15 November 2012 | 30 pages

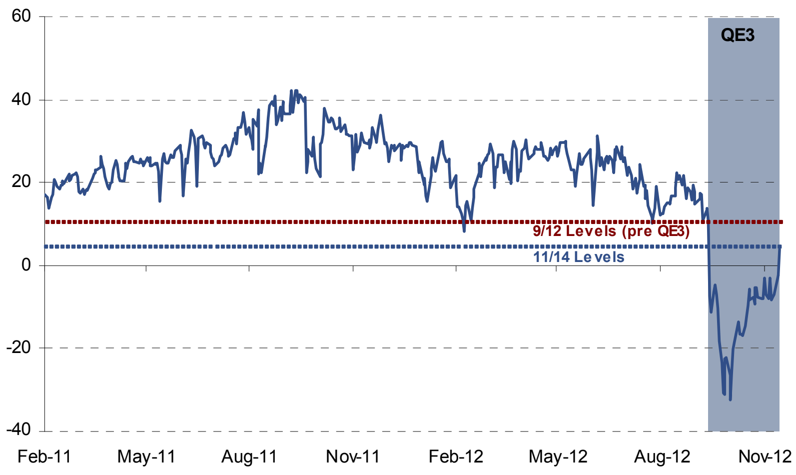
Global

US Rates & MBS Weekly

QE 4, What is It Good For?

- **More QE in December** — We continue to expect that the Fed will provide additional balance sheet actions before Operation Twist expires at year-end. However, the impacts of the more recent Fed balance sheet actions have been limited relative to the initial programs and we would expect little from QE 4.
- **Vol —** We recommend buying a 30bp range of rates, centered 40bp below current forwards as a way of expressing the view that the fiscal negotiations become sharply contentious. We implement this trade using a receiver swaption butterfly.
- **Short-End Notes —** In our base case scenario 3m T-bill yields will move down to 0bp in Q1 2013 and negative yields are likely. Despite our forecast, financial CP yields have shown little correlation with bill yields and are likely to remain positive.
- **Agency Spreads —** Using our fair-value model, we forecast five-year agencies to widen by 5bp going into the end of the year.
- **Agency MBS —** We estimate that fixed-income money managers would need to reduce their MBS weighting on funds. Although mortgages may struggle in the short-term, we think they are looking attractive for medium to long-term investors.

Figure 1. Chart of the Week: The Production Coupon OAS level for mortgages has had a minimal impact since QE 3 was announced two months ago.



Source: Citi Research, Bloomberg

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Rates Forecast

Figure 2. Rates Forecast as of November 16, 2012

	Model Value (%)	Market Value (%)	3m Forward (%)
Fed Funds Effective	0.00	0.16	0.00
2y Treasury	0.16	0.24	0.16
5y Treasury	1.01	0.62	1.11
5y Forward 5y Treasury	4.11	2.62	2.59
10y Treasury	2.56	1.59	1.85

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

We will host our weekly conference call on Monday, November 19. Please find the contact information below.

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

Summary of Views

Figure 3. Strategy Summary Table

US Rates	View	Recommended Positions
Duration	**Long:** We recommend long duration based on concerns that fiscal negotiations will remain contentious into 2013.	Long 10yr Treasuries
Yield Curve	**Neutral:** Biased to back-end. We expect that a post Operation Twist QE announcement will slightly flatten the 10s30s curve.	The post-election rally should have expanded expected front-end benefit. The back-end can further benefit from protracted fiscal negotiations.
Swap Spreads	We look to initiate wideners at the end of November.	None
Gamma	We are long low strike gamma in 10y tails, unhedged. We expect implied to drop modestly further.	Long unhedged gamma in 3m10y through low strike receivers.
Vega	We expect a decline in intermediate vega.	Sell 100mm 3y10y straddles and buy a gamma weighted amount of 6m10y straddles
Inflation	Due to seasonality, uncertainty surrounding the fiscal cliff, and economic growth, we expect TIPS to underperform in the near term.	Sell 5y5y inflation forwards 2s10s breakeven curve flatteners 2s3s real yield curve steepener
MBS	**Neutral**	Buy HLB v. TBA for 3.5s
Agency Debt	Long dated agency bullets provide great insurance for adverse events like the fiscal cliff stalemate even while they garner positive carry to Libor.	**Bullets:** Buy 10- and 20-year agency bullets on assets swap.

Source: Citi Research

US Rates & Curve: QE 4, What is It Good For?

Brett Rose

Using any distraction to avoid talking about the fiscal cliff, we use this week's release of the FOMC minutes as a reason to address Fed balance sheet activity. We look at both the impact of QE 3 announced in September and the likelihood of QE 4 being announced in December to replace Operation Twist, which expires at year-end. Our expectation is QE 4 will be announced in December and it will be very similar to the purchase portion of current Operation Twist. This is despite the fact that more recent balance sheet programs have had a very modest impact and additional programs are also likely to have a more modest impact.

More QE Likely to be Questioned

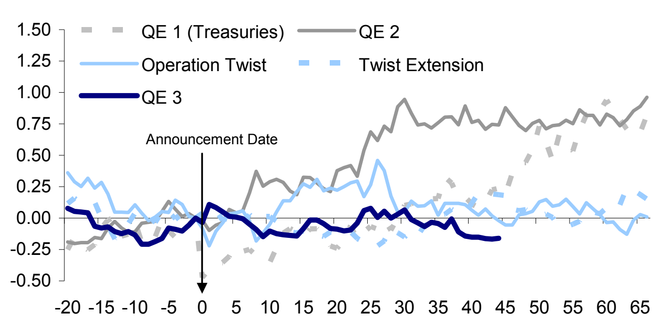
The support within the Fed for further QE in 2013 seems to be just strong enough to assure that expiring Operation Twist will be replaced with a new tranche of QE in 2013. The pro and con within the minutes of the October 24 FOMC were:

- "…a number of participants indicated that additional asset purchases would likely be appropriate next year after the conclusion of the maturity extension program…"
- "Several participants questioned the effectiveness of the current purchases or whether a continuation of them would be warranted if the recent moderate pace of economic recovery were sustained."

We assume that "a number" is greater than "several" and that Jeffrey Lacker[1] is potentially the only current voting member among the "several" and would therefore expect the constituency in the first bullet point to prevail. However, it does seem that the position has softened slightly from the September meeting when they initiated the MBS tranche of purchases and noted "…if the outlook for the labor market did not improve substantially, it would continue its purchases of agency MBS, undertake additional asset purchases, and employ its other policy tools as appropriate until such improvement is achieved in a context of price stability."

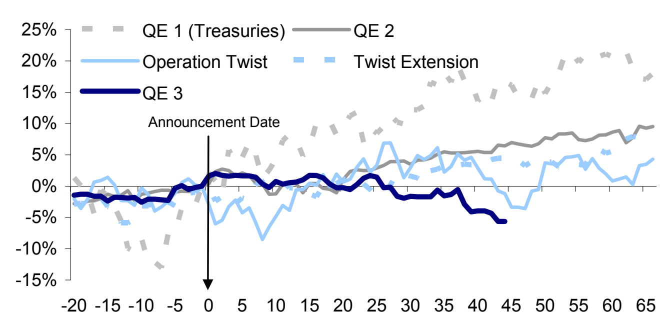
Further, while financial conditions eased slightly between the September and October FOMC, they have deteriorated since then – especially following the US elections. In Figure 4 and Figure 5 we show 10yr Treasury yields and S&P 500 in the month prior to and 3-months following the announcement date of the last five Federal Reserve balance sheet programs. The dramatic impact of QE 1 and QE 2 are less clear-cut in the more recent programs.

Figure 4. Treasury Yields Lower Under QE 3 – They Rose in QE 1 / QE 2



Source: Citi Research

Figure 5. Same Story With the S&P 500 Index



Source: Citi Research

The recent weakening in risk markets is worth discussing from several different angles. First, it increases the necessity for additional Fed easing. However, it can also call into question the effectiveness of QE as a policy measure. Finally, it raises

[1] Mr. Lacker made his disapproval clear by his dissents at recent FOMC meetings and reiterated his disapproval in a speech on November 15, 2012.

questions as to what the market impact will be to an announcement of additional QE.

