

Investment Grade Fixed Income Overview

July 28, 2016



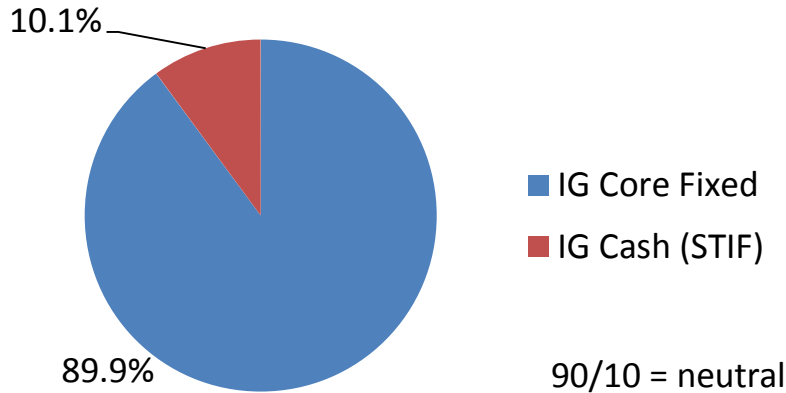
North Carolina Department of State Treasurer
Investment Management

*Learn. Invest. Grow. Prosper.*¹

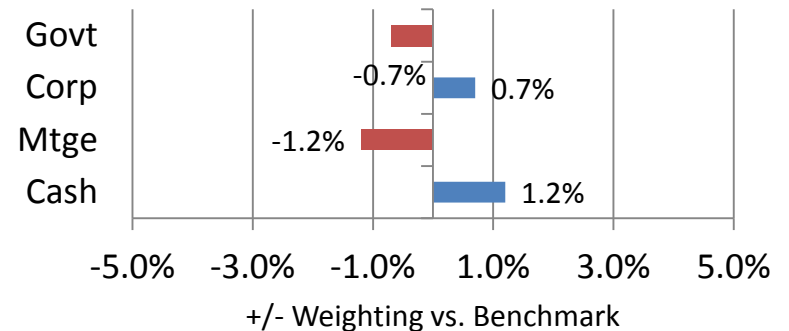
Investment Grade Fixed Income Profile

As of June 30, 2016

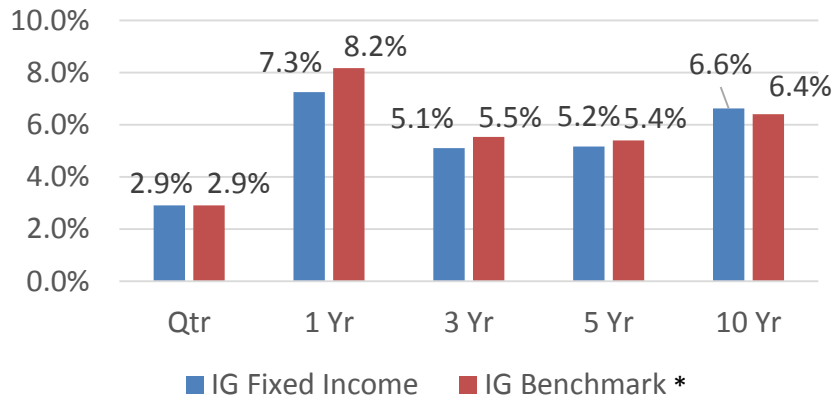
Allocation



Relative Weighting in Core Fixed



Return Summary

