



Fantastic Fundamentals of Treasury Programs

Kent Morris
Chief Investment Officer
City of San Diego

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Kent Morris

- City of San Diego Chief Investment Officer- 2006 to Present
- City of San Diego Senior Investment Officer- 2004-2006
- City of San Diego Assistant Investment Officer- 2001-2004

Rick Phillips

- FHN Main Street Advisors President- 2005 to Present
- Clark County Nevada Chief Investment Officer- 1998 to 2005
- City of Las Vegas Investment Officer- 1989 to 1998
- Government Investment Officers Association (GIOA) Founder

The Fundamentals

1. **Longer Duration Will Generate More Investment Income Over the Long Run**
2. **Detailed Asset/Liability Matching Model (aka: Cash Flow Model) is a Must**
3. **Interest Rate Risk (WAM/Duration) Matches Cash Flow Metrics**
4. **Credit Can Enhance Income, But Duration is the Bigger Determinant of Income**
5. **You...Nor Anyone Else Can't Time the Market Accurately Over the Long Run**
6. **Limit Optionality (Callables) in the Portfolio**
7. **Do Not Let GASB 31 (mark-to-market) Drive Investment Decisions/WAM-Duration**
8. **Understand the Risks of Funds in LAIF and Other Pools**
9. **Follow GAAP (Generally Accepted Accounting Principles)**
10. **Benchmark Your Investment Program and Portfolio in Multiple Ways**
11. **Tell the Story: Provide Quality, Timely, Transparent Reporting**

Source: FHN Main Street

Why It's Important to Have a Longer Duration Over the Long Run

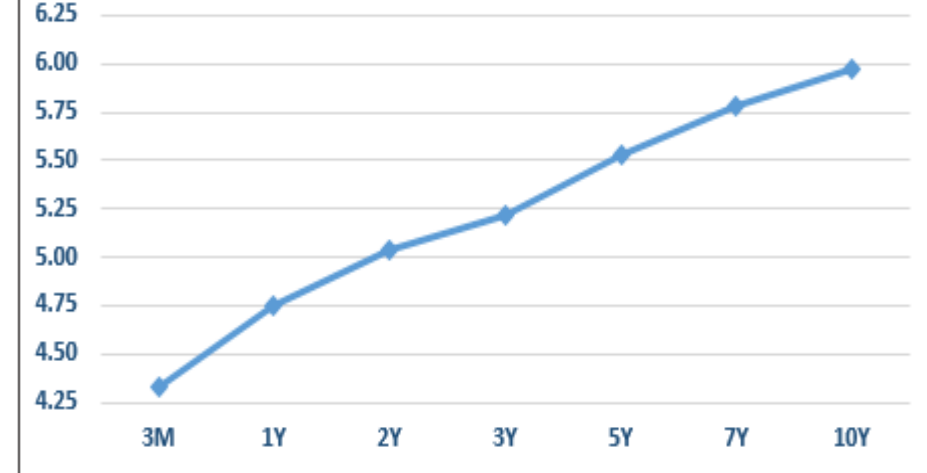
Benchmark Treasury Modified Sharp Ratio (MSR) Analysis
Jan 1977 to Present

Maturity	Avg Yield	Avg Duration	Modified Sharp Ratio	% Return of 10Yr / % 10Yr Risk
3 Mon T-Bill	4.32	0.25		72% / 3%
1 Yr T-Bill	4.75	1.00	0.43	80% / 12%
2 Yr T-Note	5.04	1.91	0.37	84% / 24%
3 Yr T-Note	5.21	2.78	0.32	87% / 34%
5 Yr T-Note	5.53	4.55	0.27	93% / 56%
7 Yr T-Note	5.78	6.24	0.23	97% / 77%
10 Yr T-Note	5.97	8.10	0.20	100% / 100%

4.75% (1Y) - 4.32% (3M) / 1.00 (1Yr Dur) = 0.43

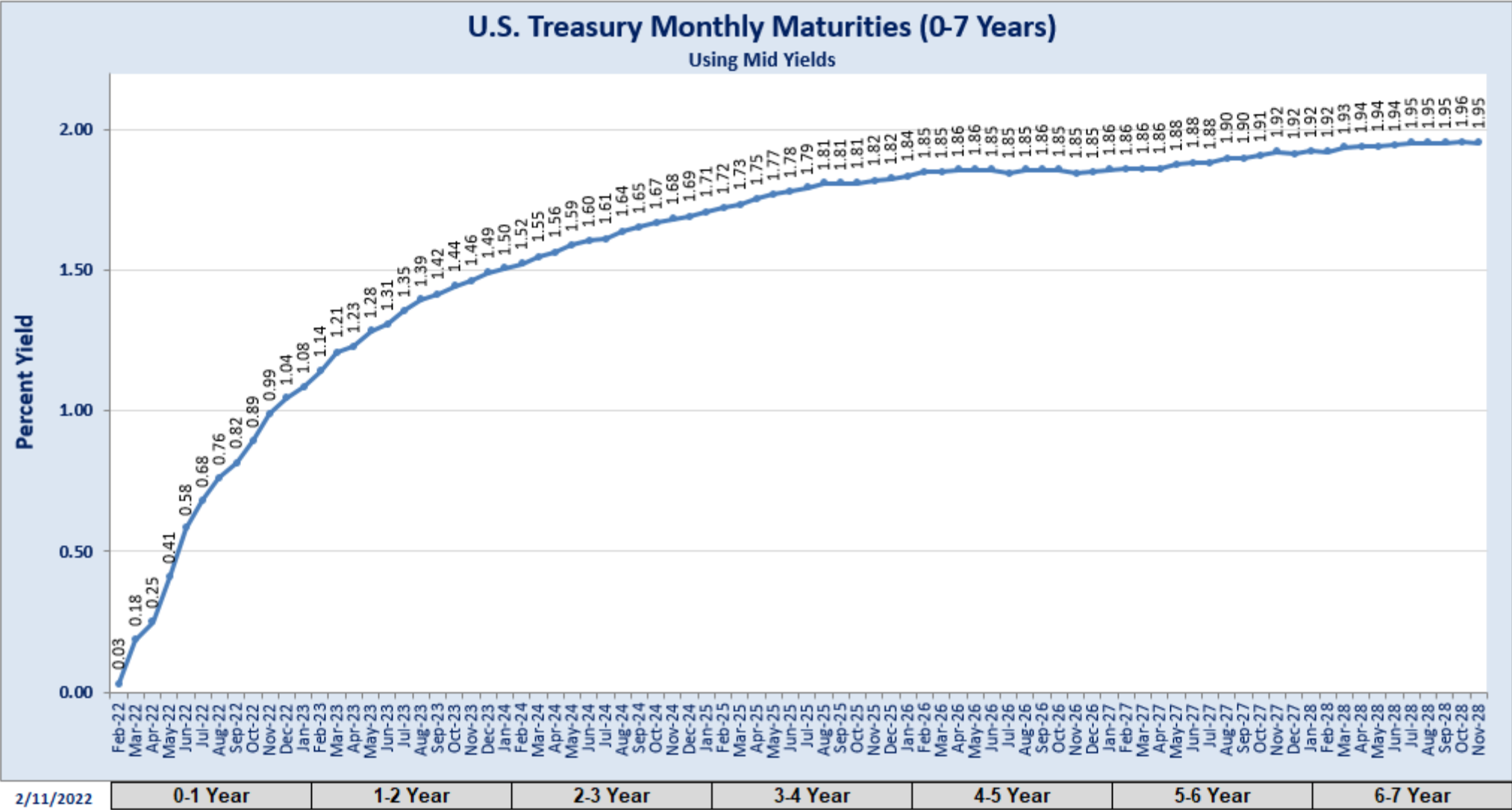
4.75% (1Y) / 5.97% (10Y) = 80%	1.00 (1Y) / 8.10 (10Y) = 12%
Yield Comparison	Duration Comparison

Avg Tsy Yields Jan 1977 to Present



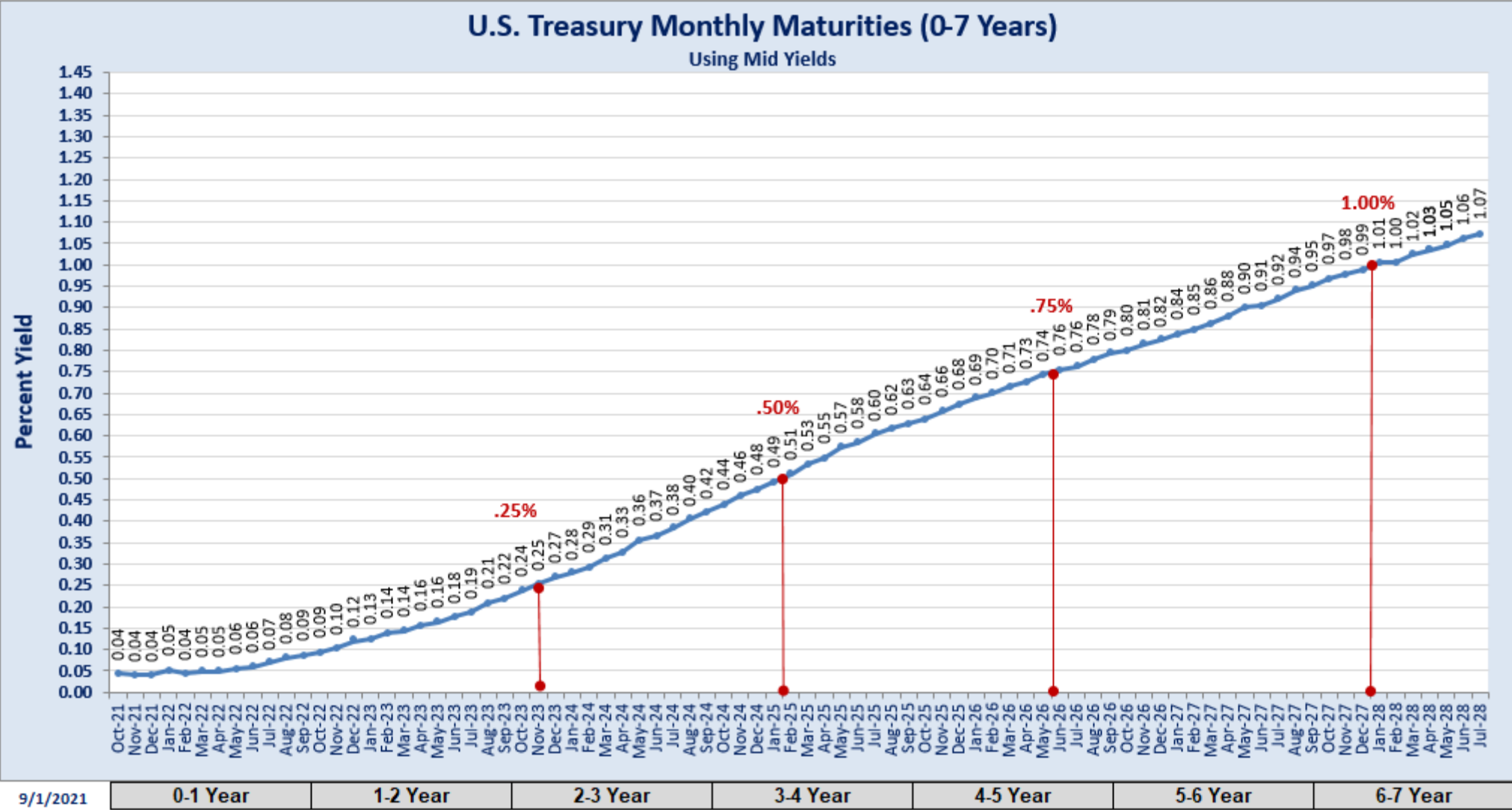
Source: Bloomberg, FHN Main Street

Treasury Yield Curve as of 2/11/2022



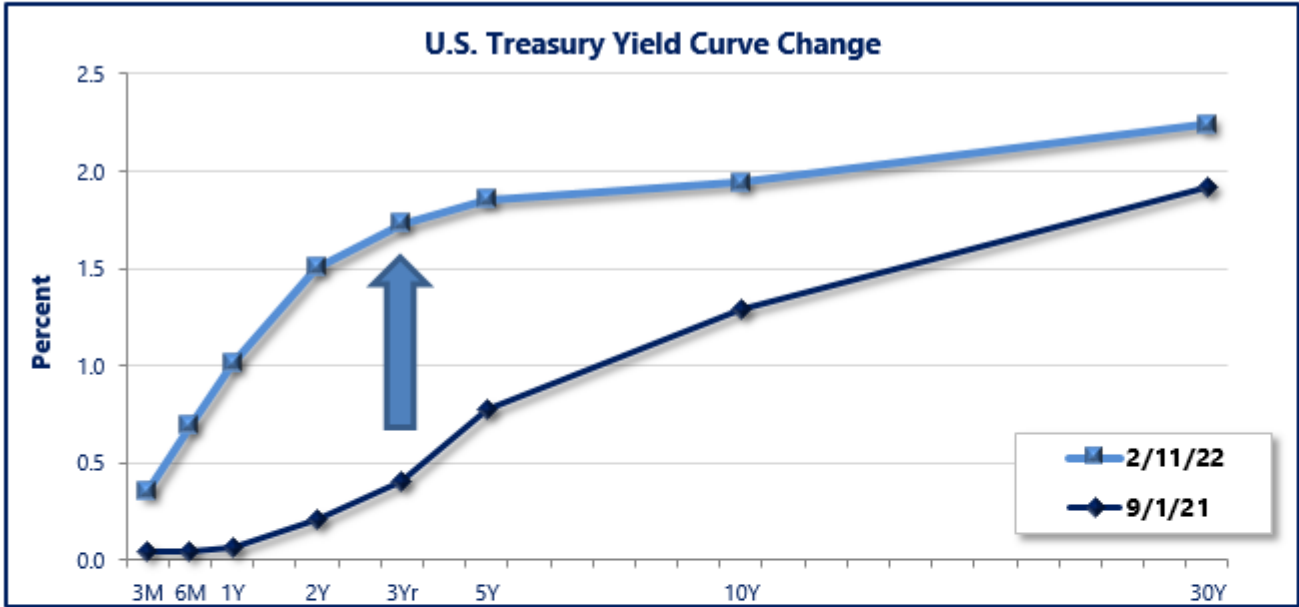
Source: Bloomberg

Treasury Yield Curve as of 9/1/2021

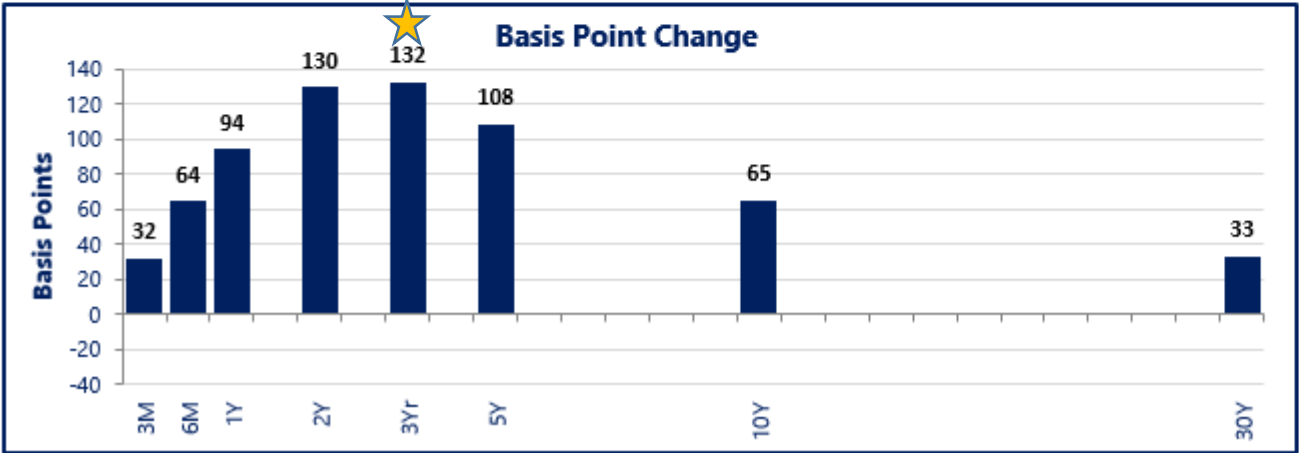


Source: Bloomberg

Treasury Yield Curve 9/1/2021 to 2/11/2022: 3Yr -- “Winner, Winner Chicken Dinner!”



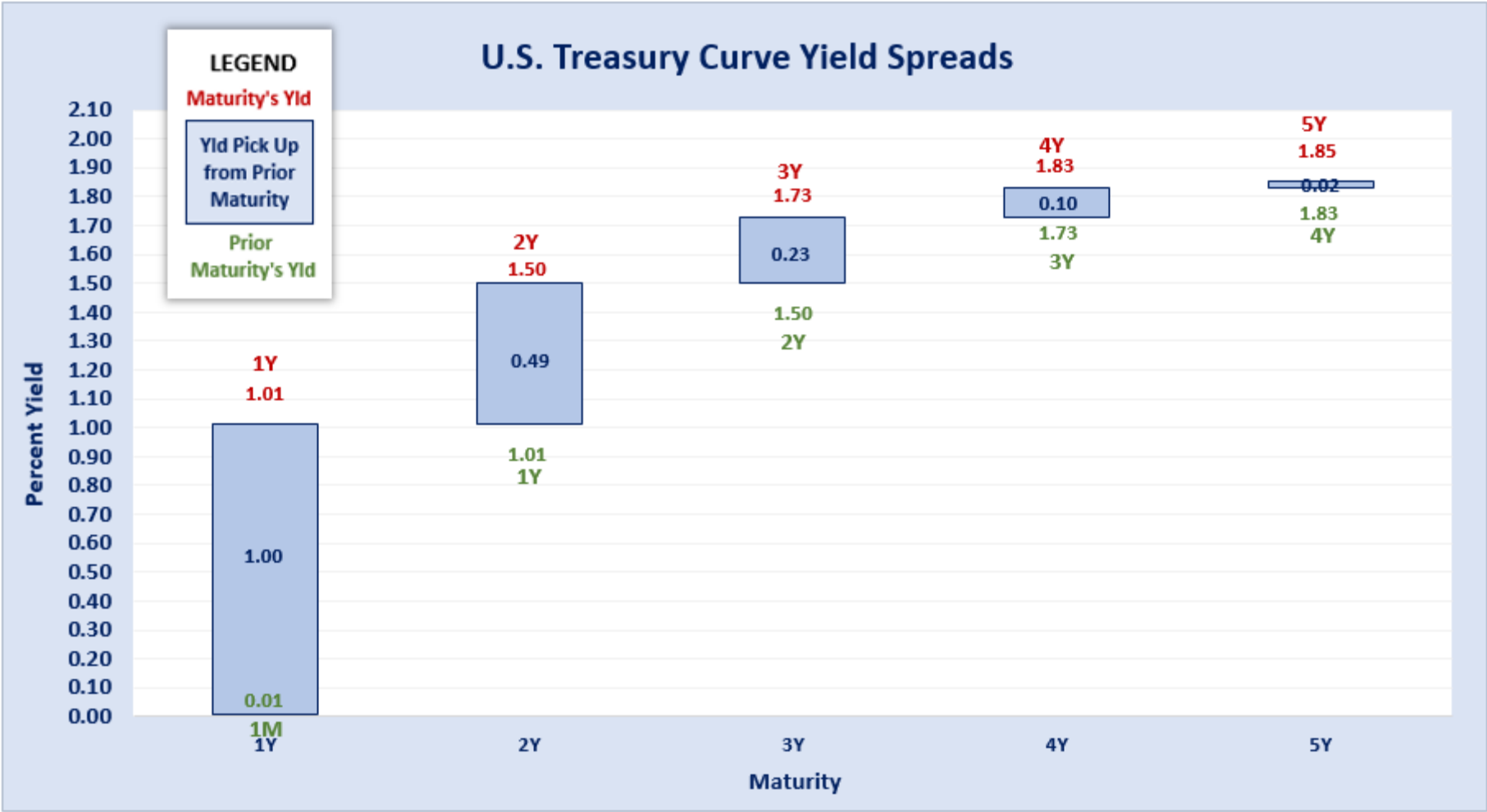
Maturity	9/1/21	2/11/22	Change
3M	0.04	0.36	0.32
6M	0.05	0.69	0.64
1Y	0.07	1.01	0.94
2Y	0.21	1.51	1.30
3Y	0.41	1.73	1.32
5Y	0.77	1.86	1.08
10Y	1.30	1.94	0.65
30Y	1.91	2.24	0.33



The legend tells that years ago every casino in Las Vegas had a three-piece chicken dinner with a potato and a veggie for \$1.79. A standard bet back then was \$2, hence when you won a bet you had enough for a chicken dinner. !"
So, the call of glorious victory rang out "Winner Winner Chicken Dinner"

Source: Bloomberg, Google

One Year Extension Analysis



Source: Bloomberg

GIOA Model Investment Policy

1. **Safety of Principal:** Safety of principal is the foremost objective of the [entity's] investment program. Investments by the [designated official] shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. To attain this objective, diversification of security types, sectors, issuers, and maturities is necessary in order that potential losses on individual securities do not exceed the income generated from the remainder of the portfolio.
2. **Liquidity:** The investment portfolio shall be structured to timely meet expected cash outflow needs and associated obligations which might be reasonably anticipated. This objective shall be achieved by matching investment maturities with forecasted cash outflows and maintaining an additional liquidity buffer for unexpected liabilities.
3. **Investment Income:** The investment portfolio shall be designed to earn a market rate of investment income in relation to prevailing budgetary and economic cycles, while taking into account investment risk constraints and liquidity needs of the portfolio.

Source: GIOA

- **If You Don't Know Where You've Been, You Won't Know Where You're Going**
- **Many Municipalities Have Too Much Liquidity** (But Your Risk is Asymmetrical)

Cash Flow Model:

- Daily for 12 Months
- Monthly for 5 Years
- Worry About the Big Rocks (80/20 Rule)
- Excel is Awesome!

**You Should Have a
Responsible Amount of
Liquidity to Ensure You
Don't Need to Sell a
Security for Liquidity –
But Not Too Much**

City of San Diego Daily Cash Flow Model

FileHomeInsertPage LayoutFormulasDataReviewViewHelpBloombergAcrobat

Cut

Copy

Format Painter

Arial

10

A⁺

Wrap Text

General

Conditional Formatting

Format as Table

Normal 2

Normal 2.2

Normal 3

Normal 3.2

Normal 4

Normal 5

Normal 6

Normal 7

Normal 8

Normal 9

Insert

Delete

Format

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Comments

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Editing

D7350

Flatiron West Inc ACH (Per Hector Montano)

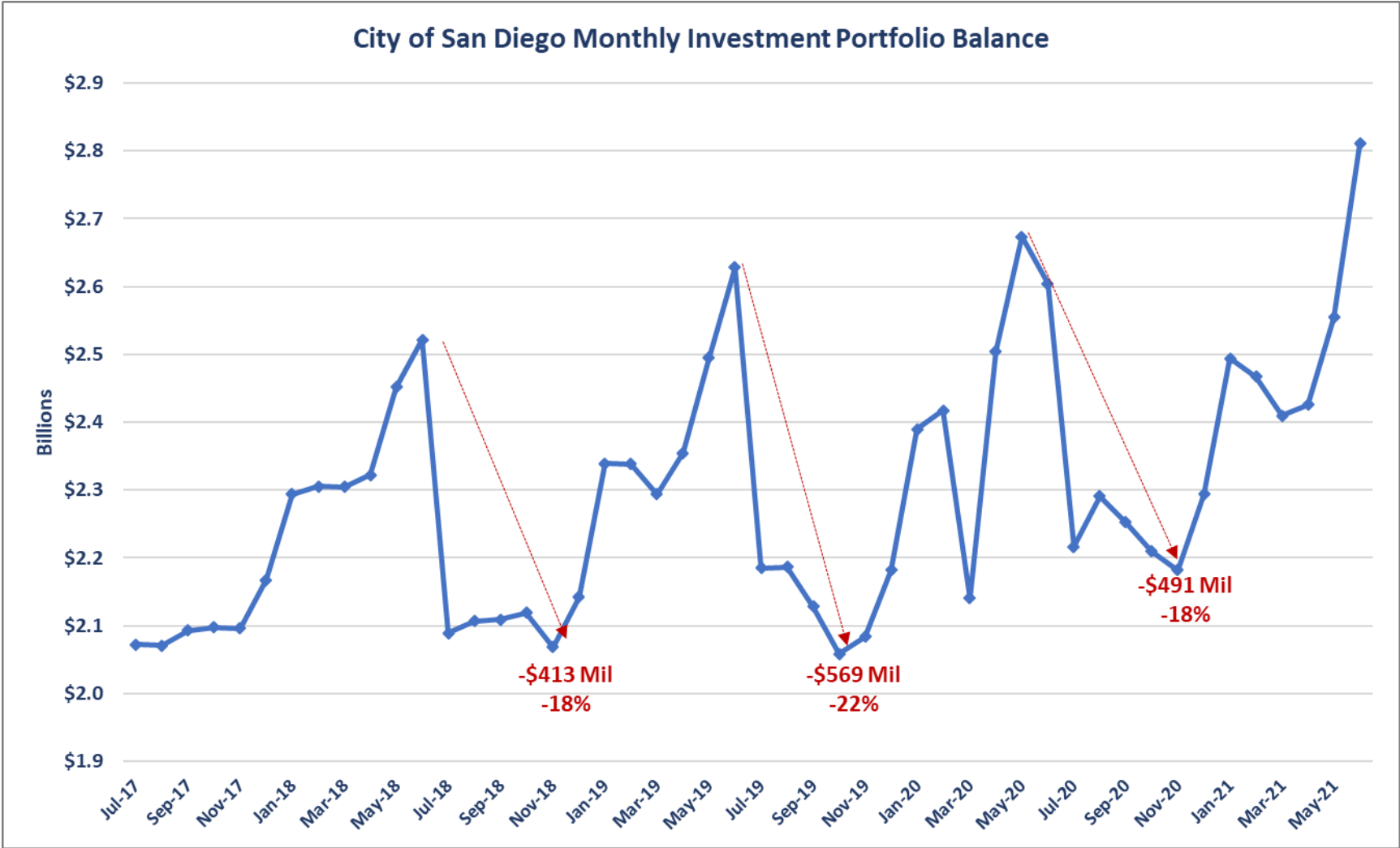
	A	B	C	D	E	F	G	H	I	J	K
1	NOTIFICATION OF LARGE PAYMENTS (these have no firm settlement dates)					Running Balance for LARGE OUTSTANDING CHECKS (\$1 MILLION OR GREATER)					
2	EXPECTED DATE	DEPOSIT, DISB., OR REIMB.	AMOUNT	#NAME?			Running Balance	Total of Checks			
3							41,596,311.27	23			
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15		Date	Group	Description	Debit	Credit	Balance	Actual End Balance	Difference		
7331		2/8/2022	E-Payable	E-Payable ACH (Per Holly Hernandez)	\$459,316.88		\$4,462,588.23				
7332		2/9/2020	SD TOT	San Diego TOT		\$66,023.02	\$4,528,611.25				
7333		2/9/2020	Water	Water		\$543,404.35	\$5,072,015.60				
7334		2/9/2020	Water	Water		\$308,239.77	\$5,380,255.37				
7335		2/9/2020	Water CP	Water CP Note Wire (Per Allison Falkenstein)		\$27,604,000.00	\$32,984,255.37				
7336		2/9/2022	Flatiron West Inc	Morena Pump Station Project ACH (Per Hector Montano)	\$1,986,135.55		\$30,998,119.82				
7337		2/9/2022	38954	MAT: MTN-AAPL-95.836-AY6- fund 9998		\$10,107,500.00	\$41,105,619.82				
7338		2/10/2022	SD TOT	San Diego TOT		\$18,839.04	\$41,124,458.86				
7339		2/10/2022	Water	Water		\$447,670.39	\$41,572,129.25				
7340		2/10/2022	Water	Water		\$237,704.95	\$41,809,834.20				
7341		2/10/2022	79403	MAT: IBRD-99.905-DY- fund 9998		\$30,243,900.00	\$72,053,734.20				
7342		2/10/2022	79551	BUY: B 06/30/22- fund 9997	\$49,916,194.44		\$22,137,539.76				
7343		2/10/2022	SD TOT	San Diego TOT		\$38,721.66	\$22,176,261.42				
7344		2/10/2022	Water	Water		\$318,666.72	\$22,494,928.14				
7345		2/10/2022	Water	Water		\$226,638.09	\$22,721,566.23				
7346		2/10/2022	EPA	Library ACH		\$7,639,605.71	\$30,361,171.94				
7347		2/10/2022					\$30,361,171.94				
7348		2/14/2022	Emerson Process	Emerson Process Management Power & Water Solutions Inc ACH (Terrell Breaux)	\$357,759.08		\$30,003,412.86				
7349		2/14/2022	SDCWA	SDCWA Wire (Projection) (Per Patricia Cruz)	\$21,710,716.50		\$8,292,696.36				
7350		2/14/2022	Flatiron West Inc	Flatiron West Inc ACH (Per Hector Montano)	\$1,180,765.01		\$7,111,931.35				
7351		2/14/2022	79475	MTN-TOYOTA-100		\$37,500.00	\$7,149,431.35				
7352		2/15/2022	79503	14041NFW6		\$12,375.00	\$7,161,806.35				
7353		2/15/2022	79388	161571FQ2		\$36,000.00	\$7,197,806.35				
7354		2/15/2022	79419	161571HP2		\$15,300.00	\$7,213,106.35				

