# Volatility And The Wild Of The Call

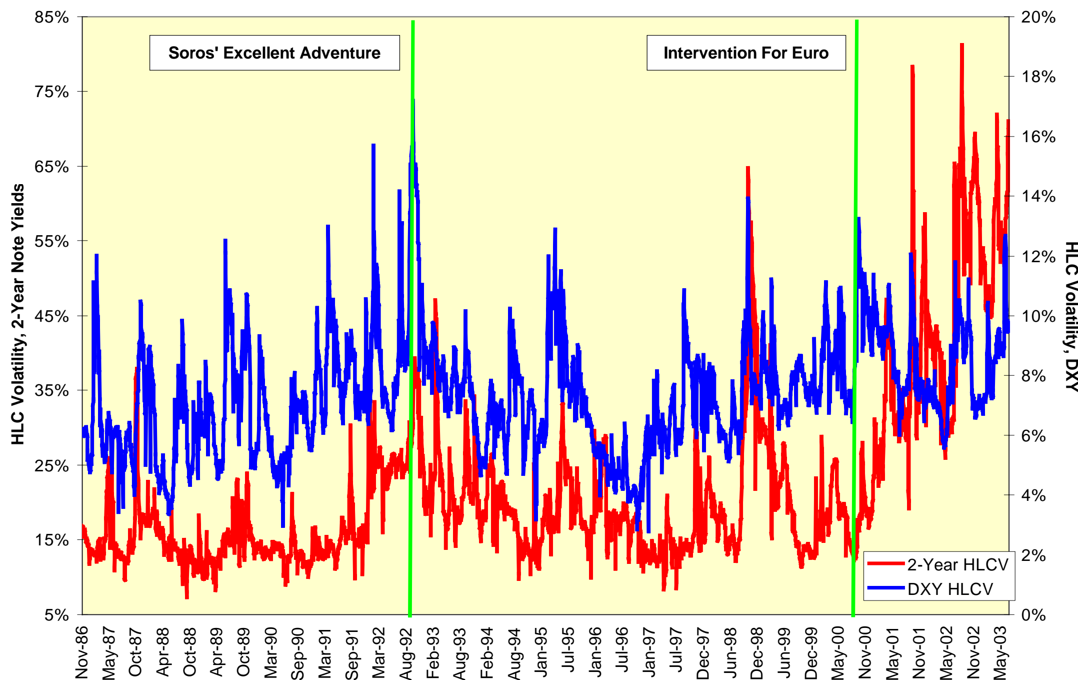
Several aspects of financial markets over the past few weeks have underscored the value of analyzing markets in terms of options. These include obvious developments such as the big jump in convertible bond issuance - convertibles can be viewed as a bond plus a call warrant - and the persistence of the VIX at the low end of its historic range. They also include, however, the likely end of the Federal Reserve's rate-cutting spree and its impact on the dollar, the shape of the yield curve, mortgage securities and on the stock market itself.

The key to option pricing is volatility. This word has two very different meanings. Historic volatility is a measure of the actual variance of returns in a market over a period of time. Implied volatility is the option market's price of insuring future uncertainties. The volatility presented immediately below is a variation of historic volatility that incorporates a market's intraday ranges as well as intraday changes; it will be referred to as the HLCV (for high/low/close volatility).

**Raising The Ante**

One of the common reasons given for the yield curve having a positive shape is bond investor demand for protection against inflation's effects over time. A corollary to this so-called liquidity premium, and one that takes on increasing importance as the foreign share of U.S. government debt nears 40%, is that foreign investors demand protection against dollar devaluation. If this is so, we should see increased HLCV in the U.S. Treasury market and an increasing steepness of the yield curve, all else held equal, when the dollar's HLCV increases.

A history of HLCVs for the DXY and for two-year note yields can be demarcated by two critical events in the foreign exchange markets. The first was the collapse of the EMS bands in September 1992; this was George Soros' massive winning bet that the Bank of England would not maintain high interest rates to keep the pound pegged to the deutsche mark.

