Balance Sheet Strategies in a Volatile Rate Environment

West Virginia Bankers Association Annual Convention

White Sulphur Springs, WV

July 24, 2023

The BakerGroup

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Market Conditions & Fed Expectations

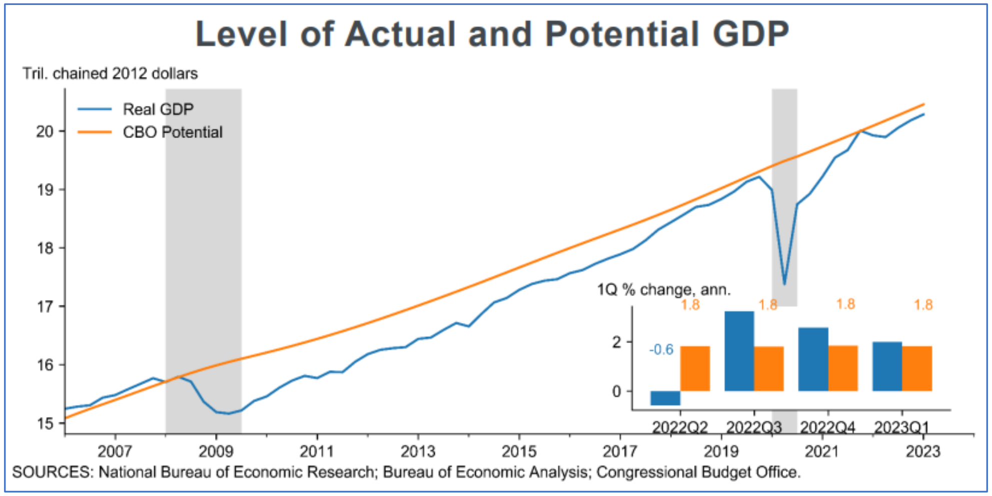
- **Economic and Inflation Data**:
  - Q1 2023 GDP = 2.0% Annualized, Q4 = 2.6%, Q3 = 3.2%
  - 209K jobs added in June, Unemployment Rate = 3.6%
  - Average Hourly Earnings 4.4% YOY vs 3.0% pre-pandemic
  - Labor Force Participation = 62.6% vs 63.4% pre-pandemic
  - CPI = 3.0%, Core CPI = 4.8%, 10yr Breakeven Inflation = 2.24%
  - Leading Indicators are now very negative and the housing market is in recession

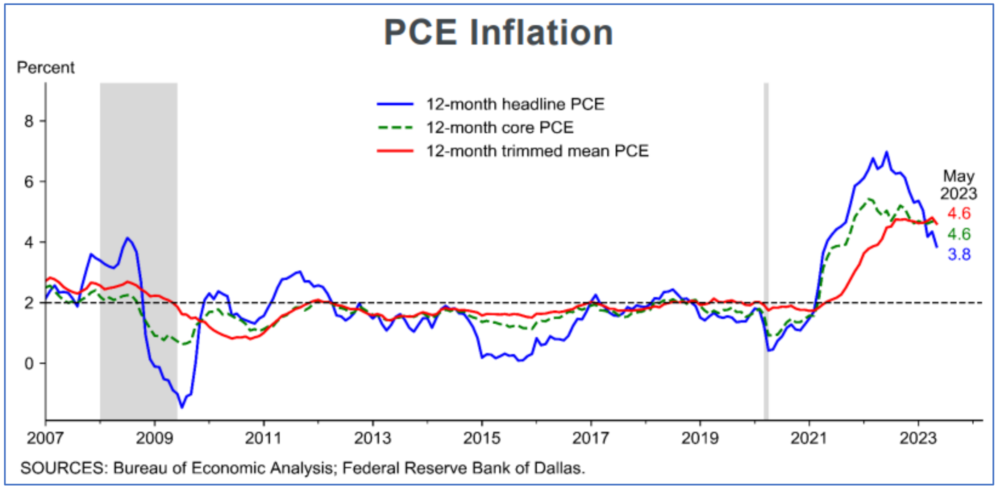
- **Fed Policy**:
  - "Hawkish Skip": Fed left rates at 5-5.25% on June 14
  - Dot Plot shows 50bp additional tightening in 2023
  - Fed Funds Futures say the Fed is "**One & Done**": near 100% chance of 25bp hike July 26 and then less than 30% chance of another hike.
  - Markets now pricing in rate cuts in Q1 2024.
  - "Quantitative Tightening" still running $95B/mo
  - Money supply growth is now negative (first time in half-a-century)

- **Global Trends**:
  - Commodities prices (crude oil, etc.) much lower, and US trade data shows weakening imports and exports… slowing global economic activity generally
  - Dollar strength has faded as Fed seems to be nearing end of tightening, but flight-to-quality provides an underlying bid

"Tighter credit conditions for households and businesses are likely to weigh on economic activity, hiring, and inflation. The extent of these effects remains uncertain."

