5 October 2012 │ 29 pages

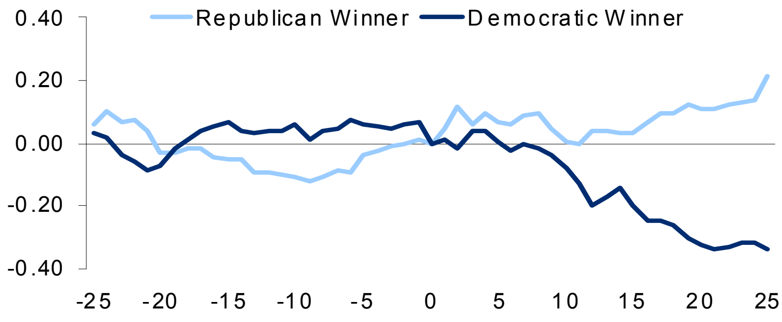
Global

US Rates & MBS Weekly

Time of the Season

- **Elections and Other Seasonals —** Early October is the beginning of a negative seasonal period for Treasuries. However, past performance surrounding US Presidential elections provides a more constructive view. We continue to recommend long duration in the 7yr part of the Treasury curve.
- **TIPS –** TIPS breakevens have widened significantly in the last three trading sessions, bringing the belly of the breakeven curve to levels that we consider rich. We favor the front end of the breakeven curve, and advocate selling forward breakevens such as the 5y forward 5y.
- **Interest Rate Derivatives –** We take a close look at why Fed buying of mortgages is not translating into materially lower intermediate implied vols. We suggest that the transmission has friction, and this is a longer-term trade. Separately, we look at October seasonals to selling gamma and find the returns to be marginal.
- **FDIC Program Ending –** The FDIC's TAG program, which guarantees $1.4 trillion in accounts with balances over $250,000, will expire Dec. 31 without congressional action. We expect $100-200 billion in transaction account outflows, which will apply further downward pressure on yields for T-bills and other high quality paper.
- **Prepay Implications of Increased Capacity –** Higher gain-on-sale, trends in mortgage employment and increased solicitation should lead to faster speeds on higher SATO borrowers. The maximum impact is likely to be on 5.0s, where speeds may increase by 4-6% CPR
- **Agency Callables –** We recommend investors holding aged high-premium bonds take gains on the positions and sell convexity via new par-priced agency callables.

Figure 1. Chart of the Week by Arjune Bose: Treasury Yields and Presidential Elections



Source: Citi Research, Bloomberg. 1-year of data.

Note:The x-axis represents days until election day, with 0 representing election day (since 1964)

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Rates Forecast

Figure 2. Rates Forecast as of October 4, 2012
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	Model Value (%)	Market Value (%)	3m Forward (%)
Fed Funds Effective	0.00	0.16	0.00
2y Treasury	0.22	0.24	0.22
5y Treasury	1.08	0.63	1.18
5y Forward 5y Treasury	3.71	2.86	2.83
10y Treasury	2.39	1.67	2.00

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

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With Thanks to:
Arjune Bose
Vincent Toh

US Rates & MBS Conference Call

Due to the Columbus Day holiday, we will not be having a Monday call. Our next call will be on Monday, October 15.

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	**Long:** We still like the carry of the front-end of the curve and expect Fed expectations to continue to benefit the 7yr – 10yr part of the curve.	Long 7yr Treasuries
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	10Y Swap Spreads are likely to tighten below 0bp.	None
Gamma	**Neutral**	None
Vega	We expect a decline in intermediate vega.	Sell 100mm 3y10y straddles and buy a gamma weighted amount of 6m10y straddles
Inflation	We expect inflation breakevens in the 10y sector to compress in the medium term.	Sell 5y5y inflation forwards
MBS	By our estimates, the gain-on-sale levels have increased to multi-year highs. As a result, lenders have a strong incentive to target borrowers more aggressively, which may lead to faster prepayments on these pools in the future.	Sell FN 3.5s, and begin dollar rolling Buy HLB FN 3.5s and 4.0s
Agency Debt	We continue to see tremendous relative value in agency callables in the wake of the outsized rally in mortgages post-QE3.We recommend investors increase their exposure to agency callables relative to mortgages	**Bullets:** 7yr agencies look attractive. **Callables:** We like Long tenors with 1-year lockouts

Source: Citi Research

US Rates & Curve: Time of the Season

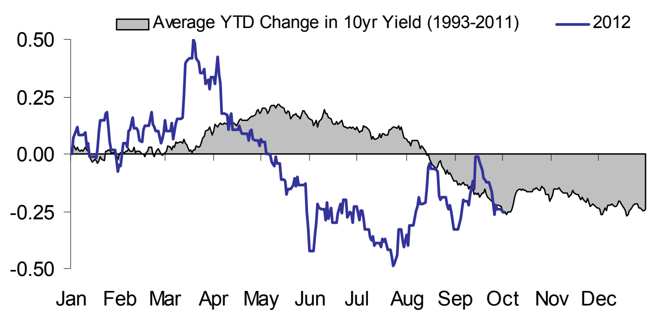
Brett Rose

During the last two weeks we have examined the justification for low US Treasury yields based upon US fundamentals and European stress. This week we examine the technicals – namely, seasonals and positioning. Ultimately, we conclude that current low rate levels are justified and continue to recommend that investors position long duration in the 7yr part of the Treasury curve. This is driven as much by a view that the high level of roll and carry in this part of the curve remains safe from a significant back-up in rates. However, we do see more risk to lower rates than higher rates in the medium term.

End of Treasury-Friendly Seasonal Period

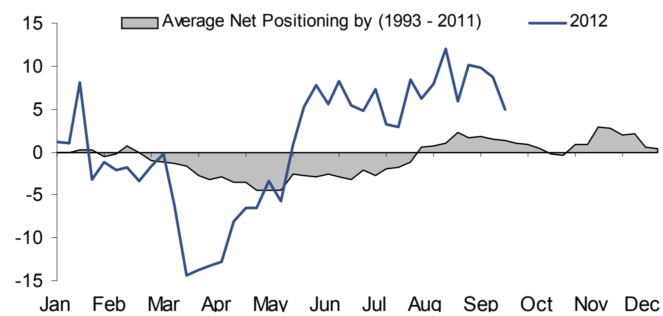
The recently completed quarter is usually a friendly period for US Treasuries with yields falling in two-thirds of the months in the 3rd quarter over the past 20-years. In Figure 4 we show the average year-to-date yield change for 10yr Treasuries between 1993 and 2011. This shows that the long drop in average yields that begins in Mid-May comes to an end in early October. While the average rise in yields going forward is relatively modest, keep in mind that this is during a period when Treasury yields fell nearly 500bp.

Figure 4. The Seasonal Drop in Yields Tends to End Right about Now



Source: Citi Research

Figure 5. Duration is net Positive and Moving Lower: in line with History



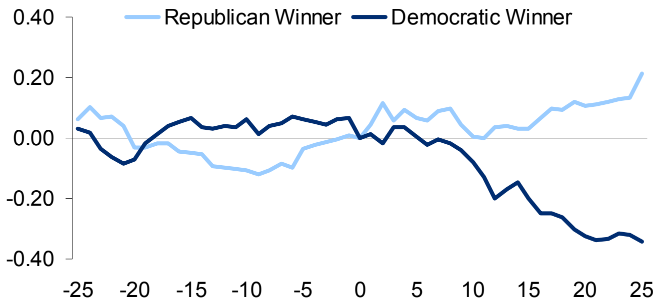
Source: CFTC and Citi Research

Consistent with the change in seasonal Treasury yields, changes in Treasury futures positioning usually begin to flip from adding duration to shedding duration around this time of the year (see Figure 5). In 2012 the year-to-date high in duration was on September 4 and it has fallen in each of the last 3-weeks, but remains relatively elevated. While the two figures above give us some pause about a long duration recommendation, we think that the most important medium-term event on the US calendar is the Presidential Election.

Treasury Behavior Surrounding Presidential Elections

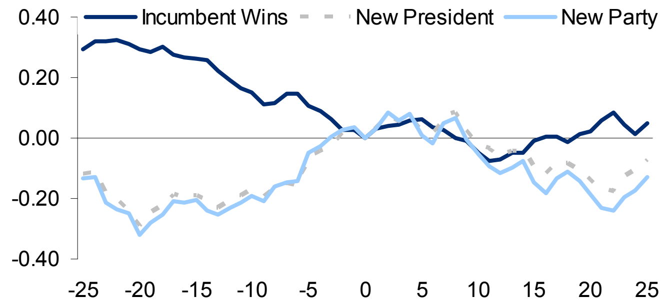
Investor consensus seems to be that a victory by President Obama would be more likely to lower Treasury yields than a victory by Mitt Romney. This would be consistent with the average behavior in presidential elections from 1964 to 2008. Figure 6 shows that Treasury yields on average fall post-election when a Democrat is elected and rise when a Republican is elected. However, looking at this a different way - Figure 7 suggests that Treasury yields would fall if a President from a different party wins (in this case Republican) and be little change if the incumbent wins (in this case a Democrat). However, this way of looking at it suggests that the more meaningful Treasury yield move would come between now and Election Day, rather than post-election. 10yr Treasury yields should fall about 25bp leading up to a Obama victory or rise about 25bp leading up to a Romney victory.

