

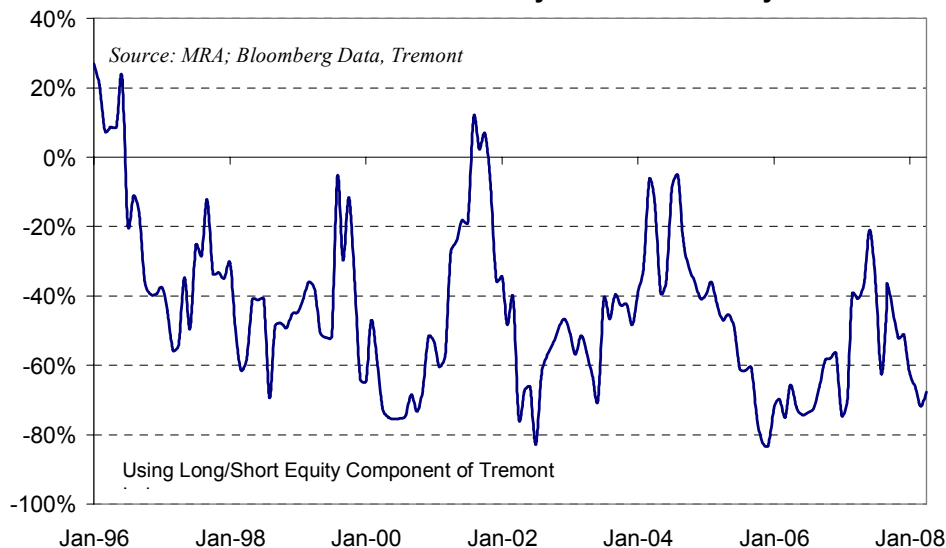
Long Short Equity and IWM Volatility

Thesis: The demand for small cap portfolio protection from long/short equity hedge funds has been an important driver of both the steep skew and high implied volatility in the IWM over the past several years. If, as recently, market risks continue to be more macro than single stock specific and if we remain in an elevated volatility environment, capital inflows into long/short equity strategies may slow and demand for option protection may fall. The result, a diminished wedge between implied and realized volatility in the IWM.

Over the past few years, the characteristics of hedge fund returns have been studied closely in an effort to identify certain market risk factors that the strategies may be sourcing the returns from. If the market risk factors can be traded directly and accessed in the correct proportion, the theory is that hedge fund returns can be reasonably “replicated” without the 2/20 fee structure. The claim that a manager’s “alpha” can be reproduced at a fraction of the cost has been the subject of a greatly contested debate. The hedge fund replication camp claims that for the most part, hedge fund returns are not sourced from alpha, but from beta. While many hedge fund strategies have been shown to carry little market beta, it is argued that exposure to risk factors such as volatility, liquidity, credit spreads, value and size are among the more subtle betas that help generate hedge fund returns. A critical piece on the effectiveness of hedge fund replication is “*The Myths and Limits of Passive Hedge Fund Replication*” and can be accessed on www.edhec-risk.com.