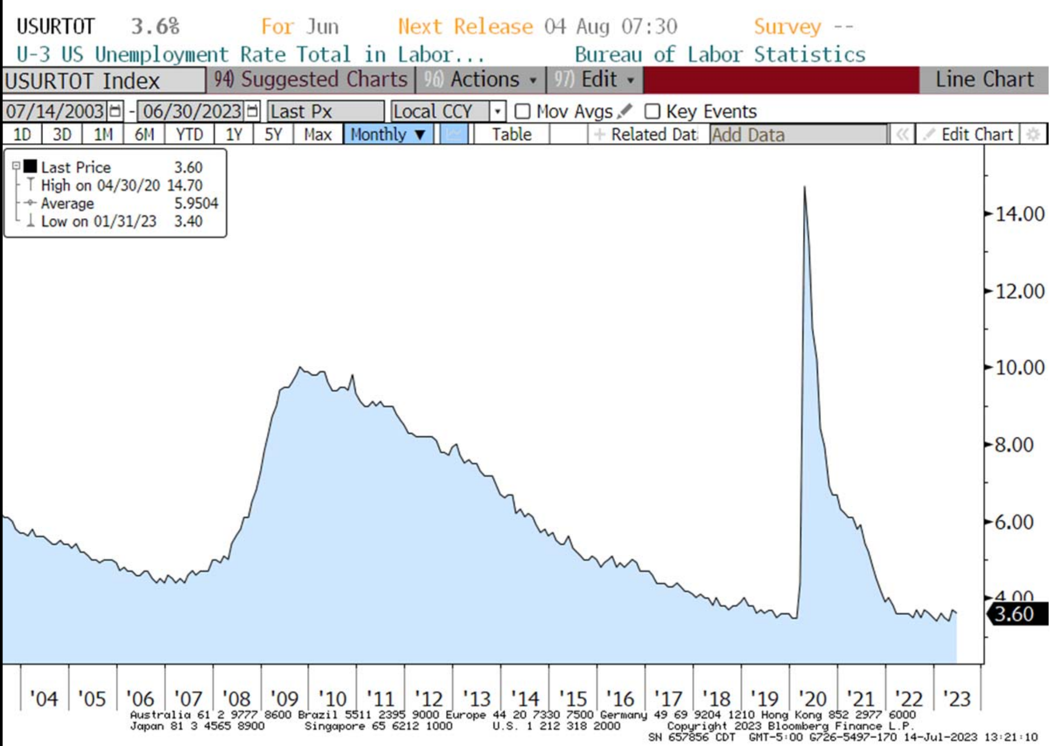
May FOMC Statement



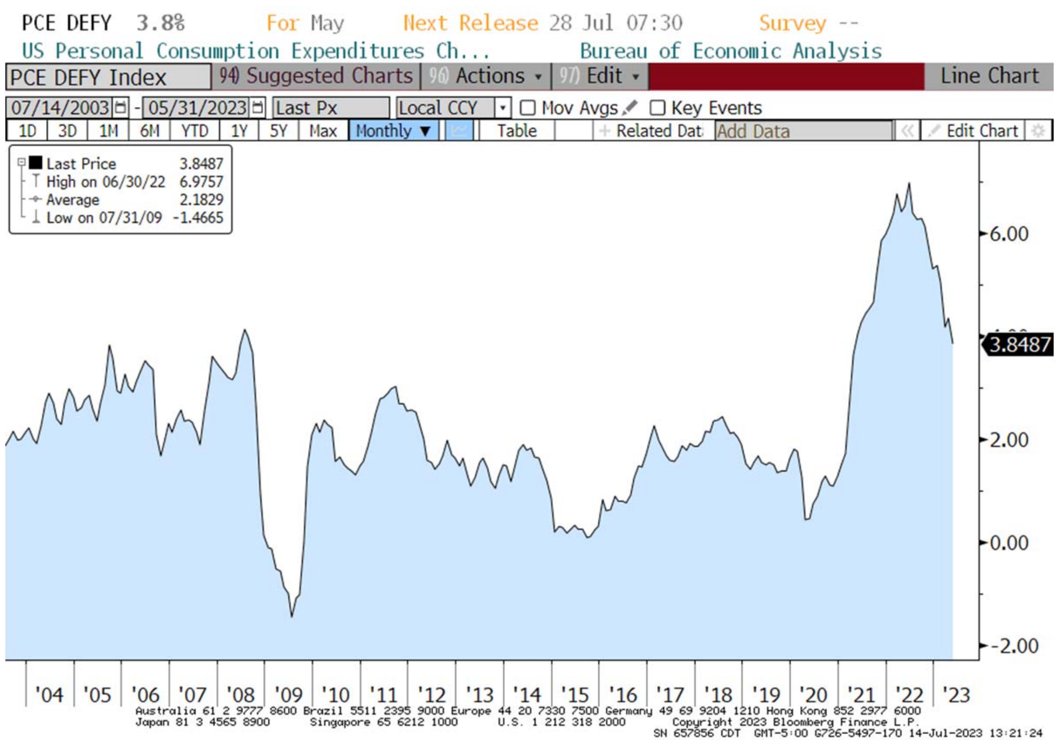


The Fed's Dual Mandate: Maximum Employment & Price Stability

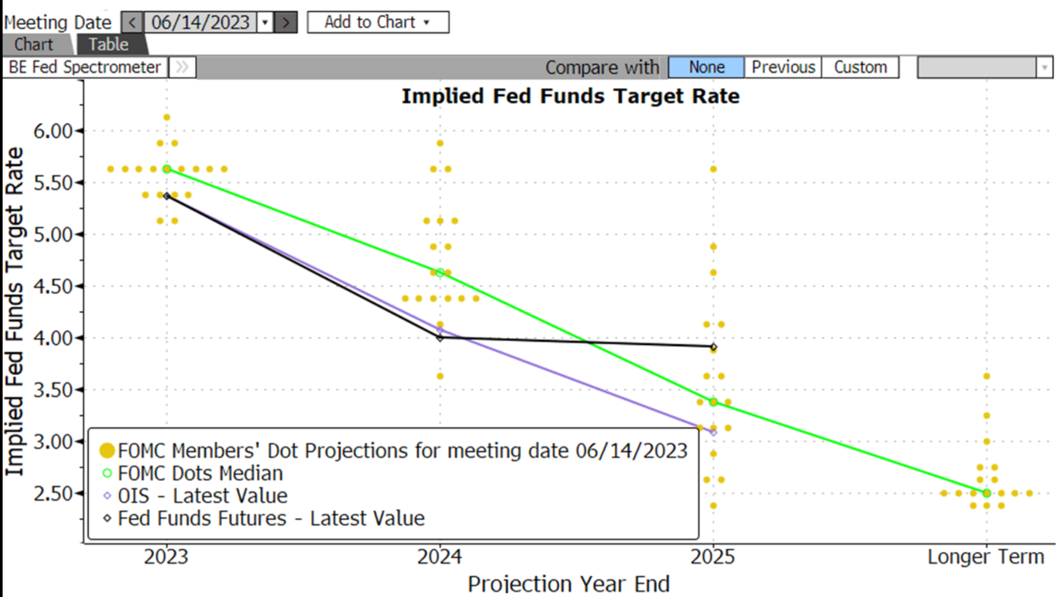
Unemployment Rate



Headline PCE Price Index



June 14 FOMC Dot Plot & Current Fed Funds Futures: One & Done?



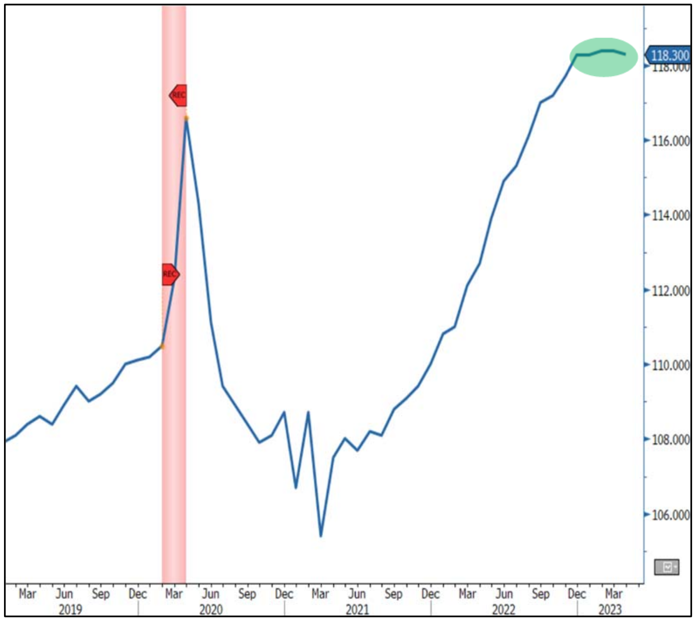
MEETING PROBABILITIES												
MEETING DATE	300-325	325-350	350-375	375-400	400-425	425-450	450-475	475-500	500-525	525-550	550-575	575-600
7/26/2023				0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	99.8%	0.0%	0.0%
9/20/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	83.9%	16.0%	0.0%
11/1/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	66.4%	30.1%	3.3%
12/13/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.9%	60.0%	25.4%	2.7%
1/31/2024	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	28.8%	47.8%	17.4%	1.8%
3/20/2024	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	18.0%	39.4%	30.8%	8.7%	0.8%
5/1/2024	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	16.7%	37.7%	31.5%	10.4%	1.4%	0.1%
6/19/2024	0.0%	0.0%	0.0%	0.0%	1.0%	9.1%	26.7%	34.8%	21.5%	6.2%	0.8%	0.0%
7/31/2024	0.0%	0.0%	0.0%	0.8%	7.3%	22.7%	32.9%	24.5%	9.6%	2.0%	0.2%	0.0%
9/25/2024	0.0%	0.0%	0.7%	6.2%	20.3%	31.3%	25.8%	12.0%	3.2%	0.5%	0.0%	0.0%
11/6/2024	0.0%	0.8%	6.7%	20.6%	31.1%	25.4%	11.7%	3.1%	0.5%	0.0%	0.0%	0.0%
12/18/2024	0.5%	4.6%	15.6%	27.3%	27.5%	16.7%	6.2%	1.4%	0.2%	0.0%	0.0%	0.0%