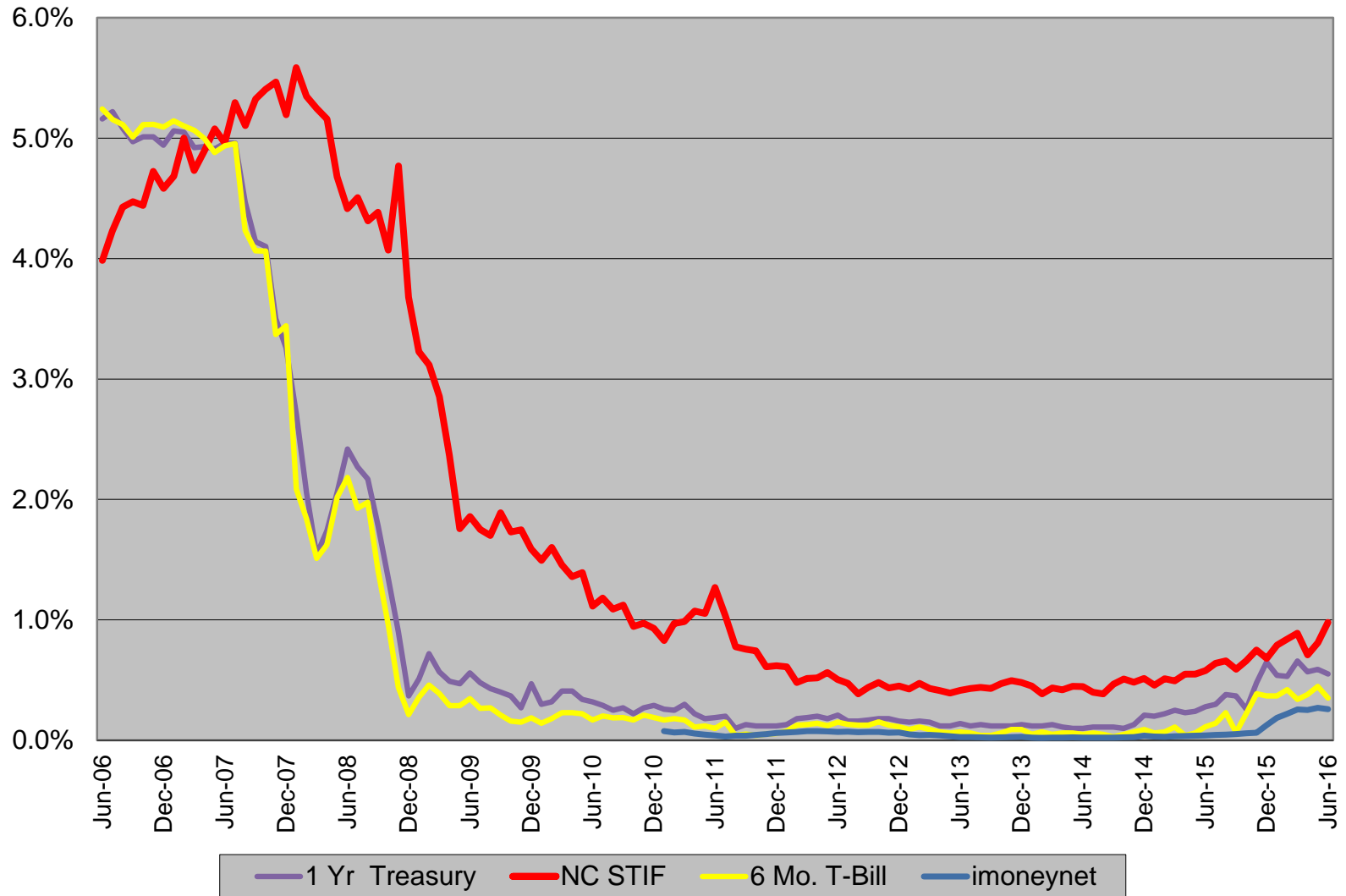


- Near term strategy has shifted slightly toward a more neutral stance, but still maintains a short duration bias
- As discussed at previous IAC meetings, the costs of maintaining a defensive position are weaker relative returns during a rate decline
- While our IG Cash F.I. outperformed the benchmark, the short duration gap resulted in Core trailing the benchmark