Source: City of San Diego

City of San Diego Daily Cash Flow Model

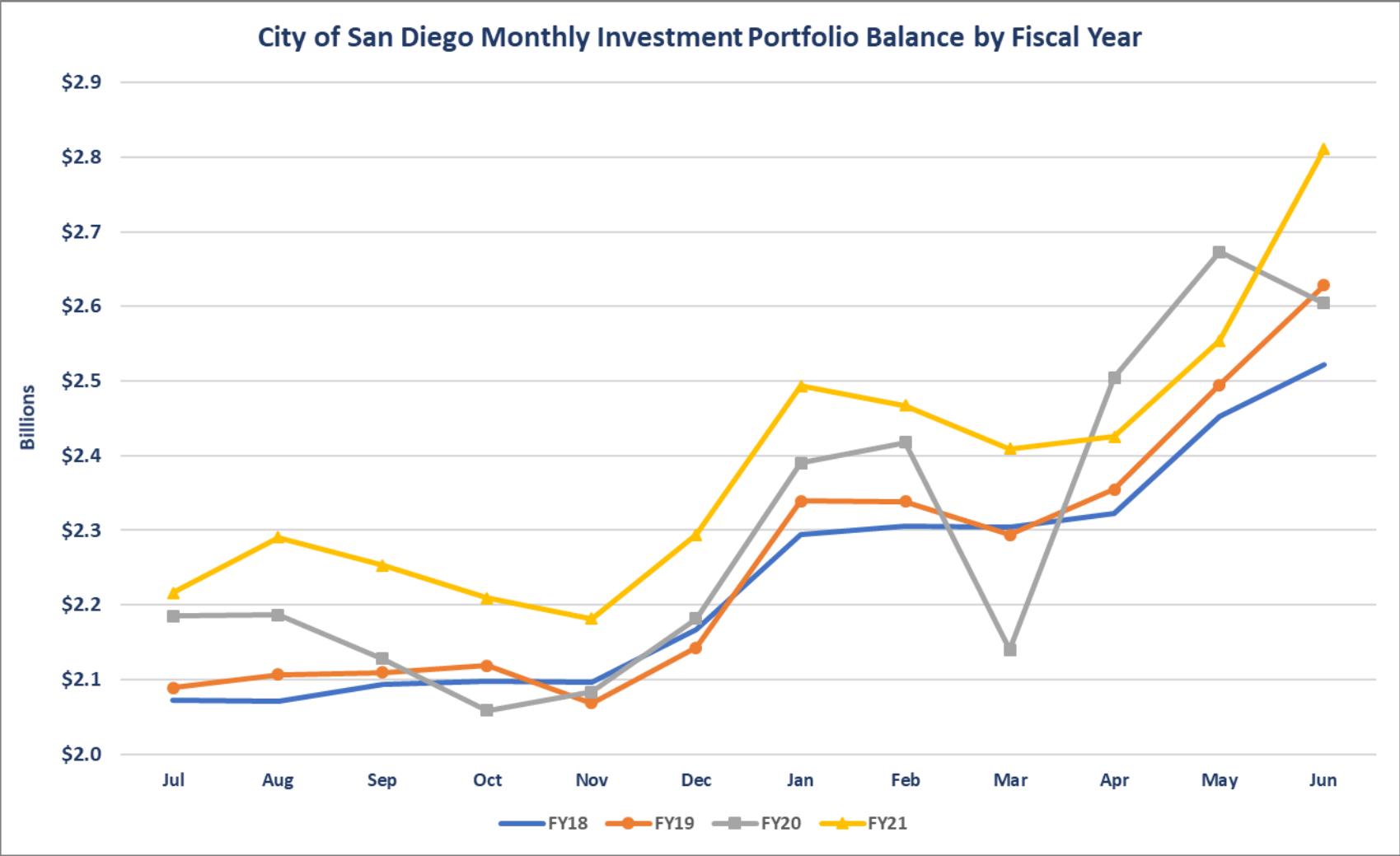
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City of San Diego Portfolio Balance



Source: City of San Diego

City of San Diego Portfolio Balance by Fiscal Year: A Repeatable Pattern



Source: City of San Diego

Cash Flow Model

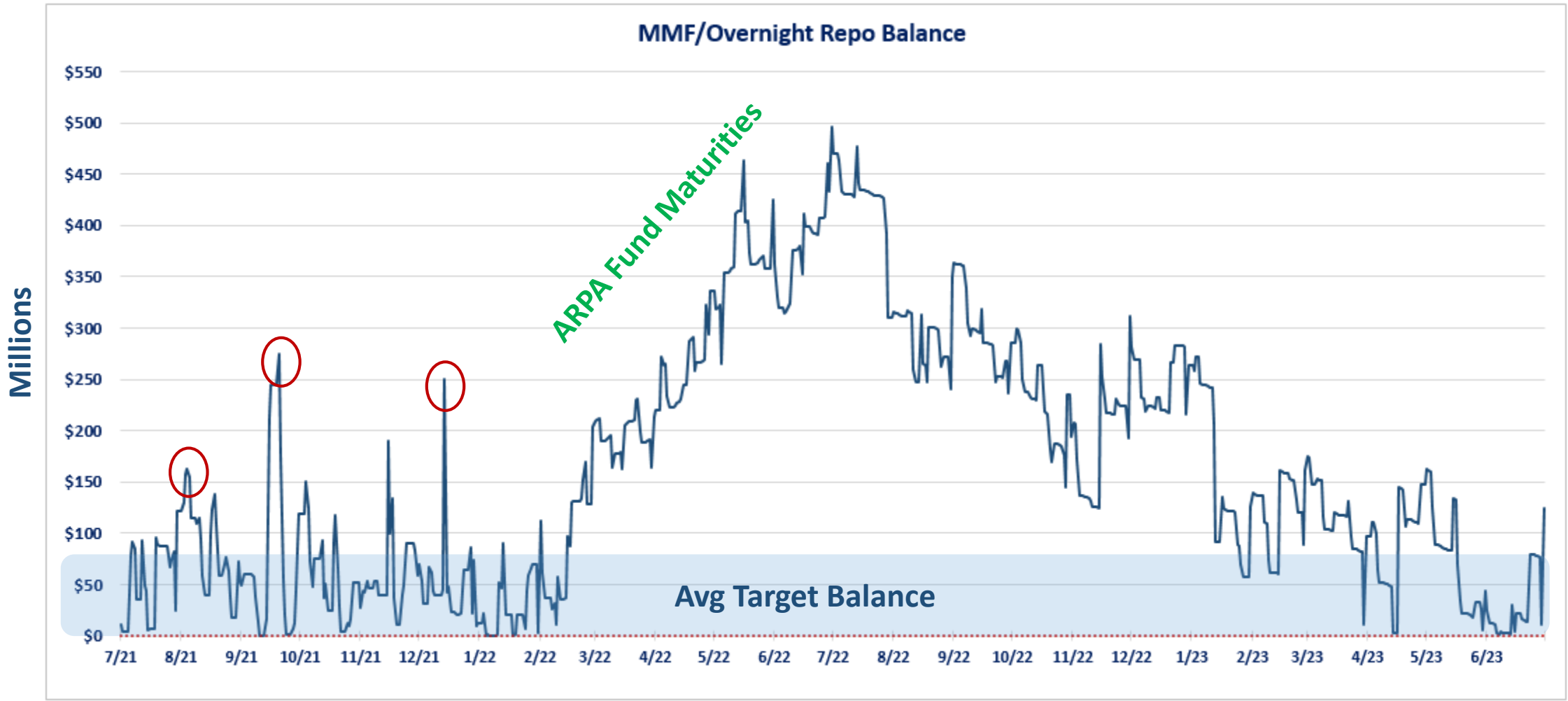
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1		INFLOWS								OUTFLOWS							
2	Date	Begin MMF	Inv Mat/Sell	Prop Tax	State Rev	Debt Svc Inflows	Wells Rev /Bus Lic	BofA Rev	Total	Payroll	AP/Cont Disb	Debt Svc	Wires/ PERS	Misc Outflow	Inv Purchase	Total	End MMF
63	8/30/21	18.4	50.0		6.5			14.9	89.8		5.8	30.1	0.2			36.1	72.8
64	8/31/21	72.8			131.5			10.1	214.4		3.0		7.5		150.0	160.5	54.0
65	9/1/21	54.0						8.0	62.0		6.5	6.5	1.8			14.8	49.4
66	9/2/21	49.4						8.0	57.4		6.0		6.0			12.0	45.4
67	9/3/21	45.4						8.0	53.4		6.0					6.0	47.4
68	9/4/21	47.4							47.4							0.0	47.4
69	9/5/21	47.4							47.4							0.0	47.4
70	9/6/21	47.4							47.4							0.0	47.4
71	9/7/21	47.4						8.0	55.4		6.0		20.0			26.0	29.4
72	9/8/21	29.4						8.0	37.4		6.0					6.0	31.4
73	9/9/21	31.4				20.0		8.0	59.4	34.0	6.0					40.0	19.4
74	9/10/21	19.4			6.5			8.0	33.9	7.0	10.0					17.0	16.9
75	9/11/21	16.9							16.9							0.0	16.9
76	9/12/21	16.9							16.9							0.0	16.9
77	9/13/21	16.9						8.0	24.9		6.0					6.0	18.9
78	9/14/21	18.9						8.0	26.9		6.0					6.0	20.9
79	9/15/21	20.9			210.0			8.0	238.9		6.0		23.0			29.0	209.9



5 Years

Source: FHN Main Street

Liquidity Tracker of a ~\$6 Billion Portfolio



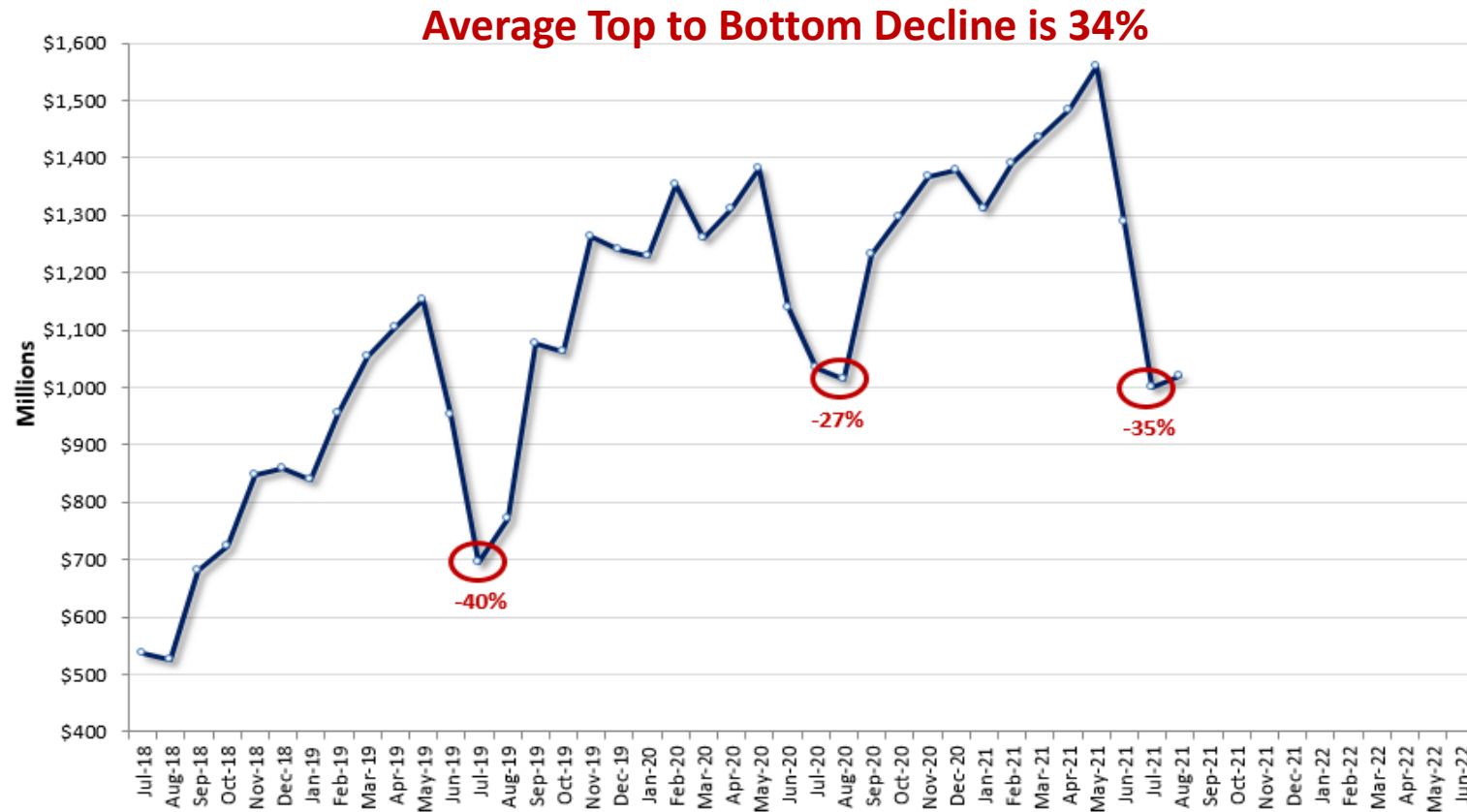
Source: FHN Main Street



Portfolio “Top to Bottom” Analysis #1

Historical Book Values

7/31/2021

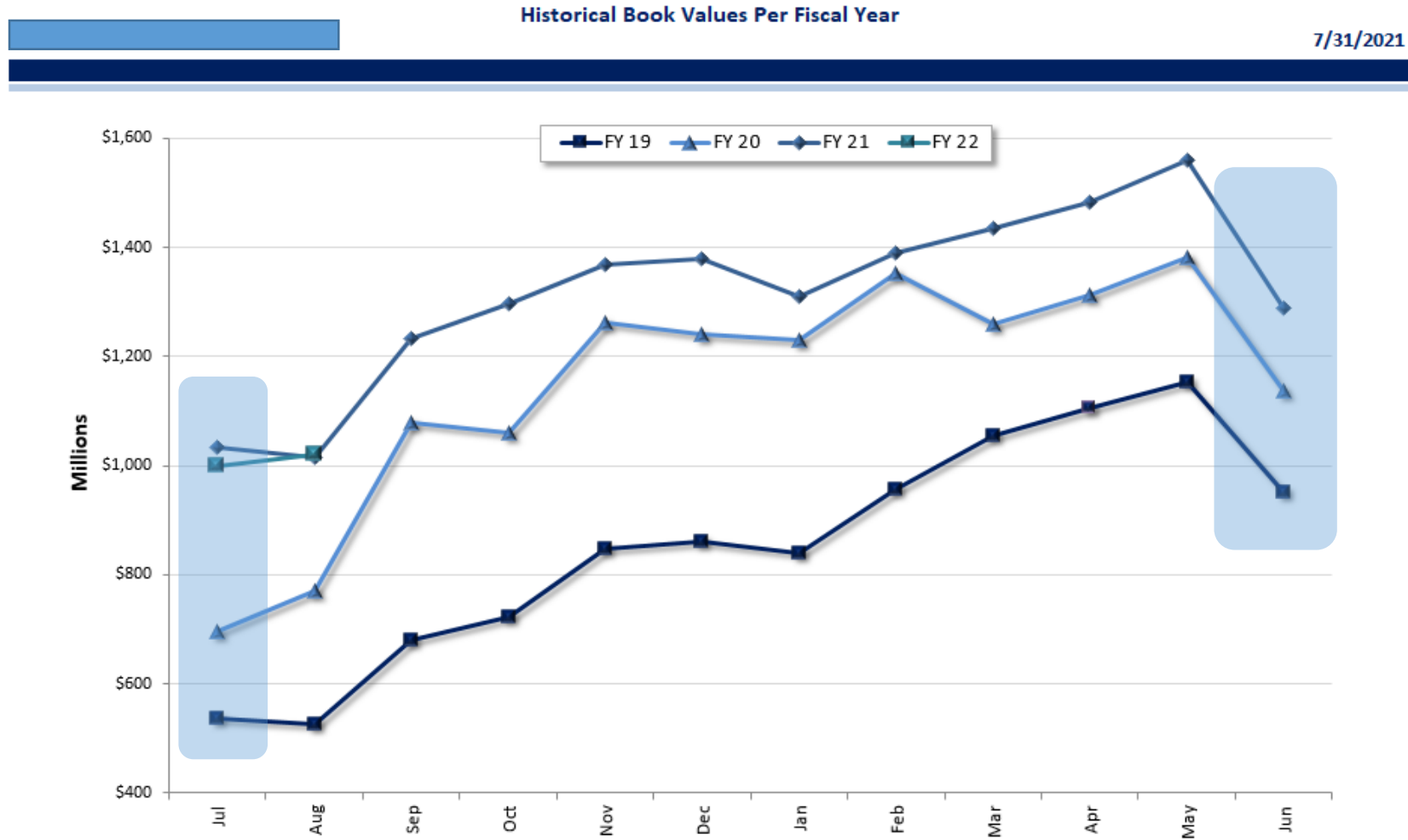


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 2019	\$535.7	\$525.2	\$679.6	\$722.0	\$847.4	\$859.4	\$838.6	\$956.1	\$1,054.9	\$1,104.0	\$1,152.8	\$952.0	\$852.3
FY 2020	\$694.8	\$770.1	\$1,078.0	\$1,060.9	\$1,263.4	\$1,241.0	\$1,229.6	\$1,353.7	\$1,260.3	\$1,311.5	\$1,380.8	\$1,137.2	\$1,148.4
FY 2021	\$1,033.7	\$1,013.7	\$1,231.8	\$1,296.9	\$1,367.6	\$1,379.1	\$1,310.8	\$1,390.6	\$1,435.3	\$1,483.7	\$1,559.3	\$1,288.5	\$1,315.9
FY 2022	\$1,000.0	\$1,020.1											\$1,010.0

Figures in Millions, Average Monthly Book Value

Source: FHN Main Street

Portfolio Balance by Fiscal Year – The Pattern Doesn't Exactly Repeat but it Rhymes #1



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 2019	\$535.7	\$525.2	\$679.6	\$722.0	\$847.4	\$859.4	\$838.6	\$956.1	\$1,054.9	\$1,104.0	\$1,152.8	\$952.0	\$852.3
FY 2020	\$694.8	\$770.1	\$1,078.0	\$1,060.9	\$1,263.4	\$1,241.0	\$1,229.6	\$1,353.7	\$1,260.3	\$1,311.5	\$1,380.8	\$1,137.2	\$1,148.4
FY 2021	\$1,033.7	\$1,013.7	\$1,231.8	\$1,296.9	\$1,367.6	\$1,379.1	\$1,310.8	\$1,390.6	\$1,435.3	\$1,483.7	\$1,559.3	\$1,288.5	\$1,315.9
FY 2022	\$1,000.0	\$1,020.1											\$1,010.0

Figures in Millions, Average Monthly Book Value

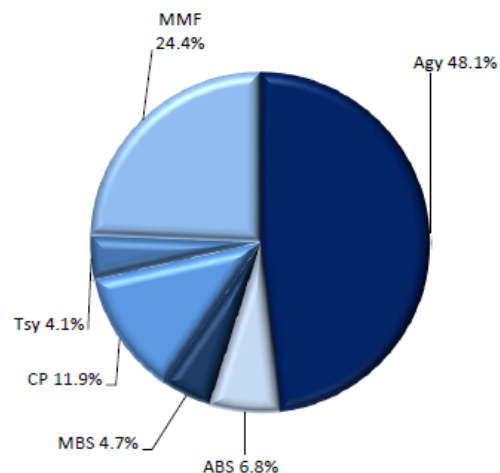
Source: FHN Main Street

Portfolio Composition #1

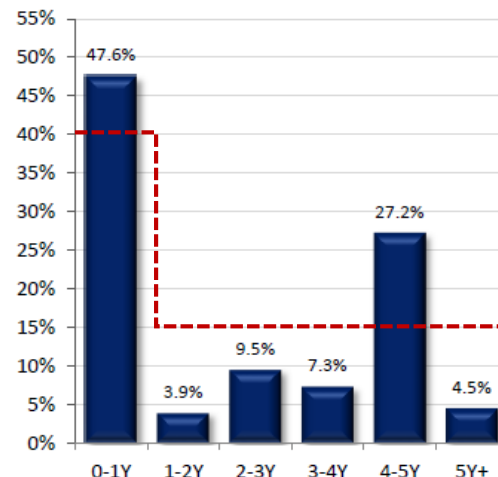
Portfolio Summary

7/31/2021

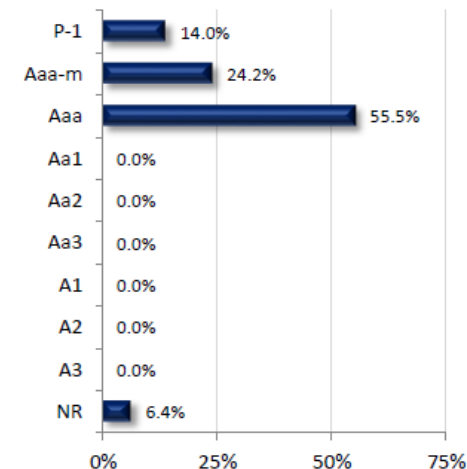
SECTOR ALLOCATION



MATURITY DISTRIBUTION



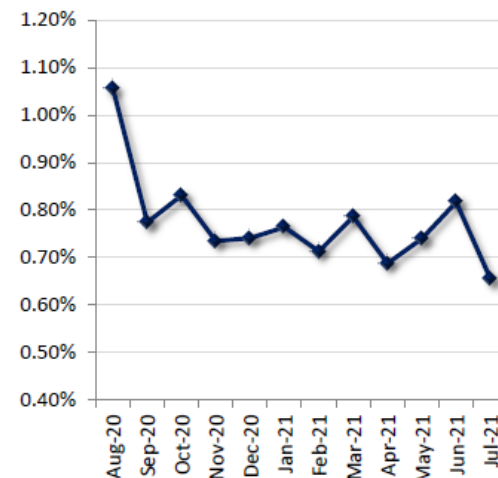
CREDIT QUALITY (MOODY'S)



ACCOUNT SUMMARY

	7/31/21	6/30/21
Market Value	\$1,219,918,338	\$1,082,340,277
Book Value	\$1,217,078,168	\$1,081,806,822
Variance	\$2,840,170	\$533,455
Par Value	\$1,214,917,367	\$1,080,006,212
Net Asset Value	\$100.233	\$100.049
Book Yield	0.65%	0.82%
Years to Maturity	2.23	2.74
Effective Duration	1.23	1.69

MONTH-END PORTFOLIO BOOK YIELD



TOP ISSUERS

Issuer	% Portfolio
JP Morgan US Govt-MMF	24.2%
FHLMC	20.3%
FHLB	20.2%
FFCB	6.2%
U.S. Treasury	4.1%
MUFG Bank	4.1%
Credit Agricole	4.1%
FNMA	3.2%
FAMCA	2.9%
Sumi Trust	2.5%
Capital One - ABS	1.9%
Natixis	1.2%
Honda - ABS	0.9%
Carmax Auto - ABS	0.8%
Toyota - ABS	0.8%

Source: FHN Main Street

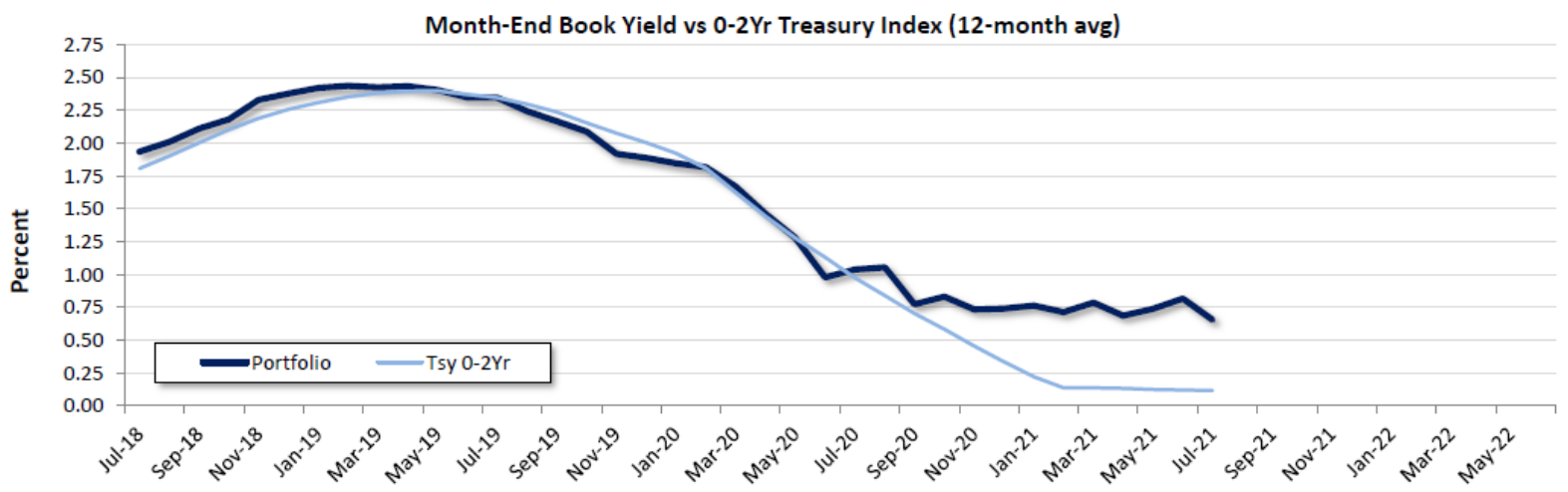
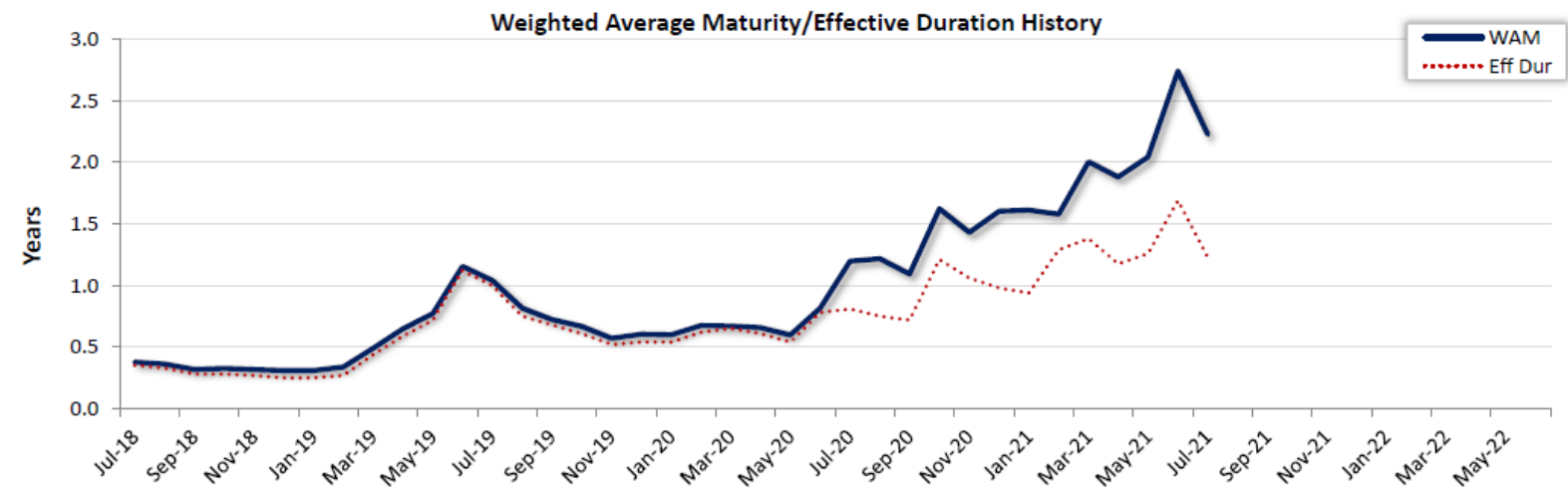
Book Value is at original Cost, Not Amortized