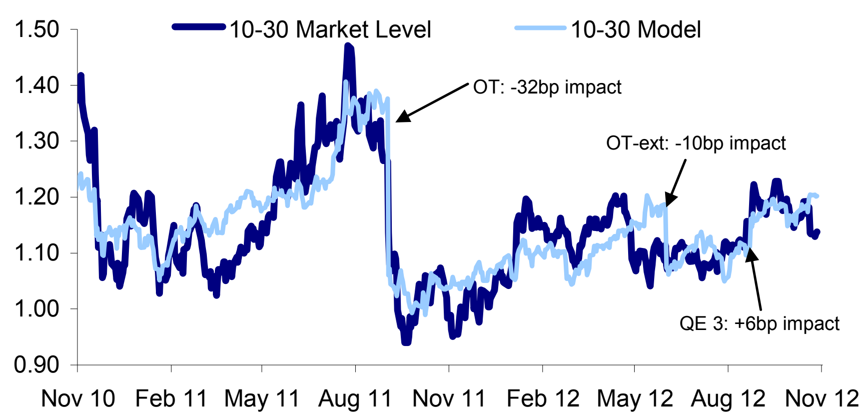
Additional QE will likely drive Treasury yields lower – but very modestly.

Ultimately, it is our expectation that the Fed will focus on the increased need for QE due to softening financial conditions and choose to extend MBS purchases into 2013 and to replace expiring Operation Twist with a new round of Treasury purchases. While some at the Fed (and many outside of the Fed) will likely be concerned about the possibility that the effectiveness is modest, we do not expect the core view of the FOMC to reflect this. However, we expect that the impact is likely to be modest. When QE 3 was announced in September we initiated a long duration recommendation with the view that the direct demand impact of additional duration purchases would overwhelm any indirect impacts from improving economic or financial conditions. While our current long duration recommendation is driven more by concerns over fiscal negotiations, additional Fed duration purchases would merely provide some modest additional support for this view.

Curve Impact of Operation Twist Extension Also Muted

When we analyze the impact of Operation Twist on the long-end of the Treasury curve, we also see the impact of the program extension to be less than the impact of the initial program. To analyze this impact we compare the 10yr – 30yr curve with the variables that we find to be most impactful under normal conditions; yield level, volatility and inflation expectations. To estimate the impact of Fed balance sheet actions we then add a dummy variable for each of the three programs announced over the past two years; Operation Twist, Twist Extension and QE 3. In Figure 6 we compare market levels with estimated levels for 10yr-30yr Treasury curve.

Figure 6. The Impact of Operation Twist was More than 3x the Impact of the Extension



Source: Citi Research

This suggests that the impact of the extension of Operation Twist in June was less than one-third as much as the initial program that was announced in September 2011. This is despite the fact that the extension was more than two-thirds the size of the initial program.[2] This regression also estimates that QE 3 increased the 10yr – 30yr curve by 6bp which is reasonable given that the duration of the MBS purchased is more concentrated in the 10yr part of the curve.

QE 4 Likely Means Lower and Flatter, but…

Our expectation is that the announcement of QE 4 to replace expiring Operation Twist will result in lower yields and a flatter 10yr – 30yr curve. However, we think that the impact will be very modest. Ultimately, we would expect fiscal issues to dominate monetary actions for the next couple of quarters. We also expect the next outcome of the fiscal negotiations, or more precisely the lack of a near-term outcome, to drive yields lower. Combining this with an expectation that Fed balance sheet accommodation will be supportive of Treasury prices, albeit very modestly, support our recommendation to be long duration in the 10yr part of the curve.

[2] We run a similar regression in our daily US Rates Chart Pack (Figure 5). In this chart pack we assume the curve impact of these programs is related to the size of the program, which appears to be overestimating the impact of the extension of Operation Twist and QE 3.

Interest Rate Derivatives

Look to enter 10y SS wideners towards end of the month

Neela Gollapudi

Market Recap

Over the past week, the market appears to have come to the conclusion that there is little near-term uncertainty. Consequently, 1m expiries were crushed, especially in longer tails. The decline in longer-tails should also be seen as a rate-bearish event, or at worst a bull steepening bias in the market. The move suggests the market has little concern for middle-eastern tensions, the Fed in mid-December, and any quick fiscal deal. Risk premia beyond the one-month point are modest, with one-month forward two-month expiries in 10y tails perhaps at about 75bp/annum – i.e., not very high. This week we look at gaining exposure to interesting wing scenario where rates make lows, and settle slightly above the lows – somewhat akin to the ratcheting behavior that we have seen since 2011.

Figure 7. Vol surface changes 11/8-11/15 in bp/annum

Tenors left top right	2y	5y	10y	30y
1m	(2.5)	(5.1)	(7.1)	(7.9)
3m	(0.9)	(1.0)	(1.9)	(0.9)
6m	(1.0)	(0.6)	(1.5)	(0.9)
1y	(1.0)	(0.2)	(0.7)	(0.6)

Source: Citi Research

The ratcheting rates scenario

Just to be clear upfront, this is not our base case scenario, but a plausible wing scenario that is worth considering. Our base case is a decline in 10y Treasury yields down to 1.35% by March 2012, followed by a fiscal deal, and an increase in rates to the 1.85% area during the following several months.

Over the past twenty months or so interest rates have declined from time to time, but having declined, they have not bounced back even when presented with positive economic data (see Figure 8). Instead, rates have tended to tread water at or around the level that they declined to, with consequent declines in volatility. In this instance we are speaking specifically of the periods of stability from November 2011 through February 2012, and from August 2012 to the present.

Figure 8. 10y Swap Rates (and Treasury yields) appear to be ratcheting lower

Source: Citi Research

Should there be another leg lower in yields, following and event such as "going off the fiscal cliff", at the end of the year, it is very conceivable that yields do not bounce back materially.

In expressing this view, it is necessary to visualize what is feasible in terms of declines in rates, bounce-backs, and periods of stability.

The period between November 2011 and February 2012 saw a very narrow 20bp range for four months after a large 180bp decline in rates and a modest but aborted bounce. The period from August 2012 to the present saw a slightly wider 30bp range after a fairly sharp 85bp decline in 10y yield peak-to-trough from March 2012 to July 2012. If the past were prelude, it would suggest a smaller 40-60bp decline in rates on a fiscal cliff type event, a modest 20bp bounce off the lows, say, and a tight 20bp trading range for 3- to 4-months. This is not to say that these numbers are necessarily scientifically derived. We are merely painting a picture here. Rallies from current levels of yields are likely to be shallower than rallies last year, or even rallies earlier this year, simply because of the current low level of rates – i.e., plain old log-normality. Likewise, the size of the bounce-back could be smaller than earlier ones over the past twenty months.

One could easily come up with economic rationale as to why such a wing scenario is plausible. First, low rates that are approached in a non-crisis situation appear to be an absorbing barrier. Japan for the past two decades, and the US for the past couple of years are examples in point.

Secondly, what separates our base case from the wing scenario is simply the nature of the outcome in the fiscal negotiations. For instance, all parties concerned could settle on an agreement by December 23rd, as many in the market expect.

Alternately, they could continue negotiating with temporary relief provided both on taxes and deficit cuts. In either of these cases, one could see modest declines in rates until an actual agreement is reached, and somewhat larger increases in rates thereafter, as the agreement is likely to be somewhat *friendly*. As we mentioned above, this is our base case.

On the other hand, if negotiations become contentious, and there is no temporary relief while negotiations spill into the first several months of 2013, the decline in rates both going into year-end 2012, and in the following months, could be harder. Also, the agreement that is reached could be shallower. Some negative ratings actions are plausible under this scenario. Risk assets are unlikely to bounce materially in this scenario. Possibly, neither will rates. The visual we would offer is of throwing a lump of clay at a wall, and seeing it stick.

We would express the view about the range-trade that comes after the rally and the bounce, rather than just the rally, which we have previously covered in a low strike receiver that we recommended several weeks ago.

We would structure this trade in two parts. The first piece is a 1 by 2 in six-month expiries on 10y tails, with the near leg struck 25bp below the forwards, and the far leg struck 45bp below the forward. The strike on the far leg is at 1.36%, and assumes a very modest amount of swap spread widening on the rally. This leg of the trade is structured to be cash flat.