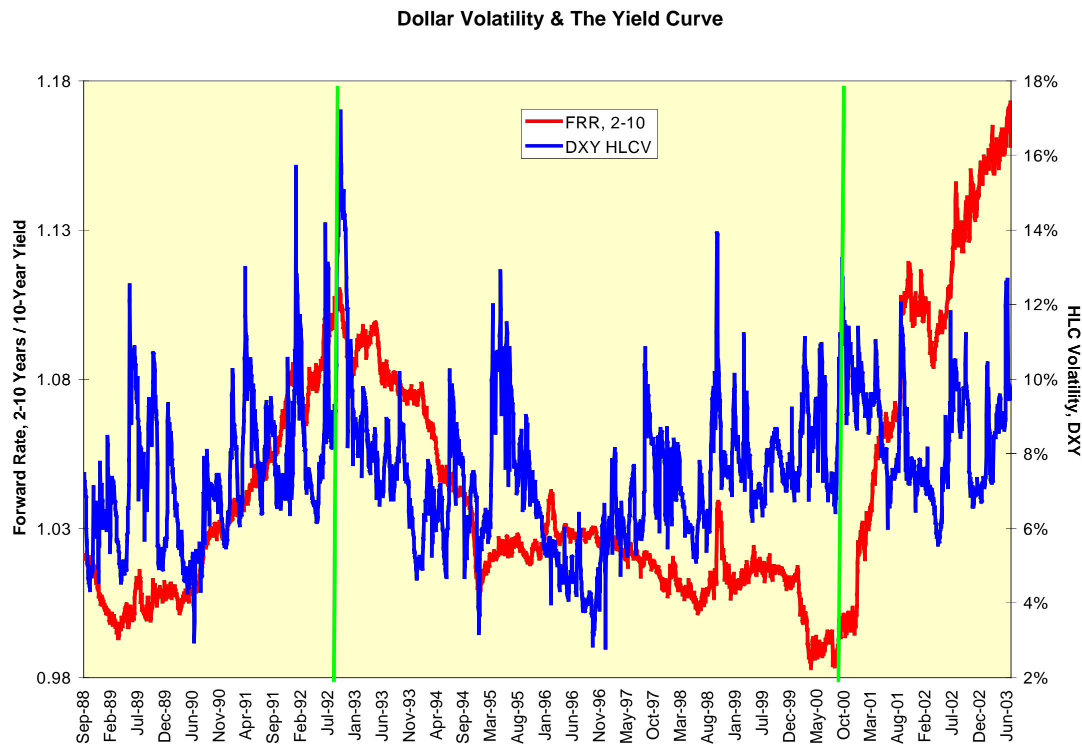



That episode cost European central banks about $60 billion of their taxpayers' money and convinced European politicians that there had to be a better way. The drive toward the euro, envisioned in the February 1992 Maastricht Treaty, strengthened out of the collective memory of that debacle, and it is unlikely that anyone in Europe will ever want to turn the clock back to that period.

The second development came in late September 2000. As the U.S. stock market started to come off its unsuccessful attempt to punch through the March 2000 highs, the euro was getting walloped. A massive multilateral intervention on was launched on September 22, 2000, and the Wilshire 5000 has never been higher by one tick. Even though the dollar's HLCV fell, the HLCV of the two-year note has never been lower than it was more than three months before the Fed's first rate cut.

**Volatility And The Yield Curve**

The same two events bracket two significant changes in the yield curve as well. We can measure the steepness of the curve by taking the ratio of the forward rate from two to ten years, the rate at which you can lock in borrowing for a ten-year period starting two years from now, to the ten-year rate itself. The looser the Fed, the higher the forward rate ratio.

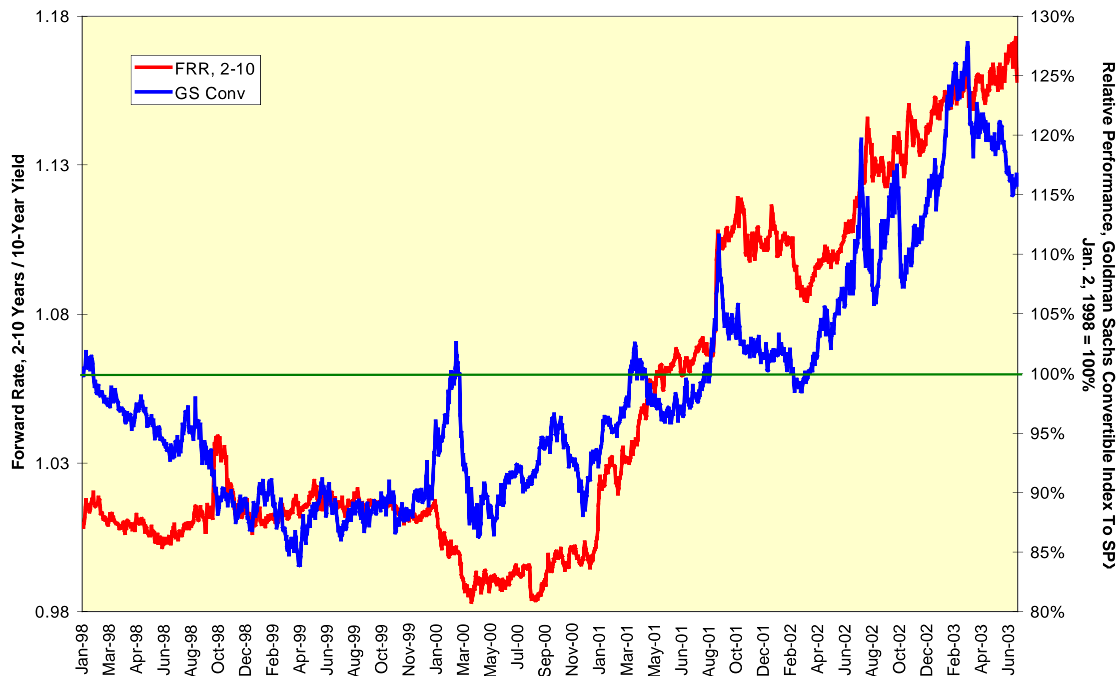



Once the high DXY HLCV ended in September 1992, the FRR began to fall even though the Fed remained quite accommodative until February 1994. The FRR continued to fall with minor exceptions throughout the 1990s bubble, which is not consistent with the oft-cited charge that the Fed aided and abetted the stock market spree.

