

NORTH CAROLINA  
DEPARTMENT OF STATE TREASURER



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INVESTMENT MANAGEMENT DIVISION

# Investment Grade Fixed Income Review

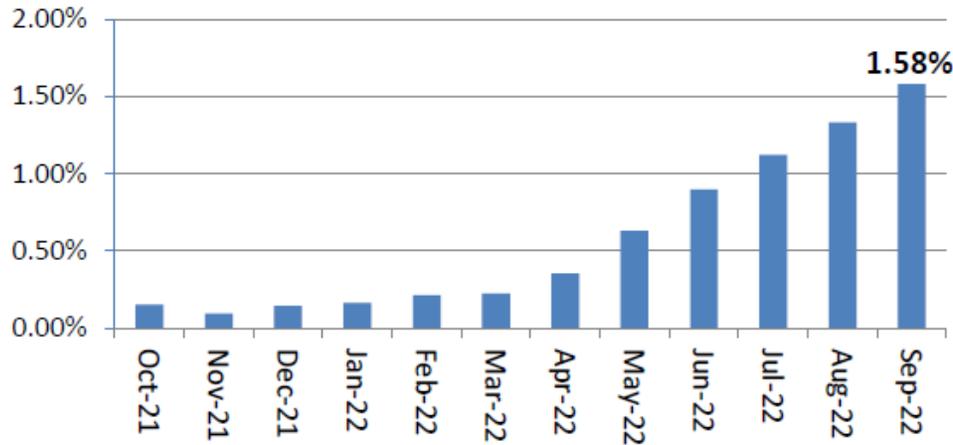
November 9, 2022



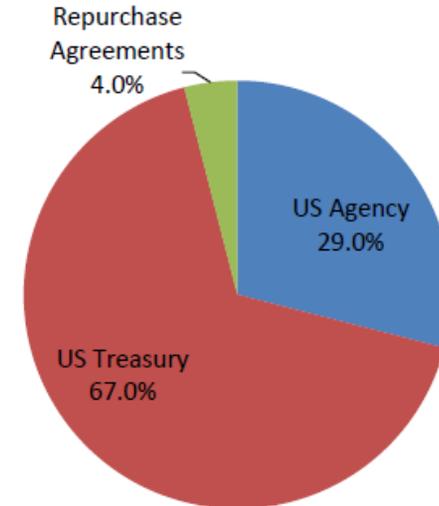
# North Carolina Short Term Portfolio (STIF)

## September 30, 2022

Historical Annualized Net Cash Return



STIF Allocation

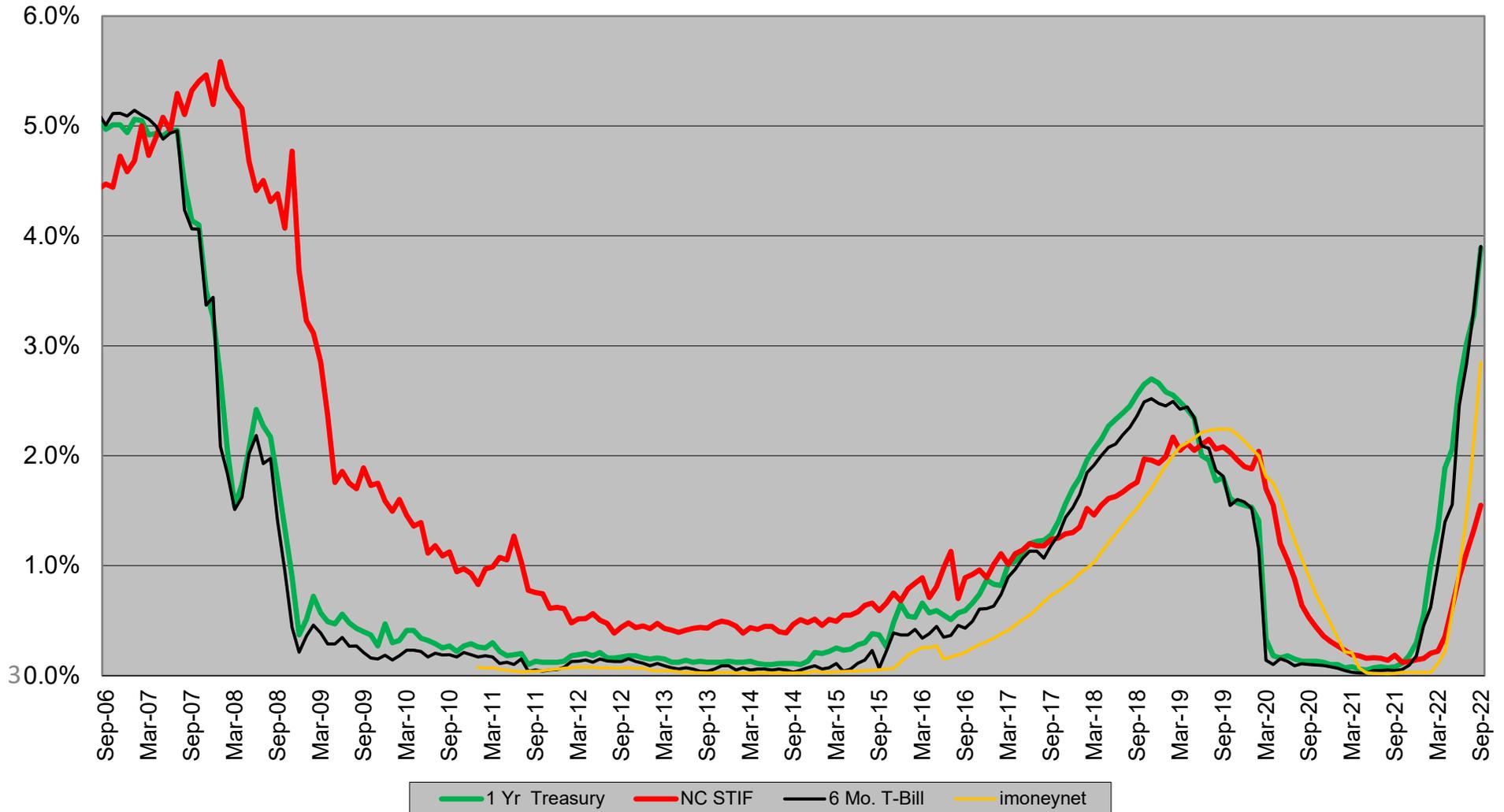


Portfolio Characteristics	Month ending 9/30/22
Current Annualized Net Cash Return	1.58%
Effective Duration	0.79
Average Maturity (Yrs)	0.9
Average Credit Rating (Moody's)	AAA
Average Price	99.96
Average Coupon	0.74%



