

Investing in a Flat Yield Curve Environment

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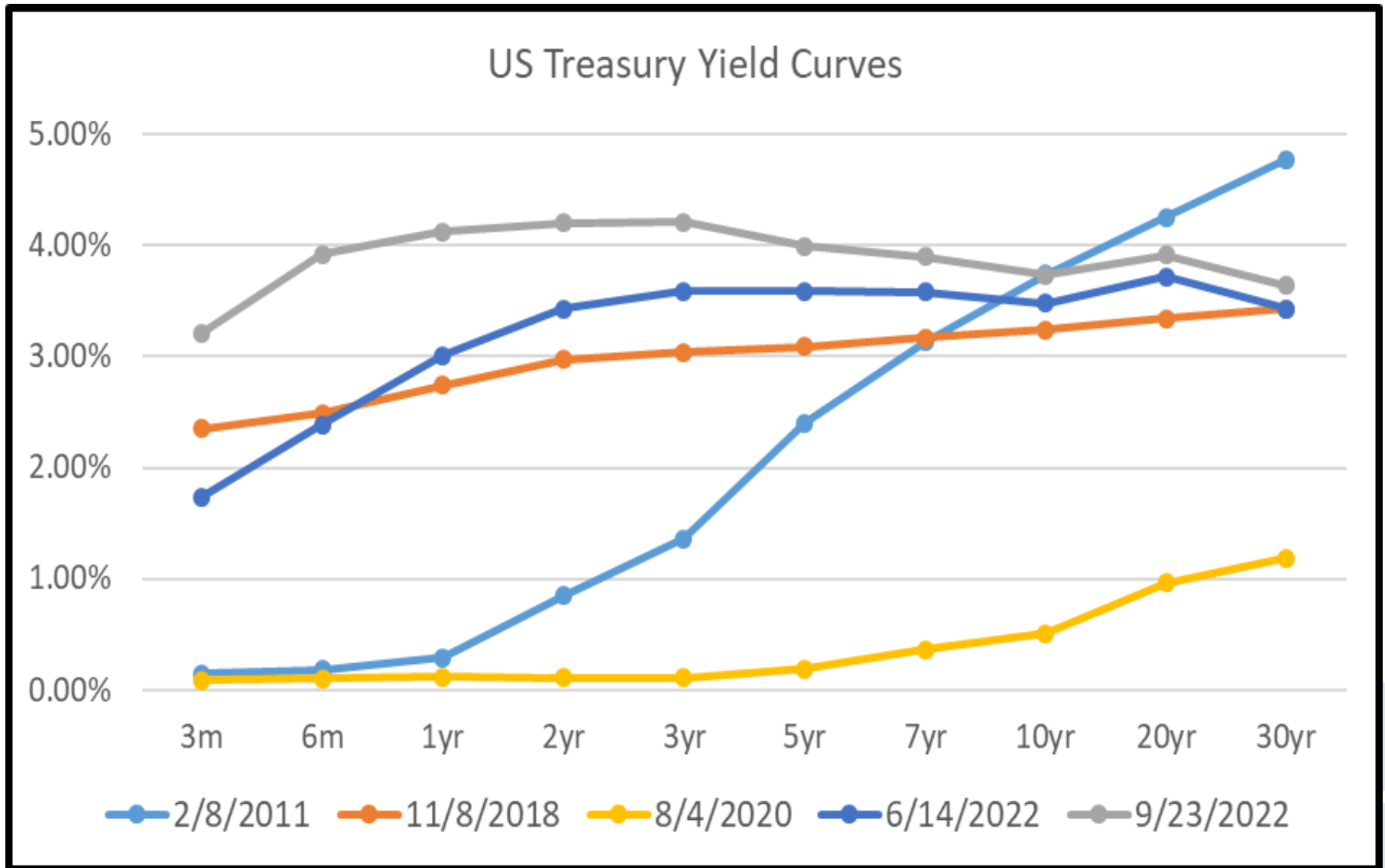


David Farris Bio

- **Consulting for Community Banks and S&L's – 12 Years**
 - Investment and Trading in Mortgage-Backed Securities (MBS) and Managing Interest Rate Risk
- **Portfolio Manager for Public Mortgage REIT – 10 Years**
 - Portfolio of Agency and Non-Agency MBS
 - Whole Loan Purchases and Sales – Bulk and Flow
 - Interest Rate Risk
- **Private Hedge Fund Partner – 10 Years**
 - Trading Non-Agency MBS Securities
 - Investment Strategies and Risk Management
- **Asset Management Group, Inc., a Division of Country Club Bank - Joined in 2019**
 - Provide Asset Liability Management Advice to Community Banks
 - Interest rate risk
 - Liquidity risk
 - Investment and funding programs
 - Overall balance sheet strategies
- **Capital Markets Group, a Division of Country Club Bank – Joined in 2019**
 - Registered Investment Sales Officer
 - Providing Investment Portfolio Management and Sales to Institutional and Retail Accounts



US Treasury Yield Curve Changes



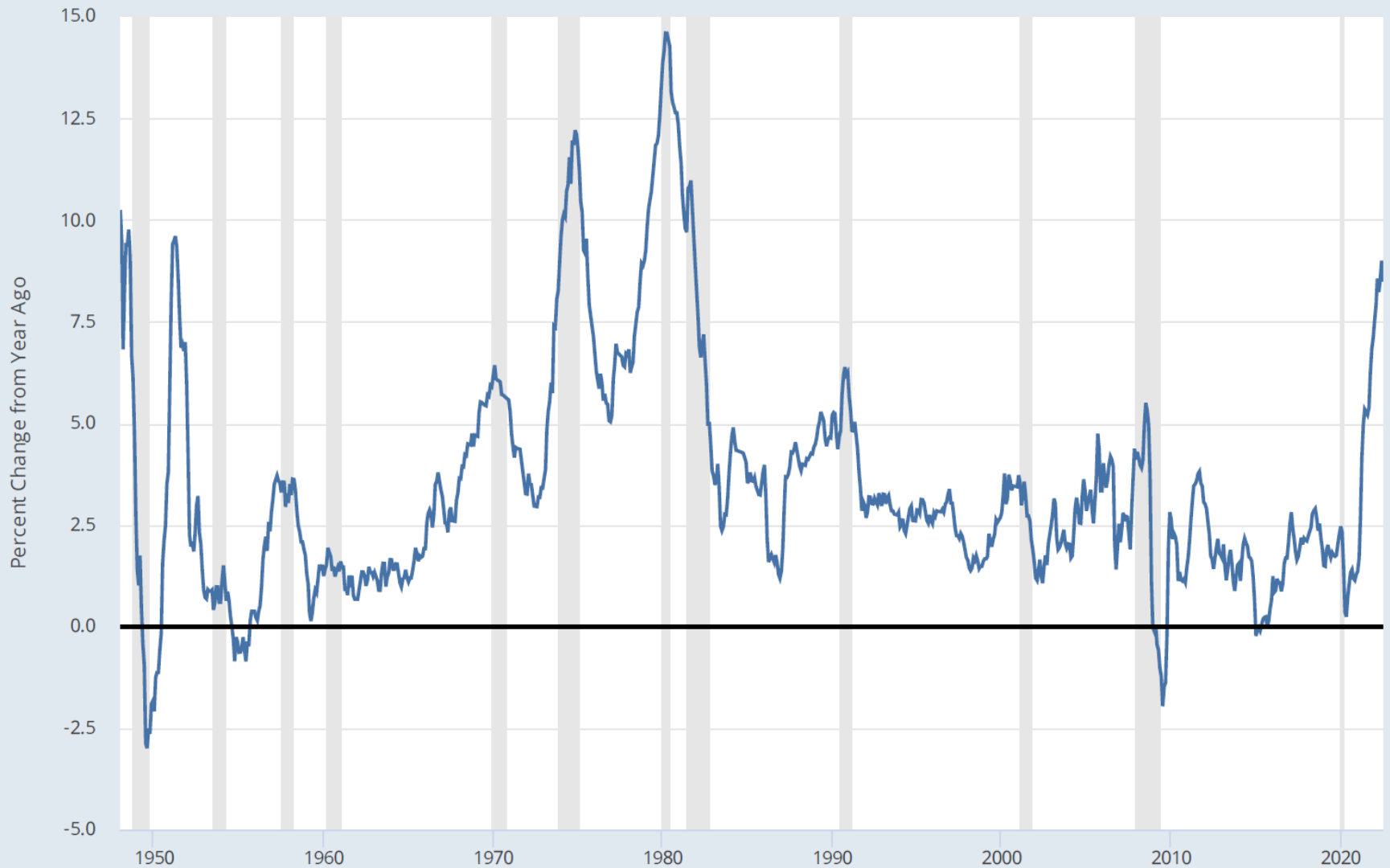
US Treasury Yield Curve Changes

Historical Treasury Yield Curves		3m	6m	1yr	2yr	3yr	5yr	7yr	10yr	20yr	30yr	3m to 2y	2yr to 10
<u>Historical HIGH/LOW</u>													
1	2/8/2011	0.15%	0.18%	0.29%	0.85%	1.36%	2.40%	3.13%	3.74%	4.26%	4.77%	0.70%	2.89%
2	11/8/2018	2.35%	2.49%	2.74%	2.97%	3.04%	3.09%	3.17%	3.24%	3.34%	3.43%	0.62%	0.27%
3	8/4/2020	0.10%	0.10%	0.12%	0.11%	0.11%	0.19%	0.36%	0.51%	0.96%	1.19%	0.01%	0.40%
4	6/14/2022	1.74%	2.39%	3.01%	3.43%	3.59%	3.59%	3.58%	3.48%	3.72%	3.43%	1.69%	0.05%
5													
6	<u>Quarter End</u>												
7	12/31/2020	0.09%	0.09%	0.11%	0.12%	0.17%	0.36%	0.65%	0.92%	1.44%	1.65%	0.03%	0.80%
8	3/31/2021	0.02%	0.04%	0.06%	0.16%	0.35%	0.94%	1.42%	1.74%	2.32%	2.42%	0.14%	1.58%
9	6/30/2021	0.05%	0.05%	0.07%	0.25%	0.46%	0.89%	1.24%	1.47%	2.02%	2.09%	0.20%	1.22%
10	9/30/2021	0.04%	0.05%	0.08%	0.28%	0.51%	0.97%	1.29%	1.49%	1.99%	2.05%	0.24%	1.21%
11	12/31/2021	0.05%	0.19%	0.39%	0.73%	0.96%	1.26%	1.44%	1.51%	1.93%	1.90%	0.68%	0.78%
12	3/31/2022	0.50%	1.02%	1.61%	2.34%	2.51%	2.46%	2.43%	2.34%	2.60%	2.45%	1.84%	0.00%
13	6/30/2022	1.67%	2.49%	2.78%	2.96%	3.01%	3.04%	3.07%	3.02%	3.44%	3.19%	1.29%	0.06%
14													
15	<u>CURRENT:</u>												
16	9/23/2022	3.21%	3.92%	4.12%	4.20%	4.21%	3.99%	3.90%	3.73%	3.91%	3.64%	0.99%	-0.47%
17													
18	<u>Change from Historical HIGH/LOW to CURRENT:</u>												
19	2/8/2011	3.06%	3.74%	3.83%	3.35%	2.85%	1.59%	0.77%	-0.01%	-0.35%	-1.13%		
20	11/8/2018	0.86%	1.43%	1.38%	1.23%	1.17%	0.90%	0.73%	0.49%	0.57%	0.21%		
21	8/4/2020	3.11%	3.82%	4.00%	4.09%	4.10%	3.80%	3.54%	3.22%	2.95%	2.45%		
22	6/14/2022	1.47%	1.53%	1.11%	0.77%	0.62%	0.40%	0.32%	0.25%	0.19%	0.21%		

