

## US Rates Daily

### Chart Pack October 24 close

- **Treasuries were little changed** – Treasuries were little changed today. 10yr Treasuries sold off 1.8bp to close at 2.52%.
- **30y TIPS Auction** – Today's 30y TIPS reopening auction stopped through the 1pm level by 2.25bp for a yield of 1.33%. The demand for the reopening was above average, with a Citi Strength indicator of 65%.
- **Chart of the day** – The Bloomberg Consumer Comfort Index declined to the lowest level since February as American grew more concerned over the U.S. fiscal issues. (Figure 1)

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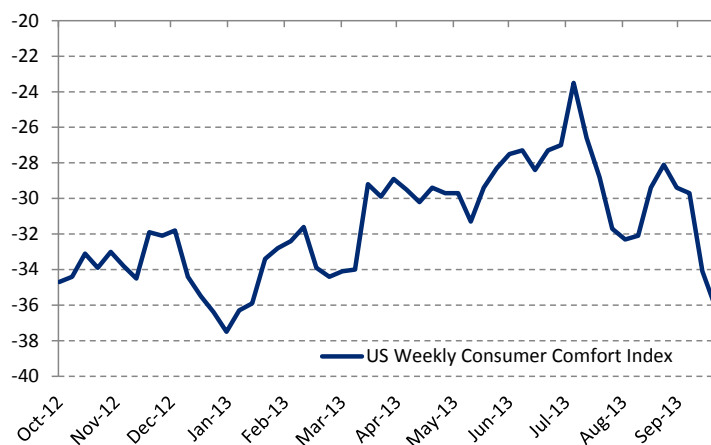
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Figure 1. Consumer Confidence in U.S. Declines to Eight-Month Low



Source: Citi Research, Bloomberg

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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# US Rates Chart Pack – October 24 Close

## Macro Evaluation

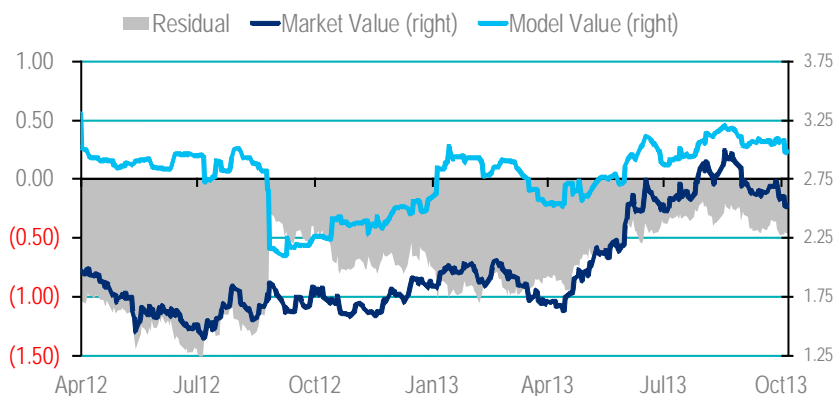
Below are our estimates of fundamental fair value of US Treasuries.

Figure 2. Fair Value Model Levels and Residuals

	Model (%)	Market (%)	Current	1 Week Avg	1 Month Avg	3 Month Avg	1 Year Avg
2y	0.26	0.30	0.04	0.04	0.05	0.04	0.08
5y	1.73	1.30	(0.43)	(0.42)	(0.38)	(0.30)	(0.30)
10y	2.98	2.52	(0.46)	(0.47)	(0.43)	(0.35)	(0.64)
30y	3.97	3.61	(0.36)	(0.36)	(0.32)	(0.24)	(0.63)
5y5y	4.23	3.92	(0.31)	(0.31)	(0.26)	(0.18)	(0.80)
10-30 Curve	0.99	1.09	0.11	0.11	0.11	0.11	0.00

