RATELAB

MERRILL LYNCH US RATES STRATEGY

Value Concepts from the BAS/ML Trading Desk
December 7, 2009

Holiday Stocking Stuffers – 2009

A Portfolio You Can Live With

Come this time every year, we at the RateLab publish a list of "Investments" that we think will do well. These tend NOT to be *nips to blips* RV trades, but rather longer term notions that capitalize upon either our strongly held themes or the *weak hands* of other traders. Unlike last year-end, where every market was at some sort of five Standard Deviation extreme, ideas for the coming year will not be as exciting. Nonetheless, we believe they will still produce both Absolute and Relative outperformance.

To repeat our Mantra:

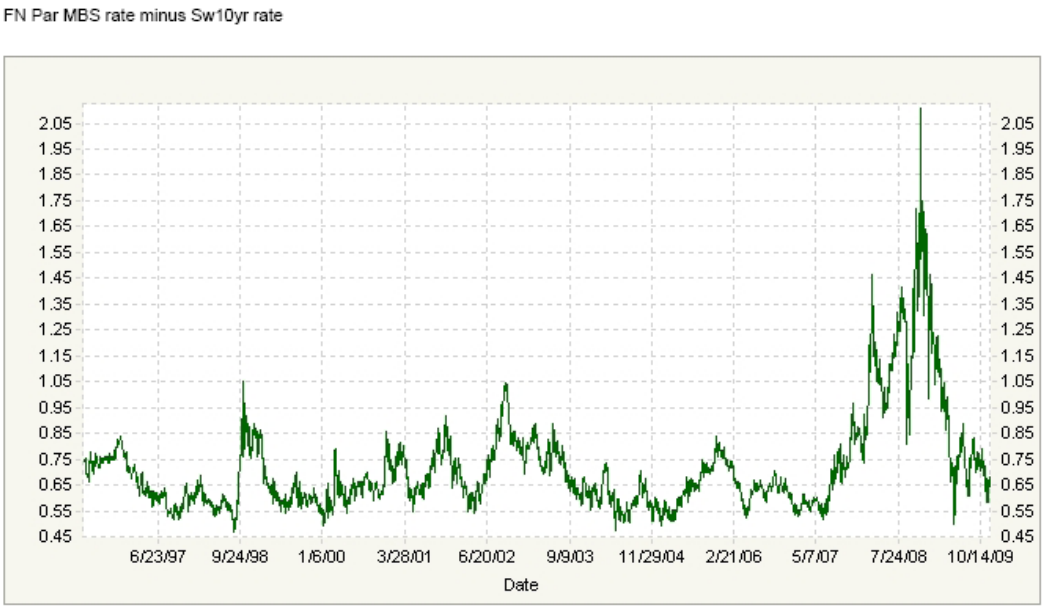
1) Whatever MUST happen, WILL happen.
2) In a debt crisis, inflation is the ONLY solution.
3) The FED + USTreasury can create inflation.
4) As such, there WILL be Inflation.

In this light, we will remind you that whenever you hear someone whisper to you that "It is different this time", we urge you to grab your wallet and run. It is never truly different, only the flavor and the timing have been altered. Concurrently, we will note that "Pigs can fly, when shot out of a large enough cannon". As such, the ability of the FED+USGovernment to simultaneously print money and lower interest rates can only end in tears. If this were NOT the case, then Zimbabwe would be a paradise and the Weimar Republic would still exist. But enough ranting, let's look at this year's Holiday Stocking Stuffers.

CMM versus CMS

Detailed in: *RateLab – "The Nessie, Yetti and CMM" February 12, 2009*

Faithful readers know that this is our best idea for 2010. In a nutshell, one can buy the Spread between the Par MBS rate and the Sw10yr rate one year forward at near 40bps. As shown by –the green line- below, this spread has only breached 50bps a few times for as long as we have data. Since the Spot spread is presently in the mid-60s, this simple structure allows you to be short MBS with positive carry (when the standard definition of carry is "Forwards roll to Spot").