# Short Term Portfolio (STIF) Rate History

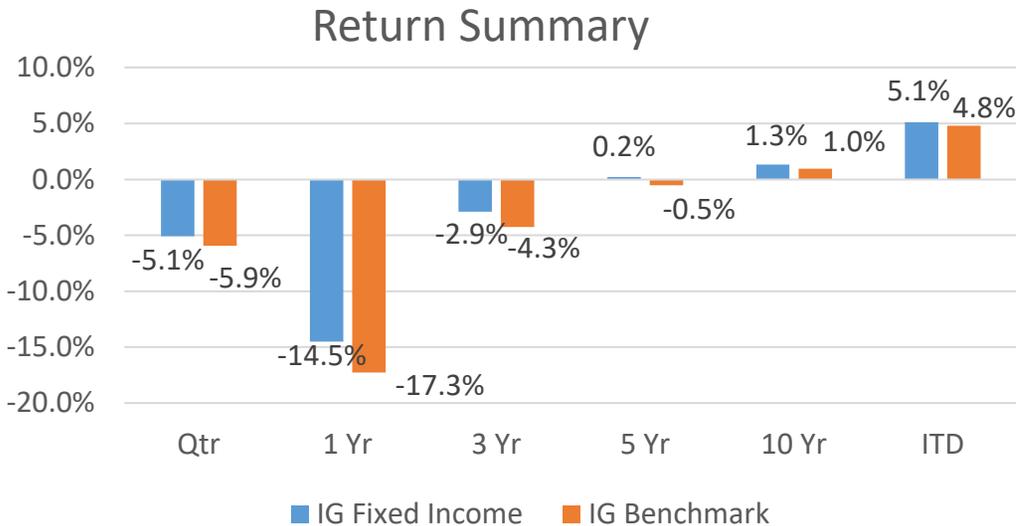
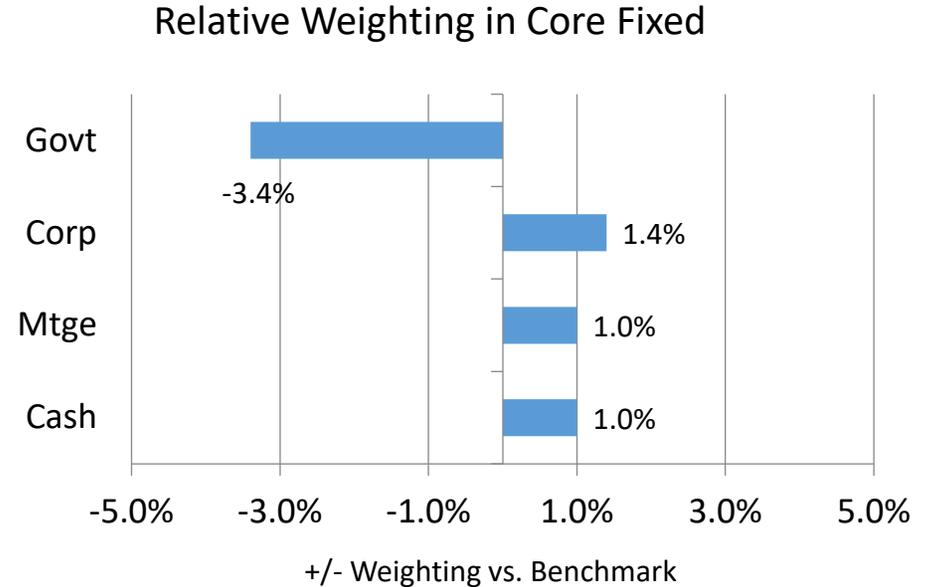
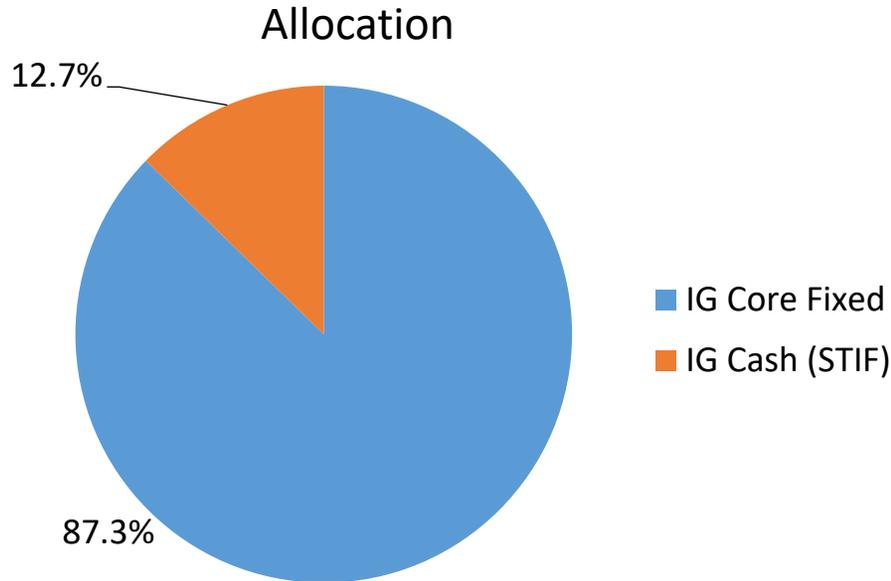
\$52.9 Billion AUM as of 9/30/22





# Investment Grade Fixed Income Profile

As of September 30, 2022



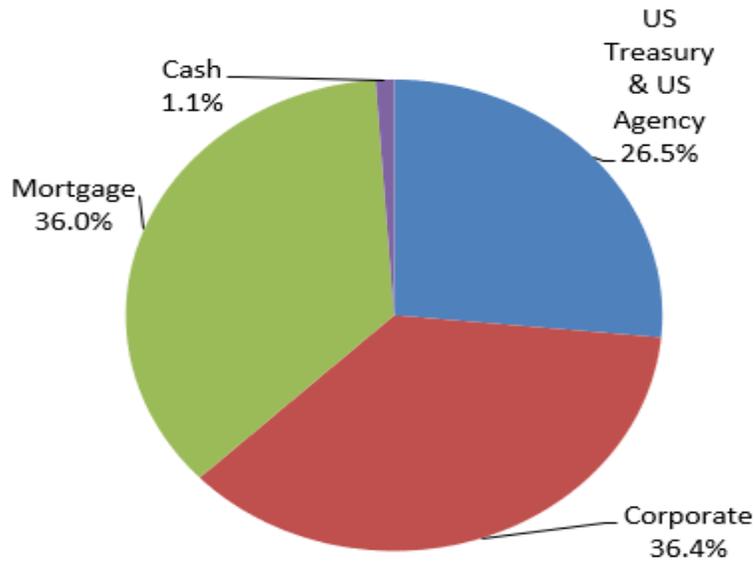
- Worst year for Fixed Income since the inception of mark to market on our Fixed Income portfolios (1997).
- Investment Grade Fixed Income has outperformed in all measured time periods..
- The portfolio's outperformance over the last year was driven by our short relative duration to the benchmark.