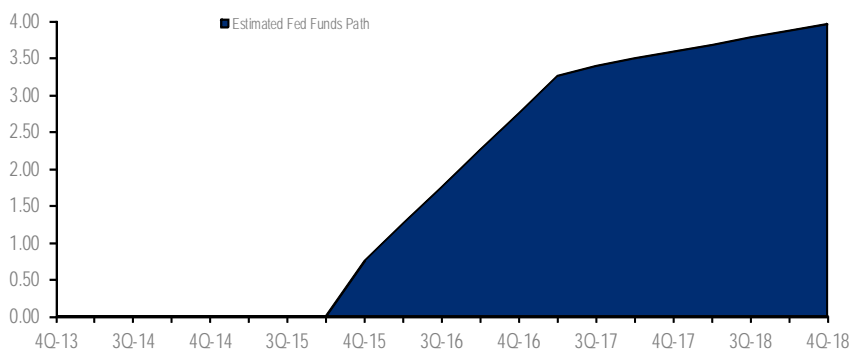
Source: Citi Research

Figure 3. 10 Year fair Value Treasury Model



Source: Citi Research

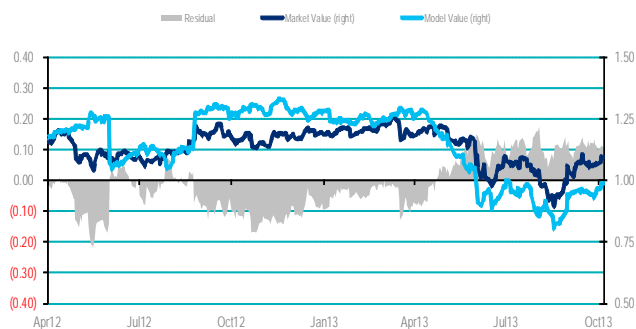
Figure 4. Path of Fed Funds Implied from Economic Projections



Source: Citi Research. We use a modified Taylor Rule to create a path of Fed Funds from Citi's economic projections. See "Updating Our Treasury Fair Value Model" in our [2012 US Rates Outlook](#).

