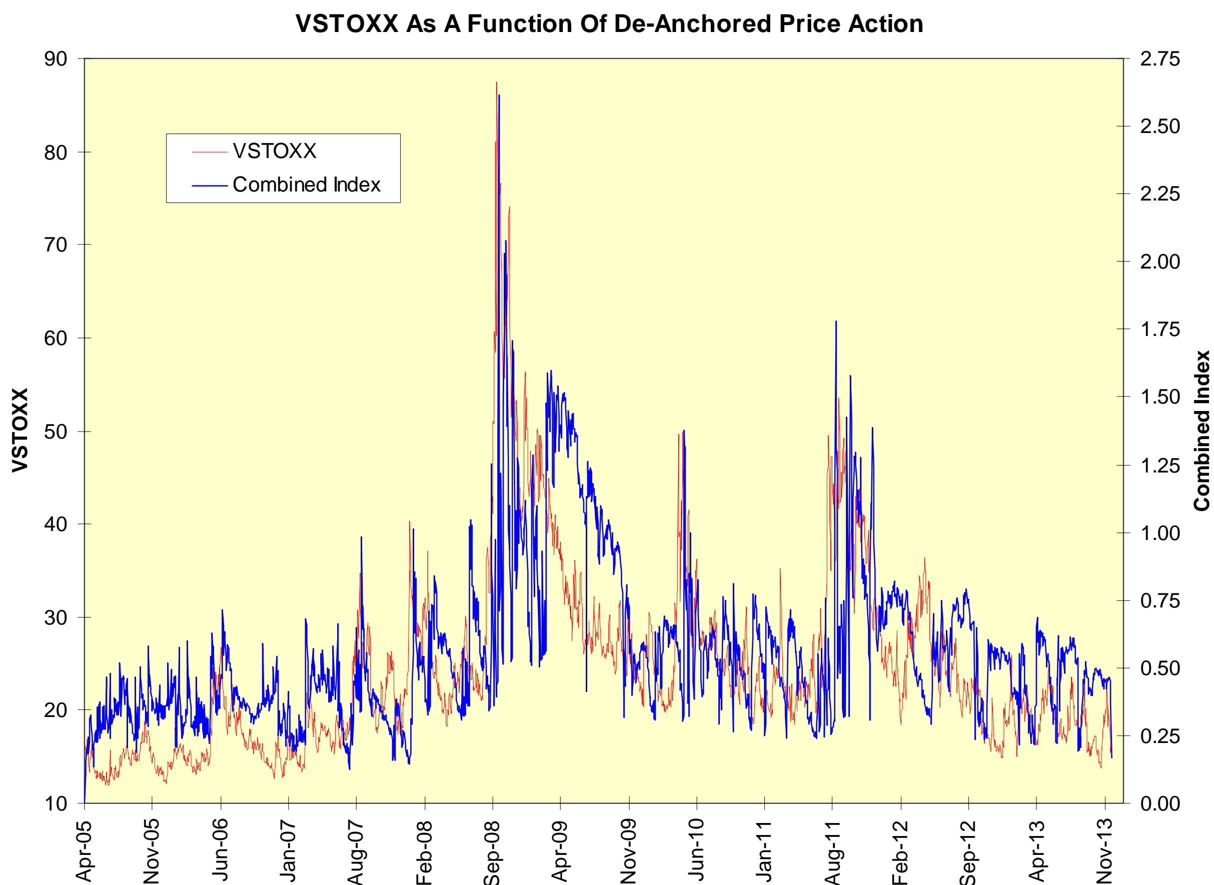
# VSTOXX Meets Fear And Regret

I concluded on Monday, “As investors’ state of psychological loss is related to the time-adjusted retracement of gain, a different measure of psychological anchoring will be required for the VSTOXX.” That was not simply idle prattle, although I am hardly allergic to such, but rather a reference to previous analyses done for the VIX.