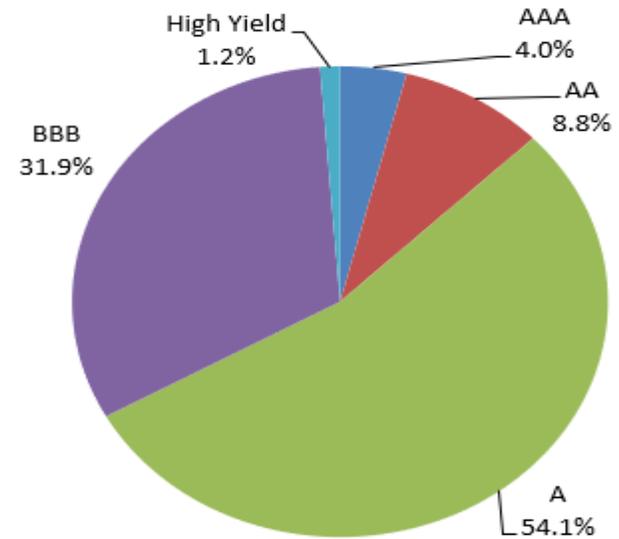
# Core Fixed Income Long Term Portfolio (LTIP)

## September 30, 2022

**LTIP Allocation**



**Corporate Allocation by Quality**



Portfolio Characteristics (ex cash)	As of 9/30/22
Yield to Maturity	4.8%
Duration	7.5
Average Maturity (Yrs)	10.8
Average Credit Rating	AA
Average Coupon	3.5%

