


SESSION THREE

Understanding and
Managing Risk in Public
Investing

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Chief Investment Strategist
Meeder Public Funds





Dictionary

Est. 1828

Dictionary

Definition

noun

verb

Synonyms

Example Sentences

Word History

Phrases Containing

Entries Near

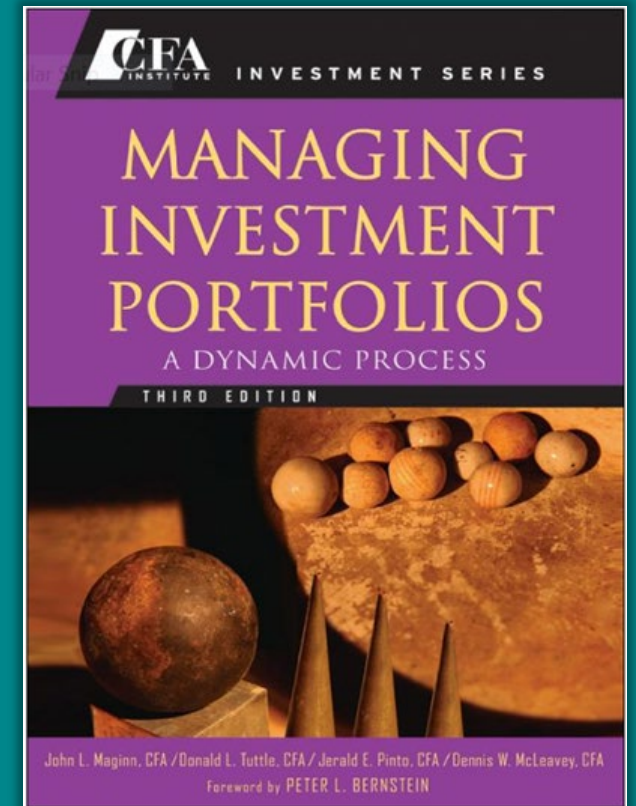
risk 1 of 2 noun

'risk 

Synonyms of *risk* >

- 1 : possibility of loss or injury : **PERIL**
- 2 : someone or something that creates or suggests a hazard
- 3
 - a : the chance of loss or the perils to the subject matter of an insurance contract
also : the degree of probability of such loss
 - b : a person or thing that is a specified hazard to an insurer
 - c : an insurance hazard from a specified cause or source

RISK means more things can happen than will happen. The range of future outcomes is the impenetrable mystery all investors must face. Investors must shape all portfolio decisions around that simple but powerful truth. If we do not know the future, decision errors and surprises are inevitable. As a result, managing investment portfolios is ultimately about managing risk, or preparing for uncertainty, and unexpected outcomes.



SOURCE: MANAGING INVESTMENT PORTFOLIOS: A DYNAMIC PROCESS (CFA INSTITUTE INVESTMENT SERIES – KINDLE LOCATION 179) . WILEY. KINDLE EDITION.

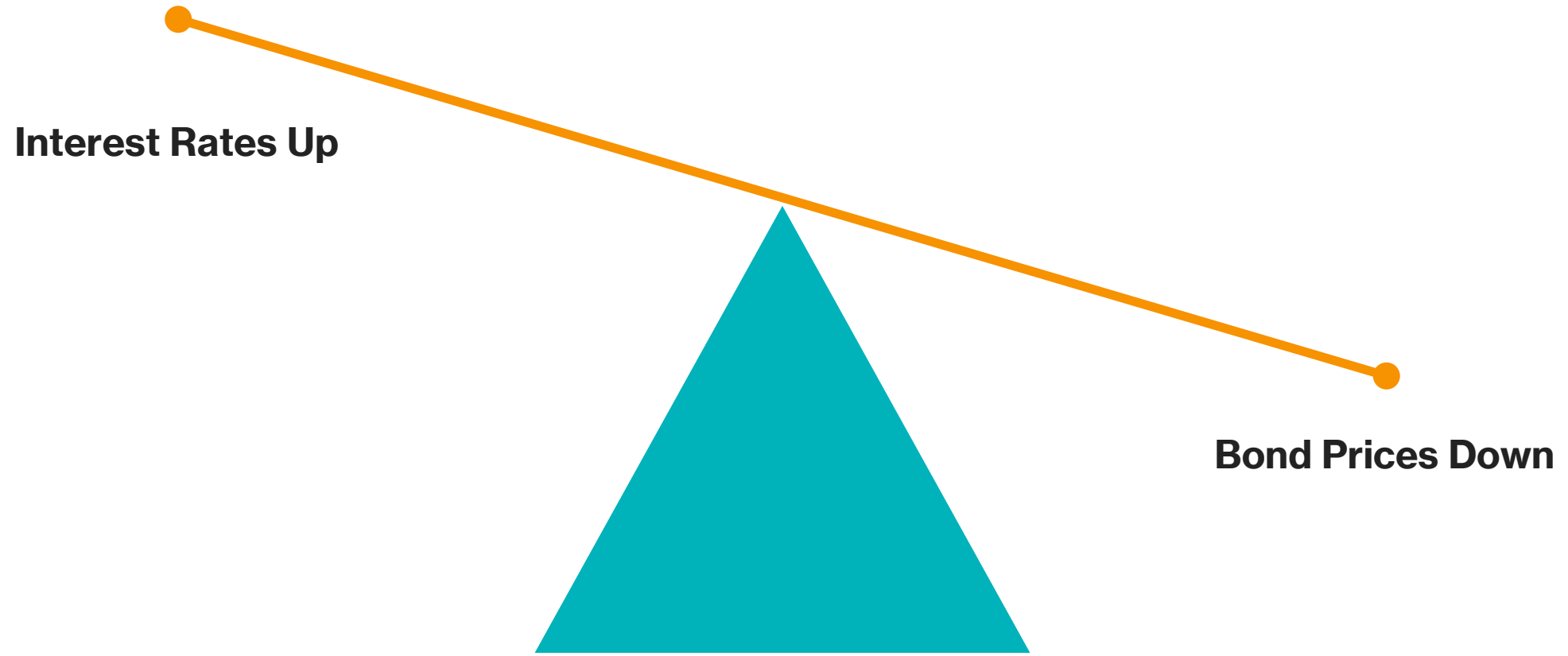
**Risk comes from
not knowing what
you're doing.**