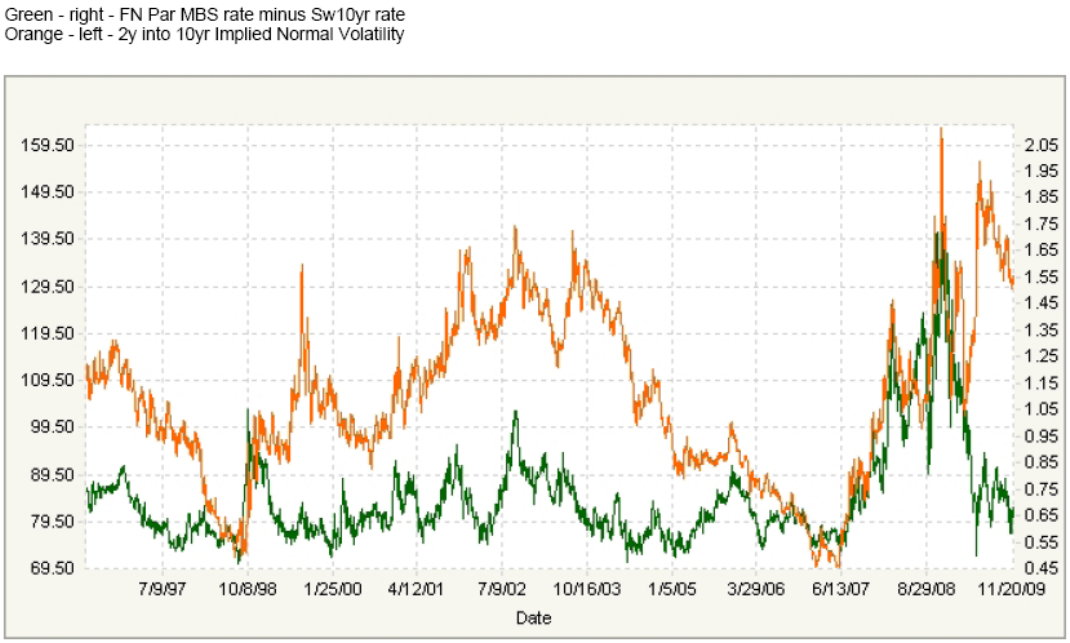


All charts, unless otherwise noted, are sourced from BAC / MER data

The key to conceptualizing this trade is to understand what exactly this green line represents. The credit risk in both the MBS and the Swap is functionally similar, as such, this spread is mostly a measure of the cost of the embedded prepayment option. (Call us for a discussion as to why we use the Sw10yr instead of the Sw7yr which is closer to the mathematical spot Duration of a MBS.) Since a callable bond should always trade cheaper (higher yield) than a non-callable bond, this spread is always positive.

To put some scale to this concept, look at the next chart. The -green line- on the right is identical to the chart above. The –orange line- on the left is the Implied Volatility of a 2 year into 10 year swaption. Notice how the wides in the spread match the highs in Volatility. More importantly, notice how the few times this

spread contracted to near 50bps was when the Implied Volatility was either at a local low or was declining sharply from a local high.



The long-term average of the Spot spread is 72bps. The anomaly that makes this trade idea so compelling is that the Spot spread is presently well below this long-term average while the current Implied Volatility of 132Nvol is 26% above its long-term average of 105Nvol. Either Implied Volatility must decline dramatically or this spread needs to widen to 80bps to 90bps. What is driving this disconnect is the FED's $1.25 Trillion MBS purchase program.

This trade is the best way to bet that MBS spreads normalize after the FED program is finished on March 31, 2010. Moreover, unlike executing a spread widener in the cash market where one must pay a substantial negative carry while waiting, this trade carries positively.

Finally, since Volatility tends to rise during times of sudden extreme stress, aka Event Risk, we view this trade as functionally long Convexity. After all, when was the last time you saw spreads tighten during a crisis ? So as we noted in our original write-up, we see this trade as long Convexity with positive carry.

