17 August 2012 | 25 pages

Global

US Rates & MBS Weekly

Back to the Old Range

- **Beware Positioning if Going Long** — Though the greater than 40bp rise in 10yr Treasury yields recently provides a good opportunity to re-enter long positions, the technicals are a concern. We would wait. The market appears to be positioned long, which likely explains *how* yields have moved higher over the past three weeks.

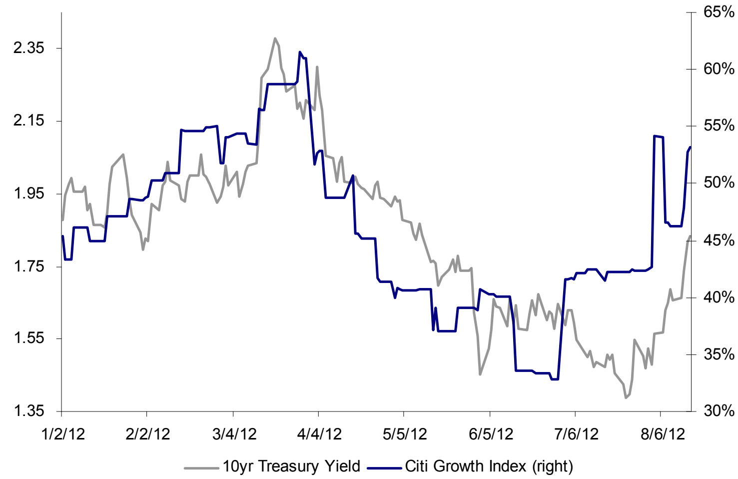
- **Breakevens to Stay Capped, Real Yields Approaching Buy Zone** — With CPI coming in below expectations, breakevens are likely to struggle in the near term. Real yields are approaching buy levels with the recent selloff.

- **Mortgage Impact on Vol Limited for Modest Selloffs** — We look at the mortgage market's duration exposures at higher rates and conclude that their participation in the vol market will be muted at best for modest rate backups. We do not expect to see much directionality between intermediate expiry volatility and interest rates.

- **Agencies Attractive on Vol-Adjusted Basis** — As spreads tighten and expected returns for fixed-income assets decline, we favor overweighting or leveraging up lower-volatility sectors, such as agencies, despite tight spread levels.

- **Treasury Announcement on GSEs** — Today's Treasury announcement on the GSEs should be very positive for agency debt.

Figure 1. Chart of the Week by John Sheridan: Rates Following US Growth Data Again? Citi Growth Index Near 4-Month Highs Following Strong NFP and Retail Sales



Source: Citi Research, Bloomberg.

US Rates & MBS Strategy

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Rates Forecast

Figure 2. Rates Forecast as of August 16, 2012

	Model Value (%)	Market Value (%)	3m Forward (%)
Fed Funds Effective	0.00	0.13	0.00
2y Treasury	0.22	0.29	0.33
5y Treasury	1.29	0.80	1.42
5y Forward 5y Treasury	4.79	2.90	2.87
10y Treasury	3.04	1.82	2.15

Source: Citi Research; Model values are from our Fed Funds Path Model, described in the US Rates 2012 Outlook

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US Rates & MBS Conference Call

Our weekly conference call will be hosted on August 20, 2012, at 7:30AM NYT.

Please find the dial-in information below. A PDF outlining the call will be sent via email before the call.

Participant Audio Information:

Toll free:	1-877-238-4695
Toll:	1-719-785-5595
Passcode:	617839

Replay Audio Information:

Toll Free Domestic:	1-888-348-4629
Toll International:	1-719-884-8882
Replay Passcode:	617839
Replay Availability:	7 days from the call date, available 2 hours after the call

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Summary of Views

Figure 3. Strategy Summary Table

US Rates	View	Recommended Positions
Duration	**Neutral:** While we see this is an attractive location to get long, positioning gives us pause. We would not be surprised by rates going to 2% in the near term.	Long 2yr Treasuries for good vol-adjusted carry and roll
Yield Curve	We like owning duration in the middle of the yield curve relative to the wings. This includes 2-5yr flatteners and 10-30yr steepeners.	None
Swap Spreads	**Spread Curve Steepener:** Momentum with carry.	5yr-10yr swap spread steepener
Gamma	**Neutral**	Buy 3m10y atm receiver, Sell 9m10 atm receiver Long 6m forward 6m10y atmf straddles
Vega	**Neutral**	None
Inflation	**Short Breakevens:** We expect BEs to continue to soften in the near term. Softer than expected July CPI should also cap BEs. Real yields are now attractive at current levels.	Short breakevens 5s30s breakeven curve steepener Accumulate longs in 10y real yields
MBS	**Neutral**	None
Agency Debt	**Bullets:** 10yr agencies look attractive on asset swap. **Callable:** 7nc1 is attractive.	10yr bullets on asset swap 7nc1

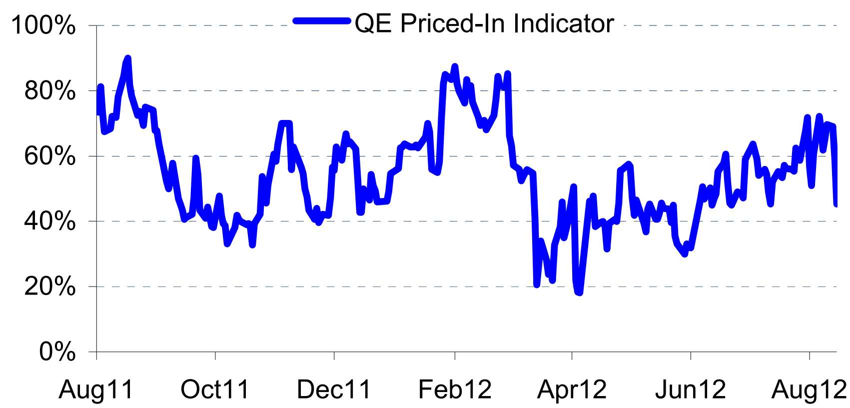
Source: Citi Research

US Rates & Curve: Back to the Old Range

Brett Rose

Likelihood of QE 3 appears to have fallen significantly over the past several trading days as Treasury yields moved significantly higher while equities, gold and long inflation breakevens were near flat. On the margin it is reasonable that the likelihood of QE 3 should be lower now than prior to the strong NFP and retail sales releases of the past two weeks. Further, any Fed action at the September meeting seems very unlikely unless something dramatic takes place over the next month. In Figure 4 we show our market indicator of QE likelihood.