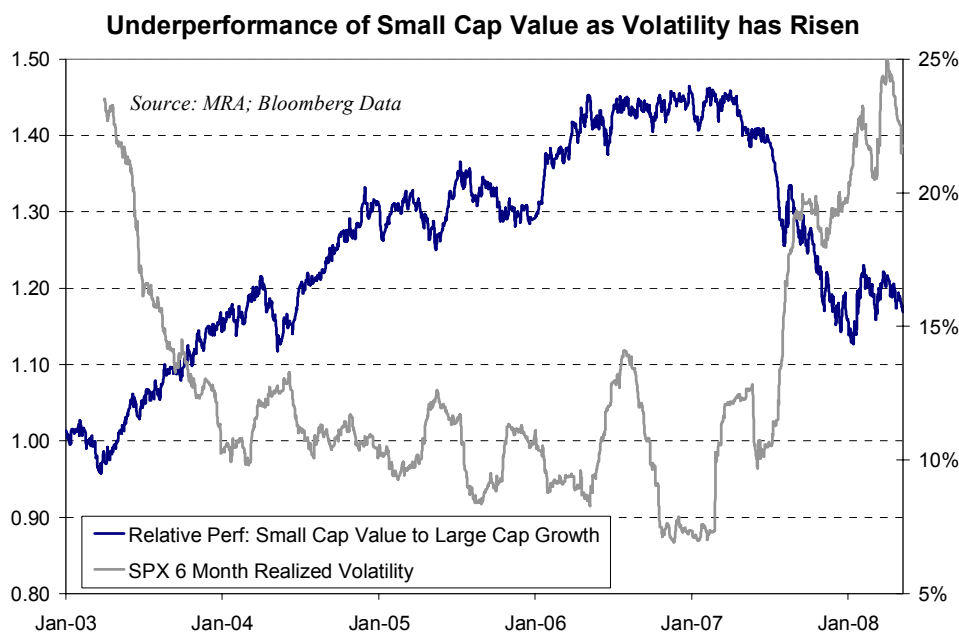
In the long/short equity sector, three factors have been shown to explain a large portion of return. These include a market factor, a size factor (small outperforms large) and a value factor (value outperforms growth). These three factors represent the modified CAPM approach of Fama and French (The Cross Section of Expected Stock Returns, Journal of Finance, 1992). In a recent paper, Kuenzi and Shi (Journal of Alternative Investments, Summer 2007) show that adding a fourth factor, volatility, incrementally helps explain the return variation of long/short strategies. In the graph below, we show the rolling one year correlation of the long/short component of the Tremont Index (www.hedgeindex.com) to monthly SPX realized volatility. The consistently negative correlation points to the difficulty that long/short funds have had recently as market volatility has been very high.

Rolling 12 Month Correlation: Long Short Equity Month Returns to SPX Monthly Realized Volatility



As volatility collapsed from 2004 to the middle of 2007, assets committed to long/short equity grew markedly and put options on the IWM emerged as an extremely popular product employed to hedge the risk exposures common to the strategy. In purchasing puts on the IWM, managers were gaining short delta exposure to both the market and to the small cap style as well as long volatility exposure. The use of IWM put options by managers is logical given the four risk factors previously cited as effective in explaining a large proportion of the variation of long/short strategy returns.

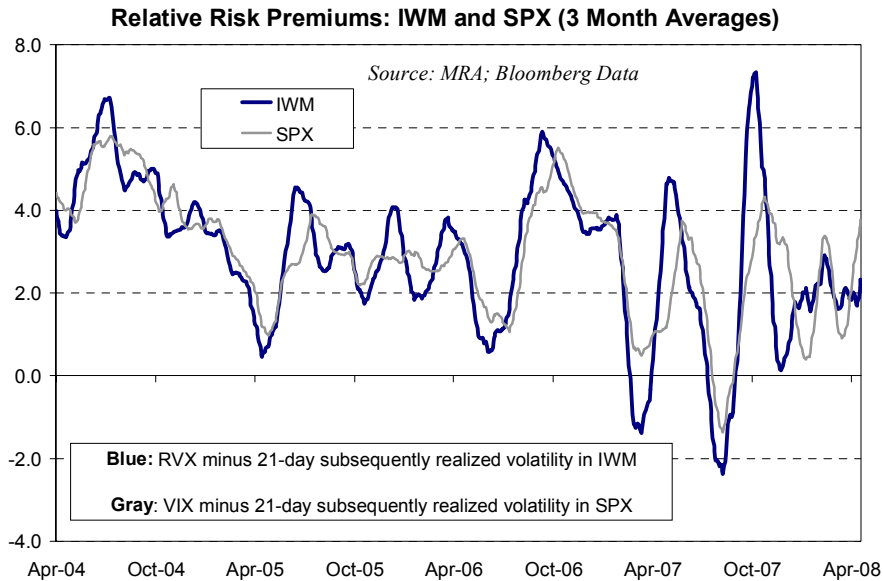
The outperformance of small cap stocks over large cap stocks during the low volatility era has been widely discussed. Our view is that this outperformance represented another of the myriad examples of short volatility strategies that were successfully employed as volatility compressed from 2004 to the middle of 2007. Small cap stocks, and further, small cap value stocks, are companies with more uncertainty, weaker balance sheets and greater exposure to turbulent economic times. The market prices them as such and as a result, when economic conditions wind up favorable, they outperform larger stocks for which the market has paid more. The graph below depicts this effect. We show the relative performance of the IWN (small cap value index) versus the IWF (large cap growth index) and overlay rolling 6 month realized SPX volatility. The outperformance of the IWN hit an exhaustion phase in early 2007 as the VIX fell to 10 and as the sub prime crisis began. As volatility has since exploded and the overall business climate has become more challenging, large cap growth stocks have outperformed small cap value.