Figure 6. 10yr Treasury Yields Tend to Fall After Democrat Wins



Source: Citi Research

Figure 7. 10yr Treasury Yields React Little to Re-Election of Incumbent



Source: Citi Research

Note: Figure 6 and Figure 7 we examine elections from 1964 forward – as far back as we have daily 10yr Treasury yield data.

Taken together, this suggest that if President Obama is re-elected, as current polls suggest is likely, Treasury yields should either fall starting about now (Figure 7) or in the weeks following the election (Figure 6).

The Fiscal Cliff: Issue #1 Following the Presidential Election

In the current political environment, the fiscal negotiations are the most obvious issue that can significantly impact Treasury yields. Our expectations for how this process is likely to develop agrees that a Obama victory is more likely to lead to a fall in Treasury yields and a Romney victory is more likely to lead to a rise in Treasury yields. This is based on our expectation that a Romney victory is more likely to be accompanied by control of Congress and an easier path to a fiscal cliff agreement. While we see the opposite more likely if Obama wins, a landslide Obama victory could deliver a mandate that results in a quick fiscal agreement.

Longer-Term Interest Rate Implications of Presidential Party

Figure 6 fits with the 'conventional wisdom' that Republicans are more business friendly, which leads to higher equity prices and higher Treasury yields. However, the performance that occurs in the initial weeks following the election does not extend throughout the entire term of the President. Looking at the change in Treasury yields under various Presidents from JFK to today, 10yr Treasury yields have moved higher by an average of 30bp per year under a Democrat and moved lower by an average of 27bp per year under a Republican.[1]

Maintain Long Duration Recommendation

Intrade Prediction Markets
Obama: 67%
Democratic Senate: 60%
Democratic House: 14%

With President Obama leading in most polls and priced at about a two-thirds chance of winning in Intrade Prediction Market, we would position based on this outcome. The historical evidence shown in Figure 6 and Figure 7 suggests that Treasury yields should fall in this instance. Further, our assessment of the likely outcome of the fiscal cliff negotiations under Obama (with no Congressional mandate) also favors a long duration position. This remains consistent with our view based on US and European fundamentals as well.

[1] This is based on dates in office. If we instead define a president's term as starting on the date elected the numbers would change to Democrat: +29bp per year; Republican: -21bp per year.

TIPS: Positioning for a Reversal

Jabaz Mathai

TIPS breakevens have widened significantly in the last three trading sessions, bringing the belly of the breakeven curve to levels that we consider rich. We find better value in the front end of the curve. We advocate selling forward breakevens such as the 5y forward 5y.

Breakevens: Rich in the belly

TIPS breakevens have widened back over the last three sessions, with 10y breakevens at 2.55 as of Thursday's close (as compared to 2.42 as of last Friday's close) as shown in Figure 1. Real yields have hit fresh lows, with 10y real yields now at -89bp. Interestingly, real yields rallied across the curve, even on Thursday when nominal Treasuries were higher in yield. For example, the 30y nominal Treasury was higher by 7bp on Thursday, but the 2/42 TIPS were lower in yield by 1.5bp at 32bp. Breakevens were thus higher by just over 8bp in the 30y. In other words, the entire sell off in nominal Treasuries recently was driven by an increase in inflation expectations.

To some extent, the real rate rally/ breakeven widener makes sense from a duration flow standpoint. The flow argument is that the Fed purchases assets in an environment where demand for high quality fixed income assets among different investor classes continues to be high, thereby depressing real yields. Inflation expectations rise, as asset price inflation gives rise to increasing inflation expectations.

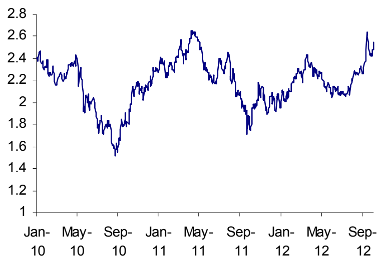
At this point, however, one has to stop and wonder if the valuation of breakevens makes sense from first principles. The bridge from rising asset prices to rising CPI is more slippery gravel than solid concrete. Ultimately, energy prices drive headline CPI. Note that crude oil is still down about 9% from its September 14 peak as shown in Figure 2, even as the S&P is less than 0.2% away from its peak (the day after FOMC). Given the ample supply of crude oil in the global market, there is likely to be downward pressure on crude prices over the medium term. Our commodity strategists expect $85 in WTI prices in 2013, which is below forward prices (the Dec 2013 futures contract is priced at about $93 as of Thursday's close. Unless there is an escalation of geopolitical conflict in the Middle East, it is unlikely that we will have a spike up in oil prices anytime soon.

Second, trends for underlying CPI components currently do not exhibit any tendency to break out significantly higher (energy as mentioned above being the potential exception in the event of a temporary supply shock). Multiple measures of inflation continue to be well contained. Headline and core PCE are running at 1.5%. The Cleveland Fed median CPI is running at 2.3%, while headline and core CPI are running at 1.7% and 1.9% respectively. Our economists expect an average yoy headline CPI of 2.1% in 2013. In this context, the 10y sector of the breakeven curve looks too rich.

A global comparison

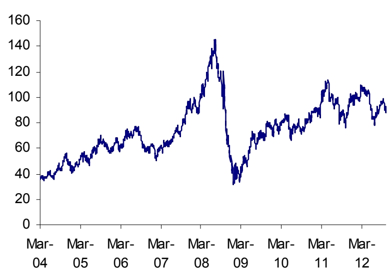
TIPS breakevens have also recently decoupled from breakevens in other countries. Figure 3 shows three spreads over the last two years – US vs. Europe, US vs. UK and US vs. Canada. In the case of Canada and UK, US breakevens are trading at the highest level in 2years in spread terms. The US-Europe spread is trading close to recent highs, with the current spread being in the 93rd percentile over the last two years. We acknowledge that there are differences between these markets. In the UK, for example, breakevens have recently compressed because of the possibility that the RPI-CPI wedge might be reduced through reformulation of the RPI index, thus reducing cash flows from future index values. In Canada, lower energy prices has had a bigger impact on headline CPI, resulting in an August headline CPI of only 1.2% vs. US CPI of 1.7%.

Figure 8. With 10y BEs approaching post FOMC highs, we look for BEs to pause and head back lower



Source: Citi Research

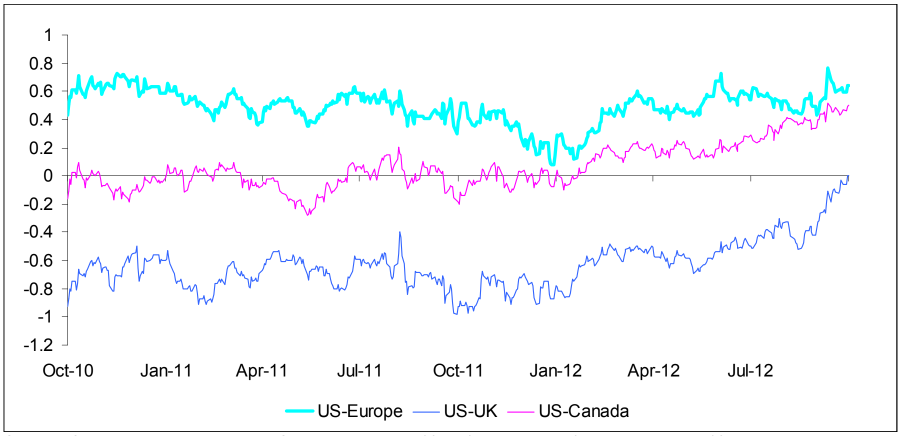
Figure 9: Oil prices are 9% below Sep 14 (post FOMC) levels



Source: Citi Research, Bloomberg. Front crude contract (WTI).

Nevertheless, there is a close relationship in CPI across these economies. This is evidenced through the historical correlations across these countries. The correlations of US CPI with Europe, UK and Canada since 2005 are 86%, 65% and 83% respectively, based on the last 7 years of data.

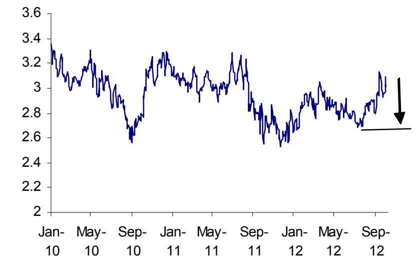
Figure 10. US breakevens have widened relative to other sovereign breakevens as shown below for the 2y history of spreads vs. Europe, UK and Canada



Source: Citi Research, Bloomberg. Spreads between 10y inflation swaps for Euro and UK. 10y cash BE spreads for US-Canada

The front end of the breakeven curve is reasonably priced

Figure 11. We recommend shorting 5y forward 5y breakevens



Source: Citi Research

The front end of the breakeven curve is reasonably priced and some of the very short maturity bonds such as the 1.875% of July 13s have potential upside, if our near term CPI estimates are realized. Also, with the 2s10s breakeven curve at 90bp, we find more value in the front end of the breakeven curve.