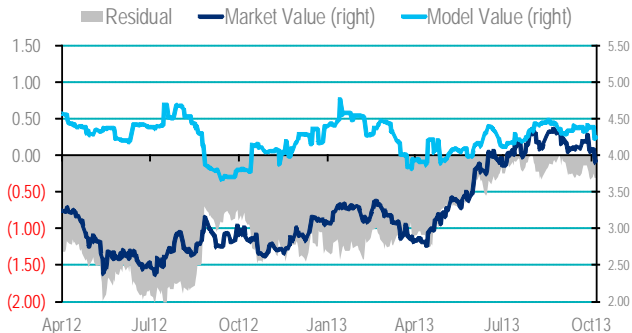
## Macro Valuation – continued

Figure 5. 10y-30y Treasury Curve Model



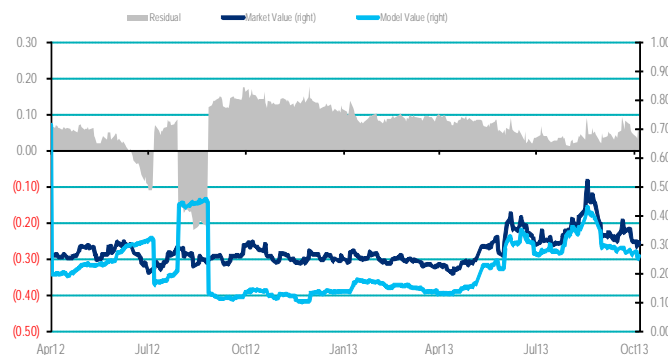
Source: Citi Research

Figure 6. 5y5y Forward Model



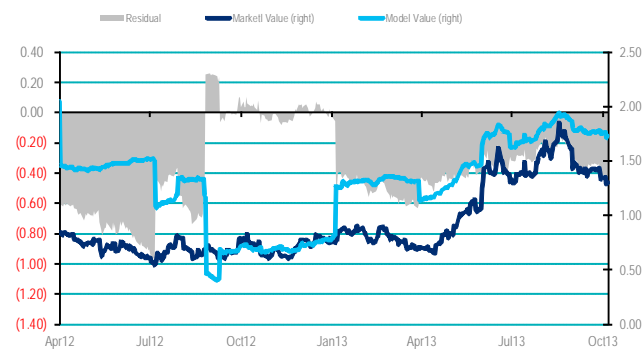
Source: Citi Research

Figure 7. 2 Year Treasury Yield Model



Source: Citi Research

Figure 8. 5 Year Treasury Yield Model



Source: Citi Research

## Economic Fundamentals, Flows/Positioning, Liquidity

Figure 9. Citi Growth Index



Source: Citi Research

Figure 10. Citi Economic Surprise Index



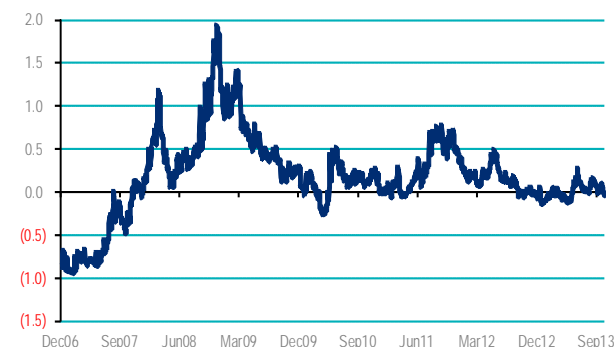
Source: Citi Research

Figure 11. Treasury Off-the-Run Spread



Source: Citi Research

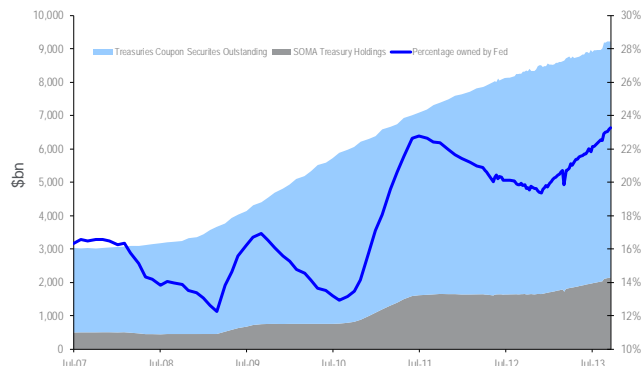
Figure 12. Citi Liquidity Index



Source: Citi Research

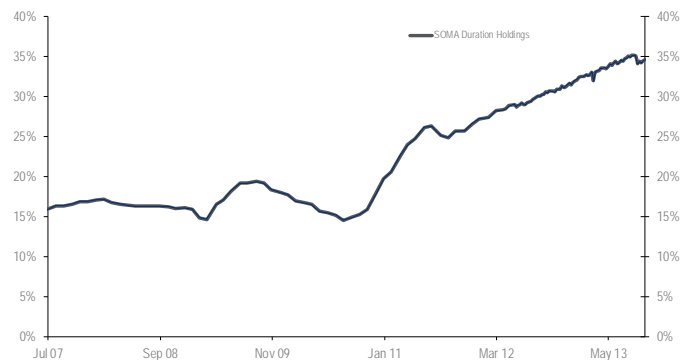
## Federal Reserve Treasury Holdings

Figure 13. Size of Treasury Market and Fed Ownership



Source: Citi Research, Federal Reserve, US Treasury

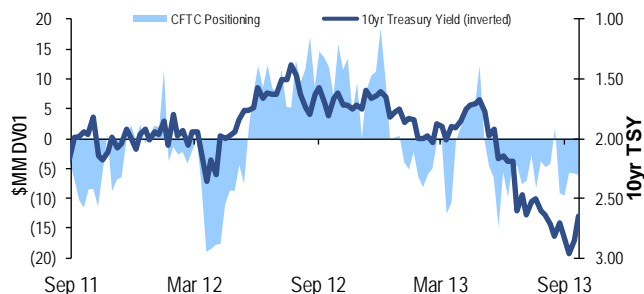
Figure 14. Percentage of Treasury Duration Owned by Fed