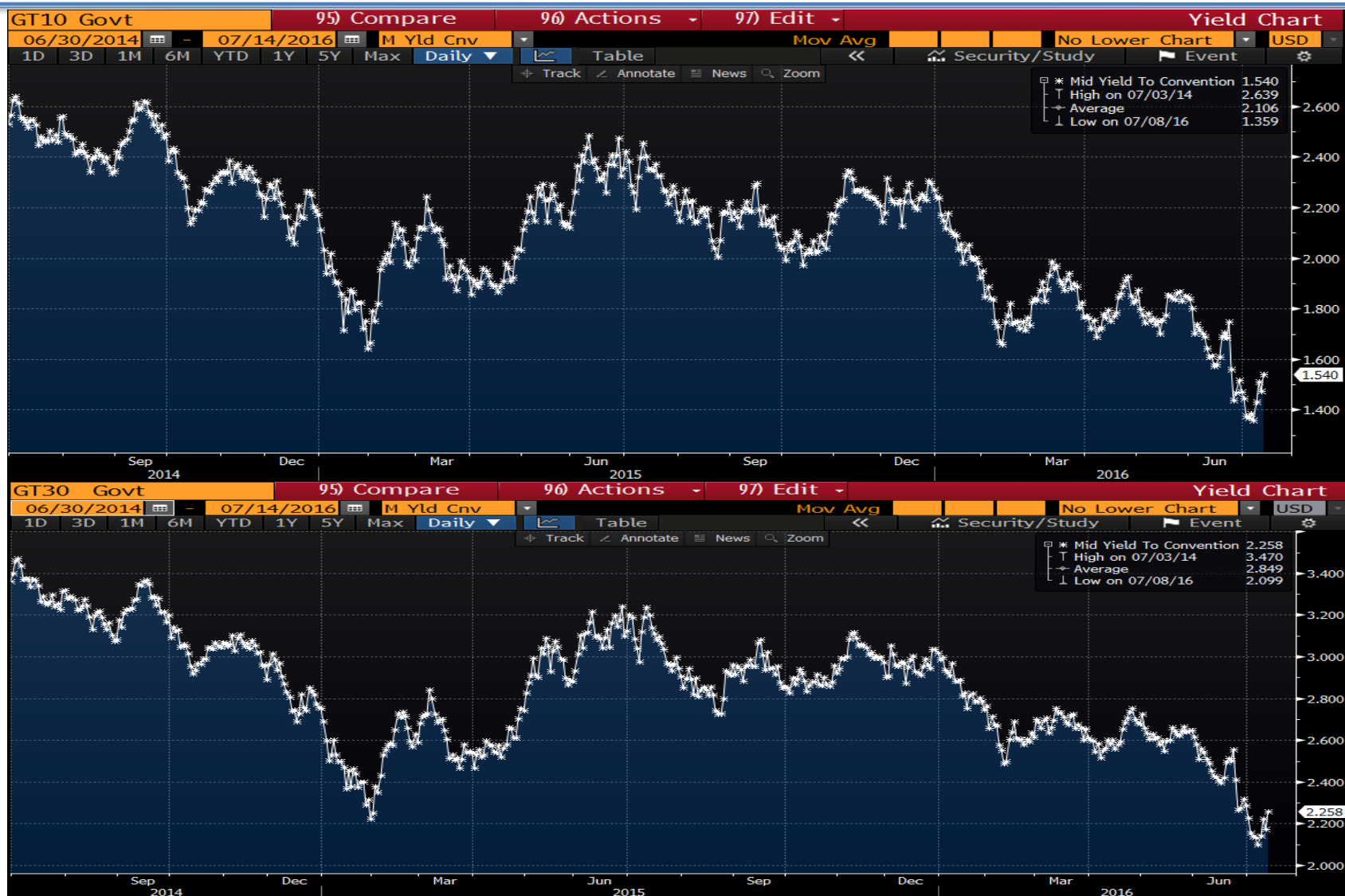


Short Term Portfolio (STIF) Rate History

\$18.3 Billion AUM as of 6/30/16



Intermediate and Long Treasury Yields Decline in FY 15-16



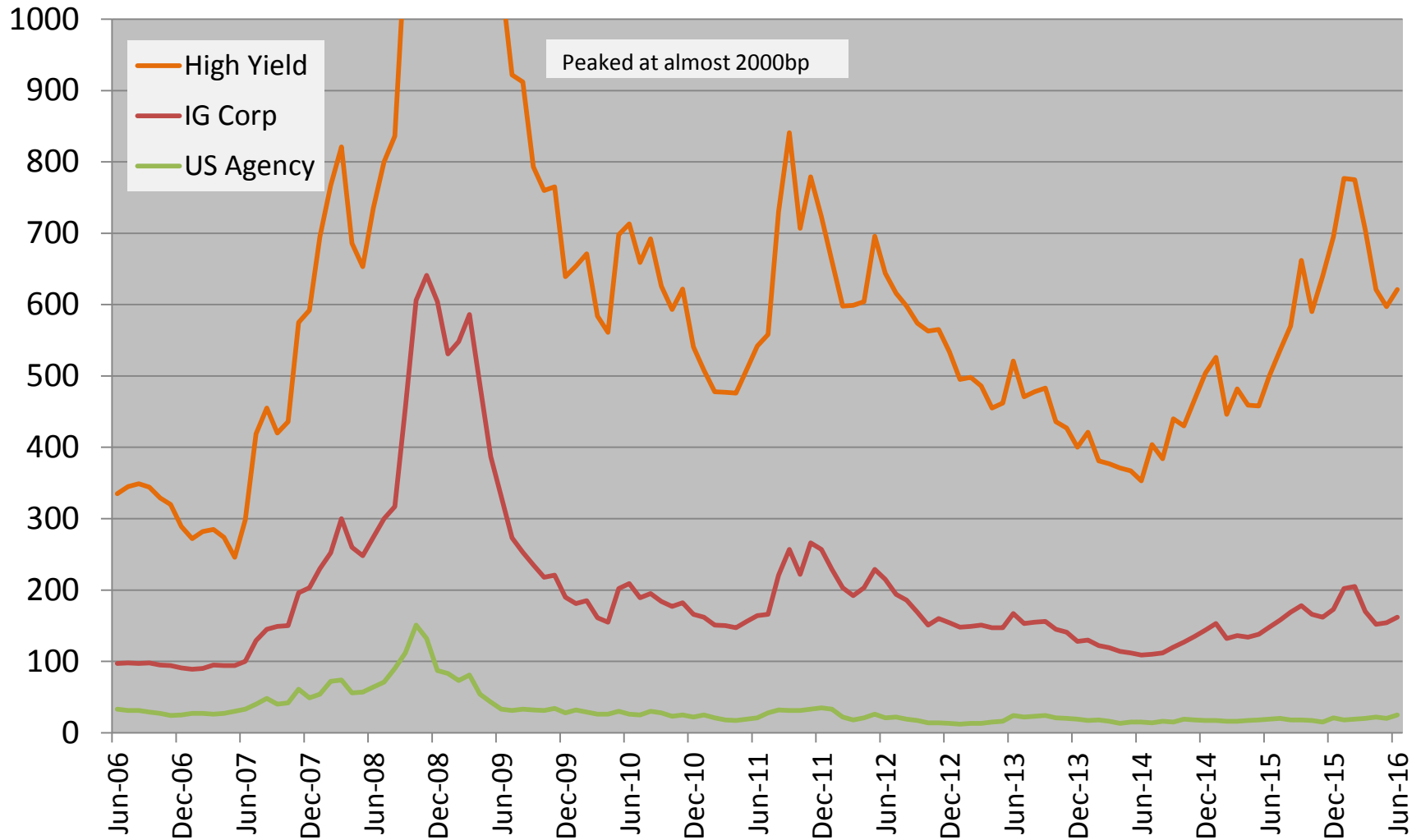
The Bond Market Gets It Wrong Again

	2 Yr	10 Yr	30 Yr
Feb. 2014 (IAC) - Actual	0.31%	2.67%	3.65%
Forecast for June 2015	1.09% (+0.78%)	3.61% (+0.94%)	4.41% (0.76%)
Actual Rates - June 2015	0.65%	2.35%	3.12%
Actual Change	+0.34%	-0.32%	-0.53%
March 2015 (IAC) - Actual	0.60%	2.07%	2.69%
Forecast for 2016	1.95% (+1.35%)	3.01% (+0.94%)	3.58% (+0.89%)
Actual Rates – June 2016	0.58%	1.47%	2.58%
Difference	-0.02%	-0.60%	-0.41%