Sell CMM versus Buy 10CMS, one year forward, at any spread below 45bps. However, it is possible to execute between the low 40s to high 30s if we are given a resting order.

Sell the Skew

Detailed in: *RateLab – "No Bad Bonds, Just Bad Prices" October 27, 2009*

Skew is a measure of the difference in the Implied Volatility of an At-the-Money option versus an Out-of-the-Money option. This skew, often called "the smile", reflects many competing risk components. Skew tries to capture not only what the a-t-m Volatility will be at a certain rate level, but also the speed at which the market will move there. Moreover, there is also a core supply::demand function that can overwhelm even a consensus view of the Volatility Surface.

Since the FED started expanding its balance sheet (printing money) and the USGovernment went down the Keynesian path of using Fiscal Policy as an economic "pump primer", MacroEconomic investors have increasingly demanded products that would profit from vastly higher interest rates. The product of choice has been the CMS interest rate cap.

Simultaneously, MBS Servicers have had to restructure their convexity hedges to reflect the fact that the entire MBS universe is now above Par. With the Convexity Vortex (*See RateLab – January 11, 2008*) now well below the market at a higher rate level, these hedgers have needed to purchase o-t-m Payer swaptions in order to mitigate their extension risk.

Five year into Ten year Payer Swaptions

	ATM	+100bp	+200bp	+300bp	+400bp	+500bp
October 2008	*110nv*	*110nv*	*114nv*	*118nv*	*123nv*	*128nv*
October 2009	*122nv*	*133nv*	*145nv*	*159nv*	*173nv*	*187nv*
	+11%	+21%	+27%	+35%	+41%	+46%

The combined buying of Macro speculators and MBS hedgers has driven the cost of o-t-m put options to record levels. In the –green chart- above, notice how the relative Implied Volatility of an a-t-m option versus a deep o-t-m option has risen by almost 50%.

While there are many ways to try to isolate this excessive skew, we like structures that minimize the duration (direction) and gamma (convexity) components.

Our BEST Idea for selling OTM Payer Skew

Buy 100mm 5yr – 10yr payer K = 6.25% 463bps 135Nvol 24.4% Yvol
Sell 100mm 5yr – 10yr payer K = 7.75% 281bps 154Nvol 24.9% Yvol
Sell 100mm 5yr – 10yr payer K = 9.40% 182bps 178Nvol 25.9% Yvol

Zero Cost at a 5.00% Forward Rate

Delta exposure: Effectively zero, depends upon model used
Gamma exposure: Short 2mm 1yr – 10yr straddles
Vega exposure: Short 30mm ATM 5yr – 10yr straddles

Carry: Assuming flat roll along all surfaces, this trade marks up $400k in one year.

Rate risk: Assuming vols remain unchanged, trade marks down $500k on an instant +200bp rate rise, but mark up a net $600k if that occurs over one year.

Vega Risk: The only initial "Greek" risk is short Vega. The last time we had rates above 8% was in the 1980s. Examining CBOT option data from that period reveals that Implied Volatility ranged from 110nv to 140nv and rarely exceeded 160nv. As such, a "high strike" sale at 182nv seems safe if we reach that strike.

GNMA Reverse Mortgage Floaters

This is a relatively new product the Government is supporting as a way to provide advantageous financing to the elderly. The underlying loans in this security sound like an investment you might ordinarily avoid: Negative Amortization Home Equity Loans, or in street parlance, NegAm Helocs. To take the edge off, these bonds have been dubbed Reverse Mortgages, or more formally, Home Equity Conversion Mortgages (HECM).

No matter, the key concept here is that subject to following HUD guidelines, the FHA will insure these loans and issue them as a GNMA. Once securitized, Wall Street can pool these bonds and via the standard CMO Remic process create GNMA Floaters. Presently these Par priced bonds accrue a monthly interest payment at Libor+100bps with a 13.5% cap. Compare this to your standard GN CMO "strip floater" with a 7% cap that comes out at Par priced at Libor+50bps. If you make this an apples to apples trade by modeling the cap at 13.5% instead of 7%, you would be lucky to achieve Libor flat. This bond is a tad quirky because the coupon is paid via principal accretion and the prepayments can be a bit lumpy. But every core Government portfolio should have some exposure to this new product while there is still a "novelty premium" attached.

