



Axioma Research Paper No. 034

August 19, 2011

Slow Burn or Powder Keg? Current Insights from the Axioma Risk Models

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Markets are off 15% to 20% from their peaks in mid July, and volatility has been, well, volatile. As investors consider their responses to current market conditions, we report on the recent changes in the Axioma Robust Risk Models™ in both the US and Europe.





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Markets are off 15% to 20% from their peaks in mid July, and volatility has been, well, volatile. As investors consider their responses to current market conditions, we report on the recent changes in the Axioma Robust Risk Models™ in both the US and Europe. The main findings are:

- Although risk has increased for indices in both the US and Europe, the increases in predicted benchmark risk have been modest so far, at least compared with the large increases observed in late 2008.
- The relative change in the average factor volatility has surged in the last three weeks. The relative increases are now approximately half the relative increase that occurred during 2008. This surge in factor volatility mirrors the rise in market volatility even though it produces only modestly higher levels of index total risk. This, of course, is to be expected, as the benchmarks have small exposures to most of the factors in the risk models. We would expect portfolio managers with significant active exposures to observe greater increases in predicted tracking error derived from the combination of nonzero active exposure and rising factor volatility.
- The average industry/industry correlations in both the US and European fundamental factor risk models are higher than any time during 2008, with Europe now exhibiting an average industry/industry correlation of just under 95%. Whatever happens to the markets, it will be felt similarly across all industries.

Yesterday was another down day for the market, and everyone is concerned about what this portends over the next few weeks and months. Hopefully the data presented here helps put the current market turmoil in an appropriate historical context.

Market Performance and Risk Model Predictions

Figure 1 shows the cumulative return of the Russell 1000® index (in USD; green) and the FTSE™ Europe Developed Index (in EUR; brown) over two time periods: September through December 2008 and July to August 18, 2011. In 2008, the indices lost 30% to 40% of their value, with a significant part of that occurring in the first two weeks of October. Over July and August 2011, the indexes were down about 15% (so far). Most of that decline (approximately 10%) occurred in the first week of August, and that week in isolation was comparable to the first or second week of October 2008. However, yesterday was another down day. To be sure, market volatility has increased, and the intraday returns picture was less calm than illustrated here. Nevertheless, July and August 2011 look more like late November 2008 than they do October 2008.

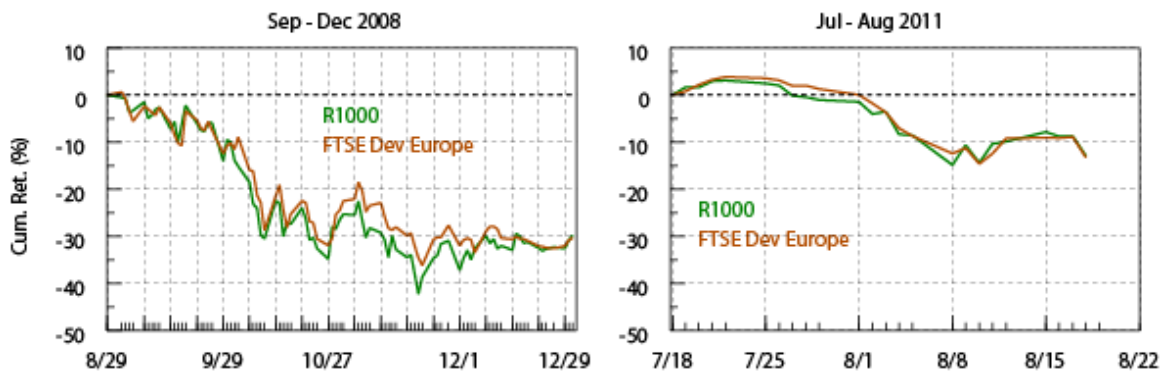


Figure 1. Cumulative return of the FTSE Developed Europe index (brown; in EUR) and the Russell 1000 index (green; in USD) for 2008 (left) and 2011 (right).

Figure 2 shows the risk predicted for the same two indices (the Russell 1000 Index and the FTSE Europe Developed Index) and the same two time periods (Sep to Dec 2008 and Jul to Aug 2011). The predictions of the Axioma fundamental factor risk models are shown in blue while those of Axioma's statistical factor risk models are in red. We used the short-horizon version of the US and European risk models.