– WARREN BUFFET



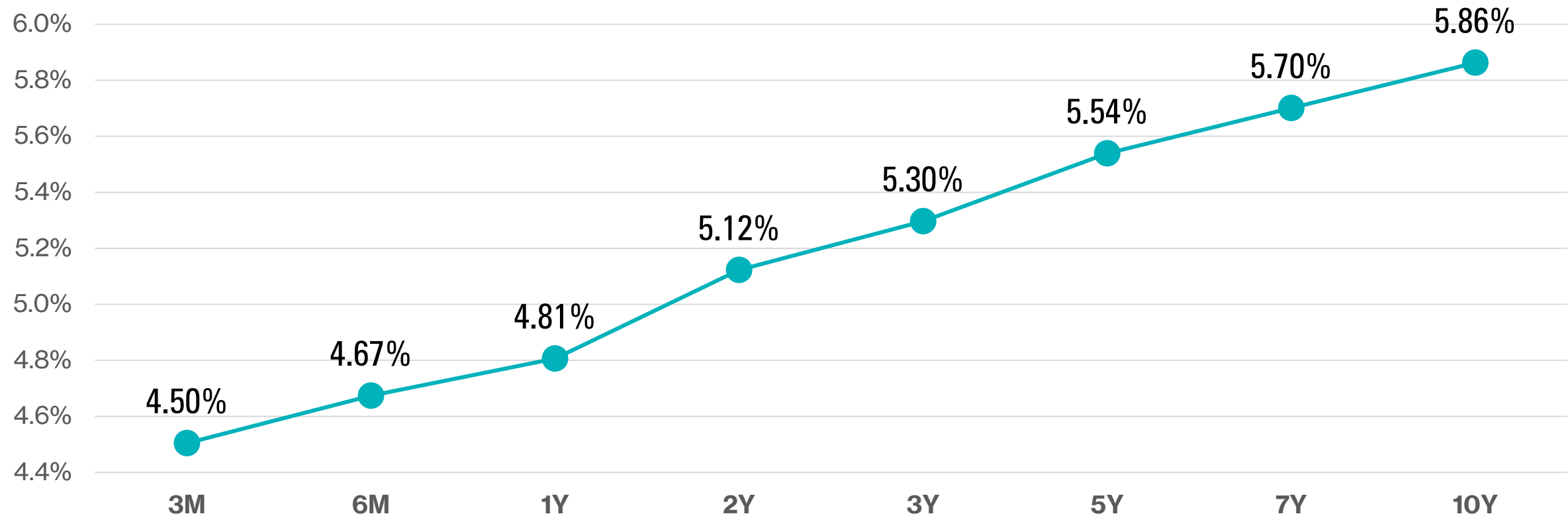
SOURCE: WARREN BUFFET, AZ QUOTES

Bond Risk Basics




Longer Duration has Generated more Investment Income Over the Long Run

Average Monthly Treasury Yields
1977 to Present



SOURCE: BLOOMBERG, MONTH-END CLOSING YIELDS, 2Y INTERPOLATED 1963-1976, 7Y INTERPOLATED 1963-1969

A Detailed Asset/Liability Matching Model (aka: Cash Flow Model) is a Must



Date	INFLOWS									OUTFLOWS								End MMF
	Begin MMF	Inv Mat/Sell/Call	From LGIP	Prop Tax	State Rev	Debt Svc Inflows	Wells Rev /Bus Lic	BofA Rev	Total	Payroll	AP/Cont Disb	Debt Svc	Wires/ PERS	Misc Outflow	Inv Purchase	To LGIP	Total	
1/14/24	183.4								183.4								0.0	183.4
1/15/24	183.4								183.4								0.0	183.4
1/16/24	183.4			62.2			3.5	21.8	270.9		6.4		153.5		27.4		187.3	116.7
1/17/24	116.7						14.5	13.2	144.4		4.0		18.8				22.8	110.8
1/18/24	110.8	50.0					49.2	16.3	226.3		5.0		7.1				12.1	211.1
1/19/24	211.1							14.6	225.7		6.7		4.5				11.2	211.1
1/20/24	211.1								211.1								0.0	211.1
1/21/24	211.1								211.1								0.0	211.1
1/22/24	211.1							16.8	227.9		10.6		1.7		25.0		37.3	198.6
1/23/24	198.6							13.1	211.7		4.7		7.3		20.0		32.0	188.5
1/24/24	188.5							8.0	196.5		3.3		10.7				14.0	192.4
1/25/24	192.4							10.8	203.2	40.1	4.9		6.0				51.0	150.2
1/26/24	150.2							5.0	155.2	7.0	18.7		6.3				32.0	116.9
1/27/24	116.9								116.9								0.0	116.9
1/28/24	116.9								116.9								0.0	116.9
1/29/24	116.9							5.0	121.9		6.0						6.0	115.9
1/30/24	115.9	30.0				22.5		5.0	173.4		6.0	24.0					30.0	143.4
1/31/24	143.4				115.0	20.5		5.0	283.9		6.0						6.0	277.9

Target average of \$160M in overnight liquidity = 2% of \$8B portfolio

SOURCE: MEEDER PUBLIC FUNDS

Unique

Being the only one of its kind; unlike anything else.

The income generated by a state/local government investment program is the only source of revenue that is received without charging fees or taxes to their citizenry.

SOURCE: OXFORD DICTIONARY, RICK PHILLIPS

Safety Liquidity Income



Public Fund Investment Considerations

The Investment Primer is intended to guide the development and management of an investment program while maintaining an appropriate balance among safety, liquidity and yield considerations

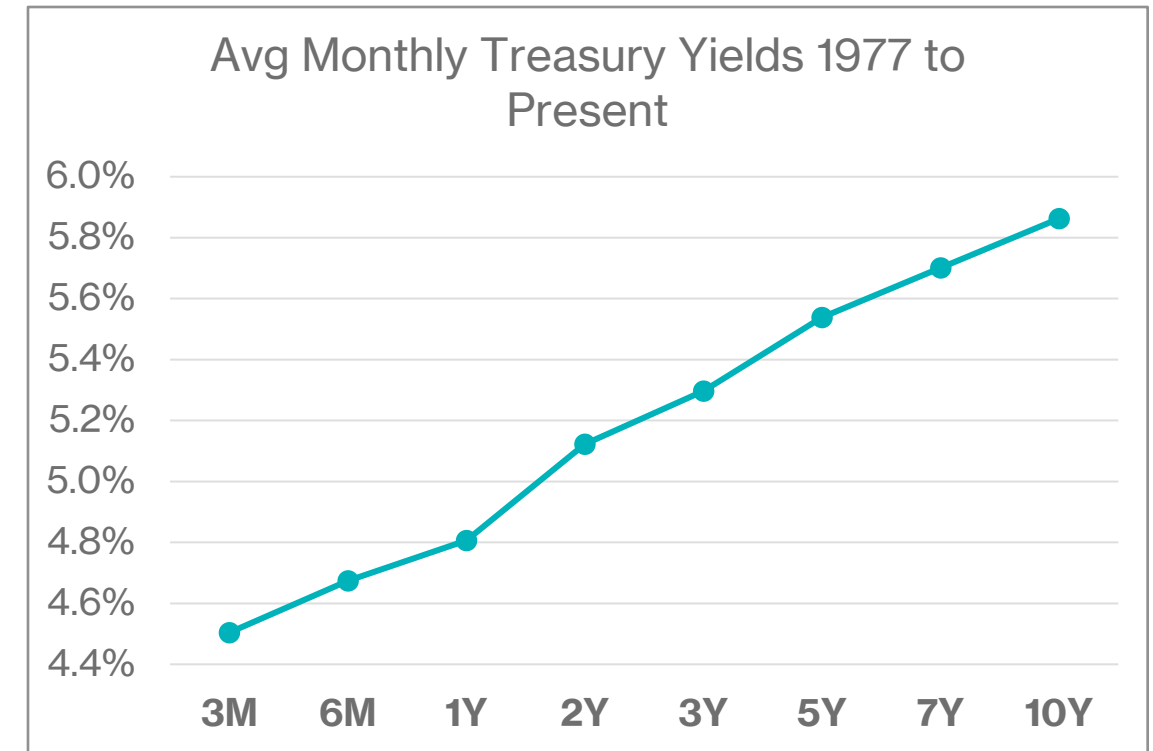
- Preservation of principal (or safety) is the first and most important consideration of public fund investment.
- Public agencies address the safety consideration through the implementation of an investment program that controls exposure to **many risks**, including those related to principal loss through excess exposure to market or credit risk.