Per Book Value

WAM and Yield History #1

Weighted Average Maturity/Effective Duration and Portfolio Yield

7/31/2021



Source: FHN Main Street



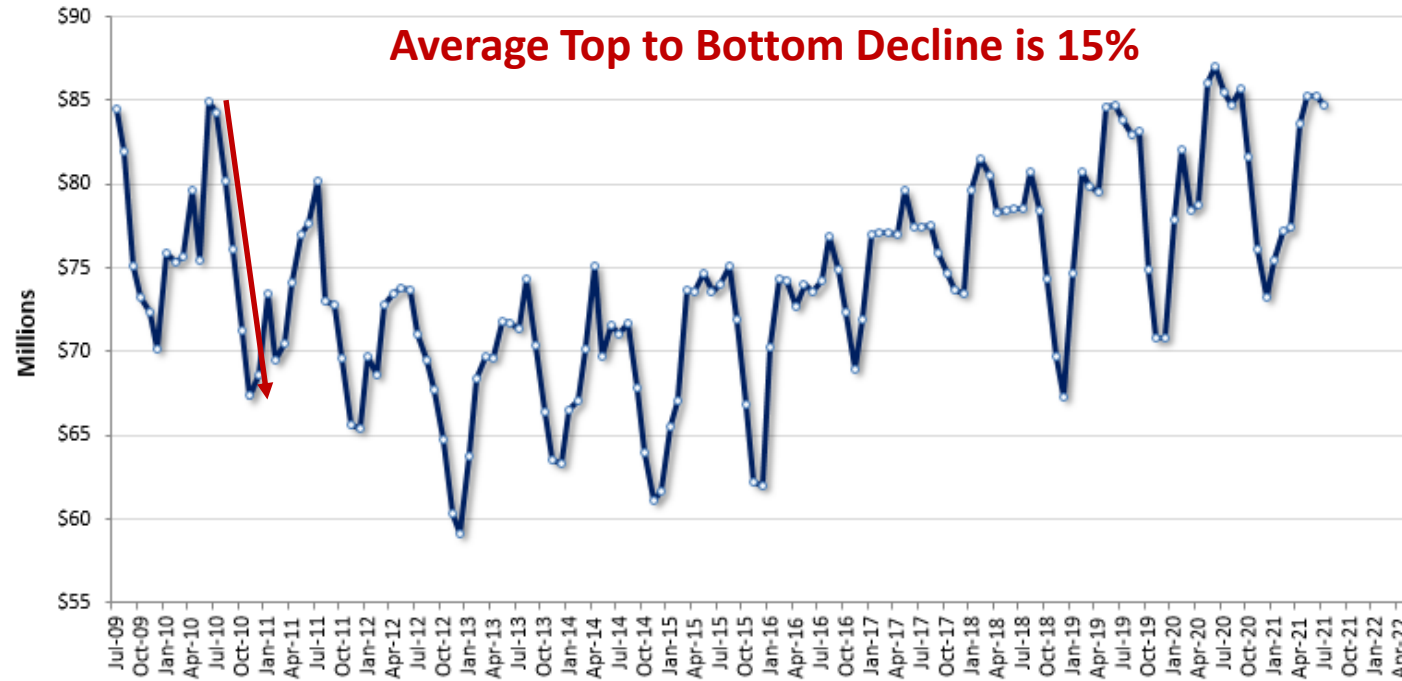
ICE BofAML Index: 0-2Yr Treasury Index; Includes ABS/MBS Portfolio As Of July 2020



Portfolio “Top to Bottom” Analysis #2

Historical Book Values

7/31/2021



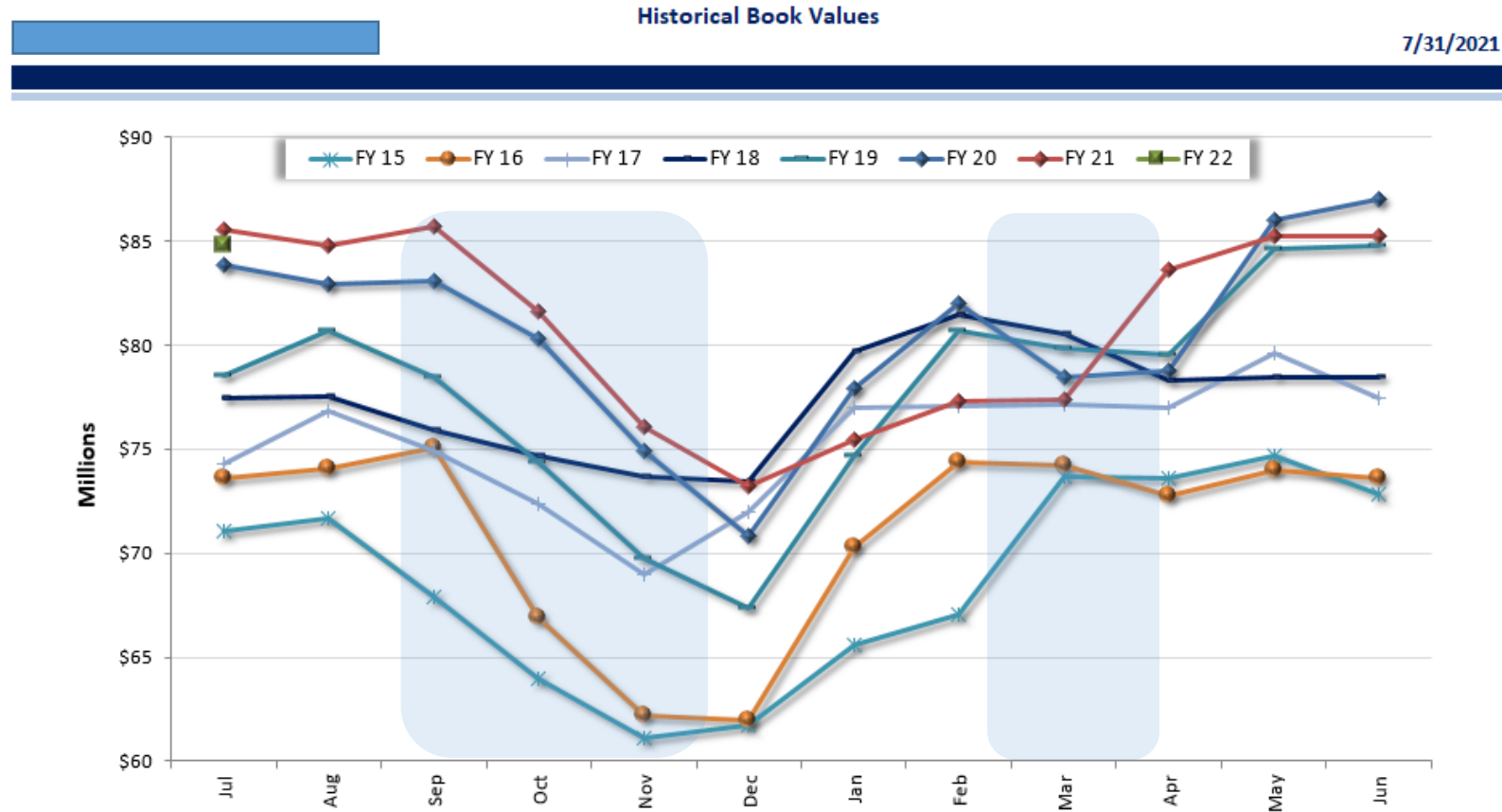
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 2013	\$71.0	\$69.5	\$67.7	\$64.8	\$60.4	\$59.1	\$63.8	\$68.4	\$69.7	\$69.6	\$71.8	\$71.7	\$67.3
FY 2014	\$71.3	\$74.4	\$70.4	\$66.4	\$63.5	\$63.4	\$66.5	\$67.0	\$70.1	\$75.1	\$69.7	\$71.6	\$69.1
FY 2015	\$71.1	\$71.7	\$67.9	\$64.0	\$61.1	\$61.7	\$65.6	\$67.0	\$73.7	\$73.6	\$74.7	\$72.8	\$68.7
FY 2016	\$73.6	\$74.1	\$75.1	\$66.9	\$62.2	\$61.9	\$70.3	\$74.4	\$74.2	\$72.7	\$74.0	\$73.6	\$71.1
FY 2017	\$74.3	\$76.8	\$74.9	\$72.3	\$69.0	\$72.0	\$77.0	\$77.1	\$77.1	\$77.0	\$79.6	\$77.4	\$75.4
FY 2018	\$77.4	\$77.5	\$75.9	\$74.6	\$73.7	\$73.4	\$79.7	\$81.5	\$80.6	\$78.3	\$78.4	\$78.5	\$77.5
FY 2019	\$78.5	\$80.7	\$78.4	\$74.4	\$69.7	\$67.3	\$74.7	\$80.7	\$79.8	\$79.5	\$84.6	\$84.8	\$77.8
FY 2020	\$83.8	\$82.9	\$83.1	\$80.3	\$74.9	\$70.8	\$77.9	\$82.0	\$78.4	\$78.8	\$86.0	\$87.0	\$80.5
FY 2021	\$85.5	\$84.8	\$85.7	\$81.6	\$76.1	\$73.2	\$75.4	\$77.3	\$77.4	\$83.6	\$85.3	\$85.2	\$80.9
FY 2022	\$84.7												\$84.7

Figures in Millions, Average Daily Balance

Source: FHN Main Street



Portfolio Balance by Fiscal Year – The Pattern Doesn't Exactly Repeat but it Rhymes #2



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 2015	\$71.1	\$71.7	\$67.9	\$64.0	\$61.1	\$61.7	\$65.6	\$67.0	\$73.7	\$73.6	\$74.7	\$72.8	\$68.7
FY 2016	\$73.6	\$74.1	\$75.1	\$66.9	\$62.2	\$61.9	\$70.3	\$74.4	\$74.2	\$72.7	\$74.0	\$73.6	\$71.1
FY 2017	\$74.3	\$76.8	\$74.9	\$72.3	\$69.0	\$72.0	\$77.0	\$77.1	\$77.1	\$77.0	\$79.6	\$77.4	\$75.4
FY 2018	\$77.4	\$77.5	\$75.9	\$74.6	\$73.7	\$73.4	\$79.7	\$81.5	\$80.6	\$78.3	\$78.4	\$78.5	\$77.5
FY 2019	\$78.5	\$80.7	\$78.4	\$74.4	\$69.7	\$67.3	\$74.7	\$80.7	\$79.8	\$79.5	\$84.6	\$84.8	\$77.8
FY 2020	\$83.8	\$82.9	\$83.1	\$80.3	\$74.9	\$70.8	\$77.9	\$82.0	\$78.4	\$78.8	\$86.0	\$87.0	\$80.5
FY 2021	\$85.5	\$84.8	\$85.7	\$81.6	\$76.1	\$73.2	\$75.4	\$77.3	\$77.4	\$83.6	\$85.3	\$85.2	\$80.9
FY 2022	\$84.7												\$84.7

Figures in Millions, Average Daily Balance

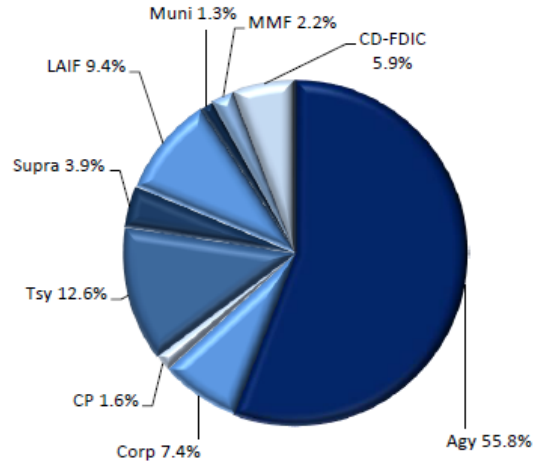
Source: FHN Main Street

Portfolio Composition #2

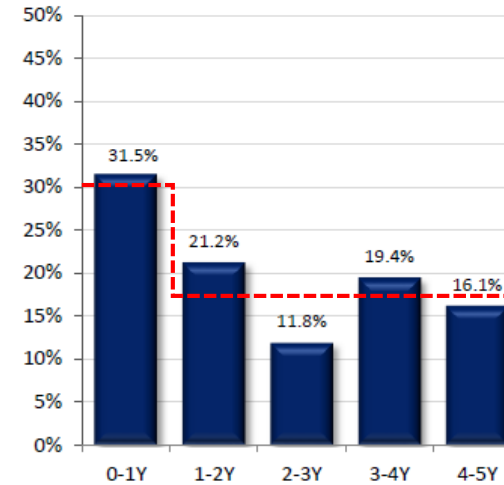
Portfolio Summary

7/31/2021

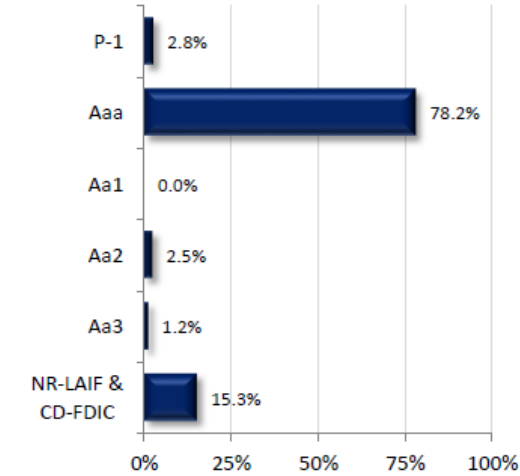
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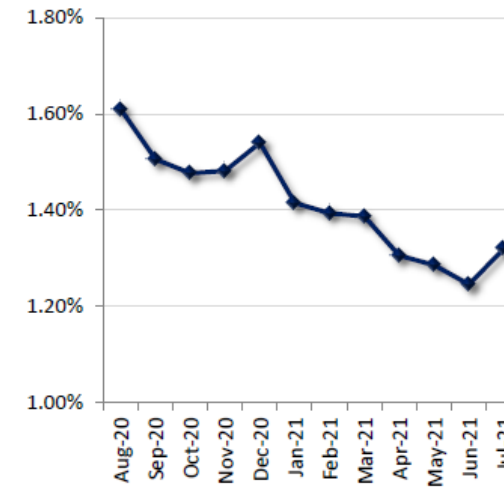
Per Book Value

ACCOUNT SUMMARY

	7/31/21	6/30/21
Market Value	\$81,509,460	\$86,415,962
Book Value*	\$80,466,977	\$85,444,975
Variance	\$1,042,482	\$970,987
Par Value	\$80,215,311	\$85,305,914
Net Asset Value	\$101.296	\$101.136
Book Yield	1.32%	1.25%
Years to Maturity	1.97	1.76
Effective Duration	1.62	1.58

*Book Value is Amortized

MONTH-END PORTFOLIO BOOK YIELD



NR: Not Rated

TOP ISSUERS

Issuer	% Portfolio
FFCB	22.9%
FHLB	13.1%
U.S. Treasury	12.6%
FNMA	10.0%
LAIF	9.4%
FHLMC	7.4%
IBRD	2.5%
Tennessee Valley Authority	2.5%
Fidelity US Govt MMF	2.2%
Rabo Bank	1.6%
INTL Finace	1.4%
Johnson & Johnson	1.3%
State of California	1.3%
Natl Sec Clearing	1.2%
Metlife	1.2%

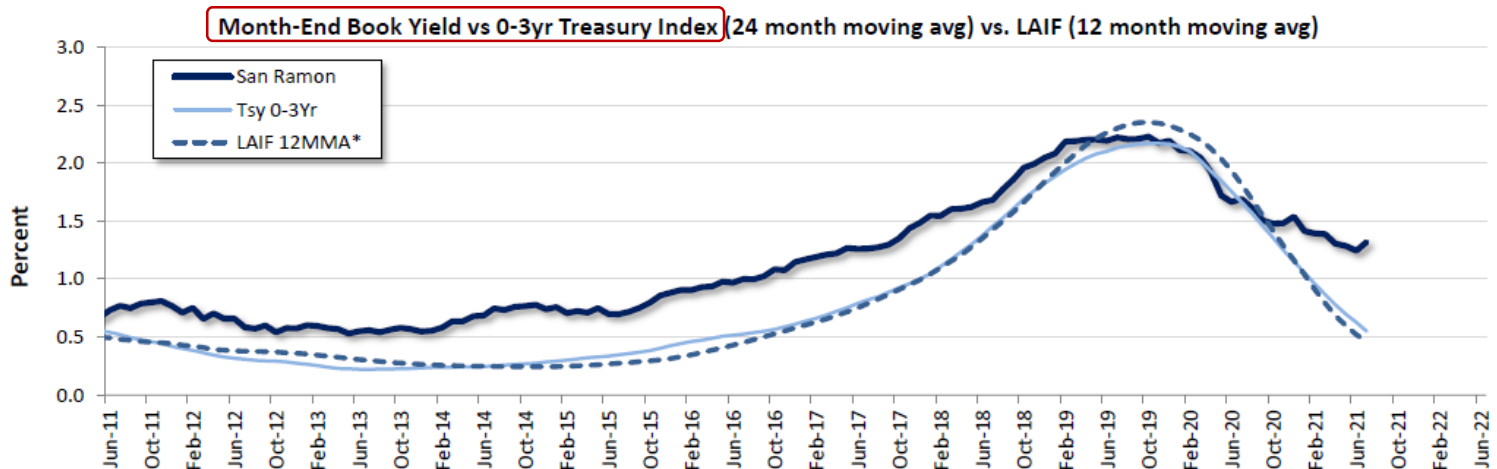
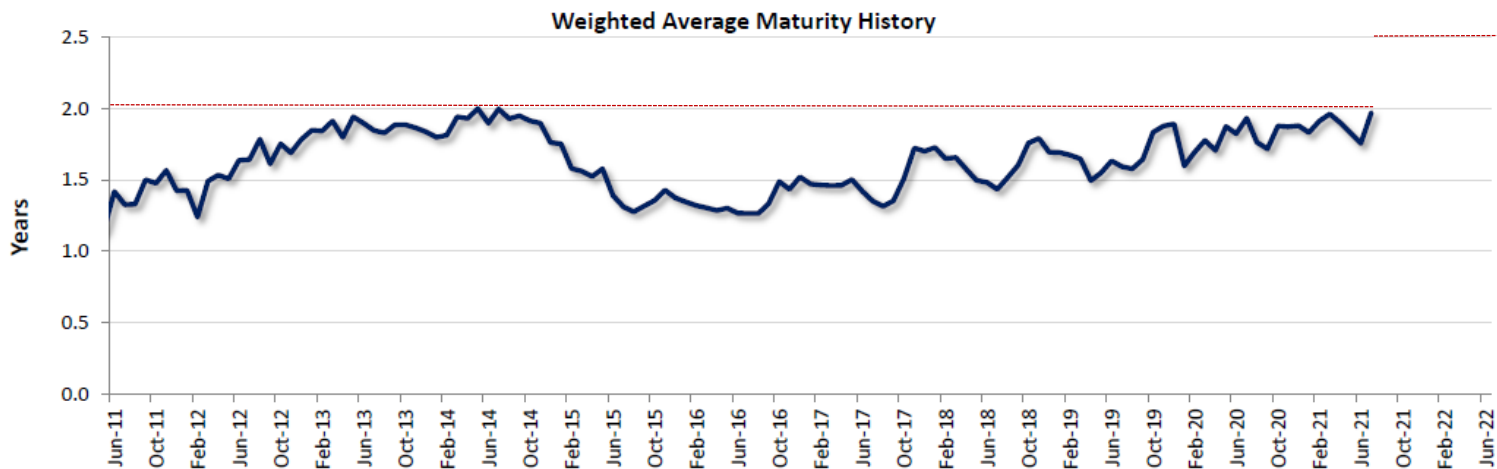
Per Book Value

Source: FHN Main Street

WAM and Yield History #2

Weighted Average Maturity and Aging Report

7/31/2021



Source: FHN Main Street



ICE BofAML Index: 0-3Yr Treasury Index; Book Yield includes LAIF Balance

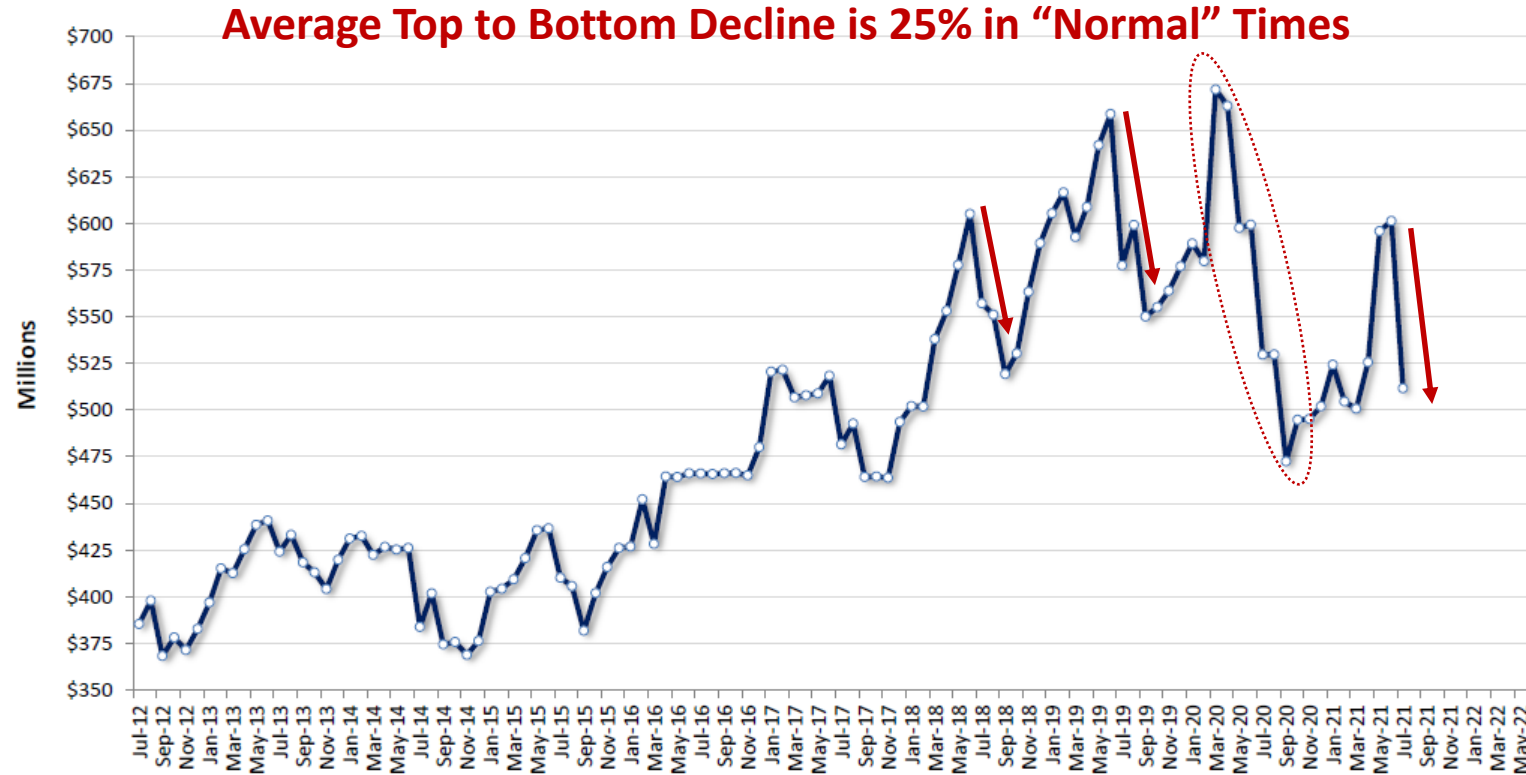
*12 Month Moving Average



Portfolio “Top to Bottom” Analysis #3

Historical Book Values

7/31/2021

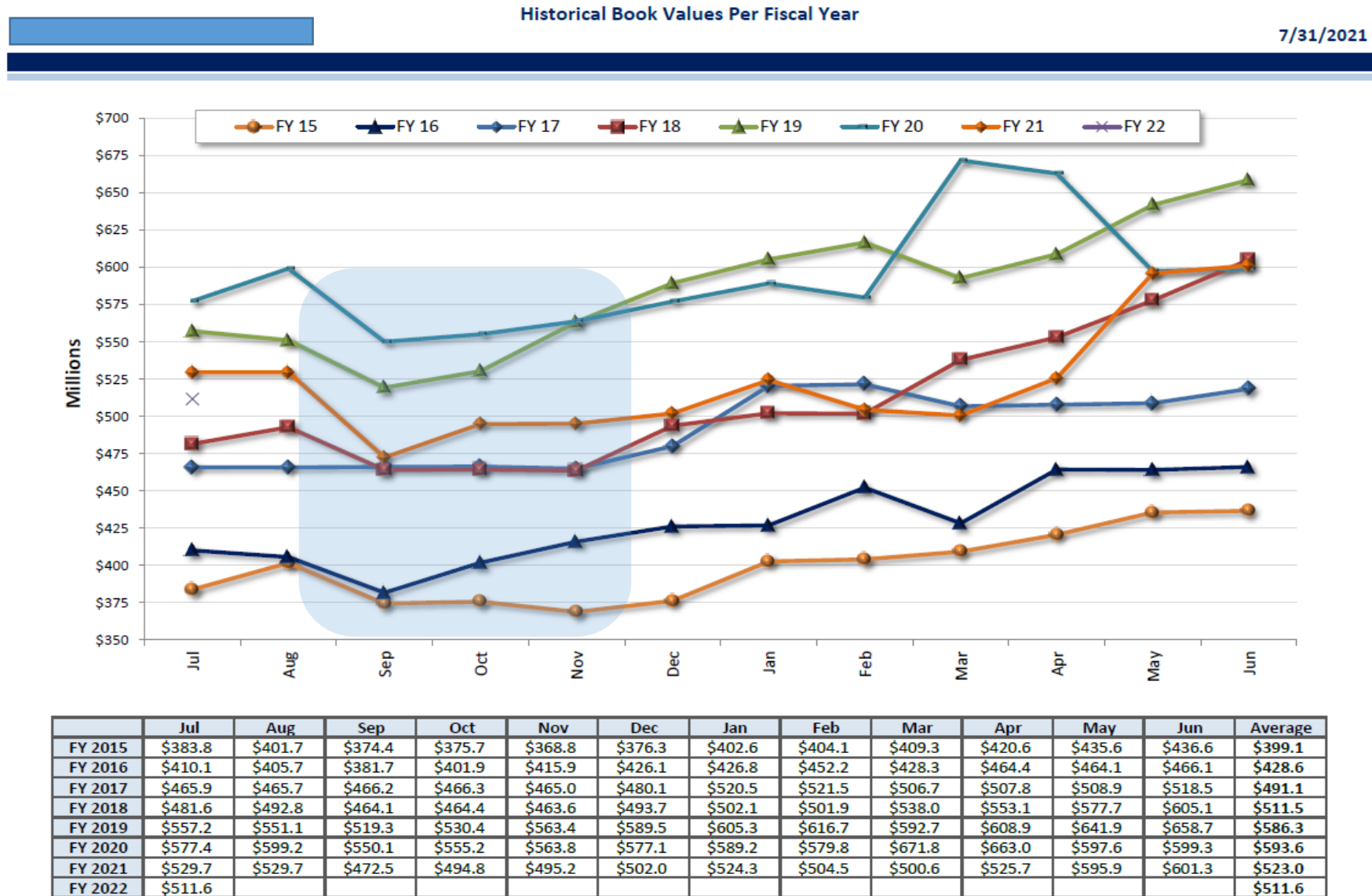


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
FY 2015	\$383.8	\$401.7	\$374.4	\$375.7	\$368.8	\$376.3	\$402.6	\$404.1	\$409.3	\$420.6	\$435.6	\$436.6	\$399.1
FY 2016	\$410.1	\$405.7	\$381.7	\$401.9	\$415.9	\$426.1	\$426.8	\$452.2	\$428.3	\$464.4	\$464.1	\$466.1	\$428.6
FY 2017	\$465.9	\$465.7	\$466.2	\$466.3	\$465.0	\$480.1	\$520.5	\$521.5	\$506.7	\$507.8	\$508.9	\$518.5	\$491.1
FY 2018	\$481.6	\$492.8	\$464.1	\$464.4	\$463.6	\$493.7	\$502.1	\$501.9	\$538.0	\$553.1	\$577.7	\$605.1	\$511.5
FY 2019	\$557.2	\$551.1	\$519.3	\$530.4	\$563.4	\$589.5	\$605.3	\$616.7	\$592.7	\$608.9	\$641.9	\$658.7	\$586.3
FY 2020	\$577.4	\$599.2	\$550.1	\$555.2	\$563.8	\$577.1	\$589.2	\$579.8	\$671.8	\$663.0	\$597.6	\$599.3	\$593.6
FY 2021	\$529.7	\$529.7	\$472.5	\$494.8	\$495.2	\$502.0	\$524.3	\$504.5	\$500.6	\$525.7	\$595.9	\$601.3	\$523.0
FY 2022	\$511.6												\$511.6

Figures in Millions, Month End Book Value

Source: FHN Main Street

Portfolio Balance by Fiscal Year – The Pattern Doesn't Exactly Repeat but it Rhymes #3



Source: FHN Main Street

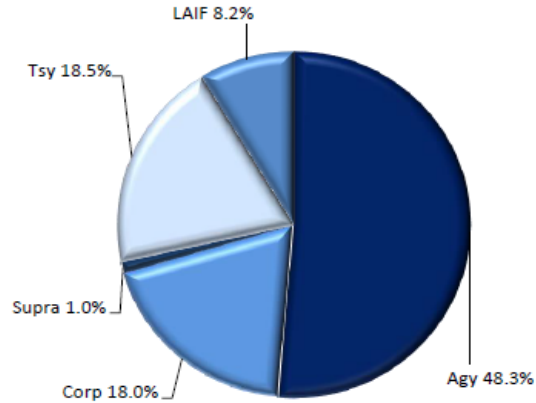
Figures in Millions, Month End Book Value