Figure 4. QE Expectations Have Fallen Dramatically



Source: Bloomberg and Citi Research

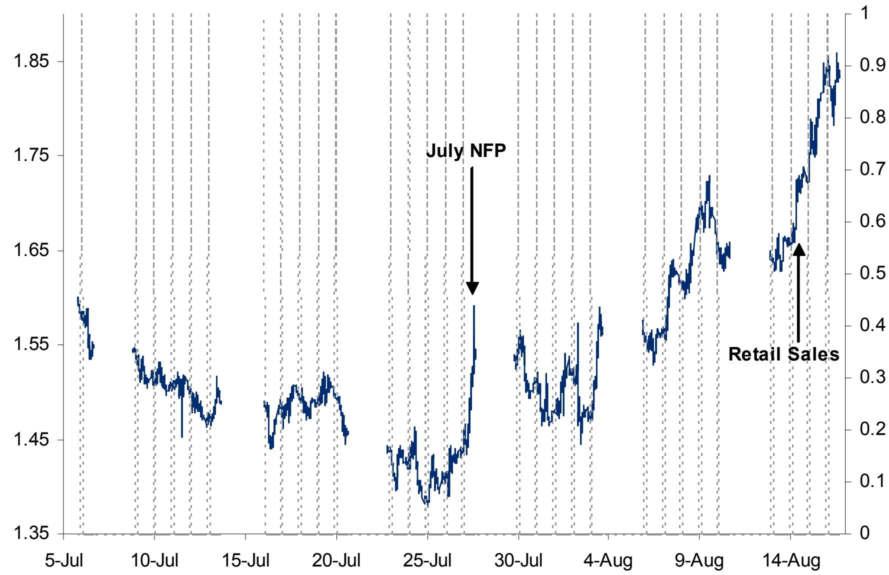
Note: Based on Gold, MBS Spreads. 10yr Real yields, 5yr Treasury Fly and US Dollar

While we would agree with there being a dramatically lower likelihood of QE 3, we are not as convinced that the likelihood of QE 3 taking place eventually has fallen that dramatically. While concerns about US economic performance and European financial stress have both backed away from serious levels of earlier this summer, neither have been solved in any definitive way. Economic conditions are likely better than our worst fears; however, conditions are unlikely to be strong enough to lower the unemployment at a rate that most would be satisfied with. In Europe, non core yields have stabilized and the debate has turned more towards near-term backstops of these securities; however, barriers remain to any support actually being provided.

The Trend is Not Yet Your Friend

While we think that the greater than 40bp rise in 10yr Treasury yields over the last few weeks provides a good opportunity to re-enter long positions, the technicals are a concern. Positioning appears to be biased towards long duration, which likely explains how yields have moved higher over the past three weeks. In Figure 5 we show the intraday moves in 10yr Treasury yields over the last month.

Figure 5. Rates Have Tended to Trend Higher on Little News, Outside of Large Moves on the Days of NFP and Retail Sales



Source: Citi Research, Bloomberg

There are a few key events during this period[1], that explain a few of the big moves. However, for much of the period yields just slowly moved higher throughout the day on relatively limited volume. Taken together this supports squaring of bad positioning in an illiquid summer market is likely to be worth as much as a re-pricing based on significantly improved perception of either US economic conditions or European financial stress.

It is hard to see what stops this trend in the near term. There is no significant economic data during the next couple of weeks and it is likely that no major policy development will come out of Europe until September arrives. Therefore, we will be cautious about adding duration at this point. It would not be difficult to imagine 10yr yields moving towards 2% in the near term, even though we think that 1.5% is equally likely in the medium term. Therefore, we merely continue to recommend long 2yr positions on the basis of good vol-adjusted roll and carry.

[1] Including a strong July NFP print and above-expectation retail sales. Industrial production was also released, though the upside surprise was not large.

TIPS: BEs Capped Near Term

Jabaz Mathai

Headline CPI for July came in weaker than market expectations – at 0.045% (rounded to 0%) mom for the headline, vs. market expectations of 0.2% and core at 0.1% vs. market expectations of 0.2%. Breakevens are likely to stay capped near term. Real yields are approaching buy levels.

Soft July CPI to Cap Breakevens Near Term

July CPI came in weaker than expected at both the headline and core levels. Headline CPI came in at 0.045% month over month, compared to the median Bloomberg estimate of 0.2%. The headline index level, which is the key index for TIPS investors, came in at 229.104, which was lower than the lowest economist forecast surveyed by Bloomberg (median estimate of 229.505 with the low estimate at 229.386). In our view, this is bearish for the short end of the breakeven curve, and gives us an added level of confidence in our recommended 5s30s breakeven curve steepener. With the low NSA print, carry in the front end has turned more negative (see Table 1 for carry out to end of September).

Figure 6. TIPS Carry to Sep 30, 2012

Issue	Closing Price	Closing Yield	BE	Carry
TII 2 7/15/2014	106.69	-1.43	1.72	-24.25
TII 0.125 4/15/2017	106.32	-1.19	1.9	-8.69
TII 1.875 7/15/2019	120.19	-0.94	2.12	-5.66
TII 0.125 7/15/2022	106.69	-0.53	2.15	-3.22
TII 0.75 2/15/2042	106.56	0.51	2.3	-0.71

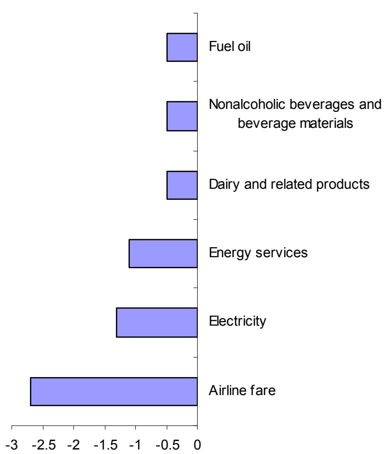
Source: Citi Research

Softness due to energy and transportation

The biggest drivers of CPI (in terms of percentage change) are shown in figures Figure 7 and Figure 8. Airline fares were down 2.7% mom, while electricity and energy services were down 1.3% and 1.1%, respectively. Apart from nonalcoholic beverages and beverage materials and dairy products, which were down 50bps each from June, the other four categories were energy related. While gas prices had moved higher in July, the discounting in airline fares due to cheaper fuel likely acted with a lag. With retail gasoline at $3.71 a gallon now vs. $3.33 at the end of June, it is likely that the next CPI reading will see a snapback in the energy component.