Source: Citi Research, Federal Reserve, US Treasury

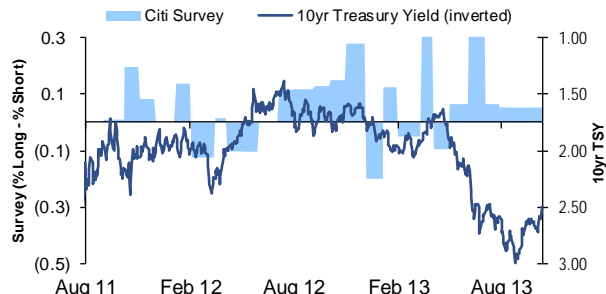
## Investor Positioning and Flows

Figure 15. Treasury Futures Duration vs 10yr Yield



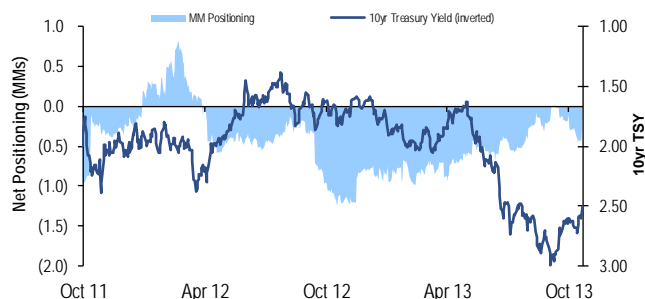
Source: Citi Research, CFTC

Figure 16. Citi Duration Survey vs 10yr Yield



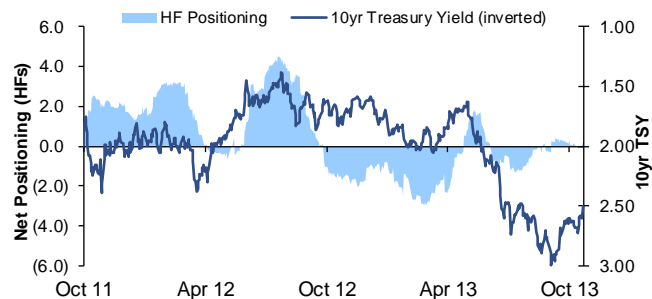
Source: Citi Research

Figure 17. Estimated Money Manager Duration vs. 10yr Yield



Source: Citi Research, Bloomberg

Figure 18. Estimated hedge Fund Duration vs. 10yr Yield



Source: Citi Research, Bloomberg

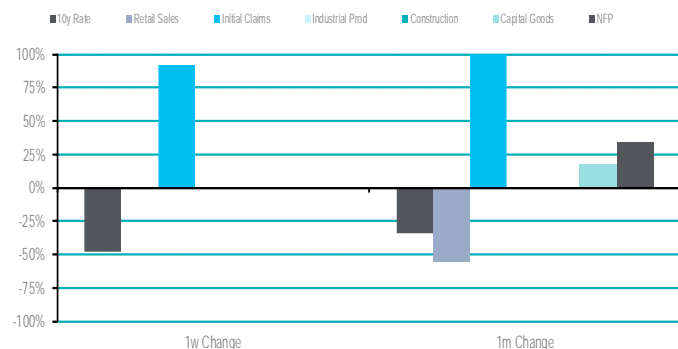
Figure 19. Flows (\$ Billions)

	Week of 9/11	Aug	Jul	Jun	3mo Avg	6mo Avg
Bond Mutual Funds	1.24	(2.33)	21.25	(29.59)	(3.55)	(2.38)
Bank Credit	(9,981.4)	(36.4)	16.1	(28.2)	(16.2)	(5.6)
Securities	(2,662.5)	(19.2)	(13.7)	(31.8)	(21.6)	(8.0)
Tsys and Agencies	(1,773.8)	(21.9)	(27.2)	(23.0)	(24.0)	(12.8)
Loans and Leases	(7,314.1)	(14.6)	13.6	23.5	7.5	6.1

