



Axioma Research Paper No. 035

September 27, 2011

What Goes Up...

Have Correlation and Volatility Turned the Corner in the US?

Anthony A. Renshaw, Ph.D.

After an awful August, volatility and correlations in the US appear to be headed towards more typical values, making US market conditions more favorable to investors. However, the same trends in Europe and Emerging markets just reversed themselves. There are other indications, too, that we are not yet out of the woods...





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August was a terrible month for equity markets worldwide. Benchmarks suffered double-digit declines, realized asset volatility effectively doubled, and average asset-asset correlations increased by more than 20% in the US and Europe.

Fortunately, though the equity markets remain quite volatile, market conditions appear to be improving, at least in the US. Volatility and correlations are coming down while market returns have remained above their August lows despite wild swings. These are encouraging signs. Of course, the trend could reverse course abruptly (e.g., tomorrow), as we have seen in the past. In fact, just last week in Europe and Emerging Markets both volatility and correlation changed direction and began to rise again (in the case of EM, to a new all-time high). Indeed, as noted below, there are indications that we are not yet out of the woods.

Equity Market Performance, Volatility, and Correlation

We assess market conditions using the daily asset returns of a benchmark universe by computing three statistics:

- The cumulative return of the benchmark;
- The average volatility of individual asset returns for all assets in the benchmark over the preceding twenty days; and,
- The average correlation of returns for all asset-asset pairs in the benchmark over the preceding twenty days.

Figures 1 – 5 show these three statistics since January 2005 for the Russell 1000® Index; the Russell 2000® Index; the FTSE Developed Europe Index; the FTSE Developed Asia Pacific Index; and the FTSE Emerging Index. The last data point represents market close on Friday, September 23.

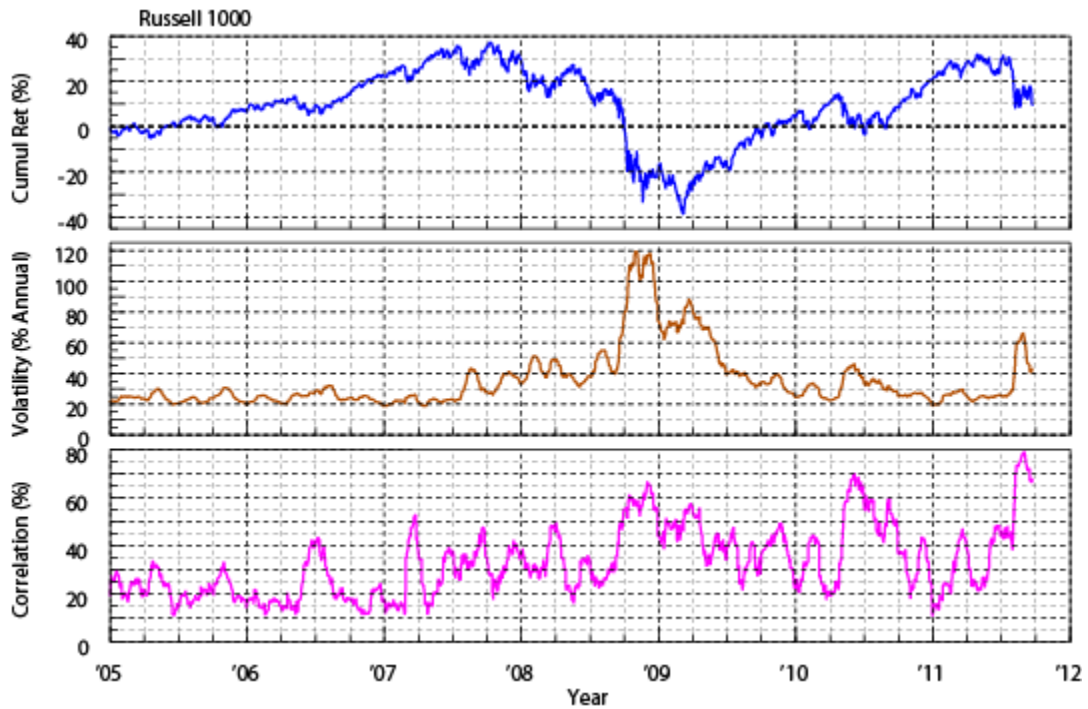


Figure 1. Statistics for the Russell 1000 Index through market close Sept. 23, 2011: the cumulative return (top, blue); average trailing 20-day realized asset volatility (middle, brown); and average trailing 20-day asset-asset correlation (bottom, purple).

