RATELAB

MERRILL LYNCH US RATES STRATEGY

VALUE CONCEPTS FROM THE ML TRADING DESK

The Optimal Transactions to Fill your Volatility Risk Bucket

In December of last year, we published a RateLab analysis of the relative cheapness of *Yield Curve Options*. Last month we published a table thumping prediction that *Implied Volatility had reached its nadir*. We have also written at length about *Forward Volatility*. The transactions below, which we strongly recommend, synthesize these ideas to create the best ways to **buy volatility as an asset class**. As described below, they provide the most efficient execution available with the least management cost. Although you certainly are paying a small-embedded structuring fee, the virtual elimination of "delta hedging", "strike location risk" and "skew maintenance" more than compensates. Finally, you are entering into these buy Volatility trades at levels that are still near the all-time lows in Implied Volatility.

Our recommendations:

1) Pure Volatility Bonds
2) Double Look-Back Bonds
3) Yield Curve Bonds

Executive Summary:

The concept of **buying volatility** is relatively straightforward. Most people would define it as purchasing assets that will outperform if underlying risk vectors (such as interest rates or stock prices) start to change a great deal from day to day. The most common execution is to purchase options; usually at-the-money straddles. However, buying volatility in this manner brings along a lot of unintended baggage; this includes non-linear cost/benefit, strike risk, timing risk, and rollover risk. One usually tries to mitigate these by delta hedging, but this often just introduces more problems as well as absorbing huge amounts of management time. The three recommendations above allow you to purchase a series of twenty quarterly options (five years total) for a fixed price set today. Each of these quarterly options has a levered linear payout function (based upon your chosen risk vector) that can never be negative. Moreover, each quarterly option is struck at-the-money "spot" at the start of the quarter. As such, there is no delta hedging involved. Furthermore, the trade can be unwound at any time before the stated final maturity. The market value will strongly correlate to the current price for generic Swaptions. Each quarter you will have risk exposure struck at the current market level for your chosen risk vector. This defined cost payout function cannot be replicated via standard vanilla options. Finally, the absolute low level of Implied Volatility and relatively flat shape of both the Yield Curve and Volatility surface has created nearly the cheapest entry point on record for our recommended transactions.

The Trades in "Large-Type":

1) **Vanilla Volatility Bond:** The buyer pays par for a 5yr non-call maturity *Structured Note*. He receives a coupon equal to 13.5 times the absolute difference in basis points between the CMS 5yr yield on the first day of the quarter and the last day of the quarter for twenty quarters with the first quarterly "start date" set to the trade date. 13.5 is the *leverage factor* and is market determined on the trade date. [For example, if CMS5yr started the quarter at 4.90% and ended at 4.20%, the bond owner would receive an annualized coupon 9.45% or about 2.36% for the period.] The lower the market Implied Volatility on trade date, the higher the *leverage factor*. The *leverage factor* is fixed for the full term of the bond. As such, if Implied Volatility rises, the value of the bond increases.
2) **Double Look-back Bond:** Similar in flavor to the Volatility Bond, this *Structured Note* is purchased at par and pays a single coupon at maturity equal to the *leverage factor* times the difference between the absolute high yield and the absolute low yield during the term. As such, you capture the full-realized volatility; we refer to it as "The Ultimate Market Timer" !!!