The second leg of the trade buys a receiver that is struck at atmf-55bp, and is optional. This leg is meant for those that do not like open-ended loss scenarios. The goal is to unwind this leg should there be a sharp rally to the 1% area in cash 10s. At that point, one would have avoided the mark-to-market pnl swings on a 1by2, but reassessing legging into the 1by2 after taking gains on the low-strike receiver. Trade details are given below.

Figure 9. . Trade details: Buy 1by2 in 6m10y, and optionally hedge the tail scenario with an additional lower strike 6m10y

	Notional ($mm)	Expiry / Tenor	Relative Strikes	Structure	Atmf	Absolute strikes	Premium	Delta	Vega	Gamma
Buy	+100.0	6m10y	-25	Receiver	1.761	1.511	900,797	32,967	22,160	843
Sell	-200.0	6m10y	-40	Receiver	1.761	1.361	(900,797)	(42,735)	(33,934)	(1,453)
Buy	+100.0	6m10y	-55	Receiver	1.761	1.211	216,129	11,958	11,062	529
Net							216,129	2,190	(712)	(80)

Source: Citi Research; Pricing is indicative as of late afternoon 11/15; For an executable level, please call the desk.

To be fair, the super-low strike 6m10y is unlikely to gain much in value in a large rally, unless one actually goes through the strike. We see it simply as insurance for the scenario where one actually goes through the strike.

The maximum downside in the trade is what one pays upfront to do the trade. The max payout ratio is about 6.3, without assuming higher durations at lower rates.

Short-end notes: How low can rates go?

Andrew Hollenhorst

Expect short rates to move lower in 2013

A number of factors will come together in 2013 to pressure short term rates lower:

1. **Reserve creation by the Fed** – The continuation of $40 bn/mth in mortgage purchases and our expectation of $45 bn/mth in unsterilized treasury purchases beginning in 2013 will directly pressure Fed effective and repo.

2. **Expiration of TAG** – Expiration of FDIC insurance on $1.4 trillion in deposits could lead to $100-$200 billion in new demand for short term paper from corporates and $50 billion in demand from state and local government (see below).

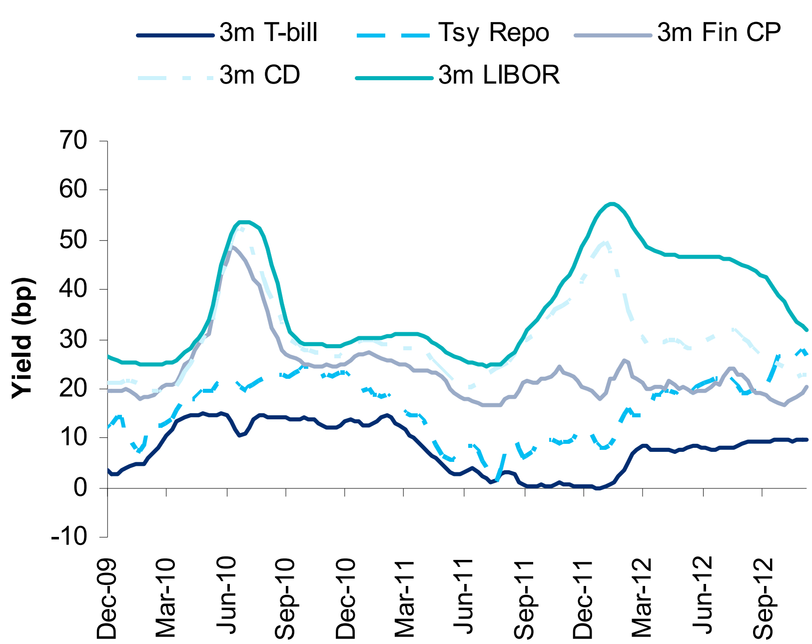
3. **Expiration of Operation Twist** – The end of the Fed's sales of front end treasuries will decrease net supply of short-term treasuries to the nonofficial sector and alleviate pressure on dealer balance sheets

4. **Lower REIT repo demand** – The recent decline in REIT equity valuations may cause REITs to shrink assets by engaging in share buybacks and lowering leverage ratios, decreasing demand for term repo.

5. **Clearing of OTC Derivatives** – The need for those clearing OTC derivatives to post margin under Dodd-Frank may bid up the price of T-bill collateral.

6. **LIBOR reform** – The proposed reforms to LIBOR, in particular increasing the panel of submitters, will likely take LIBOR 1-5bp lower.

Figure 10. Low short-term rates likely to move lower in 2013



Source: Citi Research, Bloomberg, Federal Reserve H.15, 20 day or 5 week moving averages

T-bill yields may breach 0bp

It is not unlikely that we see negative 3m T-bill yields in 2013.

In our view, the expiration of TAG deposit insurance will result in $150-$250 billion in new demand for high quality front end paper, pushing bill yields 6-10bp lower.[3] Given that 3m T-bill yields have averaged just under 10bp over the last 20 trading days (Figure 10), the effect of TAG alone could push T-bill yields close to zero or slightly negative. Taking into account the whole list of factors arguing for lower short-term rates, our base case scenario is that 3m T-bill yields move to around 0bp in Q1 2013 and that it is not at all unlikely that we see negative bill yields.

T-bill yields will face resistance as they move into negative territory and are likely floored at -15bp.

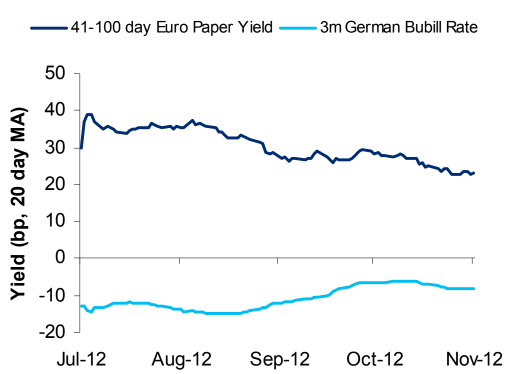
Even if demand for T-bills surprises to the upside (e.g. if withdrawals from TAG accounts are more than forecast), T-bill yields will likely face increasing resistance in moving lower as they enter negative territory, keeping yields at only slightly negative levels. There are both empirical and theoretical reasons to expect that T-bill yields will not sustain levels below -15bp. Empirically, German 3m Bubill yields hit a low of -21bp since becoming negative in late 2011 and the 20 day moving average yield has not moved below -15bp. (Figure 11) Negative T-bill yields mean that investors are in effect paying the US government a fee to safeguard their cash. Investors could obtain essentially the same service by paying a fee to place cash in an insured storage vault. Commodities investors currently pay 15-20bp to store gold in this way.[4] While we don't think cash will actually flow into storage vaults, the theoretical possibility should put a floor on T-bill yields at around -15bp.

Expect CD and CP yields to remain positive

Financial CP is likely to continue to offer significantly positive yields even if T-bill yields move negative.

As of Nov. 9, 3m CDs and 3m financial CP traded at spreads of 14bp and 13bp respectively to 3m T-bills. We think CD and CP yields may move slightly lower in sympathy with T-bills but much less than one-for-one and will stay positive even if T-bill yields move negative. Since 2009 CD and CP yields have shown zero or negative correlation with T-bill yields as the credit component of the yield has overshadowed the interest rate component. (Figure 12) Also, many T-bill investors require the highest level of liquidity and lowest credit risk and would be either unwilling or unable to substitute out of T-bills and into CDs or CP even if spreads were to widen. Finally, although the European example is not directly comparable because of heightened credit concerns, European short term paper increased in yield even as Bubills moved negative. (Figure 11)

Figure 11. German 3m Bubill yields have rarely yielded less than -15bp



Source: Citi Research, ECB, Euro paper yields are STEP yields at issue

Figure 12. Financial CP exhibits low correlation with T-bills

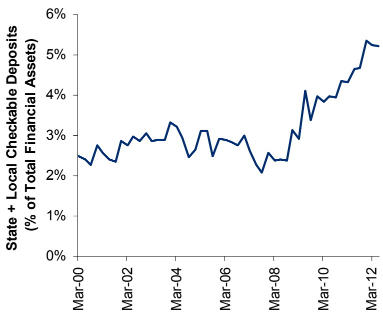
	Correlation of Weekly Changes Nov. 2009-Present					
	Fed Eff	Repo	3m T-bill	3m CD	3m CP	3m LIBOR
Fed Eff		0.76	0.54	-0.05	0.20	-0.10
Repo			0.50	-0.06	0.20	-0.01
3m T-bill				-0.32	0.01	-0.15
3m CD					0.68	0.86
3m CP						0.68

Source: Citi Research, Federal Reserve H.15, CP is financial sector CP

[3] The estimated effect of demand on T-bill yields is based on a linear regression of changes in T-bill yields on net issuance. We estimate 4bp lower yields for $100 billion increased demand.
[4] See storage fees listed on GoldSilver.com for instance.

