

## Bund Futures' Volatility And Returns

An economist is a person who after digging through the promotional e-mails says, "Gee, I wish I could make my data sample bigger." And with good reason, too: While past performance might not predict future results, it is far more readily available than future performance and quite often is all the information we have upon which to base decisions.

The consequences of sample-size inadequacy can be huge, as demonstrated during the recent financial crisis. All risk models are based on statistical relationships and therefore imbed the assumption the future will behave much as the past. That assumption usually fails miserably as relationships break, liquidity disappears and various rocket scientists and self-proclaimed Masters of the Universe are reminded unceremoniously it is quite possible to lose on both legs of a spread.

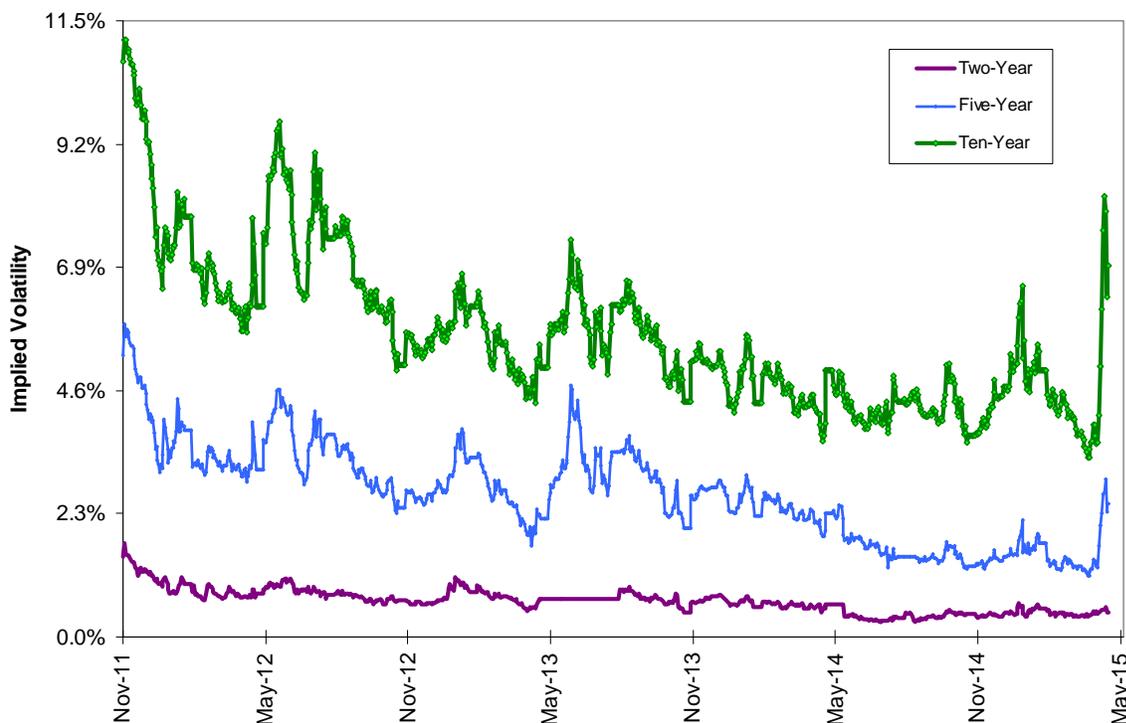
### Bund Volatility

The suppression of market signals by central banks since the financial crisis has poisoned a lot of these statistical relationships as short-term interest rates have been pinned to 0%, yield curves have been flattened and currencies have been devalued competitively.

Once new information comes into the market, such as there is a limit to investors' willingness to accept negative yields in German debt, we move into the broken relationships/vanishing liquidity phase. The jump in one-month 50-delta implied volatilities for futures on the two-year, five-year and ten-year Bund contracts during the recent selloff has been the most abrupt since the November 30, 2011 expansion of global swap lines eased the Eurozone sovereign debt crisis. The increases have been highly maturity-dependent with the Bunds' implied volatility increasing the most.