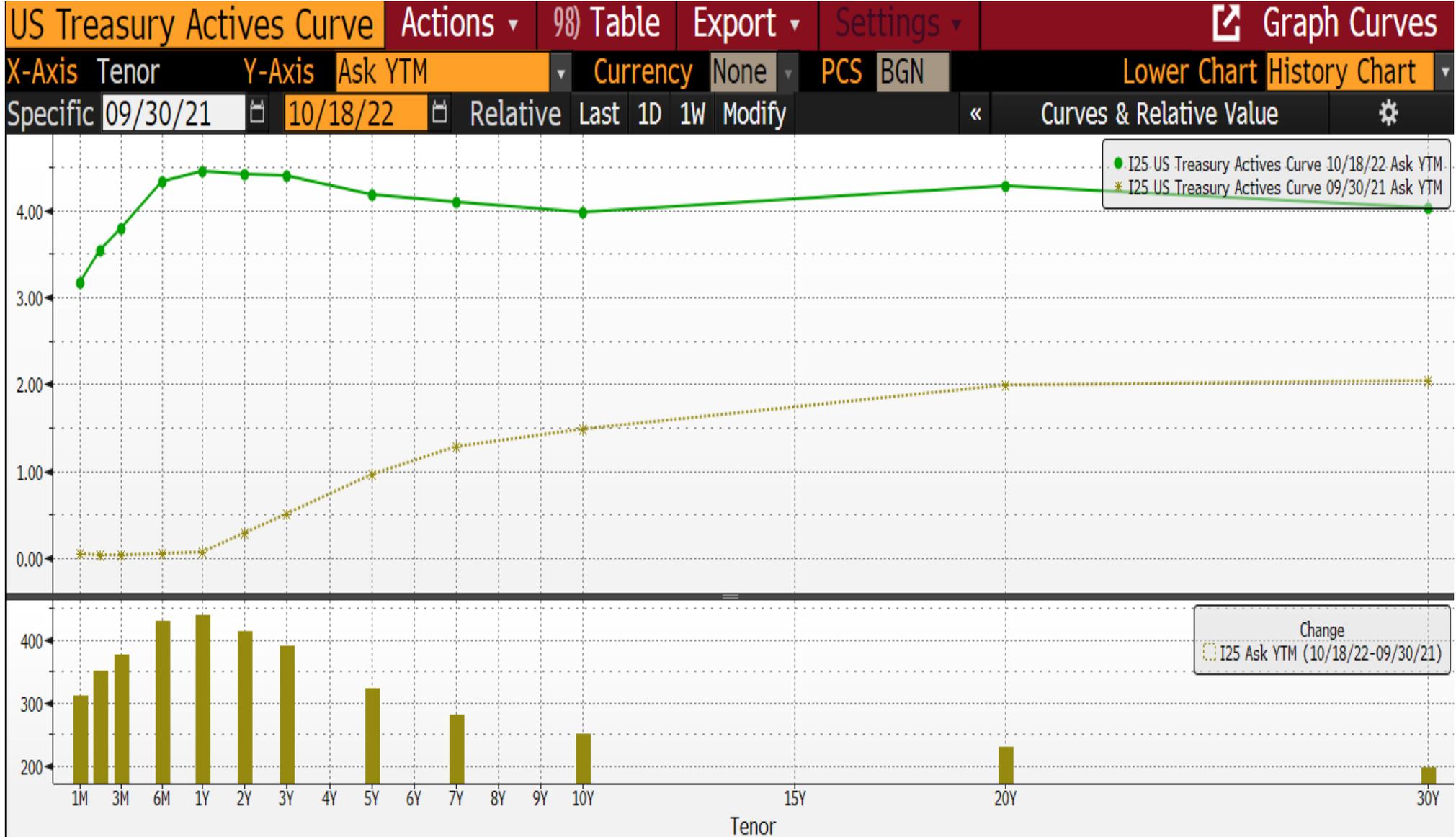
\* BOAML Custom Fixed Income Benchmark



# 10 year and 30 Year UST Yield History

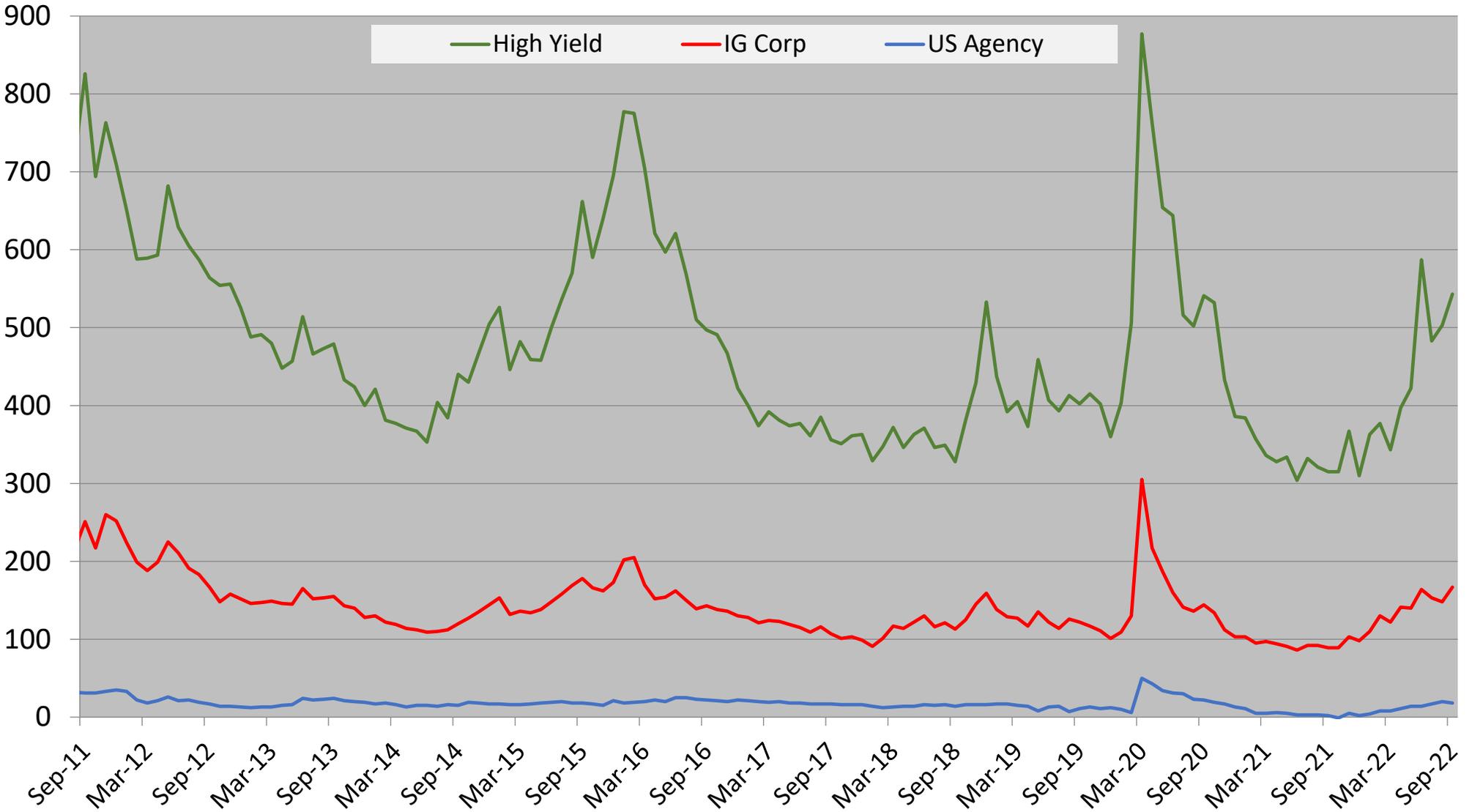


Source: Bloomberg





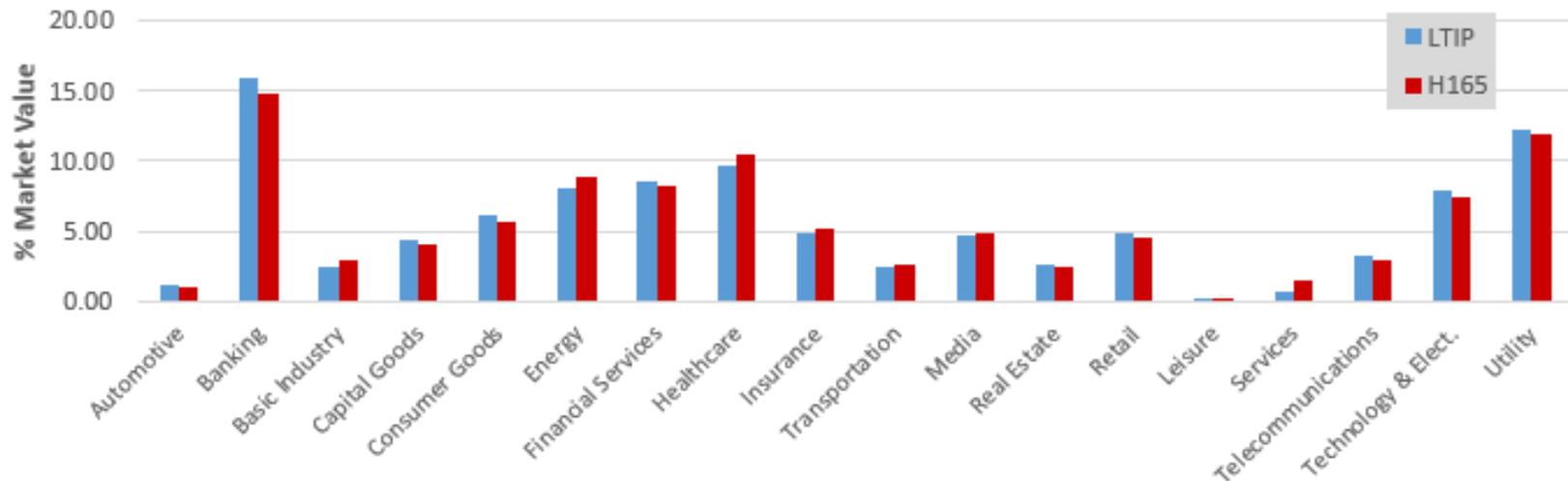
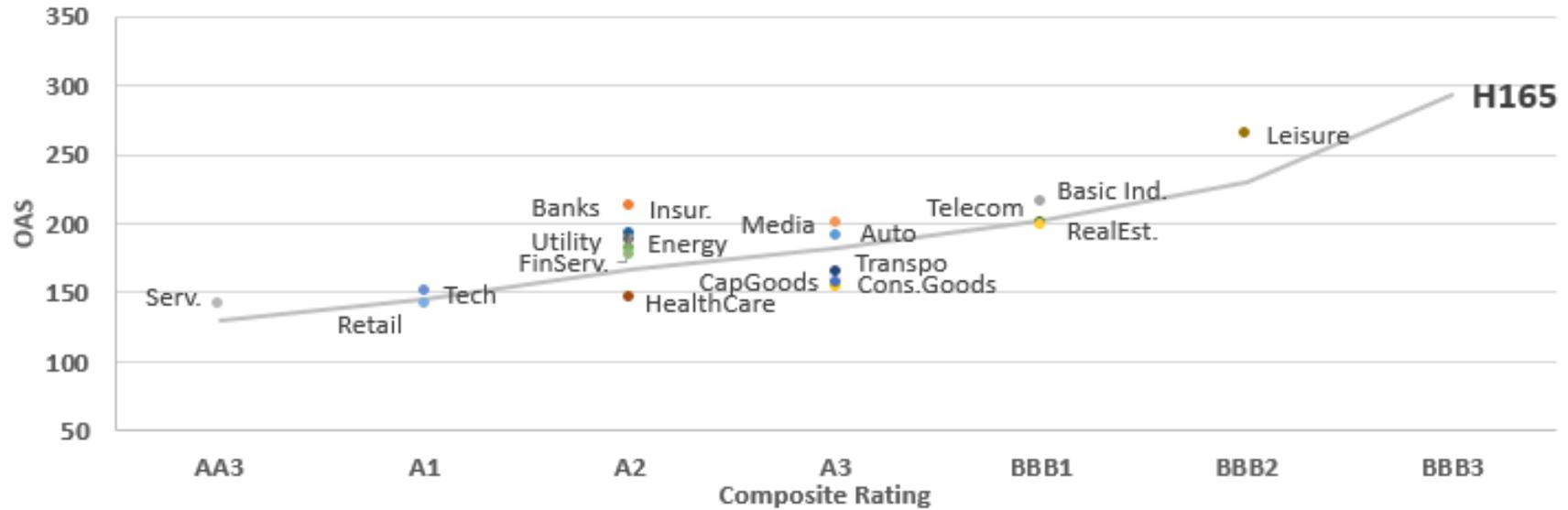
# Spread History Credit Markets