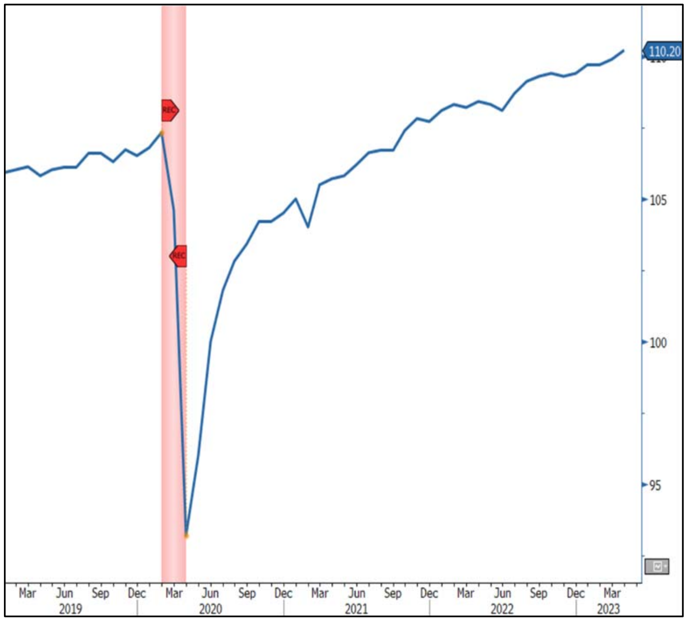
The Fed's "Problem" - Lagging Versus Leading Indicators

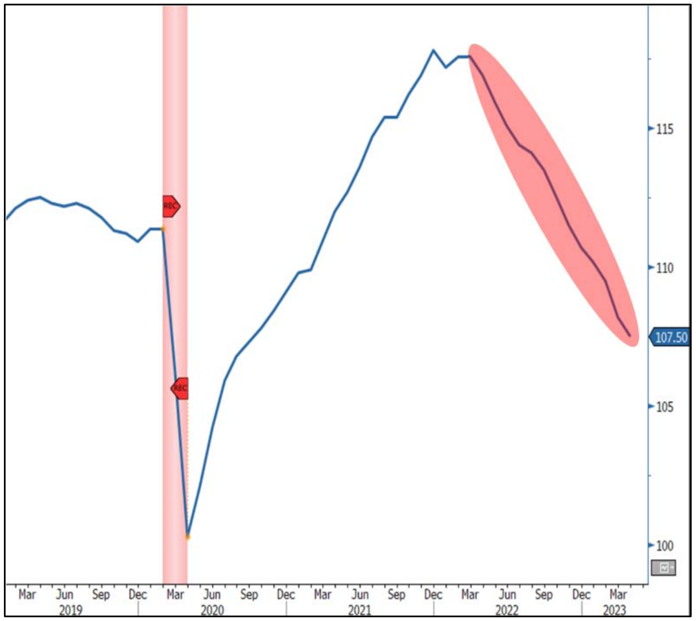
Lagging
- Unemployment
- Consumer Price Index (CPI)
- PCE Price Index
- GDP
- Average Hourly Earnings

Coincident
- Industrial Production
- Personal Income & Spending
- Manufacturing & Trade Sales
- Short-Term Interest Rates

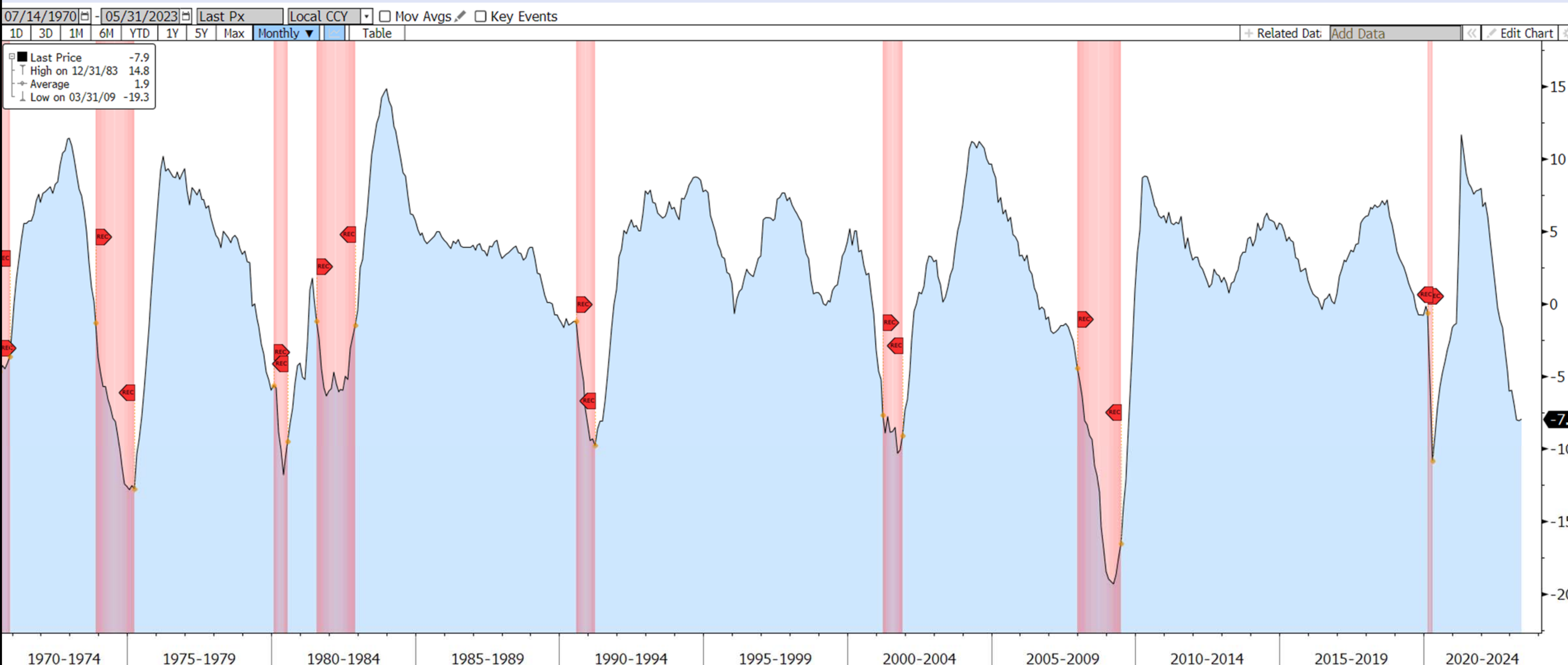
Leading
- Housing Starts
- Consumer Sentiment
- Stock Prices
- Interest Rate Spread
  (10yr vs 2yr etc)