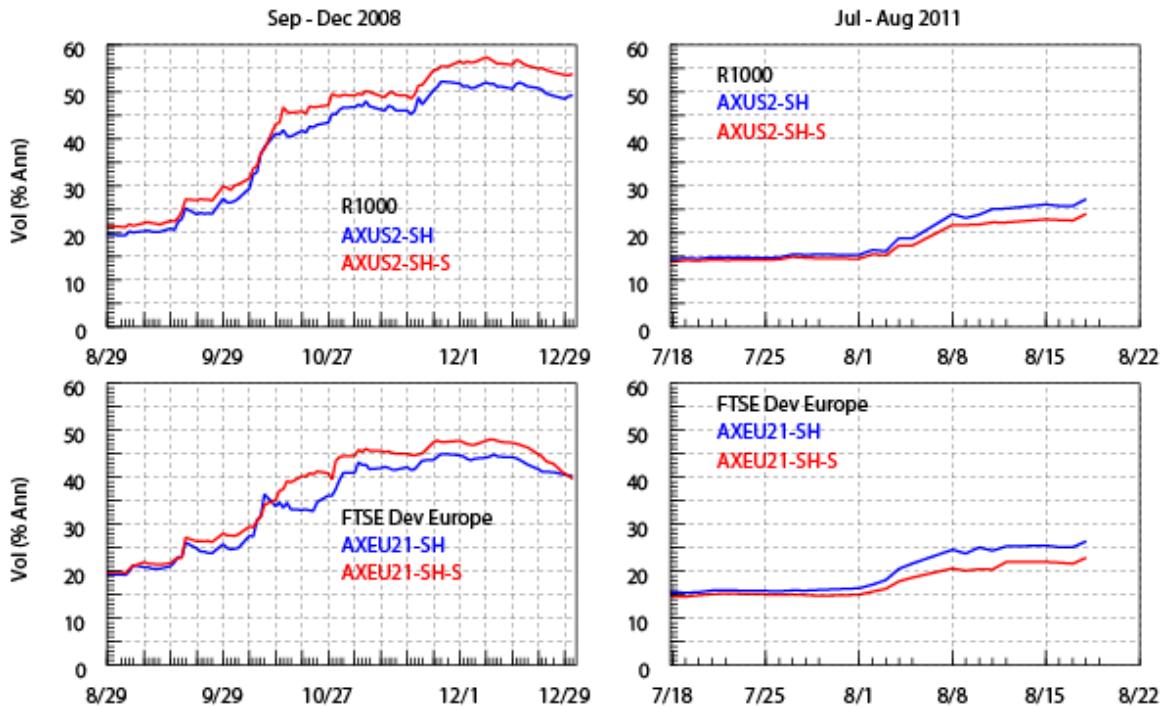


Figure 2. Predicted risk in 2008 (left) and 2011 (right) for Axioma’s fundamental factor risk models (blue) and statistical factor risk models (red). Top: Russell 1000 index using Axioma’s short horizon US risk models (AXUS2-MH and AXUS2-MH-S). Bottom: FTSE Developed Europe index using Axioma’s short horizon European risk models (AXEU21-SH and AXEU21-SH-S).

In 2008, predicted risk went from 20% to 50% over the course of one or two months. So far, the predicted risk in August 2011 has increased from 15% to 22%, with most of that increase occurring in the first week of August.

Figure 3 shows average predicted specific risk across all assets. The picture here is similar to that of Fig. 2: specific risk has increased modestly relative to the increases seen in 2008, at least for the fundamental factor models. Interestingly, the specific risk for both statistical models has not changed in 2011. But even in 2008, the risk in statistical specific risk lagged market volatility significantly.