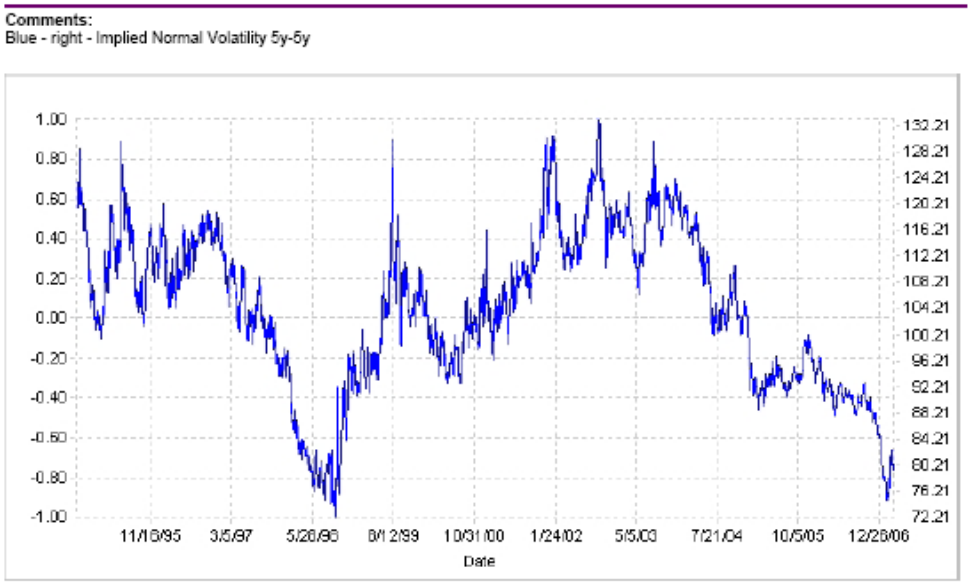
3) **CMS Spread Volatility Bond:** Similar to the Volatility Bond, this *Structured Note* pays a *leverage factor* times the absolute difference between the starting and ending shape of the yield curve. [For example, for a five-year non-callable term, the buyer would earn a coupon of 25 times the change in slope between the CMS2yr rate and the CMS30yr rate. If the slope were +27bp at the start of the period and +62 at the end, then the owner would receive an annualized coupon of 8.75% or about 2.19% for the period.]

NOTE: All of these Notes can be purchased in an off-balance sheet Swap format.

Critical Analysis:

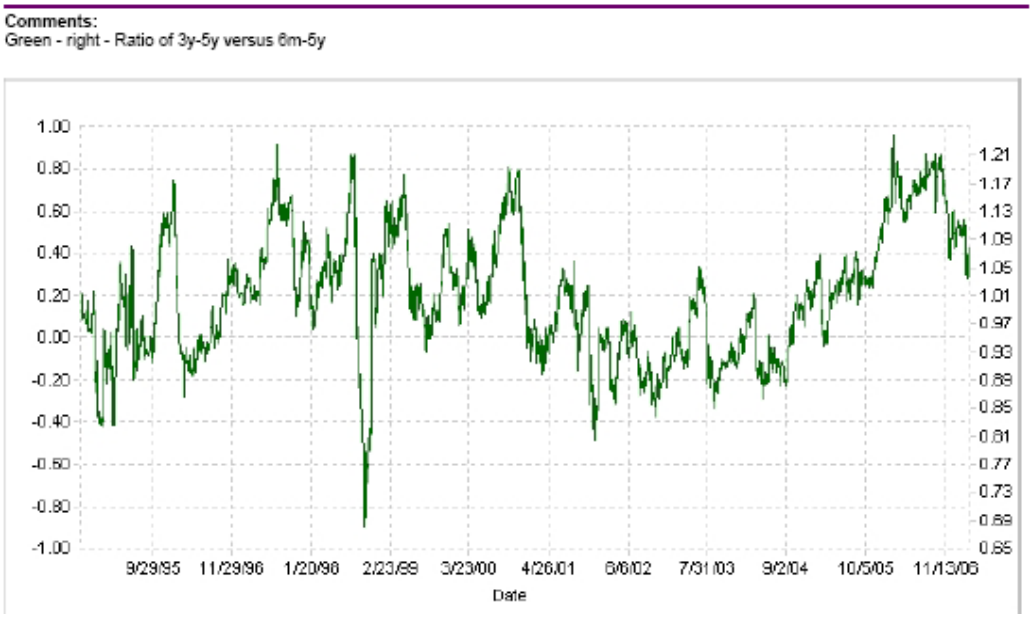
Implied Volatility is near the all-time lows…..