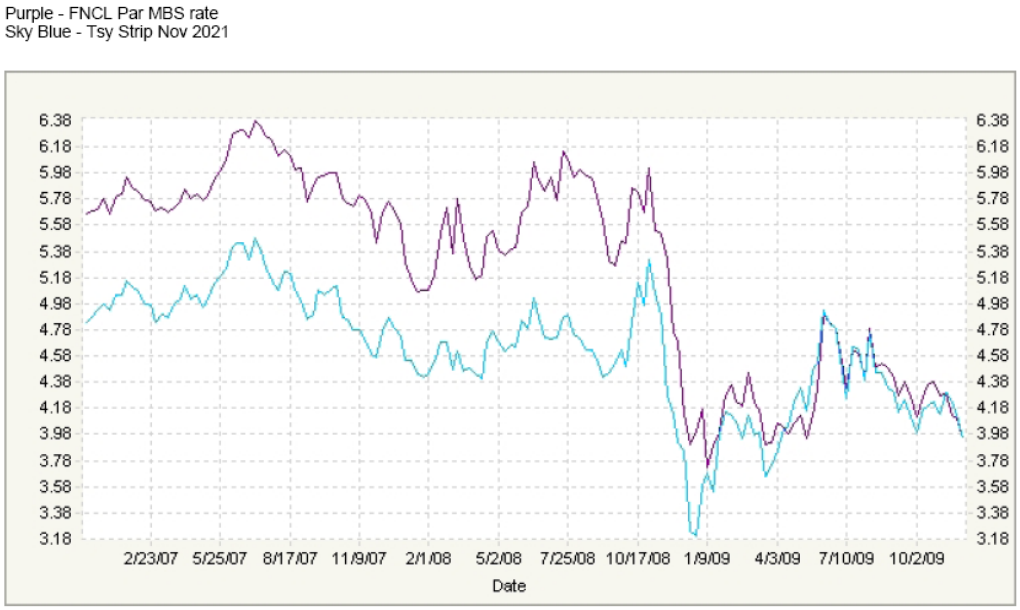
Sell MBS versus Buy Treasury Strips

One of the overlooked consequences of the FED's MBS buy program combined with a near record steep curve is that Treasury zero coupon bonds (Strips) now yield about flat to Par MBS bonds. This is strange in so many ways.

	FN 4s @ 100-06	Nov 2021 Strip @ 4.00%
Yield	@ 6cpr = 3.97%	62.25 = 4.00%
Dv01	5.1 to 5.6	7.30
Average Life	@ 6cpr = 10.2yrs	12yr Final
Down 100bp	104-18 up 4-12	70.02 up 7.77
Up 100bp	94-12 dn 5-26	55.37 dn 6.88

Although a bit model dependent, we chose to compare FN 4s to the November 2021 Strips. Despite indisputably better credit and the fact that the convexity profiles curve in opposite directions, the Treasury actually yields MORE than the MBS bond.

The chart below shows the –purple line- as the FNCL Par MBS rate while the –sky blue line- is the yield of the Strip Nov 2021. Notice how soon after the FED announced its QE program, the two yields started to converge.



To isolate the yield differential, the –pink line- below is the Yield spread between the two bonds. We should note that these two charts slightly tip the relative performance in favor of the MBS because we use a constant rolling MBS bond yet the Strip is a single security. To be fair we should use a constant 12 year Strip (but that requires tech skills above our pay grade).

An additional benefit is that the Strip holding will earn the true stated yield while the MBS holder will incur reinvestment risk as P+I is returned. This trade also has a huge flattening bias since MBS tend to do worse with a flatter curve as the CMO bid diminishes. This is a great side benefit since the Curve is near a record steep and the next big move must be to a flatter Curve.