State + local deposits add $50 billion to increased demand on TAG expiration

Figure 13. State and local checkable deposits have increased as TAG program obviated need for collateralization of deposits



Source: Citi Research, US Flow of Funds, Total Financial Assets is net of receivables and miscellaneous

In previous research we have estimated that the expiration of FDIC TAG insurance on $1.4 trillion in deposits will result in between $100-$200 billion in demand for high quality short-term assets from the corporate sectors. State and local governments typically require banks to collateralize their uninsured deposits with treasuries or other high quality securities. The expiration of unlimited FDIC insurance means banks will either need to come up with collateral or state and local governments will be forced to withdraw funds and buy short term assets.

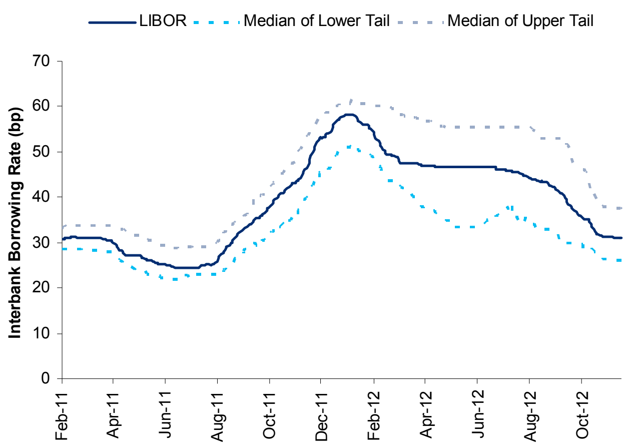
State and local checkable deposits have grown from a median of 2.8% of financial assets[5] over the period 2000-2007 to 5.2% in Q2 2012. (Figure 13) If checkable deposits were to drop 1.4% to their pre-crisis levels, this would imply just under $50 billion in checking account withdrawals. Adding the state and local demand to the corporate demand gives a total estimate of $150-$250 billion in increased demand due to TAG expiration.

LIBOR likely to move 3bp lower by year-end

In mid October we had called for 3m USD LIBOR to continue declining, but at a slower pace of about .5bp per week. In fact the pace declined to .2bp per week before stalling in early November and registering a .1bp increase on November 15. (Figure 14) Despite the stall in the rate of decline, we still think that given CP and CD yields in the low 20s, LIBOR will continue to move toward 28bp by year end.

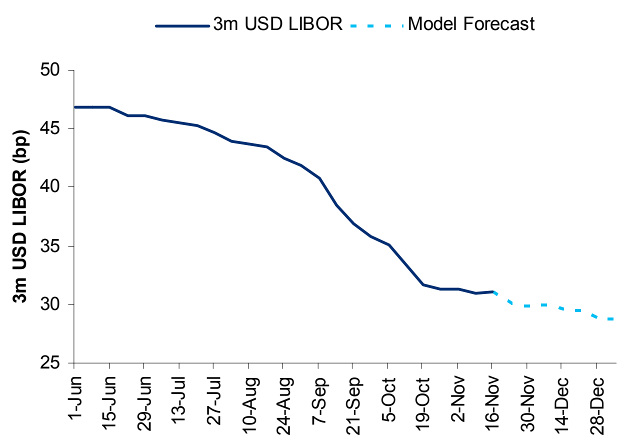
While the recent stall in the decline of LIBOR may seem to signal a resistance level, a statistical model that uses past changes in LIBOR to predict future changes suggests that LIBOR may continue to decline through year end.[6] (Figure 15)

Figure 14. The decline in 3m USD LIBOR has stalled…



Source: Citi Research, Bloomberg, Upper and lower tails are the top 4 and bottom 4 submissions which are trimmed away when LIBOR is computed.

Figure 15. …but a simple model suggests continued decline to 28bp



Source: Citi Research, Model is a linear autoregressive model fit on changes. The model uses 5 lags of weekly changes.

[5] We exclude tax receivables, trade receivables, and miscellaneous from total financial assets.

[6] We fit a linear autoregressive model to weekly changes in USD 3m LIBOR over the period August 2009-Present. The model uses 5 lags of weekly changes and has an R^2 of .59.

Agency Spreads: Post US Election Recap

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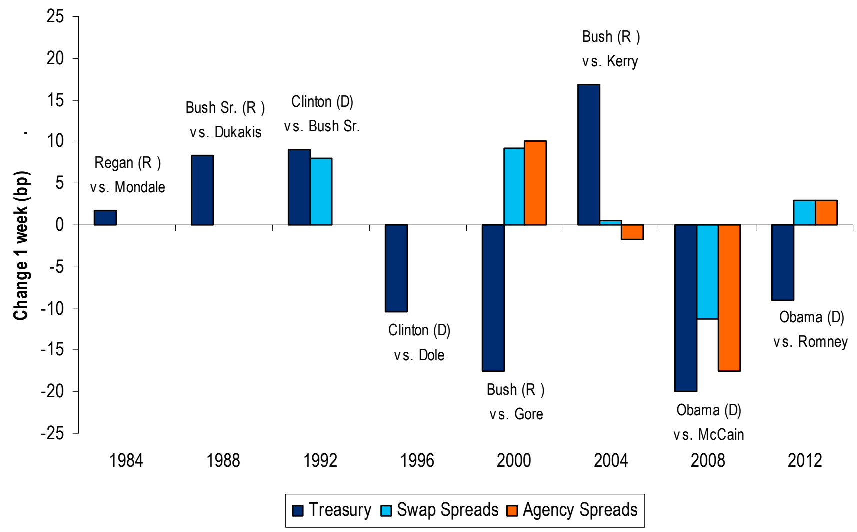
- Using our fair-value model, we forecast five-year agencies to widen by 5bp going into the end of the year, based on our rates strategists' forecasts.
- Five-year agencies have widened by 3bp since the election. We had predicted a tightening of 1bp in the case of an Obama victory based on our fair-value model and swaps tightening 2.5bp (US Agency Notes - Taking a View on the US Elections). In fact, swaps widened 3bp.

Figure 16. Historical post-election rate/spread changes (5-yr Tsy, swaps and agency)



Source: Citi Research

Markets Recap

America re-elected President Obama for his second term in the White House last week, and the markets responded with a rally in Treasuries as well as widening of swap and agency spreads. In particular, the five-year Treasury rallied by 9bp, five-year swap widened by 3bp, and the five-year agency widened by 3bp (Figure 17).

Figure 17. Pre and post election levels

Current, 11/15/2012			Pre-Election, 10/31/2012			Change		
5Y Tsy (%)	5y Swap (bp)	5y Agy (bp)	5Y Tsy (%)	5y Swap (bp)	5y Agy (bp)	5Y Tsy (%)	5y Swap (bp)	5y Agy (bp)
0.64	13	14	0.73	10	11	-0.09	3	3

Source: Citi Research

Fair Value Model Review

We had forecast that in an Obama victory, the five-year agency spread would tighten by 1bp, largely as a result of swap spreads widening. However, as it turned out, agencies widened by 3bp. The discrepancy was due to a couple of reasons:

1. We had anticipated swap spreads tightening with an Obama victory.
2. The five-year agency spread had been rich relative to the fair value model prior to the elections. Since the election it has cheapened back into line with the model.

Figure 18. Model-implied agency changes based on actual moves

Actual Changes			Model Implied Changes
5Y Tsy (%)	5y Swap (bp)	5y Agy (bp)	5y Agy (bp)
-0.09	3	3	2

Source: Citi Research

Using the actual Treasury and spread moves since the election (Figure 18), we see that our fair value model's implied widening of 2bp was actually quite close to the observed widening of 3bp.