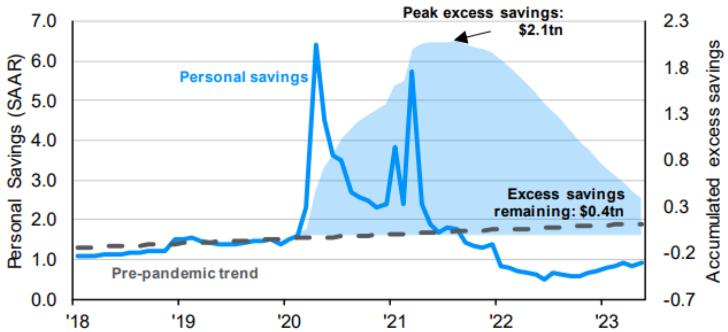
Leading Economic Indicators – YOY



Consumer "Excess Savings" Are Almost Gone And Delinquencies Are Rising

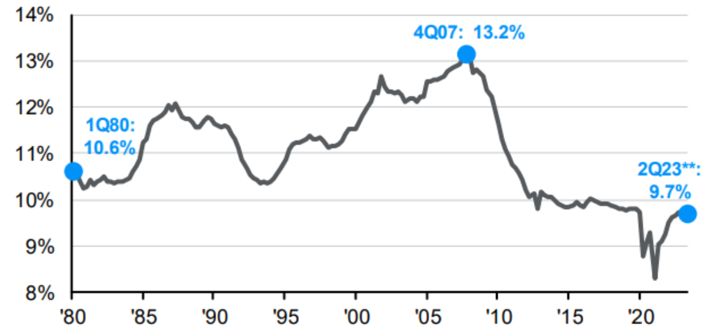
Household excess savings

Trillions of USD



Household debt service ratio

Debt payments as % of disposable personal income, SA

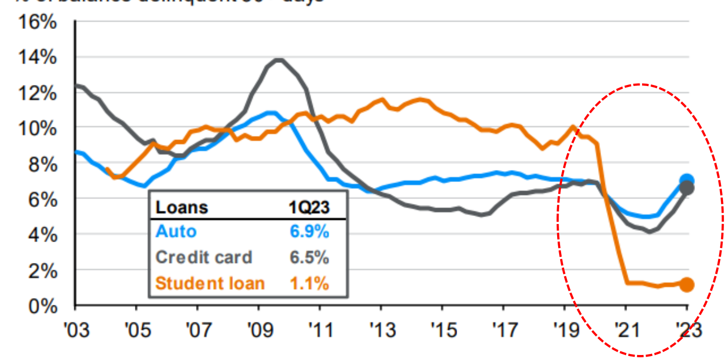


Revolving consumer credit outstanding

% of disposable income, SAAR

Flows into early delinquencies

% of balance delinquent 30+ days



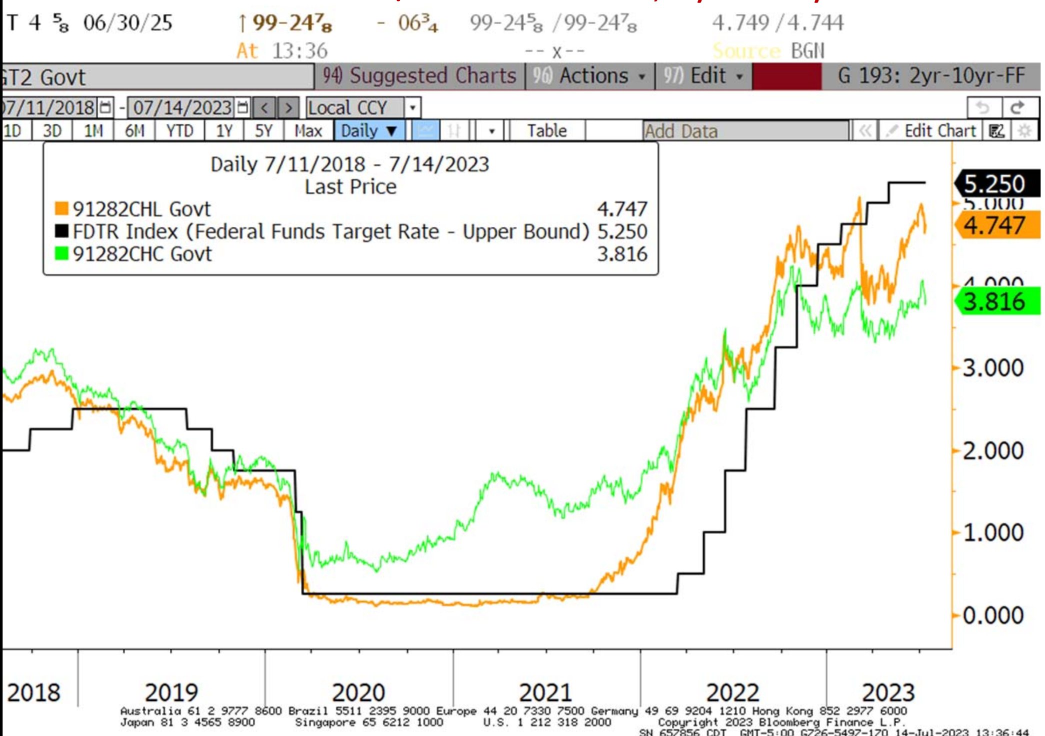
Suspension of student loan payments in 2020 led to big drop in delinquencies on other debt as consumers reallocated those payments. But now Auto & CC delinquencies are rising even before student payments restart in Sep/Oct.

