

## Interesting look at Euro, Yen, Volatility, and S&P 500

Risk on. Risk off. The markets are moving together. Risk on trades are thought to be short U.S. dollar, yen, and bonds; long equities, commodities, and EM. There is nothing cast in stone about these patterns and in the past the pattern was different. In the late 1990s and again in the 2002-2004 period, the euro and the S&P 500, for example, were inversely correlated. When existing pattern breaks down, there will be many caught wrong-footed.

In order to monitor the strength of the pattern we looked at the correlation between the euro and yen vs. the S&P 500 over different time periods. We look at the correlation of percentage change because we think that is more robust and relevant to investors.

Over the past two years, the percentage change of the euro was correlated with percentage change in the S&P 500 31% of the time, using daily data. Thus far this year, the correlation stands at 42.5% and in the past three months it has risen to 71.3%. The correlation has eased over the past month, but is still a robust 50.3%. Looking at weekly data, the correlation at the end of last week of almost 41.5% is the upper end of where it has been for the last 35 years.

If the correlations between financial variables is a mean reverting process, the risks are that the pattern, in this case the euro's correlation with the S&P 500, becomes a bit looser, but a catalyst for a genuine and significant break does not appear evident. We hypothesize that the catalyst could be stronger than expected U.S. economic growth. Economists are revising up Q3 GDP into the 3-4% area, but Q4 forecasts, like the Bloomberg consensus of 2%, will have also have to revised upwards. Essentially, it appears that inventory liquidation may still be taking place as a slower rate, but the actually rebuilding may be a Q4 story or Q1 2010.

The dollar-yen correlation with the S&P 500 appears to be more stable, but the pattern by which the dollar is bought against the yen with a rising stock market has seen some exceptions, though the last time the correlation sign was negative was more than two years ago.

Over the past two years, the daily correlation between dollar-yen and the S&P 500 has been around 47.5%. Year-to-day the correlation is just below 36%. Over the last three months the correlation has been near 63.5%. On a weekly basis the correlation reached its highest level since the end of Bretton Woods last October at almost 69%. As of last week, the correlation stood at 45%.

What could be the catalyst for a break of this pattern? There are a couple of forces that could conspire. First, this month marks the end of the fiscal half year in Japan and repatriation, especially given the new tax incentive--like the U.S. Homeland Investment Act--could drive the yen independently of the vagaries of the equity market. Second, if what has been a gradual grind down in the dollar turns into a bit of a stronger of a move, investors typically do not want to be short the yen during such periods. Third, foreign investors have stepped up their purchase of Japanese shares in recent weeks, according to the weekly MOF data. This could also exert an influence on dollar-yen separate from the performance of the S&P 500.

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