Forecast for End of Year

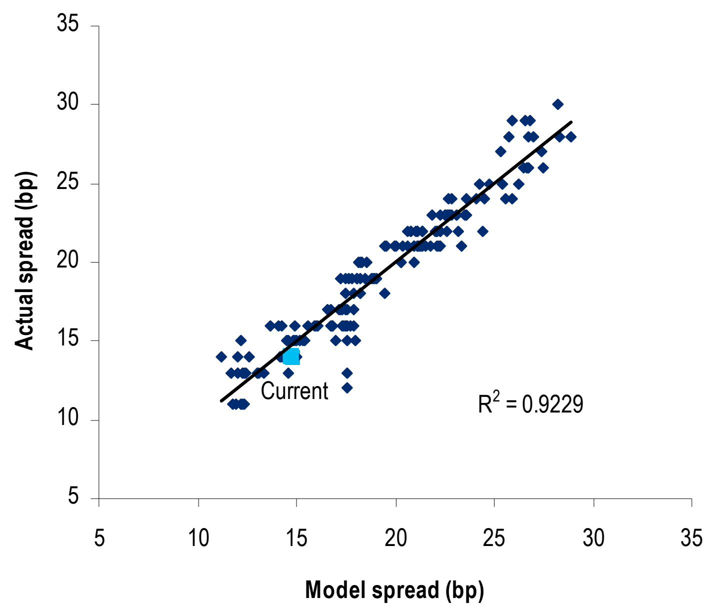
In Figure 19 we show the results of using our fair-value model to forecast agency spreads going into the end of year. Our rate strategists believe that the Fed is likely to buy additional Treasuries, and they have factored that into their forecasts. Based on those projections, with the five-year Treasury rallying 9bp and swap spreads widening 8bp, we anticipate agency spreads to widen by 5bp vs. Treasuries, and tighten 3bp vs. swaps.

Figure 19. Forecast levels for end of year

Current, 11/15/2012			End of Year, 12/31/2012		
5Y Tsy (%)	5y Swap (bp)	5y Agy (bp)	5Y Tsy (%)	5y Swap (bp)	5y Agy (bp)
0.64	13	14	0.55	21	19

Source: Citi Research

Figure 20. Efficacy of the fair-value model over the last six-month period



Source: Citi Research

Agency MBS: Morton's Fork

Ankur Mehta
Timothy Chung
Mayank Singhal

Market Overview

Production coupon agency MBS underperformed their Treasury hedges by 16-19 tick over the last week (Thursday-Thursday closes). A combination of uncertainty around the fiscal cliff and debt ceiling along with policy risk to prepays seem to have driven MBS investors to the sidelines. The underperformance was not restricted to lower coupons with FN 5.5s and 6.0s down 21-24 ticks over the week as the market digested the faster than expected prepays from the latest print. Although mortgages may struggle in the short-term, we think they are looking very attractively priced for medium to long-term investors.

The Fed announced that their re-investment purchases for the new purchase cycle will be $35bn. The amount was in line with our expectations and $6bn higher than their re-investment purchases last month. The MBA refinancing index saw a 13% increase as mortgage rates hit new lows and applications in the east coast states impacted by superstorm Sandy rebounded strongly.

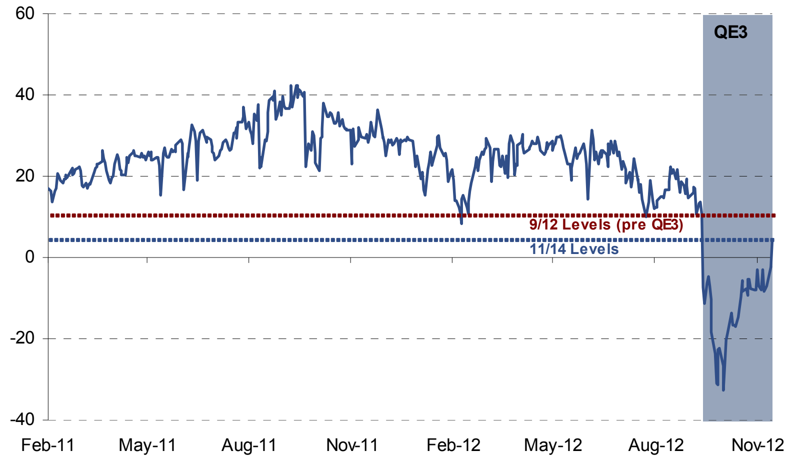
September TIC data was released earlier today and showed that overseas investors were net sellers of $6bn agency MBS versus being net sellers of $1bn agency in August. The $13bn of net purchases over the month were more than offset by the $19bn of paydowns on their MBS portfolio. Similar to domestic investors, it seems overseas investors increased their purchases of agency debt in September as MBS spreads tightened significantly after the QE3 announcement. Their purchases of agency debt increased from approximately $2bn over in July and August to $5bn in September.

Basis Update: Mortgages Look Attractively Priced

Although the performance of production coupon agency MBS was in line with market expectations immediately after the election, investors seemed to have been caught off guard by the massive underperformance over the last few trading sessions. Following the recent price action, production coupon LOAS are now within 5 to 10bps of pre-QE3 levels (Figure 1).

Figure 2 shows our estimates of agency MBS holdings across different investors as of October 2012. We also show our expectations of how these holdings will change over the course of the next year. We expect that net issuance in agency MBS will be $50bn and the Fed will continue its MBS purchase program over this period. We assume that bank holdings will remain unchanged whereas GSE, REIT and overseas holdings will decline by $75bn, $25bn and $50bn respectively. For supply/demand to balance out, we estimate that fixed-income money managers would need to reduce their holdings by $230bn over the next one year. This would reduce their agency MBS weighting on their funds from 35% (approximately 3% overweight) to 19% (approximately 13% underweight). We think this is extremely unlikely given that spreads on agency MBS are close to being at their pre-QE3 level after the recent widening.

Figure 21. Production coupon LOAS has widened considerably and is only 5-10bp tighter than pre-QE levels



Source: Citi Research

In spite of the positive technicals, a combination of uncertainty around the fiscal cliff and debt ceiling, along with policy risk to prepays seems to have driven MBS investors to the sidelines. We continue to believe that the administration will not replace Ed DeMarco over the next couple of months as they have more pressing issues to deal with which will take precedent. However, uncertainty on the fiscal cliff and debt ceiling is likely to continue over the next few weeks. We also believe that dealer risk appetite will decline into year end and this is likely to result in a fair amount of basis volatility. Although mortgages may struggle in the short-term due to the aforementioned factors, we think they are looking very attractively priced for medium to long-term investors. We continue to recommend an overweight on agency MBS versus Treasuries

Figure 22. Long term technicals are still favorable

Investor Type	Holdings as of Oct'12 ($bn)	Expected 1-Yr Change ($bn)	Expected Holdings in Oct'13($bn)
GSEs	530	-75	455
Treasury	0	0	0
Federal Reserve	852	505	1,357
Banks	1,450	0	1,450
Foreign	634	-50	584
REITs	345	-25	320
Agency MBS Funds	150	0	150
Other Fixed-Income Funds	520	-230	290
MBS Weighting of FI Funds	**35%**		**19%**
Others (Ins. Companies + State/Local Govts)	729	-75	654
Outstanding MBS	5,211	50	5,261

Source: Citi Research

FHA Actuarial Report

Earlier today, the FHA reported that due to losses from its loans, the funds economic value declined from positive $1.2bn last year to negative $13.5bn. Most of these losses are expected to come from the 2008-09 vintage borrowers, where, the fund is likely to lose $25.5bn. Given the $25.57bn of capital resources at the end of FY 2012, current projections show that the fund expects to be cash-flow positive by 2014.

Since FHA operates under permanent and indefinite authority from the Treasury, they will not need any congressional approval to get funds. Further, the FHA still has a cash surplus which should be enough to cushion against losses over the short-term. HUD secretary Shawn Donovan announced that the FHA will increase their insurance premiums by 10bp, sell 10,000 delinquent loans per quarter, and boost “relief for borrowers” to increase revenue and reduce losses. Although we have long been expecting another increase in FHA insurance premiums, we were a little surprised that the increase was only 10bp[7]. We expect the FHA to implement the 10bp increase in premiums in the first quarter of 2013.