Source: FactSet, FRB, J.P. Morgan Asset Management; (Top and bottom right) BEA.
Data include households and nonprofit organizations. SA – seasonally adjusted. *Revolving includes credit cards. Values may not sum to 100% due to rounding. **2Q23 figures for debt service ratio are J.P. Morgan Asset Management estimates.
Guide to the Markets – U.S. Data are as of June 7, 2023.

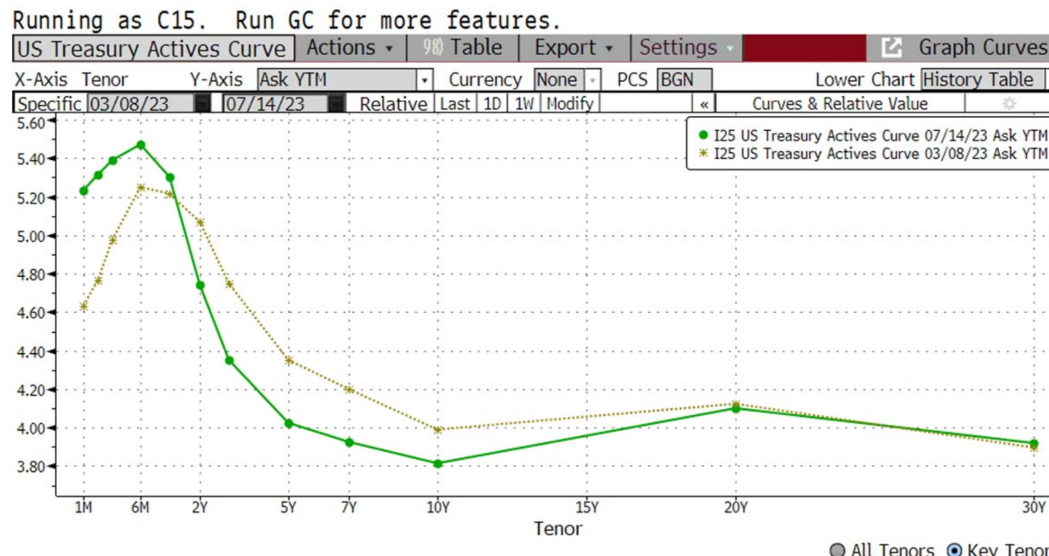
J.P.Morgan
ASSET MANAGEMENT

Have Bond Yields Peaked?