As shown by the –Blue line- below, the Implied Normalized Volatility (Nvol) for 5yr into 5yr swaptions, at about 80, is near the lowest levels ever recorded. Since all the trades noted above focus on buying volatility, this is most critical concept. Although we prefer to ignore the MBS ReFi induced Vol spike from 2002 to 2004 as a non-recurring situation, you can see that even during the more "normal" period of 1994 to 2001, 5y-5y Implied Nvol averaged over 100. (…..and in case you were wondering, Realized Volatility averaged about the same level.) Since these trades are levered to both Realized and Implied Volatility, there is a great deal of upside if we ever revert back towards long-term levels.



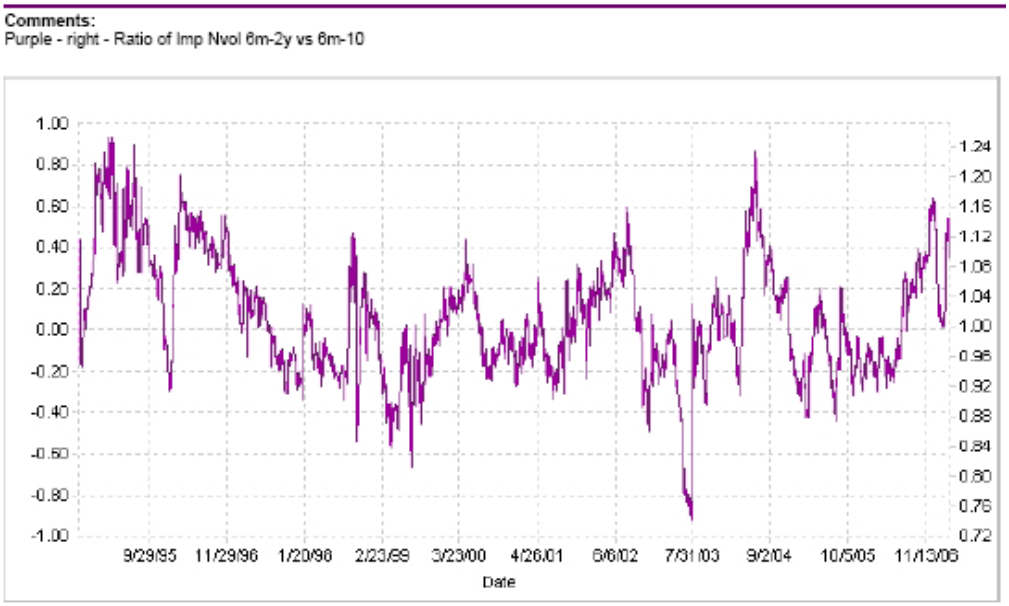
Flat Volatility Surface reduces cost of Forward Starting Options……

The key attribute of all these *Structured Notes* is that they are pure investments in Volatility with little management required. This is accomplished by resetting the strike levels at the beginning of each period. Effectively, one is purchasing a series of *Forward Starting* at-the-money "spot" options. Similar to forward interest rates that are determined via the slope of the Yield Curve, the value of *Forward Starting* options is dependent upon the shape of the Volatility Surface. As noted by the -green line- below, the shape of the Volatility Surface, as measured by the ratio of 3y-5y Nvol and 6m-5y Nvol, is now nearly flat. This means that the cost for *Forward Starting* options will be relatively close to those for Spot Starting options.