CPI

FRED

— Consumer Price Index for All Urban Consumers: All Items in U.S. City Average

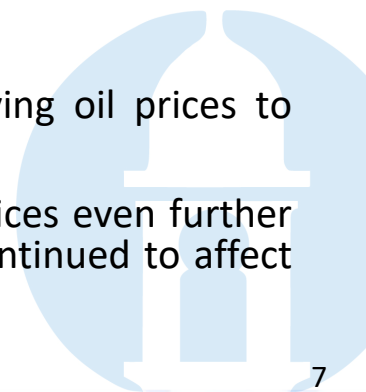


Source: U.S. Bureau of Labor Statistics

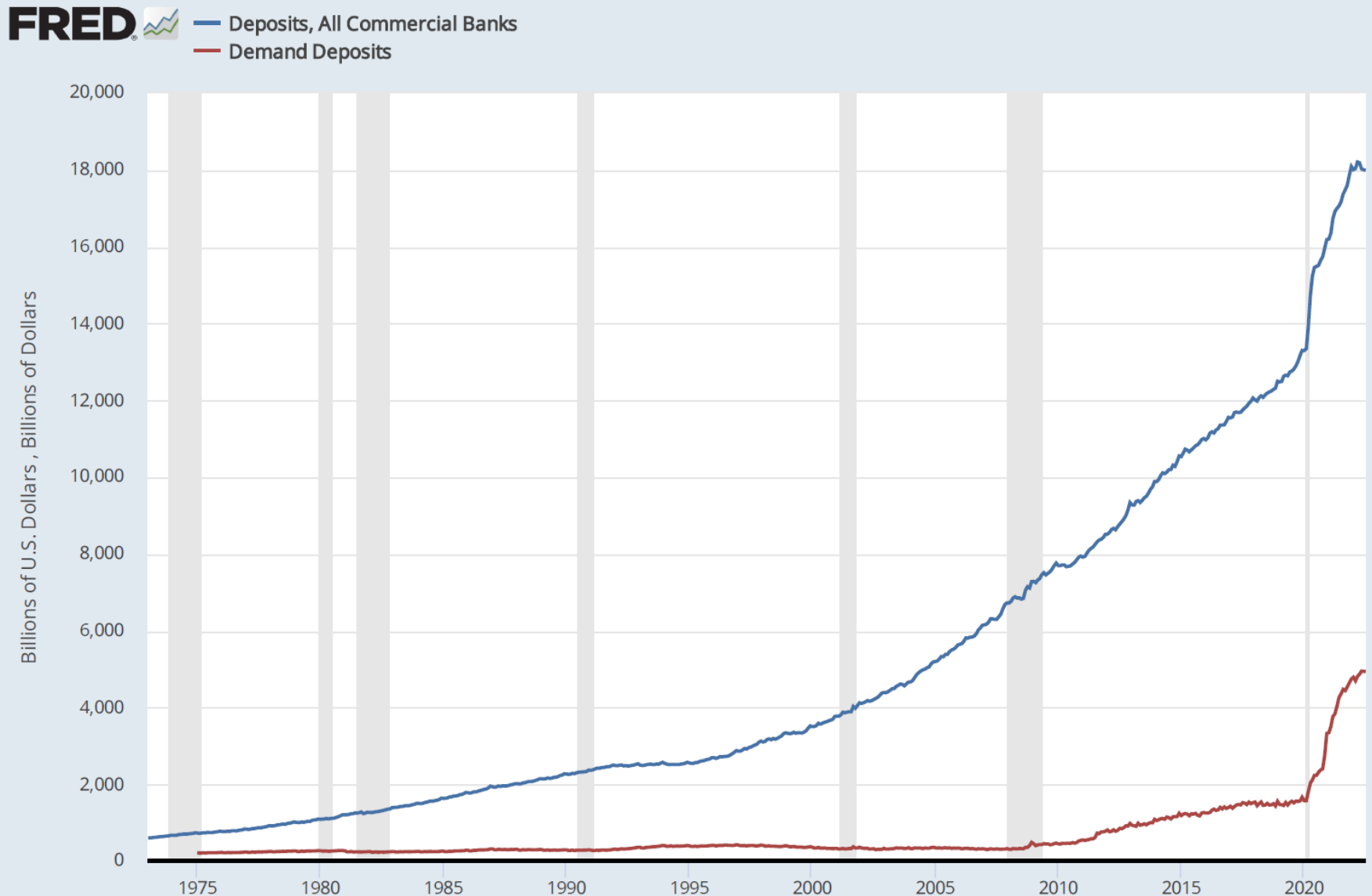
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The Path to Higher Inflation

- Monetary policy was already accommodative when COVID hit due to a \$4T balance sheet that had not been markedly shrunk since the Fed's reaction to the 2008 recession and rates already below levels considered normal
- Massive fiscal response to COVID including stimulus checks, PPP loans, payments to municipalities and more stimulus checks
- Personal savings rate increases due to the US COVID lockdown and business draw downs of credit lines to build cash buffers
- Fed Funds to 0% and a doubling of the size of the Fed's balance sheet
- All this was a massive injection of liquidity into the market and caused huge increases in bank deposits as shown on the next page
- While demand increased due to more liquidity, supply decreased due to COVID lockdowns and supply chain disruptions
- Lack of workers, as evident by a historically low unemployment rate and record job openings, has produced wage gains and strengthening demand as the economy continues to add jobs
- The Fed's historically slow monetary response was rooted in an approach they called it's new framework, adopted in August 2020, to eliminate pre-emptive strikes on inflation
- The Fed also thought inflation was "transitory"
- Questionable government energy policy decreasing US oil production and driving oil prices to \$85/barrel
- The piling on of the effects of the Russia/Ukraine war, which drove up energy prices even further along with many other products. Continuing COVID lockdowns in China have continued to affect supply chains



Bank Deposits



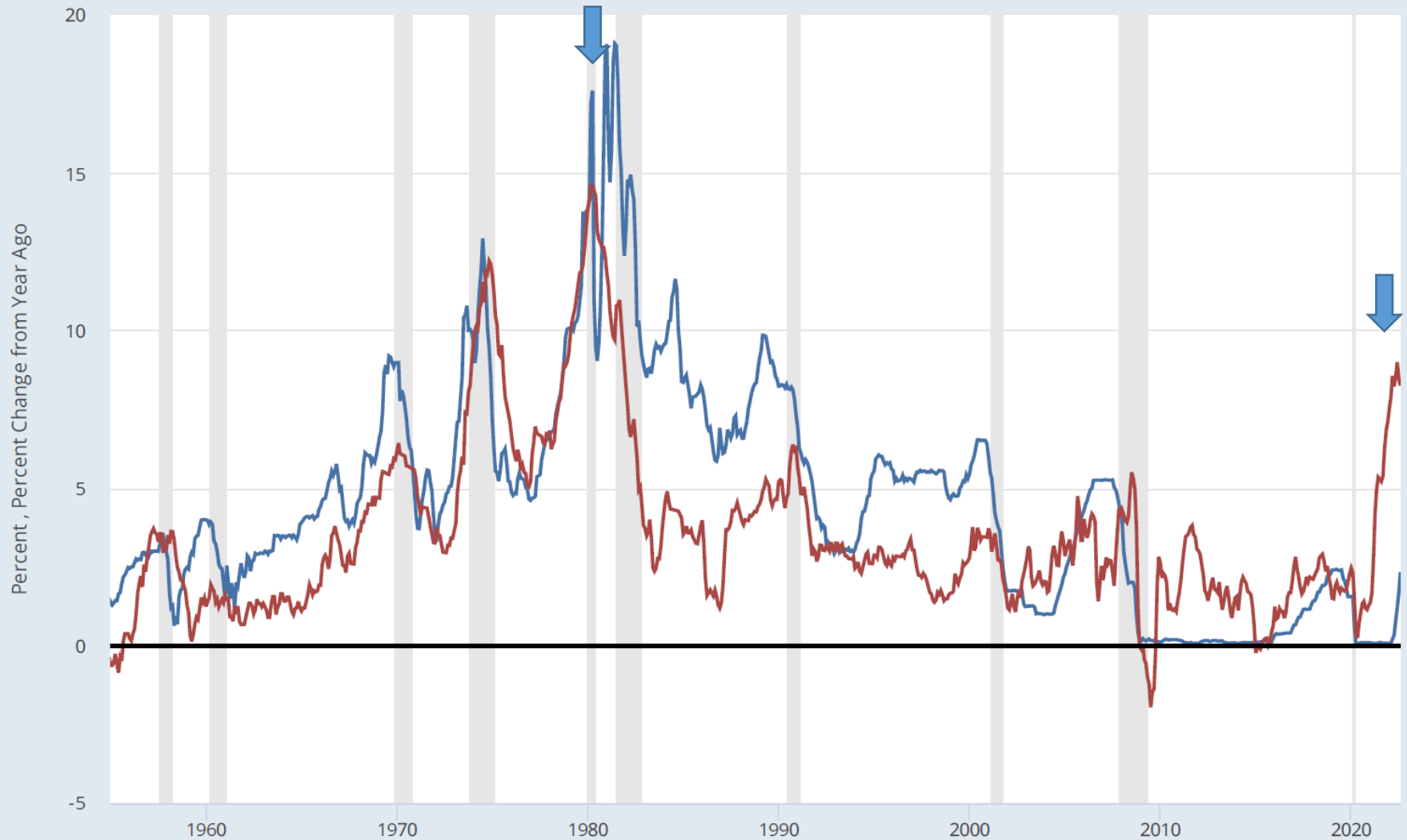
Source: Board of Governors of the Federal Reserve System (US)