Risk

- Not having a suitable amount of interest rate risk/duration...pursuant to your cash flow metrics/model
- Not hitting your investment income budget

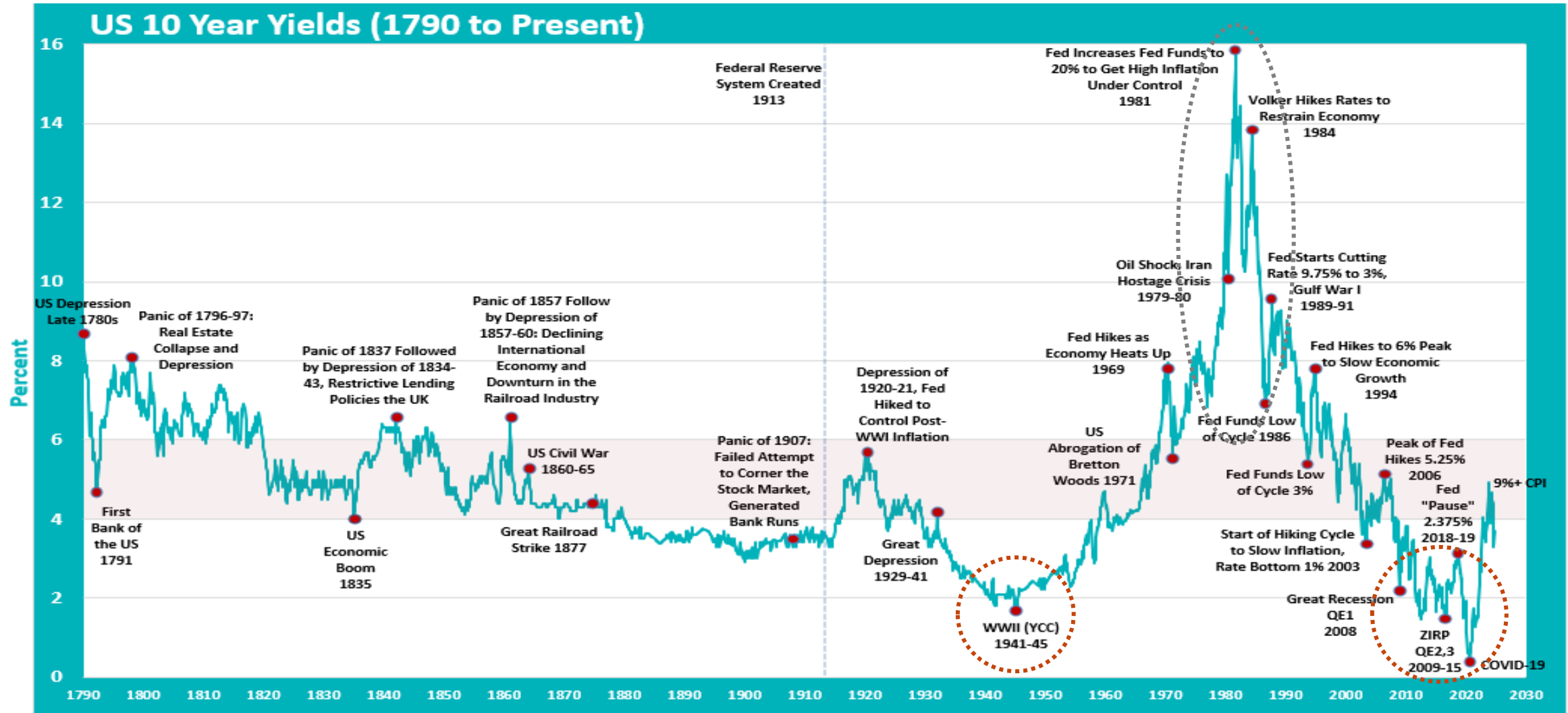
Maturity	Avg Yield	Avg Dur	Modified Sharp Ratio	% Yield of 10Yr	% Risk of 10Yr
3M T-Bill	4.50%	0.25		77%	3%
6M T-Bill	4.67%	0.50	0.34	80%	6%
1Y T-Bill	4.81%	1.00	0.30	82%	12%
2Y T-Note	5.12%	1.82	0.34	87%	22%
3Y T-Note	5.30%	2.79	0.28	90%	34%
5Y T-Note	5.54%	4.61	0.22	94%	56%
7Y T-Note	5.70%	6.36	0.19	97%	77%
10Y T-Note	5.86%	8.22	0.17	100%	100%



2Y vs. 6M = +45 BPs 2Y vs. 1Y = +31 BPs

SOURCE: BLOOMBERG, MONTH-END CLOSING YIELDS, 2Y INTERPOLATED 1963-1976, 7Y INTERPOLATED 1963-1969

Rate History: A Very Long Rate History



SOURCES: GOLDMAN SACHS, GLOBAL FINANCIAL DATABASE, ARBOR RESEARCH, BLOOMBERG.
1790 TO 1831: BRITISH CONSOLS; 1831 TO 1919: HIGH-GRADE LONG-TERM RAILROAD; 1919 TO DATE: 10-YR TREASURIES.