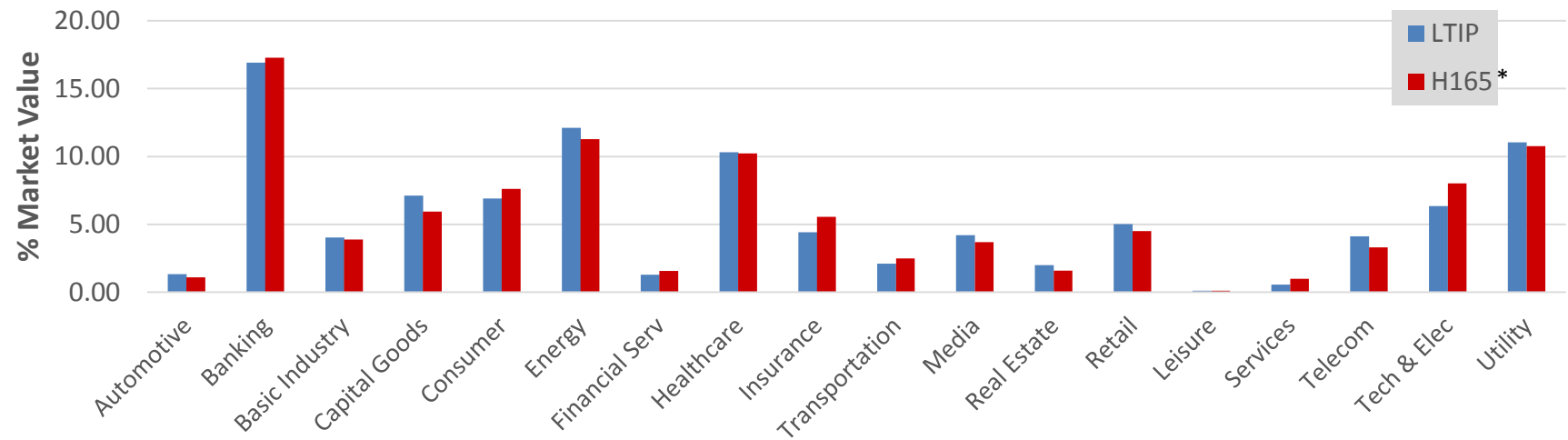
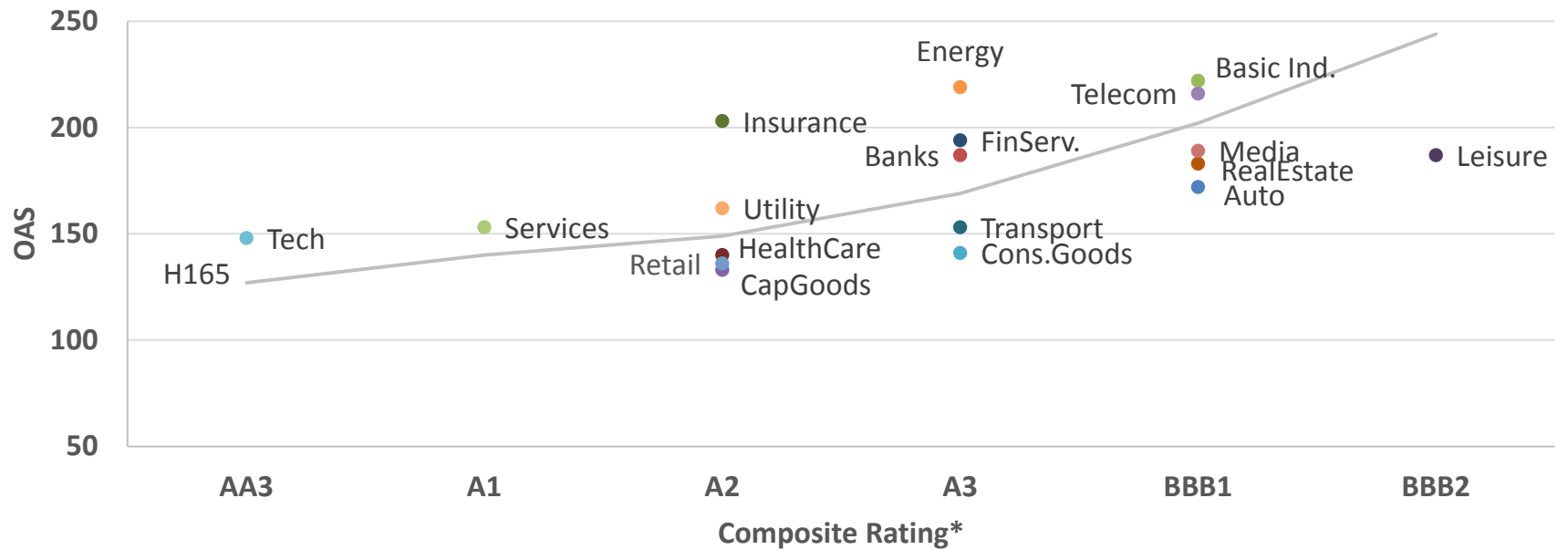