Source: Citi Research, Federal Reserve, ICI

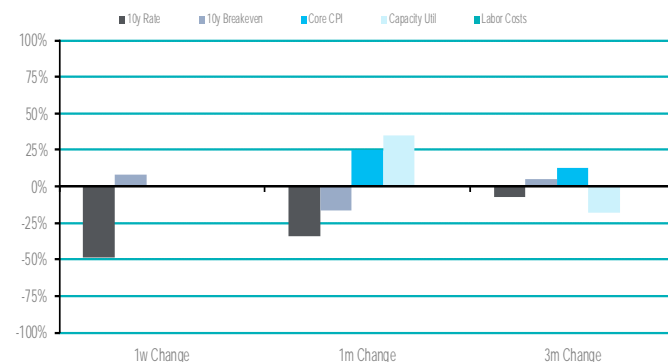
## Fair Value Model Indicator Movements

Figure 20. Growth Indicators



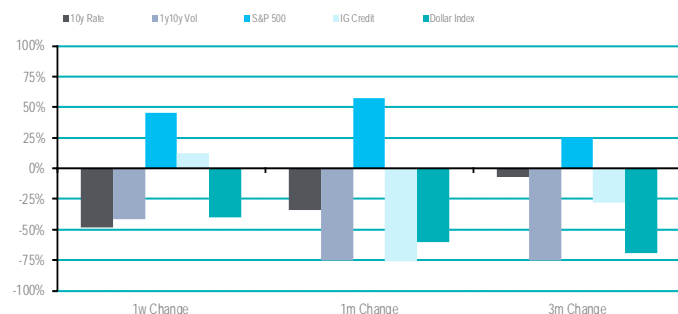
Source: Citi Research

Figure 21. Inflation Indicators



Source: Citi Research

Figure 22. Asset Indicators



Source: Citi Research

Figure 23. Definitions

Indicator	Percentile of
<b>Asset</b>	
10y Rate	bp change in on-the-run 10-yr treasury yield
1y10y Vol	% change in US swaption normal vols
S&P 500	% change in S&P 500 index
IG Credit	% change in 5y IG CDX Index
Dollar Index	% change in dollar index reflecting international value of the US\$
<b>Growth</b>	
Retail Sales	change in percentile of 6m average of retail sales less autos/gas (MoM % change)
Initial Claims	change in percentile of difference of US initial claims 4w MA and index avg over 1986-2009
Industrial Prod	change in percentile of % change over 1Q of US industrial production
Construction	change in percentile of % change over 1Q of census construction spending total
Capital Goods	change in difference of capital goods new orders nondefense less aircraft/parts and 6m avg
NFP	change in percentile of US employees on non-farm payrolls (MoM % change)
<b>Inflation</b>	
10y Breakeven	bp change in generic 10-yr breakeven
Core CPI	change in US urban consumers less food & energy CPI (YoY)
Capacity Util	% change of US capacity utilization as % of total capacity
Labor Costs	% change of US non-farm/business unit labor costs

Source: Citi Research

Figure 24. Percentiles and Correlations with 10yr Rate Changes

	3m Correl	6m Correl	1y Correl	1w Change	1m Change	3m Change
10y Rate			-48%	-7%		
1y10y Vol	0.84	0.81	0.74	-42%	-76%	-75%
S&P 500	(0.16)	(0.14)	0.16	45%	58%	25%
IG Credit	0.21	0.27	(0.08)	12%	-76%	-28%
German 10yr	0.78	0.77	0.81	-68%	-24%	26%
Italy/Spain 10yr	0.65	0.52	0.17	-54%	-48%	-51%
\$ / EUR	(0.59)	(0.49)	(0.14)	45%	67%	70%
Dollar Index	0.65	0.62	0.29	-40%	-61%	-70%

Source: Citi Research

## Carry and Roll-down

Figure 25. 3 Month Treasury Carry and Roll-down

	2 Year	3 Year	5 Year	7 Year	10 Year	30 Year
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Carry (bp)	3.2	4.7	6.8	7.4	7.2	4.9
Roll-down* (bp)	3.8	6.7	7.1	6.8	1.2	(3.5)
Total R + C	7.0	11.4	13.9	14.2	8.4	1.4

Source: Citi Research

Figure 26. 3 Month Swap Carry and Roll-down

	2 Year	3 Year	5 Year	7 Year	10 Year	30 Year
Carry (bp)	2.8	4.3	6.5	7.1	6.9	4.4
Roll-down (bp)	4.8	8.2	9.2	6.7	4.1	0.2
Total R + C	7.6	12.5	15.7	13.8	11.0	4.6