Would we recommend this to a levered RV account; probably not since it could take quite awhile to achieve normalization. However, Index accounts should take this opportunity to underweight MBS versus Strips to add massive positive Convexity to their portfolios without any yield give up. To offset the Duration/Cash gap, we recommend selling options to monetize the Convexity advantage and flatten out the Dvo1 difference.

Buy the CMBX Credit Curve

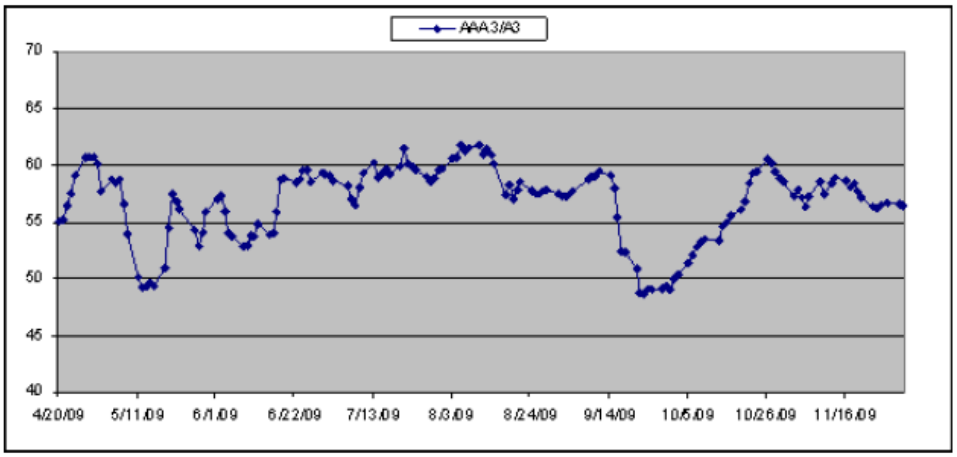
The big Credit story of the fourth quarter has been the slow wait for the other shoe to drop in the CMBS market. Although the front page stories have focused upon the potential celebrity default of the Stuyvesant Town complex, the larger

risk to the market is the pending defaults of the bread and butter middle tier that populated the CMBS deal machine from 2002 to 2007.

Although we are not recommending an outright trade like we did last year, we do like buying the Credit Curve via buying the AAA3 tranche versus selling the A3 tranche. The xxx.3 is the new name for the old 07-01 series where the underlying loans were originated during the second half of 2006, near the peak of the market. The AAA3 tranche is the top of the capital structure capturing the 30% to 100% of the waterfall. The A3 is an ultra-thin slice that captures 7.20% to 8.25% of the waterfall. Please don't ask how the rating agencies could be so specific as to the default risk for so narrow a band of losses.

Nonetheless, we like the idea of buying this spread on a one to one basis. While some market professionals recommend weighting the legs to create some sort of an OAS-spread duration weighted package, we prefer the simpler "even up" trade that relies more on a Macro thought than upon some nips to blips daily mark-to-market concept.

The –blue line- below is a graph of the most recent history of this spread. The trade is slightly negative carry. The main theme is that the investors who called the Housing Crunch correctly by shorting the lower credit tranches have been covering their shorts into the start of the TALF program. Since street traders are loath to take on large risks in this sector, any large buy programs will lift the market quickly. This has kept the spread relatively tight despite the reality that credit losses in the CMBS market are about to rise significantly. [Read Wilbur Ross's comments from last month] If credit losses exceed 8.25% (the top end of the A3 slice) yet remain below the lower end of the AAA3 tranche at 30%, this Credit spread will expand significantly next year. Moreover, buying for TALF will support the top slices of the CMBS market.



Buy CMBX AAA3 at 81-16 versus Sell CMBX A3 at 25-00 for a net 57-16

Buy the FN 4 ½ Butterfly in March at Zero

Free Convexity within the MBS coupon Stack

For those of you who are unfamiliar with MBS parlance, a coupon stack butterfly is when you look at three consecutive coupon bonds, buy or sell 100mm of the middle one and do the opposite for 50mm each of the wings. So to buy 100mm of the FN ½ butterfly, you would buy 100mm FN 4½ versus selling 50mm each of FN 4 and FN 5. Without a tremendous amount of MBS knowledge, it should be obvious to even the novice that the "upper" dollar price spread (between the FN 5 and FN 4 ½) should be smaller than the "lower" dollar price spread. The logic here is that in a rally the more callable "upper" bond will begin to experience "par compression" while in a price decline the lower bond will start realize extension risk.