In terms of increases within the CPI basket, tobacco had the biggest increase at 1.1%, while medical related costs also increased through medical care commodities, physician services and hospital services. The latter has increased 5.7% yoy unadjusted and represents the biggest increase within the CPI basket over the year.

Figure 7. Largest Negative mom CPI Changes



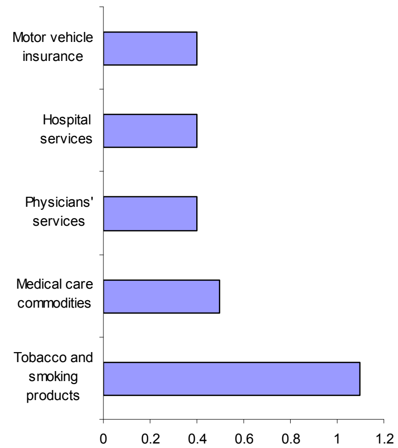
Source: Citi Research, BLS

Real yields approaching buy zone with recent sell off

In our rates weekly on Aug 2 (US Rates & MBS Weekly, page 10), we had recommended selling real yields on a tactical basis, targeting -75bp on 10y and 25bp on the 30y as entry levels for shorts. While 10y real yields touched -75bp intra day on Aug 6, 30y real yields had a low of 28bp on Aug 3 and didn't touch our sell target zone.

Note that 10y real yields have been moving lower within a downward sloping channel over the last 10 months. The 30bp sell off in real yields since the beginning of August has brought real yields closer to the top end of this channel. The reason for the sell off is primarily due to a reduced probability of QE3 in the very near term in the face of slightly better economic data recently (primarily payrolls, but housing data to some extent as well). Given the fragility of the recovery going forward, we think it's premature to be overly bearish on real yields. It is possible that position unwinding may have played some role in the sell off. It is also possible that the sell off could continue for a few more days. But we don't expect a sustainable breakout higher in yields yet as the fundamental picture doesn't support a sell off. We think that we are in the buy zone for real yields and recommend that investors close out their shorts and start accumulating long positions in 10y real yields.

Figure 8. Largest Positive mom CPI Changes



Source: Citi Research, BLS

Figure 9. 10y real yields have bounced off the low end of the downward sloping channel from October of 2011 (start of operation twist). We recommend buying as real yields near the upper end of the channel

Source: Citi Research

TIPS 5y auction: Expect to go well with recent real yield backup

The 5y TIPS issue – the 0.125% of 4/15/2017 will be re-opened this week, on Thursday the 23rd. The 14bn re-opening brings the issue size to 30bn. Recently, 5y TIPS auctions have tended to come in close to market levels with a median tail of about 2bps as shown in Figure 10. We think that the auction should be absorbed without too much trouble. 5y real yields have backed up by about 16bp since the beginning of the month and as mentioned in the previous section, we think real rates are approaching buy levels. If real yields get closer to -1% (-1.12% currently), we believe that it would be a good buy, despite the negative carry.

Figure 10. Historical auction results for 5y TIPS: Median tail is 1.75bp from 2009 to present

Date	Coupon	Maturity	Tail / (Through) in bp
4/19/2012	0.125	4/15/2017	2
12/15/2011	0.125	4/15/2016	-0.2
8/18/2011	0.125	4/15/2016	1.75
4/21/2011	0.125	4/15/2016	2.5
10/25/2010	0.500	4/15/2015	-1
4/26/2010	0.500	4/15/2015	3

Source: Citi Research

Interest Rate Derivatives

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Market Recap

Vols are higher over the week following the rapid rise in yields. 10y Treasury yields rose by 20bps over the week. This realized volatility pushed gamma higher, as 10y and 30y tail vol has rallied by more than 5 norms. We have also seen a relatively large move in vega space, where vega across the board closed 3 norms higher over the week. 2y10y vega traded higher by 4 norms, resulting in the highest levels since mid-June.

Figure 11. Vols have gone higher over the last week

Exp\Ten	2y	5y	10y	30y
1m	(0.8)	3.6	7.3	6.4
3m	0.3	4.0	6.7	6.1
6m	0.8	4.2	6.0	5.3
1y	2.4	3.9	4.5	3.4
2y	3.9	4.9	4.4	3.5
5y	3.1	3.5	3.4	2.0

Source: Citi Research

Mortgage Index / Servicer Durations & Vol

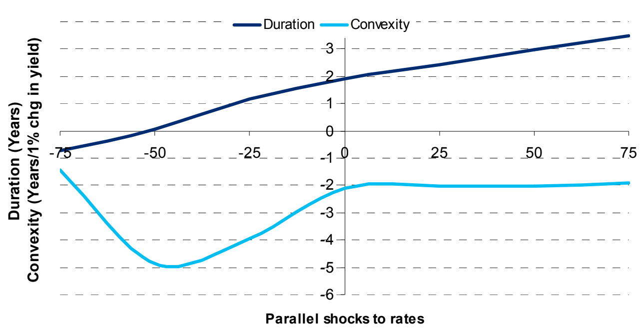
Mortgage duration profile with rates

As interest rates continue to grind higher and the curve bear steepens, implied volatilities on rates rose steadily over the past week. There are incipient concerns of a mortgage extension trade. Market participants are establishing significant puts-payers positions – both on expectation of a mortgage trade, and on the perception that it is a cheap duration play. In this context, we look at mortgage exposures at higher rates, together with the outlook for intermediate vol.

The following discussion does not imply that we expect rates to actually go higher – we are near-term neutral duration, and expect somewhat lower rates over the next several months before they turn higher. This is just a discussion on mortgage exposures and impact on the vol market conditional on higher rates.