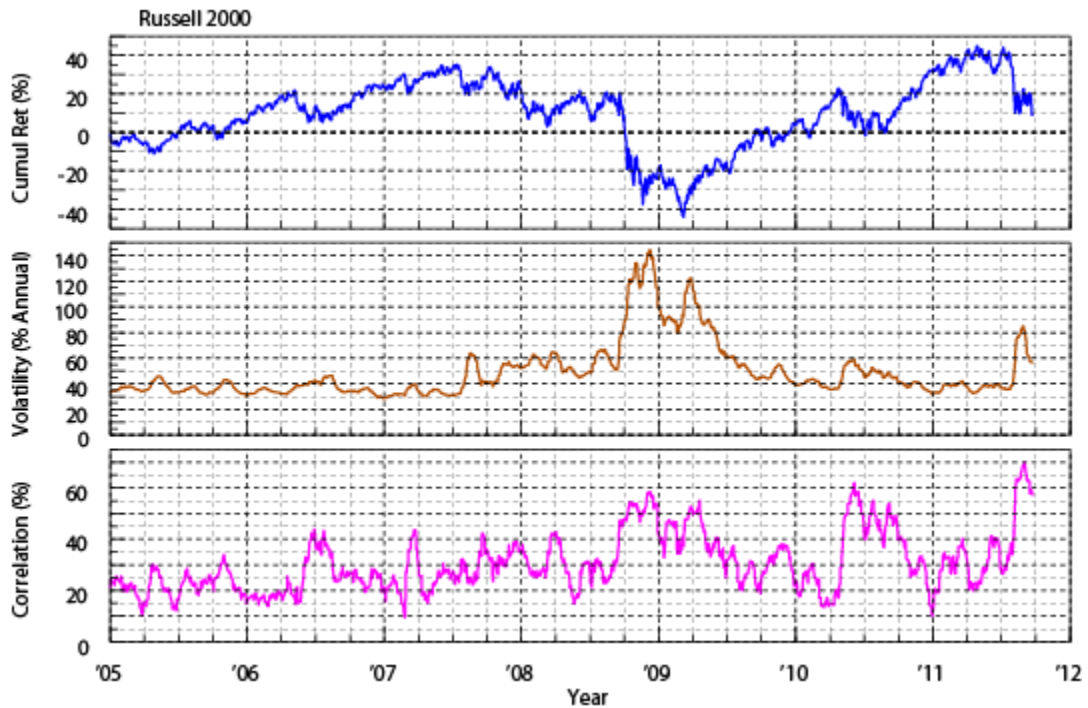


Figure 2. Statistics for the Russell 2000 Index.