Recent Yield/Rate Moves: FF, 2yr & 10yr

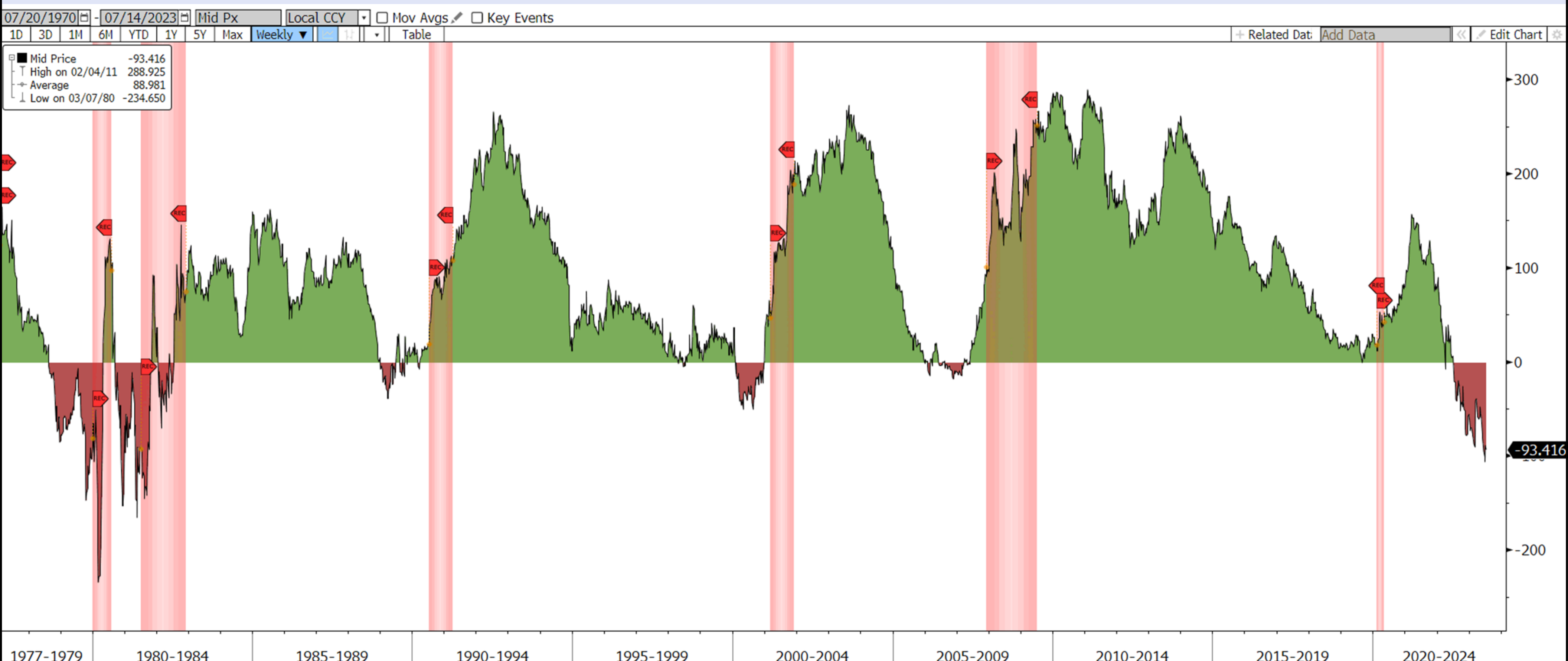


Yield Curve Change Since 3-8-23



	Curve Id	1M	3M	2Y	5Y	10Y	20Y	30Y
11)	I25 07/14/23	5.232	5.388	4.744	4.026	3.815	4.098	3.918
12)	I25 03/08/23	4.634	4.976	5.070	4.349	3.991	4.124	3.894
13)	I25 (07/14/23-03/0...	59.9	41.2	-32.6	-32.3	-17.7	-2.5	2.3

10yr-2yr Spread Since 1970



1 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 85
4565 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2023 Bloomberg F
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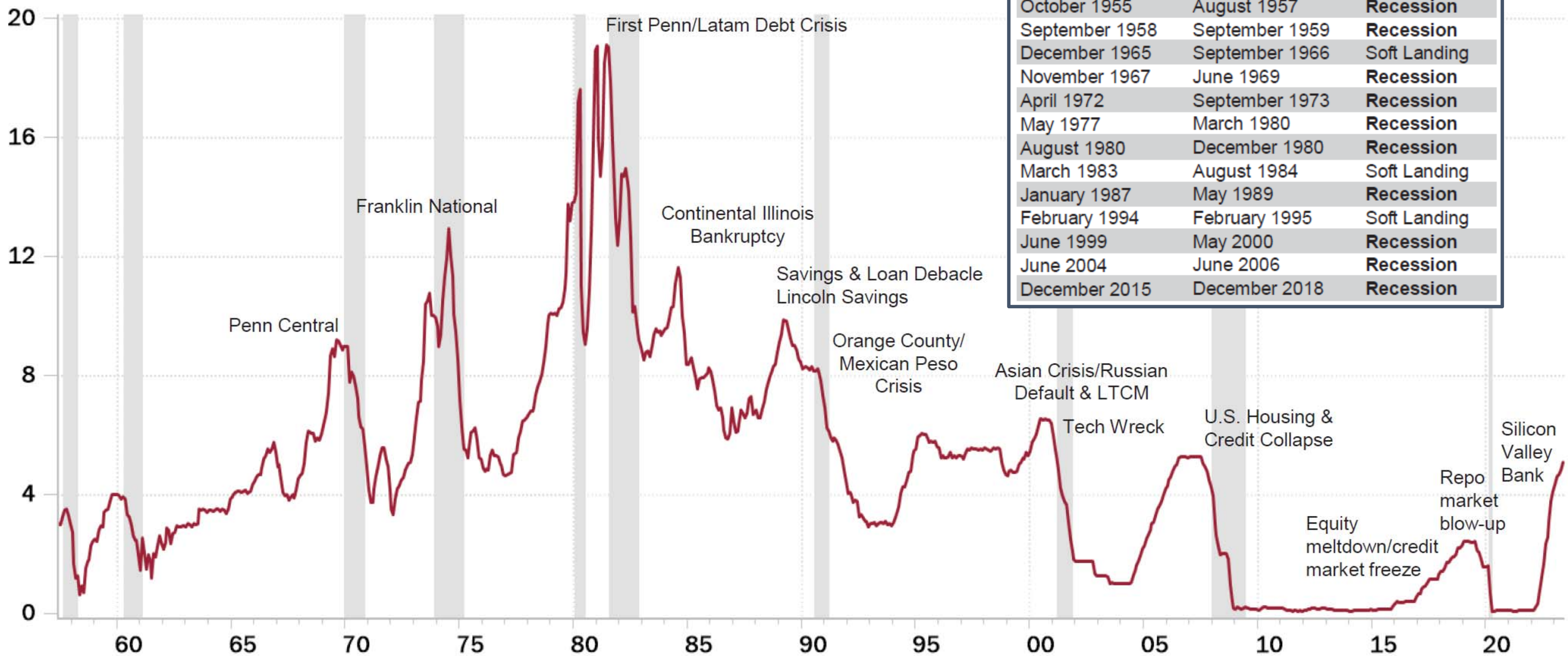
FED TIGHTENING CYCLES ARE ALWAYS FOLLOWED BY SOME SORT OF CRISIS