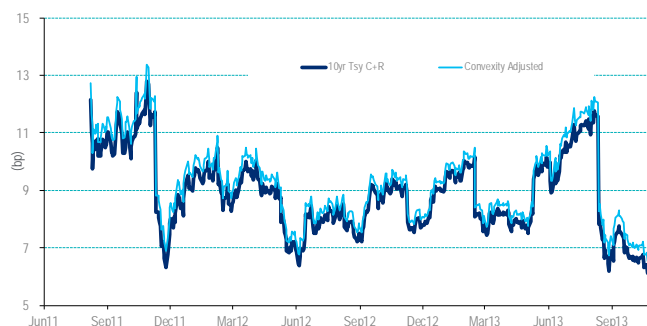
Source: Citi Research

Figure 27. 2yr Treasury – 3 Month Carry and Roll-down



Source: Citi Research

Figure 29. 10yr Treasury – 3 Month Carry and Roll-down



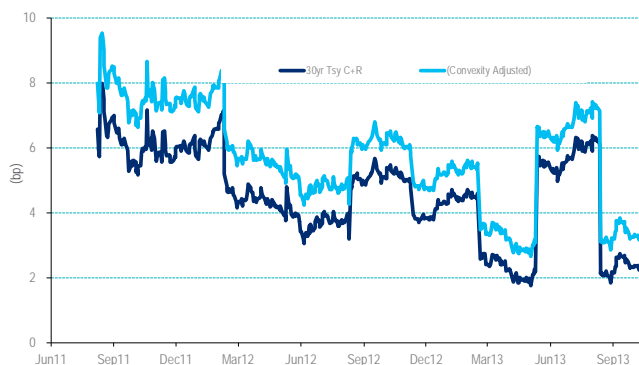
Source: Citi Research

Figure 28. 5yr Treasury – 3 Month Carry and Roll-down



Source: Citi Research

Figure 30. 30y Treasury – 3 Month Carry and Roll-down



Source: Citi Research

## Carry and Roll-down – Curve and Fly

Figure 31. 2s10s Flattener – 3 Month Carry and Roll-down



Source: Citi Research

Figure 32. 10s30s Flattener – 3 Month Carry and Roll-down



Source: Citi Research

Figure 33. 2s5s10s Fly – 3 Month Carry and Roll-down



Source: Citi Research

Figure 34. 5s10s30s Fly – 3 Month Carry and Roll-down

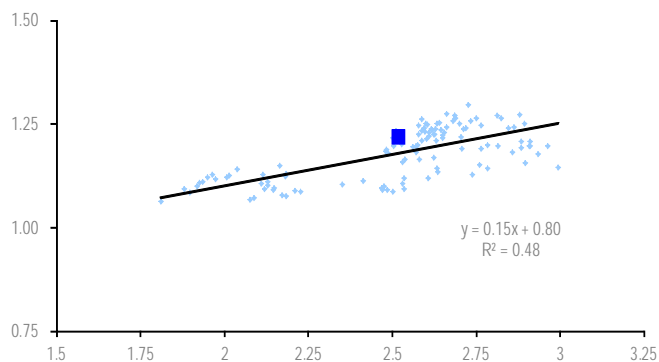


Source: Citi Research



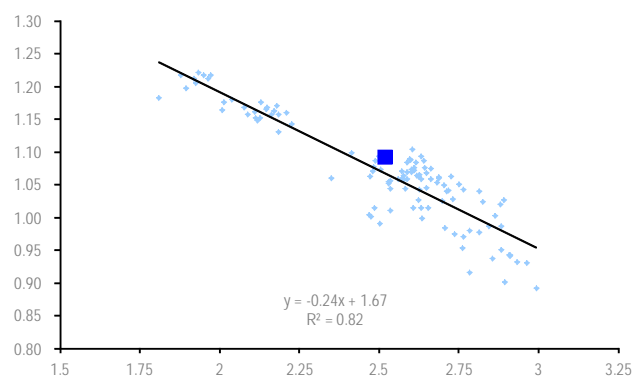
## Curve and Fly Directionality

Figure 35. 5yr-10yr Curve vs. 10yr Treasury



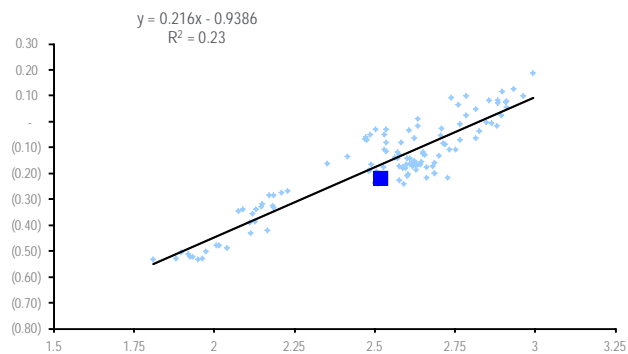
Source: Citi Research

Figure 36. 10yr-30yr Curve vs. 10yr Treasury



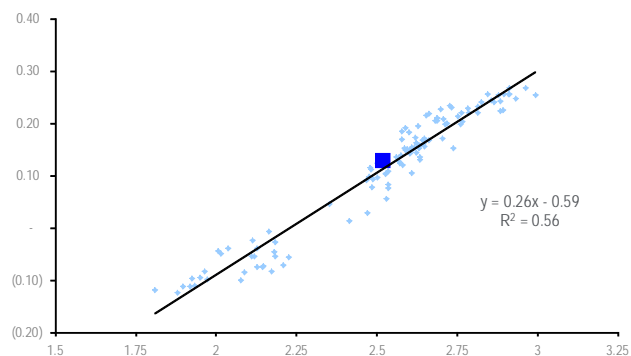
Source: Citi Research

Figure 37. 2yr-5yr-10yr Treasury Fly vs. 10yr Treasury



Source: Citi Research

Figure 38. 5yr-10yr-30yr fly vs. 10yr Treasury



Source: Citi Research

## Sovereign Asset Swap Levels by Currency

Figure 39. USD

USD	2y	5y	10y	30y
US	-11	-13	-12	3
Germany	-17	-20	-8	8
France	-1	14	42	88
Netherlands	-10	9	26	31
Japan	24	49	67	37
UK	-28	-2	20	36
Canada	-27	-36	-47	-50
Australia	-45	-65	-74	

Source: Citi Research

Figure 40. JPY

JPY	2y	5y	10y	30y