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Fed Funds vs. CPI

FRED

— Federal Funds Effective Rate
— Consumer Price Index for All Urban Consumers: All Items in U.S. City Average

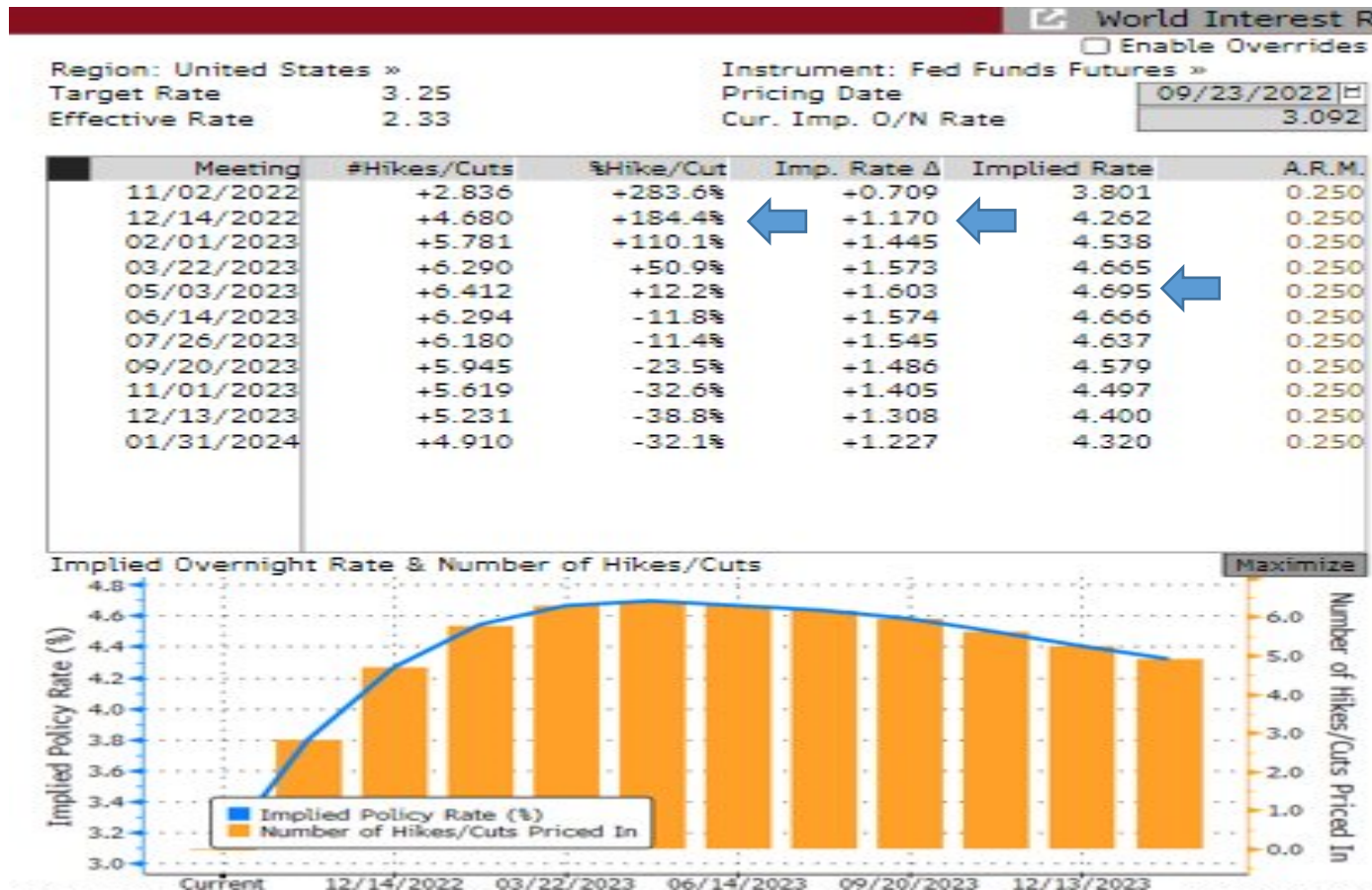


Sources: Board of Governors; BLS

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Implied Fed Funds Rate

The market currently thinks the FED will stomp out inflation in 2022 and fix the recession reportedly on the horizon in 2023

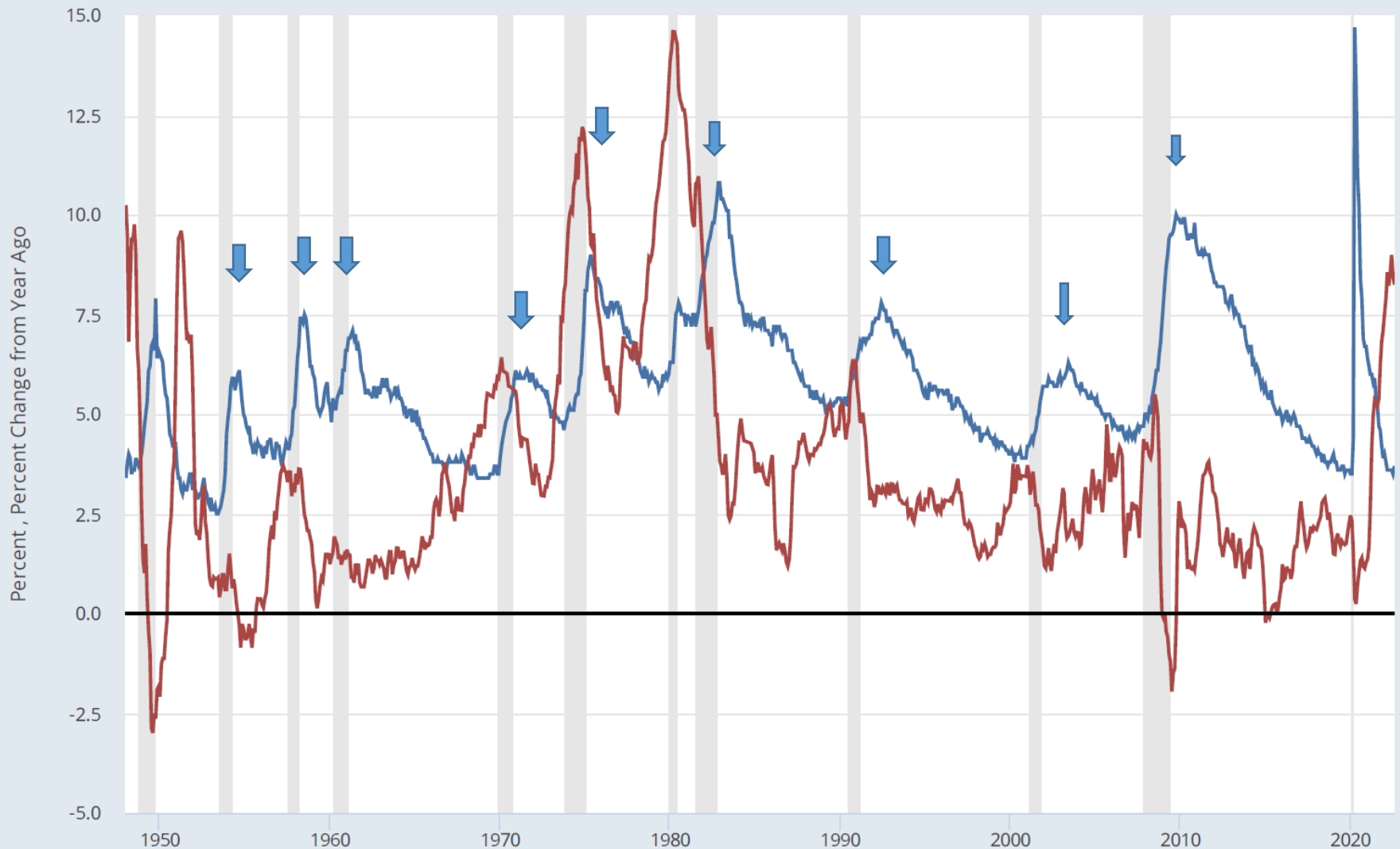


The market is pricing in a 83.6% chance of a 75 basis point increase at the November FED meeting. Close to a 50 bp increase is expected in December ($1.17 - 0.71 = .46$) with the chances of 50 at 84.4%. For February, the chances are 100% for a 25 bp hike and 10.1% for a 50 bp hike. The market is implying that the Fed Funds rate will peak in May 2023 at 4.695% and then begin decreasing slightly through the beginning of 2024.