Prepay Trends on HARP Eligible Pools

Last months prepay print caught a lot of investors by surprise as speeds on HARP eligible higher coupon vintages increased much more than what the market was expecting. As we had highlighted last week, most of this increase can be attributed to an uptick in loans serviced by Greentree (originally serviced by Bank of America). We take the unexpected prepay print as an opportunity to dig deeper into trends being observed amongst HARP eligible pools. Our key takeaways are as follows:

- **2003-05 vintage speeds have increased recently:** The prepay difference between 2006-08 and 2003-05 vintages was approximately 2-3%CPR (with the former paying faster) prior to the implementation of HARP 2.0 but this difference had increased to over 10%CPR for pools with higher loan sizes by June 2012. More recently, we have seen a convergence in speeds as prepays on the more seasoned vintages (2003-05) have increased more than the 2006-08 vintage speeds.

- **Loan Balance speeds have been trending higher:** Pools with loan size greater than 150k witnessed a rapid increase in prepays after HARP 2.0 was introduced late last year. However, since June 2012, the speed increase on loan balance pools has either exceeded or kept pace with the speed increase in the 150k+ bucket.

[7] Please see Agency MBS Weekly published on Sept. 14th 2012 and Nov. 9th 2012 for more details.

- **Lenders focus seems to have shifted:** We think that lenders focused on higher loan size and higher LTV loans right after HARP was introduced as refinancing these loans was very profitable. However, once they were done soliciting these borrowers, their focus seems to have increased on lower LTV cohorts (2003-05) and lower loan balance pools. This trend is most pronounced for lenders like Chase, Wells and Citi which have been more aggressive to ramp up for HARP. Another factor that could be impacting these speeds is the constant rally in mortgage rates.

- **Outlook for speeds:** Based on the trends we are seeing on HARP eligible pools, we think that the 2006-08 vintage speeds are likely to stay in the recent range or decline slightly over the next 2-3 months (adjusted for day count). However, prepayments on the 2003-05 vintage could actually increase as lenders continue to court these borrowers. Further, we expect that lenders will also continue to target loan balance borrowers and speeds on these pools will most likely increase over the next couple of months even if cohort level speeds stabilize or decline.

Figure 23. Loan balance stories have shown higher voluntary speeds since June 2012

Vintage	Type	Ch. Since 6/12	Ch. Since 1/12
2003-05	LLB	5.1	7.7
2003-05	MLB	7.0	11.3
2003-05	HLB	6.6	12.4
2003-05	150k+	6.0	13.1
2006-08	LLB	5.2	7.4
2006-08	MLB	6.3	11.3
2006-08	HLB	6.7	16.3
2006-08	150k+	4.2	19.8

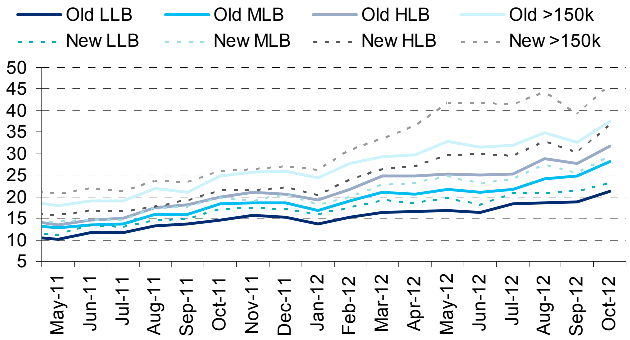
Source: Citi Research, All data is based on Gold pools with 5.5% coupons.

Speeds on 2003-05 Vintage and Loan Balance Pools have Increased

We first examine the relative speeds on loan balance stories, where we compare voluntary speeds on GD 5.5 pools issued between 2003-05 with those issued from 2006-08. Figure 23 and 4 show how speeds across various loan balance buckets have changed since the beginning of the year. Figure 23 also shows the change in speeds since June of this year. A clear trend emerges across loan balance buckets with the 150k+ loan size prepays increasing rapidly right after HARP 2.0 was introduced late last year. However, since June 2012, the speed increase on loan balance buckets has either kept pace or exceeded the speed increase in the 150k+ bucket. This trend is even more pronounced if we just compare June speeds with September speeds (October speeds for 150k+ jumped due to an uptick in prepays on Greentree serviced loans).

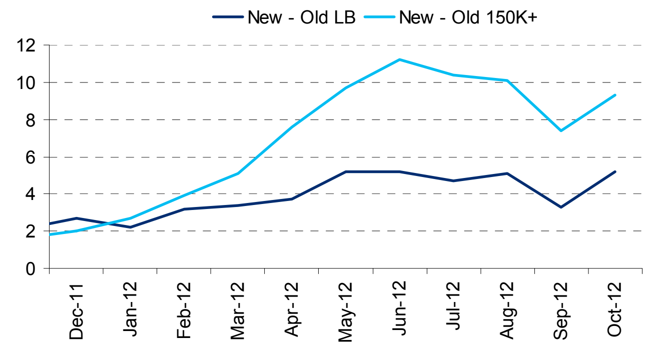
Another observation worth highlighting is that before the implementation of HARP 2.0 in January 2012, the more seasoned pools (2003-05 vintage) prepaid only marginally slower than their less seasoned counterparts (2006-08) across loan balance buckets. After HARP 2.0 was implemented, 2006-08 vintage pools prepaid faster than more seasoned pools until around June 2012, after which the prepays on the more seasoned loans started to converge with less seasoned loans. This trend is more clear in Figure 25, where we plot the prepay difference between the "New" HARP vintages (2006-08) and the "Old" vintages (2003-05) across loan balance buckets and for higher loan size pools. The difference between the new and old vintages was approximately 2-3%CPR prior to the implementation of HARP 2.0 but increased to over 10%CPR for pools with higher loan sizes by June 2012. Since then, the difference has been declining. Similarly, the newer vintage loan balance pools also saw a sharper uptick in speeds after HARP 2.0 was implemented but more recently the more seasoned loan balance pools have started to catch up.

Figure 24. More seasoned pools have started to track speeds of less seasoned pools



Source: Citi Research, CDR&CPR. All data is based on Gold pools with 5.5% coupons. Speeds are voluntary, where buyout prepayments were removed.

Figure 25. ...as speeds on more seasoned pools start to converge (New = 2006-08 Vintage, Old = 2003-05 Vintage)



Source: Citi Research, CDR&CPR. "New" refers to 2006-08 vintage; "old" refers to 2003-05 vintage pools. Prepay data is based on voluntary prepays on GD 5.5s.

Explaining the Trends

We think that the following factors are driving prepay trends for HARP eligible borrowers:

- **Loan Size:** Lenders will find it more profitable to refinance high loan size HARP eligible loans given that they earn more revenue for the same amount of work. This most likely led to the surge in prepays on pools with loan size greater than 150k between January and June of this year. As lenders are done soliciting these borrowers, they most likely started targeting loan balance borrowers more recently. We examine this theory by plotting speeds on loan balance pools against the ratio of existing balances between non-loan balance (150k+) and loan balance pools since 2011 in Figure 26. A lower ratio indicates that there are less high loan balance pools outstanding for the servicer. Across servicers, we see a strong trend with speeds on loan balance pools increasing as the ratio declines[8]. Given the lower rates, a lot of these loan balance borrowers may be choosing to refinance into a 15-year loan.

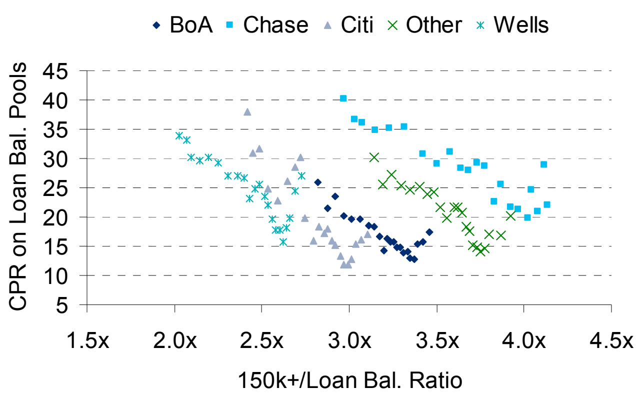
- **Impact of mark-to-market LTVs**: Similar to the impact of loan size, lenders would have found it more profitable to refinance high LTV (80+LTV) HARP eligible loans as the newly refinanced loans could be sold at a payup. This most likely led to lenders soliciting the high LTV loans, most of which are concentrated in the 2006-08 vintages (Figure 27), more aggressively. HARP 2.0 also gave the flexibility to specifically target 80+LTV borrowers and this probably led to the surge in speeds from January to June of this year.