The front end also looks cheap on asset swap, with the July 14s trading at Libor +1 and the July 15s trading at Libor +3. Both these bonds have traded as low as Libor -6/ Libor – 5 in early Sep. Balance sheet issues may keep these issues cheap heading into year end, but investors who are not constrained by balance sheet should consider accumulating front end TIPS on asset swap.

Taking into consideration the relative inexpensiveness of the front end and our view that the belly of the BE curve has gotten ahead of itself, we would therefore recommend selling the belly of the breakeven curve (see US Rate Strategy Notes) or 10y breakevens and hedging it with a long position in the very front end of the breakeven curve.

Interest Rate Derivatives

Neela Gollapudi

Market Recap

We've had more of the same over the past week as we've had the prior week – rates unchanged, swap spreads modestly wider, and vol somewhat mixed. The vol surface steepened between one- and six-month options in most tenors. There is yield enhancement selling of vol, and selling on the CBOT. There was initial interest in buying risk-reversals, followed by softness. The supply of vol from callable issuance was also sizeable.

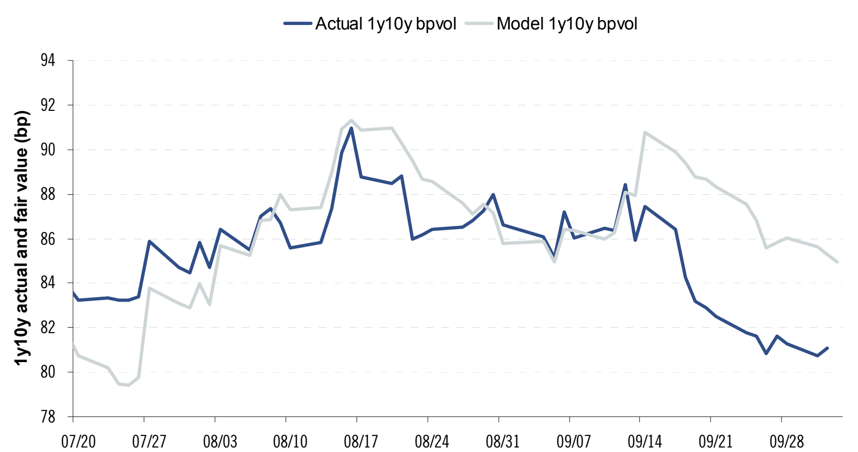
Swap spreads have tightened modestly in 5y and 10y tenors, and widened in 2y and 30y tenors. Spreads had widened on continued paying interest and steepeners in 10y and longer tenors earlier in the week, and reversed part of the move on Wednesday as hedge funds sold 30y spreads.

This week we offer perspective on the seeming lack of spillover from mortgages into swaption vol, and look at seasonality of realized returns from selling vol.

Mortgage QE has had little effect on vol so far

We had recommended selling 3y10y gamma-hedged with 6m10y on September 14. From the close of the 14th, the particular strike we are short in 3y10y has declined by 2.2bp/annum[2] – roughly on pace for our target of 5-7bp/annum over a three month period. Stated another way, after adjusting for skew, vol declined about 2.2bp/annum. Adjusting for skew is not the same as adjusting for lower realized vol. A more elaborate model for vol, that we maintain for the 1y10y point, suggests that vol has moved from being 2.0bp/annum cheap to model as of 9/13 to being 4.6bp/annum cheap to model as of 10/3 – broadly consistent with skew-adjusted cheapening we saw above for 3y10y vol.

Figure 12. Since the day of the Fed meeting, vol has cheapened only 2.2bp/annum vs. fair value



Source: Citi Research

Last week we suggested that the richening in mortgages has not spilled over into other surrounding assets because market participants who are long mortgages would not like to exit the trade to enter similar but alternative trades in any meaningful size if they believed the richening had further to go. We offer further reasons on why the spillover may take its time in coming through:

- Mortgages carry slightly better than some replication variations.

[2] The trade has a small amount of negative pnl because the atm straddle has a small amount of delta at inception, and rates have declined since inception.

- It is possible that carry in mortgages understates actual carry as the mortgage rates are less volatile than what is priced into mortgage models through assumptions on Treasury yield vs. mortgage rate sensitivities.
- Investors may be holding onto mortgages because the Fed purchases haven't settled yet, and investors are still earning carry, although this situation could start to change over the next few weeks.
- Investors could be handicapping an addition to the Fed QE, potentially in mortgages, after the end of "operation twist" in December.
- Finally, the asset-allocation decision across asset classes are likely slower to develop than movements of capital inside an asset class.

Since the Fed meeting, there was about 41bn in GSE gross callable issuance, and about negative7bn in net-callable issuance. On the face of it, this is another example of a lack of migration across asset classes. We should caution against this interpretation though, as many investors (over 70%) used proceeds from calls/redemptions in short locks to go into longer (5y and longer) final maturities and longer locks – i.e., a more mortgage like product. So it does appear that some migration is underway. We think cash-to-cash migration likely has a lower threshold than cash-to-derivative migration. The trickle-down substitution into vol is likely less than it is into Callable Agencies – only enough to be worth about 2bp/annum decline in intermediate expiries. The GSEs do not have an unlimited appetite to absorb the demand for callables. We have already seen signs of tightening of callable spreads. It is possible that once callables are exhausted as a venue, the investor community would look to selling vol outright.

There is one other issue to consider, if only to reject it. It is possible that market participants sold a lot of vol into the market, but implieds have reacted only in a muted fashion. This requires the demand curve to be horizontal so that a supply shock can be absorbed with a negligible change in price. In order to consider this possibility, one must consider what gives shape to the demand curve for volatility. We suggest that apart from differing end-user needs, demand the curve is upward sloping because different market participants have differing subjective priors about the state of the world, as well as priors on the inherent uncertainty in the environment. The differences in the subjective distributions manifest themselves as an upward sloping demand curve. The demand curve would be horizontal only if all market participants have the same expectations about the uncertainty in the market. Given the large uncertainty (and really uncertainty about uncertainty) about Europe, the US elections, and the fiscal cliff, it is hard to imagine that market participants agree on the level of uncertainty in the market. Therefore, the demand curve is likely upward sloping. Therefore it is likely that the vol market did not yet see a supply shock in vol from market participants migrating out of mortgages, because if it did, we would have felt it in the level of implied vols.

Seasonality of gamma returns in October

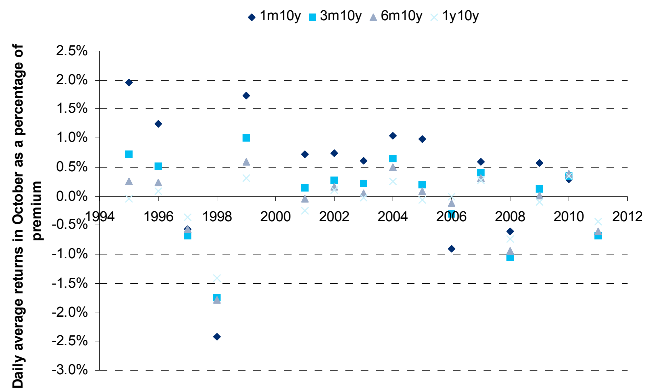
Returns to selling gamma vary from month to month. Traditionally October hasn't been a good month for selling vol as crises have tended to occur in or around October (Russian crisis, Lehman).

Figure 13. October returns to selling vol only modest without crises, and negative with crises

	1m10y	3m10y	6m10y	1y10y
Data from 1995 excluding 2000	0.34%	0.01%	-0.09%	-0.13%
Data from 1995, excluding 1998, 2000 and 2008	0.60%	0.21%	0.09%	0.01%

Source: Citi Research

Figure 14. One does not need a crisis to earn negative returns on short-vol positions; Skinny risk premia will also do it; 2006 is a case in point



Source: Citi Research

As we can see from the table and the chart, returns to selling vol in October are marginal at best. After taking out the two crisis years of 1998 and 2008 (which we really shouldn't, strictly speaking), perhaps one could make a case for selling 1m10y at best. Given the relative low level of implieds in 1m10y, it is not a compelling sell though. Since we are not recommending selling vol looking at positive returns, we do not report t-stats for the averages in the table. We remain neutral on gamma at current levels, and will look to buy wing options should 1m10y drop into the low 60s.

Freeze Tag?

Andrew Hollenhorst

FDIC insurance likely to expire on $1.4 trillion

We expect unlimited FDIC insurance for TAG accounts to expire.

Since October 2008 deposits in noninterest-bearing transaction accounts, essentially checking accounts that don't pay interest, have received full FDIC insurance under the Transaction Account Guarantee Program (TAG).[3] On December 31, 2012 the insurance will expire on all accounts with balances above $250,000 if congress takes no action. As efforts by lobbying groups failed to convince lawmakers to attach an extension of the program to the September continuing resolution that funds the government, we think it is likely that the insurance will expire.

