During the last week of February a sudden increase in volatility shook international markets across emerging and developed regions, spanning asset classes from Equities, Fixed Income, and Credit, to Commodities. Focusing on the US equity market we compare the Barra risk forecasts and changes over the last few weeks with the Chicago Options Exchange Volatility Index (VIX), also known as the “fear gauge”.

Figure 1: US Trading Model Risk Forecast

Figure 1 shows the daily annualized risk forecast for the S&P500 for the last two weeks. The figure displays Total Risk and Specific Risk forecasts of the Barra Trading Model as well as the VIX index. It appears that the VIX and the Barra risk forecast are highly responsive and reacted immediately to reflect the sudden increase in risk. Some interesting details though stand out. The VIX is significantly more (over-) reactive, jumping around between 2/28/07 and 3/2/07 whereas the Barra model jumped up and stayed up. The Barra Trading Model’s objective is to provide accurate risk forecasts over the next five to ten days. It is designed to be very responsive, but tries to avoid over-reaction as illustrated here by the VIX index.

The second interesting observation is related to the specific risk. As expected in sudden downturns the correlations across assets increase, the stock specific component becomes less relevant and common factor risk takes over as almost all stocks move in one direction. Again, in the example above the Barra Trading Model picks up on this.

In a second analysis we reviewed the monthly risk forecasts for the long and short horizon Barra US Equity models. We compared the annualized risk forecasts for the S&P500 at the end of January with the forecast at the end of February.
Table 1: Barra Long and Short Horizon Model Risk forecast

<table>
<thead>
<tr>
<th></th>
<th>2/28/2007</th>
<th>1/31/2007</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>UA S&amp;P 500 (Short)</td>
<td>9.32</td>
<td>8.90</td>
<td>4.72%</td>
</tr>
<tr>
<td>UB S&amp;P 500 (Long)</td>
<td>10.83</td>
<td>10.75</td>
<td>0.74%</td>
</tr>
<tr>
<td>Specific Risk S&amp;P 500</td>
<td>1.25</td>
<td>1.24</td>
<td>0.81%</td>
</tr>
</tbody>
</table>

Table 1 shows that the Total Risk forecast increased by roughly 5% for the short horizon model and less than 1% for the long horizon model. Clearly, the forecasted increase in risk seems unexpectedly small for such a news making event. Are Barra's risk models inaccurately forecasting risk?

Of course not!

Instead, we have to remember that these two models are geared away from a “fear” factor like response. They are designed to provide steady yet responsive risk forecasts for investment horizons of around 3 months for the short horizon model, and more than 6 months for the long horizon model. Both the Barra Trading Model’s risk forecast and the VIX index are now already trending downward again, though at significantly higher levels than two weeks ago. It is unclear at this point how volatility will evolve over the next couple of weeks and months but this analysis highlights the importance of analyzing volatility in light of your chosen investment horizon.
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