Portfolio Composition #3

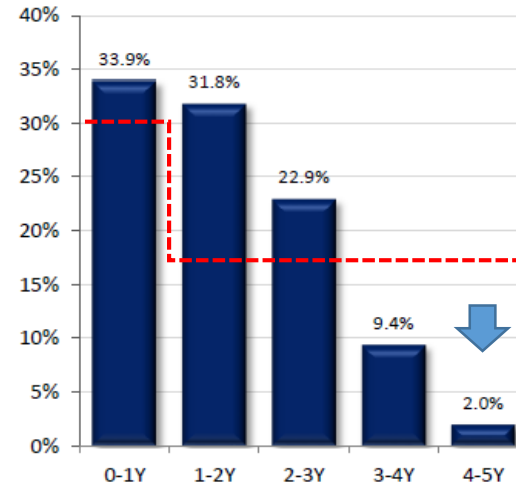
Portfolio Summary

7/31/2021

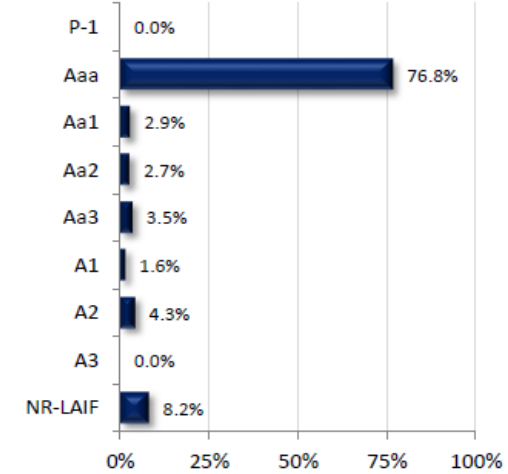
SECTOR ALLOCATION



MATURITY DISTRIBUTION



CREDIT QUALITY (MOODY'S)



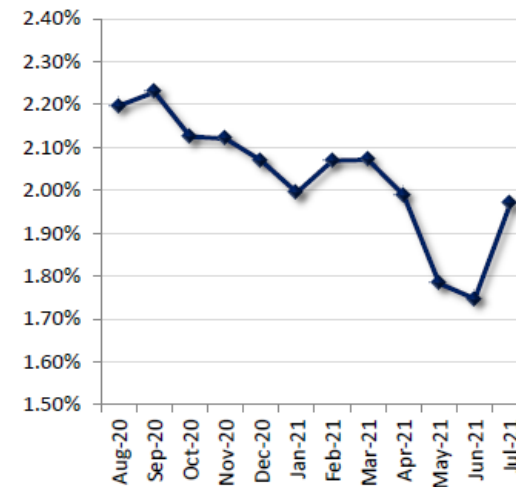
Per Book Value

ACCOUNT SUMMARY

	7/31/21	6/30/21
Market Value	\$525,371,929	\$615,088,687
Book Value	\$511,594,434	\$601,328,272
Variance	\$13,777,495	\$13,760,415
Par Value	\$511,621,869	\$601,361,401
Net Asset Value	\$102.693	\$102.288
Book Yield	1.97%	1.75%
Years to Maturity	1.57	1.40
Effective Duration	1.37	1.41

Per Book Value

MONTH-END PORTFOLIO BOOK YIELD



NR: Not Rated

TOP ISSUERS

Issuer	% Portfolio
FFCB	22.8%
U.S.Treasury	18.5%
FHLB	11.8%
FNMA	8.8%
LAIF	8.2%
Wells Fargo Govt Inst MMF	5.4%
FHLMC	4.9%
Met Life	3.5%
Apple	2.9%
Truist Bank	2.0%
Wells Fargo Bank	1.8%
New York Life	1.0%
US Bank	1.0%
Microsoft	1.0%
PNC Bank	1.0%

Per Book Value

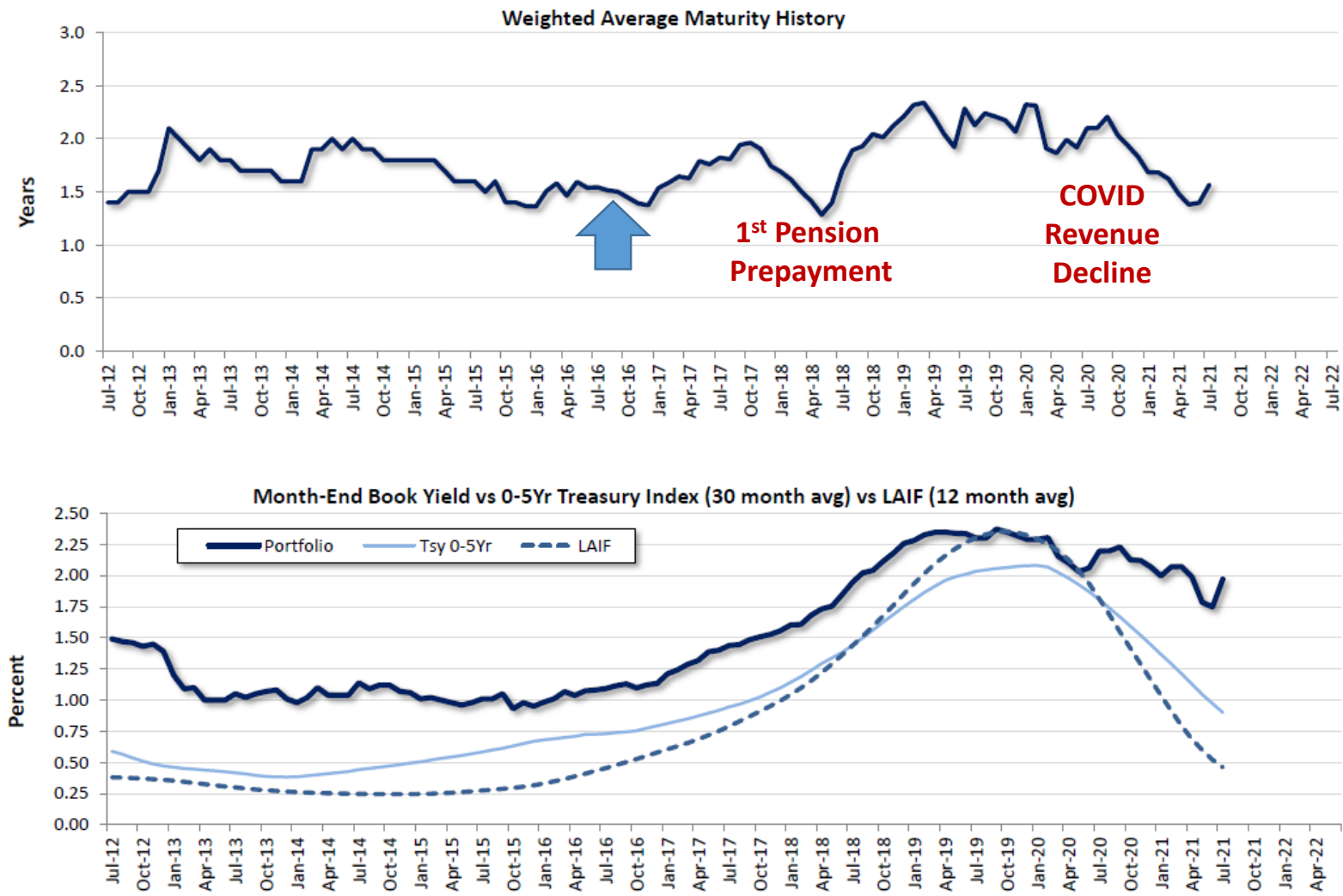
Source: FHN Main Street

Book Value is Amortized

WAM and Yield History #3

Weighted Average Maturity and Portfolio Yield

7/31/2021



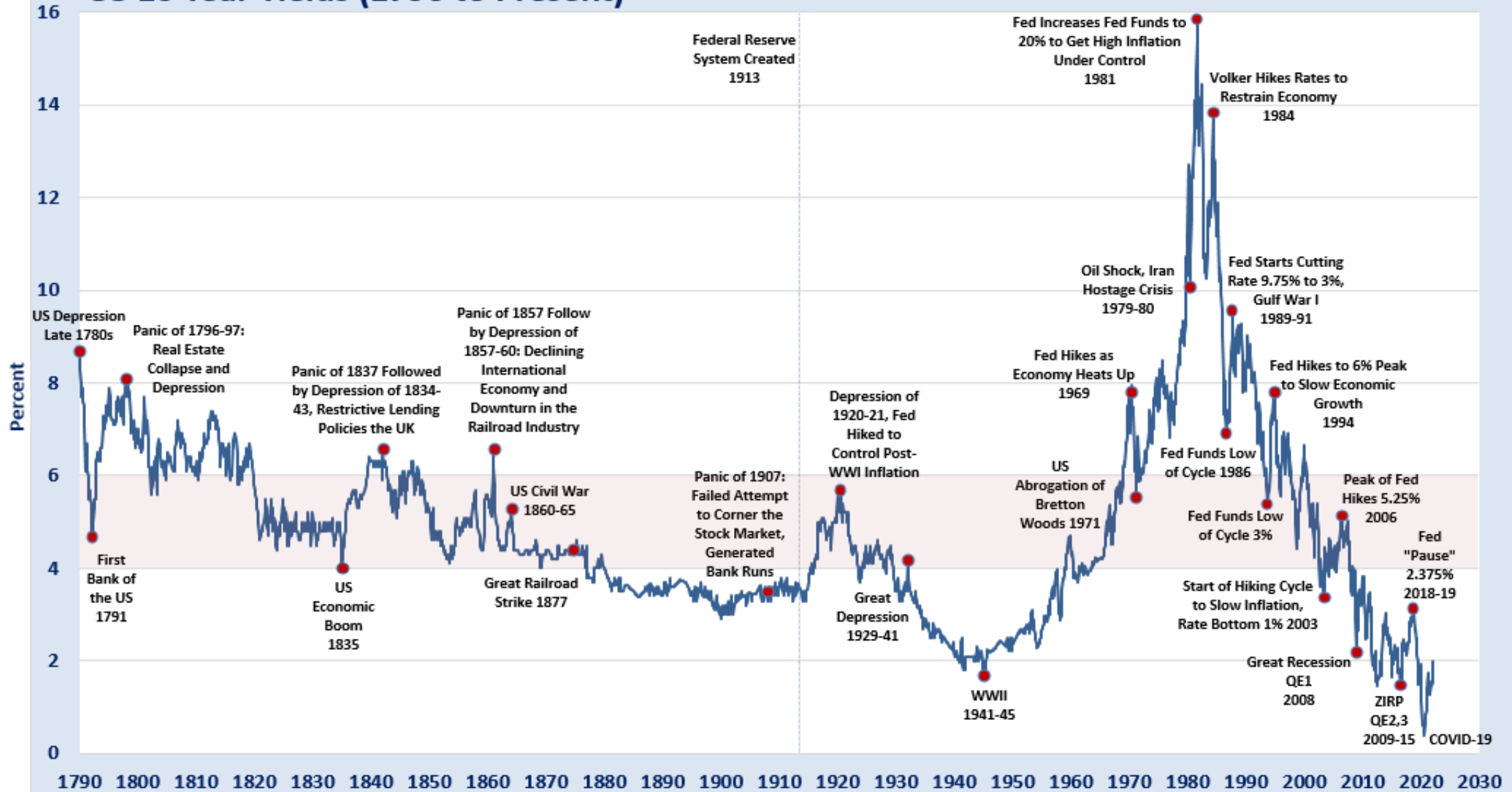
Source: FHN Main Street



ICE BofAML Index: 0-5Yr Treasury Index



US 10 Year Yields (1790 to Present)



Sources: Goldman Sachs, Global Financial Database, Arbor Research 1790 to 1831 British Consols, 1831 to 1919 High-Grade Long Term Railroad, 1919 to Date 10Yr Treasuries

1 Year WAM vs. 2 Year WAM: A Long View of Returns

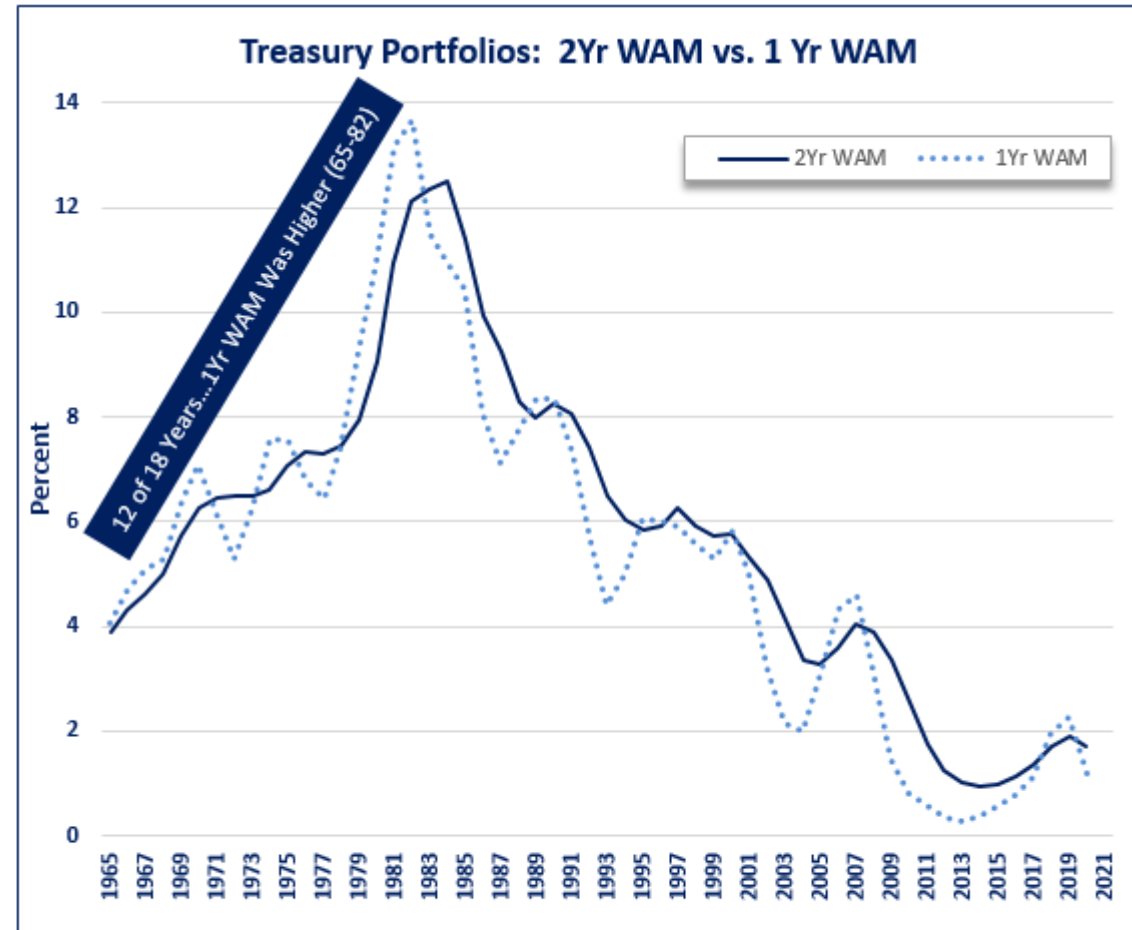
-174 BP/Yr>

Year	1Y WAM	2Y WAM	Var
1965	4.06	3.90	(0.16)
1966	4.70	4.30	(0.40)
1967	5.09	4.63	(0.46)
1968	5.28	5.00	(0.29)
1969	6.38	5.73	(0.65)
1970	7.08	6.27	(0.81)
1971	6.18	6.45	0.28
1972	5.30	6.49	1.19
1973	6.24	6.48	0.24
1974	7.57	6.60	(0.97)
1975	7.56	7.05	(0.51)
1976	6.77	7.33	0.57
1977	6.43	7.31	0.88
1978	7.40	7.44	0.04
1979	9.23	7.93	(1.30)
1980	10.95	9.07	(1.88)
1981	13.17	10.94	(2.22)
1982	13.68	12.11	(1.57)
1983	11.50	12.36	0.86
1984	10.93	12.50	1.57
1985	10.46	11.38	0.93
1986	8.07	9.94	1.87
1987	7.14	9.24	2.10
1988	7.75	8.31	0.56
1989	8.34	7.97	(0.37)
1990	8.37	8.25	(0.11)
1991	7.32	8.07	0.75
1992	5.63	7.42	1.79

1Yr WAM Avg Yield= 5.39%

Year	1Y WAM	2Y WAM	Var
1993	4.41	6.49	2.08
1994	4.99	6.03	1.03
1995	6.05	5.84	(0.21)
1996	6.00	5.92	(0.08)
1997	5.91	6.26	0.35
1998	5.56	5.93	0.37
1999	5.28	5.73	0.45
2000	5.84	5.75	(0.09)
2001	5.04	5.29	0.25
2002	3.23	4.87	1.64
2003	2.15	4.12	1.98
2004	2.02	3.35	1.34
2005	3.12	3.27	0.16
2006	4.33	3.60	(0.74)
2007	4.59	4.06	(0.53)
2008	3.18	3.91	0.73
2009	1.48	3.37	1.89
2010	0.83	2.56	1.73
2011	0.58	1.74	1.17
2012	0.36	1.26	0.89
2013	0.29	1.02	0.73
2014	0.39	0.96	0.57
2015	0.57	0.99	0.42
2016	0.76	1.14	0.38
2017	1.12	1.37	0.25
2018	1.96	1.72	(0.24)
2019	2.25	1.89	(0.36)
2020	1.18	1.72	0.53

2Yr WAM Avg Yield= 5.73%



2Yr WAM vs. 1Yr WAM Yield = 0.33% Per Year

Notes: 2Yr WAM is the 48 month moving average of the 4yr treasury, the 1Yr WAM is the 24 month moving average of the 2 year treasury
The 4yr treasury is the average of the 3yr and 5yr treasury, since the US Treasury does not issue a 4 yr treasury

Source: Bloomberg, FHN Main Street

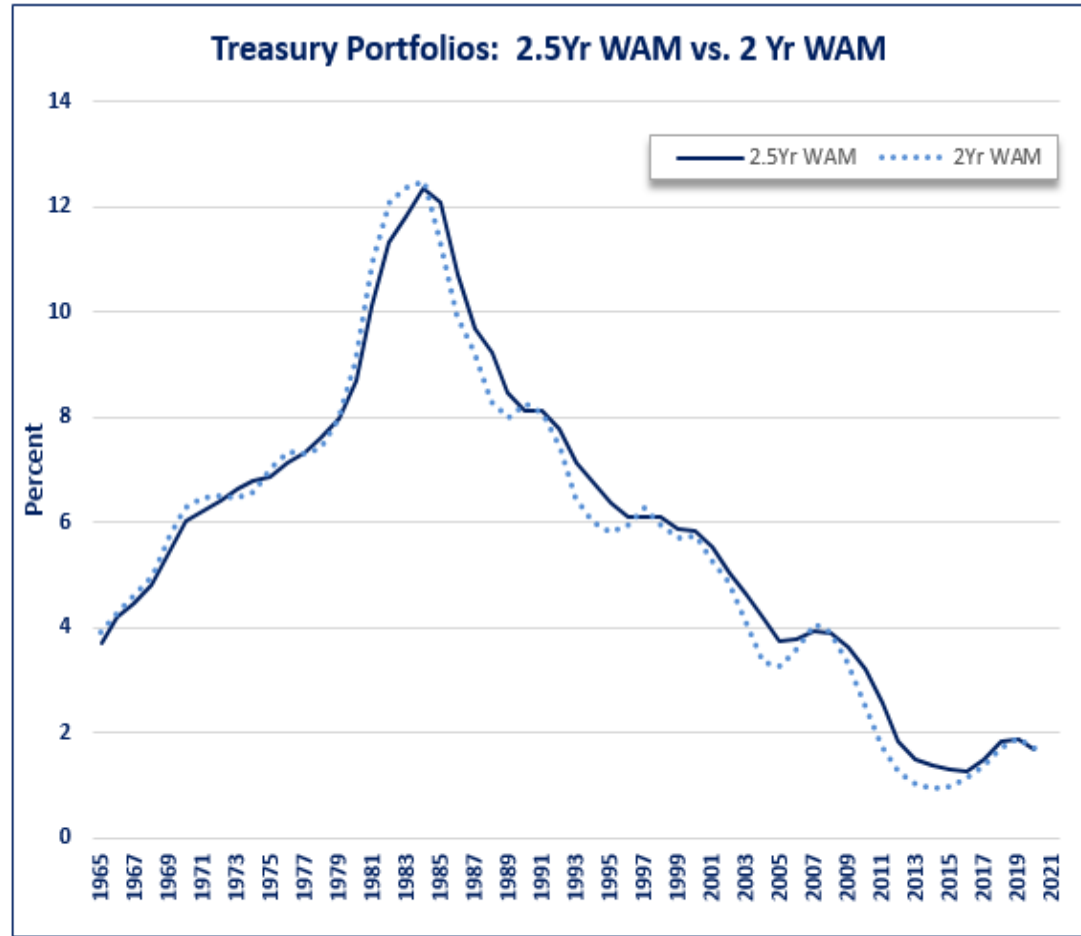
2 Year WAM vs. 2.5 Year WAM: A Long View of Returns

Year	2Y WAM	2.5Y WAM	Var
1965	3.90	3.70	(0.20)
1966	4.30	4.19	(0.11)
1967	4.63	4.47	(0.16)
1968	5.00	4.81	(0.19)
1969	5.73	5.42	(0.31)
1970	6.27	6.04	(0.22)
1971	6.45	6.22	(0.23)
1972	6.49	6.40	(0.10)
1973	6.48	6.63	0.15
1974	6.60	6.80	0.20
1975	7.05	6.88	(0.17)
1976	7.33	7.12	(0.21)
1977	7.31	7.32	0.01
1978	7.44	7.61	0.17
1979	7.93	7.95	0.02
1980	9.07	8.70	(0.37)
1981	10.94	10.11	(0.83)
1982	12.11	11.31	(0.80)
1983	12.36	11.81	(0.55)
1984	12.50	12.35	(0.15)
1985	11.38	12.08	0.70
1986	9.94	10.70	0.76
1987	9.24	9.68	0.45
1988	8.31	9.22	0.91
1989	7.97	8.47	0.50
1990	8.25	8.12	(0.13)
1991	8.07	8.13	0.06
1992	7.42	7.78	0.36

2Yr WAM Avg Yield= 5.73%

Year	2Y WAM	2.5Y WAM	Var
1993	6.49	7.12	0.63
1994	6.03	6.75	0.72
1995	5.84	6.36	0.52
1996	5.92	6.12	0.20
1997	6.26	6.12	(0.14)
1998	5.93	6.12	0.20
1999	5.73	5.90	0.17
2000	5.75	5.85	0.10
2001	5.29	5.52	0.23
2002	4.87	5.04	0.17
2003	4.12	4.61	0.48
2004	3.35	4.18	0.83
2005	3.27	3.76	0.49
2006	3.60	3.80	0.20
2007	4.06	3.92	(0.13)
2008	3.91	3.89	(0.02)
2009	3.37	3.64	0.27
2010	2.56	3.22	0.66
2011	1.74	2.57	0.83
2012	1.26	1.84	0.58
2013	1.02	1.51	0.49
2014	0.96	1.40	0.45
2015	0.99	1.32	0.33
2016	1.14	1.29	0.14
2017	1.37	1.52	0.15
2018	1.72	1.83	0.11
2019	1.89	1.90	0.01
2020	1.72	1.70	(0.02)

2.5Yr WAM Avg Yield= 5.87%

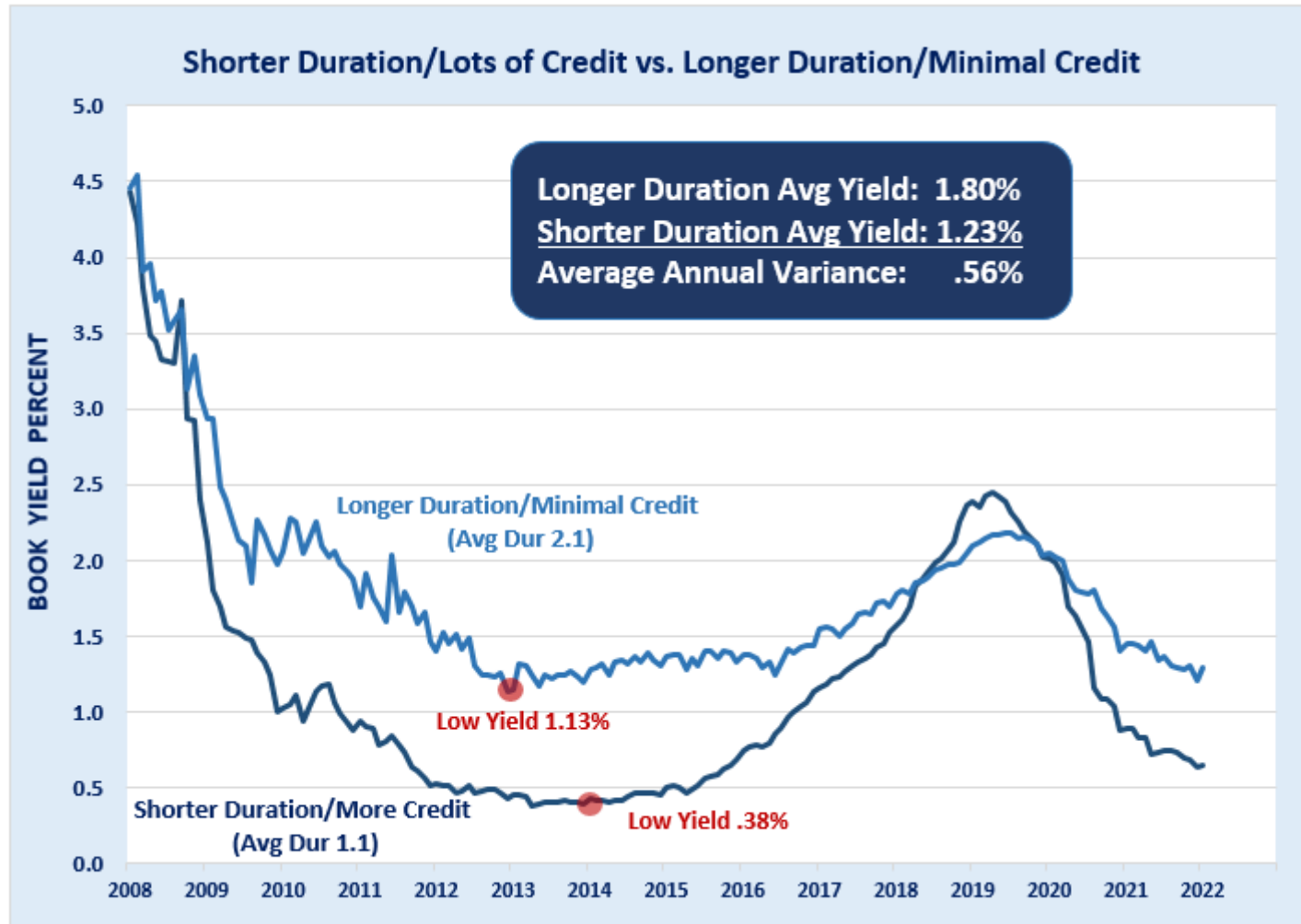


2.5Yr WAM vs. 2Yr WAM Yield = 0.15% Per Year

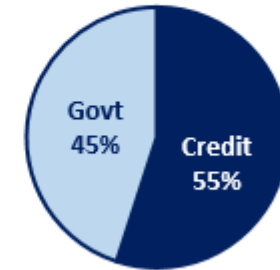
Notes: 2Yr WAM is the 48 month moving average of the 4yr treasury, the 2.5Yr WAM is the 60 month moving average of the 5 year treasury
The 4yr treasury is the average of the 3yr and 5yr treasury, since the US Treasury does not issue a 4 yr treasury

Source: Bloomberg, FHN Main Street

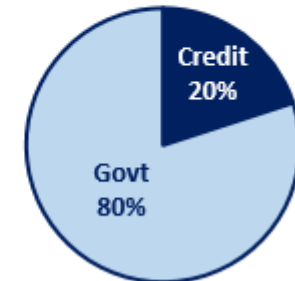
Real World Example #1



Shorter Duration
(Avg Dur 1.1)

