RESEARCH SPOTLIGHT

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The experience of uncorrelated assets

Much has been written about the low correlation between managed futures strategies and the S&P 500. However, over certain periods, the correlation between the two can be quite high. In Superstars versus teamwork, we showed the distribution of estimated pairwise correlations is broad and symmetrical when the true correlation is low (i.e. large sampling error). Given a correlation of -0.16 between the Newedge CTA Index and S&P 500 since January 2000, we should expect to see periods of relatively high positive correlation. Even so, intervals of increased correlation still have real implications for a portfolio of diversified trading strategies. In this snapshot, we analyze returns of the S&P 500 and the Newedge CTA Index conditional on periods of relatively high correlation and find CTA returns appear to be independent of S&P 500 performance irrespective of correlation levels. Second, when correlations between the two indices are high, the S&P 500 exhibits significant positive performance.

Exhibit 1

63 day rolling daily return correlations (S&P 500 / Newedge CTA Index)

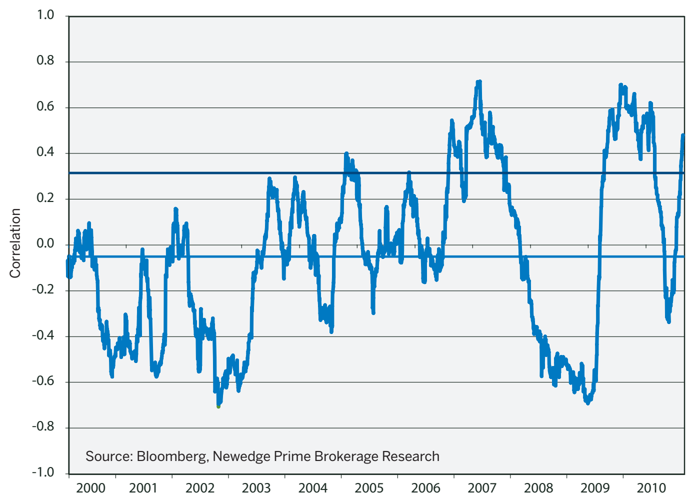
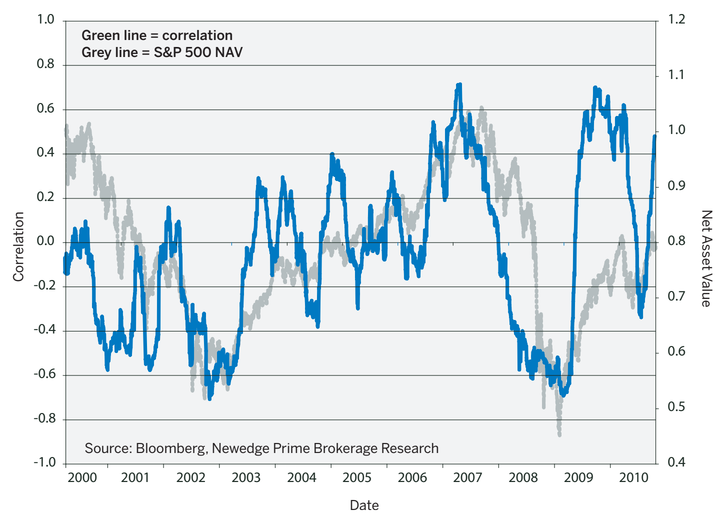


Exhibit 2

Correlation and S&P 500 Performance



In Exhibit 1 we plot the 63 day (3 month) rolling correlation between daily returns of the Newedge CTA Index and the S&P 500 stock price index using data from January 2000 through November 2010 (2745 observations). The red line represents the average 63 day rolling correlation while the dark green line corresponds to one standard deviation above that average. For the purpose of this note, we have defined high correlation periods as those where the rolling correlation is one standard deviation above the mean. This has occurred several times in the past 11 years. We saw the correlation cross this level multiple times in the beginning of 2005 and for two days in March of 2006. However, more recently, the correlation between the two indices has been elevated for extended periods, most notably a large part of 2007 and July 2009 through July 2010.

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We found the annualized return for the S&P 500 during all of these periods was 13.98% compared to -2.95% when the correlation was below this level. The annualized return for the S&P 500 over the entire period was 0.49%. During these same intervals, we also calculated the corresponding returns for the Newedge CTA Index. When the rolling correlation to the S&P 500 was high, the annualized return was 6.35% compared to 7.23% when the correlations were below the one standard deviation level. The annualized return for the CTA index over the entire period was 6.92%. These returns would suggest that CTA returns are independent of the performance of the S&P 500.

In Exhibit 2, we have included the performance of the S&P 500 along with the rolling correlation from Exhibit 1. There appears to be a strong relationship between the performance of the index and an increased correlation to the Newedge CTA Index. The negative performance of the S&P during 2000 – 2002 coincides with zero to negative correlations to managed futures. The rise in the equity markets from 2003 through 2007 is coupled with a volatile but steadily increasing correlation. Finally, correlations collapsed during the financial crisis and have risen sharply during the "recovery."

Our work here has generated a couple of questions that bear further thought. We have observed a more pronounced range of correlations over the past 4 years. Although the average is still slightly negative, correlations between the two indices seem to spend a considerable amount of time well above and below the mean. We think this is, in part, a result of the spike in stock market volatility associated with the financial crisis that began in the latter part of 2008. This would be consistent with our findings in Stock price volatility and CTA returns which showed that correlations have an inverse relationship to the level of S&P 500 volatility. So now the two important questions seem to be: (1) Will this relationship persist? and (2) What implications would this have for multi-manager portfolios?

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