Fixed Income Credit Markets

10 Year Spread History



Corporate Relative Value and LTIP Allocation by Sector



Investment Grade Fixed Income Discussion Items

- Historically low rates (again)
- Comfort level with short relative duration position?
 - Costs of maintaining position (absolute vs. relative returns)
- Limited conviction on timing/pacing of rate increases
- Hidden Illiquidity in Investment Grade Credit
 - IG Cash position could serve as liquidity provider in a dislocation
- Transfer of non-pension assets from Core Fixed Income
 - 144a eligibility
- Negative to zero global interest rates impact on the relative value of US Treasury market



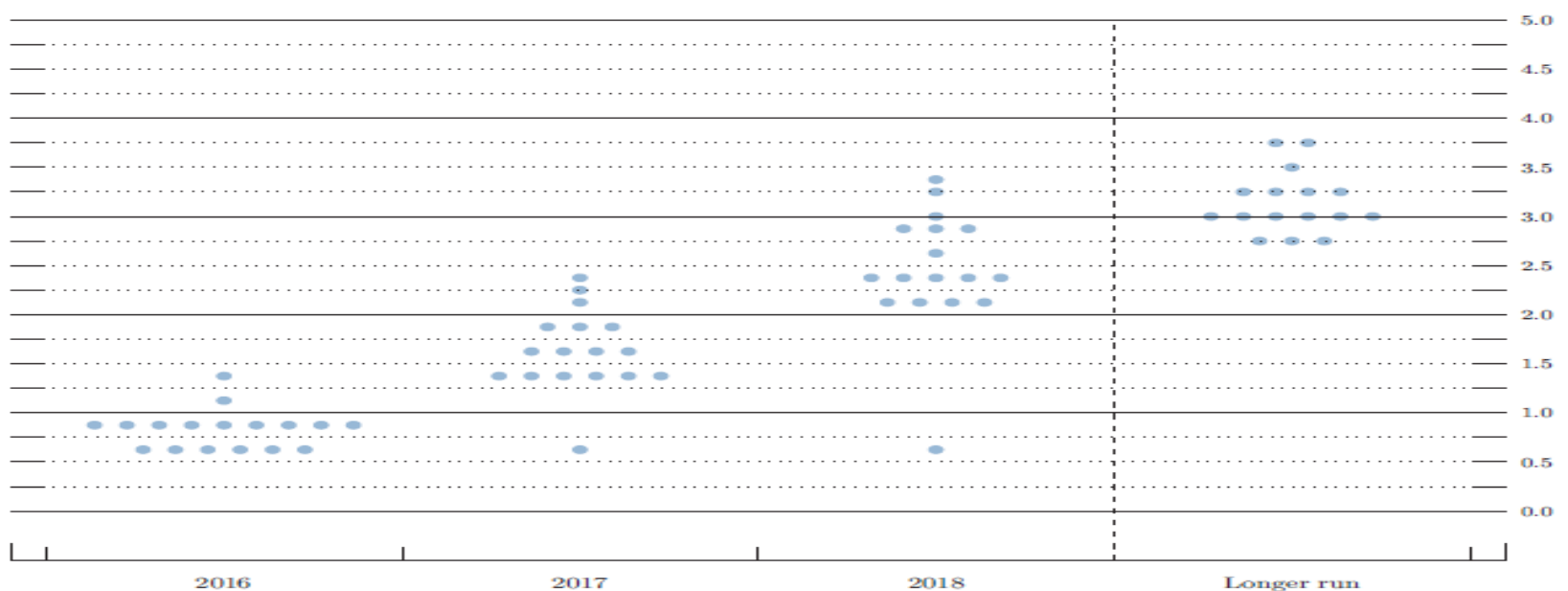
FOMC Projections

Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents, June 2015
Advance release of table 1 of the Summary of Economic Projections to be released with the FOMC minutes