Let's spin this idea a different way. We know a MBS bond is callable therefore it is negatively convex. If it were the case that the upper and lower coupon swaps were the same, then that would imply that in a 50bps rally or back-up, the price change of the middle bond would be the same. (Assuming the FN 4 ½ becomes similar to FN 5 into higher prices and becomes similar to FN 4 into lower prices.) If a bond experiences equal changes in price during similar up and down rate movements, this is the definition of zero Convexity, i.e., the second derivative of price to rate is zero. As such, a butterfly price of zero (upper and lower coupon swaps being equal) clearly should not occur under ordinary circumstances. When it has occurred in the past, it tends to be driven by a huge buyer in the Spot market who then takes delivery of the bonds and refuses to lend them in the financing market. When this happens, the Repo rate gaps lower and the "Dollar Roll" expands. Although the Butterfly would be zero in the Spot market, after the financing was accounted for, the Butterfly would trade very positively in the Forward market and no trading opportunity would be available.

Presently, the FED has tired of buying the lower coupon "production" bonds because they fear they will own more than the available float. So they have shifted their buying to the upper coupons of FN 5, FN 5 ½ and FN 6 where there is a large available float. [See the Dudley interview in the Economist] However, the FED does not want to distort the market too much, so they are lending their bonds back into the dealer market. As such, FN 5 has risen sharply yet the financing rate has not plummeted. Consequently, it is now possible to buy the FN 4 ½ Butterfly all the way out to March Settlement at zero or less. Once the FED buy program ends at the end of March 2010, prices should normalize and this Butterfly should revert back to its traditional value of about 12/32s. In the meantime, you will own the embedded convexity of the MBS market for free.

Buy the FN 4 ½ Butterfly in March for zero

Buy the August 2025 vs. USH0 Basis at 1 Tic over Carry

Detailed in: *RateLab – "The Return of CBOT Delivery Shift" January 17, 2008*

To briefly summarize our previous RateLab, the construction of the delivery function for the CBOT bond contracts is driven by two factors, Coupon and Time to Maturity. However, those of you who still have handy your dusty copies of the original Bond Bible ("Inside the Yield Book" by Homer and Leibowitz 1972) know that Duration is calculated by three functions, Coupon, Time to Maturity, and Yield Level. It is this third missing risk vector that creates the Cheapest to Deliver construct, also known as the Delivery Shift option.

The Delivery Shift option can be quite large depending upon various market factors, but the one fact we know for sure is that the value of this option is never below zero.

The easiest way to look at the potential for Delivery Shift is to use the CMS function on Bloomberg >>> {USH0 cmdty CMS <go>} Although this is only a parallel shift model, it nicely captures the concept. Presently, the T 6.875% 8/25 is the Cheapest to Deliver bond into the USH March 2010 contract. There is an indicated small shift to the T 6.625% 2/27 in the up 70bp to 80bp scenario and a much larger shift to the T 5.25% 2/29 in the up 90bp to 100bp scenario. One can buy this Delivery Shift option for 1/32 above the cost of carry, a net basis of 1/32.

The fact is we will not move in parallel if rates rise by 75bps. In fact, truth be told, we cannot even tell you if it will be a steepener or a flattener if that occurs. Nonetheless, considering the massive skew the market is pricing for deep OTM payers, buying a deep OTM lottery option for 1/32 seems like a fine idea. I am sure Nassim Taleb will have a chapter on these "Black Swan" options in his next book.