Unemployment Rate vs. CPI

FRED

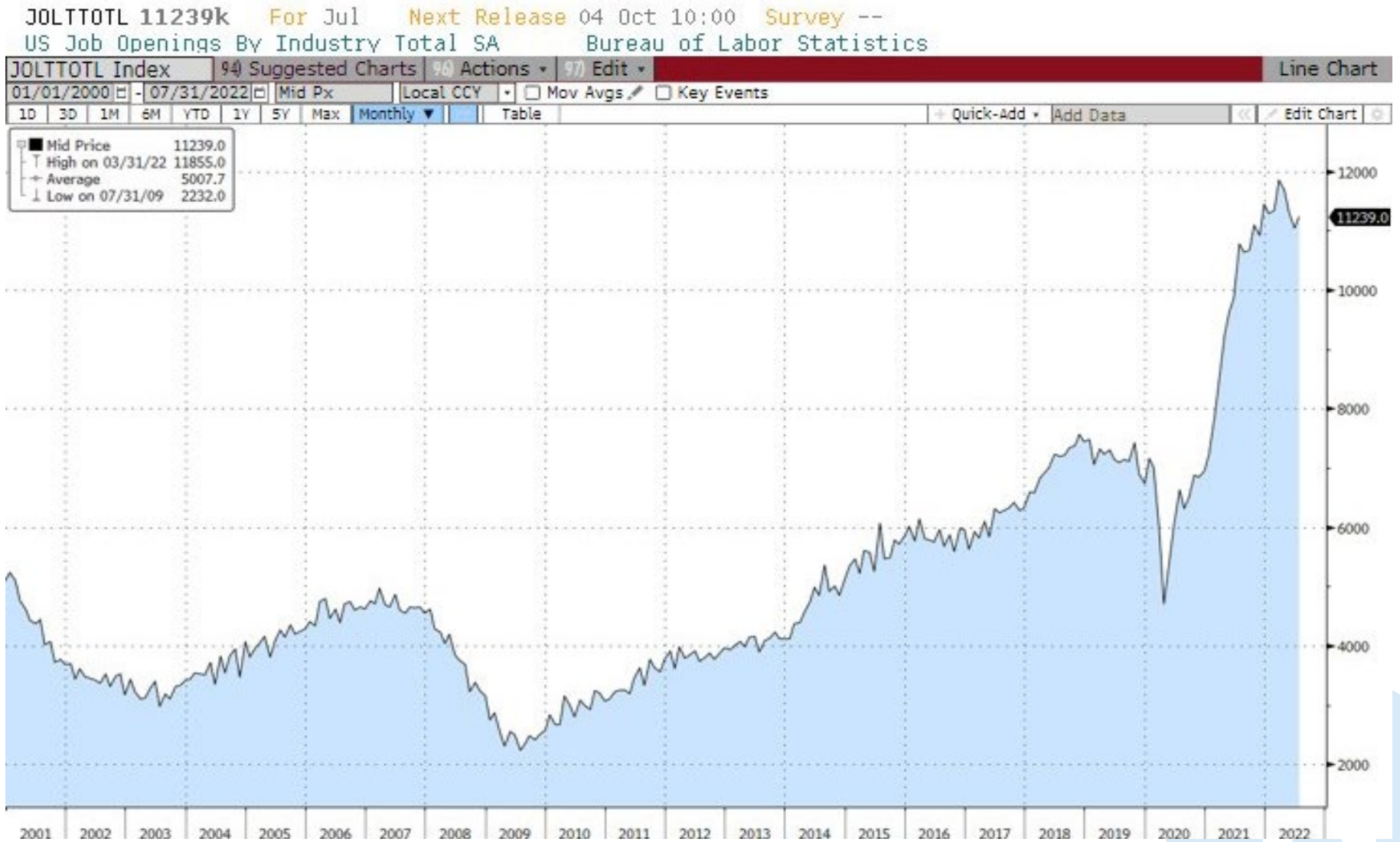
— Unemployment Rate
— Consumer Price Index for All Urban Consumers: All Items in U.S. City Average



Source: U.S. Bureau of Labor Statistics

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US Job Openings



What Will Likely Impact Interest Rates Moving Forward

- The FED
 - Fed Funds Rate Increases
 - Balance Sheet Reduction
- Inflation
 - Supply Chains
 - ▶ Worker Shortages Remain
 - ▶ Lockdowns in China Easing
 - ▶ Railroad Strike Averted
 - Housing
 - ▶ Still High Input Costs and Low Supply
 - ▶ Demographics
 - ▶ Higher Mortgage Expense
 - ▶ Expensive Houses forcing Higher Rents
 - Wages
 - ▶ High Demand for Workers
 - ▶ Record Job Openings
 - ▶ Lowest Unemployment Rate in 50 Years
 - Food
 - ▶ Higher Input Costs for Farmers
 - ▶ Higher Shipping Costs
 - ▶ War and Droughts
 - Energy
 - ▶ Russia/Ukraine Situation
 - ▶ US Government Energy Policy
 - Liquidity in the Markets
 - ▶ US Consumer still strong but weakening
 - ▶ Bank Liquidity is decreasing
- GDP Growth / Recession Fears
- Russia / Ukraine
- Other Geopolitical Conflicts – China
- The Stock Market / Corporate Earnings Declines
- COVID
- Higher Tax Rates
- Level of US Debt – More Spending Packages
- Has the Employment Situation given the FED the Green Light to fight Inflation?

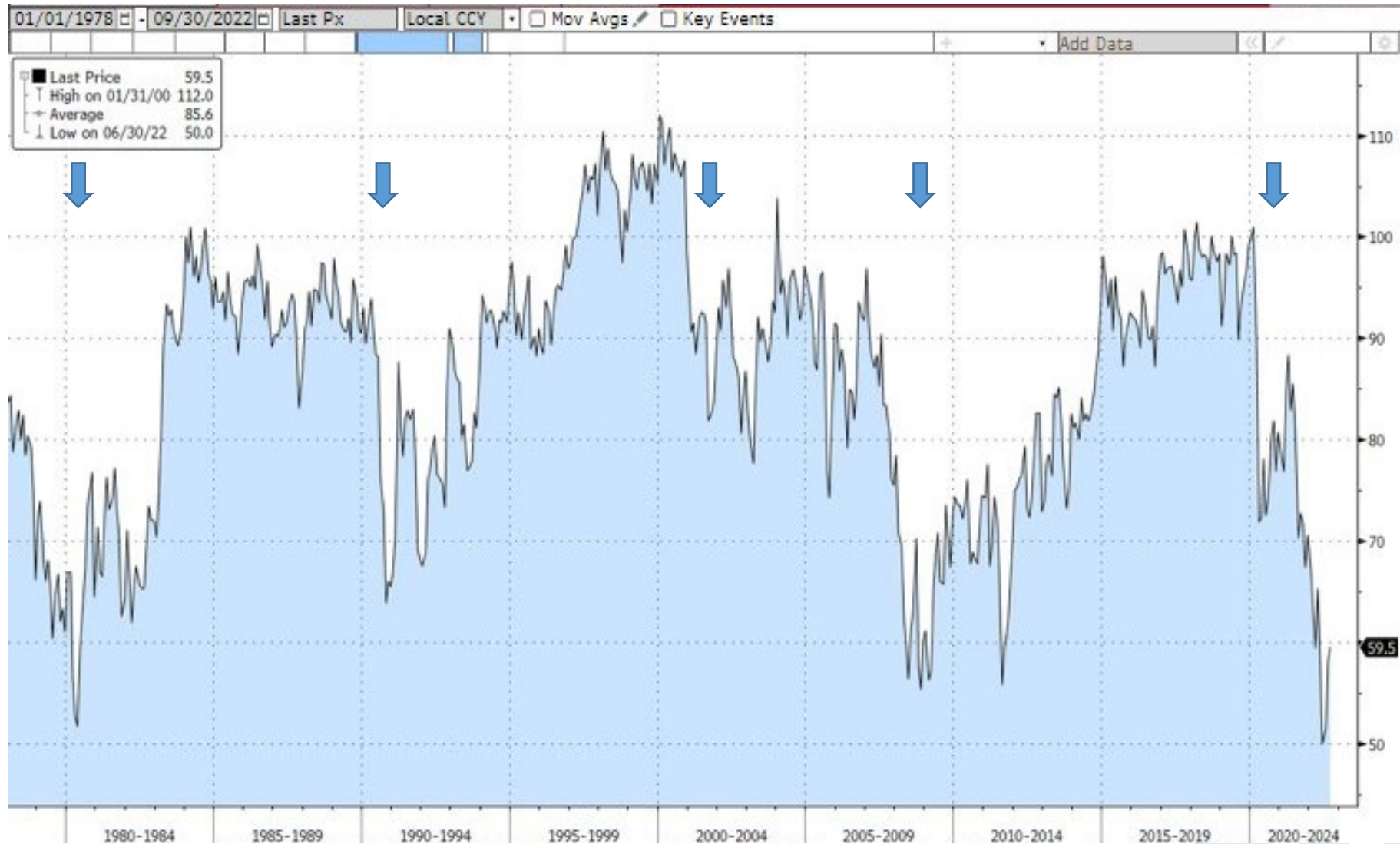
- The unemployment rate at 3.7% for August is just off 3.5% for July which was the lowest level since 1969
- The University of Michigan Consumer Sentiment index hit an all time low of 50.0 on 6/30 due to inflation. The previous all-time low was 52.7 in 1980 and the index has not been this low since 55.8 in 2011. It is trending back up now with 58.2 on 8/26 and 59.5 on 9/16.
- Job openings were a record 11.9mm in March, eased to 11.04mm for June but ticked back up to 11.24mm for July. This is versus 2019 highs of around 7.50mm.
- Credit card debt grew 5.5% from the first to second quarter and 13% year over year. The annualized increase was the sharpest increase in more than 20 years.