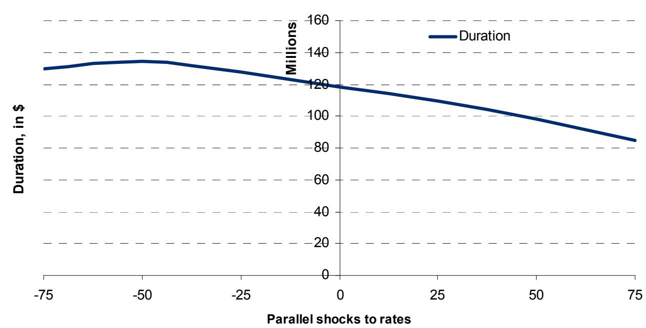
We look at changes in both the Citigroup mortgage index, as well as estimated changes in mortgage servicer swap exposures for various rate scenarios. Index exposures are important only to the extent that there are investors that hold index like portfolios, but are actually not indexed themselves and need to rebalance the duration in their mortgage book. We do not have a strong sense of what this cohort might be, but for instance, someone like a bank portfolio would fit in this category.

Figure 12. The mortgage index is only modestly convex towards higher rates



Source: Citi Research; As of 8/15.

Figure 13. Mortgage servicer exposures do not appear materially negatively convex towards higher rates



Source: Citi Research; As of 8/15.

The seemingly negative duration at the far left of Figure 2 is likely a model artifact at very low rates that we would ignore. What is interesting though is that the mortgage index was seemingly most negative about 40bp lower in rates. Even as rates moved up, in fact fairly quickly, there was no large bid for intermediate vol from the mortgage community. The flat-lining of convexity towards, even if negative, suggests even less real hedging needs for the mortgage investor community.

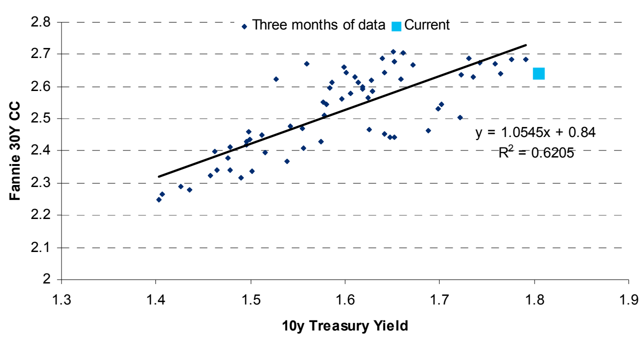
The rate exposure of the mortgage servicer community is not much different as we could see from Figure . The curvature of duration extension appears relatively gentle. Also, there are no kinks in the duration vs. rates profile suggesting there are no large changes in the convexity.

Two other issues should be considered in conjunction with the above rate exposure – sensitivity of primary or secondary market rates with the move up in rates, and the existing hedging in the Treasury futures, mortgage option and swaption vol markets.

Sensitivity of primary/secondary mortgage rates with Treasury yields

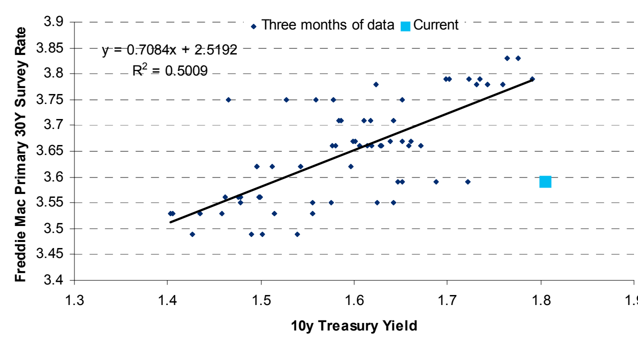
Handling differing sensitivities between primary and secondary mortgage rates and Treasury yields is a complex affair. Models inherently have some sensitivity between mortgage and Treasury yields built in. For instance, our current mortgage model assumes 80% sensitivity between mortgage rates and Treasury yields for the next two years, before normalizing to 100% after that. Assuming that the sensitivity is closer to 50% for the next two years does not materially change measured convexities for the index. It is unclear whether investors respond to the volatility of the primary rate or the secondary rate – the truth is likely somewhere it between. While secondary market mortgage rates have tracked Treasury yields, primary market rates have been highly unresponsive.

Figure 14. The secondary mortgage rate has tracked Treasury yields closely for the past three months



Source: Citi Research; Three months of data.

Figure 15. Primary mortgage rates have not responded materially to changes in Treasury yields



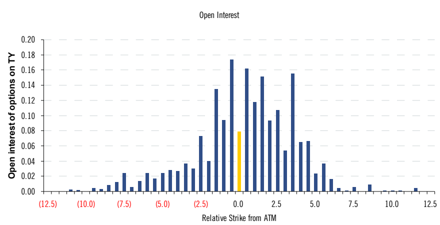
Source: Citi Research

As one can see from Figure above, the primary mortgage rate has hardly moved over the three months even as Treasury yields moved materially higher. It is therefore no surprise that the mortgage community has not stepped up to buy optionality in any meaningful size.

Build up of high-strike protection

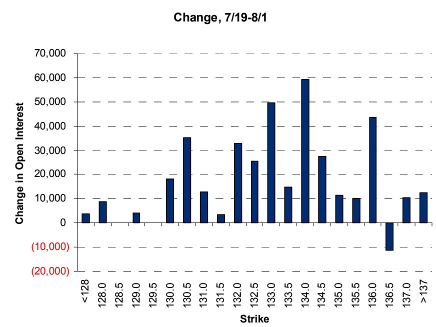
It is difficult to estimate how much optionality the mortgage community has bought. The only related data we have is open interest of board options. We look at levels and changes in these as a proxy for optionality bought elsewhere as well.

Figure 16. Levels of Open interest in board vol mostly towards lower rates (60/40 ratio)



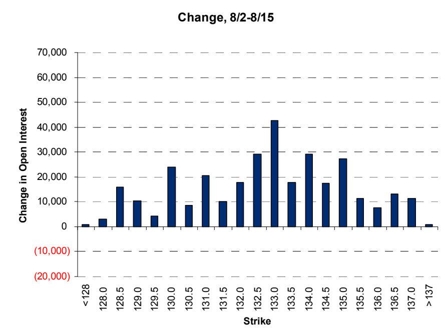
Source: Citi Research; Relative strikes are in price terms and open interest is in millions of contracts; As of 8/15.