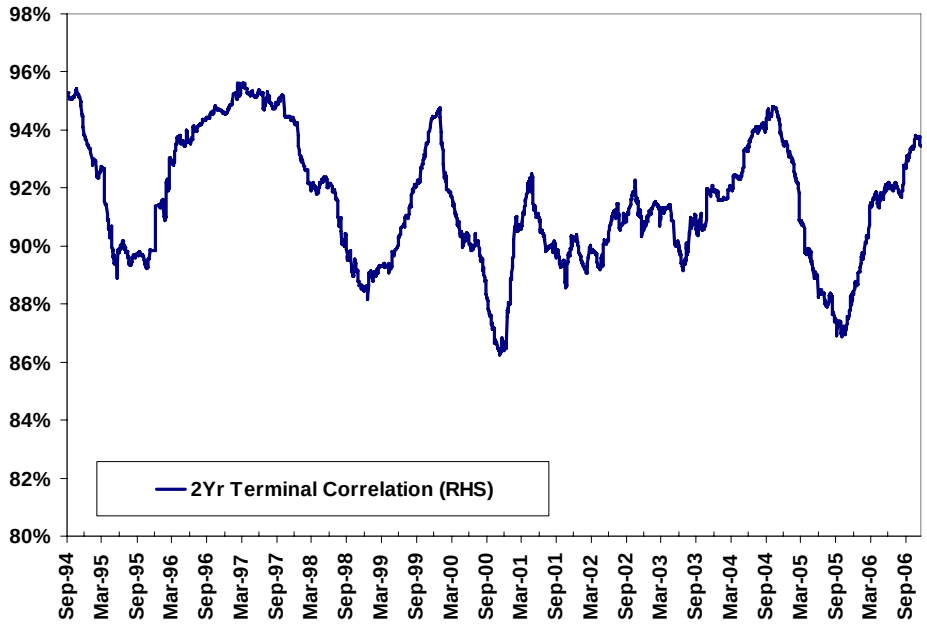
Increasing Yield Betas are a precursor to higher Volatility……..

When the FED is on hold or Fundamental Economic conditions are extremely stable, one tends to see short-rates and long-rates move in parallel. Moreover, these parallel movements tend to be smaller (less volatile) than normal. Once the FED is perceived to be near action or Macro Economic conditions start to shift, all rates become more volatile and the shape of the yield curve starts to change. One can monitor the market's forward view via the –purple line- below, which measures the "beta" or ratio of 6m-2y Nvol versus 6m-10y Nvol.



Correlation, the Key Driver of Spread Volatility…..

As noted above, when stability abounds with the FED on hold, all rates tend to move slowly and synchronously. And when the FED becomes active or Macro Economic conditions start to shift, this situation reverses. Below -the Blue line- is another method to track these consequences. This is a measure of the correlation of the CMS2yr rate versus the CMS10yr rate. Eyeballing all the preceding charts, you will notice that, in broad strokes, Volatility tracks Correlation. Our favorite trade, the CMS Spread Volatility Bond, derives its valuation from the Correlation of your chosen rates. With Yield Curve Correlations near the highest ever (they cannot go above 100%), the *leverage factors* for these bonds will also be near the highest levels ever attainable.



Conclusion: Who should be a buyer of these bonds…….??????

Insurance Companies are exposed to significant non-linear event risk on both the asset and liability sides of their balance sheets. As described in previous RateLab publications, there is a strong correlation between Credit Spreads and Implied Volatility. Since Insurance Companies are large owners of both corporate bonds and commercial real estate, these Volatility Bonds will provide significant hedge value during turbulent times without the bothersome management of vanilla options.

Commercial Banks are large owners of callable bonds via their MBS and GSE holdings. Moreover, Commercial Banks are also the owners of most of the largest MBS Servicers. As such, they have material risk exposure to both Implied and Realized Volatility. Volatility Bonds are a more efficient way to stabilize both the Income Statement and the Balance Sheet.

ERISA Money Managers who have derivative restrictions should find value in Volatility Bonds. Not only will these bonds add many arrows to your quiver, but also the low management nature of the assets should be appealing to even Money Managers who are derivatives approved.

Hedge Funds often prefer to manufacture their risk exposure one piece at a time. Moreover, they are remiss to pay a structuring fee to create a "payoff" they can construct themselves. However, as noted at the outset, the *payout profile* embedded in these bonds cannot be created via a package of vanilla swaptions. As one of the world's largest derivatives dealers **(ML was named the 2007 Derivatives House of the Year by Risk Magazine)** with a huge diversified portfolio of risk, Merrill Lynch can create these various *payout profiles* cheaper than any single investor would able to. As such, even sophisticated traders will find value in these bonds.

Please call your Merrill Lynch representative for a detailed PowerPoint.

ML US Rates Strategy
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