Percent


Variable	Central tendency ¹				Range ²			
	2015	2016	2017	Longer run	2015	2016	2017	Longer run
Change in real GDP	1.8 to 2.0	2.4 to 2.7	2.1 to 2.5	2.0 to 2.3	1.7 to 2.3	2.3 to 3.0	2.0 to 2.5	1.8 to 2.5
March projection	2.3 to 2.7	2.3 to 2.7	2.0 to 2.4	2.0 to 2.3	2.1 to 3.1	2.2 to 3.0	1.8 to 2.5	1.8 to 2.5
Unemployment rate	5.2 to 5.3	4.9 to 5.1	4.9 to 5.1	5.0 to 5.2	5.0 to 5.3	4.6 to 5.2	4.8 to 5.5	5.0 to 5.8
March projection	5.0 to 5.2	4.9 to 5.1	4.8 to 5.1	5.0 to 5.2	4.8 to 5.3	4.5 to 5.2	4.8 to 5.5	4.9 to 5.8
PCE inflation	0.6 to 0.8	1.6 to 1.9	1.9 to 2.0	2.0	0.6 to 1.0	1.5 to 2.4	1.7 to 2.2	2.0
March projection	0.6 to 0.8	1.7 to 1.9	1.9 to 2.0	2.0	0.6 to 1.5	1.6 to 2.4	1.7 to 2.2	2.0
Core PCE inflation ³	1.3 to 1.4	1.6 to 1.9	1.9 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	
March projection	1.3 to 1.4	1.5 to 1.9	1.8 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	

Percent



Modest Rate Increases Expected in the Near Term (Again)

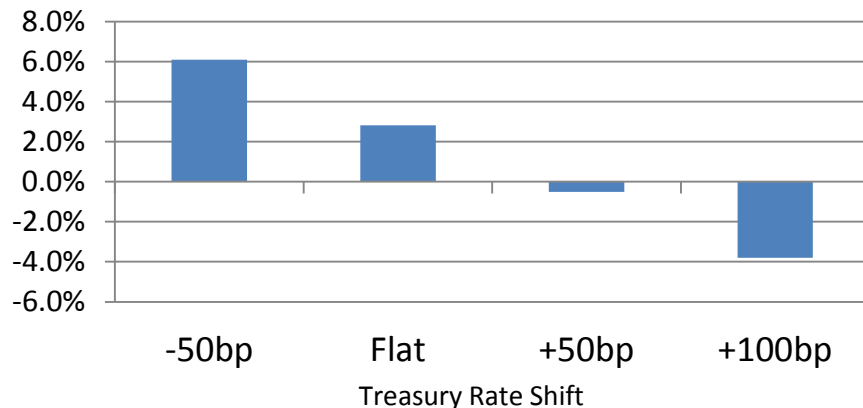
Rate	Market Yield	Q3 16	Q4 16	Q1 17	Q2 17	Q3 17	Q4 17
United States							
US 30-Year	2.26	2.37	2.50	2.61	2.72	2.79	2.89
US 10-Year	1.54	1.60	1.75	1.89	1.99	2.09	2.22
US 2-Year	0.69	0.73	0.85	1.00	1.13	1.37	1.45
US 3-Month Libor	0.67	0.66	0.78	0.91	1.07	1.21	1.44
Federal Funds Target Rate - Upper Bound	0.50	0.55	0.70	0.80	0.95	1.05	1.20
Federal Funds Target Rate - Lower Bound	0.25	0.29	0.44	0.54	0.71	0.80	0.97
2 Year - 10 Year Spread	0.85	0.87	0.90	0.90	0.86	0.72	0.77