Figure 17. Changes in board-option open interest in late July close to atm levels



Source: Citi Research; Changes in open interest in options on Sep and Dec TY

Figure 18. Changes in board-option open interest in early August less than in late July



Source: Citi Research

There are three points of interest from the above charts:

- There is not a lot of open interest of options at higher yield strikes than where the market currently is. This either suggests lack of concern or exposure. If rates did move materially higher from here, some capitulation might happen.
- In the first leg of the rate move from mid to late July, it appears that there is a lack of conviction among market participants, and additions to open interest were near ATM levels, suggesting un-hedged selling of gamma.
- In the later stage of the selloff, there is increased interest in wing options, and therefore we suspect this involved gamma buying, as opposed to selling.

We should note that even though our data consists of short-expiry options, we are looking to make inferences about behavior in buying longer expiry options – between 6m and 2y in expiry. Some subset of the action on the board is likely to be mortgage players. There is no reason to believe their behavior deviates much from the general average in terms of conviction and beliefs. Initial lack of conviction about the rate move, followed by early modest concern about where the move would end is the takeaway from this discussion.

Where does this leave us regards our view on intermediate vol? We have felt from the start of the year that 1y10y below 85bp/annum did not make sense given the environment. Our view has not changed. Our rationale for this level is based on natural inherent uncertainty about the US recovery coupled with the risk of a tail event in Europe. Since the fundamentals on these two issues have not changed, vol is unlikely to move materially higher from here in a purely knee jerk reaction. Realized volatility of 10y Treasury yields over the past year has been 95bp/annum, while realized volatility of levels (more pertinent to the un-hedged seller of vol) has been about 22bp/annum. Given the large gap between the two, we think 1y10y implieds will not be overly reactive to rate moves. We see the actual traded level of 1y10y to be within 2bp/annum of model fair value.

Potential Changes in US Treasury's support to the GSEs and impact on volatility

On Friday morning the Treasury announced [2]that they would require the housing GSEs to wind down their portfolio at a faster 15% annual rate than the previously agreed upon 10% annual rate, among other things. This would have the affect of taking the GSEs out of the Swaption vol market a little bit sooner than what the market currently anticipates. We have previously written and reiterate here that the

[2] Please refer to the press release from the Treasury at http://www.treasury.gov/press-center/press-releases/Pages/tg1684.aspx

impact of such an event on the level of intermediate vols will be marginal at best – perhaps no more than 5-10bp/annum in 3y10y vol, spread over several years. The rationale for the view is that the GSEs are likely net sellers of optionality, even if they have been net buyers of swaption vol. Accounting for the differences and limited fungibility between swaption vol and the vol embedded in mortgages and agency callables there is some rome for swaption vol to decline. We think a GSE wind-down is likely worth no more than a decline of 5-10bp/annum in intermediate vol, if that. This move, even if did happen will be spread over several years, and is fairly small compared to the noise in the level of the vol surface. Given the noise, the only way such a move could be ascertained is by carefully estimating models that account for other factors such as the slope of the yield curve, level of rates, and realized volatility in the rates market.

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Agency Debt is Attractive on a Volatility-Adjusted Basis

Agency spreads are very tight historically versus Treasuries (Figure 119), and on the surface it would appear that there is little upside in owning agency debt. However, spreads for most fixed income asset classes are also at low percentiles. As spreads have compressed, common risk/return metrics have also compressed, indicating that fixed income markets have increasingly become unattractive in this low rate regime we find ourselves in.

In moments like these, we think it benefits investors to position more defensively by choosing low volatility sectors especially when Sharpe ratios have been reduced. Thus, we believe that the value in holding agency debt is not in the absolute level of agency spreads but in the extremely low volatility of those spreads when compared to other asset classes.

Figure 119. Agency Spreads

Agency OAS to Treasuries

							Changes
Sector	8/15/2012	1 year Percentile	3 month average	1 day	1 week	1 month	3 months
2	4	7%	5	0	0	0	-2
3	9	4%	12	0	1	-4	-6
5	17	2%	21	0	-2	-1	-11
7	27	10%	33	0	-1	-3	-10
10	35	13%	43	0	-1	-8	-8

Source: Citi Research

In Figure 120 we analyze the monthly duration-adjusted returns of agency debt, agency MBS and corporate bonds (investment-grade financials, utilities and industrials) to see how these asset classes have performed post the financial-crisis. We find that the risk-adjusted average return of agency debt (the information ratio) is the highest of all the sectors – not because it has the highest returns but because it has the lowest monthly standard deviation by a wide margin. Mortgages exhibit the next-best ratio. All things equal, we should expect low-volatility sectors to have superior information ratios as average returns and spreads drop. Additionally, going forward it would make sense to allocate more to low-volatility sectors when spreads are at historical lows to mitigate any spread widening.

Figure 120. Post-Crisis (6/09 to present) Monthly Returns

	Agency	Mortgage	Finance	Utility	Industrials
Average Monthly Return	0.06	0.12	0.40	0.23	0.27
Std Dev	0.16	0.35	1.76	1.38	1.30
Information Ratio (Avg / Stdev)	**0.38**	**0.35**	0.23	0.17	0.21
1/Std. Dev	6.2	2.9	0.6	0.7	0.8

Source: Citi Research

Investors could implement strategies to harness this advantage of agency debt in a number of ways. For instance:

- Hedge funds could choose to adopt a risk-parity approach such that the risk from agency debt is the same as that from other asset classes. So using the data from Figure 120 we would lever up agency debt to 6.2x, mortgages to 2.9x, finance to 0.6x etc. After the levering process, the return expectation of each sector would be the information ratio (since the levered standard deviation of each sector would be 1), transforming the volatility advantage of agency spreads into a return advantage.