Risks

- **Timing the market**
- **Relying on specific economic/market indicators and/or “experts” to time the market/economy**

**The point of studying
economics is so
as not to be fooled
by economists.**

— JOAN ROBINSON

SOURCE: JOAN ROBINSON, AZ QUOTES



Bloomberg Survey for 2-Yr T-Note Yield

as of 9/19/24

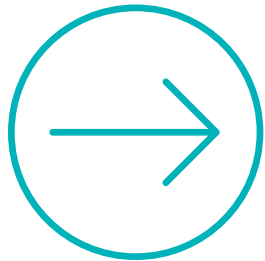



Chart Analysts		Forecast Histogram		Export	Disclaimer		Bond Yield Forecasts: Analysts							
United States					Q3 24	Q4 24	Q1 25	Q2 25	Q3 25	Q4 25	Q1 26	Q2 26	Q3 26	Q4 26
US 2-Year														
	Market Yield 3.58	Bloomberg Wgt Avg			3.83	3.82	3.66	3.52	3.37	3.26	3.14	3.14	3.22	3.21
		Implied Forward Yield			3.55	3.37	3.26	3.24	3.24	3.27	3.31	3.35	3.38	3.41
		Median Forecast			4.05	3.90	3.62	3.48	3.33	3.30	3.20	3.20	3.25	3.28
		Average Forecast			4.09	3.90	3.70	3.54	3.38	3.26	3.14	3.14	3.22	3.21
		High Forecast			4.65	4.65	4.70	4.80	4.80	4.70	4.15	3.90	3.65	3.50
		Low Forecast			3.40	2.90	2.70	2.40	2.15	1.90	1.90	1.90	2.70	2.64
Recent Updates														
		Responses			42	42	42	42	38	37	21	21	19	18
J. Bryson		Aug. Survey Median			4.05	3.90	3.62	3.48	3.38	3.30	3.20	3.20	3.24	3.25
		Jul. Survey Median			4.50	4.23	4.00	3.80	3.60	3.51	3.43	3.32	3.30	3.30
		Change in Medians			-0.45	-0.33	-0.38	-0.32	-0.23	-0.21	-0.22	-0.11	-0.06	-0.05
Firm Name		Analyst	As of	Q3 24	Q4 24	Q1 25	Q2 25	Q3 25	Q4 25	Q1 26	Q2 26	Q3 26	Q4 26	
1) Bank of America Corp		M. Gapen	08/23	3.85	3.60	3.45	3.30	3.30	3.30					
2) Bank of Montreal		D. Porter	08/23	3.97	3.79	3.60	3.42	3.24	3.06	2.88	2.97	3.06	3.16	
3) Barclays PLC		A. Pradhan	08/23	4.00	3.90	3.80	3.75							
4) Bayerische Landesbank		M. Bucher	08/23	4.50	4.40	4.30	4.20							
5) Bloomberg Intelligence - I...		I. Jersey	08/23	4.05	3.78	3.52	3.30	3.10	3.10					
6) Canadian Imperial Bank of...		A. Shenfeld	08/23	4.20	3.95	3.55	3.35	3.25	3.30					
7) Comerica Inc		W. Adams	08/23	4.41	3.94	3.39	3.10	2.75	2.39	2.43	2.55	2.70	2.64	
8) Commerzbank AG		Research	08/23	4.00	3.60	3.50	3.40	3.50						
9) Dai-ichi Life Research Inst...		S. Katsurahata	08/23	4.09	3.58	3.58	3.46	3.18	3.20	3.20	3.20	3.20	3.32	
10) Desjardins Securities Inc		J. Jean	08/23	4.10	3.90	3.70	3.50	3.35	3.20	3.05	3.00	3.00	3.00	
11) Fannie Mae		D. Duncan	08/23	4.13	3.96	3.85	3.78	3.74	3.71					
12) First Trust Advisors LP		B. Wesbury	08/23	4.05	3.78	3.50	3.23	2.95	2.68					
13) HSBC Holdings PLC		S. Major	08/23	3.40	2.90	2.70	2.40	2.15	1.90	1.90	1.90			
14) Helaba Bank		P. Franke	08/23	3.90	3.85	3.75	3.60	3.50	3.30					

SOURCE: BLOOMBERG, AS 9/19/24

Bloomberg Survey for 2Yr T-Note Yield

as of 1/13/25

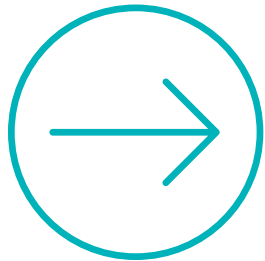



Chart Analysts		Forecast Histogram	Export	Disclaimer		Bond Yield Forecasts: Analysts							
United States				Q1 25	Q2 25	Q3 25	Q4 25	Q1 26	Q2 26	Q3 26	Q4 26	Q1 27	Q2 27
US 2-Year													
 Market Yield 4.38		Bloomberg Wgt Avg		4.04	3.90	3.80	3.74	3.60	3.55	3.52	3.55	3.46	
		Implied Forward Yield		4.42	4.46	4.53	4.59	4.62	4.65	4.67	4.70	4.71	
		Median Forecast		4.00	3.82	3.75	3.70	3.52	3.50	3.52	3.52	3.50	
		Average Forecast		4.01	3.87	3.77	3.69	3.56	3.52	3.49	3.52	3.47	
		High Forecast		4.40	4.50	4.70	4.85	4.50	4.52	4.61	4.76	4.23	
		Low Forecast		3.38	3.35	3.10	2.85	2.85	2.80	2.80	2.80	2.85	
Recent Updates		Responses		43	43	43	44	33	32	29	29	20	
I. Jersey													
W. Adams		Dec. Survey Median		4.00	3.84	3.74	3.70	3.51	3.50	3.55	3.53	3.50	
		Nov. Survey Median		4.00	3.77	3.60	3.44	3.37	3.34	3.30	3.35	3.30	
		Change in Medians		0.00	0.06	0.13	0.27	0.14	0.17	0.25	0.17	0.20	
Firm Name		Analyst	As of	Q1 25	Q2 25	Q3 25	Q4 25	Q1 26	Q2 26	Q3 26	Q4 26	Q1 27	Q2 27
1) RBC Financial Group		Research	12/17	4.40	4.50	4.70	4.85						
2) Bloomberg Intelligence - I...		I. Jersey	01/07	4.14	4.28	4.31	4.49	4.50	4.52	4.61	4.76		
3) Stifel Financial Corp		L. Piegza	12/17	4.28	4.35	4.25	4.28	4.30	4.35				
4) Intesa Sanpaolo SpA		C. Manenti	12/17	4.15	4.06	4.13	4.20						
5) Commerzbank AG		Research	12/17	4.00	3.90	4.00	4.10	4.10					
6) Nomura Securities Co Ltd		Research	12/17	4.10	4.10	4.10	4.00	4.00	3.95				
7) Evercore ISI		E. Hyman	12/17	4.10	3.90	3.80	4.00						
8) UniCredit SpA		H. Bandholz	12/17	4.25	4.20	4.10	4.00						
9) Bank of America Corp		A. Bhave	12/17	4.00	4.00	4.00	4.00						
10) Fannie Mae		M. Palim	12/17	4.03	4.01	4.00	3.99	3.99	4.00	4.01	4.02		
11) Regions Financial Corp		R. Moody	12/17	4.02	3.98	3.96	3.94	3.71	3.62	3.58	3.54	3.52	
12) ING Groep NV		J. Knightley	12/17	3.95	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	
13) First Trust Advisors LP		B. Wesbury	12/17	4.18	4.03	4.00	3.85						
14) Scotia Capital Inc		D. Holt	12/17	4.00	3.90	3.85	3.80	3.75	3.75	3.75	3.70		