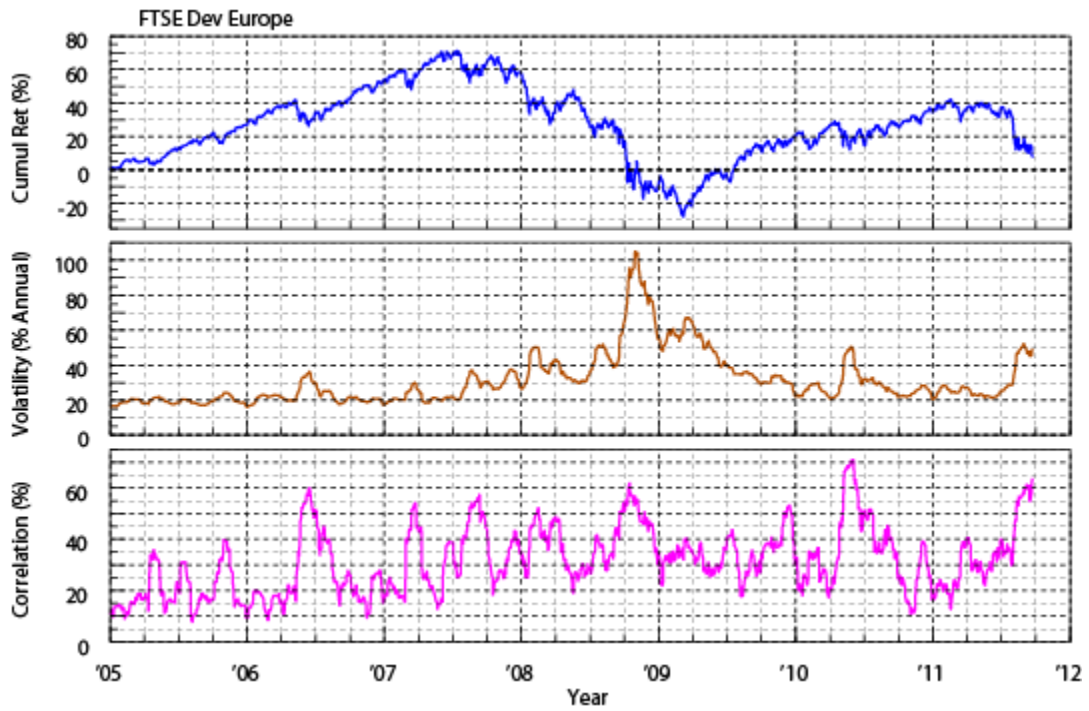


Figure 3. Statistics for the FTSE Developed Europe Index.

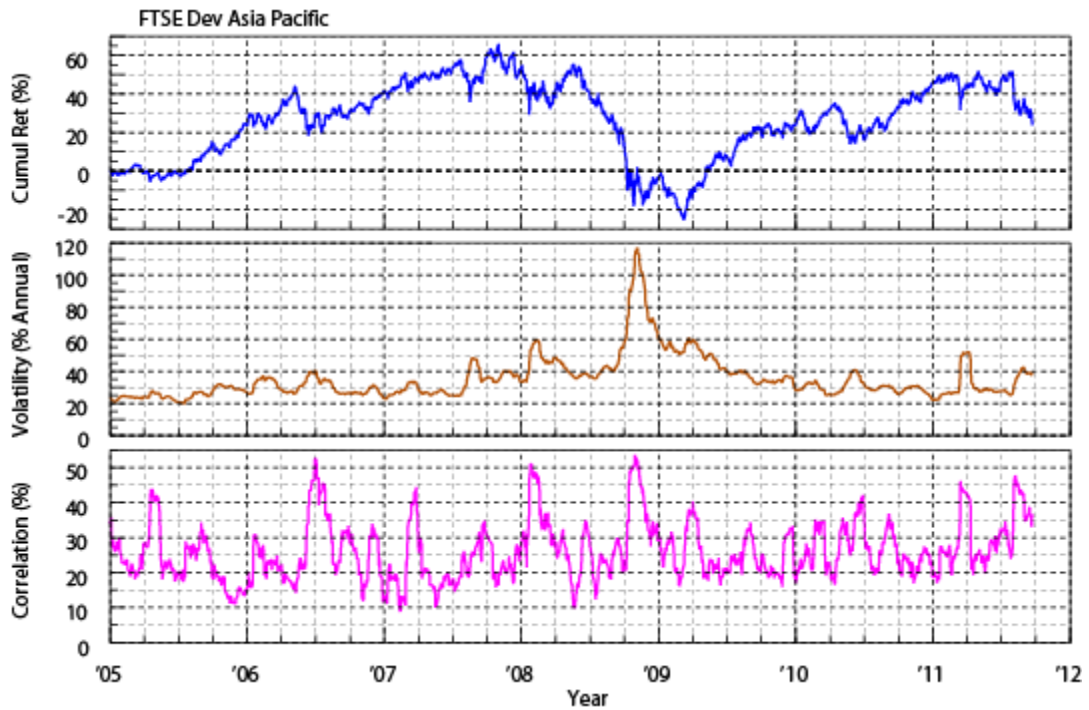


Figure 4. Statistics for the FTSE Developed Asia Pacific Index.