Source: Bloomberg, LLC

University of Michigan Consumer Sentiment

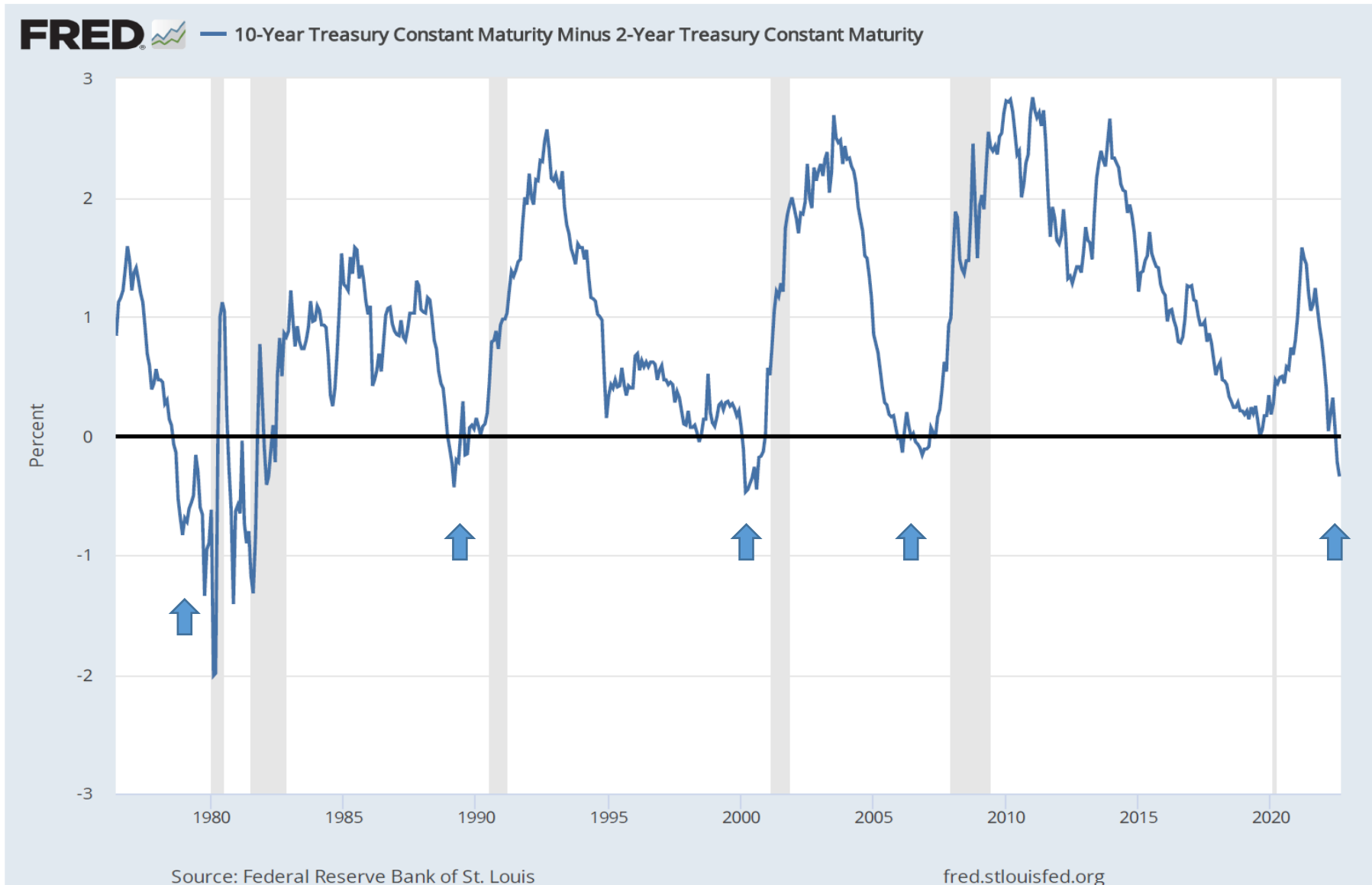
The University of Michigan Consumer Sentiment is a Good Recession Indicator

After Hitting a low of 50.0 on 6/30 it is back up to 59.5 on 9/16



10 Year / 2 Year Treasury Spread

This spread going below 0 has historically signaled recession. Currently at -44 on 9/23/2022.



Previous Fed Tightening Cycles vs. Today

This shows the last 4 major Fed tightening cycles compared with the current one today. In all cases, interest rates are lower 6 months to a year after the end of the cycle. This is shown in the 5yr TSY Drop column.

Cycle	Begin Date	End Date	FF Begin	FF End	Total Move	# Moves	Average Move	Cycle Length	5y TSY Begin	5y TSY End	5y TSY Increase	5y TSY After	5y TSY Drop	After Period
1994	Jan-94	Mar-95	3.00%	6.00%	3.00%	7	0.43%	1.16	5.00%	6.90%	1.90%	5.90%	-1.00%	6 mon
1999	Apr-99	Sep-00	4.75%	6.50%	1.75%	6	0.29%	1.42	5.05%	5.80%	0.75%	4.50%	-1.30%	6 mon
2004	Jun-04	Jul-06	1.00%	5.25%	4.25%	17	0.25%	2.08	3.50%	4.75%	1.25%	4.40%	-0.35%	9 mon*
2015	Dec-15	Dec-18	0.25%	2.50%	2.25%	9	0.25%	3.00	1.55%	2.40%	0.85%	1.60%	-0.80%	6 mon
2022	Mar-22	Sep-22	0.25%	3.25%	3.00%	5	0.60%	0.52	2.18%	3.96%	1.78%	3.96%	0.00%	

*Drop of 1.75% 12 months out

Source Bloomberg, LLC

1. Cycle – The year the tightening cycle began
2. Begin Date – The beginning date of the tightening cycle
3. End Date – The ending date of the tightening cycle
4. FF Begin – Level of FF at the Begin Date
5. FF End – Level of FF at the End Date
6. Total Move – Total amount of interest rate movement in the FF Rate during the cycle
7. # Moves – The number of actual times the Fed raised interest rates during the cycle
8. Average Move – Total Move / # Moves
9. Cycle Length – In years
10. 5y TSY Begin – The yield on the 5 year TSY at the Begin Date
11. 5y TSY End – The yield on the 5 year TSY at the End Date
12. 5y TSY Increase – The increase in the 5 year TSY between the Begin Date and the End Date
13. 5y TSY After – The yield on the 5 year TSY X months after the End Date (X = After Period)
14. 5y TSY Drop – How far the 5yr TSY had dropped X months (X = After Period) after the End Date

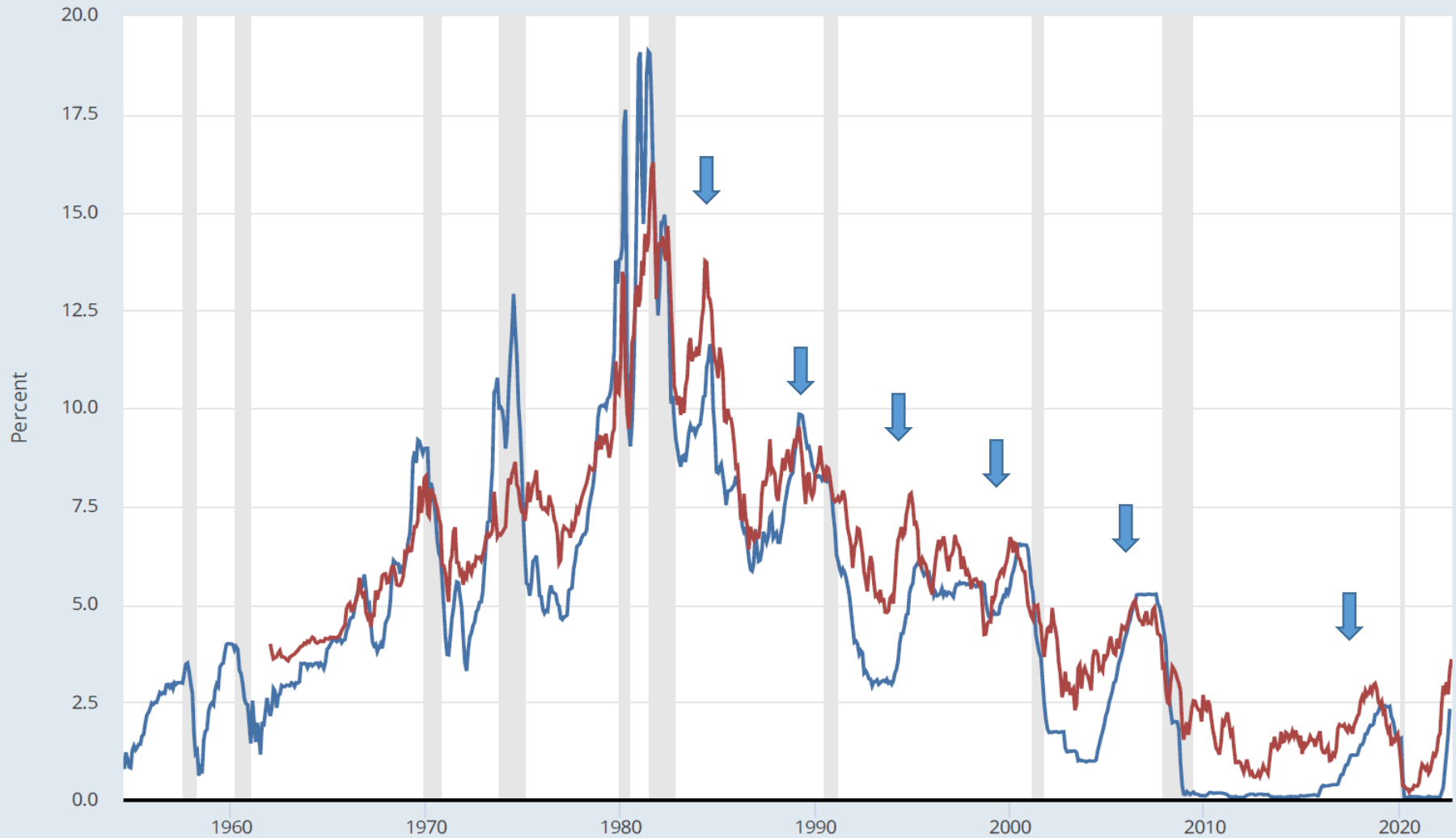


Fed Funds vs. 5 Year TSY Yield

FRED

— Federal Funds Effective Rate

— Market Yield on U.S. Treasury Securities at 5-Year Constant Maturity, Quoted on an Investment Basis



Source: Board of Governors of the Federal Reserve System (US)

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10 Year Regression Analysis

Regression analysis on the 2 year, 5 year and 10 year treasury rates going back 10 years. These are all at +3 standard deviations



10 Year Regression in Bull and Bear Markets Since 1960

10 Year TSY Rate



Bank Liquidity

Bank Liquidity Trends Lower as Rates Increase

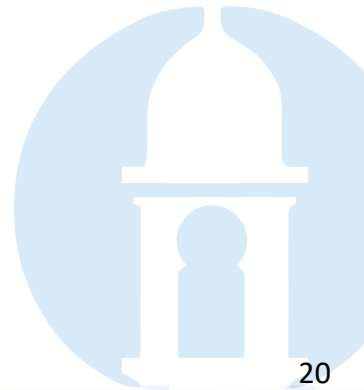
- Prepayments on Loans and Investments Slow
- Loan Demand Increases in a Stronger Economy with Higher Rates
- Deposits Turn Less Sticky when Market Rates Rise as Depositors Leave the Bank to Target Higher Returns
- Less Liquidity Available for Investments

Bank Liquidity Trends Higher as Rates Decrease

- Prepayments on Loans and Investments Increase
- Loan Demand Decreases in a Weaker Economy with Lower Rates
- Deposits are More Likely to Stay at the Bank and Wait for Higher Returns in Bonds or Opportunities to Invest in the Equity Markets
- More Liquidity Available for Investments