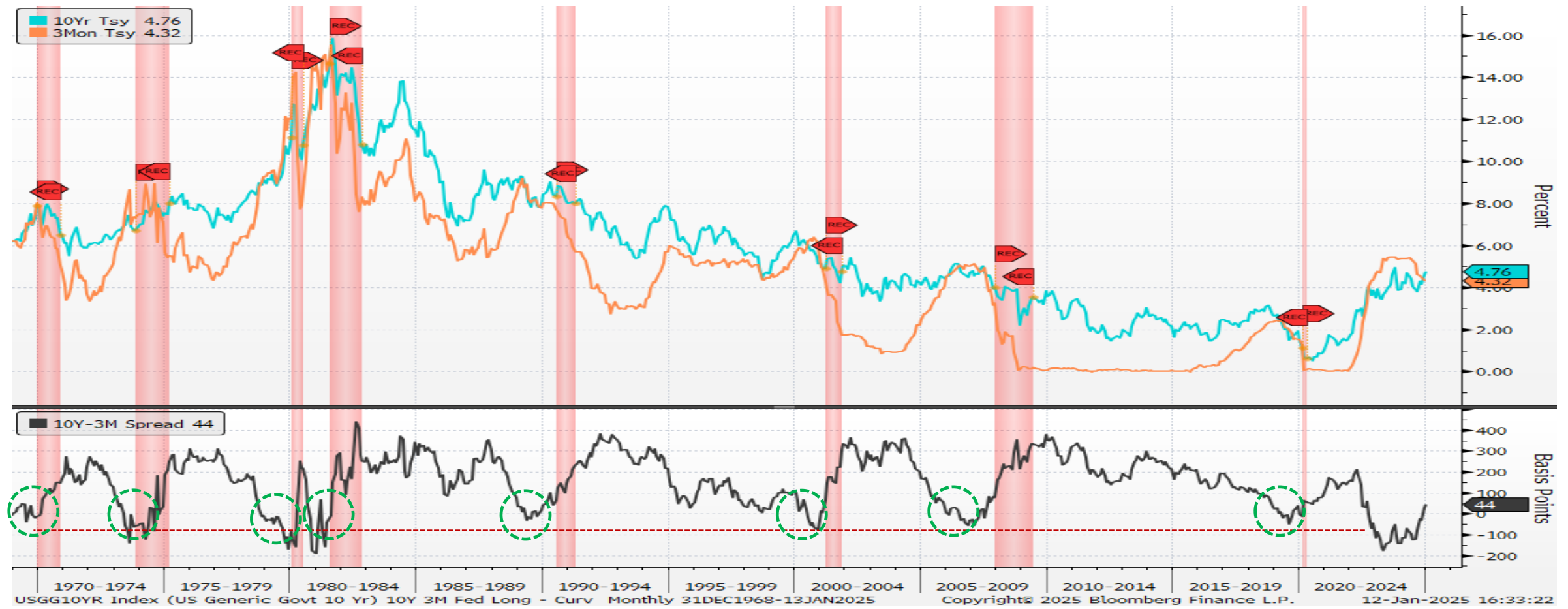
SOURCE: BLOOMBERG, AS 1/13/25

Fed's Preferred Yield Curve



SOURCE: FEDERAL RESERVE BANK OF NEW YORK

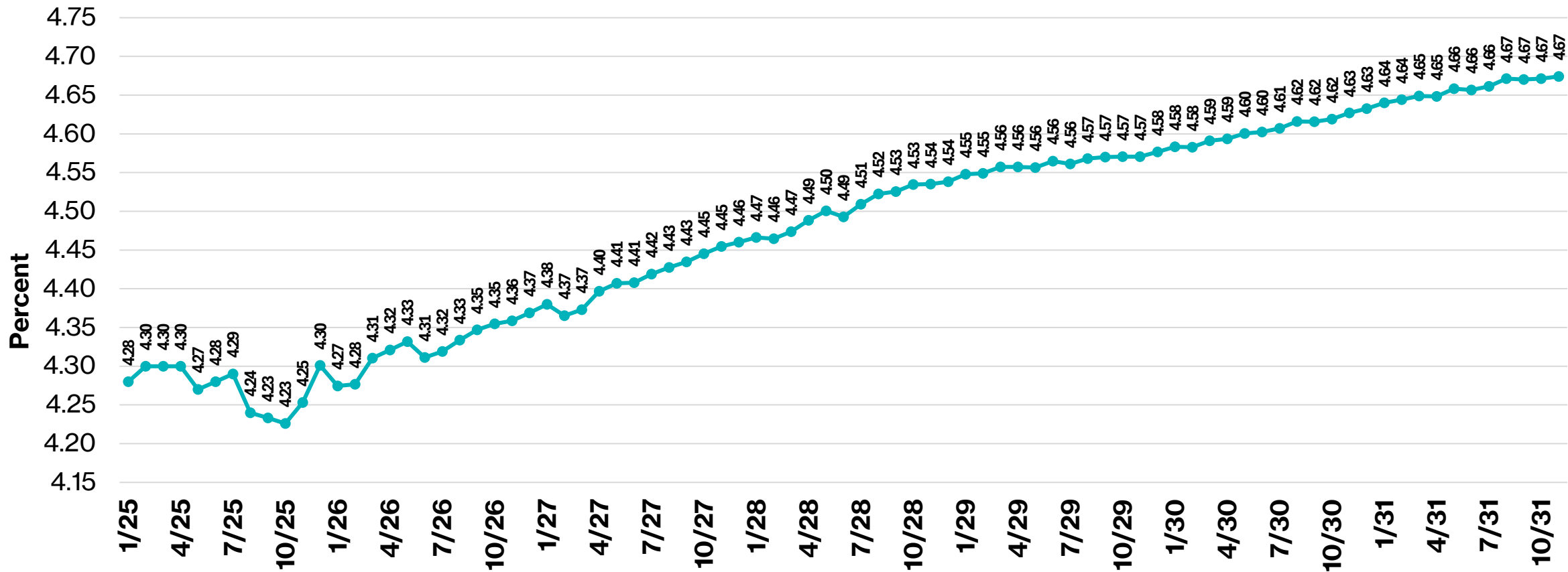
Since 1968, a Recession Followed an Inverted Yield Curve (10y-3m) 8 for 8 Times



SOURCE: BLOOMBERG

U.S. Treasury Note Yields (%)