After September 2000, the FRR shot higher in an unprecedented fashion and - here's the cost of bad policy - as long rates failed to follow short rates lower. One reason for the failure of long rates, the only ones that matter for capital investment, to fall was the renewed risk to foreign investors that their dollar holdings would be devalued.

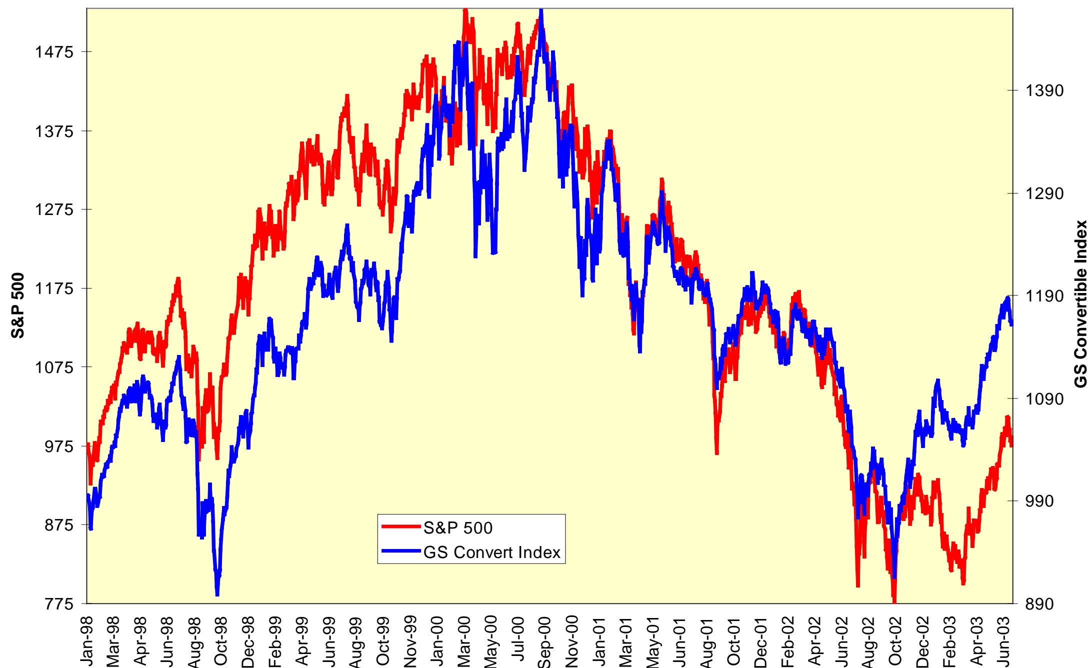
**Stock And Bond Volatility Together**

The relative performance of the Goldman Sachs/Bloomberg U.S. Convertible 100 index to the S&P 500 is a useful proxy for the volatility market and has correlated closely to the FRR since its inception. This is more than spurious correlation: As stocks fall, volatility tends to rise, which both increases the value of the call option embedded in the convertible bond drives money into short-dated notes, thereby steepening the yield curve.




Throughout the bear market, rallies in the relative performance measure for convertible bonds tended to lead sharp breaks in the S&P 500; this was true in March 2000, February 2001, August 2001 and June 2002. Here again, this is more than spurious correlation: Lower volatility cheapens the convertibles relative to the stocks.

However, the recent rally in relative performance peaked in March 2003, and this was followed by a very strong stock market. Is something different this time? That's always a dangerous suggestion. Viewed on an absolute as opposed to a relative basis, convertibles lagged behind stocks during the bubble.




Once the bubble burst, many of these issues which had been at or near their conversion price fell just as hard as their underlying stocks. These so-called "busted" issues were like caterpillars without hope of ever becoming butterflies. The divergence of the trend lines since October 2002 may simply be a result of investors buying cheap volatility from a market exhausted on the downside with the Fed's cheap liquidity.

**The Bottom Line**

The recent turmoil in the currency market and the Fed's largesse are keeping the yield curve inordinately steep as foreign investors demand compensation for currency risk. Excess liquidity, the dissipation of many of 2002's negative events and a series of government policies with the apparent goal of pushing stocks higher helped lower stock volatility and make convertible bonds attractive. These instruments will help keep many marginal issuers and their stocks alive.

Treasury bonds themselves are unattractive at present, and may become even more unattractive as mortgagees like Fannie Mae and Freddie Mac shed these non-callable bonds purchased as prepayment protection. With the Fed unlikely to raise rates for a while, the yield curve will remain very steep.

In this scenario, stocks will outperform bonds for a short time. But, this is a cyclical bull market within a secular bear market. At some point the rise in bond yields and the preservation of excess capacity could combine to re-enact October 1987's convergence of stocks and bonds.

Needless to say, volatility will rise then.