Bank Investment Portfolio Managers Would Prefer:

- More Liquidity at the Top of the Rate Cycle but Instead there is Less
- Less Liquidity at the Bottom of the Rate Cycle but Instead there is More



Decision Matrix

What decisions should be considered based on levels of rates and standard deviations away from the mean

	Yield Curve	Liability Strategy	Loan Strategy	Credit Strategy	Investment Strategy	Off Bal Sheet Strategy	Leverage Strategy
+2 Std	Inverted	Shortest Specials; Shortest Adv Brokered Callables	More Fixed; Prepay Penalty Prime Index	Tighter Credit Standards Don't Reach	Max Dur Min Option	Asset: Var > Fix Liab: Fix > Var	Max Leverage (Max Invest)
+1 Std	Flattening	Shorter Specials; Shorter Adv Brokered Call	Prefer Fixed;	Begin Tighter Credit	Extend Dur Fewer Options	Hedge Int. Rate Exposure as Needed	Incr Leverage (More Invest)
-1 Std	Steepening	Longer Specials; Longer Adv Brokered Call	Prefer Floating;	Begin Easier Credit	Shorten Dur More Options Cash Flow	Hedge Int. Rate Exposure as Needed	Incr Leverage (More Loans)
-2 Std	Very Steep	Longest Specials; Longest Adv Brokered NC	More Variable; Tsy Index; No Caps	Easiest Credit Standards	Min Dur Max Option Cash Flow	Asset: Fix > Var Dep: Var > Fix	Max Leverage (Max Loans)



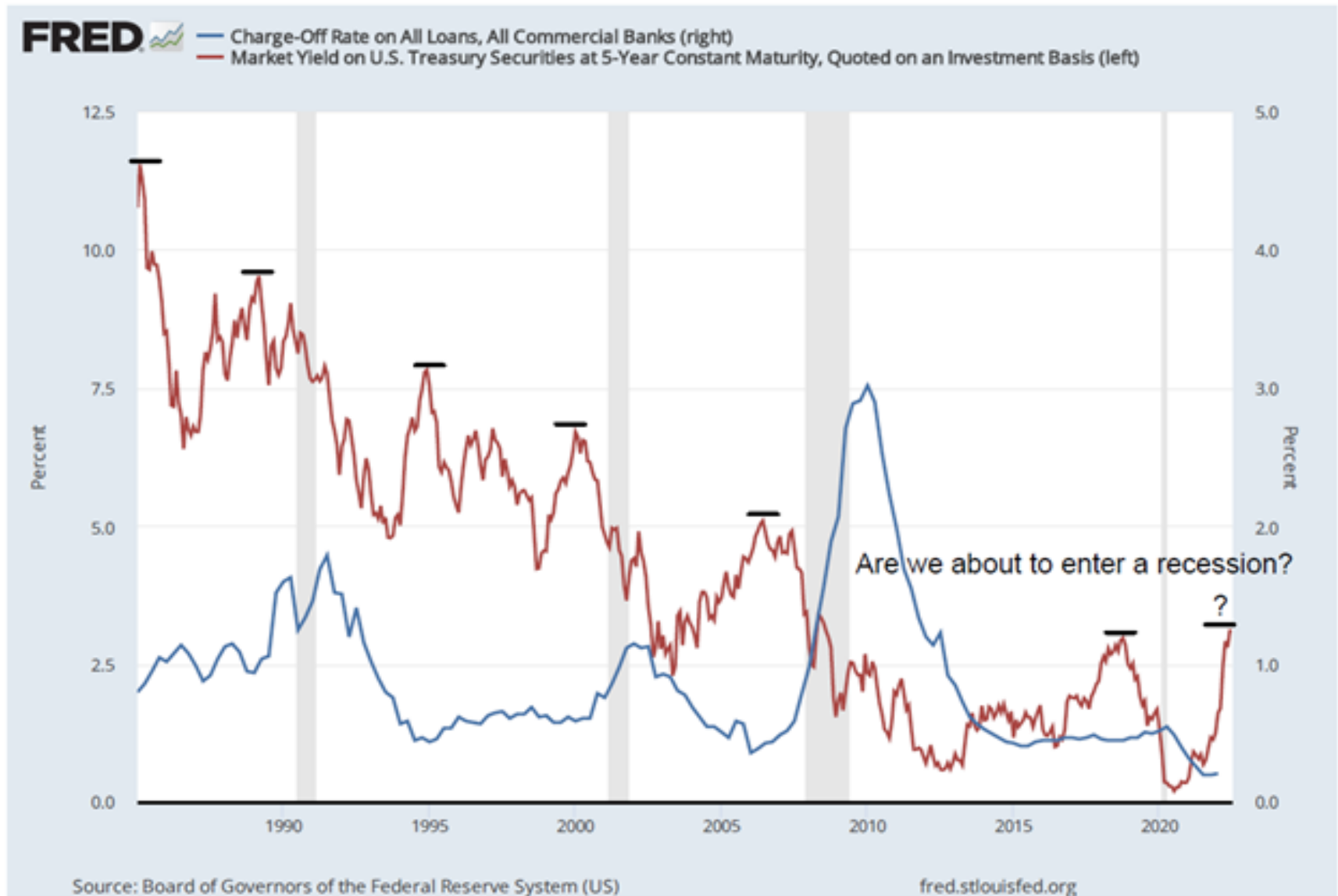
When searching for extra yield because rates are low remember:

- The gain in the portfolio means interest rates are relatively low
- A steep yield curve generally means interest rates are headed higher
- Generally invest shorter than the portfolio's average duration
- Having excess funds to invest is usually a signal to stay short

When nervous due to the loss in the portfolio because of rising interest rates remember:

- The loss in the portfolio means interest rates are becoming or are attractive
- A flat or inverted yield curve generally means lower interest rates are ahead
- Generally invest longer than your portfolio's average duration
- The lack of investable funds is a buying signal

Charge-Off Rate on All Loans vs. 5 Year TSY Rate



Potential Investments

- Agency Callable
- Fixed Agency MBS with 3-5 Year Durations
- Agency SOFR ARMs
- Fixed Agency CMBS FNMA DUS and Freddie K with 3-5 Year Durations
- Fixed Agency MBS with 5-7 Year Durations
- Municipal Bonds



Agency Callable Bonds

- The key to these is to make sure to get fully compensated in yield for the call(s) you are short
- Final maturities of 3 to 5 years should be targeted rather than longer maturities to limit downside with the bias still to higher rates in the market
- The time to first call should be 9 months to 2 years to provide initial call protection
- The one-time calls are the most attractive due to the market projecting a possible recession on the horizon which would imply lower interest rates in the future – having a bond that is past its calls when this starts to happen would be preferred because this would produce gains in the down rate scenario on the bond as opposed to the bond just being called
- Being short additional calls past the first call date just allows the market to call the bond when rates go back down so if an investor is taking this risk they should be getting more yield on the front end
- There are sometimes opportunities in discount callable bonds where the YTM can be the same as a new issue issued at par but the YTC is higher due to the discount dollar price due to lower coupon
- A step up coupon at the first reset protects against higher interest if the bond is not called – even if the bond is called due to the step up coupon, market interest rates could still be higher than where they were at purchase so even though the bond is called, principal is returned at par that can be reinvested at higher rates. Step up coupons are a great defensive structure against rising interest rates
- Agency callable bonds will simply be called at the call date if interest rates are lower so these are not bonds for an entire or large percentage of a portfolio but are good to mix in as a defensive structure against higher interest rates for a portion of the portfolio and can provide good current yield

Fixed Agency MBS with 3-5 Year Durations

- Seasoned FN 15yr 4.00%
- 122 month WAM and 51 month WALA (weighted average loan age)
- Good returns to a 3.86 year WAL – 4.44% yield – 35 bp spread – In the base case
- The WAL only extends 0.34 years from 3.86 at base to 4.20 +300 bps so good performance if rates continue to increase
- The bond only shortens 0.43 years to a 3.43 WAL -200 due to the 51 months seasoning, a short final maturity of 03/1/2035 and a maximum average loan balance of \$175,000
- Low loan balance pools tend to pay slower in down rate scenarios vs. generic pools so these offer a better profile in lower rate scenarios
- Stable WAL Profile with Minimal Extension Risk AND Better Performance in Down Rate due to the Low Loan Balance**

<div> <div>Actions</div> <div>Export</div> <div>Settings</div> </div>									
100% FNCI 4 M				4.497(122)51 CUSIP 3140XHV1		Pool Level		As of 09/2022	
9/2022	105P	6.3C	0.0B	Traits	CI, Super, 30/360	Coupon	4.0%	Maturity	3/1/35
3Mo	--	--	--	07/01/2022	18,088,414	LTV/HLTV	67/45	Accrual	10/1-10/31
6Mo	--	--	--	09/25/2022	17,472,628	MAXLS	175,000	Next Pay	11/25/22
12Mo	--	--	--	Factor	0.96595688	WAOLS	159,878	GA	6% 2017
Life	206	12.3	--	# Loans	1,676				4%
Price-to-Yield									
Settle	10/18/22	10.7 CPR	8.1 CPR	8.4 CPR	9.1 CPR	12.6 CPR	14.4 CPR	17.9 CPR	
Indices		C+0	C+300	C+200	C+100	C-100	C-200	C-300	
Vary	0	100% BAM	100% BAM	100% BAM	100% BAM	100% BAM	100% BAM	100% BAM	
Price	98-12 ¹ / ₈	4.4376	4.4064	4.4095	4.4175	4.4612	4.4850	4.5345	
Avg Life		3.86	4.20	4.16	4.07	3.63	3.43	3.08	
Mod Duration		3.36	3.64	3.61	3.54	3.17	3.01	2.71	
Prin Win	Date	11/22-11/32	11/22-11/32	11/22-11/32	11/22-11/32	11/22-11/32	11/22-11/32	11/22-11/32	
I Spread		35	36	36	35	35	35	36	