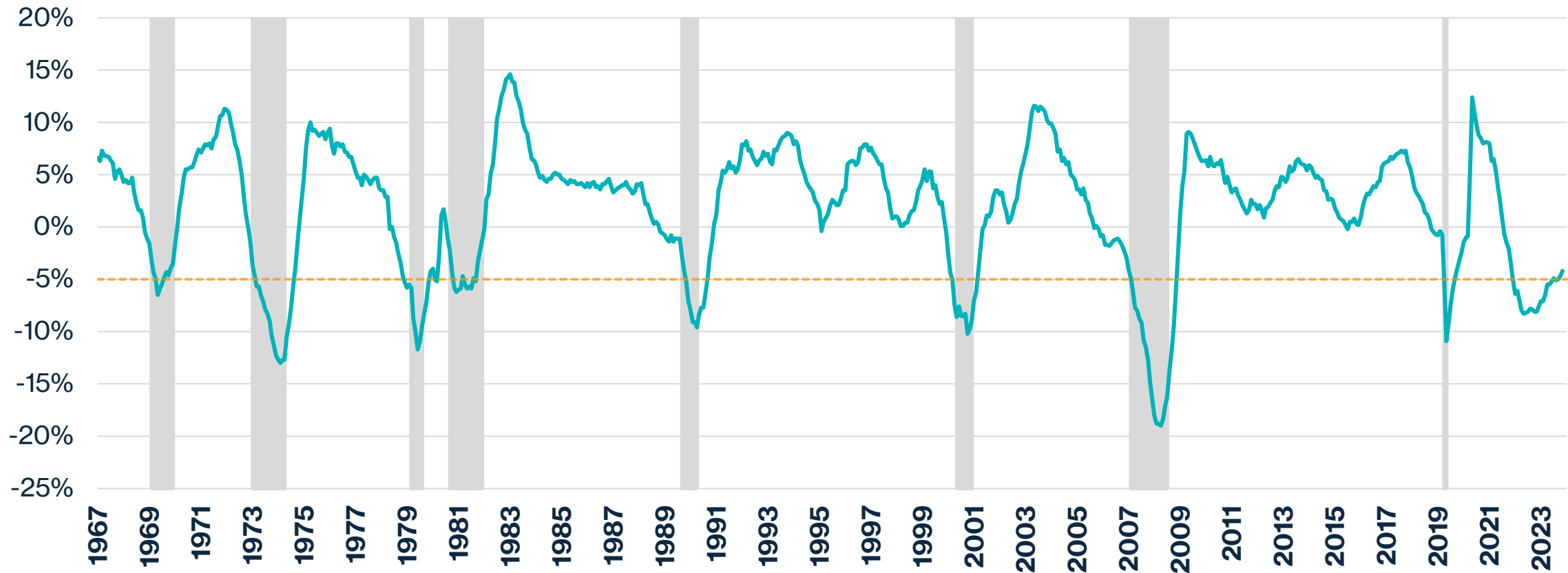
By Monthly Maturities (0-7 Years)



SOURCE: BLOOMBERG AS OF 1/13/25

Since 1968, Aa Recession Followed a -5 or Worse LEI...8 for 8 Times

Conference Board Leading Economic Index YoY % Change



SOURCE: BLOOMBERG

Risks

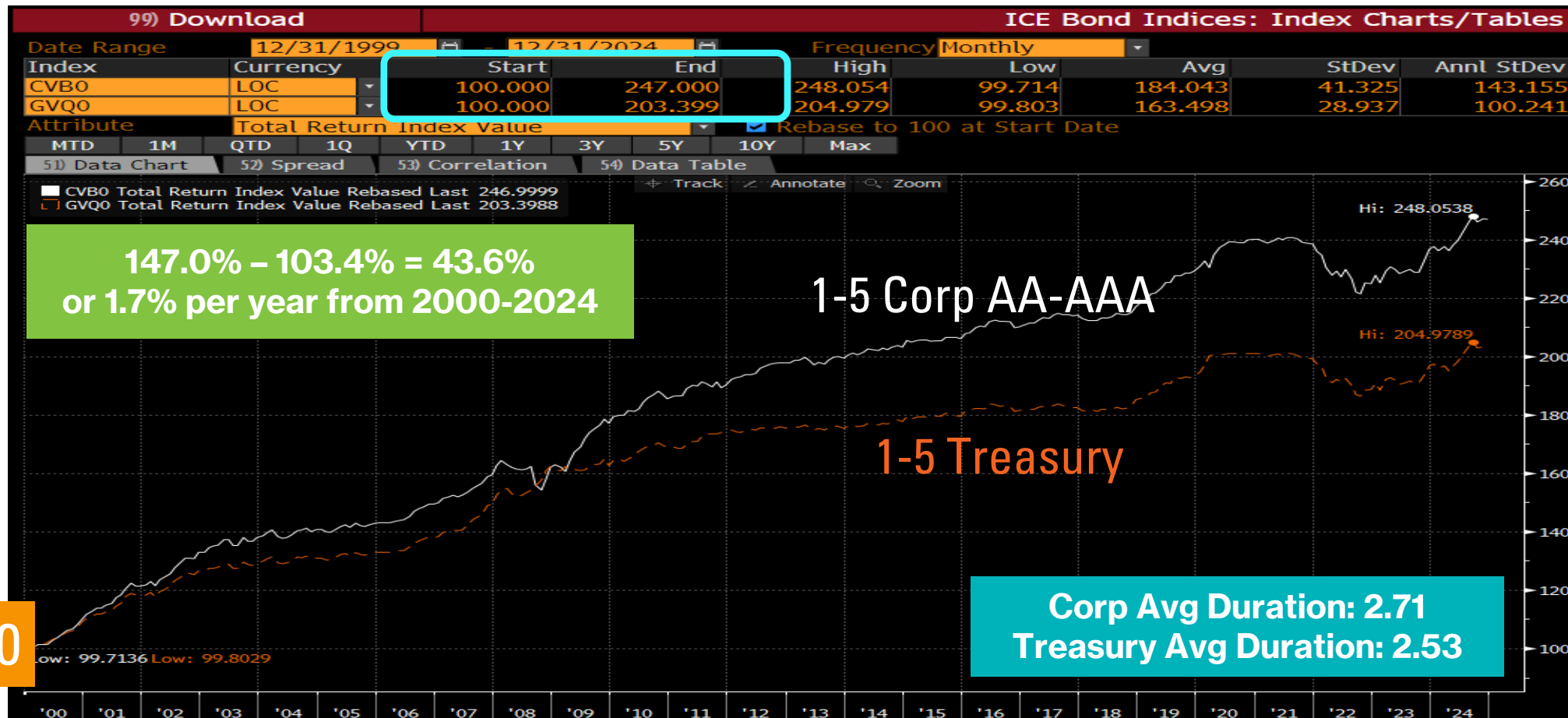
- Credit
- Relying only upon the rating agencies

Ratings Matrix

Moody's		S&P		Fitch	
Long-Term	Short-Term	Long-Term	Short-Term	Long-Term	Short-Term
Aaa	P-1	AAA	A-1+	AAA	A-1+
Aa1		AA+		AA+	
Aa2		AA		AA	
Aa3		AA-		AA-	
A1	P-2	A+	A-1	A+	A-1
A2		A		A	
A3		A-	A-2	A-	A-2
Baa1		BBB+		BBB+	
Baa2	P-3	BBB	A-3	BBB	A-3
Baa3		BBB-		BBB-	