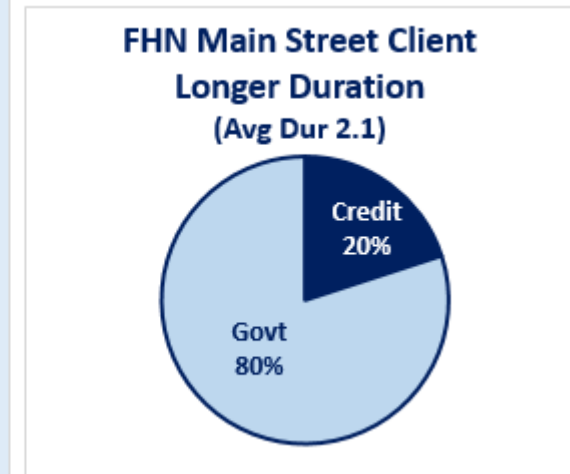
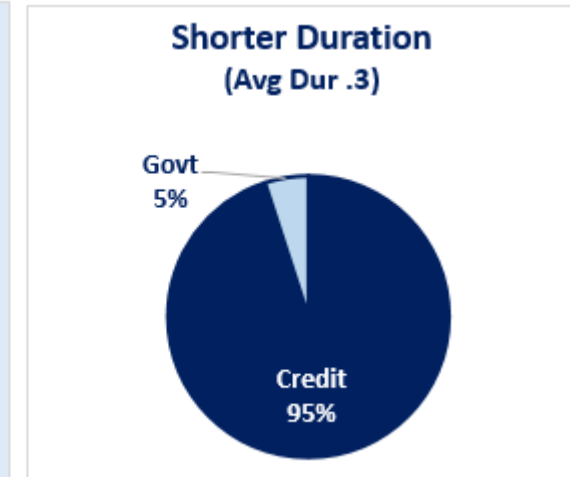
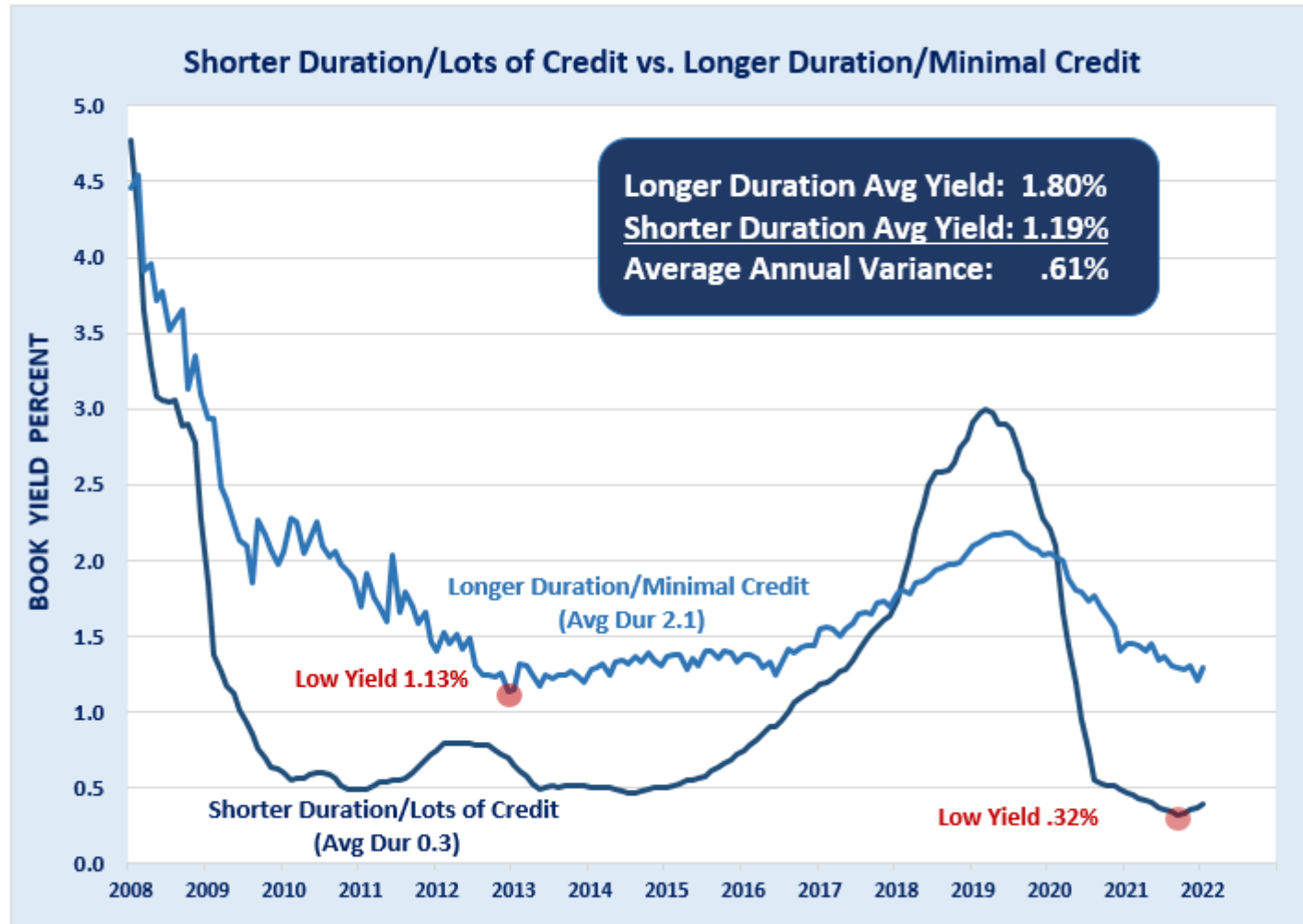


FHN Main Street Client
Longer Duration
(Avg Dur 2.1)



Source: Entities' Websites, FHN Main Street

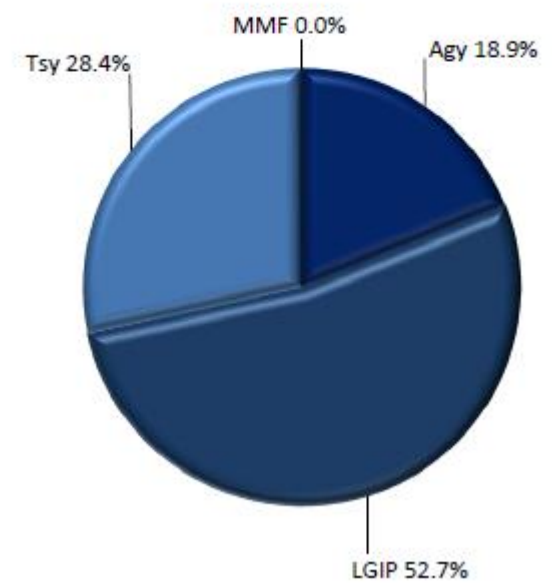
Real World Example #2



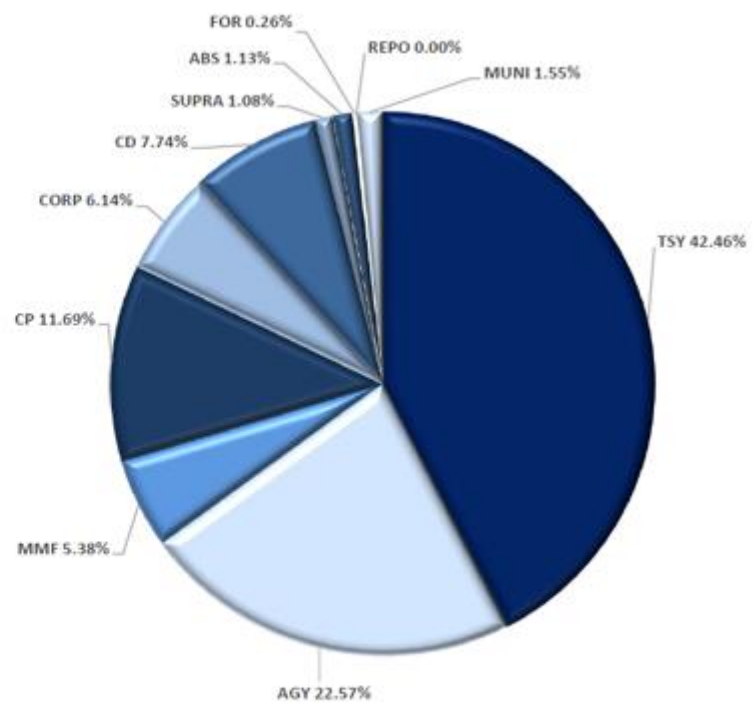
Source: Entities' Websites, FHN Main Street

Understand the Risks of Funds in LAIF and Other Pools

SECTOR ALLOCATION



Sector	Amount	Percentage
Treasury	271,422,507.85	42.46%
Agency	144,265,293.53	22.57%
MMF	34,416,870.99	5.38%
Commercial Paper	74,707,910.01	11.69%
Corporate	39,220,288.48	6.14%
CD	49,490,833.97	7.74%
Supranational	6,900,388.48	1.08%
Asset-Backed Security	7,239,515.36	1.13%
Foreign	1,651,372.03	0.26%
Repurchase Agreement	-	0.00%
Municipals	9,923,806.98	1.55%
Total	639,238,787.68	100.00%



★ Corporate Exposure via NV LGIP = 25.5%

Source: FHN Main Street

Understand the Risks of Funds in LAIF and Other Pools



PMIA/LAIF Performance Report as of 02/10/22



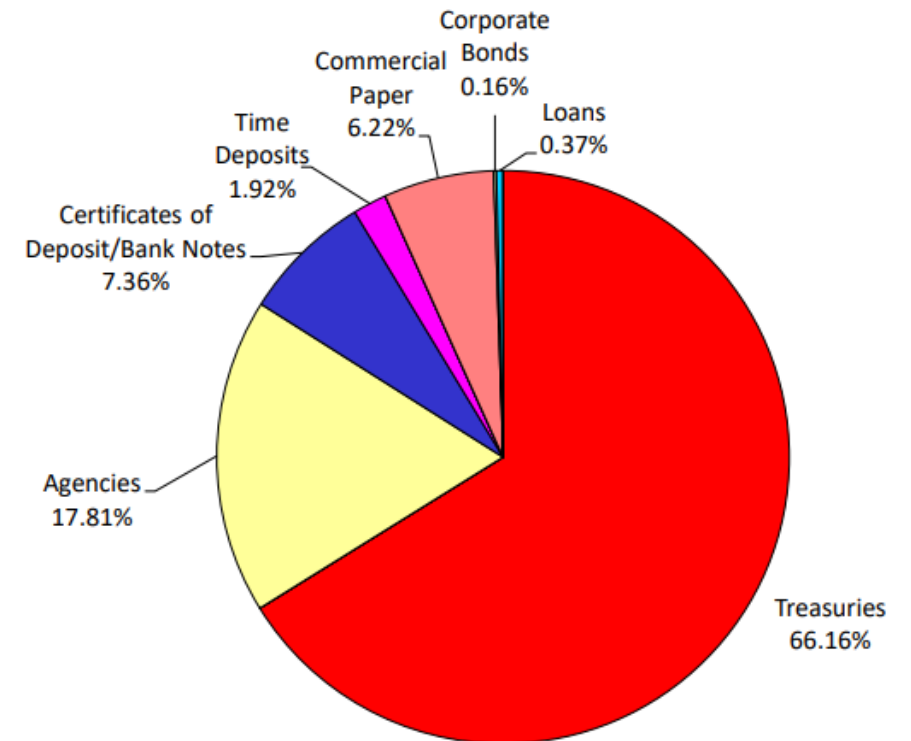
PMIA Average Monthly Effective Yields⁽¹⁾

Jan	0.234
Dec	0.212
Nov	0.203

Quarterly Performance Quarter Ended 12/31/21

LAIF Apportionment Rate ⁽²⁾ :	0.23
LAIF Earnings Ratio ⁽²⁾ :	0.00000625812849570
LAIF Fair Value Factor ⁽¹⁾ :	0.997439120
PMIA Daily ⁽¹⁾ :	0.22%
PMIA Quarter to Date ⁽¹⁾ :	0.21%
PMIA Average Life ⁽¹⁾ :	340

Pooled Money Investment Account Monthly Portfolio Composition ⁽¹⁾ 01/31/22 \$202.8 billion



Source: treasurer.ca.gov

Understand the Risks of Funds in LAIF and Other Pools



CalTRUST Liquidity Fund
Month End Portfolio Statistics
January 31, 2022

CalTRUST Liquidity		BofAML 3-Month US Treasury Bill Index		CalTRUST Liquidity Return	BofAML 3-Month US Treasury Bill Index
Net Assets	\$152,632,312.33	N/A	One Month	0.00%	-0.01%
NAV per Share	\$1.00	N/A	Three Month	0.01%	0.01%
30 Day SEC Yield	0.03%	N/A	Six Month	0.02%	0.01%
Distribution Yield	0.03%	N/A	One Year*	0.03%	0.03%
Period Net Total Return	0.00%	-0.01%	Two Year*	0.19%	0.29%
Effective Duration	.08 yrs	N/A	Three Year*	0.86%	0.93%
Weighted Average Maturity	30 days	N/A	Five Year*	NA	NA
Weighted Average Life	47 days	N/A	Ten Year*	NA	NA
			Since Inception*	1.07%	1.13%
			*Annualized		

Portfolio Sector Breakdown

- CERTIFICATE OF DEPOSIT - 27.09%
- COMMERCIAL PAPER - 26.36%
- CORPORATE BONDS - 0.21%
- MONEY MARKET FUNDS - 4.40%
- REPURCHASE AGREEMENTS - 40.62%
- U.S. GOVERNMENT & AGENCIES - 1.32%

CalTRUST Historical Liquidity 30 day SEC Yield

1/22	0.03%
12/21	0.03%
11/21	0.03%
10/21	0.03%
9/21	0.03%
8/21	0.03%
7/21	0.03%
6/21	0.03%
5/21	0.05%
4/21	0.05%
3/21	0.05%
2/21	0.03%

Rated AAAM by S&P Global Ratings

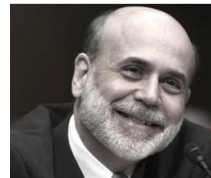
Source: caltrust.org

Timing the Market



"The only function of economic (and interest rate) forecasting is to make astrology look respectable."

John Kenneth Galbraith, Economist



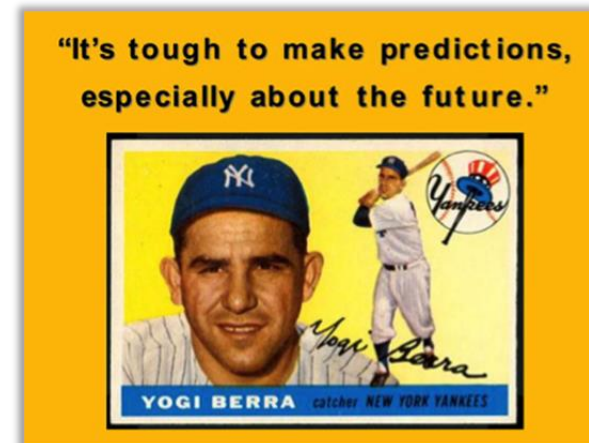
"The Federal Reserve is currently not forecasting a recession."

Ben Bernanke (former Fed Chair), January 10, 2008



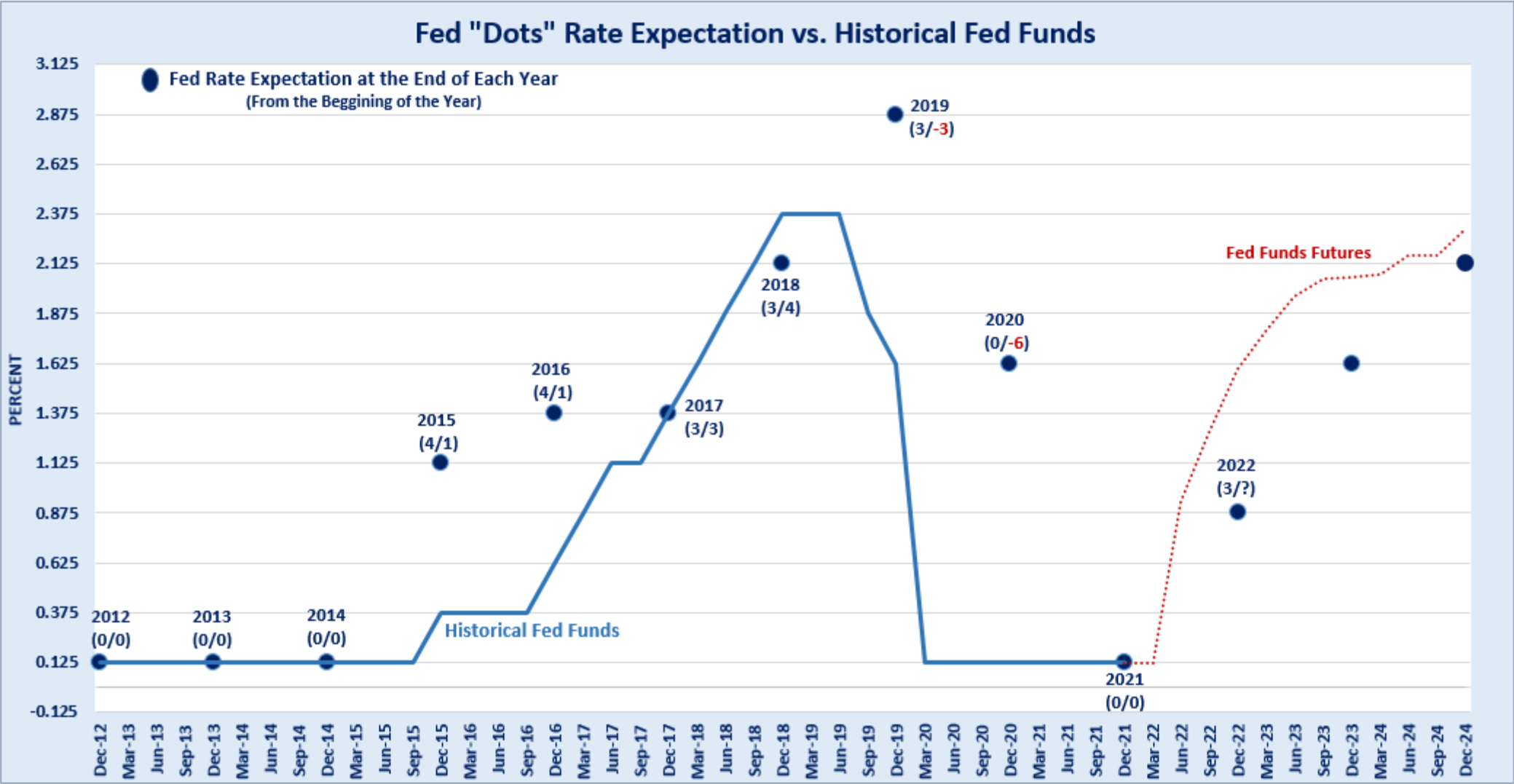
"Our ability to forecast is limited".

Alan Greenspan (former Fed Chair) November 2019



Source: Google

The Fed...“Just a Bit Outside!”



Source: Bloomberg

The Private Sector is Not Much Better

S&P Dow Jones Indices

A Division of **S&P Global**

Research

SPIVA® U.S. Scorecard

Report 11: Percentage of Fixed Income Funds Outperformed by Benchmarks

FUND CATEGORY	COMPARISON INDEX	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
Government Long Funds	Bloomberg Barclays US Government Long	100.00	76.79	98.31	98.73	98.00
Government Intermediate Funds	Bloomberg Barclays US Government Intermediate	94.12	89.47	85.71	85.29	91.07
Government Short Funds	Bloomberg Barclays US Government (1-3 Year)	91.67	84.00	82.14	69.70	82.86
Investment-Grade Long Funds	Bloomberg Barclays US Government/Credit Long	97.65	72.04	98.91	95.97	97.50
Investment-Grade Intermediate Funds	Bloomberg Barclays US Government/Credit Intermediate	50.50	39.90	55.50	51.65	72.68
Investment-Grade Short Funds	Bloomberg Barclays US Government/Credit (1-3 Year)	83.87	37.50	62.12	41.27	68.00

Source: S&P

2022: How Many Hikes?

Probability of Fed Hikes CME GROUP 2/11/2022

FOMC Meeting	2 Hikes .50%-.75%	3 Hikes .75%-1.00%	4 Hikes 1.00%-1.25%	5 Hikes 1.25-1.50%	6 Hikes 1.50%-1.75%	7 Hikes 1.75%-2.00%	8 Hikes 2.00%-2.25%	9 Hikes 2.25%-2.50%	10 Hikes 2.25%-2.50%	11 Hikes 2.50%-2.75%	12 Hikes 2.75%-3.00%
16-Mar-2022	94% ●	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4-May-2022	100%	95% ●	20%	0%	0%	0%	0%	0%	0%	0%	0%
15-Jun-2022	100%	100%	96% ●	35%	0%	0%	0%	0%	0%	0%	0%
27-Jul-2022	100%	100%	99%	80% ●	3%	3%	0%	0%	0%	0%	0%
21-Sep-2022	100%	100%	100%	94%	66%	21%	2%	0%	0%	0%	0%
2-Nov-2022	100%	100%	100%	96%	77%	39%	10%	1%	0%	0%	0%
14-Dec-2022	100%	100%	100%	99%	90%	65%	29%	7%	1%	0%	0%
1-Feb-2023	100%	100%	100%	99%	93%	73%	41%	14%	3%	0%	0%
15-Mar-2023	100%	100%	100%	100%	99%	94%	77%	48%	20%	5%	1%
3-May-2023	100%	100%	100%	100%	97%	95%	82%	56%	27%	9%	2%
14-Jun-2023	100%	100%	100%	100%	95%	97%	87%	65%	38%	16%	5%
26-Jul-2023	100%	100%	100%	100%	93%	97%	88%	68%	42%	19%	6%

Values in Green = Probability Over 50%

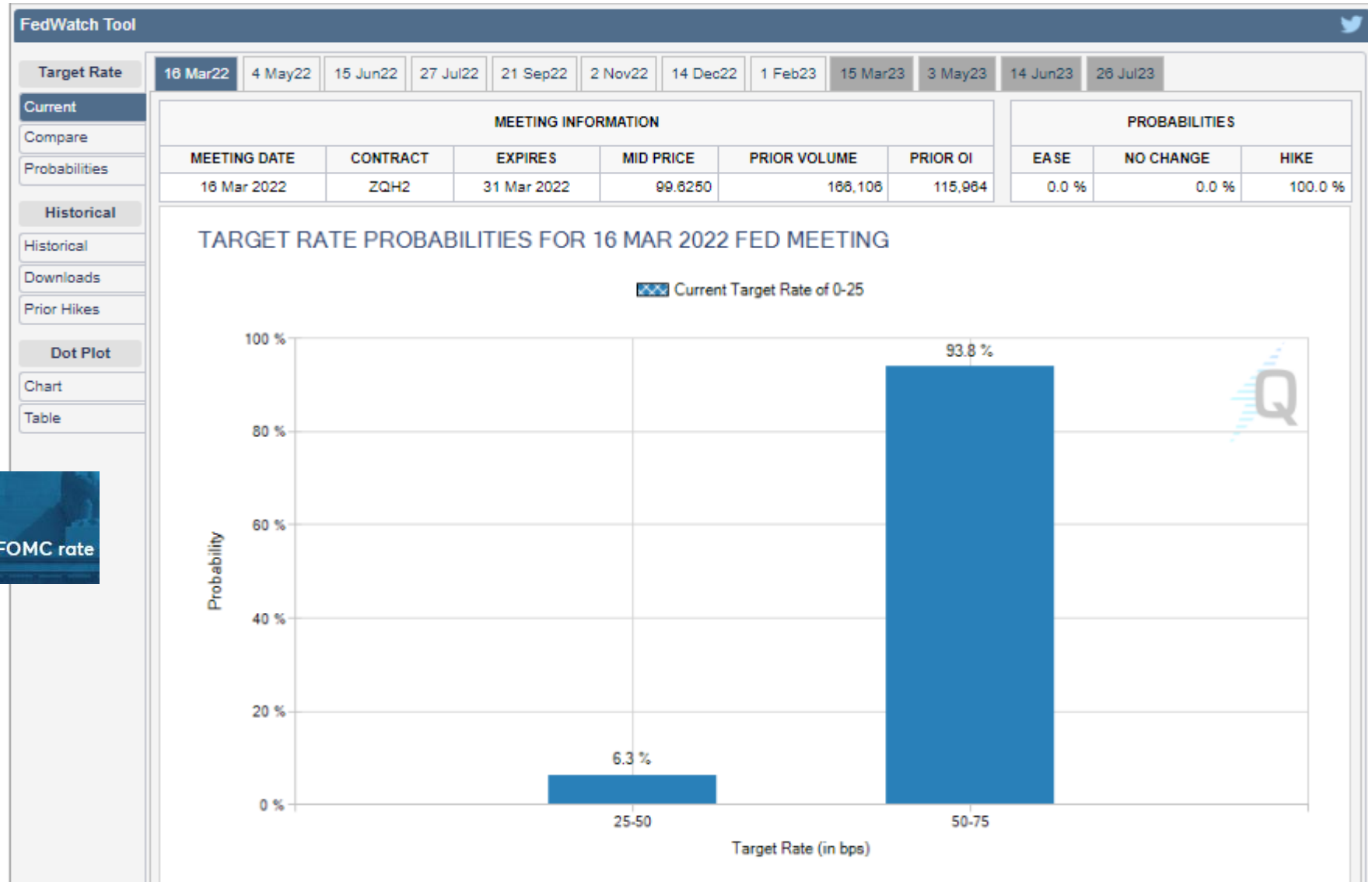
● FHN Main Street Expected Hikes

Source: CME

Fed Funds Probabilities

CME FedWatch Tool

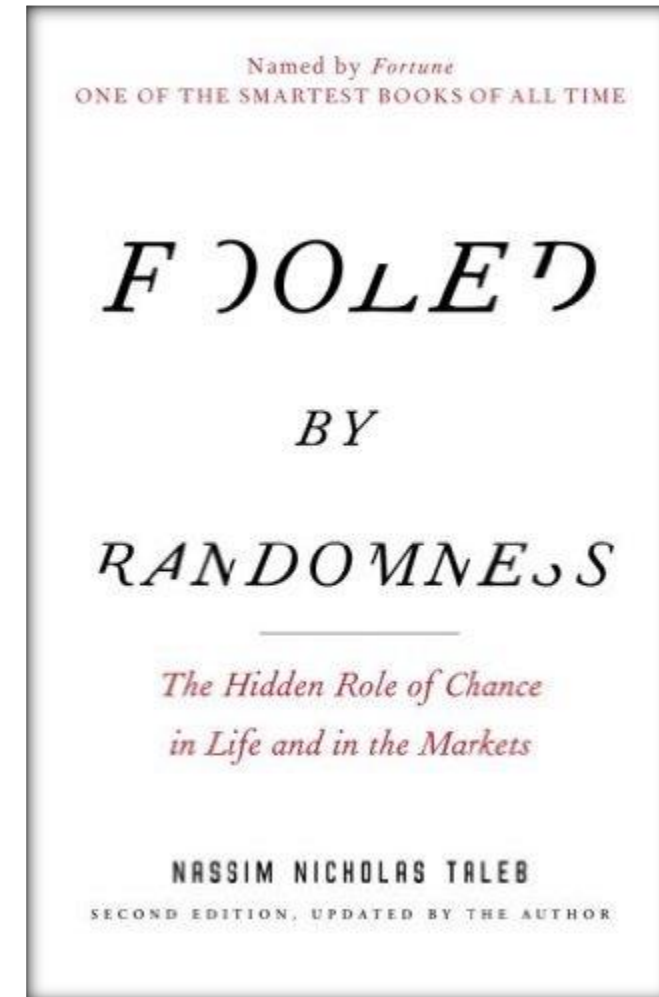
Stay up-to-date with the latest probabilities of FOMC rate moves with the CME FedWatch Tool.



Source: CME

Think You Timed the Market Well...Maybe You Were “Fooled by Randomness”

“Generate a long series of coin flips, producing heads and tails with 50% odds each and fill up sheets of paper. If the series is long enough you may get eight heads or eight tails in a row, perhaps even ten of each. Yet you know that in spite of these wins the conditional odds of getting a head or a tail is still 50%.”



Source: Fooled by Randomness, Nassim Taleb

How Long Until the Recession?