Agency SOFR ARMs

- SOFR ARM that is fixed for 5 years at 4.045% - SOFR stands for Secured Overnight Financing Rate
- After 5 years ARM resets at SOFR + 2.12% every 6 months
- The coupon can reset plus/minus 200 bps at the first reset then 100 bps every 6 months thereafter
- At a base case CPR of 15.9%, the yield is 4.46% with a 5.15 WAL and a 52 bp spread
- While fixed coupon positions lose value in up rate scenarios, this will lose minimal value as it nears and enters the adjustment phase
- Prepays tend to increase as the bond approaches first reset...**Especially if rates move higher...We believe this to be a Perfect Structure for Bank Portfolios**
- The yield could be much higher than 4.46% should SOFR move higher – Below assumes a fully indexed coupon at Base of 4.42% (2.30% SOFR + 2.12% Margin) after 1st reset
- SOFR will track the Fed Funds Rate – The index for SOFR ARMs is the 30 day average so it will take 30 days for the index to catch up to FF after FF changes – This shows 30 day SOFR (SOFR30A) at 2.30% - With the Fed move this will approach 3.0% in 30 days

BT7883 Mtge				Actions	Export	Settings	Yield Table						
100% FN5SASM8 4 N				4.675(360)0		CUSIP 3140LWXM4	Pool Level		As of 09/2022				
9/2022	P	--C	B	Traits	S0, Semi-Annual ...	Coupon	4.045%	Maturity	10/1/52	CA	15%	2022	100%
3Mo	--	--	--	09/01/2022	34,566,788	LTV/HLTV	68/68	Accrual	9/1-9/30	IL	12%		
6Mo	--	--	--	09/25/2022	34,566,788	MAXLS	840,000	Next Pay	10/25/22	TX	10%		
12Mo	--	--	--	Factor	1.0	WAOLS	433,054			FL	7%		
Life	--	--	--	# Loans	96	SOFR30A	+2.120%	Cap	9.045%	Flr	2.120%	Mths to Reset	60
1) Price-to-Yield													
Current SOFR30A 2.3047%													
Settle	09/27/22	13.5 CPR		13.9 CPR		14.5 CPR		15.9 CPR		19.4 CPR		24.5 CPR	
Indices		C+300		C+200		C+100		C+0		C-100		C-200	C-300
Vary	0	100% BAM		100% BAM		100% BAM		100% BAM		100% BAM		100% BAM	100% BAM
Price	98-20	5.35		5.06		4.75		4.46		4.24		4.13	
Avg Life		6.04		5.87		5.60		5.15		4.25		3.35	
Spread Duration		4.83		4.71		4.52		4.19		3.50		2.79	
Prin Win	Date	10/22-10/52		10/22-10/52		10/22-10/52		10/22-10/52		10/22-10/52		10/22-10/52	10/22-10/52
I Spread		144		115		83		52		21		1	



Fixed Agency FNMA DUS and Freddie K CMBS with 3-5 Year Durations

- FNMA DUS and Freddie Mac K-Fred – Commercial MBS – CMBS
- Shorter CMBS trading at discounts offer value in the 3-5 year part of the curve
- 4.68% yield with 3.44 WAL and 53 bp spread at 100 CPY
- 4.42% yield with 3.90 WAL and 32 bp spread at 0 CPY
- Most CMBS have some type of Yield Maintenance in the form of a prepayment penalty or defeasance requirement, making these less likely to prepay
- Many times there is an Open Period of 6 to 12 months before maturity where borrower can prepay with no penalty (this one has 6 months)
- 100 CPY assumes all borrowers prepay at the beginning of the open window and 0 CPY assumes none – In the case of this bond 100 CPY shortens the bond by 6 months
- 10/01/2026 Final Maturity so no extension risk with this bond

e Actions Export Settings											
US POOL		3.700(49)71		CUSIP 3138LE3X7		Pool Level		As of 09/2022			
9/2022	OP	0.0C	B	Traits	HY, Balloon, ACT/...	Coupon	2.28%	Maturity	10/1/26	FL	100% 2016 100%
3Mo	--	0.0	--	10/01/2016	42,960,000	LTV	80	Accrual	9/1-9/30		
6Mo	--	0.0	--	09/26/2022	40,624,035	MAXLS	--	Next Pay	10/25/22		
12Mo	--	0.0	--	Factor	0.94562465	DSCR (Curr)	1.530				
Life	0	0.0	--	# Loans	1						
Price-to-Yield											
Settle	09/28/22		CF		CF		CF		CF		CF
Vary	0	0 CPY	100 CPY								
Price	92-15 ³ / ₈	4.4176	4.6834								
Avg Life		3.90	3.44								
Mod Duration		3.63	3.22								
Prin Win	Date	10/22-10/26	10/22-4/26								
I Spread		32	53								

Fixed Agency MBS with 5-8 Year Durations

- New issue FNMA 15yr 5.0%
- 4.77% Yield at Base with 85 bps Spread to TSY
- WAL of 5.07 Years at Base
- WAL Extends to 6.18 Years +300
- WAL Shortens to 4.22 Years -100
- Even though this bond extends in the up rate, it still returns principal in the form of prepayments and regular amortization that would be able to be reinvested at higher rates
- This bond will shorten to a 4.22 WAL if rates go back down 100 with the yield only decreasing 5 bps so still good performance and good duration if rates go back down from here
- If the view is for dramatically lower rates, a lower coupon and lower premium or discount MBS would perform better

SB8192 Mtge		Actions	Export	Settings	Yield Tabl			
P 100% FNCI 5 N	5.777(179)0	CUSIP	3132D6C57	Pool Level	As of	09/2022		
9/2022	P	--C	B	Traits	CI, Super, 30/360	Coupon	5.0%	Maturity 10/1/37 TX 19% 2022 100%
3Mo	--	--	--	09/01/2022	53,643,480	LTV/HLTV	65/65	Accrual 10/1-10/31 FL 8%
6Mo	--	--	--	09/25/2022	53,643,480	MAXLS	620,000	Next Pay 11/25/22 PA 6%
12Mo	--	--	--	Factor	1.0	WAOLS	248,795	GA 6%
Life	--	--	--	# Loans	305			
1) Price-to-Yield								
Settle	10/18/22	+300 MED	+200 MED	+100 MED	0 MED	-100 MED	-200 MED	-300 MED
Vary	0	138 PSA	154 PSA	188 PSA	237 PSA	344 PSA	511 PSA	656 PSA
Price	100-27+	4.81	4.81	4.79	4.77	4.72	4.65	4.58
Avg Life		6.18	5.97	5.58	5.07	4.22	3.34	2.83
Mod Duration		4.97	4.83	4.55	4.20	3.59	2.93	2.53
Prin Win	Date	11/22-8/37	11/22-8/37	11/22-8/37	11/22-8/37	11/22-8/37	11/22-8/37	11/22-8/37
I Spread		94	93	90	85	72	55	45



Fixed Agency MBS with 5-8 Year Durations

- New issue FNMA 30yr 5.0%
- 5.22% Yield at Base with 140 bps Spread to TSY
- WAL of 8.06 Years at Base
- WAL Extends to 11.16 Years +300
- WAL Shortens to 5.13 Years -100
- Even though this bond extends in the up rate, it still returns principal in the form of prepayments and regular amortization that would be able to be reinvested at higher rates
- This bond will shorten to a 5.13 WAL if rates go back down 100 with the yield increasing 7 bps so good performance and good duration if rates go back down from here
- This bond is longer than the 15 year so this one has more interest rate risk and more WAL volatility risk but with yields over 5% and spreads to TSY over well over 100 these should be in consideration

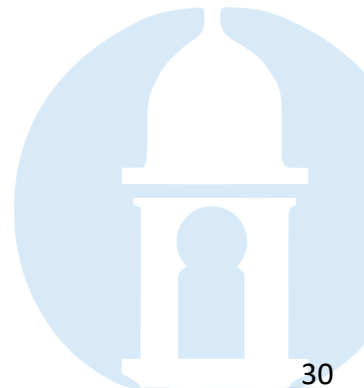
SD8246 Mtge		Actions	Export	Settings	Yield Table				
100% FNCL 5 N		5.896(358)1	CUSIP 3132DWET6	Pool Level	As of 09/2022				
9/2022	3158P6.3C	0.0B	Traits	CL, Super, 30/360	Coupon	5.0%	Maturity	9/1/52	CA 15% 2022 100%
3Mo	--	--	08/01/2022	4.4MMM	LTV/HLTV	81/81	Accrual	10/1-10/31	WA 6%
6Mo	--	--	09/25/2022	4.3MMM	MAXLS	1,502,000	Next Pay	11/25/22	CO 5%
12Mo	--	--	Factor	0.9935681	WAOLS	453,324			TX 5%
Life	3158	6.3	# Loans	10,685					
Price-to-Yield									
Settle	10/13/22	+300 MED	+200 MED	+100 MED	0 MED	-100 MED	-200 MED	-300 MED	
Vary	0	101 PSA	115 PSA	134 PSA	181 PSA	337 PSA	659 PSA	1135 PSA	
Price	98-22	5.18	5.19	5.20	5.22	5.29	5.43	5.60	
Avg Life		11.16	10.48	9.66	8.06	5.13	3.01	1.97	
Mod Duration		7.54	7.19	6.76	5.88	4.12	2.63	1.80	
Prin Win	Date	11/22-7/52	11/22-7/52	11/22-7/52	11/22-7/52	11/22-7/52	11/22-7/52	11/22-3/47	
I Spread		143	145	146	140	134	126	144	