- **Constant rally in mortgage rates**: One thing to note is that much of these increased speeds have occurred through the current record-low rate environment. Thus, it is possible that some of the recent trends we have seen are occurring because loan balance and 2003-05 vintage borrowers are finally starting to react to these lower rates. However, we are noticing

[8] Another possible reason for this strong correlation could be due to the constant rally in mortgage rates which we discuss in more detail later.

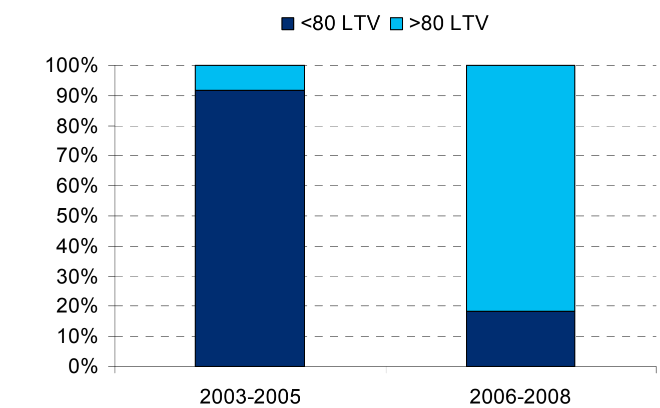
that the trends are occurring for super premiums as well, where borrowers have had significant incentive to refinance for some time. Additionally, as we show in the next section, the increase in loan balance speeds has happened primarily for lenders that aggressively ramped up on HARP. This also suggests that the primary reason for the recent speed increase is more aggressive solicitation of these borrowers rather than lower mortgage rates.

Figure 26. The availability of 150k+ pools has a relationship with loan balance speeds



Source: Citi Research, CPR&CDR. Uses data between Jan 2011 and Oct 2012. Based on 2003-2008 vintage pools. 150k+ /Low Loan Bal. Ratio is calculated by the ratio of total current balance larger and smaller than 150k loans. A larger ratio indicates that larger balanced loans comprise a larger portion of the originator's portfolio.

Figure 27. 2006-08 vintage pools have a higher concentration of high LTV loans



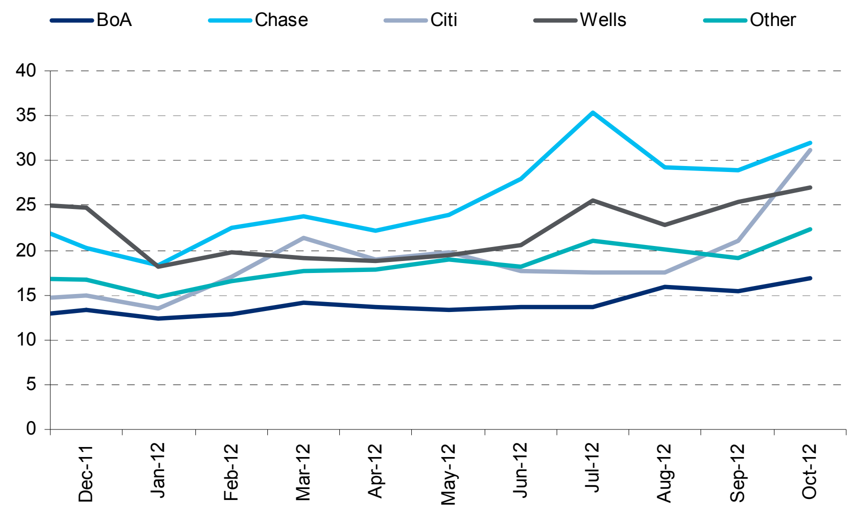
Source: Citi Research, CPR&CDR.

It is worth highlighting that the trends across servicers/sellers can be different than the trends seen in overall speeds. As shown in Figure 28, Chase, Citi and Wells seem to have become much more aggressive in refinancing LLB borrowers than Bank of America and other smaller lenders. These are the very lenders/servicers which were the most aggressive at targeting HARP borrowers once the program was revamped late last year.

Prepay Expectations

Based on the trends we are seeing on HARP eligible pools, we think that the 2006-08 vintage speeds are likely to stay in the recent range or decline slightly over the next 2-3 months (adjusted for day count). However, prepayments on the 2003-05 vintage could actually increase as lenders continue to court these borrowers. Further, we expect that lenders will also continue to target loan balance borrowers and speeds on these pools will most likely increase over the next couple of months even if cohort level speeds stabilize or decline.

Figure 28. Relatively, Chase and Citi have shown to be faster on low loan balance pools



Source: Citi Research, CPR&CDR. Only using LLB loans on 2003-2008 vintage FNCL pools.

BPA Portfolio Update

Vincent Toh

From 17 October to 14 November, our preferred portfolio, Bull Hedged, trailed the index by 0.08%. Maxmin lost 0.06%, and Forward underperformed by 0.13%.

The Treasury curve bull-flattened substantially over the last four weeks, led by the 20-year area. Ten-year and thirty-year yields fell 22bp and 25bp, respectively. Yields in the two- to five-year area were down 5bp to 15bp. Mortgages reversed much of their impressive post-Fed rally and gapped out 29bp. Agency bullets widened 1bp. Curve movements dragged down returns for all three portfolios, especially Forward. Spreads also hurt returns, with Bull Hedged and Forward losing the most.

Since rebalancing on 27 August (see the Bond Portfolio Analysis Quarterly of 28 August for descriptions), the Bull Hedged portfolio is down 0.10%. The Maxmin and Forward portfolios are down 0.04% and 0.11%, respectively.

Figure 29. Contributions of Curve, Spread and Vol Factors to Portfolio Returns Versus Index, 26 Sep 12 – 17 Oct 12 (Return Differences in Percent)

	Yield Curve				Spread				
Portfolio	Parallel Shift	Curve Reshape	Other	Total	Change	Other	Total	Vol + Convexity	Total Return
Bull Hedged	-0.08	0.04	0.00	-0.04	-0.07	0.03	-0.04	0.00	-0.08
Maxmin	-0.07	0.02	0.00	-0.04	-0.02	0.01	-0.01	0.00	-0.06
Forward	-0.07	-0.02	-0.01	-0.10	-0.05	0.02	-0.03	0.00	-0.13

Source: Citi Research

Curve Returns

All three portfolios are short duration relative to the index and lost 0.07 – 0.08% from parallel shift return as a result of the ten-year yield falling 22bp. The Bull Hedged and Maxmin portfolios took advantage of the flattening at the front end to gain 0.04% and 0.02%, respectively, from curve reshaping. The Forward portfolio is net short in the one- to three-year area and lost 0.02% as a result of reshaping.

Spread Advantage Returns

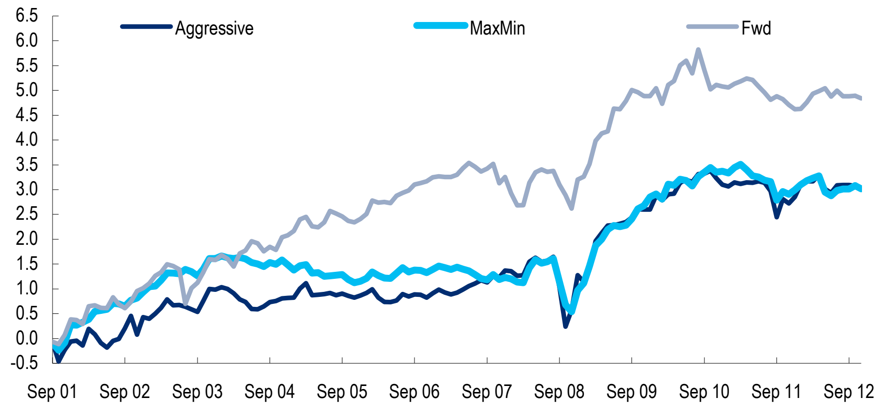
Spread effects dragged down returns for all three portfolios, with Bull Hedged and Forward losing 0.04%, each, and Maxmin off 0.01%. In all cases, the underperformance of mortgages was the main contributor to the spread underperformance. With agencies outperforming the index as a hole on a spread basis, underweighting agencies also reduced returns modestly.