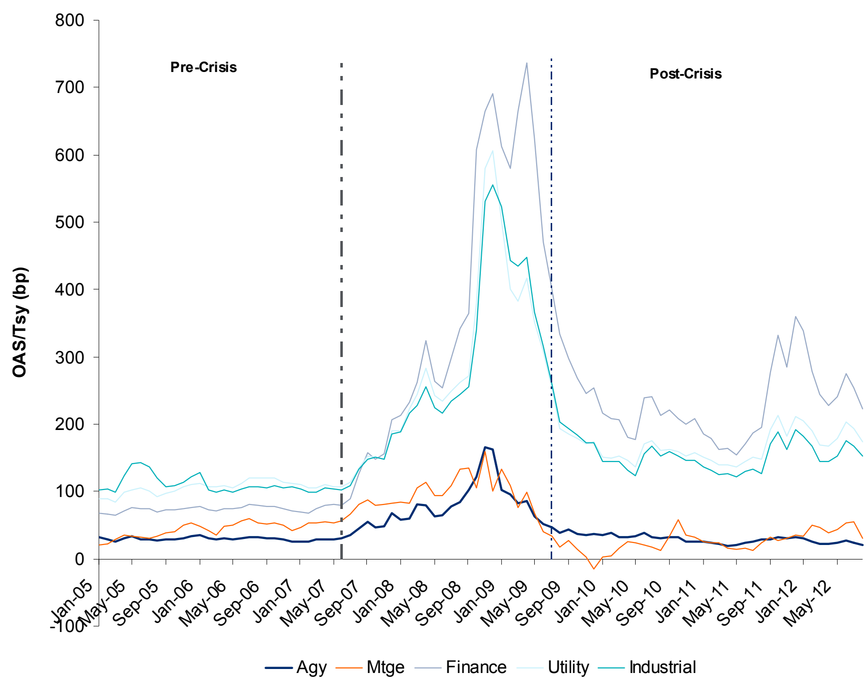
- Real money investors could allocate assets such that the relative weights of the asset classes are in the proportion of the inverse of their standard deviations which is comparable with the risk parity approach. In the context of the data in Figure 120 agency debt would have a 60% weight (6.2 / (6.2+2.9+0.6+0.7+0.8)) of the portfolio, mortgages 30% and finance, utilities and industrials all10% each.

Historical Perspective

To provide some context for current spreads, we look at the spreads of our five sectors going back to 2005 (Figure 21). We separate the recent history into three regimes: pre-crisis, crisis and post-crisis.

During the financial crisis most spread sectors cheapened aggressively. Post crisis, spreads have come back though corporate spreads still look wide compared to pre-crisis levels but at approximately the 50th percentile since 2005.

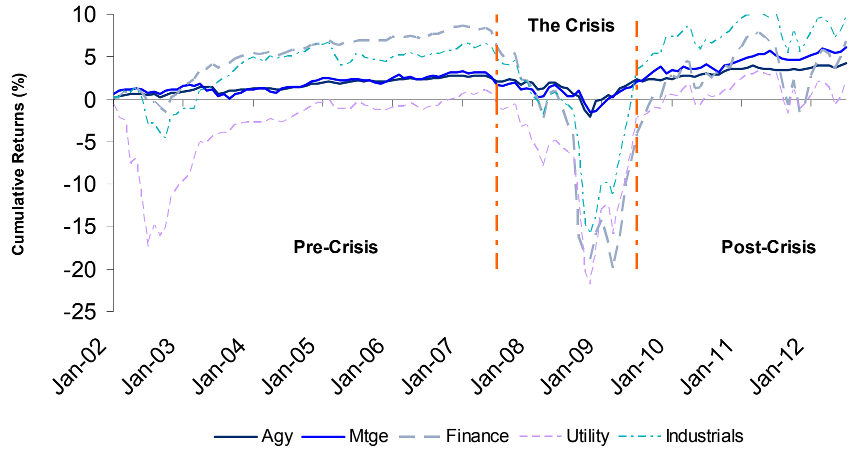
Figure 21. OAS to Treasuries Pre- and Post-Crisis



Source: Citi Research

Figure 22 shows the cumulative returns since January 2001 of the same sectors as in Figure .

Figure 22. Cumulative Returns Post-Crisis



Source: Citi Research

Risk-Parity Portfolios Under Different Regimes

To illustrate the potential advantage of overweighting lower-volatility/high information ratio sectors at this juncture, we create a simplistic risk-parity portfolio where we weight the different asset classes such that they have equal volatility in-sample. Figure provides the monthly return data for our three different regimes under consideration and computes the portfolio weights based on our risk-parity measure.

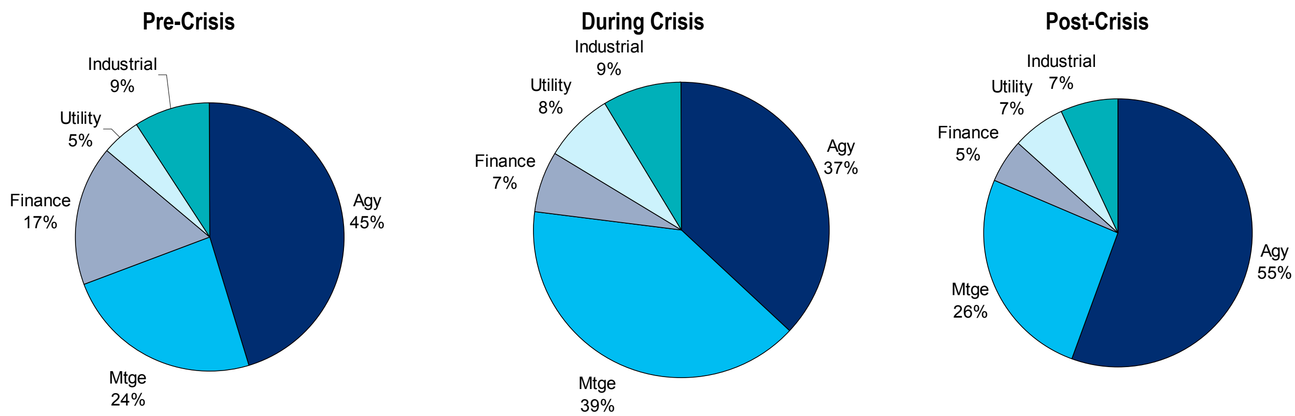
In the post-crisis regime, the data suggests that agencies should constitute a 56% weighting, MBS 26% and corporates the remaining 19% (5+7+7) of the portfolio. The pre-crisis portfolio is actually quite similar, with the exception of the financial sector. Unsurprisingly, the volatility of the financial sector rose dramatically during the crisis and has remained elevated. Pre-crisis, the financial sector was much less volatile and thus accounted for a 17% weighting in the portfolio, with agencies at 45%. Post crisis, the volatility-adjusted weighting of finance is now 5%, despite an average return of 0.40% for the period.