Higher Coupon Municipal Bonds

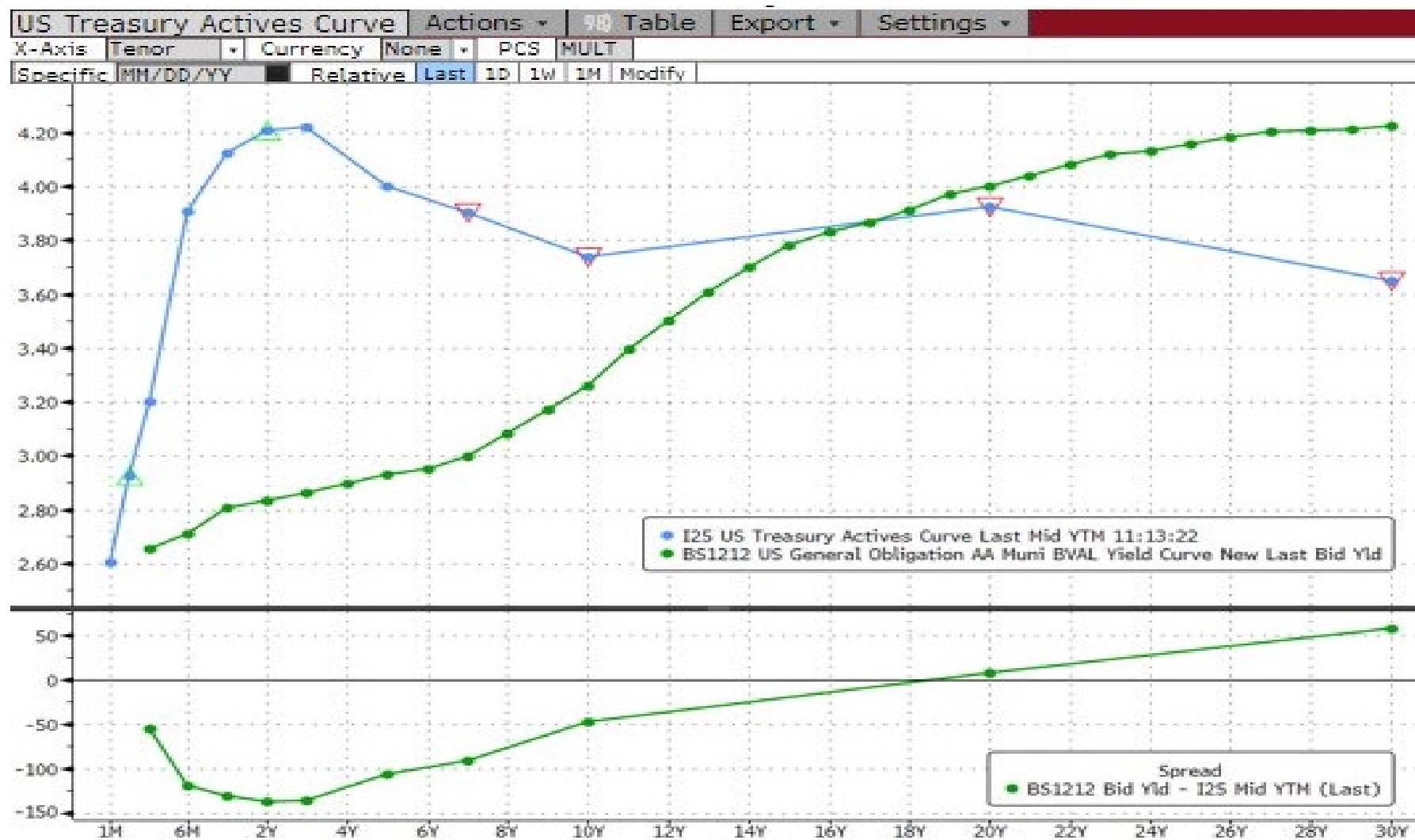
- Municipal bonds with coupons of 4.00% and higher
- Call dates within 5-10 years
- Maturity dates of 10-20 years
- Tax-equivalent spreads to treasury of 60 to 100 bps to the first call date
- Amortize premium paid on the bond to the first call date
- If bonds are not called at the call date then the yield is the coupon because the bond is owned at 100.00
- The bond is said to “Kick” to a higher yield if not called
- Having a higher coupon “Kicker” protects against higher interest rates
- Tax-equivalent yields on coupons owned at 100.00 are as follows:

Coupon	Tax Equivalent Yields	
	C-Corp	S-Corp
4.00%	5.06%	5.68%
4.50%	5.70%	6.39%
5.00%	6.33%	7.10%
5.50%	6.96%	7.81%
C-Corp Rate: 21.0%		
S-Corp Rate: 29.6%		



US TSY Curve vs. US GO AA Municipal Curve

The short end of the Municipal Curve remains rich to TSY. Ratios to TSY look more attractive in longer maturities



Data as of 9/23/2022

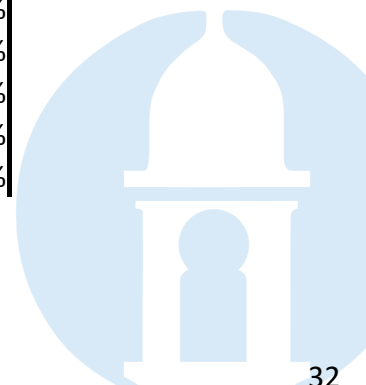
Source Bloomberg, LLC

US GO AA Municipal Spreads to TSY

Spreads to TSY for Municipals start look attractive out 10 years and longer

	Years	US TSY	US AA GO	Pre-Tax	Ratio to	TEY		TEY	
		Curve	Muni	Spread	Treasury	21.00%	Spread	29.60%	Spread
2023	1	4.14%	2.81%	-1.33%	68%	3.56%	-0.58%	3.99%	-0.15%
2024	2	4.20%	2.83%	-1.37%	67%	3.58%	-0.62%	4.02%	-0.18%
2025	3	4.21%	2.86%	-1.35%	68%	3.62%	-0.59%	4.06%	-0.15%
2026	4	4.10%	2.90%	-1.20%	71%	3.67%	← -0.43%	4.12%	← 0.02%
2027	5	3.99%	2.93%	-1.06%	73%	3.71%	← -0.28%	4.16%	← 0.17%
2028	6	3.95%	2.95%	-1.00%	75%	3.73%	← -0.21%	4.19%	← 0.25%
2029	7	3.90%	3.00%	-0.90%	77%	3.80%	-0.10%	4.26%	0.36%
2030	8	3.84%	3.08%	-0.76%	80%	3.90%	0.06%	4.38%	0.53%
2031	9	3.79%	3.17%	-0.62%	84%	4.01%	0.23%	4.50%	0.72%
2032	10	3.73%	3.26%	-0.47%	87%	4.13%	0.40%	4.63%	0.90%
2033	11	3.75%	3.39%	-0.36%	90%	4.29%	↔ 0.54%	4.82%	1.07%
2034	12	3.77%	3.53%	-0.24%	94%	4.47%	0.70%	5.01%	1.25%
2035	13	3.79%	3.68%	-0.11%	97%	4.66%	↔ 0.87%	5.23%	1.44%
2036	14	3.81%	3.82%	0.01%	100%	4.84%	1.03%	5.43%	1.62%
2037	15	3.83%	3.90%	0.08%	102%	4.94%	1.11%	5.54%	1.71%
2038	16	3.84%	3.99%	0.15%	104%	5.05%	↔ 1.21%	5.67%	1.82%
2039	17	3.86%	4.05%	0.19%	105%	5.13%	1.26%	5.75%	1.89%
2040	18	3.88%	4.09%	0.21%	105%	5.18%	1.30%	5.81%	1.93%
2041	19	3.90%	4.13%	0.23%	106%	5.23%	1.33%	5.87%	1.97%
2042	20	3.92%	4.16%	0.24%	106%	5.27%	1.35%	5.91%	1.99%

Data as of 9/23/2022 Source: Bloomberg, LLC



Investment Menu

Security	Price	-200 Yield	-200 WAL	Base Yield	Base WAL	+300 Yield	+300 WAL	Base Eq TSY	Base Spread	Contr WAL	Exten WAL
1 4y 2y 1x 4.50% Callable	100-00	4.50%	2.00	4.50%	2.00	4.50%	4.00	4.20%	0.30%	-	2.00
2 FHR CMO	99-24	4.80%	2.14	4.80%	3.33	4.80%	4.33	4.15%	0.65%	(1.19)	1.00
3 15 Yr 4% MBS Seasoned	98-12	4.49%	3.43	4.44%	3.86	4.41%	4.20	4.09%	0.35%	(0.43)	0.34
4 FN DUS 6m Window	92-16	4.68%	3.44	4.68%	3.44	4.42%	3.90	4.15%	0.53%	-	0.46
5 Freddie K Floater SOFR+42	99-00	1.67%	5.21	3.67%	4.25	6.67%	3.25	3.00%	0.67%	0.96	(1.00)
6 5 Yr 4.045% ARM SOFR+212	98-20	4.13%	3.35	4.46%	5.15	5.35%	6.04	3.94%	0.52%	(1.80)	0.89
7 15 Yr 5.0% MBS	100-27	4.65%	3.34	4.77%	5.07	4.81%	6.18	3.92%	0.85%	(1.73)	1.11
8 20 Yr 4.5% MBS	98-08	4.95%	3.08	4.90%	6.40	4.87%	8.20	3.90%	1.00%	(3.32)	1.80
9 30 Yr 5.0% MBS	98-22	5.43%	3.01	5.22%	8.06	5.18%	11.16	3.82%	1.40%	(5.05)	3.10
10 AA BQ 4.0% Due 2037/30	103-00	4.94%	8.00	4.94%	8.00	5.05%	15.00	3.83%	1.11%	-	7.00



Historical 5 Year Treasury Rate

The 5 Year TSY has not been this high since June of 2008.



Historical 10 Year Treasury Rate

The 10 Year TSY has not been this high since April 2011.



Summary

- Interest rates have risen 300+ bps since the lows 2 years ago and are at 10 year plus highs. The market now looks to be at or approaching the top of the rate cycle
- Many indicators are flashing oversold conditions and recession on the horizon which could foreshadow a move back to lower rates on the longer end and a more inverted yield curve as the fed continues to raise
- Inflation is not yet under control and the Fed will err on the side of tightening too much rather than risk not tightening enough and have inflation remain elevated
- Market indicators say banks should make investments at this point in the rate cycle to extend duration and to add yields to the portfolio greater than the overall yield of their investment portfolio
- The time is now to start or continue averaging in to investments at these levels of the market – Markets can turn quickly so good investment opportunities will disappear quickly as well
- We believe this should start with buying Agency MBS and CMBS in the 3-5 year portion of the curve and focus on pools and structures with minimum extension risk and lower call risk if rates fall
- While keeping an eye on the possibility of still higher rates, it continues to make sense to buy securities that are defensive against higher interest rates such as ARMs, high coupon municipal bonds and agency step-ups
- Depending on risk tolerance and rate bias, longer term fixed rate MBS in the 5-8 year duration range make sense with higher yields and spreads than shorter duration alternatives but still returning some cash flow back in the form of amortization and prepayments to reinvest even if rates increase even further
- Again, depending on risk tolerance and rate bias, medium to longer term municipal bonds also offer attractive spreads to treasury and will provide maximum call protection if rates begin to trend back down on the medium to longer part of the treasury curve

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