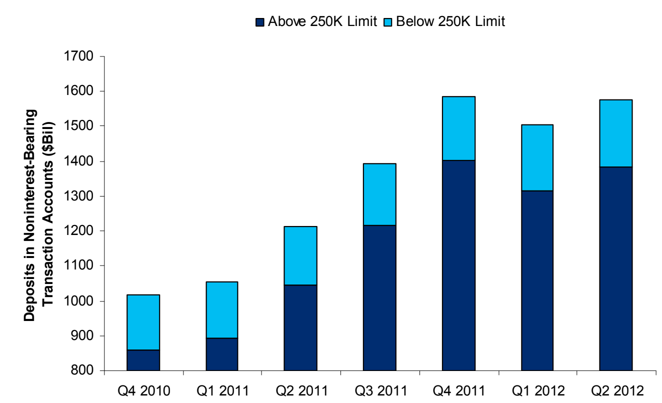
Currently $1.4 trillion in deposits are insured under TAG.

TAG balances set to lose their insured status in 2013 stood at approximately $1.4 trillion as of Q2 2012, an increase of over $500 billion since Q4 2010. (Figure 15) The abnormally fast run-up in transaction account (TA) balances is even more apparent in a longer time series which shows that TA balances at commercial banks were fairly stable before taking off in late 2008. (Figure 16)

We expect $100-$200bil in TAG outflows, pressuring yields on high quality short-term paper.

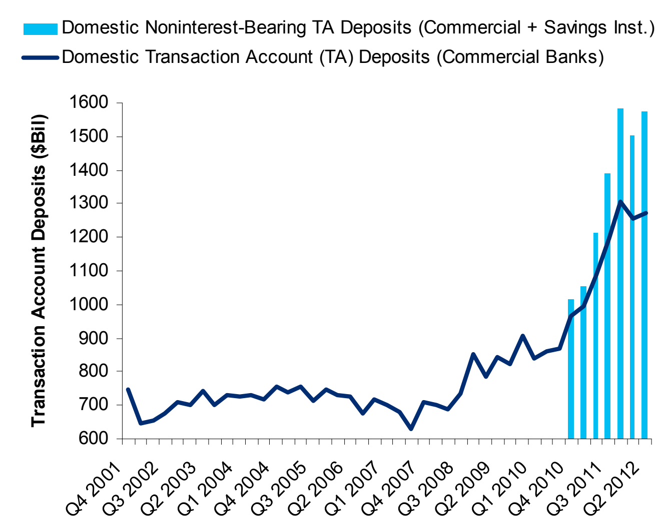
The concern in short-term markets is that when the deposit insurance sunsets, TAG balances will flee like an unfrozen freeze-tag player[4] and seek safety in short-term investments like T-bills. While we think that concerns that the full $1.4 trillion in TAG deposits will be withdrawn are overblown, a significant amount, between $100-$200 billion may go in search of short-term assets, putting downward pressure on T-bill yields.

Figure 15. $1.4 trillion in deposits likely to lose FDIC insurance



Source: Citi Research, FDIC

Figure 16. Transaction account balances have grown substantially



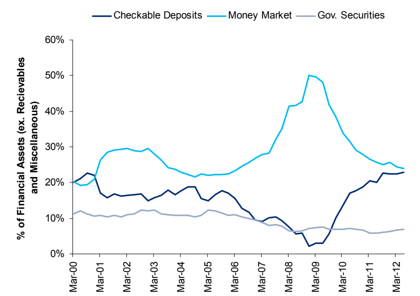
Source: Citi Research, FDIC

[3] In December 2010 the TAG Program expired but the unlimited deposit guarantee was extended through December 2012 by a provision in the Dodd-Frank Wall Street Reform and Consumer Protection Act. In spite of this, deposits covered by the provision are usually termed "TAG balances."

[4] "Freeze-tag" is a popular children's game in the US.

Expect $100-$200bil. withdrawals from TAG

Figure 17. Corporate allocation to checkable deposits slightly higher than normal



Source: Citi Research, Federal Reserve Flow of Funds

While the increase in TA balances has been dramatic (Figure 16), it has occurred contemporaneously with an increase in total financial assets held by nonfinancial corporate business. Rather than looking at the level of checkable deposits, if we focus on checkable deposits as a percentage of financial assets (excluding receivables and uncategorized assets), percentage allocations to checkable deposits are only slightly higher than their median level from 2000-2006. (Figure 17) A recent survey of corporate treasurers reports a somewhat larger shift into bank deposits, from about 25% of short term assets before 2009 to 50% in 2012. (Figure 18)

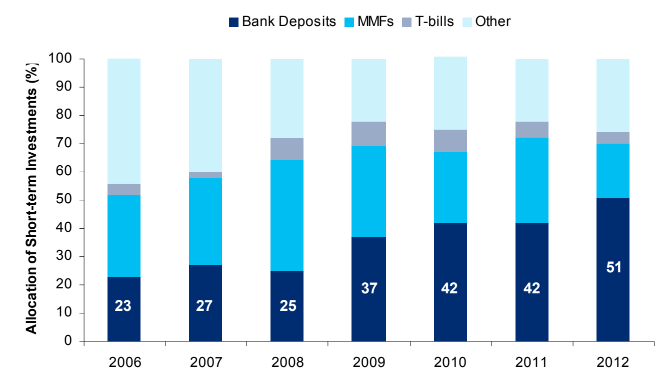
While some of this reallocation is structural, it is likely that there will be some movement back toward earlier allocation norms as corporate treasurers seek to limit exposure to bank names following the expiry of the FDIC insurance. According to our estimates, this implies an approximately $100-$200 billion decrease in TA balances.[5] This estimate is similar in magnitude to the $230 billion in TAG deposits at banks with assets less than $50 billion that may be most likely to be withdrawn.

New demand will pressure short-term yields

T-bill yields could be pushed as much as 4bp lower.

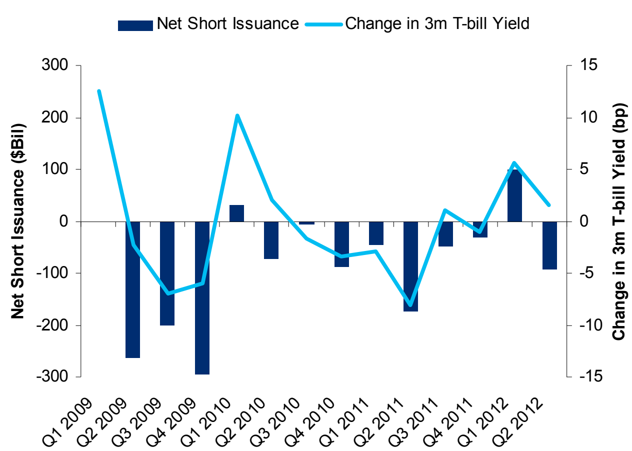
Even the lower bound of our range, $100 billion, in increased demand is significant if it shows up in the market for T-bills and other short-term paper either through direct corporate investment or indirectly through money funds. $100 billion is on the order of net issuance of high quality short-term paper in a typical quarter. Moreover, since 2009, a decrease of $100 billion in supply has moved 3m T-bill yields 4bp lower. (Figure 19) By analogy, we expect the increased T-bill demand of $100 billion to drive 3m yields as much as 4bp lower.

Figure 18. Bank deposits have become a larger share of corporate short term investments



Source: Citi Research, Association for Financial Professionals Liquidity Survey

Figure 19. $100 billion of new demand is enough to move T-bill yields as much as 4bp lower



Source: Citi Research, FNMA, FHLMC, FHLB, Federal Reserve, Net issuance numbers are T-bills, adjusted for Fed holdings, agency discount notes, and CP.

[5] Assuming we return to median percentage allocations based on flow of funds data from 2001-2006 implies the allocation to checkable deposits decreasing by 6ppt which is worth about $100bil. From the survey data, we assumed that the reallocation from MM to bank deposits is maintained but otherwise we return to the mean percentage allocations in 2006-2008. This implies checkable deposits decrease by 12ppt which is worth about $200bil.