# Corporate Relative Value and LTIP Allocation by Sector

As of 9/30/22

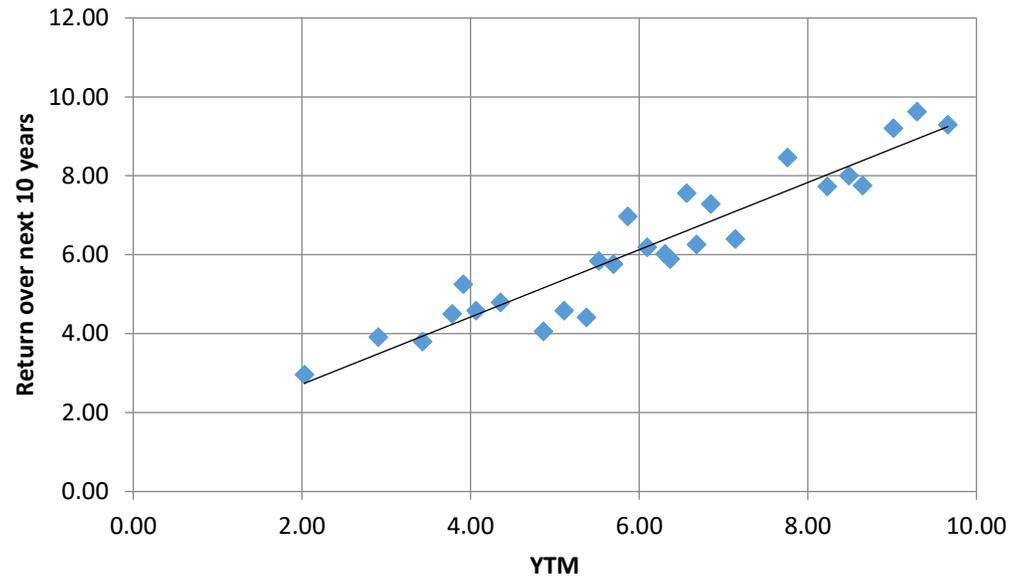




Yield vs Realized Returns			
DOAO - Domestic Master			
Year End	YTM	Return the Next 10 Years	+/-
1985	9.29%	9.63%	0.33%
1986	7.76%	8.46%	0.71%
1987	9.01%	9.21%	0.19%
1988	9.66%	9.29%	-0.37%
1989	8.65%	7.75%	-0.90%
1990	8.48%	8.01%	-0.48%
1991	6.85%	7.28%	0.44%
1992	6.56%	7.56%	1.00%
1993	5.86%	6.97%	1.11%
1994	8.23%	7.73%	-0.50%
1995	6.09%	6.19%	0.09%
1996	6.68%	6.26%	-0.41%
1997	6.30%	6.02%	-0.28%
1998	5.69%	5.76%	0.06%
1999	7.14%	6.40%	-0.74%
2000	6.36%	5.89%	-0.48%
2001	5.52%	5.84%	0.33%
2002	3.91%	5.25%	1.34%
2003	4.06%	4.58%	0.52%
2004	4.35%	4.79%	0.44%
2005	5.11%	4.58%	-0.53%
2006	5.37%	4.41%	-0.96%
2007	4.86%	4.06%	-0.80%
2008	3.78%	4.50%	0.72%
2009	3.43%	3.80%	0.37%
2010	2.90%	3.91%	1.01%
2011	2.03%	2.96%	0.93%
2012	1.56%	0.99%	-0.57%
		as of 9/30/22	
10/19/22	5.02%		