95) Chart Analysts		96) Forecast Histogram	Bond Yield Forecasts: Analysts					
United States	▼		Q3 16	Q4 16	Q1 17	Q2 17	Q3 17	Q4 17
US 10-Year	▼	Bloomberg Wgt Avg	1.60	1.75	1.89	1.99	2.09	2.22
 Market Yield 1.54		Implied Forward Yield	1.59	1.63	1.66	1.70	1.73	1.76
		Median Forecast	1.58	1.70	1.85	1.93	2.00	2.13
		Average Forecast	1.60	1.75	1.89	1.99	2.09	2.22
		High Forecast	2.20	2.45	2.77	2.90	3.15	3.60
		Low Forecast	1.20	1.15	1.20	1.25	1.30	1.20
		Recent Updates	Responses	62	62	61	60	55
No Update Since Last Official Survey								
		Jul. Survey Median	1.58	1.70	1.85	1.93	2.00	2.13
		Jun. Survey Median	2.00	2.11	2.30	2.40	2.50	
		Change in Medians	-0.43	-0.41	-0.45	-0.48	-0.50	

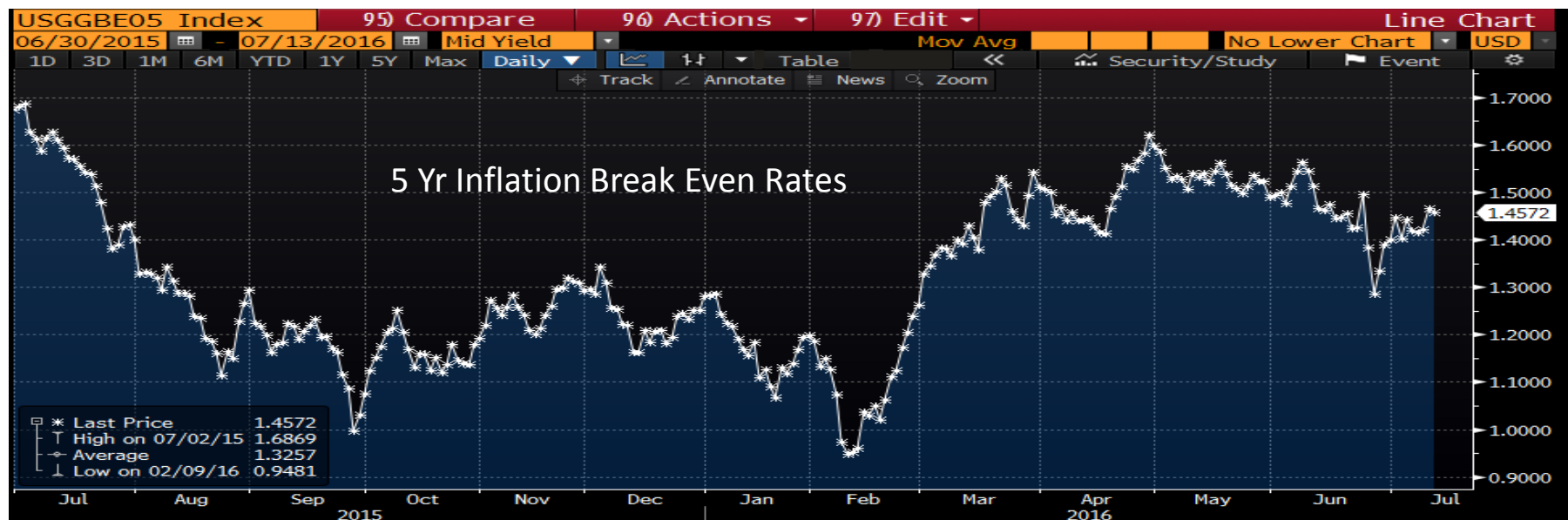


Fixed Income Expectations

1 Year Parallel Simulation for Core Fixed
(As of 6/30/16)



- Expectations are for rates to rise modestly into 2017
- Risks of material near term inflation are very limited
- Return expectations over the next five years remain in the 2% to 4% range



DISCLAIMER

The IG Fixed Income Benchmark is comprised 10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index*. The custom BOAML core index comprised of the following weightings: 30% BOAML 5+ Years Governments, 35% BOAML 5+ Years Investment Grade Corporates, and 35% BOAML Mortgage Master.

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