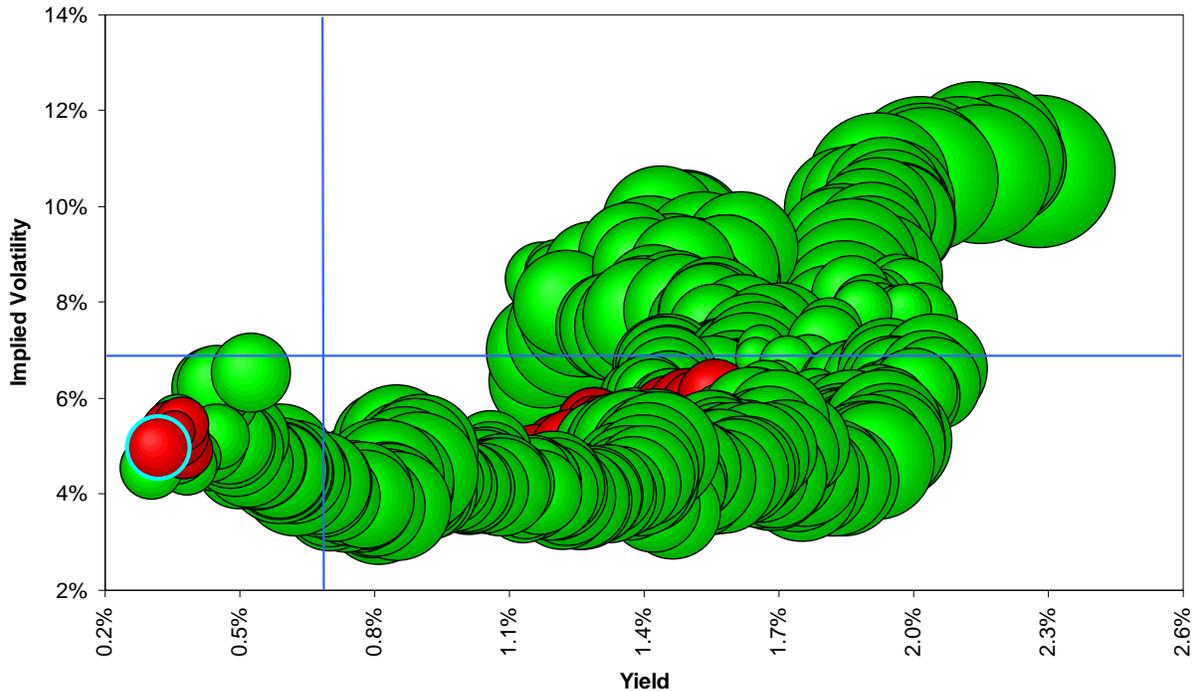
While the rate of increase has been quite notable, the ordinal level of implied volatility for Bunds was higher just prior to the July 2012 "whatever it takes" statement by Mario Draghi and Bobl implied volatility was higher during the May-June 2013 taper tantrum. However, both of those episodes occurred well before the European Central Bank embarked upon its own QE program and well before Basel III forced an unnatural flight into sovereign debt. The downward shift in yields to negative levels for all but the Bund has been unique.

### One-Month 50-Delta Futures Implied Volatilities



What do these ordinal volatility and starting yield levels imply for the prospective returns on 7-10 year benchmark Eurozone notes? Three month-ahead returns are mapped as a function of these two state variables. Positive returns are depicted with green bubbles, negative returns with red bubbles; the diameter of the bubble corresponds to the absolute magnitude of the return. The last datum used, from February 12, 2015, is highlighted; the current combination of conditions is highlighted with a blue bombsight.

**Three Month-Ahead Returns As Function Of Yield And Implied Volatility  
Seven-Ten Year Notes**



The environment has shifted strongly to the northeast over the past three months as both yields and implied volatility have increased. The present environment is out of the range of observation since the world changed at the end of November 2011. Should an investor look at this map and conclude, “Well, most three month-ahead returns are positive, so what do I have to lose?” No, that would be succumbing to the inadequate-sample bias created by three and one-half years of market suppression. The reality is past performance in the policy world in which we still live is providing us no information at all.

The only operative information we have know is the point at which risk-averse bond buyers will walk away from negative-yield instruments. We have no information as to when yields will prove sufficiently attractive for new buyers.