Data from BOAML Domestic Master Index

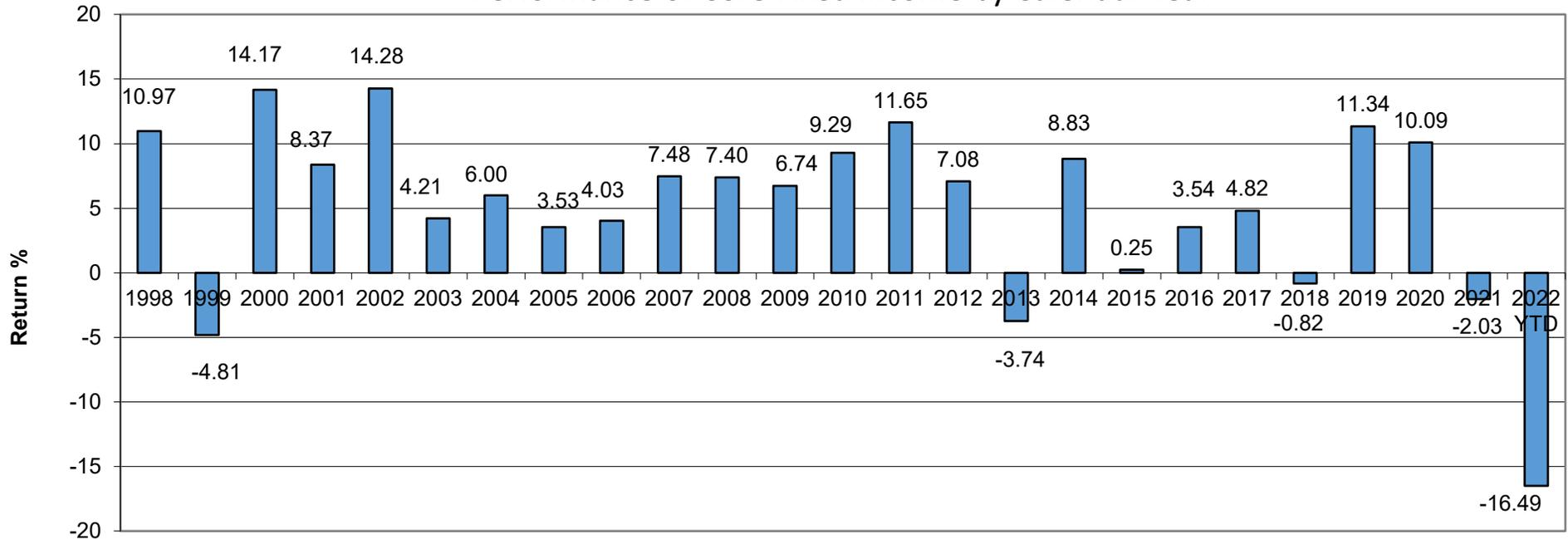
YTM versus Future 10-Year Returns



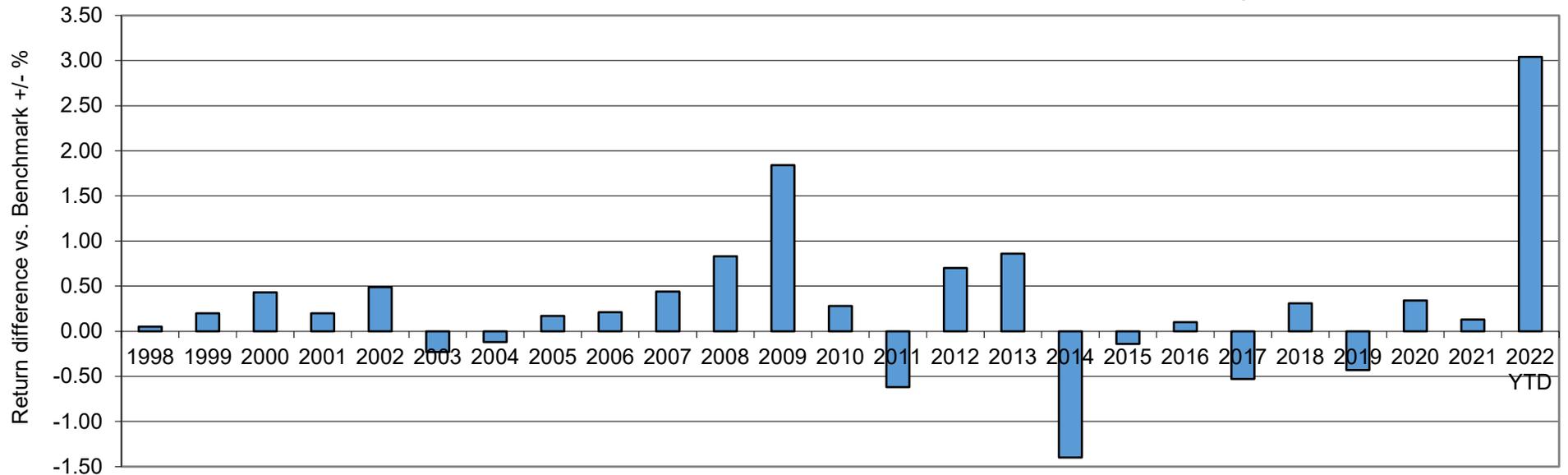
- When building out our asset allocation model, current yield to maturity is the basis for expected returns in the asset class
- Despite the historically negative returns over the last year, the realized returns in bonds over a 10 year period were close to the expected level based on historical yields.
- With a current yield to maturity over 5%, expected returns in fixed income over the next decade are at the highest level in 15 years.