Callable Agencies: Best Value Investment in the Market

There are three vectors of risk: Duration, Credit and Convexity. Of the three, the one that is most out of line is Convexity. Presently, longer-dated Implied Volatility is about 25% above its "forever" average. Moreover, Realized Volatility has been about 20% below these elevated levels for the past month. It is this disconnect between extremely high Implied Volatility and the FED's insistence that they intend to hold rates steady for an "extended period of time" that has the market seeing stars. It is also the prime reason that so many investors continue to buy MBS bonds despite their apparent richness. Buying MBS is the only method many investors have to sell Convexity. The retort to anyone who questions buying FN 5s is: How do you ignore 12/32s a month of Carry ?

True enough, but there is a better way to earn that type of carry without reaching to the long end of the yield Curve or taking on massive Credit risk. It is a much purer Volatility sell and has none of the Political risk associated with the uncertain ending of Quantitative Easing. We refer of course to Callable Agencies.

FNMA	5.00%	15yr no call 1 year	@	99-24	+18bp Libor OAS
FN	5.00%	10.3yr Avg Life @ 6cpr	@	104-08	- 33bp Libor OAS

While hard to compare these two bonds, what is for sure is that the Callable throws off a lot more carry and that if rates rise a lot, both bonds extend in a similar fashion. Moreover, if the FED's buy program does end on schedule, MBS bonds should widen by about 1 point (+25bps) while the projected annual 10% shrinkage of the Agency's Retained Investment Portfolio (RIP) will limit new supply of Callable Debentures.

As a side comment, let us remind you that the traditional GSE model was to issue Callable Debentures at a Libor OAS of -5bp to -10bp and then buy MBS at a Libor OAS of +20bp to +30bp. If properly managed, they could earn 30bps running on a Trillion dollar portfolio. This business model is now totally reversed. In fact, the GSEs are effectively locking in long-term losses on any MBS they purchase since the "Arbitrage", if you can call it that, is now at -45bps. What should happen here is that the GSEs should sell to the FED, buy back their debt, and sell out their super rich long Vega swaptions positions. This would lock in the massive mark-to-market profits they have. But until that time, you should execute this idea by lightening up on MBS and directing dollars to Callable Debentures.

Concluding Comments

Last year's trades all revolved around taking advantage of the total panic in the Financial Markets where for some short period of time, we actually did not know if there was a bottom. Even grizzled old veterans felt a slight shiver and a wince of fear that maybe the system actually could unravel. What was required to make a lot of money was not a large IQ but rather simply having cash that you were willing to invest. Almost every Financial Asset is worth more now than a year ago.

This year's Holiday Stocking Stuffers have a different theme. Nothing is outright "cheap", rather relationships between significantly similar bonds or derivatives are grossly out of whack. In many cases, these differentials are so great as to create a Positively Convex payout structure that exhibits Positive Carry. <u>This is analogous to being paid to own an option</u>. These anomalies are not occurring in crazy offbeat markets in far off lands, but rather in the major liquidity centers of MBS and USDollar Rates.

Why is this happening ? In a nutshell, the old fashioned Relative Value investors who kept prices in line have been sidelined by VAR limits and a lack of balance sheet. However, as detailed in *RateLab – "VAR: Driving While Looking in the Rearview Mirror", October 7, 2009*, the mathematics of VAR limits will shift markedly after the start of the new year as the Lehman Event fades out of the historical moving average. Furthermore, if the Government does follow through and end its QE program, traditional MBS valuations will normalize. Most importantly, the markets are terrified of what will happen on April 1st, 2010 without a QE program. If the rates do not gap 100bps higher on that day, then both Implied Volatility and Skews can slowly slide back towards their longer term averages.

Can we summarize it all in one line? Yes we can: *"It is NEVER different this time"*.

Happy Holidays from the RateLab.

Harley S. Bassman

BAS/ML US Trading Desk Rates Strategy
December 7, 2009

Additional Disclosure Notes:

Representative mid-market prices for sometime during the week of December 1.

We at the RateLab may have positions in some of these recommendations both professionally and personally.

Please be sure these investment ideas are consistent with your investment horizon. Since these are "investments" and not "trades", the work-out time could certainly be measured in years.