Agency MBS: Increased Capacity

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Market Overview

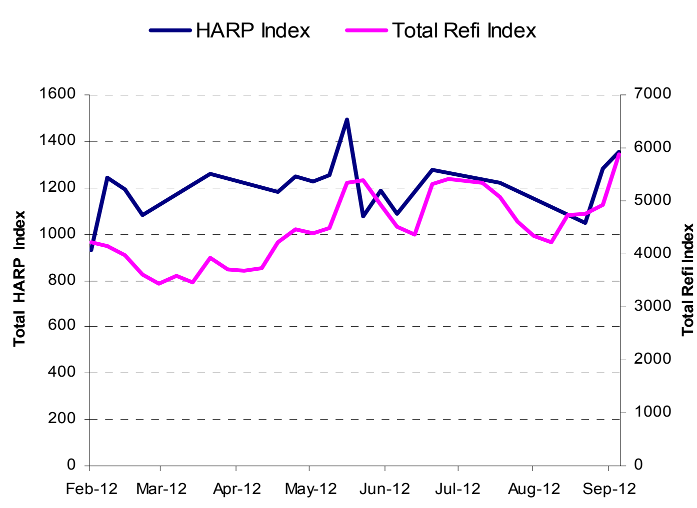
30-year production coupon MBS underperformed their duration hedges by 7-12 ticks (Thursday-Thursday closes). Origination selling picked up during the week as 30-year mortgage rates rallied to all time lows and the refi index spiked to the highest level since April 2009. Dollar rolls on lower coupons also weakened by + to 1+ ticks over the week. Although the Fed has been buying an average of $4bn agency MBS per week, price action has been very choppy. Mortgages lagged the days where origination exceeded the Fed purchases and tightened when origination was light.

October factor data was released late yesterday and showed that speeds on 30-year Fannie Mae MBS declined by 10%, in line with our expectations. We expect 30-year Fannie Mae speeds to increase by 10-15% next month. Net issuance in the agency MBS sector increased from flat in August to $15bn in October.

Refi Index Spikes: HARP Applications also Increase

As mortgage rates rallied to all time lows, the MBA refinancing index spiked to the highest levels since April 2009. Although HARP share of refi activity declined from 26% to 23%, the overall HARP applications were higher due to the increase in the refi index. The HARP refi index (Figure 20) is indicating that refi activity on these loans is at similar levels to what was seen during April through May of this year. Note that the HARP eligible float has declined by 10-15% since April which indicates that prepays on these loans could exceed the levels seen over the last few prints. Most of this increase should take place in the pre-May 2009 4.5s and 5.0s. Given the recent selloff in mortgages, we expect that the MBA refinancing index will be flat to 10% lower next week.

Figure 20. The Refi Index Spiked to its Highest Levels since April 2009



Source: Citi Research, Mortgage Bankers Association

Loan Balance Payups Appreciate

Last week, we highlighted that payups on loan balance 3.5s and 4.0s had remained unchanged or declined even though dollar prices on these securities had surged after the QE-3 announcement. We recommended that investors buy HLB 3.5s and 4.0s since they had low absolute payups and were looking very attractively priced. Since then, payups on these pools have increased by 8-16 ticks even though dollar prices on TBA declined by 7 to 9 ticks (Figure 21). Despite this large move, we think loan balance 3.5s are still looking attractively priced given the decline in the roll and the cuspiness of the coupon. Although we think HLB 4.0s also have room to appreciate, we find this trade less compelling now given the large move in payups.

Figure 21. Loan Balance Pools Have Rallied Over Last Week

		26-Sep-12	3-Oct-12	Diff
FN3.5	LLB	38	52	14
FN3.5	MLB	27	42	15
FN3.5	HLB	12	20	8
FN4.0	LLB	116	126	10
FN4.0	MLB	102	116	14
FN4.0	HLB	64	80	16
FN3.5	TBA	107-16+	107-07	-0-09+
FN4.0	TBA	107-29+	107-22	-0-07+
30Y Survey Rate		3.49	3.36	(0.13)

Source: Citi Research

Prepay Implications of Increased Capacity[6]

Last week, we introduced a more accurate way of calculating gain-on-sale for newly originated mortgage loans[7]. Rather than using the primary/secondary spreads, which can be volatile and inaccurate when rates rally to all-time lows, we derived the gain-on-sale by looking at the 30-year mortgage rate and backing out the coupon that originators are selling into the MBS market (and retaining) net of GSE guarantee fee. Note that this gain-on-sale does not account for the higher profitability in originating specified loans and FHA/VA loans. There are two important trends that stand out when looking at the gain-on-sale (Figure 22):

- The gain-on-sale has increased from 2 to 3 points in 2009 to approximately 5-points recently.
- Even though gain-on-sale has increased, retained servicing does not seem to have changed materially over the last few years. We estimate that 33%-50% of the gain-on-sale in 2009 was due to retained servicing (1-point of the 2 to 3-points of gain-on-sale)[8]. Currently, only 20-25% of the total gain-on-sale (approximately 1-point of the 5-points gain-on-sale) is due to servicing whereas the rest of the 75-80% is being monetized through the origination process

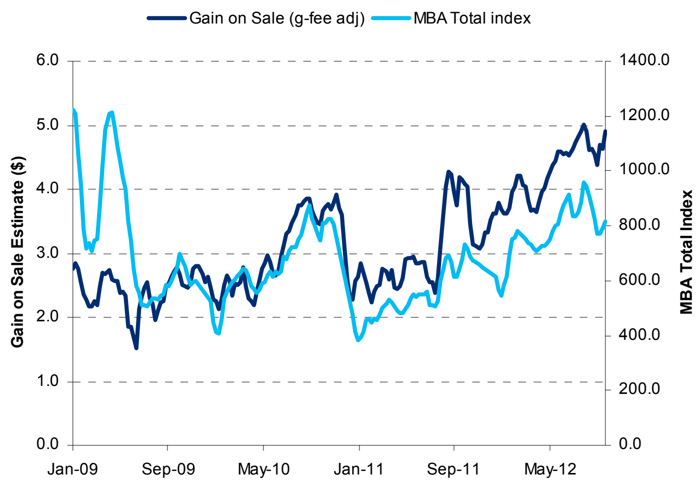
[6] This section is a reprint of the Agency MBS Comment published on October 4 2012

[7] Please see the Agency MBS Weekly published on 28 September 2012 for details.

[8] We assume that the retained servicing spread is 25bp and the IO multiple is 4X. Thus the retained servicing is worth a point.

Given that the origination process profitability is now heavily skewed towards originating a loan, lenders have a strong incentive to ramp up capacity and target borrowers for refinancings. Although this dynamic has been place for some time, the surge in gain-on-sale coupled with specified pool and FHA/VA payups is making mortgage lending an even more compelling business than before. Lastly, lenders have more conviction that rates will remain low given the recently announced QE3 program.

Figure 22. Gain-on-sale has Surged to all time Highs Recently



Source: Citi Research, Freddie Mac

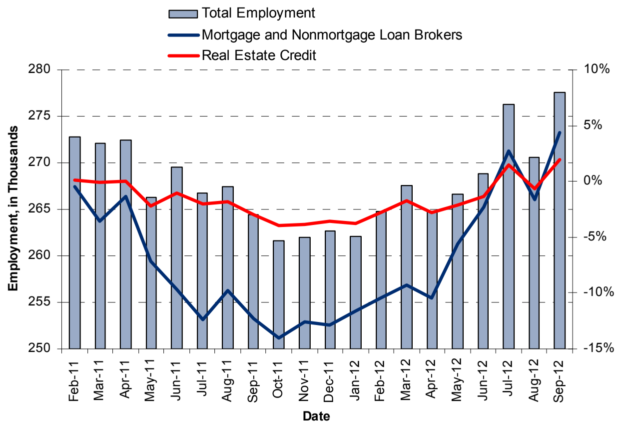
Trends in Mortgage Employment

Figure 23 shows employment statistics for the real estate and mortgage/non-mortgage broker categories as reported by the Bureau of Labor Statistics. After declining towards the end of 2011, employment in both of these categories has seen robust growth and overall employment now exceeds the levels in early 2011. The increase has been larger for mortgage and non-mortgage brokers with employment increasing by approximately 5% since 2011 as compared to a 2% increase in employment for the real estate credit category. Arguably, the employment in the broker category is less relevant than employment in the real estate credit category since brokers primarily act as middlemen in the origination process. However, at the margin, an increase in broker employment does lead to more capacity all else being equal.

As the employment in the mortgage industry has increased, so has the monthly gross issuance of agency MBS (Figure 24). The recent run-rate of $150bn agency MBS issuance per month exceeds the monthly issuance in the sector since the beginning of 2011[9].

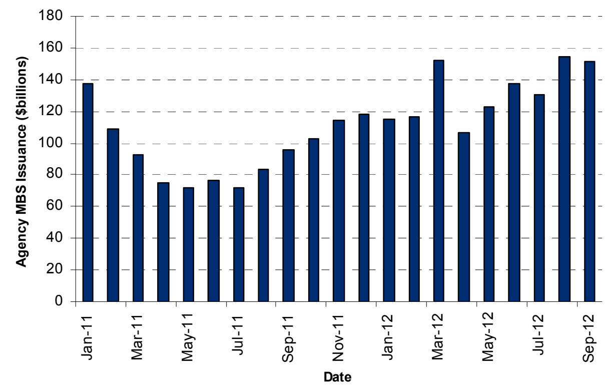
[9] Monthly agency MBS issuance was artificially higher in March 2012 due to the introduction of higher g-fee by the GSEs.