### Performance of Core Fixed Income by Calendar Year



### Core Fixed Income Relative Performance vs. BOAML Benchmark by Calendar Year





## FOMC Projections

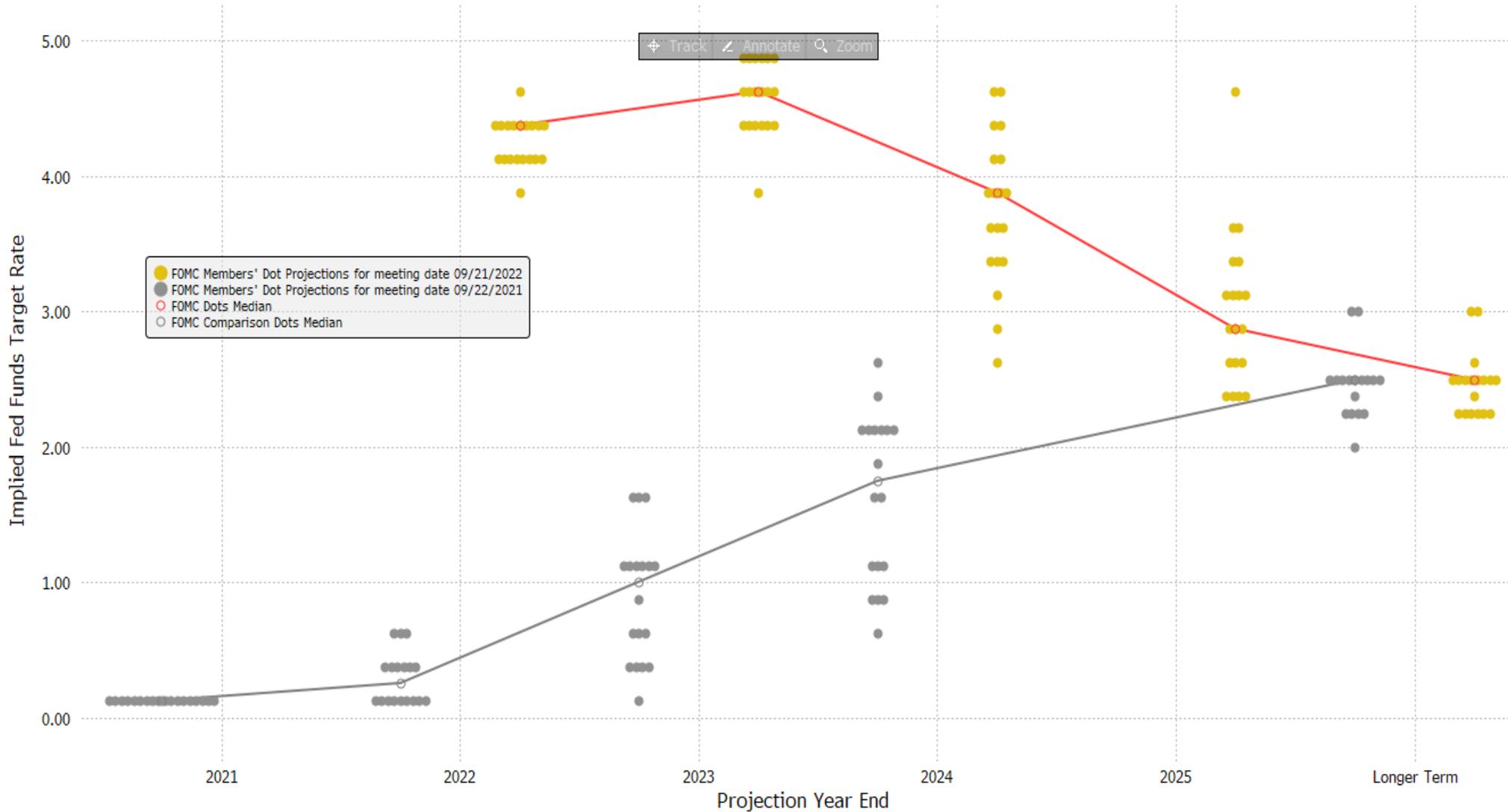
**Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, September 2022**

Percent

Variable	Median <sup>1</sup>					Central Tendency <sup>2</sup>					Range <sup>3</sup>				
	2022	2023	2024	2025	Longer run	2022	2023	2024	2025	Longer run	2022	2023	2024	2025	Longer run
Change in real GDP	0.2	1.2	1.7	1.8	1.8	0.1-0.3	0.5-1.5	1.4-2.0	1.6-2.0	1.7-2.0	0.0-0.5	-0.3-1.9	1.0-2.6	1.4-2.4	1.6-2.2
June projection	1.7	1.7	1.9		1.8	1.5-1.9	1.3-2.0	1.5-2.0		1.8-2.0	1.0-2.0	0.8-2.5	1.0-2.2		1.6-2.2
Unemployment rate	3.8	4.4	4.4	4.3	4.0	3.8-3.9	4.1-4.5	4.0-4.6	4.0-4.5	3.8-4.3	3.7-4.0	3.7-5.0	3.7-4.7	3.7-4.6	3.5-4.5
June projection	3.7	3.9	4.1		4.0	3.6-3.8	3.8-4.1	3.9-4.1		3.5-4.2	3.2-4.0	3.2-4.5	3.2-4.3		3.5-4.3
PCE inflation	5.4	2.8	2.3	2.0	2.0	5.3-5.7	2.6-3.5	2.1-2.6	2.0-2.2	2.0	5.0-6.2	2.4-4.1	2.0-3.0	2.0-2.5	2.0
June projection	5.2	2.6	2.2		2.0	5.0-5.3	2.4-3.0	2.0-2.5		2.0	4.8-6.2	2.3-4.0	2.0-3.0		2.0
Core PCE inflation <sup>4</sup>	4.5	3.1	2.3	2.1		4.4-4.6	3.0-3.4	2.2-2.5	2.0-2.2		4.3-4.8	2.8-3.5	2.0-2.8	2.0-2.5	
June projection	4.3	2.7	2.3			4.2-4.5	2.5-3.2	2.1-2.5			4.1-5.0	2.5-3.5	2.0-2.8		
Memo: Projected appropriate policy path															
Federal funds rate	4.4	4.6	3.9	2.9	2.5	4.1-4.4	4.4-4.9	3.4-4.4	2.4-3.4	2.3-2.5	3.9-4.6	3.9-4.9	2.6-4.6	2.4-4.6	2.3-3.0
June projection	3.4	3.8	3.4		2.5	3.1-3.6	3.6-4.1	2.9-3.6		2.3-2.5	3.1-3.9	2.9-4.4	2.1-4.1		2.0-3.0