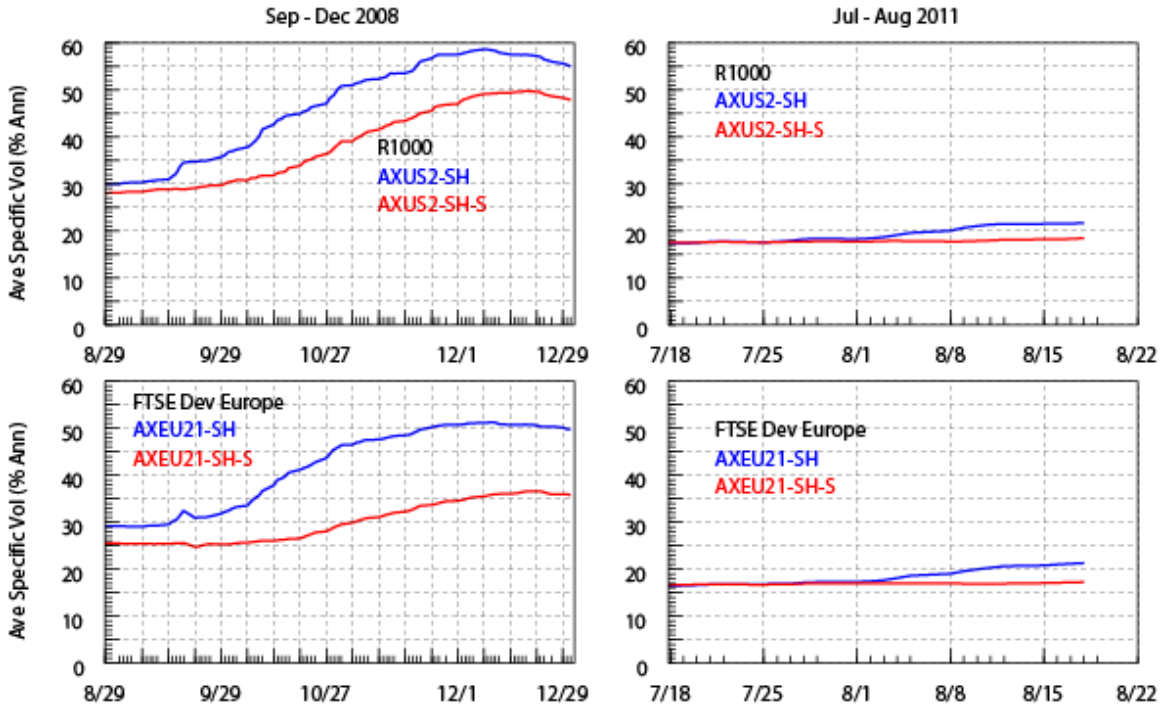


Figure 3. Average predicted specific risk for all assets.

Figure 4 shows the relative change in the average predicted factor risk across all factors in the risk models¹. The US fundamental risk model has 78 factors and the European fundamental model includes country and currency factors and has 90 factors. The US and European statistical factor risk models have 15 and 21 statistical factors, respectively². The relative change is computed with respect to the starting date of each graph.

The data shows that both US and European factor volatility has surged over the last three weeks. The relative increases are now approximately half the relative increase that occurred during 2008. This surge in factor volatility mirrors the rise in market volatility even though it produces only modestly higher levels of index total risk. This, of course, is to be expected, as the benchmarks have small exposures to most of the factors in the risk models. We would expect portfolio managers with significant active exposures to observe larger increases in predicted tracking error derived from the combination of nonzero active exposure and rising volatility. Interestingly, the relative changes of both

¹ The European fundamental factor risk model is industry focused, so that the market risk is in the industry factors.

² The US model has 15 statistical factors; the European model has 20 statistical factors and 21 currency factors. For these calculations we exclude the currency factors in the average for both European risk models.

the fundamental and statistical models have been comparable so far. In 2008, the relative change in the fundamental models was quite a bit larger than the statistical, but that divergence did not occur until early October.