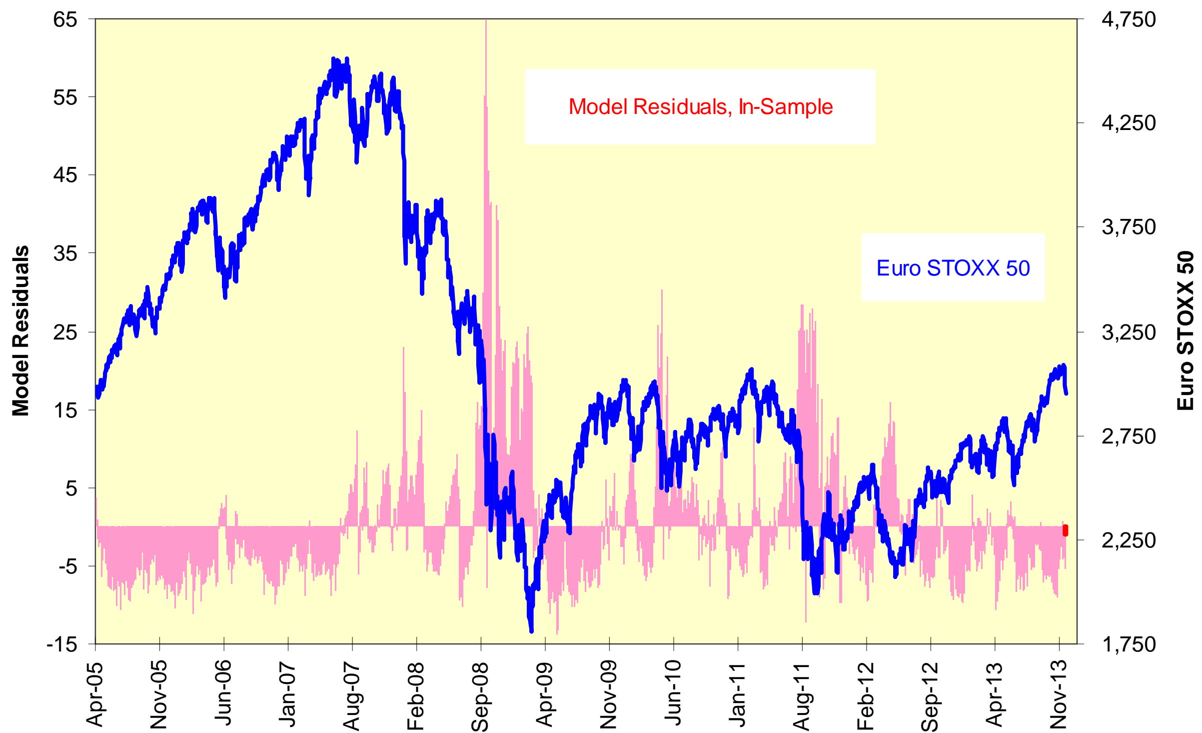
Briefly, anchoring is the phenomenon wherein we measure our current state against some reference point, such as a last new high in personal wealth. As time heals all wounds except the last one, some accounting for the time passed between that last new high and the present is required; this is the ‘regret’ portion of the title. Similarly, we get a sense of fear and then relief from the various downdrafts into the spike lows so characteristic of stock market trading patterns. That exhilaration attenuates over time as well.

If we combine these two phenomena into a simple model incorporating time-adjusted proximity to the last new high and the most recent low, we can create an index de-anchored from price levels as to where the VSTOXX, VIX or other volatility indices should be trading. The history of this index against the VSTOXX itself is displayed below.




**Too High Or Low?**

The model’s index can be subtracted from the actual VSTOXX to create a residual value. If we map this against the Euro STOXX 50 index that underlies the VSTOXX, we can see how closely or poorly it matches history. As of last Thursday, the last datum used, the residual of -0.92 was a mere 0.112 standard deviations below fair value. This suggests the VSTOXX was neither too low – the “complacency” abhorred by so many for reasons only a few can articulate – nor too high, inviting sales of volatility either in the form of option straddles or VSTOXX futures. The VSTOXX market has moved in accordance with the cumulative and time-adjusted fear and regret of investors.




The history above invites some narration. Please note the very large positive residuals during the 2008-2009 financial crisis; volatility jumped well over fair value during this period as the market started pricing in the risk of ruin for financial markets. Similar periods of over-valuation occurred during the May 2010 Greek default and European Central Bank rescue and again during the September-October 2011 Spanish/Italian sovereign debt crises leading to the expansion of global currency swap lines in November 2011.

It works both ways, too: Virtually the entire period since the July 2012 “whatever it takes” statement by Mario Draghi has been spent with undervaluation. This is an accurate reflection of financial suppression and indeed a metaphor for an entire age in financial markets.