ratio of the low traditional CAPM beta portfolio (average 86) has been meaningfully less than our improvised down market beta portfolio (average 93), which we had expected to provide better downside protection. Our theory was disproved. The conclusion is that an improvised beta actually detracted from the objective of avoiding downside risk. In this case, refining a traditional risk measure to target a market condition was not helpful.

The fundamental process of research begins with a hypothesis, which is then proven or disproved. This is an example of a disproved theory and illustrates one of the many perils of adopting a logical refinement to portfolio construction, which is not always statistically sound. Some ideas have great intuitive appeal, such as the improvised down market beta, but without validation through thorough research those ideas can lead to false insight. It also illustrates how our industry can over complicate concepts. Sometimes 'keep it simple' applies.