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## Staying the Course on Momentum Investing

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A recent *Wall Street Journal* article<sup>1</sup> discussed the challenges faced this year by hedge funds whose strategy involves betting on the persistence of market trends. According to the article, 2008 was a banner year for such "momentum strategies," riding the market down while benefiting from subcurrents such as the commodities boom and bust. The sharp market reversal last March and April caught many trend-followers by surprise, leading to negative performance year-to-date. In response, several hedge fund managers cited in the article have decided to reduce risk or bring down exposure to this strategy. Time will tell if this was the right call, but history suggests to those quantitatively inclined that they may want to keep their bet on the table at this point.

I have analyzed the performance of a simple long-short momentum strategy that buys the top 20% of stocks in some equity benchmark by their total return from 12 months ago until 1 month ago, and sells the bottom 20%. The most recent month is omitted from the return calculation to avoid short-term price reversal effects. Each side of the portfolio is equal-weighted and rebalanced monthly. A back-test of this strategy showed that from 1990 until July of this year it would have generated a 7% annualized absolute return for large-cap stocks (Russell 1000 universe) and 16% for small-caps (Russell 2000), with an annualized standard deviation of 26% for each. As highlighted before<sup>2</sup>, trend following is effective but not for the faint of heart.

Last year I discussed improvements to this strategy to identify which stocks are most likely to sustain their momentum<sup>3</sup>. In this article I address the conditions under which the momentum investment style is most effective. According to recent academic research<sup>4,5</sup> this is when markets are trending up with low volatility. The authors hypothesize that under these conditions investors are more confident in their initial assessment of stocks and less likely to update these beliefs. Their findings corroborate the academic theory that it is the slow adjustment of stock prices to relevant new information that causes the momentum anomaly.

Along those lines, we measure the performance of our momentum strategy as a function of:

- Market trend (rolling 12-month performance of R1000 index)
- Trend-following efficacy (rolling 12-month performance of momentum strategy)
- Market volatility (VIX level and its month-over-month change)

For each predictor variable, months are classified based on their prior-month value being in the top, middle or bottom tertile of all its monthly values since 1990. We then calculated the average return to momentum in these months for both the R1000 and R2000 indexes for the period from 1990 until 2008.

The results in the table below confirm that the momentum strategy does worst in a bear market when volatility is decreasing, though the impact of VIX level by itself is less clear. Moreover, stretches of poor performance of the momentum strategy are likely to reverse, illustrating the cyclical nature of trend-following. Looking back at the beginning of 2009, the VIX (at 40) had just started to come down from record levels and, with the benefit of hindsight, was likely to continue to drop. Market performance had been dramatic (down 39%) but the momentum strategy had done well (up 14% for the R2000). All of these could have been warning signs for the poor subsequent performance of momentum in 2009. Currently the VIX (at 26) is still elevated though much lower than before, while markets are still down (28%) but have regained some ground. Lastly, momentum performance has been extremely poor (down 65% for R2000), potentially signifying imminent reversal.

In conclusion, the signals are mixed but it may be a bit late in the game to reduce exposure to the momentum strategy that has such a strong track record of generating absolute returns. Maintaining a good diversification among investment strategies and staying the course in the momentum component may be the preferable option. ■

- 1 "Trend-Chasing Funds Struggle After Blowout Year," *Wall Street Journal*, August 7, 2009.
- 2 "Riding Out Momentum Stocks: Stay on that Bandwagon!" *ING Investment Weekly*, March 12, 2007.
- 3 "Crowded Momentum Trades: When to Join the Party?" *ING Investment Weekly*, February 11, 2008.
- 4 Wang and Xu, "Market Volatility and Momentum," 2009 (available from the Social Science Research Network)
- 5 Cooper, Gutierrez and Hameed, "Market States and Momentum," *Journal of Finance*, 2004.

**Monthly Return (%) to Long-Short Momentum Strategy for R1000 and R2000 by Tertiles of Prior-Month Predictor Variables (1990-2008)**

Index	Tertile	Market Trend	Momentum Performance	VIX Level	VIX Monthly Change
<b>R1000</b>	Lowest 33%	0.47	2.03	0.46	0.57
	Middle 33% - 66%	0.66	-0.31	1.47	0.9
	Highest 33%	1.55	0.89	0.81	1.25
<b>R2000</b>	Lowest 33%	1.54	2.39	1.27	0.65
	Middle 33% - 66%	1.56	1.51	1.97	1.93
	Highest 33%	1.95	1.11	1.85	2.43

Source: Bloomberg, FactSet

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