When the **10Yr/3M** U.S. Treasury Curve Inverts 10 Consecutive Trading Days

Date of 10 Day Inversion	Consecutive Trading Days Inverted	Date of Next Recession	Days to Next Recession
1/10/1969	24	Dec 1969	325
6/14/1973	177	Nov 1973	140
12/8/1978	91	Jan 1980	389
11/7/1980	102	Jul 1981	236
6/6/1989	30	Jul 1990	390
7/31/2000	135	Mar 2001	213
8/1/2006	217	Dec 2007	487
6/6/2019	41	Feb 2020	268
Average	102		306

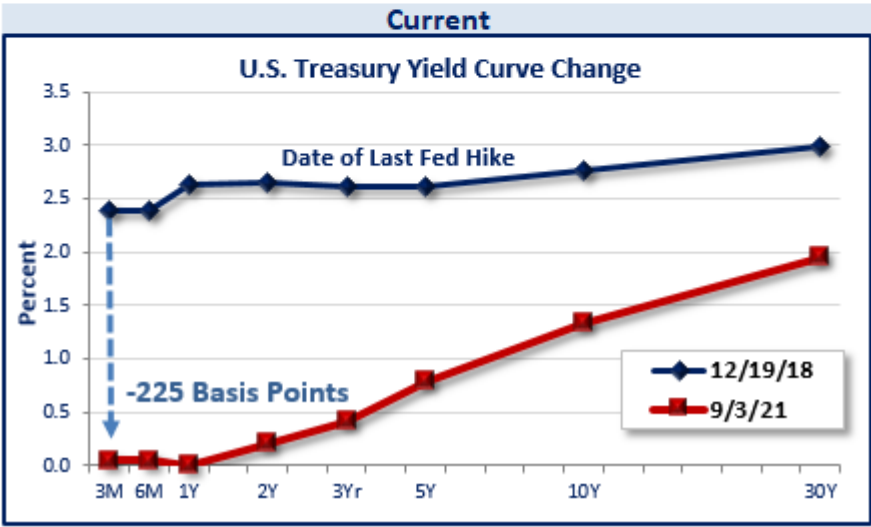
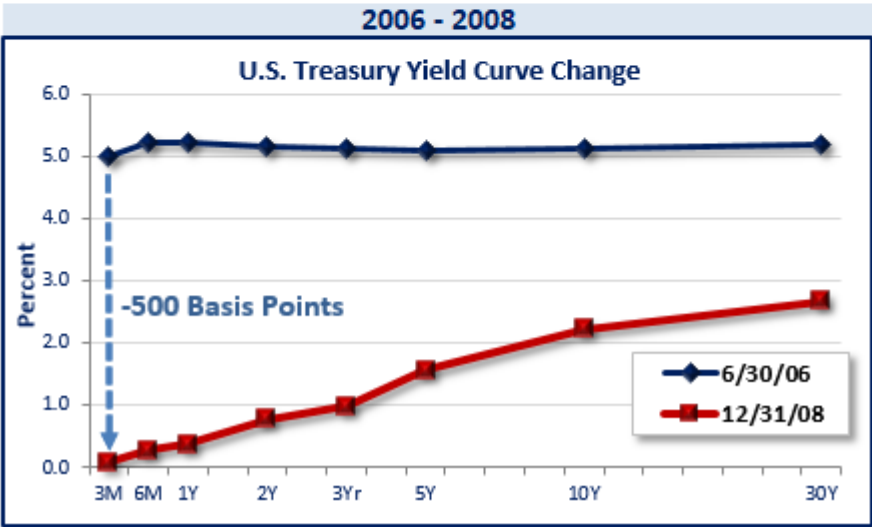
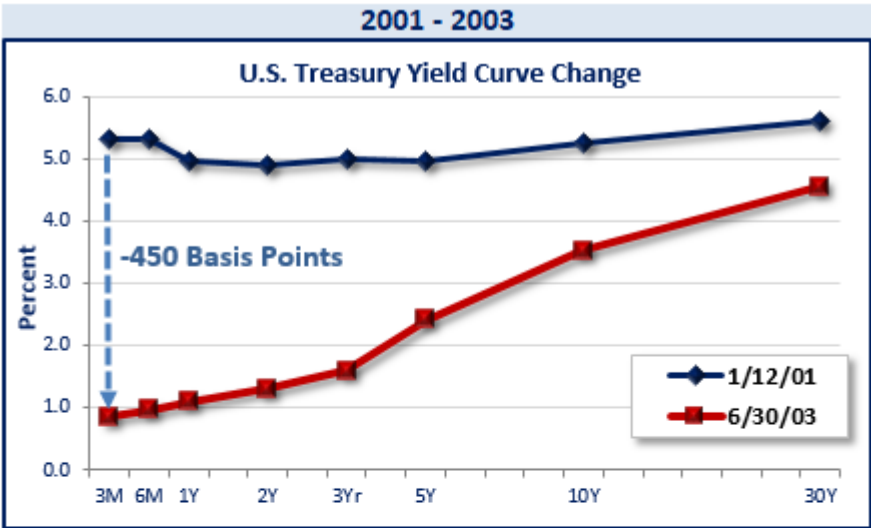
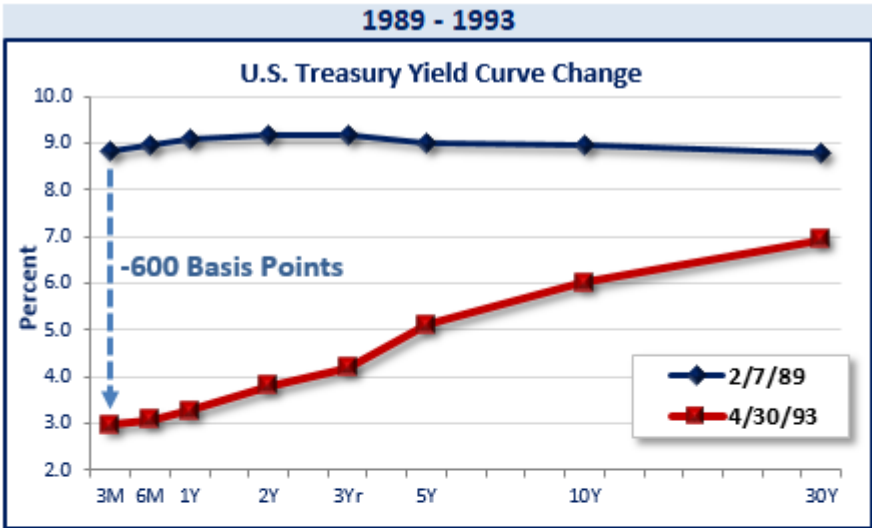
1/10/1969 = Inverted for 24 days, went positive for 33 days, then inverted again for 53 days

6/6/1989 = Inverted for 30 days, went positive for 9 days, then inverted again for 26 days

6/6/2019 = Inverted for 41 days, went positive for 1 day, then inverted again for 65 days

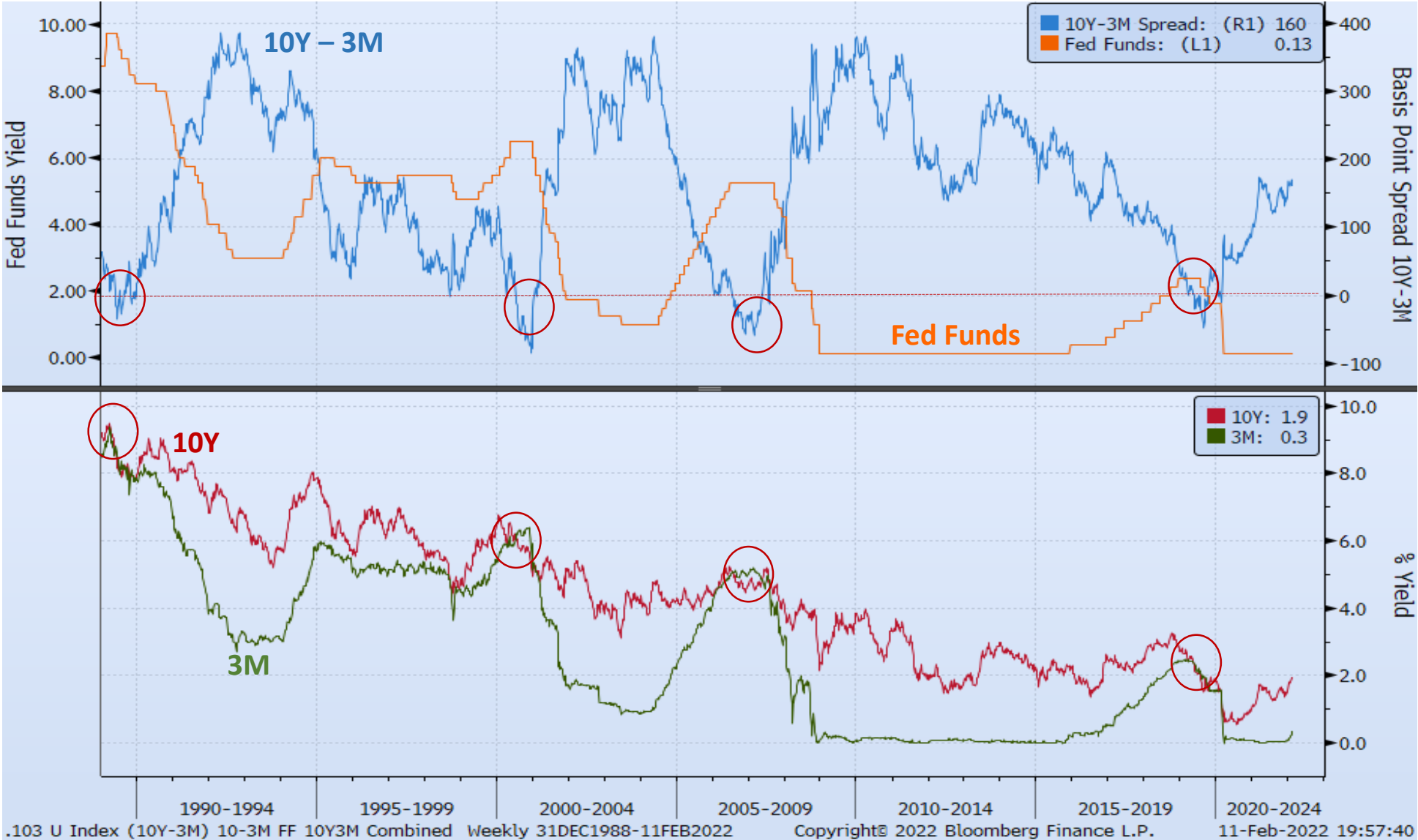


The “Yield Curve Trap”



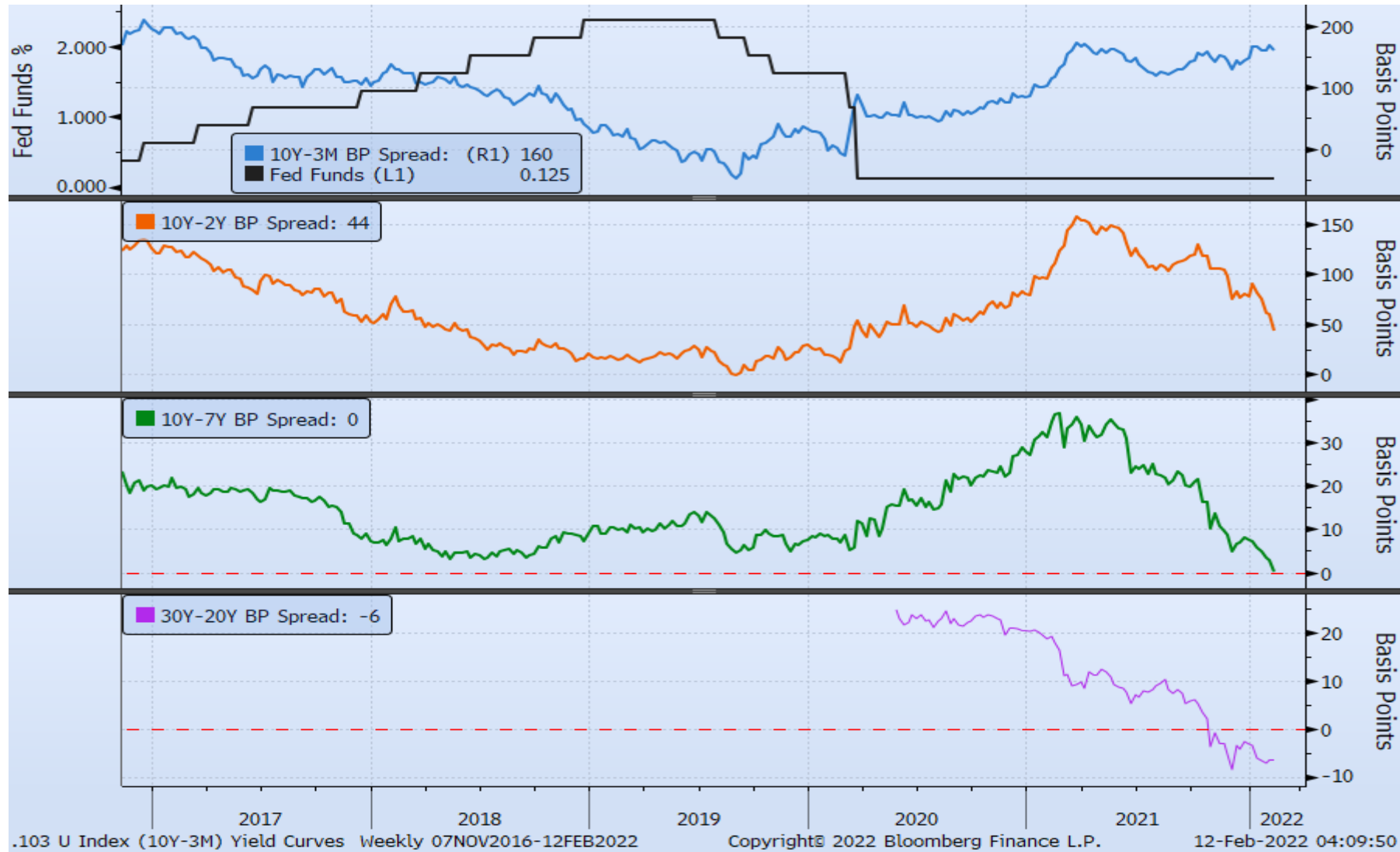
Source: Bloomberg

Yield Curve/Rates History



Source: Bloomberg

First Yield Curve “Canary in the Coal Mine”?



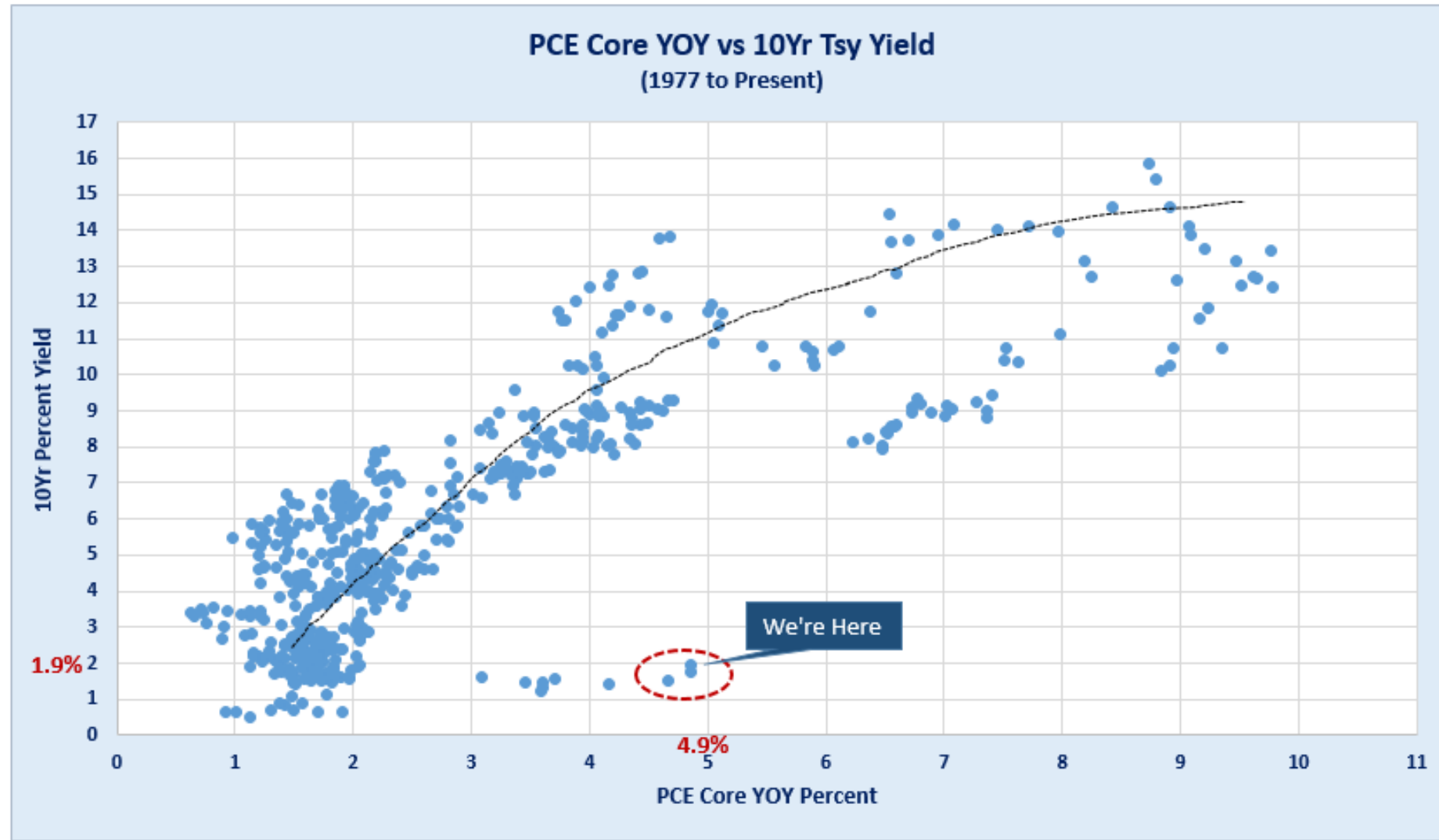
Source: Google

5 Year Treasury Long Term Trend...Will the Cycle of Lower Highs Continue?



Source: Bloomberg

“One of These Things is Not Like the Others”



Source: Bloomberg, Google

Security Type Selection for Different Strategies

Securities to Match Cash Outflows:

- Bullets
- ABS Credit Card (soft bullets)
- Floating Rate Notes

Securities to Market Time:

- Bullets
- Paydowns (ABS/MBS/SBA)
- Floating Rate Notes
- Callables
- Step-Ups/Step-Downs
- Bond Mutual Funds
- Floating NAV Funds

Limit Optionality (Callables) in the Portfolio

Effective Duration: Agency 1-5Yr Bullets vs. 1-5 Yr Callables



Source: Bloomberg

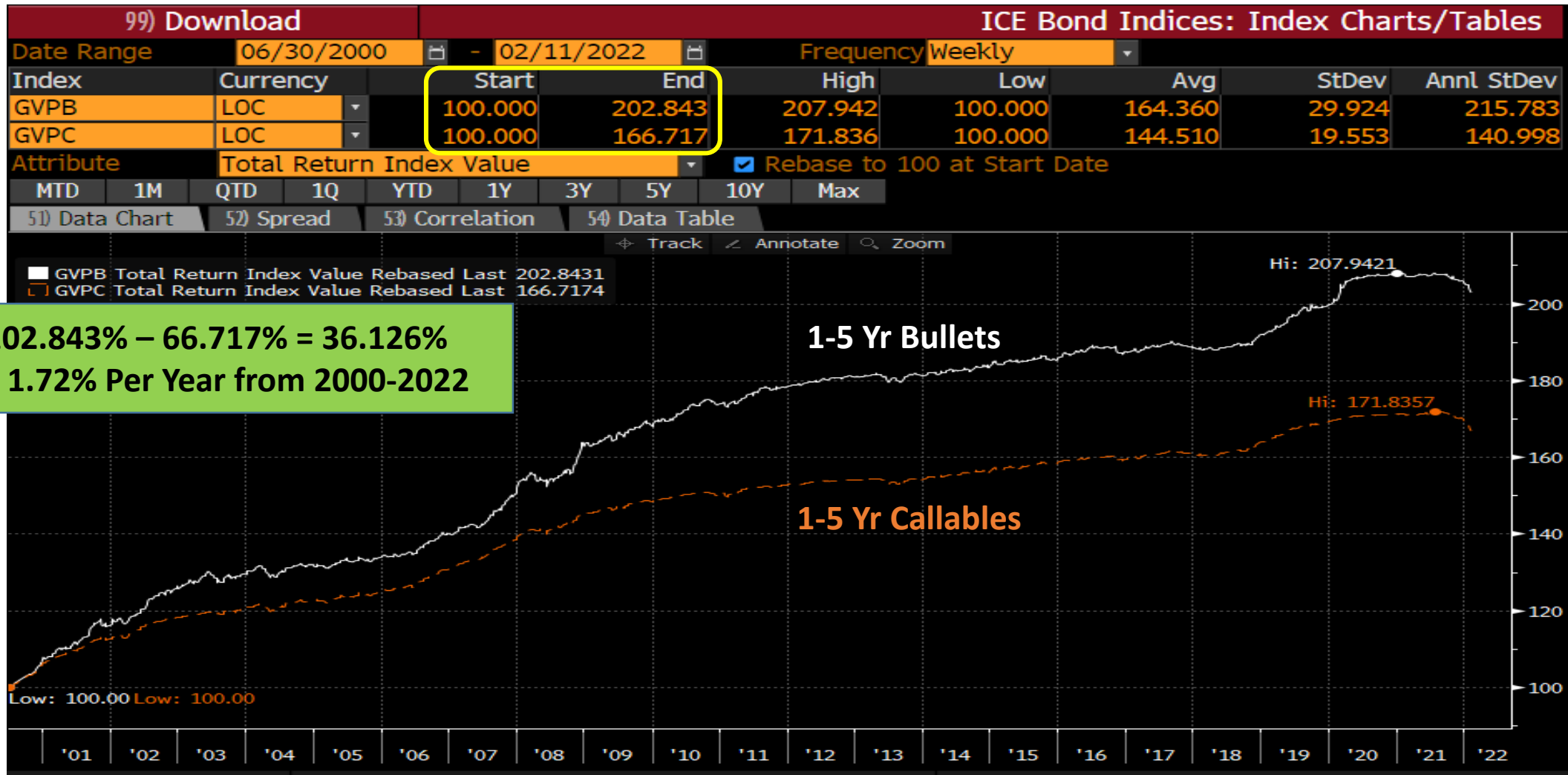
Avg Effective Duration: Bullets 2.31 Callables 1.54

Average Prices: 1-5Yr Callables vs. 1-5Yr Bullets



Source: Bloomberg

Long Run Return: Agency 1-5 Yr Bullets vs. 1-5 Yr Callables



Source: Bloomberg

Avg Effective Duration: Bullets 2.31 Callables 1.54

Total Return Comparison

1-5Yr Bullets

GVPB	99) Download	ICE
ICE BofA 1-5 Year US Bullet Agency Index		
06/30/2000	- 02/11/2022	Currency LOC 0 % Hedged
		Periodic Return Annualized Return
Total Return Factors		
Price Return (Local)	0.207	0.010
Income Return (Local)	102.636	3.314
Total Return (Local)	102.843	3.324



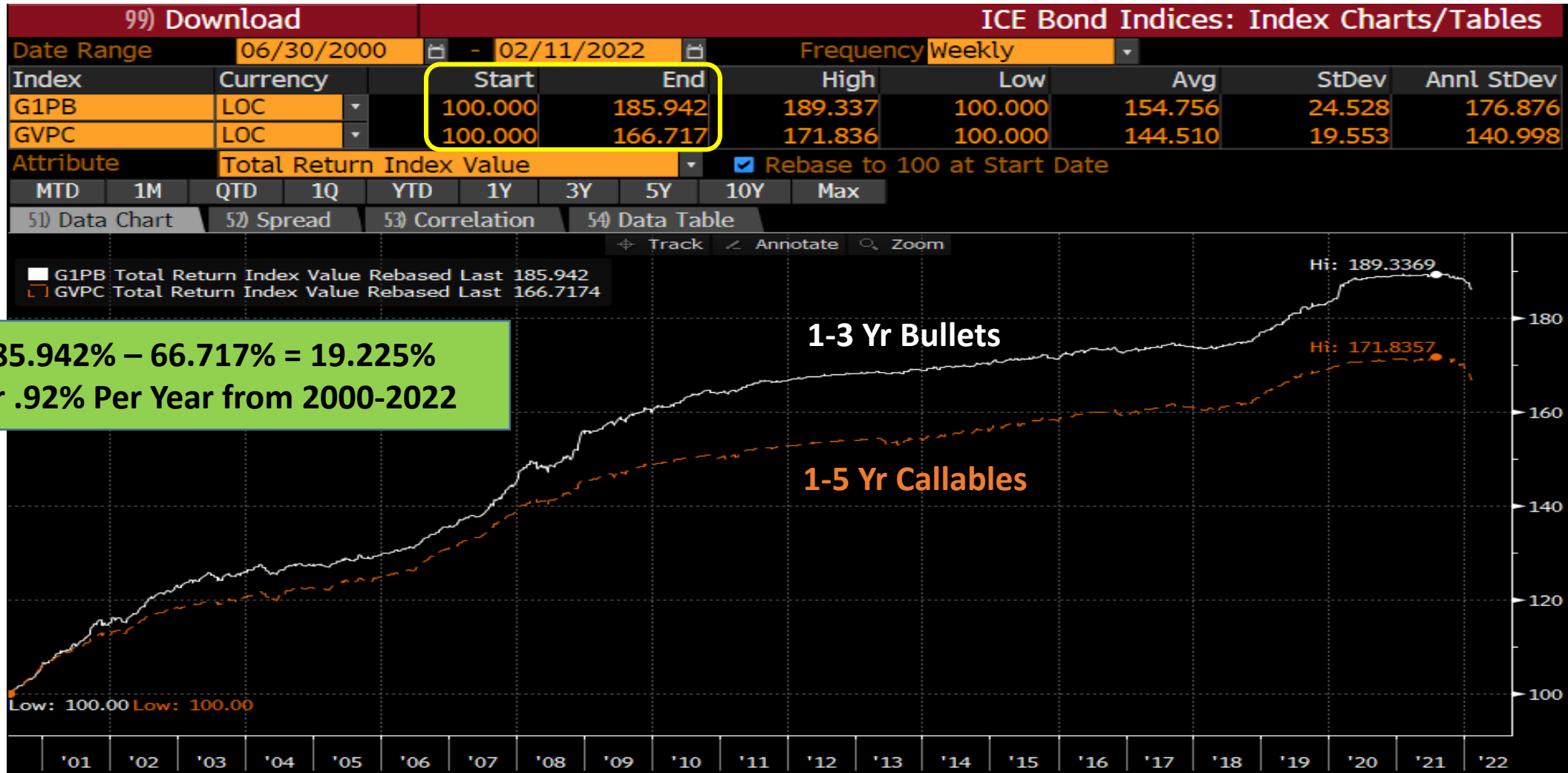
3.324% Bullets
2.391% Callables
.933%

1-5Yr Callables

GVPC	99) Download	ICE
ICE BofA 1-5 Year US Non-Bullet Agency Index		
06/30/2000	- 02/11/2022	Currency LOC 0 % Hedged
		Periodic Return Annualized Return
Total Return Factors		
Price Return (Local)	-1.346	-0.063
Income Return (Local)	68.063	2.454
Total Return (Local)	66.717	2.391

Source: Bloomberg

Long Run Return: Agency 1-3 Yr Bullets vs. 1-5 Yr Callables



85.942% – 66.717% = 19.225%
Or .92% Per Year from 2000-2022

Avg Effective Duration: Bullets 1.78 Callables 1.54

Source: Bloomberg

Step-Ups

95) Actions ▾	96) Alerts ▾	97) Summary	98) Set Homepage	99) Export ▾	New Issue Monitor			
Selection	*NIM2-Agency (NIM2) ▾		1) Show Filters	2) Clear Filters	Issues	▾		
<input checked="" type="radio"/> Real Time	<input type="radio"/> Issue History	Date Range	01/11/22 📅	-	02/11/22 📅	6) Prelim Bonds PREL		
Date ↓	Issuer	Coupon	Maturity	Spread	Curr	Outst	Book Mgr	Note
		Step ▾	All ▾	All ▾	US ▾	All ▾		
101) 15:38	FED HOME LN BANK	STEP	02/28/25		USD	65	JOINT LEADS	3-NC1 BERINC
102) 11:48	FED HOME LN BANK	STEP	02/28/24		USD	10	MTBK-sole	2-NC1 1X
103) 11:06	FED HOME LN BANK	STEP	02/27/26		USD	15	BOSC,DW	4-NC1 1X
104) 2/10	FED HOME LN BANK	STEP	02/28/25		USD	25	MIZ-sole	3-NC1 1X
105) 2/10	FED HOME LN BANK	STEP	08/28/24		USD	15	JOINT LEADS	2.5-NC1 1X
106) 2/10	FED HOME LN BANK	STEP	02/28/25		USD	15	JOINT LEADS	3-NC1 1X
107) 2/9	FED HOME LN BANK	STEP	02/24/27		USD	25	FHN-sole	5-NC1 BERM
108) 2/9	FED HOME LN BANK	STEP	02/28/25		USD	45	BOSC,CCB,DW	3-NC1 BERINC
109) 2/9	FED HOME LN BANK	STEP	02/25/27		USD	25	HUNSEC,MTBK	5-NC3MO INC

Source: Bloomberg

1 Time Step-Up Callable vs. Bullet

4Y Tsy T 0 1/2 02/28/26 ↑94-25+ + 11 1/4 94-23 1/4 /94-25+ 1.861 /1.843

4Y Step-Up

FHLB 1 1/2 02/27/26 (3130AQYW7)				Coupon Schedule		
Spread	40.890 bp	vs	T 0 1/2 02/28/26	Rate(%)	Start	End
Price	100.0000	↻	94-25+ 21:00:53	1.500	02/28/2022	02/27/2023
Yield	2.2517 Mty		1.8428 S/A	2.500	02/27/2023	02/27/2026