Figure 23. Employment in the Mortgage Industry has been growing



Source: Citi Research, Bureau of Labor Statistics

Figure 24. Agency MBS Issuance has also surged correspondingly



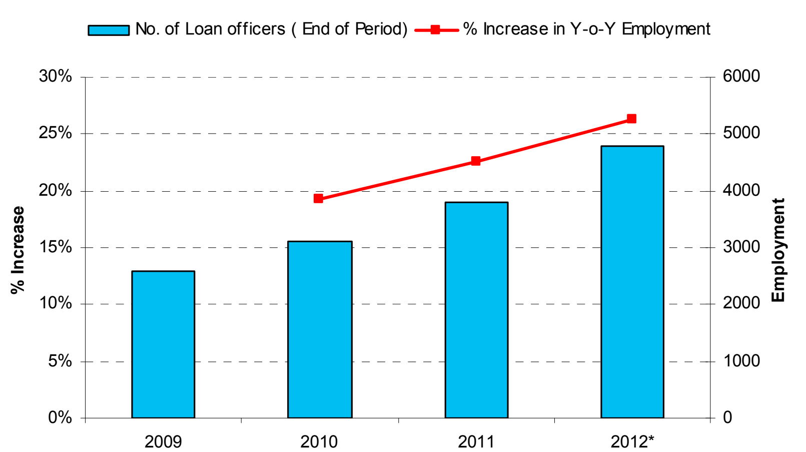
Source: Citi Research, CPR&CDR

How much Capacity will Lenders Increase?

Figure 25 shows the number of loan officers employed by Chase from 2009 to 2011. It also shows the number loan officers Chase intends to employ at the end of 2012. Based on these numbers, the headcount in their mortgage origination business has been increasing by 20-22% over the last two years and they plan to increase it by another 25% this year. Similar to Chase, Wells Fargo has also added approximately 2000 employees in the second quarter to help with the increased demand of mortgage products[10]. Note that these employees were added when gain-on-sale on new loans was between 2 to 4 points. If anything, the inclination to increase capacity should be higher now than before.

Given the record gain-on-sale, we expect that Chase and Wells along with smaller lenders will continue to add loan officers to meet the rising demand for mortgage loans. Overall, we estimate that total origination capacity could increase by 10-15% over the next few months if 30-year mortgage rates stay here or rally further.

Figure 25. Chase has been Hiring Loan Officers Aggressively



Source: Citi Research, J.P. Morgan

[10] We estimate that this led to a 15-25% increase in the number of loan officers employed by Wells Fargo.

Prepay Impact of Increased Capacity

As origination capacity increases, the question mortgage investors will be grappling with is the ultimate impact on prepayments. Clearly, if all capacity constraints do is result in several months of moderately higher prepays versus very high prepays over a shorter time frame, the impact on valuations should be minimal. However, we think the following two factors should lead to faster baseline speeds on mortgages if capacity increases from here:

- **Easier Access to Mortgage Lenders:** As mortgage rates rally and there is a sharp pickup in refinancing applications, many borrowers find it difficult to get through retail channels to apply for a refinancing. Some of these borrowers get discouraged by the long wait times and fail to apply for a refinancing. If capacity increases, more of these borrowers should be able to get through the application process.

- **Increased Solicitation:** Some lenders may choose to become more aggressive with solicitation if they have enough capacity. This should lead to faster prepayments.

Figure 26 shows 1-yr prepay estimates for newer production FNCLs assuming that capacity remains unchanged and under the assumption that capacity increases by 10-15%. The basic intuition in coming up with these estimates is that a large portion of the speed differential between our prepay model – which captures collateral characteristics like loan size, TPO%, WALA and LTV – and actual speeds is occurring due to capacity constraints.

Overall, we expect that the prepay impact on very high quality loans with high TPO% will be minimal. However, the increased capacity should result in faster speeds on higher SATO borrowers. If capacity increases by 10-15%, we expect that speeds on 3.5s should be unaffected whereas speeds on 4.0s-4.5s may increase by 2-4%CPR. The maximum impact is likely to be on 5.0s for which speeds may increase by 4-6%CPR.

Figure 26. 1-yr CPR Estimates for 2010-11 Cohorts Assuming Capacity Increases 10-15%

Coupon	Vintage	Unchanged	Capacity Up 10-15%	Change
3.5	2010	33.3	33.5	0.2
	2011	34.1	34.2	0.1
4.0	2010	32.0	34.0	2.0
	2011	31.0	33.2	2.2
4.5	2010	30.0	33.0	3.0
	2011	27.0	31.3	4.3
5.0	2010	23.0	27.2	4.2
	2011	18.0	24.0	6.0

Source: Citi Research

September Prepayment Commentary

Prepayments on 30-year Fannie Mae MBS declined by 10% in September, in line with our expectations for a 10-15% decline. Some highlights from the latest print are as follows:

- **Speeds slowed from 8-year highs:** 30-year Fannie Mae speeds declined by approximately 10% from their 8-year higher last month. However, a majority of this decline can be attributed to the 20% reduction in daycount. After adjusting for daycount, speeds actually increased by approximately 10%.
- **Prepays by Coupon:** The decline in speeds was very consistent across the coupon stack with FN 3.5s-6.0s declining by 8-10%.
- **HARP Speeds:** HARP speeds fell about 9-10% for Fannie, but only 6-7% for Freddie, reversing a previous pattern of larger Fannie HARP speed increases.
- **GNMA Speeds:** Speeds for recent production GNMA I and II 3.5s and 4s were flattish overall despite the significant drop in day count. Although GNMA-HARP speeds declined versus last month, prepays on these pools were higher after adjusting for daycount.
- **Fed Paydowns:** We estimate that Fed paydowns for the month of September were approximately $28bn.
- **Net Issuance:** The net issuance in the sector increased from flat in August to $15bn in September.

We expect that the drop in the refinancing index towards the end of August/beginning of September will be offset by the 20% increase in daycount in October. Overall, we expect 30-year Fannie Mae speeds to increase by 10-15% next month.

The Case for Callable Agencies

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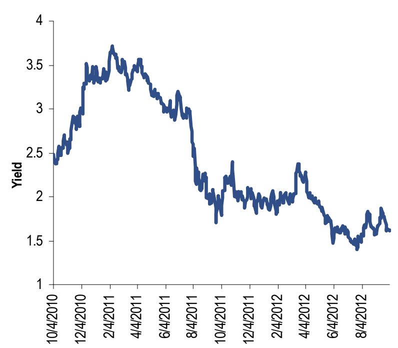
- Investors holding aged, longer lockout callables have a choice to make: they can either sell the bonds, often at substantial gains, or wait for them to be called (sometimes the call date is as far away as four years).
- We recommend that holders of aged, high-premium callables with low negative convexities sell their bonds and go into new, par-priced callables. This allows them to reset convexity and take advantage of the current relative-value in callable agencies (see bullet below) as well as realize gains.
- We continue to find agency callables attractive versus both mortgages (The case for the callable crossover– 9/27/2012) and corporates (Callables Vs Corporates - 9/21/2012).
  - High redemptions for the remainder of the year should provide continuing opportunities for cheap callable levels and good supply.
  - Lower forecasted intermediate volatility should provide a nice fillip to return.
  - Richer levels on mortgages and corporates should lead to a switch in allocation.

Figure 27. US 10-yr Rates

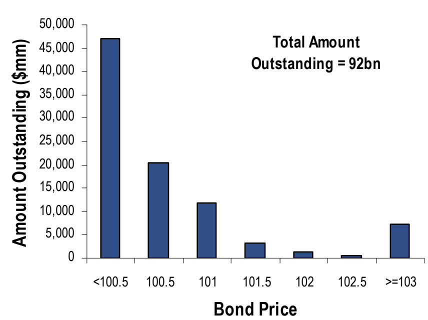


Source: Citi Research

The Outstanding Callable Market

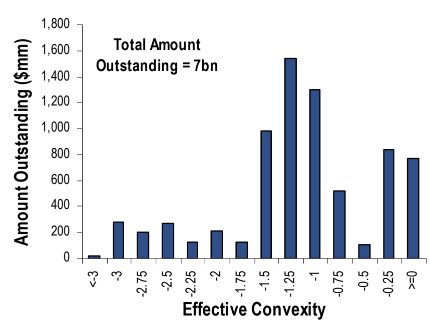
Of the 926 aged high-premium callables in the market today (with a total par amount of $120 billion – Figure 28) we focused our analysis on the ones with a dollar price above $103 and a convexity greater than -1 (Figure 29 and Figure 30) leaving us with $4 billion in outstanding notional (we list out the individual CUSIPs in the Appendix).