Figure 30. Returns Versus Index, Nov 11 – 14 Nov 12 (Return Differences in Percent)

	Yield Curve				Spread					
Portfolio	Parallel Shift	Curve Reshape	Other	Total	Change	Other	Total	Vol + Convex.	Total Return	Return 2012 YTD
Aggressive	0.12	-0.01	0.08	0.19	-0.09	0.02	-0.07	-0.11	0.02	0.01
Maxmin	0.01	-0.03	0.04	0.02	0.02	0.03	0.05	-0.12	-0.05	-0.05
Forward	0.04	0.05	-0.15	-0.06	-0.01	0.02	0.02	-0.12	-0.16	-0.01

Source: Citi Research

Figure 31. Cumulative Return Versus Index, Sep 01 – 14 Nov 12 (Return Differences in Percent)



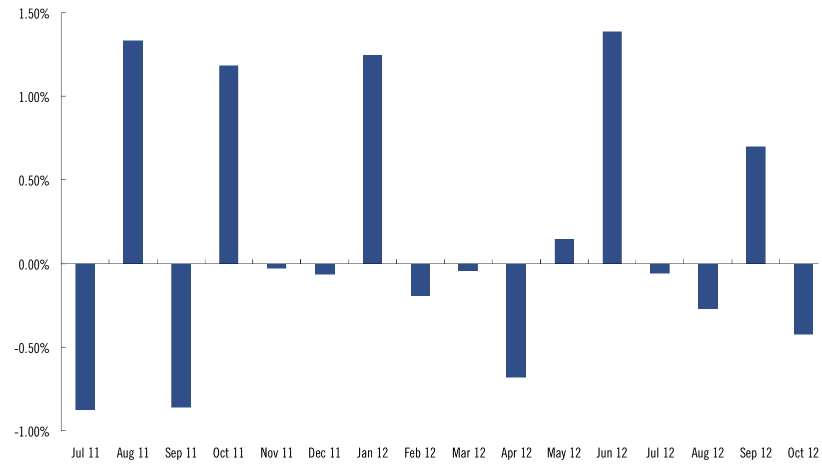
Source: Citi Research

US Rates Strategy Model Portfolio Update

Arjune Bose

The US Rates Strategy Model Portfolio is down -0.41% for the month of October. Figure 32 shows the monthly model portfolio returns since July 2011. Figure 33 shows the P&L from our outstanding trades, while Figure 34 shows all trades closed in 2012. Note that we have removed all trades from 2010. To see the older trades, please refer to a previous publication.

Figure 32. Monthly Returns for the US Rate Strategy Model Portfolio, July 2011- October 2012



Source: Citi Research

Outstanding Trade Recommendations

All closed trades since the beginning of 2012 are listed in the Appendix.[9]

Buy 10y Treasuries Outright (Opened November 07, 2012, horizon 1 month). We recommend going long duration, buying 10yr Treasuries. This trade is up $616k.

Buy 3m10y Receivers and Sell Nov6-10y Receivers (Opened October 12, 2012, horizon 3 months). We recommend buying 3m10y receivers and funding it by selling Nov6-10y receivers at equal notional levels. This trade is up $18k.

2s10s Breakevens Flattener (Opened October 26, 2012, horizon 1 month). We recommend trading a 2s10s breakevens flattener using TIPS or inflation swaps. This trade is down -$334k

Sell 5y5y Forward Inflation Swaps (Opened October 3, 2012, horizon 3 months). We recommend selling 5y5y forward inflation swaps, given that the curve looks too high for us, even with QE 3 operations priced in. This trade is up -$191k.

Buy 6m10y Swaption Straddles and Sell 3y10y Swaption Straddles (Opened September 14, 2012, horizon 3 months). We recommend selling intermediate vega. This trade is down -$322k.

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 down -$1,058k.

[9] 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 33. Summary of US Rate Strategy Model Portfolio Performance, November 15, 2012

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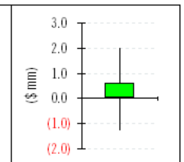
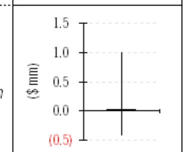
US Rates Strategy Model Portfolio

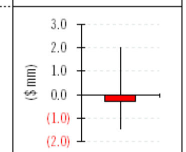
RATES	**Long 10y Treasuries**	Open	1.680%	*Nov 7, 2012*
	Buy $75MM 10y TSY @ 99.48	Current	1.590%	*1 Month(s)*
		P&L	616	
		Target	2,000	
		Stop	(1,300)	



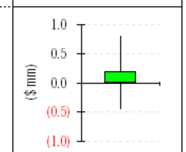
VOL	**Buy 3m10y and sell Nov6 10y 25 Receivers**	Open		*Oct 12, 2012*
	Buy $100MM 3m10y 25 Receiver	Current		*3 Month(s)*
	Sell $100MM Nov610y 25 Receiver	**P&L**	18	
		Target	1,000	*trading potential uncertainity in presidential election*
		Stop	(425)	



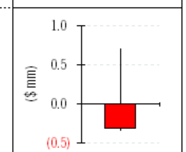
INFLATION	**2s10s Breakevens Flattener Using TIPS**	Open	75 bps	*Oct 26, 2012*
	Buy $200MM Jul14 TIPS @ 105.95	Current	87.4 bps	*2 Month(s)*
	Sell $42MM Jul22 TIPS @ 108.48	**P&L**	(334)	
	Buy $23MM Jul22 TSY @ 99.09	Target	2,000	*short end inflation fell with oil futures, causing large steepening*
		Stop	(1,500)	



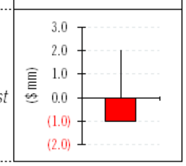
INFLATION	**Sell 5y5y inflation swap**	Open	3.050%	*Oct 3, 2012*
	Sell $50MM 5y5y Inflation Forward	Current	3.014%	*3 Month(s)*
		P&L	191	
		Target	805	
		Stop	(460)	



VOL	**Sell 100mm 3y10y and buy 6m10y straddles**	Open	91.9 bps	*Sep 14, 2012*
	Sell $100mm 3y10y Straddle	Current	88.67 bps	*3 Month(s)*
	Buy $40mm 6m10y Straddle	**P&L**	(322)	
		Target	700	
		Stop	(350)	



VOL	**Buy forward vol for a post-election trade**	Open	2.105 MM	*May 11, 2012*
	Sell $100 MM 6m10y Swaption Straddle	Current	-1058K	*12 Month(s)*
	Buy $100 MM 1y10y Swaption Straddle	**P&L**	(1,058)	
		Target	2,000	*We expect volatility in rates post election, similar to the move post debt-ceiling debate.*
		Stop	(1,000)	



	P&L ($000s)	Portfolio Return
Net P&L from Open Trades	(889)	-0.30%
P&L from Closed Trades Year-to-Date	8,726	2.91%
Total P&L Year-to-Date	7,837	2.61%
Total P&L Since Portfolio Inception on May 11, 2007	124,614	41.54%

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 34. 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	114bp	$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)	1,323	882	-31%	-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 in 4.5s	Apr 19, 2012	Jun 5, 2012	GN II 0-04.2 / GN I 0-04	GN II 0-03.2/ GN I -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%
Long 5y Breakevens	Aug 23, 2012	Sep 14, 2012	1.923%	2.06%	$840	700	140	0%	0.00%
Buy 2y10y Payer Ladders	Nov 4, 2010	Nov 7, 2012	6000.000%	60	$0	3,000	1,500	0%	0.00%
Long 7y Treasuries	Sep 13, 2012	Nov 7, 2012	1.150%	0	$1,800	2,667	2,000	75%	0.60%
5s30s Bear Flattener	Oct 25, 2012	Nov 7, 2012	0.000%	0	($40)	4,000	2,000	-4%	-0.01%
P/L from closed trades (YTD)					**$8,726**				**2.68%**
P/L from all closed trades (since 05/11/07)					**$125,503**				**41.83%**

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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