



Musings from Harley Bassman.

THE CONVEXITY MAVEN

Value Concepts from the BAS/ML Trading Desk
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"Paying Nickels for Dimes"



OK, this is not quite true, I have not created some type of alchemy to spin gold from straw like Rumpelstiltskin; but a trade has come into view that is as good as you will find in the somewhat efficient USD interest rates market.

As we have often noted, there is an unusually strong correlation between the shape of the Yield Curve and Implied Volatility. This is because an ultra steep (or inverted) Curve implies great uncertainty. Both the "Chicken" and "Egg" people can agree that whether Forwards grind towards Spot or Spot prices head towards the Forwards, the greater the difference, the greater potential for absolute change. And since Implied Volatility tends to be a function of uncertainty, Implied Volatility tends to rise with the greater risk embedded in a super steep (or inverted) Curve.

Using our standard graph to demonstrate, the **-red line-** on the right is the Sw10yr rate minus the Sw2yr rate while the **-blue line-** on the left is the Implied Volatility of a 1yr into 10yr swaption.

Red - right - Sw10yr minus Sw2yr
 Blue - left - 1y-10yr Implied Nvol

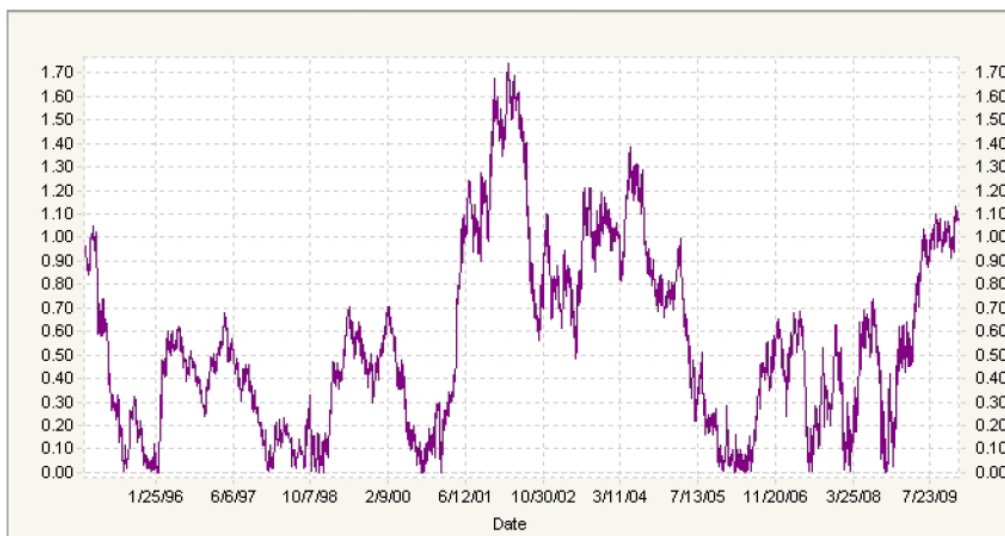


All charts, unless otherwise noted, are sourced from BAC/MER data

What is anomalous and interesting is when the level of Implied Volatility starts to diverge from the shape of the Curve. Presently, you can see how this is starting to occur. Unfortunately, there is no easy money here. Although the 1yr-10yr Nvol has declined, it is still 23% above its long-term average. This does not give me comfort in making an option purchase in this sector of the market.

However, the Curve to Volatility relationship in short maturities is interesting.

Absolute value of the Spot Sw1yr vs One year Fwd Sw1yr divided 1yr-1yr Imp Nvol



The **purple line** above is the ratio of the absolute value of the slope of the Spot Sw1yr to the one year Forward Sw1yr versus the Implied Volatility of a 1yr-1yr swaption. The Curve slope, at about 132bps, is the steepest portion of the Yield Curve. Meanwhile, the Implied Volatility of 1yr into 1yr at 120Nvol is one of the lowest points on the "grid" and is only 7% above its long-term average. Together, their ratio of 110% is 1.4 Standard Deviations above the average, a level only exceeded a few times in the past.

However, I prefer to look at it with a slightly different spin. I like to compare the pure carry value, a.k.a. the "roll down" versus the option cost. The **orange line** below is an approximation of this ratio over time.

Slope of Sw1yr minus One year Fwd Sw1yr divided by 1yr-1yr ATM receiver swaption



My simple trading rule is that whenever the ratio of carry to option cost nears three to one, I buy the option. At the current ratio of 2.8 to 1.0, it is now time to execute this trade. Specifically, buy the 1yr-1yr receiver struck at-the-money and don't hedge it.

Now we can present many fundamental reasons to do this trade that revolve around how the poor economy will delay the FED's ability to raise rates and drain the massive liquidity in the system. Moreover, I could try to provide technical reasons why the 3 to 1 ratio is a mechanical "buy signal". However, I prefer the more simple "brain dead" analysis.

Let's assume I have stuck a needle in my ear and removed half of my brain, certainly a delicate operation. So I now have no idea what the FED might do. As such, I can only assign a coin flip's odds of 50% to whether the FED raises

rates this year or not. This is a straight 2 to 1 bet. However, if the FED does not raise rates, I will earn the full roll up with nearly a 3 to 1 payoff. Hhhmmmm.....I can take a 2 to 1 risk versus the potential to earn a 3 to 1 return; I need to do these types of trades all day long.

Not convinced, let's spin this idea a different way. Many people acknowledge that the "reds" are cheap considering the economic environment. Moreover, they believe that the 1yr-1yr Implied Vol at 120Nvol is still quite rich with a FED on hold. So they have suggested selling the ATM payer swaption. Let's compare these two ideas.

The person who sells the ATM payer at 47bps can at most earn this premium. Alternatively, the buyer of the receiver can earn a net 85bps (132bp of roll minus the 47bps option cost) with a stable FED. Moreover, the put seller has exposure to unlimited terminal loss as well as some nasty mark-to-market risk if some financial official sneezes at the wrong time during a speech. Contrast this to the limited loss risk profile of the option buyer. If the option selling front-end bulls thought about it, why would they position themselves to earn a lower return while incurring greater risk if their view is ultimately correct ?

This is the derivation of the "three to one" rule: Functionally you are long convexity (gamma) with positive carry (earning theta), a truly anomalous yet valuable trading position. Now please take that needle out of my ear.

Service Notice: I now reside on our proprietary trading desk. All comments are mine alone and do not reflect the firms official views. Most importantly, this is not research. Moreover, I will frequently, but not always, have positions similar to those described in my musings.

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