Figure 28. Amount Outstanding by Bond Price



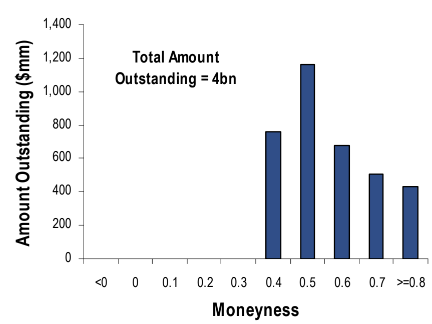
Source: Citi Research

Figure 29. Amount Outstanding with Bond Price > $103, by Convexity



Source: Citi Research

Figure 30. Amount Outstanding with Bond Price > $103 and Convexity > -1, by Moneyness[11]



Source: Citi Research

We analyzed the projected performance of a few sample aged, high-premium callables, comparing each to a new, par priced callable with a similar duration as well as a like-duration bullet. The premium callables behave much like the bullets, as they have only minimal negative convexity. However, the new-issue callables, with much higher negative convexities, outperform the high-premium bonds handily in the base case scenario. In our examples, rates would have to sell-off by more than 50bp or even 75bp from current levels for the premium callable to outperform the new-issue callable.

[11] We define the moneyness as the (forward rate at issue - current forward rate) / forward rate at issue.

Given the relative attractiveness of callable agencies and their potential to provide higher returns in a low-rate environment we recommend that investors with aged, high-premium callables switch from their current bonds into par-priced callables.

Doing so allows investors to realize a gain on their current callable and reset their convexity into more negatively convex, par-priced bonds.

Figure 31. Comparison of Premium Callables to Agency Bullets and Par-priced Callables

									Total Return Over 6 Month (Par Shift)					
Category	**Issue**	**Price**	**Cpn**	**Price**	**YTW**	**Eff. Dur**	**Eff. Cnvx**	**OAS/ Swaps**	**-50**	**-25**	**0**	**25**	**50**	**75**
Agency Bullet (like-duration)	FHLMC Corp 1% 06/17	101.362	1.000	101.362	0.70	4.57	0.2	2	2.59	1.73	0.70	-0.32	-1.33	-2.32
Premium Callable (15NC10 -> 10NC5)	FHLMC Corp 5.371% 01/22	118.540	5.371	118.540	0.93	4.56	-0.3	19	2.42	1.84	0.88	-0.10	-1.10	-2.13
Par-priced Callable	6.5NC2Y Euro	100.000	1.220	100.000	1.22	4.50	-1.5	-6	2.09	1.75	0.99	0.04	-1.05	-2.24

									Total Return Over 6 Month (Par Shift)					
Category	**Comments**	**Price**	**Cpn**	**Price**	**YTW**	**Eff. Dur**	**Eff. Cnvx**	**OAS/ Swaps**	**-50**	**-25**	**0**	**25**	**50**	**75**
Agency Bullet (like-duration)	FNMA Corp 5.375% 06/17	121.599	5.375	121.599	0.63	4.15	0.2	-2	2.23	1.52	0.60	-0.31	-1.22	-2.11
Premium Callable (15NC10 --> 9NC4)	FNMA Corp 5.45% 10/21	118.565	5.450	118.565	0.71	4.13	-0.2	8	1.93	1.54	0.69	-0.18	-1.07	-1.98
Par-priced Callable	8.5NC1Y Euro	100.000	1.760	100.000	1.76	4.00	-3.5	-4	1.69	1.59	1.25	0.55	-0.50	-1.85

									Total Return Over 6 Month (Par Shift)					
Category	**Comments**	**Price**	**Cpn**	**Price**	**YTW**	**Eff. Dur**	**Eff. Cnvx**	**OAS/ Swaps**	**-50**	**-25**	**0**	**25**	**50**	**75**
Agency Bullet (like-duration)	FHLMC Corp 4.875% 06/18	121.901	4.875	121.901	0.88	5.01	0.3	3	3.08	1.98	0.84	-0.29	-1.40	-2.50
Premium Callable (20NC10 -> 15NC5)	FHLMC Corp 5.68% 02/27	118.730	5.680	118.730	1.17	5.28	-0.6	30	2.86	2.13	1.00	-0.17	-1.39	-2.66
Par-priced Callable	15NC1Y Euro	100.000	2.680	100.000	2.68	5.57	-5.1	-3	2.60	2.30	1.65	0.53	-1.03	-3.00

Source: Citi Research

Appendix: List of Callables with Price > 103, Convexity > -1

Cusip	Ticker	Coupon	Issue Date	Maturity Date	Next Call Date	Issue Amount	Outstanding Amount	Issue Structure	Current Structure	Price[12]	Fwd at Issue	Fwd Current	Moneyness[13]
3133XS3P1	FHLB	5.1	9/12/2008	9/12/2017	9/12/2013	25	25	9NC5	5NC1	104.43	3.00	0.58	0.81
31359MZ22	FNMA	5.45	10/18/2006	10/18/2021	10/18/2016	500	400	15NC10	9NC4	118.46	4.71	0.91	0.81
3128X5YK8	FHLMC	5.371	1/31/2007	1/31/2022	1/31/2017	10	10	15NC10	10NC5	118.54	4.69	0.91	0.81
3133XRXK1	FHLB	5.5	8/20/2008	8/20/2018	8/20/2013	50	50	10NC5	6NC1	104.48	3.57	0.77	0.79
3133XRZB9	FHLB	5.2	8/27/2008	8/27/2018	8/27/2013	15	15	10NC5	6NC1	104.22	3.36	0.77	0.77
3133XRZW3	FHLB	5.25	8/28/2008	8/28/2018	8/28/2013	35	35	10NC5	6NC1	104.30	3.34	0.77	0.77
3133XS3K2	FHLB	5.2	9/12/2008	9/12/2018	9/12/2013	35	35	10NC5	6NC1	104.45	3.25	0.77	0.76
31331GCT4	FFCB	5.4	10/9/2008	10/9/2018	10/9/2013	60	60	10NC5	6NC1	104.90	3.25	0.77	0.76
3133XS5P9	FHLB	5.1	9/12/2008	9/12/2018	9/12/2013	15	15	10NC5	6NC1	104.39	3.21	0.77	0.76
3136F35P7	FNMA	5.24	8/7/2003	8/7/2018	8/7/2013	200	189	15NC10	6NC1	104.10	3.57	0.91	0.75
3133XGCT9	FHLB	6	7/26/2006	7/26/2021	7/26/2013	25	25	15NC7	9NC1	104.45	5.03	1.45	0.71
31331VX92	FFCB	5.875	8/16/2006	8/16/2021	8/16/2013	65	65	15NC7	9NC1	104.61	4.88	1.45	0.70
3133XGJL9	FHLB	5.78	8/23/2006	8/23/2021	8/23/2013	15	15	15NC7	9NC1	104.65	4.86	1.45	0.70
31331G4P1	FFCB	3.95	11/25/2009	11/25/2019	11/25/2014	52	52	10NC5	7NC2	107.32	2.52	0.77	0.70
3128X5YL6	FHLMC	5.572	1/31/2007	1/31/2022	1/31/2014	15	15	15NC7	10NC2	106.56	4.72	1.45	0.69
31331XXA5	FFCB	5.55	5/2/2007	5/2/2022	5/2/2014	10	10	15NC7	10NC2	107.65	4.62	1.45	0.69
31331XUU4	FFCB	5.625	4/11/2007	4/11/2022	4/11/2014	15	15	15NC7	10NC2	107.57	4.57	1.45	0.68
3133735C2	FHLB	3.92	3/30/2011	3/30/2021	3/30/2016	25	25	10NC5	9NC4	110.41	2.36	0.77	0.68
3133XN4F3	FHLB	5.4	11/21/2007	11/21/2022	11/21/2014	16	16	15NC7	10NC2	109.89	4.26	1.45	0.66
3136F8CH6	FNMA	5.41	12/18/2006	1/13/2023	1/13/2014	100	100	16NC7	11NC2	106.05	4.54	1.65	0.64
3128X5A81	FHLMC	5.68	2/1/2007	2/3/2027	2/3/2017	50	50	20NC10	15NC5	118.73	4.86	1.80	0.63
31398AAE2	FNMA	5.59	4/19/2007	4/19/2027	4/19/2017	75	75	20NC10	15NC5	118.45	4.72	1.80	0.62
3133XT4H6	FHLB	4.3	3/4/2009	3/4/2019	3/4/2014	25	25	10NC5	7NC2	105.40	1.98	0.77	0.61
31398ABG6	FNMA	5.5	5/10/2007	5/10/2027	5/10/2017	300	154	20NC10	15NC5	118.09	4.63	1.80	0.61
3136F8NE1	FNMA	5.73	5/24/2007	5/26/2027	5/26/2015	50	50	20NC8	15NC3	112.36	4.80	1.88	0.61
31331YZ29	FFCB	5.875	6/26/2008	6/26/2023	6/26/2013	40	40	15NC5	11NC3M	103.76	4.34	1.71	0.61
3136F74W4	FNMA	5.8	10/23/2006	10/23/2026	10/23/2013	50	50	20NC7	14NC1	105.32	4.82	1.92	0.60
3133XRFJ4	FHLB	5.55	6/19/2008	6/19/2023	6/19/2013	50	50	15NC5	11NC3M	103.43	4.18	1.71	0.59
3133XRYY0	FHLB	5.7	8/22/2008	8/22/2023	8/22/2013	10	10	15NC5	11NC1	104.40	4.16	1.71	0.59
3133XRXL9	FHLB	5.75	8/21/2008	8/21/2023	8/21/2013	15	15	15NC5	11NC1	104.43	4.15	1.71	0.59
3133XRY95	FHLB	5.625	8/28/2008	8/28/2023	8/28/2013	25	25	15NC5	11NC1	104.41	4.08	1.71	0.58
3128X5P44	FHLMC	5.63	3/12/2007	3/12/2027	3/12/2014	85	85	20NC7	15NC2	106.75	4.50	1.92	0.57
313371U46	FHLB	3.25	11/30/2010	11/30/2020	11/30/2015	15	15	10NC5	8NC3	107.18	1.79	0.77	0.57
31331Y3T5	FFCB	5.75	7/24/2008	7/24/2023	7/24/2013	40	40	15NC5	11NC1	104.05	3.95	1.71	0.57
31331YR77	FFCB	5.25	5/22/2008	5/22/2023	5/22/2013	50	50	15NC5	11NC3M	102.88	3.94	1.71	0.57
3133714N3	FHLB	3.1	10/5/2010	10/5/2020	10/5/2015	20	20	10NC5	8NC3	106.43	1.76	0.77	0.57
3133XRTP5	FHLB	5.6	8/7/2008	8/7/2023	8/7/2013	10	10	15NC5	11NC1	104.11	3.92	1.71	0.56
3133XS6A1	FHLB	5.5	9/26/2008	9/26/2023	9/26/2013	25	25	15NC5	11NC1	104.66	3.89	1.71	0.56
3133715E2	FHLB	3.125	10/8/2010	10/8/2020	10/8/2015	30	30	10NC5	8NC3	106.54	1.74	0.77	0.56
31331GAT6	FFCB	5.5	9/5/2008	9/5/2023	9/5/2013	15	15	15NC5	11NC1	104.39	3.88	1.71	0.56
3133XRAB6	FHLB	5.125	6/5/2008	6/5/2023	6/5/2013	25	25	15NC5	11NC3M	102.94	3.87	1.71	0.56
3136F7E78	FNMA	6.21	6/5/2006	6/5/2036	6/5/2017	140	140	30NC11	24NC5	121.44	5.17	2.34	0.55
3133XSJM1	FHLB	5.75	11/13/2008	11/13/2023	11/13/2013	20	20	15NC5	11NC1	105.29	3.72	1.71	0.54
313371A89	FHLB	3	10/14/2010	10/14/2020	10/14/2015	20	20	10NC5	8NC3	106.05	1.63	0.77	0.53
3133723S1	FHLB	3.5	12/16/2010	12/16/2020	12/16/2013	10	10	10NC3	8NC1	103.50	2.40	1.13	0.53
31398ARG9	FNMA	5.057	5/23/2008	12/8/2028	12/8/2016	250	250	21NC9	16NC4	114.18	4.02	1.89	0.53
31398AQY1	FNMA	5.38	5/12/2008	11/13/2028	11/13/2014	250	250	21NC7	16NC2	109.41	4.11	1.98	0.52
31398AJC7	FNMA	5.8	10/24/2007	10/23/2037	10/23/2017	50	50	30NC10	25NC5	121.20	4.83	2.38	0.51
3133XKXH3	FHLB	5.75	6/15/2007	6/15/2037	6/15/2017	20	20	30NC10	25NC5	119.63	4.80	2.38	0.50
3136F74X2	FNMA	6.08	10/23/2006	10/23/2036	10/23/2013	25	25	30NC7	24NC1	105.63	4.89	2.51	0.49
31359MZ48	FNMA	5.95	11/1/2006	11/7/2036	11/7/2013	500	149	30NC7	24NC1	105.67	4.79	2.51	0.48
3128X7XS8	FHLMC	5.352	6/10/2008	12/17/2038	12/17/2019	240	240	31NC12	26NC7	124.64	4.44	2.35	0.47
3128X5PH5	FHLMC	5.94	11/14/2006	1/14/2037	1/14/2014	50	50	30NC7	25NC2	106.53	4.71	2.51	0.47
3133XNCC1	FHLB	5.648	11/30/2007	11/27/2037	11/27/2017	250	250	30NC10	25NC5	121.08	4.41	2.38	0.46
313371HR0	FHLB	3	11/9/2010	11/9/2020	11/9/2015	35	35	10NC5	8NC3	106.10	1.37	0.77	0.44