3Y Tsy T 1 3/8 01/31/25 ↑99-02 1/4 + 08+ 98-31 1/4 /99-02 1/4 1.731 /1.698

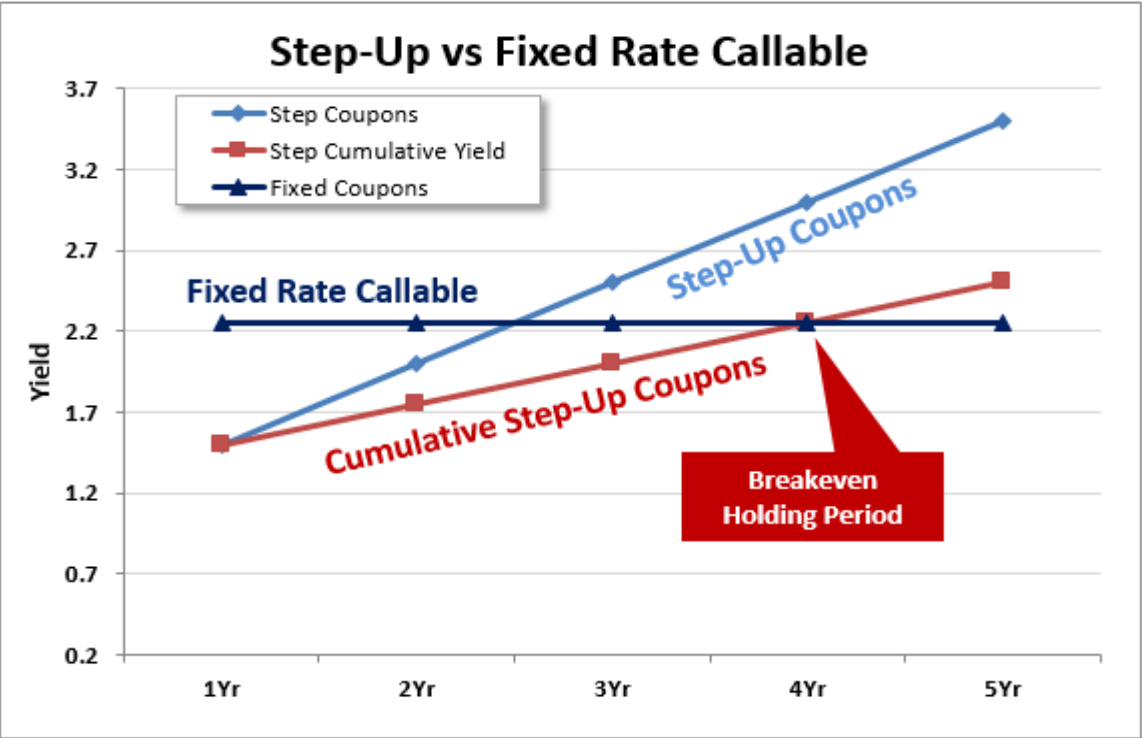
Breakeven: 2.50% (Step Coupon) – 1.698% (3 Year Treasury) = .80% Higher In One Year from Now

Source: Bloomberg

5 Year Agency Step-Up Breakeven Analysis

Coupons			
Coupon Information			
Issue Date	02/25/2022	First Coupon	Normal
1st Coupon Date	08/25/2022	Last Coupon	Normal
Observation Index	N/A	Paying Index	N/A
	Coupon	End Date	
Step-Up's Coupons >	1.500	02/25/2023	
	2.000	02/25/2024	
	2.500	02/25/2025	
	3.000	02/25/2026	
	3.500	02/25/2027	

Step Up Analysis - 5yr Annual Steps				
Time	Step Cpns	SU Cumltv Cpn	Fixed Coupons	Var
1Yr	1.500	1.500	2.250	(0.750)
2Yr	2.000	1.750	2.250	(0.500)
3Yr	2.500	2.000	2.250	(0.250)
4Yr	3.000	2.250	2.250	0.000
5Yr	3.500	2.500	2.250	0.250



Source: Bloomberg, FHN Main Street

Floaters

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

New Issue Monitor

Selection *NIM2-Agency (NIM2) ▾ 1) Show Filters 2) Clear Filters Issues ▾

Real Time

Issue History

Date Range

01/11/22📅 - 02/11/22📅

6) Prelim Bonds | PREL

	Date ↓	Issuer	Coupon	Maturity	Spread	Curr	Outst	Book Mgr	Note
			Float ▾	All ▾	All ▾	US ▾	All ▾		
102)	2/9	FARMER MAC	FRN	08/18/22		USD	100	CASOAK-sole	INCREASE
103)	2/8	FED FARM CREDIT	FRN	02/14/25		USD	100	JOINT LEADS	3-NC
104)	2/4	FARMER MAC	FRN	02/14/29		USD	5	CASOAK-sole	7-NC
105)	2/4	FED FARM CREDIT	FRN	02/09/24		USD	550	JOINT LEADS	2-NC
106)	2/2	FED HOME LN BANK	FRN	04/29/22		USD	500	ACADSE-sole	3MO-NC
107)	2/1	FED HOME LN BANK	FRN	06/24/22		USD	301.5	JOINT LEADS	5MO-NC
108)	2/1	FED HOME LN BANK	FRN	06/30/22		USD	1000	JOINT LEADS	5MO-NC
109)	1/21	FARMER MAC	FRN	02/02/28		USD	5	VS-sole	6-NC
110)	1/21	FED FARM CREDIT	FRN	01/29/24		USD	325	TDSEC-sole	2-NC
111)	1/20	FARMER MAC	FRN	01/28/30		USD	5	PIPR-sole	8-NC
112)	1/20	FARMER MAC	FRN	01/28/31		USD	5	PIPR-sole	9-NC
113)	1/20	FED FARM CREDIT	FRN	01/26/24		USD	100	ACADSE,MIZ	2-NC

Source: Bloomberg

Floater Details: 2 Year

FFCB Float 01/29/24 Cor Actions Settings Page 12/12 Security Description: Bond

Data not provided by Bloomberg... 94) No Notes 95) Buy 96) Sell

25) Bond Description 26) Issuer Description

Pages
11) Bond Info
12) Addtl Info
13) Reg/Tax
14) Covenants
15) Guarantors
16) Bond Ratings
17) Identifiers
18) Exchanges
19) Inv Parties
20) Fees, Restrict
21) Schedules
22) Coupons
Quick Links
32) ALLQ Pricing
33) QRD Qt Recap
34) TDH Trade Hist
35) CACS Corp Action
36) CF Prospectus
37) CN Sec News

Coupons
Coupon Information
Benchmark USBMMY3M
Fix Frequency Daily
Paying Agent
Pay Calendars US
Refix Calendars FD
First Irreg Cpn Long First
Last Irreg Cpn Normal
Benchmark Freq QUARTLY
Next Coupon Date 04/29/2022
Prev Coupon Date 01/28/2022
Cap NaN Floor 0
Margin -1.5 Reset Days Prior 1
Current Coupon .27521 Lockout 4
Cpn Conv Mod-Unadj Cpn Freq Quarterly
Table View Chart View
Past Coupon Resets

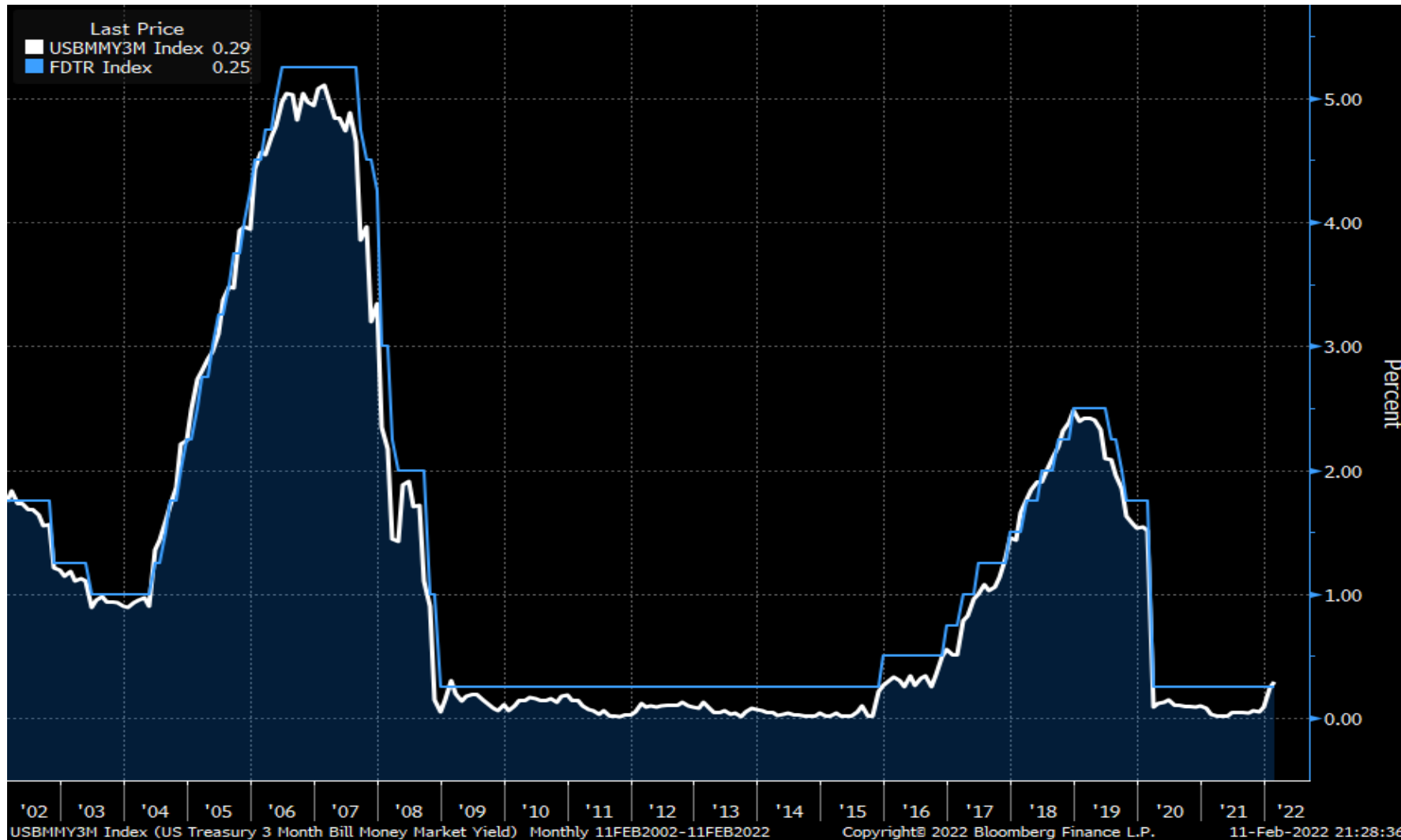
Accrual Start	Rate
02/15/2022	
02/08/2022	0.275212
02/01/2022	0.225146
01/28/2022	0.175091

Margin History

Date	Margin

Source: Bloomberg

USBMMY3M (US Treasury 3 Month Bill) vs. Fed Funds



**Floater Current
Coupon
.27%**

**2 Year Bullet
Current Coupon
1.50%**

**How Fast Do
Rates Need to
Climb to Breakeven?**

Source: Bloomberg



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About the GASB

Established in 1984, the GASB is the independent, private-sector organization based in Norwalk, Connecticut, that establishes accounting and financial reporting standards for U.S. state and local governments that follow Generally Accepted Accounting Principles (GAAP). >> [More](#)

Source: GASB

Pros and Cons of Amortizing

Buy/Sell Issue Audit Trail	Buy FNDN 0 07/01/19	Cusip Broker	313588HP3		
DlrFutBrkr	--				
Quantity	10,000,000	Disc Rate	1.0000	Principal	\$ 9,900,000.00
Price	99.0000	Yield	1.0216	Acc Int	0.00
Settle Date	07/01/2018	Spread		Net	9,900,000.00

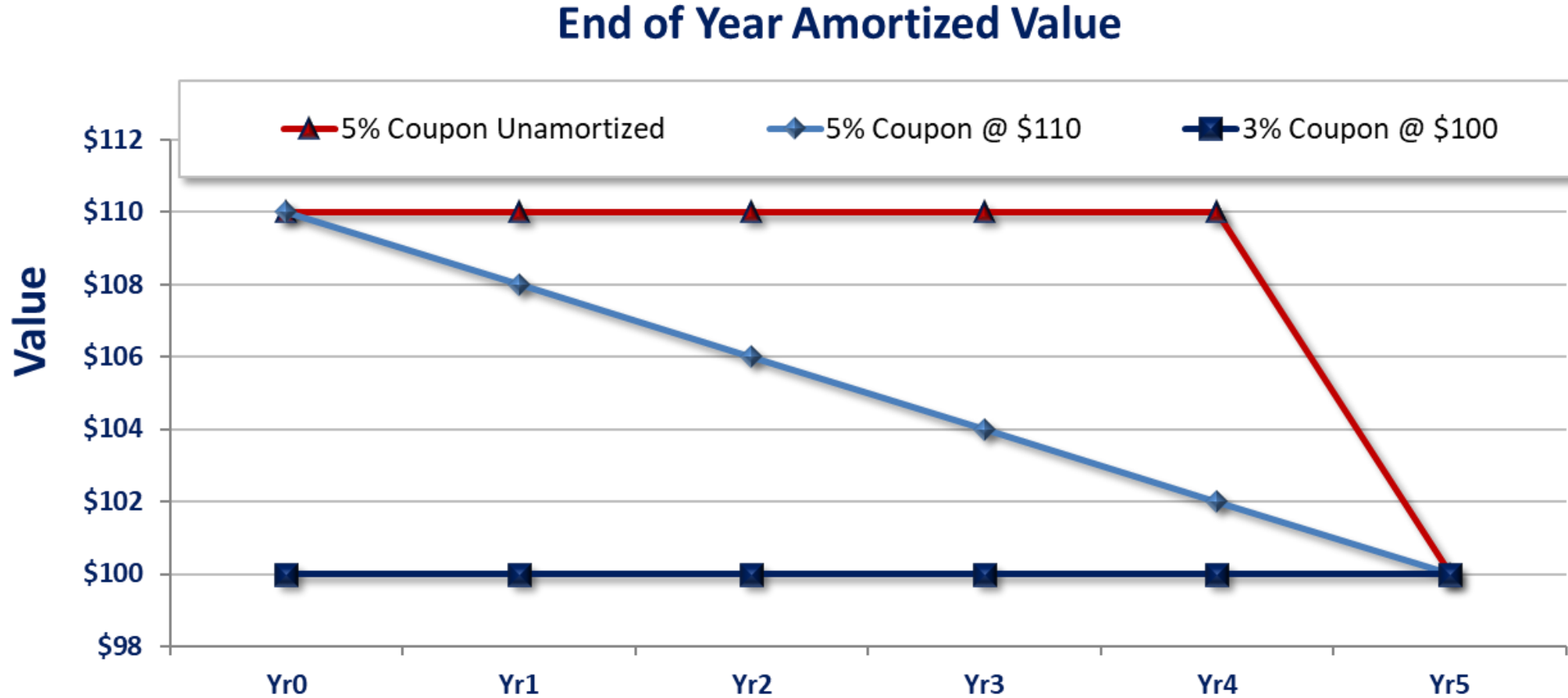
If you are not amortizing, when will you recognize the \$100,000 gain (income)?



- ❑ Involves More Work: Monthly Journal Entries
- ❑ Custodians' Amortization Methodology May Not Match Your Investment Accounting System

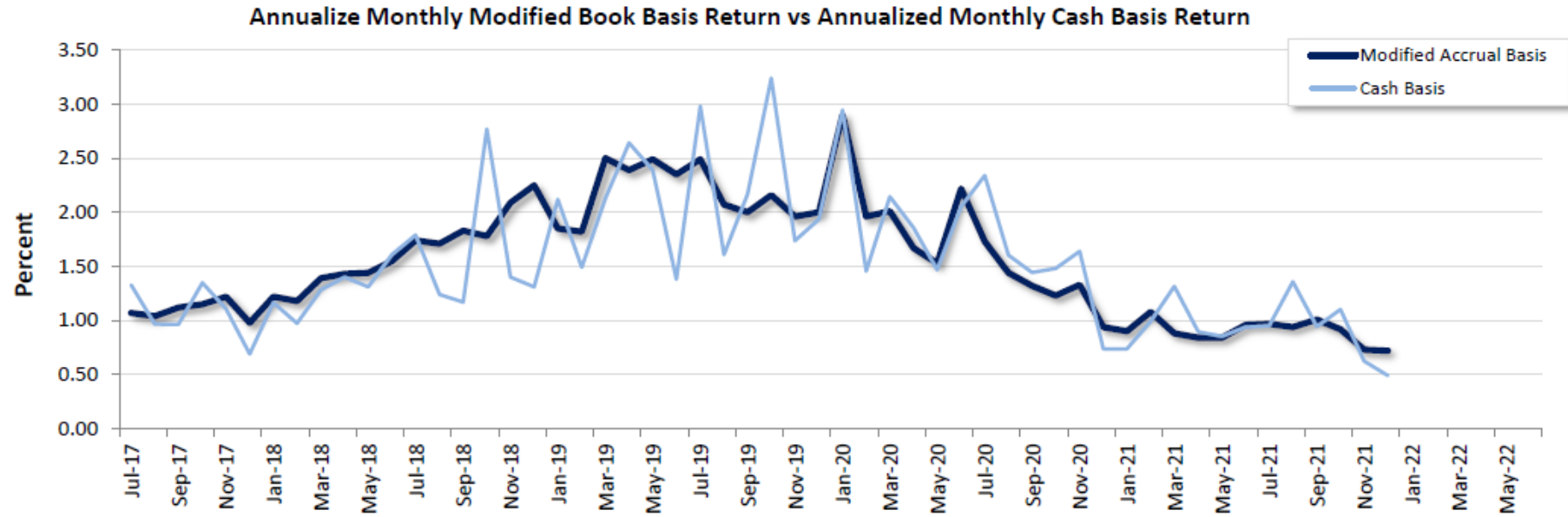
Source: Bloomberg

Not Amortizing: Overstating Income...Then a Big “Loss”



Source: Bloomberg

Cash Income vs. Accrual Income



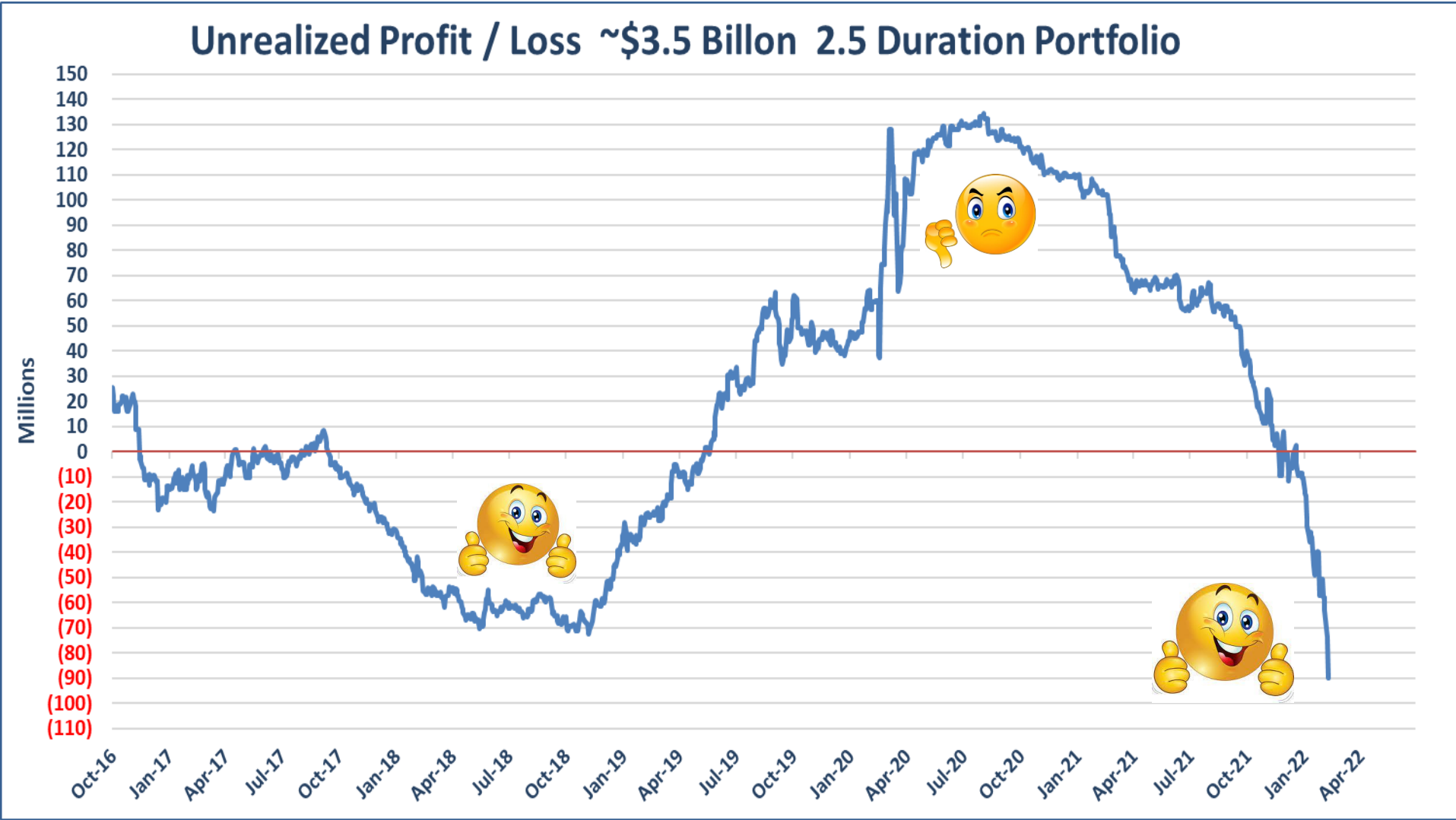
Cash Basis Return	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Fiscal Year 2020	2.98	1.61	2.17	3.24	1.74	1.94	2.94	1.46	2.01	1.86	1.47	2.05
Fiscal Year 2021	2.34	1.60	1.44	1.48	1.64	0.74	0.74	0.99	1.32	0.90	0.85	0.94
Fiscal Year 2022	0.95	1.36	0.94	1.10	0.63	0.49						

Accrual Basis Return	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Fiscal Year 2020	2.49	2.07	2.00	2.16	1.96	2.00	2.90	1.96	2.14	1.67	1.53	2.22
Fiscal Year 2021	1.73	1.44	1.32	1.23	1.33	0.94	0.90	1.08	0.88	0.84	0.84	0.96
Fiscal Year 2022	0.97	0.94	1.01	0.92	0.73	0.72						

Cash vs. Accrual	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Fiscal Year 2020	0.49	(0.46)	0.17	1.08	(0.22)	(0.06)	0.04	(0.51)	(0.13)	0.19	(0.06)	(0.17)
Fiscal Year 2021	0.61	0.16	0.12	0.25	0.31	(0.20)	(0.16)	(0.09)	0.44	0.06	0.01	(0.02)
Fiscal Year 2022	(0.02)	0.42	(0.07)	0.18	(0.10)	(0.23)						

Source: FHN Main Street

Do Not Let GASB 31 (mark-to-market) Drive Investment Decisions



Source: FHN Main Street

GIOA Model Investment Policy

1. **Safety of Principal:** Safety of principal is the foremost objective of the [entity's] investment program. Investments by the [designated official] shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. To attain this objective, diversification of security types, sectors, issuers, and maturities is necessary in order that potential losses on individual securities do not exceed the income generated from the remainder of the portfolio.
2. **Liquidity:** The investment portfolio shall be structured to timely meet expected cash outflow needs and associated obligations which might be reasonably anticipated. This objective shall be achieved by matching investment maturities with forecasted cash outflows and maintaining an additional liquidity buffer for unexpected liabilities.
3. **Investment Income:** The investment portfolio shall be designed to earn a market rate of investment income in relation to prevailing budgetary and economic cycles, while taking into account investment risk constraints and liquidity needs of the portfolio.

CFA Institute: Characteristics of Useful Performance Benchmarks

A benchmark is a collection of securities or risk factors and associated weights that represents the persistent and prominent investment characteristics of a manager's investment process. A benchmark should be:

- Unambiguous: The identities and weights of securities constituting the benchmark are clearly defined.
- Investable: It is possible to forgo active management and simply hold the benchmark.
- Measurable: The benchmark's return is readily calculable on a reasonably frequent basis.
- Appropriate: The benchmark is consistent with the manager's investment style and sectors.
- Specified in Advance: The benchmark is specified prior to the start of an evaluation period and known to all interested parties.

“The failure of a benchmark to possess these properties compromises its utility as an effective investment management tool. The properties listed merely formalize intuitive notions of what constitutes a fair and relevant performance comparison. It is interesting to observe that a number of commonly used benchmarks fail to satisfy these properties.” CFA Institute

Source: CFA Institute

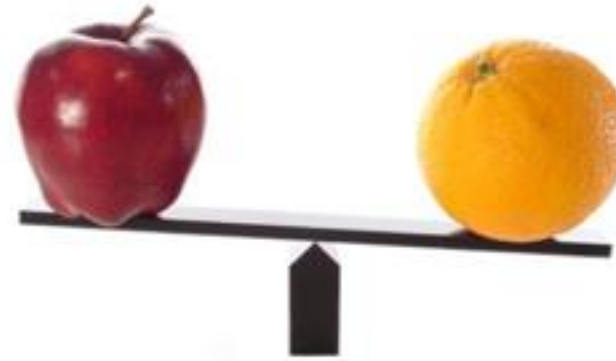
Important Benchmark Characteristics

To Be Relevant, Benchmarks Should Reflect the General Characteristics of a Portfolio's:

- Sector Allocations
- Duration/Maturity
- Turnover

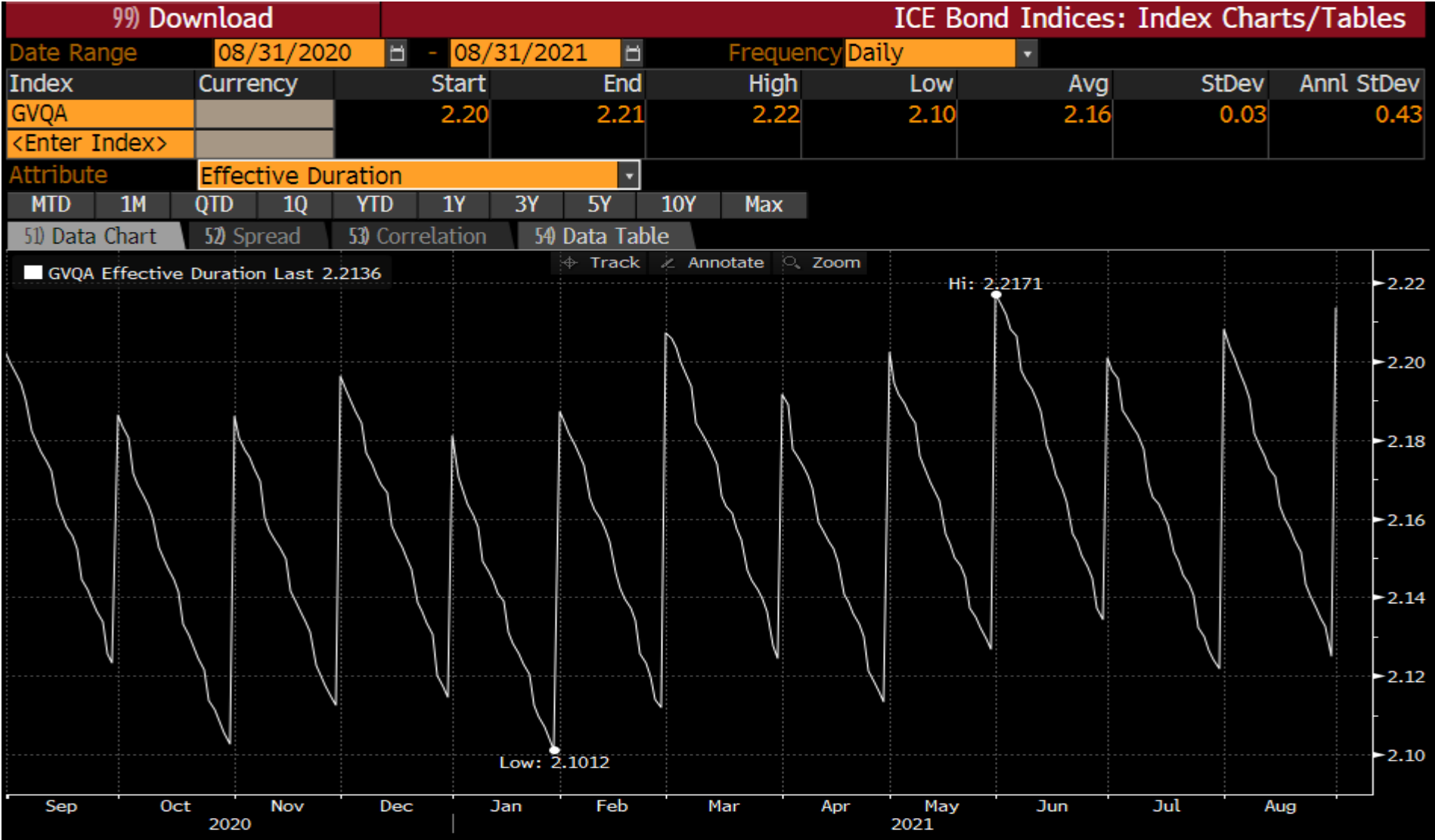
Three Types of Benchmarking:

- Weighted Yield
- Book Rate of Return
- Total Rate of Return



Source: FHN Main Street, Google

Yield Benchmark: 0-5 Year Treasury Notes/Bonds Index Effective Duration

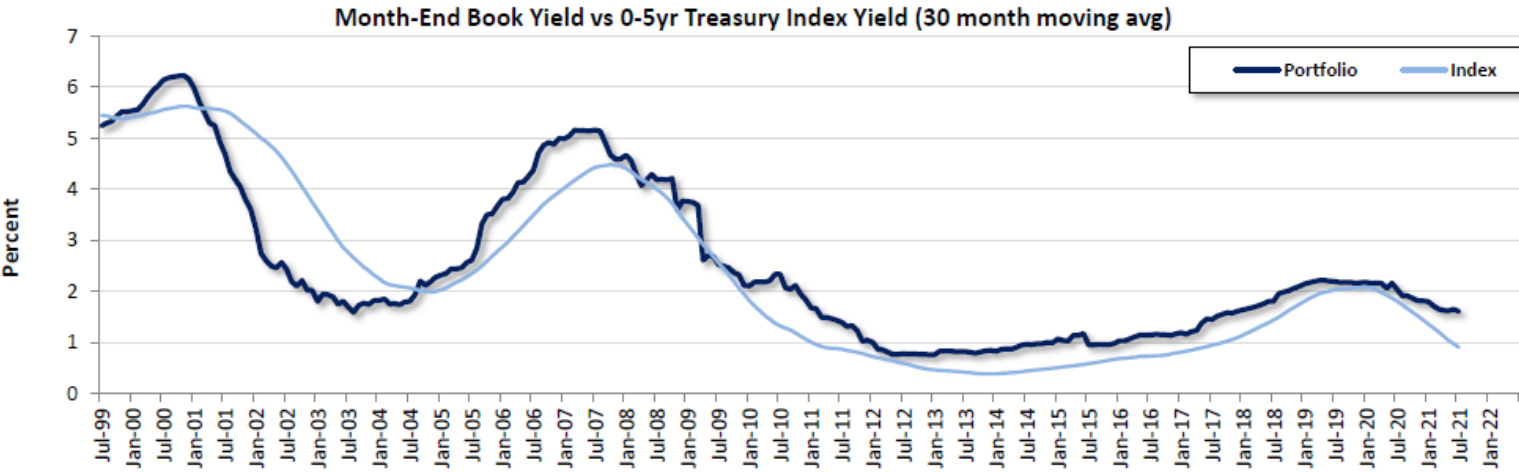
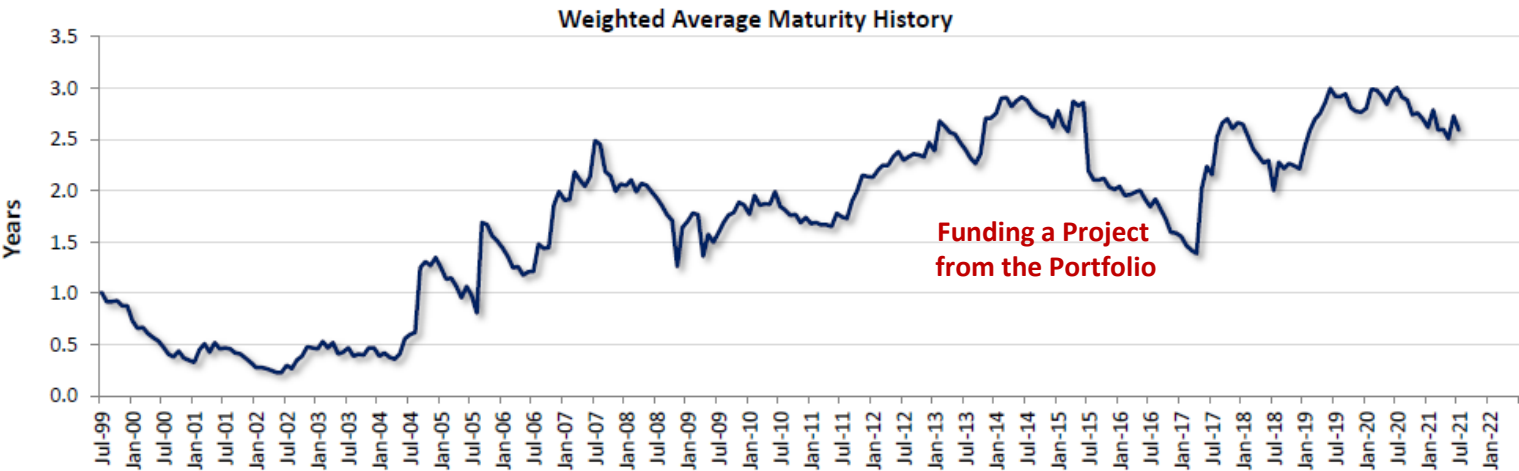


Source: Bloomberg

Yield Benchmark Characteristics

Weighted Average Maturity and Aging Report

7/31/2021



Source: FHN Main Street



ICE BofAML Index: 0-5yr Treasury Index



Performance Benchmarking

$$\text{Book Return} = \frac{\begin{aligned} &+ \text{Accrued/Received Interest} \\ &+/- \text{Amortization/Accretion or Premiums/Discounts} \\ &+/- \text{Realized Gains/Losses} \end{aligned}}{\text{Average Daily Book Balance for the Period}}$$



The Budget

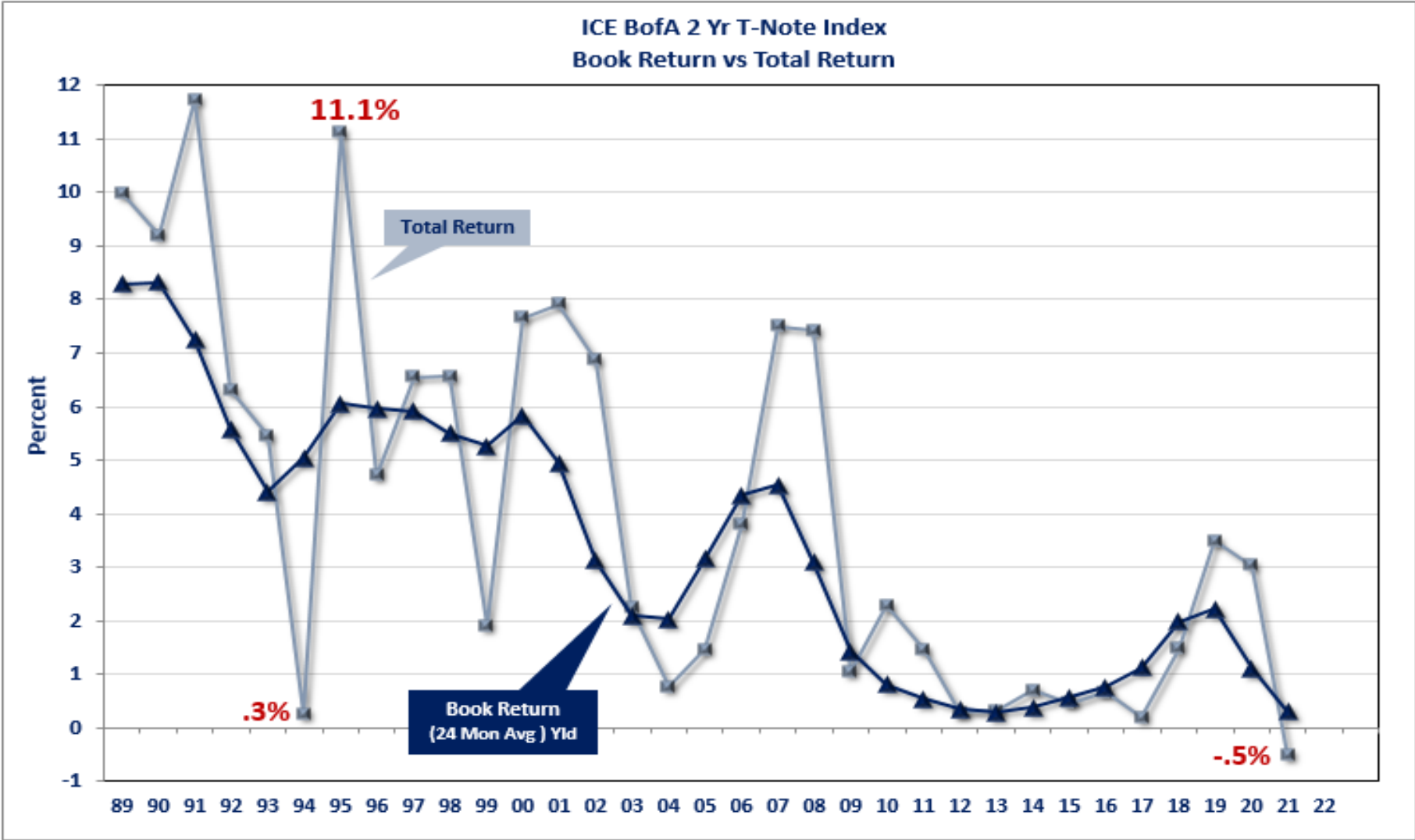
$$\text{Total Return} = \frac{\begin{aligned} &+ \text{Accrued/Received Interest} \\ &+/- \text{Realized Gains/Losses} \\ &+/- \text{Unrealized Gains/Losses} \end{aligned}}{\text{Time Weighted Invested Market Value for the Period}}$$



GASB 31

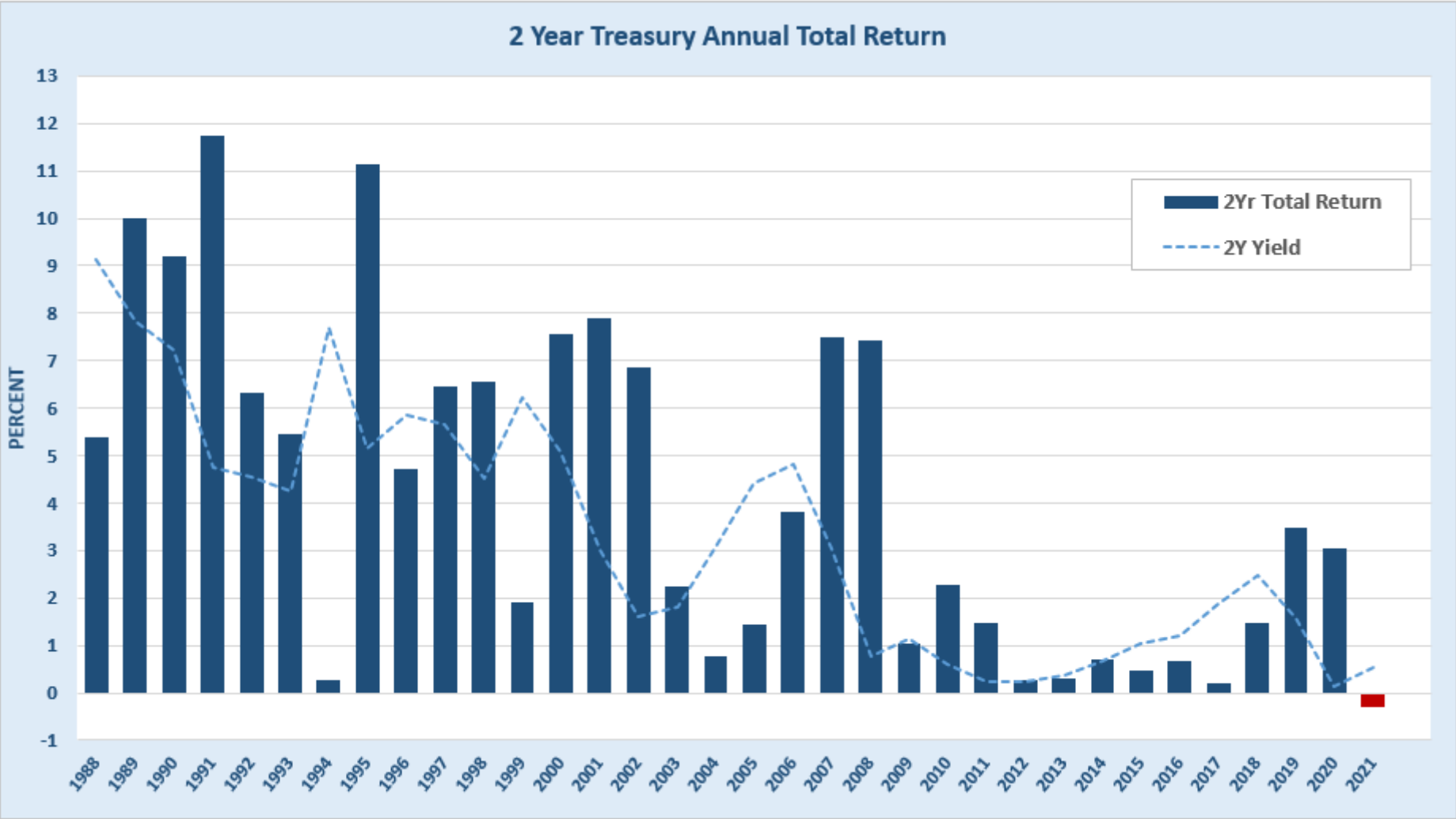
Source: Google, FHN Main Street

Book Return vs. Total Return



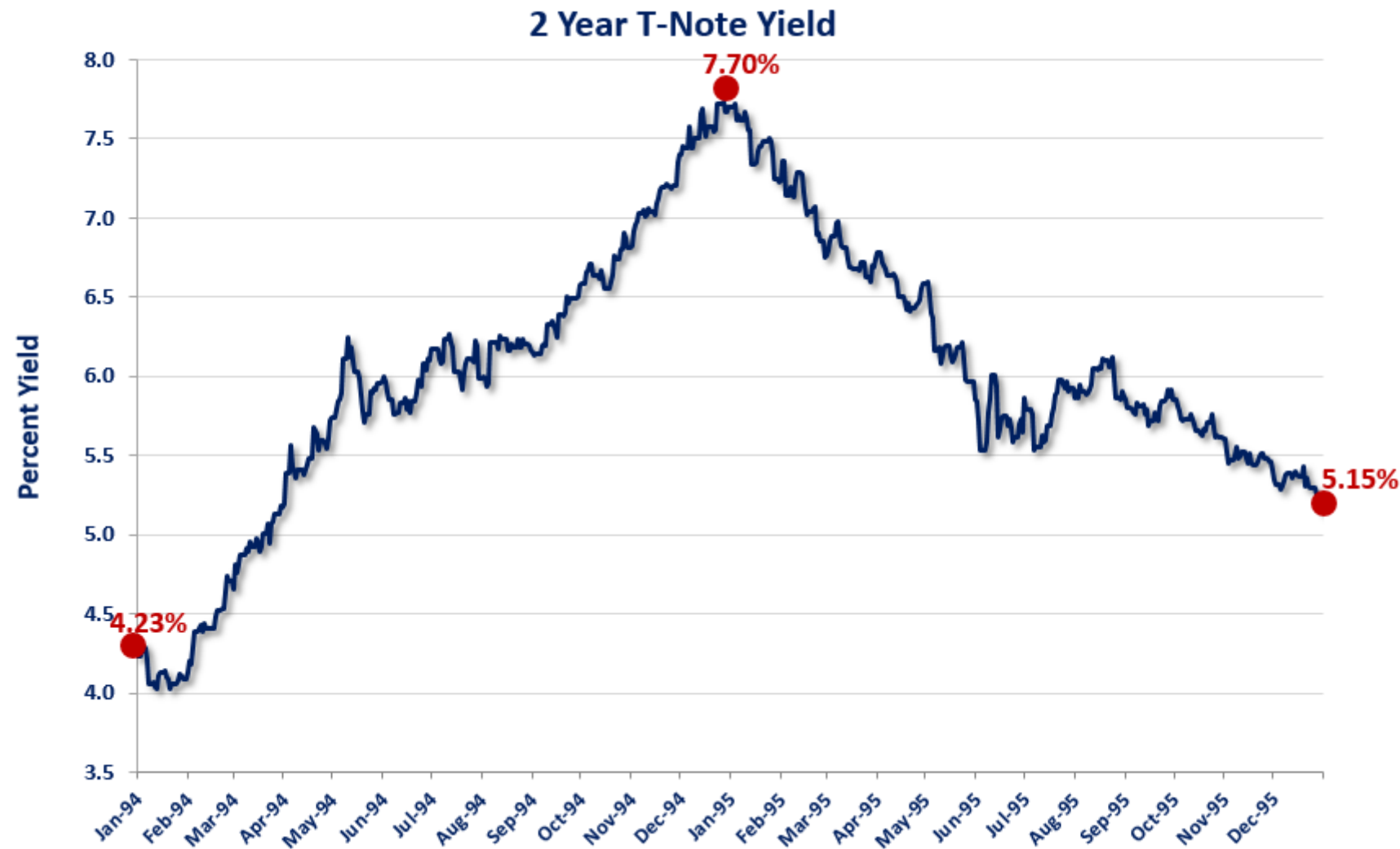
Source: Bloomberg

2 Year Treasury Yield and Total Return



Source: Bloomberg

Interest Rate Volatility



Source: Bloomberg

Over the Long Run...Book Return and Total Return Are Basically the Same

GVQA	99) Download	ICE Bond Indices: Flexible Returns			
ICE BofA 0-5 Year US Treasury Index	Inception Date		06/30/1992		
06/30/1992	-	01/31/2022	Currency	LOC	0 % Hedged
			Periodic Return	Annualized Return	
Total Return Factors			% of Total Return		
Price Return (Local)			-10.191	-0.362	-10%
Income Return (Local)			186.480	3.855	110%
Total Return (Local)			176.289	3.492	100%

Source: Bloomberg

Tell Your Story: Investment Reporting

"When performance is measured, performance improves. When performance is measured and reported, the rate of improvement accelerates." Thomas S. Monson



Your Investment Report Should Be on Your Website

Source: Google

Reporting Considerations

- **Know Your Audiences:**
 - Governing Body
 - Management
 - Auditors
 - Rating Agencies
 - GASB (CAFR now ACFR)
 - Peers
 - Taxpayers
- **Be Completely Transparent**
- **Keep it Simple – Charts/Graphs/Tables**
- **Provide Details to the Appropriate Audiences**
- **Demonstrate How the Investment Portfolio is Meeting Objectives (S, L, I)**

Source: FHN Main Street

GIOA Model Investment Policy: Items to Include in Reports

27. Investment Program Reporting

The [designated official] shall prepare a monthly (GIOA best practice is monthly, but no less than quarterly) investment report, which provides an analysis of the investment program. The report will be placed on the [entity's] website (also, a GIOA best practice). All funds overseen by the [designated official] are accounted for in the [entity's] Comprehensive Annual Financial Report.

The investment report shall include at least all of the following (examples below):

- Portfolio Summary: Weighted average maturity, weighted average book yield, asset allocation by type, maturity distribution, and aggregate book and market values
- Individual Investments: Issuer, CUSIP or identifier, purchase date, maturity date, purchase yield, par value, book value, market value, credit rating
- Compliance Matrix: Stating the compliance or non-compliance of investments or parameters
- Investment Income: A listing of investment income for the reporting period
- Performance Information: Yield comparisons, book return, total return, etc.
- Transaction Information: A listing of the period's transactions.

The [designated official] shall also maintain records, subject to audit, of all investment transactions including the names of all obligors, descriptions of all securities purchased and sold (including dates of issue, acquisition and maturity, coupon, price, yield, and gain or loss on ultimate disposition), name of the broker/dealer involved in each transaction, custodian of each security, and the sale or maturity of each security.

The [entity] will comply with any arbitrage reporting requirements as set forth in all applicable federal, state, and local laws. Additionally, the [entity] will comply with all Government Accounting Standards Board (GASB) requirements and appropriate Generally Accepted Accounting Principles (GAAP).

Source: GIOA

Reporting Examples

POOLED INVESTMENTS AT DECEMBER 31, 2021 - SUMMARY & STATISTICS

City of San Diego
Office of the City Treasurer



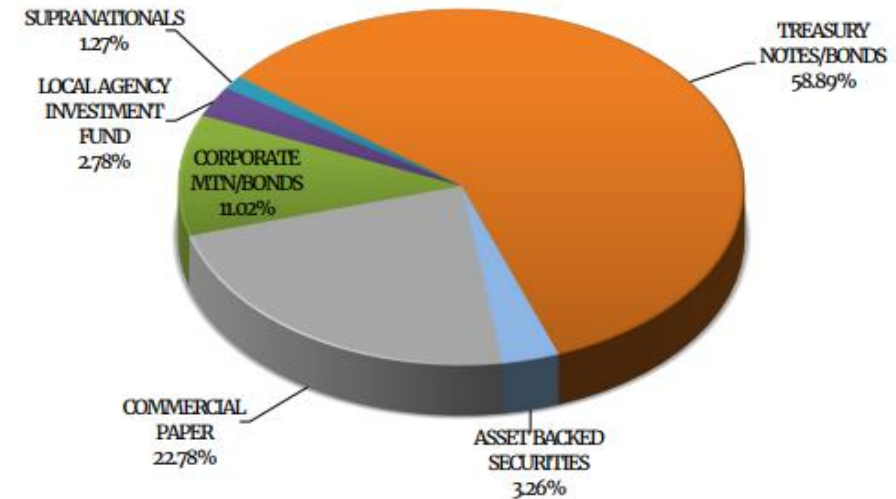
ASSET ALLOCATION

Assets (000's)	Current Par Value	Current Book Value	Market Value	Mkt/Book	Yield to Maturity
ASSET BACKED SECURITIES	76,500	77,075	76,628	99.42%	0.95%
COMMERCIAL PAPER	539,000	538,464	538,743	100.05%	0.19%
CORPORATE MTN/BONDS	258,717	260,354	260,798	100.17%	1.86%
LOCAL AGENCY INVESTMENT FUND	65,705	65,705	65,705	100.00%	0.24%
SUPRANATIONALS	30,000	29,972	30,044	100.24%	1.67%
TREASURY NOTES/BONDS	1,385,000	1,391,768	1,379,461	99.12%	0.47%
Totals (000's):	2,354,922	2,363,339	2,351,378	99.49%	0.59%

Portfolio Breakdown & Statistics

	Liquidity	Core
Portfolio Size	\$705,689,605	\$1,657,648,936
% of total pool	29.86%	70.14%
Portfolio Duration*	0.28	1.71
Index Duration*	0.26	1.89
% of index	105.87%	90.48%
Weighted Average Days to Maturity	101	641
Earned Income Yield	0.637%	0.608%

* Macaulay's Duration for Liquidity and Effective Duration for Core.



Pooled Portfolio Composition by Book Value

Source: City of San Diego

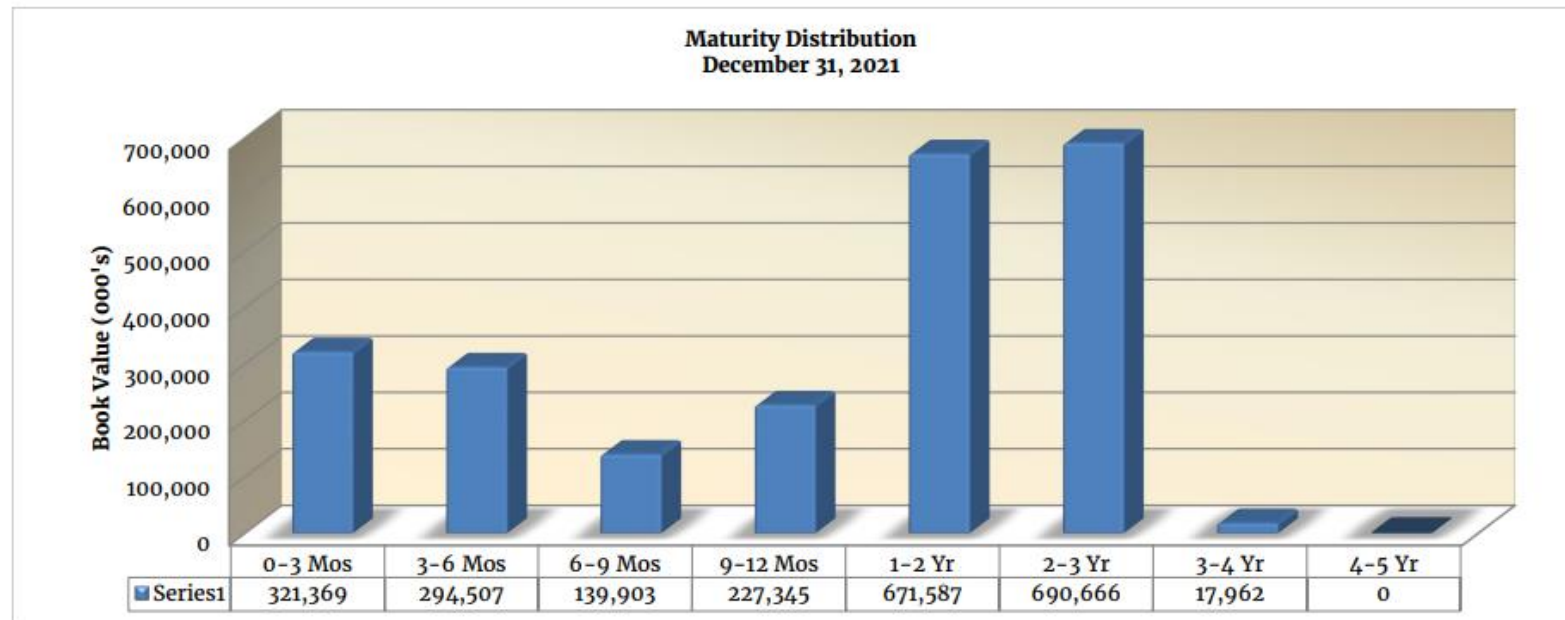
Reporting Examples

POOLED INVESTMENTS AT DECEMBER 31, 2021 - SUMMARY & STATISTICS

City of San Diego
Office of the City Treasurer



MATURITY DISTRIBUTION								
Current Book Value (000's)	0-3 Mos	3-6 Mos	6-9 Mos	9-12 Mos	1-2 Yr	2-3 Yr	3-4 Yr	4-5 Yr
ASSET BACKED SECURITIES			20,117		11,997	26,999	17,962	
COMMERCIAL PAPER	178,944	239,734	119,785					
CORPORATE MTN/BONDS	46,748	54,773		24,462	104,406	29,965		
LOCAL AGENCY INVESTMENT FUND	65,705							
SUPRANATIONALS	29,972							
TREASURY NOTES/BONDS				202,883	555,184	633,702		
Totals (000's):	321,369	294,507	139,903	227,345	671,587	690,666	17,962	0
% of Portfolio	13.60%	12.46%	5.92%	9.62%	28.42%	29.22%	0.76%	0.00%



Source: City of San Diego

Reporting Examples

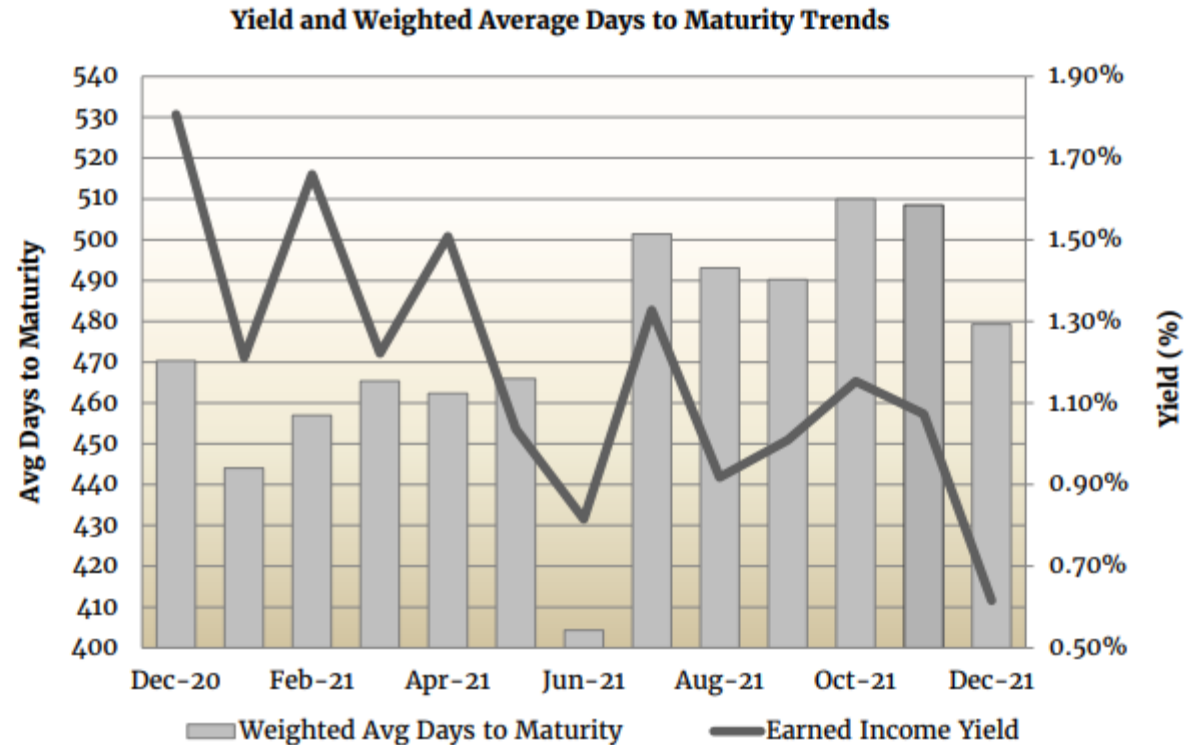
POOLED INVESTMENTS AT DECEMBER 31, 2021 - HISTORICAL EARNED INCOME YIELDS

City of San Diego
Office of the City Treasurer



PORTFOLIO - EARNED INCOME YIELD

Month	Earned Income Yield	Weighted Avg Days to Maturity
Dec-20	1.81%	470.36
Jan-21	1.21%	444.07
Feb-21	1.66%	457.02
Mar-21	1.22%	465.35
Apr-21	1.51%	462.35
May-21	1.04%	465.93
Jun-21	0.82%	404.34
Jul-21	1.33%	501.39
Aug-21	0.92%	493.08
Sep-21	1.01%	490.26
Oct-21	1.15%	509.97
Nov-21	1.07%	508.49
Dec-21	0.62%	479.35



Source: City of San Diego

Disclosure

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