SOURCE: MOODY'S, S&P, FITCH

1-5Y AA-AAA Corporate vs. 1-5Y Treasury: Total Return Values



SOURCE: BLOOMBERG

1-5Y AA-AAA Corporate vs. 1-5Y Treasury: Spread



BASIS POINT SPREAD

SOURCE: BLOOMBERG

1-5 Year A-AAA Rated Corporate Bond Spread to Treasuries



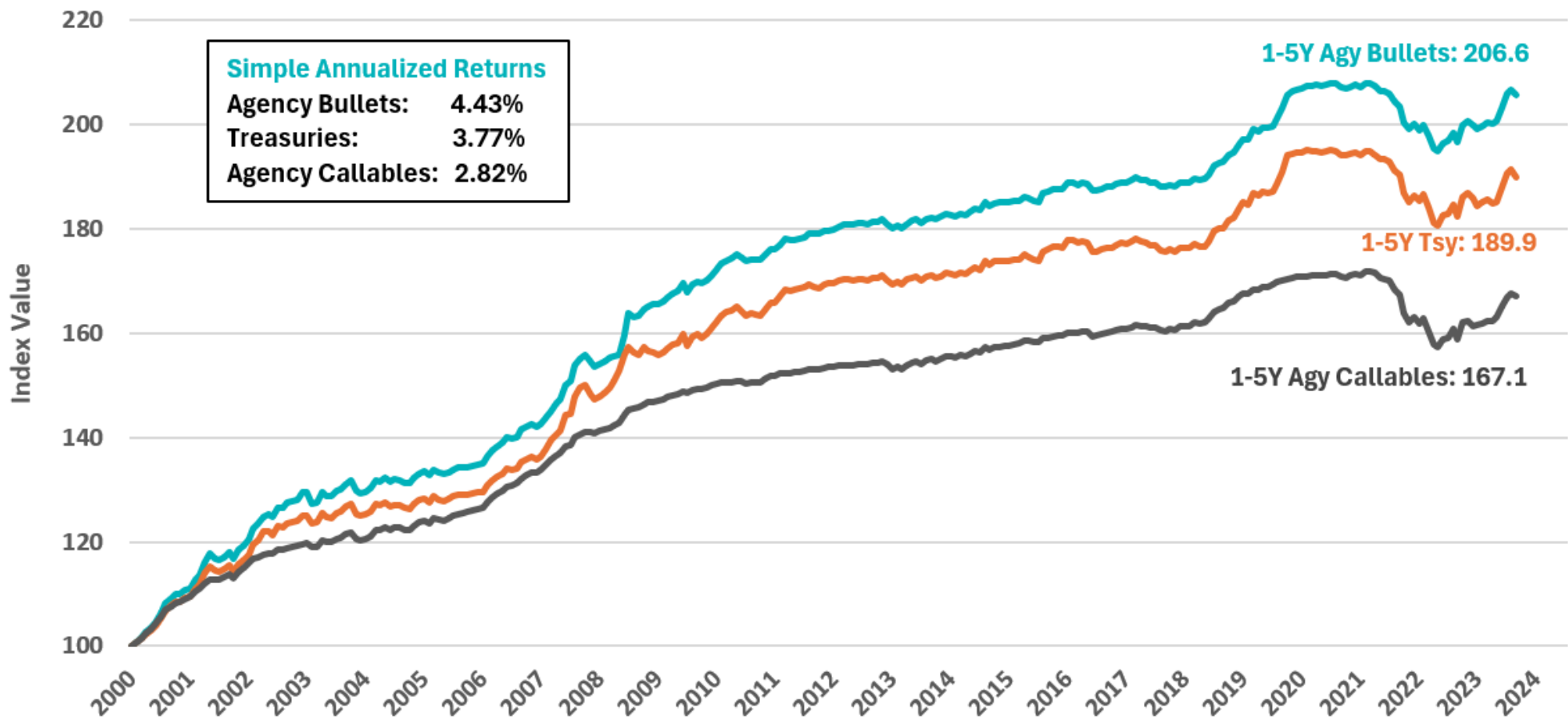
SOURCE: BLOOMBERG

Risk

- Having too much negative convexity (aka: callables)