Figure 23. Risk-Parity Portfolio Weights in Different Regimes

	Agency	Mortgage	Finance	Utility	Industrials
PreCrisis (1/02 - 6/07)					
Avg	0.04	0.04	0.12	0.02	0.09
Std Dev	0.15	0.29	0.41	1.49	0.75
Information Ratio (Avg / stdev)	0.25	0.14	0.29	0.01	0.13
1/Std Dev	6.5	3.5	2.4	0.7	1.3
Portfolio Weights	45%	24%	17%	5%	9%
Crisis (7/07 - 6/09)					
	Agency	Mortgage	Finance	Utility	Industrials
Avg	-0.02	-0.04	-0.57	-0.24	-0.23
Std Dev	0.71	0.65	3.80	3.40	2.99
Information Ratio (Avg / stdev)	-0.03	-0.07	-0.15	-0.07	-0.08
1/Std Dev	1.4	1.5	0.3	0.3	0.3
Portfolio Weights	37%	40%	7%	8%	9%
Post-Crisis (7/09 - current)					
	Agency	Mortgage	Finance	Utility	Industrials
Avg	0.06	0.12	0.40	0.23	0.27
Std Dev	0.16	0.35	1.76	1.38	1.30
Information Ratio (Avg / stdev)	0.38	0.35	0.23	0.17	0.21
1/Std Dev	6.2	2.9	0.6	0.7	0.8
Portfolio Weights	56%	26%	5%	7%	7%

Source: Citi Research

Figure 24. Risk-Parity Allocations



Source: Citi Research

Back Testing the Allocations

Performances for the three allocations were relatively similar during the post-crisis and pre-crisis periods (see Figure). However, during the crisis, the finance-heavy pre-crisis allocation performed markedly worse than the other two. It is satisfying to note that post-crisis allocation had the best information ratio in the post-crisis period, and the pre-crisis portfolio had the best information ratio in its native period.

Figure 25. Performance of Portfolios (In-sample and Out-of-sample)

		Pre-Crisis Allocation	Crisis Allocation	Post-Crisis Allocation
Post-Crisis (7/09 - Present)				
	Avg. Monthly Return	0.16	0.14	0.12
	Std. Dev of Monthly Ret	0.55	0.44	0.37
	Information Ratio	0.29	0.32	0.33
Crisis (7/07 - 6/09)				
	Avg. Monthly Return	(0.15)	(0.10)	(0.08)
	Std. Dev of Monthly Ret	1.31	1.09	1.01
	Information Ratio			
Pre-Crisis (1/02 - 6/07)				
	Avg. Monthly Return	0.06	0.05	0.05
	Std. Dev of Monthly Ret	0.27	0.29	0.25
	Information Ratio	0.21	0.17	0.18
Full Period Results (1/02 - Present)				
	Avg. Monthly Return	0.05	0.05	0.04
	Std. Dev of Monthly Ret	0.67	0.57	0.51
	Information Ratio	0.07	0.08	0.08

Source: Citi Research

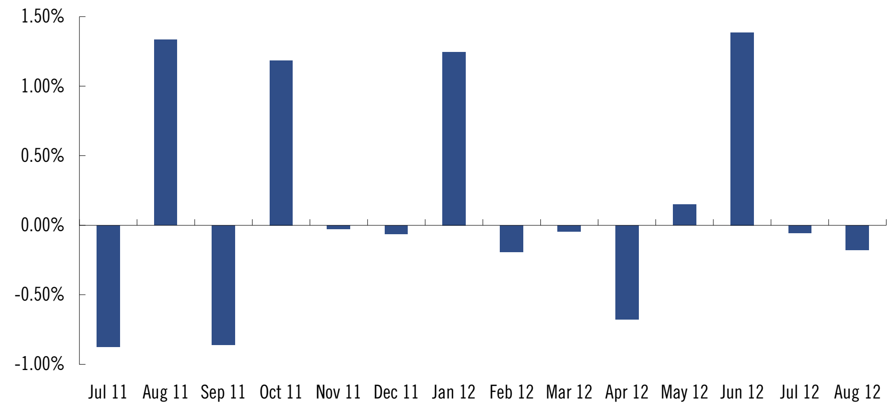
As spreads tighten and expected returns decline, we favor overweighting or leveraging up in lower-volatility sectors. From a risk parity perspective, leveraging up low volatility sectors makes sense in the current environment as a way to achieve reasonable market returns and be defensive at the same time. For real money clients, a bigger spread duration dollar allocation to agencies is most likely optimal.

US Rate Strategy Model Portfolio Update

John Sheridan

The US Rate Strategy Model Portfolio is down 0.18% for the month of June. Figure shows the monthly model portfolio returns over the past 14 months. Below we show all current outstanding trades. Note that we have removed all trades from 2010. To see the old trades, please refer to a previous publication.

Figure 26. Monthly Returns for the US Rate Strategy Model Portfolio, June 11- July 12



Source: Citi Research

Outstanding Trade Recommendations

All closed trades since the beginning of 2012 are listed in the Appendix.[3]

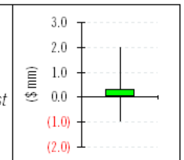
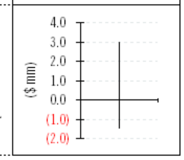
Buy 1y10y Swaption Straddles and Sell 6m10y Swaption Straddles (Opened May 11, 2012, horizon 1 year) We recommend buying forward vol for a post-election trade. This trade is up $294K.

Buy 2y10y Payer Ladders (Opened November 4, 2010, horizon 2 years) To express confidence in the Fed achieving its policy goals, we recommend buying 2y10y payer ladders to target a gradual sell-off in 10yr rates over a two-year horizon. The trade is down $60K.

[3] For a detailed list of all closed trades from May 2006 to May 2007, please see "US Rate Strategy — Trade Closeout," *US Rate Strategy — Bond Market Roundup: Strategy*, Citi, May 11, 2007.