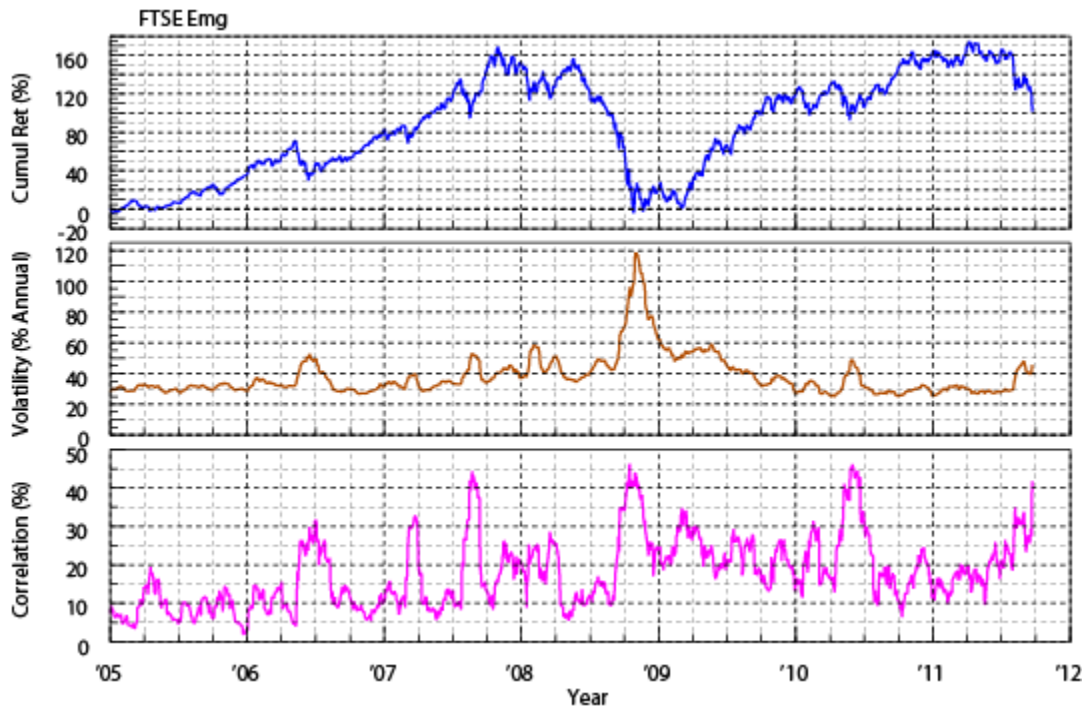


Figure 5. Statistics for the FTSE Emerging Index.

Asset-asset correlations have come down from their recent highs in all markets except Emerging Markets (which reached its 2011 high last Friday), although they remain quite high, and appear to be rising again in Europe and EM. Asset volatility has also started to drop, except in Asia and EM.

Why Are High Asset Correlations So Worrisome?

High asset-asset correlations are undesirable for at least two reasons.

- Out-performing the market in general and stock picking in particular are difficult because there is less difference in the performance of individual stocks.
- High correlations are closely associated with negative market returns. This is often expressed by saying that correlations go to one as the market falls. The converse is also true: when correlations are high, market returns are, on average, negative.

Figure 6 shows a scatter plot of the 20-day benchmark returns for the Russell 1000 against the 20-day average asset-asset correlation¹. Also shown in red is a simple least squares fit of the expected 20-day return as a function of correlation. The data and the predicted return skew strongly to the left, indicating that *market returns become*

¹ Since it does not alter what we wish to illustrate, we simply plot the data for all trading dates. As a result, the data for sequential trading dates overlap substantially and are not independent.

increasingly negative on average as correlations increase. This particular fit predicts negative market returns for correlations above 0.45 while the current Russell 1000 correlation is 0.67. So, at least by this simple model, we are not yet out of the woods.

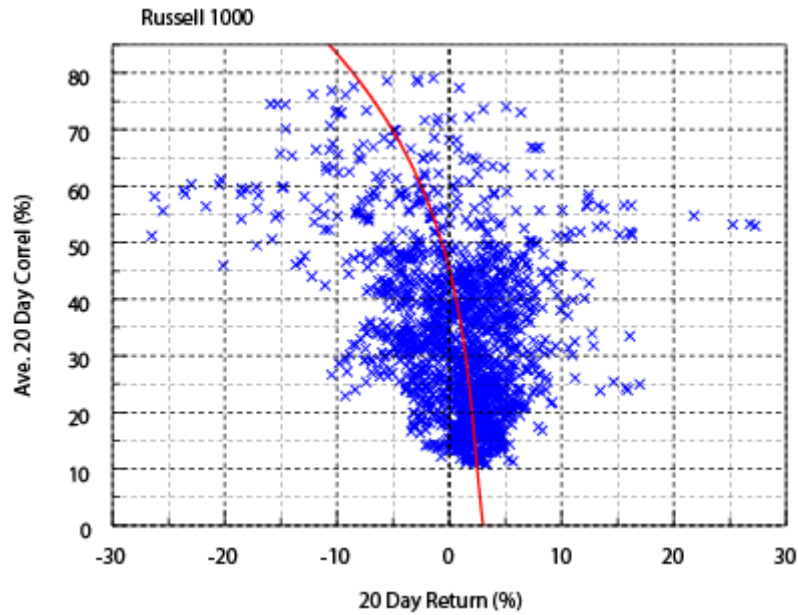


Figure 6. Twenty-day benchmark returns versus 20-day average asset-asset correlation for the Russell 1000 Index. Data for each trading date since 2005 is shown by the blue Xs. The red line shows a simple least squares fit to the data.

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