Index Return Values

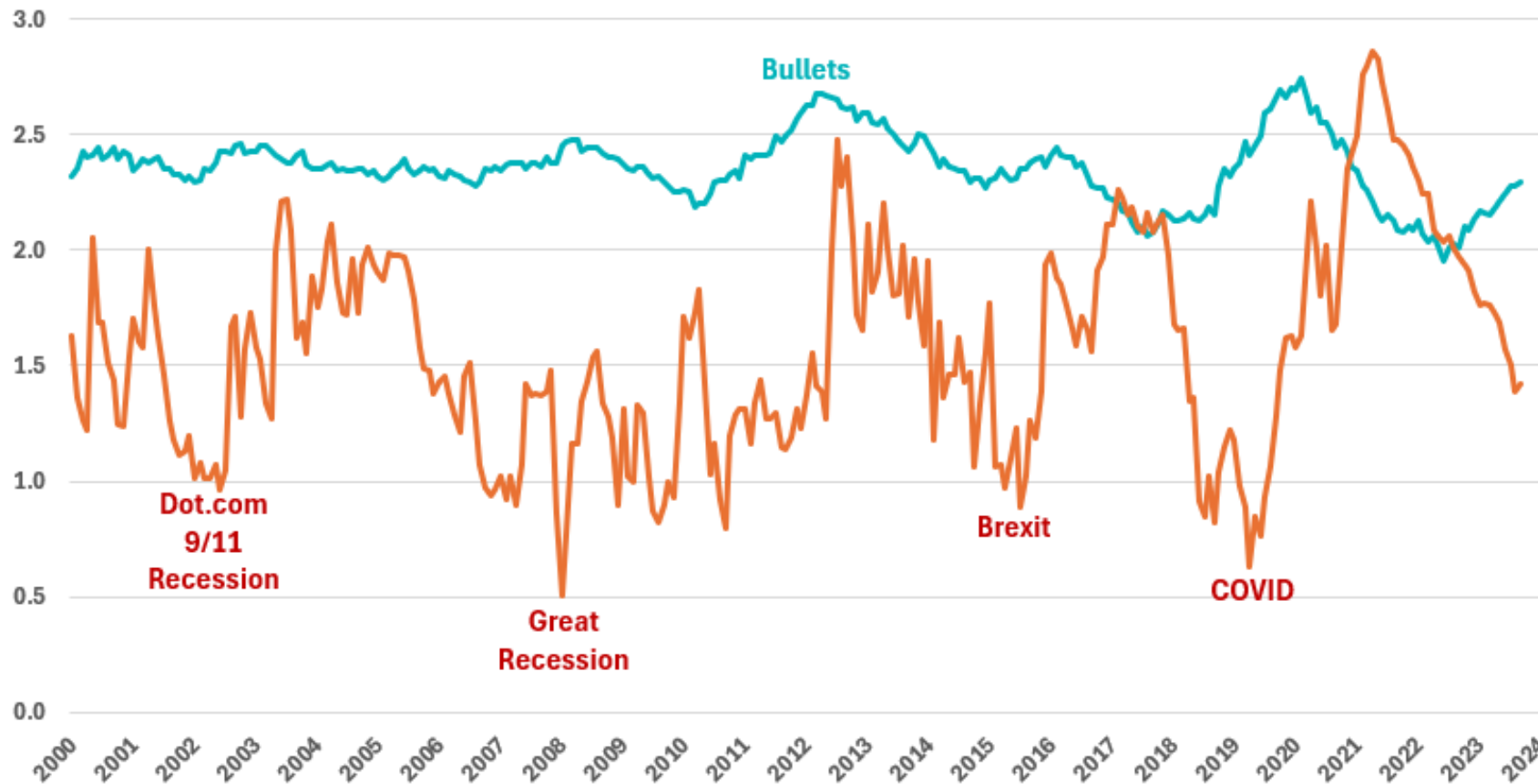
June 2000 to Present



SOURCE: BLOOMBERG AS OF 12/31/24

Effective Duration

1-5 YR AGY Bullets vs. Callables



AVERAGE EFFECTIVE DURATIONS

- Bullets 2.35
- Callables 1.57

SOURCE: BLOOMBERG AS OF 12/31/24

95) Actions ▾ 96) Alerts ▾ 97) Summary 98) Set Homepage 99) Export ▾

New Issue Monitor

Selection

*U.S. Agencies (NIM 2) ▾

1) Show Filters

2) Clear Filters

Issues & News ▾

Real Time

Issue History

Date Range

09/01/24 - 10/01/24

6) Prelim Issues | PREL

Date ▾	Issuer/Headline	Coupon	Maturity	Spread	Curr	Outst	Book Mgr	Note
		All ▾	All ▾	All ▾	All ▾	All ▾		5-nc
103) 9:42	FED HOME LN BANK	5.000	10/01/29		USD	80	JOINT LEADS	5-NC1MO BERM
106) 8:35	FED HOME LN BANK	3.850	10/01/29		USD	15	INSPRX,RWB	5-NC2 1X

SOURCE: BLOOMBERG

Risk

- Benchmarking performance

Important Benchmark Characteristics

To be relevant, benchmarks should reflect the general characteristics of a portfolio's

- Duration/maturity
- Sector allocations
- Turnover

THREE TYPES OF BENCHMARKING

- Weighted yield
- Book rate of return
- Total rate of return



Book Return and Total Return Details

CITY COUNCIL



Book Return =

- + Accrued/Received Interest
- +/- **Amortization of Premiums/Discounts**
- +/- **Realized** Gains/Losses

Average Daily Book Balance for the Period

Total Return =

- + Accrued/Received Interest
- +/- **Realized/Gains Losses**
- +/- **Unrealized** Gains/Losses

Average Daily Book Balance for the Period



Under Total Return

- Gains/losses are treated the same as income

GASB 31

- It's similar to running the market value changes of your home through your checking account

Communication is Key!



Lost?

Lost?

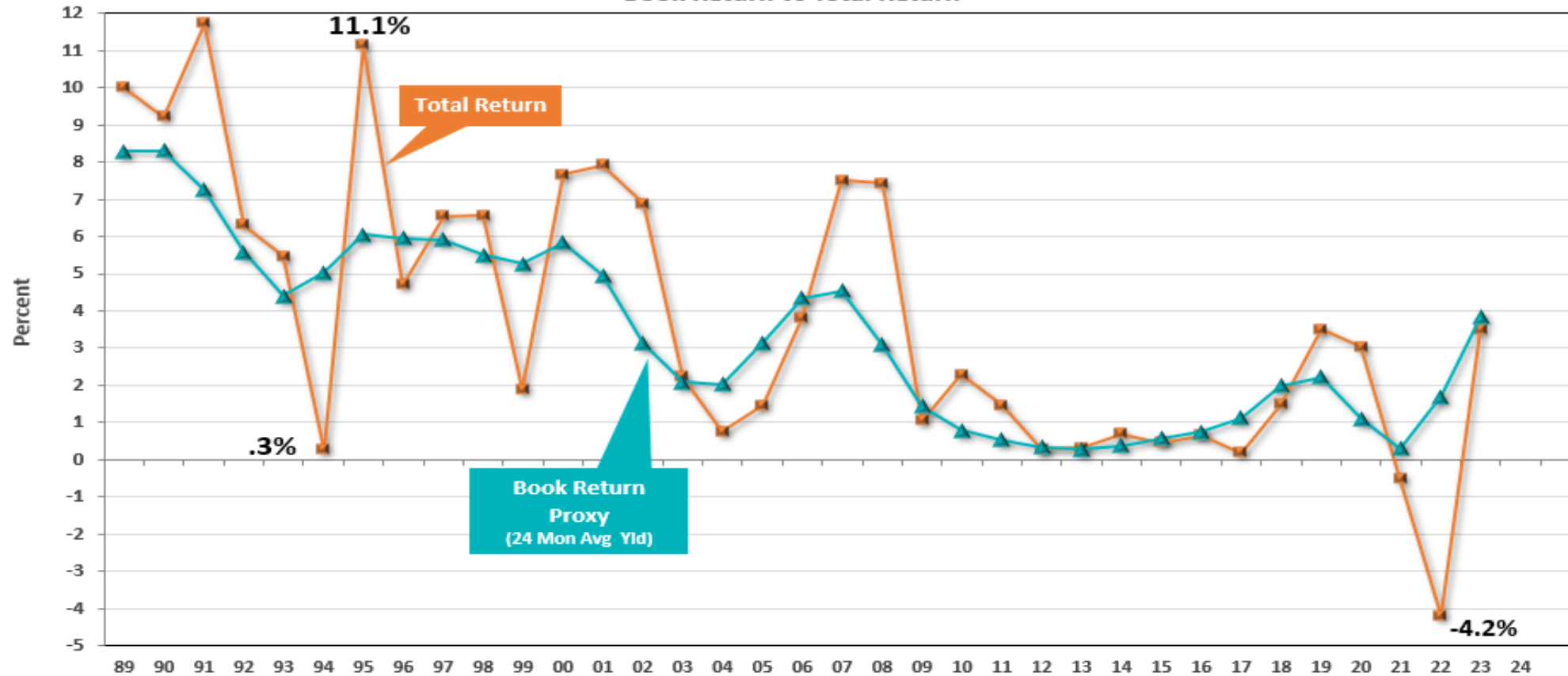
**I have good news:
We outperformed the index.
We lost 2%, and the
index lost 3%.**

SOURCE: GOOGLE, MEEDER PUBLIC FUNDS

FOR INFORMATIONAL PURPOSES ONLY. SEE IMPORTANT DISCLOSURES AT THE END OF THE PRESENTATION.

Book Return vs. Total Return: Budget Stability...Good Luck Budgeting Total Return

ICE BofA 2 Yr T-Note Index
Book Return vs Total Return



SOURCE: BLOOMBERG

QUESTIONS?

RICK PHILLIPS

Chief Investment Strategist
Meeder Public Funds



Disclosures



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