Source: Citi Research

[12] We calculate a price based on three data sources as well as the agency bullet curve.

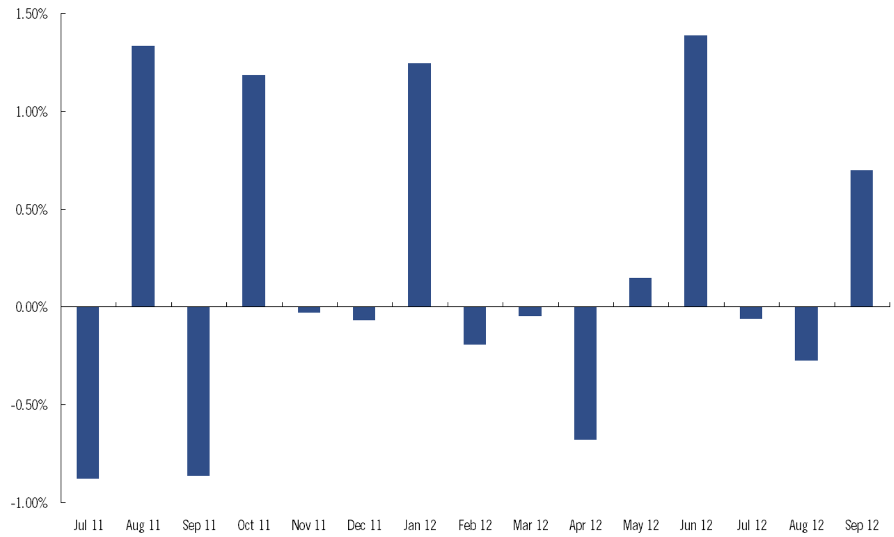
[13] The Moneyness is defined as the (Forward Rate at issue - Current Forward Rate) / Forward Rate at issue.

US Rate Strategy Model Portfolio Update

Arjune Bose

The US Rate Strategy Model Portfolio is up 0.70% for the month of September. Figure 32 shows the monthly model portfolio returns over the past 16 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 32. Monthly Returns for the US Rate Strategy Model Portfolio, June 11- September 12



Source: Citi Research

Outstanding Trade Recommendations

All closed trades since the beginning of 2012 are listed in the Appendix.[14]

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.

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 -$39k.

Buy 7y Treasuries Outright (Opened September 13, 2012, horizon 3 months). We recommend going long duration, buying 7yr Treasuries. The Fed re-iterated its desire to provide accommodation for the foreseeable future and at the same time provided a modest amount of QE. This path of policy should favor the middle of the Treasury curve. This trade is up +$1.43mm.

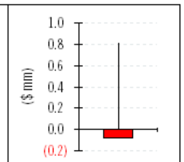
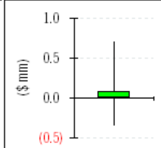
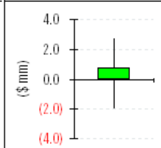
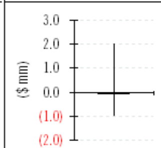
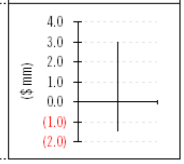
Buy 1y10y Swaption Straddles and Sell 6m10y Swaption Straddles (Opened May 11, 2012, horizon 1 year). We recommend buying forward vol for a post-election trade. This trade is down -$278k.

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.

[14] 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, August 30, 2012

US Rates Strategy Model Portfolio

INFLATION	**Sell 5y5y inflation swap**	Open	3.050%	*Oct 3, 2012*	
	Sell $50MM 5y5y inflation swap	Current	3.090%	*3 Month(s)*	
		P&L	(92)		
		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**	86		
		Target	700		
		Stop	(350)		
RATES	**Long 7y Treasuries**	Open	1.150%	*Sep 13, 2012*	
	Buy $200MM 7y Treasuries	Current	1.044%	*3 Month(s)*	
		P&L	786		
		Target	2,667		
		Stop	(2,000)		
VOL	**Buy forward vol for a post-election trade**	Open	2.105 MM	*May 11, 2012*	
	Sell $100 MM 6m10y Swaption Straddle	Current	-127K	*12 Month(s)*	
	Buy $100 MM 1y10y Swaption Straddle	**P&L**	(127)		
		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	799	0.27%
P&L from Closed Trades Year-to-Date	6,966	2.32%
Total P&L Year-to-Date	7,765	2.59%
Total P&L Since Portfolio Inception on May 11, 2007	124,542	41.51%

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	121bp	$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%	2.3%	$840	700	140	0%	0.00%
P/L from closed trades (YTD)					**$6,966**				**2.09%**
P/L from all closed trades (since 05/11/07)					**$123,743**				**41.25%**

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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