US	-37	-65	-73	-16
Germany	-38	-69	-67	-10
France	-24	-37	-22	47
Netherlands	-27	-43	-36	2
Japan	-12	-15	-15	-9
UK	-53	-53	-44	8
Canada	-54	-87	-104	-60
Australia	-71	-118	-127	

Source: Citi Research

Figure 41. EUR

EUR	2y	5y	10y	30y
US	-19	-23	-21	-6
Germany	-37	-42	-29	-6
France	-22	-9	21	64
Netherlands	-29	-14	5	11
Japan	11	36	54	23
UK	-39	-15	8	25
Canada	-40	-50	-57	-62
Australia	-55	-77	-81	

Source: Citi Research

Figure 42. GBP

GBP	2y	5y	10y	30y
US	-11	-17	-18	-3
Germany	-13	-20	-11	2
France	3	15	39	78
Netherlands	-4	9	23	22
Japan	24	47	62	29
UK	-38	-16	0	20
Canada	-28	-40	-53	-56
Australia	-45	-70	-81	

Source: Citi Research

Figure 43. CAD

CAD	2y	5y	10y	30y
US	-14	-10	-8	2
Germany	-15	-13	0	17
France	2	22	52	99
Netherlands	-8	17	35	39
Japan	22	54	74	37
UK	-30	2	25	36
Canada	-30	-34	-44	-53
Australia	-48	-64	-73	

Source: Citi Research

Figure 44. AUD

AUD	2y	5y	10y	30y
US	8	15	26	19
Germany	3	10	33	43
France	21	48	89	143
Netherlands	9	42	71	70
Japan	44	82	116	61
UK	-8	27	62	60
Canada	-9	-10	-13	-45
Australia	-26	-39	-47	

Source: Citi Research

## Sovereign Asset Swap Levels by Country

Figure 45. US

US	2y	5y	10y	30y
USD	-11	-13	-12	3
EUR	-19	-23	-21	-6
JPY	-37	-65	-73	-16
GBP	-11	-17	-18	-3
CAD	-14	-10	-8	2
AUD	8	15	26	19

Source: Citi Research

Figure 46. Japan

Japan	2y	5y	10y	30y
USD	24	49	67	37
EUR	11	36	54	23
JPY	-12	-15	-15	-9
GBP	24	47	62	29
CAD	22	54	74	37
AUD	44	82	116	61

Source: Citi Research

Figure 47. Germany

Germany	2y	5y	10y	30y
USD	-17	-20	-8	8
EUR	-37	-42	-29	-6
JPY	-38	-69	-67	-10
GBP	-13	-20	-11	2
CAD	-15	-13	0	17
AUD	3	10	33	43