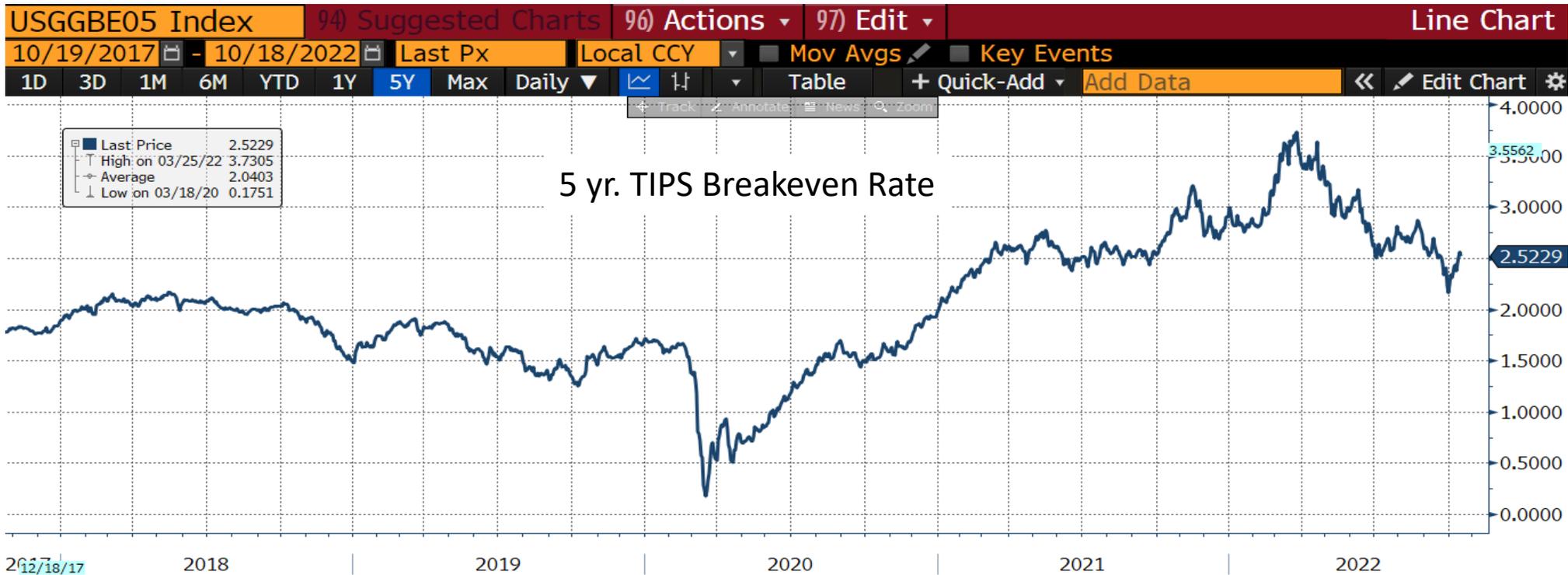
# Fed Dot Plot





## Modest Rate Decreases Expected in the Near Term

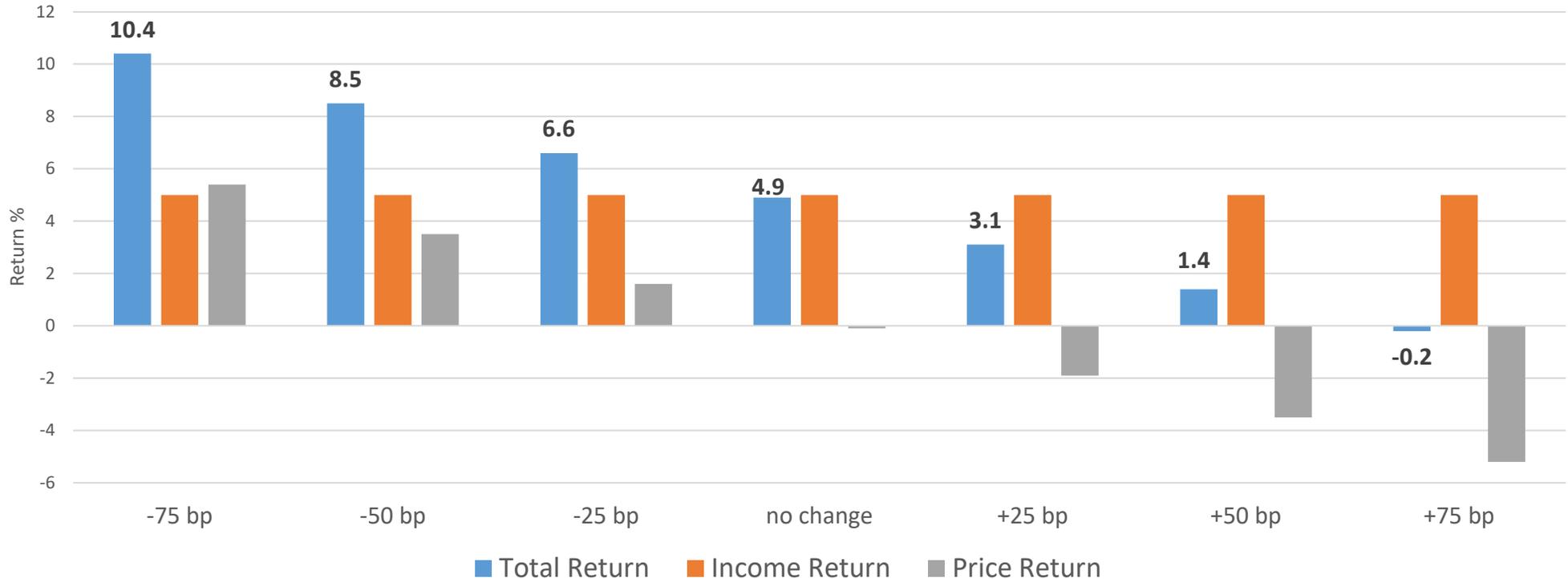
Rate	Mkt Yld	Q4 22	Q1 23	Q2 23	Q3 23	Q4 23	Q1 24	Q2 24	Q3 24	Q4 24
<b>United States</b>										
US 30-Year	4.03	3.88	3.89	3.82	3.73	3.64	3.65	3.55	3.50	3.46
US 10-Year	3.99	3.85	3.84	3.72	3.59	3.44	3.39	3.30	3.21	3.18
US 5-Year	4.19	4.15	4.10	3.93	3.71	3.52	3.41	3.26	3.15	3.11
US 2-Year	4.41	4.39	4.35	4.15	3.88	3.63	3.44	3.27	3.12	3.04
US 3-Month Term SOFR	3.96	4.26	4.51	4.40	4.17	4.03	3.82	3.67	3.46	3.27
Fed Funds Rate - Upper Bound	3.25	4.40	4.65	4.60	4.50	4.30	3.90	3.60	3.25	3.05
Fed Funds Rate - Lower Bound	3.00	4.16	4.40	4.35	4.23	4.04	3.66	3.33	3.01	2.79
2 Year - 10 Year Spread	-0.42	-0.54	-0.51	-0.43	-0.29	-0.19	-0.05	0.03	0.10	0.14





# Fixed Income Return Expectations

1 Year Core Fixed Income Return Simulation (Parallel Shift) as of 9/30/22



- Expectations are for rates to decline modestly in 2023
- The TIPS markets shows inflation declining from currently high levels, but still remaining elevated
- Return expectations over the next five years have increased to 4-6% due to the material increase in yields



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