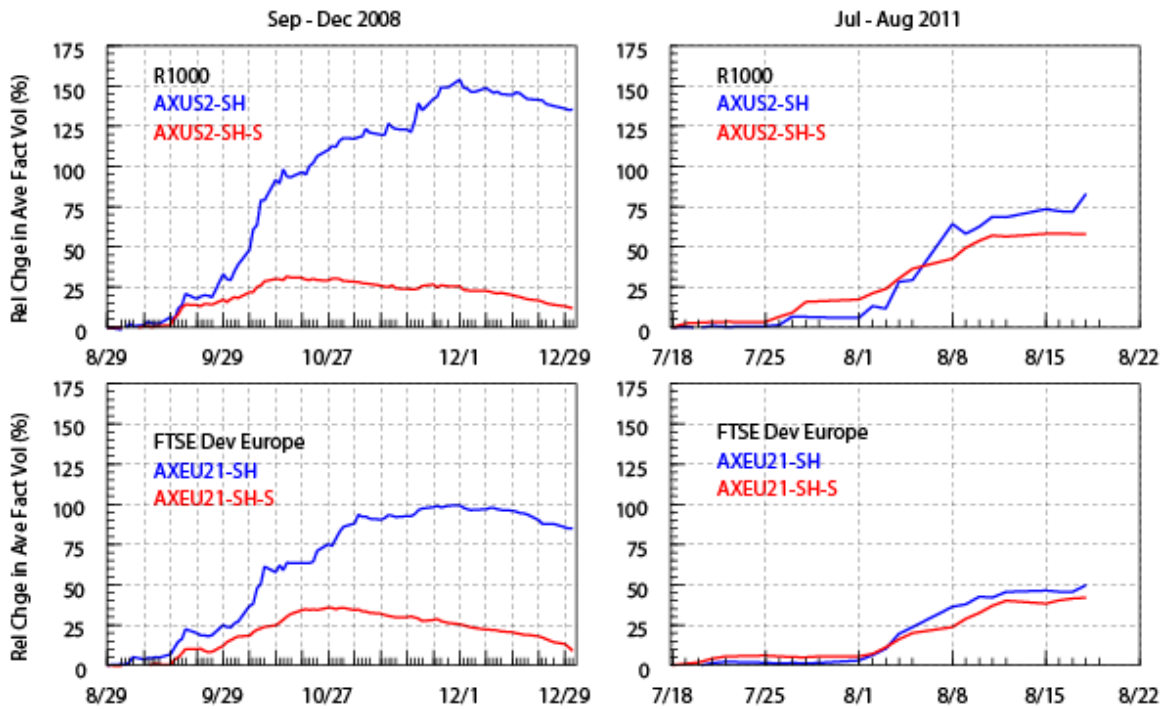


Figure 4. The relative change in the average predicted factor risk across all risk model non-currency factors.

Figure 5 shows average industry/industry correlation for the two fundamental factor risk models. Unlike the previous graphs, the results in 2011 all started higher than anything in 2008 and have risen noticeably in the last two to three weeks. European industries exhibited the highest average industry/industry correlations of just under 95%.

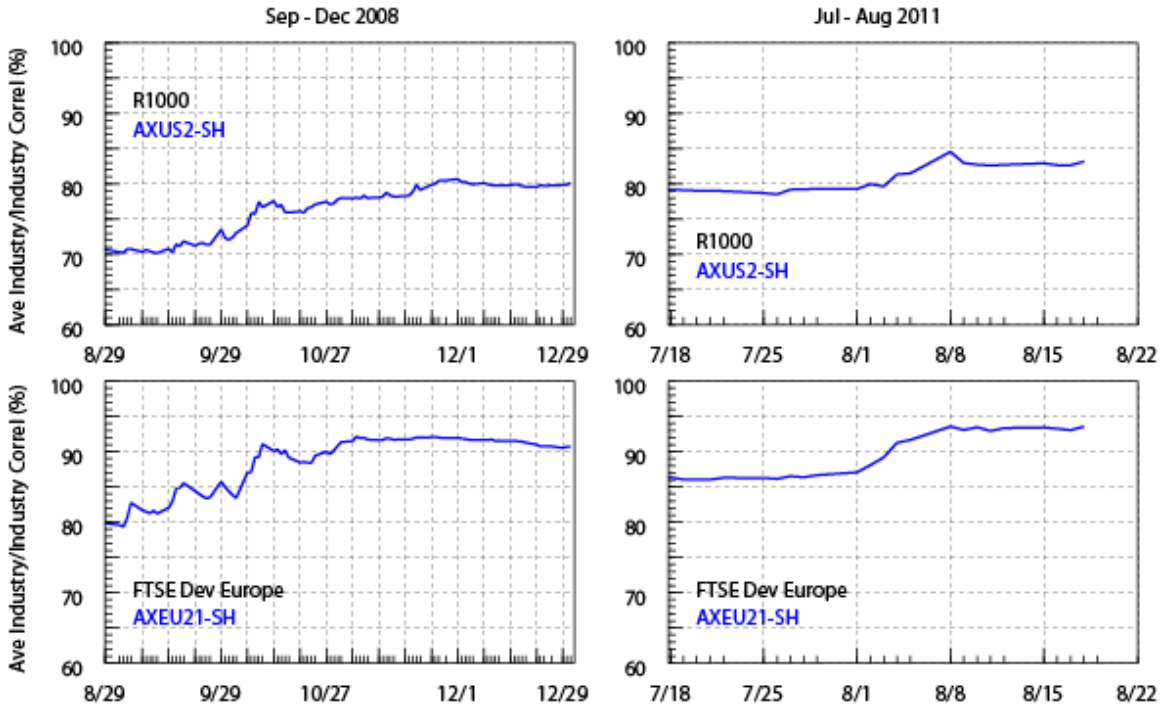


Figure 5. Average industry/industry correlations in the fundamental factor risk models. The European model is industry focused, so the market risk is embedded in the industry factors.

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