Source: Citi Research

Figure 48. UK

UK	2y	5y	10y	30y
USD	-28	-2	20	36
EUR	-39	-15	8	25
JPY	-53	-53	-44	8
GBP	-38	-16	0	20
CAD	-30	2	25	36
AUD	-8	27	62	60

Source: Citi Research

Figure 49. France

France	2y	5y	10y	30y
USD	-1	14	42	88
EUR	-22	-9	21	64
JPY	-24	-37	-22	47
GBP	3	15	39	78
CAD	2	22	52	99
AUD	21	48	89	143

Source: Citi Research

Figure 50. Canada

Canada	2y	5y	10y	30y
USD	-27	-36	-47	-50
EUR	-40	-50	-57	-62
JPY	-54	-87	-104	-60
GBP	-28	-40	-53	-56
CAD	-30	-34	-44	-53
AUD	-9	-10	-13	-45

Source: Citi Research

Figure 51. Netherlands

Netherlands	2y	5y	10y	30y
USD	-10	9	26	31
EUR	-29	-14	5	11
JPY	-27	-43	-36	2
GBP	-4	9	23	22
CAD	-8	17	35	39
AUD	9	42	71	70

Source: Citi Research

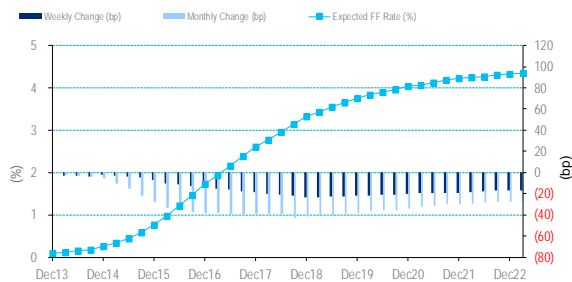
Figure 52. Australia

Australia	2y	5y	10y
USD	-45	-65	-74
EUR	-55	-77	-81
JPY	-71	-118	-127
GBP	-45	-70	-81
CAD	-48	-64	-73
AUD	-26	-39	-47

Source: Citi Research

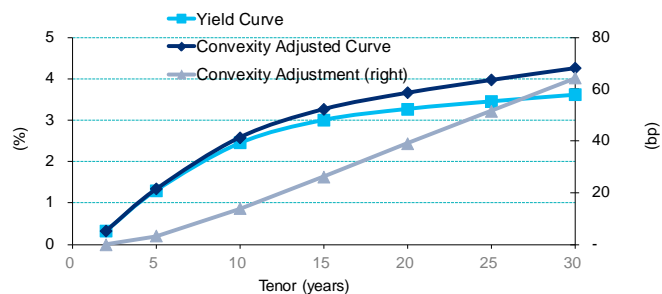
## Miscellaneous

Figure 53. Fed Funds Expectation



Source: Citi Research

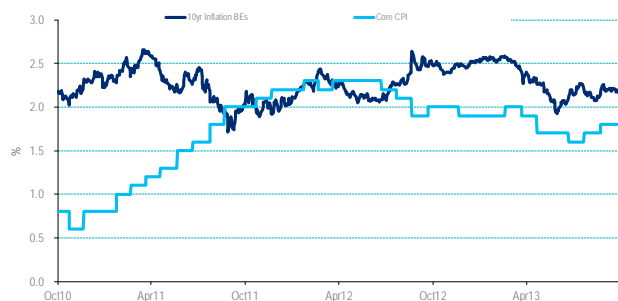
Figure 54. Convexity Adjusted Yield Curve



Source: Citi Research

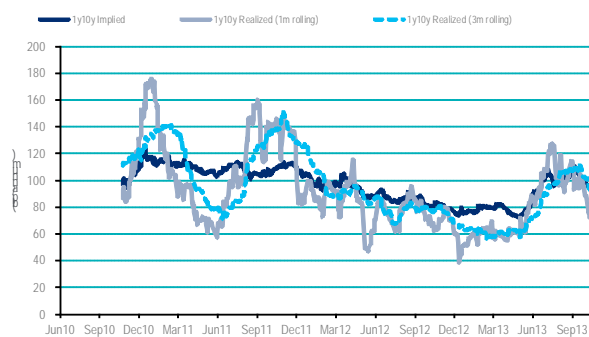
## Volatility and Inflation

Figure 55. Inflation (Core CPI vs. TIPS BEs)



Source: Citi Research

Figure 56. 1y10y Volatility



Source: Citi Research

## Appendix A-1

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