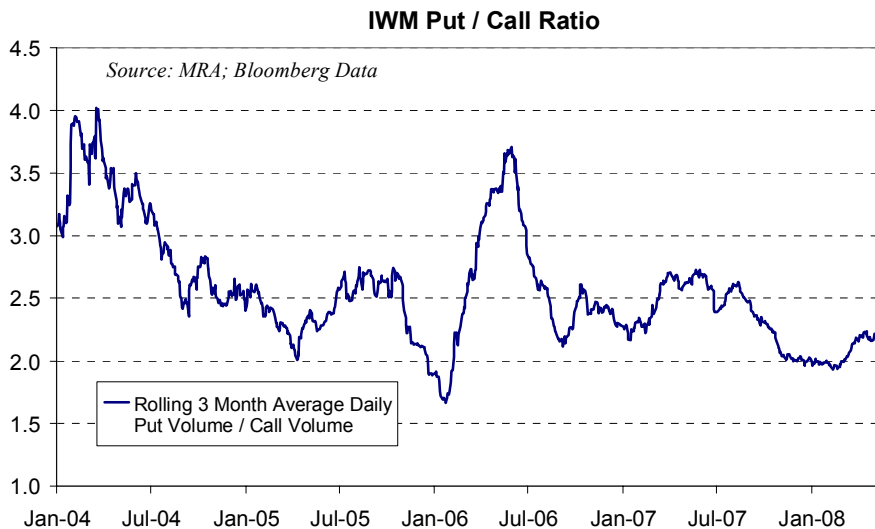
The negative relationship between long/short returns and market volatility underscores the value of IWM put options as a hedging vehicle for managers. The extensive use of put options on the IWM by long/short managers created interesting dynamics between implied and realized volatility in the IWM. Because the demand from the buy side for hedging was so strong, Wall Street dealers were left consistently short volatility. As a result, IWM implied volatility traded at a persistent premium to realized volatility since there was a general shortage of volatility supply in the IWM.

The graph on the following page puts this in context. We show the rolling average premium of the RVX index (the index of one month implied volatility for the IWM) to subsequent 21-day realized volatility in the IWM. For comparison purposes we show a similar calculation for the VIX. While the graph illustrates that both the RVX and the VIX are consistently higher than realized volatility, it is the RVX that displays an even greater premium than does the VIX. For example, since 2004, the average premium of the RVX to realized volatility in the IWM is 3.5 points. This is as opposed to just a 3 point average premium of the VIX to SPX realized volatility over the same time period.

This premium of implied to realized volatility in the IWM can be thought of as the cost of a good seat to the Super Bowl: there's more demand than supply and it shows in pricing. For long/short managers, economic conditions were so favorable and conducive to the outperformance of smaller cap stocks (as illustrated above), this volatility premium was well worth absorbing, however.



IWM put/call ratios also illustrate the extent to which the product has been used to mitigate risk exposures common to long/short portfolios. Interestingly, IWM put/call ratios have declined recently amidst higher market volatility and weaker performance (Q1 2008 return for the long/short component of the Tremont index was the worst in seven years). As a result, the long/short sector has experienced slower asset growth (according to a report issued by Institutional Investor and Hedgeco.net, long/short equity fund assets grew at a slower pace in Q4 2007 than the overall industry for the first quarter since Q3 2006, and only the second time on record).



As we have written in past pieces, we expect the economic environment going forward to be challenging and that macro risk factors like the economy, the Fed and inflation will contribute to ongoing equity volatility. In this scenario, long/short equity, with an inherently short volatility profile, may experience slower growth in assets under management. If this were to occur, the widespread utilization of put options on the IWM by long/short managers may decline from the lofty levels registered in recent years. While too early to tell, the important potential result: a compression of the spread between implied and realized volatility in the IWM.

~ Dean Curnutt