Figure 27. Summary of US Rate Strategy Model Portfolio Performance, August 16, 2012

US Rates Strategy Model Portfolio

VOL	**Buy forward vol for a post-election trade**	Open	2.105 MM	*May 11, 2012*	
	Sell $100 MM 6m10y Swaption Straddle	Current	294K	*12 Month(s)*	
	Buy $100 MM 1y10y Swaption Straddle	**P&L**	**294**		
		Target	2,000	*We expect volatility in rates post election, similar to the move post debt-ceiling debate.*	
		Stop	(1,000)		
VOL	**Buy 2y10y Payer Ladders**	Open	60	*Nov 4, 2010*	
	Buy 2y10y Payer Swaption on $100MM @ 4.296 (ATM+75bp)	Current	0	*24 Month(s)*	
	Sell 2y10y Payer Swaption on $100MM @ 4.796 (ATM+125bp)	**P&L**	**(60)**		
	Sell 2y10y Payer Swaption on $100MM @ 5.546 (ATM+200bp)	Target	3,000	*We target a gradual sell-off in 10y rates over a 2-year horizon.*	
		Stop	(1,500)		

	P&L ($000s)	Portfolio Return
Net P&L from Open Trades	234	0.08%
P&L from Closed Trades Year-to-Date	6,127	2.04%
Total P&L Year-to-Date	6,360	2.12%
Total P&L Since Portfolio Inception on May 11, 2007	123,136	41.05%

Source: Citi Research. (a) For a detailed list of all closed trades from May 2006 to May 2007, please see "US Rate Strategy — Trade Closeout," US Rate Strategy — Bond Market Roundup: Strategy, Citi, May 11, 2007. For a detailed list of all closed trades from May 2007 to May 2008, please see "US Rate Model Portfolio One-Year Anniversary Recap," US Rate Strategy — Bond Market Roundup: Strategy, Citi, May 30, 2008. Between May 2007 and May 2008, the group made a total of 87 trade recommendations, with 50 producing positive results, 36 negative, and one breaking even. This produced a 15.4% total return, with a 1.68 Sharpe ratio. Note: Return on risk is based on Citi's return-on-risk methodology and is calculated by taking the largest two-week change in the trade since January 1997. Return on portfolio based off $300 million model portfolio sizing.

Appendix: Model Portfolio Closed Trades

Figure 28. US Rate Strategy Closed Trades in 2012

	Inception Date	Unwind Date	Initial	Unwind	P&L ($000s)	Target P&L	Stop Loss	Risk Return	Portfolio Return
Buy Gold, Sell Fannie Back Month 5.0 Coupon Rolls	Nov 17, 2011	Jan 10, 2012	-0-2:6	-0-01:5	$352	781	625	23%	0.12%
3yr – 7yr Treasury Flattener	Jan 24, 2012	Jan 30, 2012	109.5 bp	94 bps	$1,520	1,465	781	71%	0.51%
Long 10y Breakevens	Sep 22, 2011	Feb 3, 2012	1.85	2.25	$2,770	2,680	1,340	103%	0.92%
Short GN/FN 4.5s	Feb 10, 2012	Feb 23, 2012	2-17+	2-14+	$234	1,000	500	23%	0.08%
Sell ATM 1y5y vs 1y10y vega-weighted	Jan 27, 2012	Mar 12, 2012	2,050		($552)	1,080	540	-27%	-0.18%
Buy 3yr Treasuries	Feb 10, 2012	Mar 13, 2012	37.3 bps	48.6 bps	($700)	1,068	712	-36%	-0.23%
Buy Conventional 3.5s vs 4.5s	Mar 9, 2012	Mar 22, 2012	2-31 Tsy 2.03	3-28:2 Tsy 2.28	($350)	700	350	0%	-0.12%
Long Gamma for 3 days	Mar 27, 2012	Apr 2, 2012	2.08	2.077	($231)	1,000	500	0%	0.00%
10yr – 30yr Treasury Steepener	Jan 13, 2012	Apr 12, 2012	104bp	116bp	$1,431	1,802	901	132%	0.48%
1by2by1 in Payers	Jan 20, 2012	Apr 19, 2012	3bp	0	($245)	2,205	2,205	-100%	-0.08%
Short Duration via Steepener	Mar 30, 2012	Apr 19, 2012	165.3 bp	156.6 bps	($880)	1323	882	-0.31179	-0.29%
Buy FN 30yr 3.5s vs 10yr Swaps	Mar 30, 2012	May 31, 2012	102-30 / 2.23	105-00:6 / 1.7458	($546)	938	469	-116%	-0.18%
Buy Ginnie II M/J Roll, Sell Ginnie I M/J Roll 4.5s	Apr 19, 2012	Jun 5, 2012	0-04:2 / 0-04	0-03:2/ -0-02:7	$40	625	313	13%	0.01%
Long 30yr TIPS Breakevens	May 10, 2012	Jun 6, 2012	229 bps	228 bps	$3,700	3,700	1,850	80%	1.23%
Conditional Bullish Swap Spread Wideners	Feb 3, 2012	Jun 18, 2012	0	$15.63K	$16	860	430	1%	0.01%
Sell near-strike receivers to buy inexpensive wing protection	Feb 10, 2012	Jun 18, 2012	0	575,000	$650	1,000	500	58%	0.19%
2yr - 10yr Beta-Weighted Flatteners	May 10, 2012	Jun 21, 2012	162 bps	130 bps	$1,200	1,400	700	86%	0.40%
Buy 6m10y Payers	Mar 30, 2012	Jun 28, 2012	94.5 vol	81.6 vol	($1,000)	2,000	1,000	-100%	-0.33%
Sell 2y5y10y Fly	Jun 22, 2012	Jul 2, 2012	-47 bps	-53.7 bps	($350)	470	260	-135%	-0.12%
1m 5y10y Payer Flattener	Jun 22, 2012	Jul 24, 2012	77.9 bps	76.55 bps	$128	200	100	128%	0.04%
Buy atmf 3m10y Straddles, delta-hedged 5 bp	Jul 20, 2012	Aug 2, 2012	68 bp/annum	75 bp/annum	$340	1,000	110	34%	0.11%
Add duration prior to central bank meetings	Aug 1, 2012	Aug 7, 2012	1.003%	0	($700)	1,005	670	-58%	-0.23%
Receive 3y3y swap ahead of central bank meetings	Aug 1, 2012	Aug 7, 2012	1.542%	0	($700)	645	430	-78%	-0.23%
P/L from closed trades (YTD)					**$6,127**				**2.09%**
P/L from all closed trades (since 05/11/07)					**$122,904**				**40.97%**

Note: For trades before January 2012 please see *US Rates & Strategy Weekly, January 6, 2012.*

Source: Citi Research.

Appendix A-1

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