Federal Funds Rate
(percent)



First Hike	Last Hike	Result
October 1950	May 1953	**Recession**
October 1955	August 1957	**Recession**
September 1958	September 1959	**Recession**
December 1965	September 1966	Soft Landing
November 1967	June 1969	**Recession**
April 1972	September 1973	**Recession**
May 1977	March 1980	**Recession**
August 1980	December 1980	**Recession**
March 1983	August 1984	Soft Landing
January 1987	May 1989	**Recession**
February 1994	February 1995	Soft Landing
June 1999	May 2000	**Recession**
June 2004	June 2006	**Recession**
December 2015	December 2018	**Recession**

Shading indicates recession
Source: Haver Analytics, Rosenberg Research

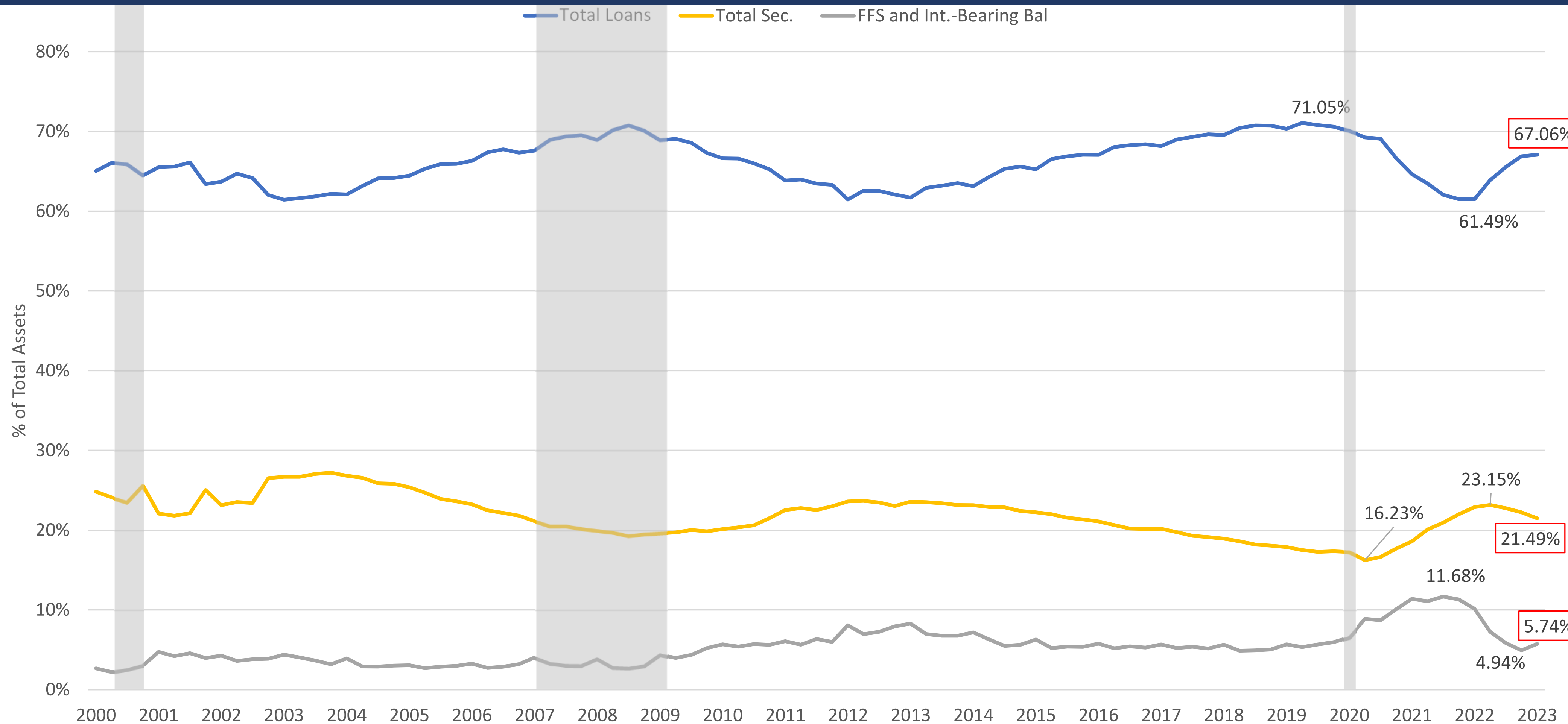
The Baker Group

Recent Banking Industry Trends

If you would like to see a Chart Pack of the following graphs for your bank versus peers, please email your Baker rep or ryan@gobaker.com

Balance Sheet Trends: Asset Mix

Averages for US Banks < $10B

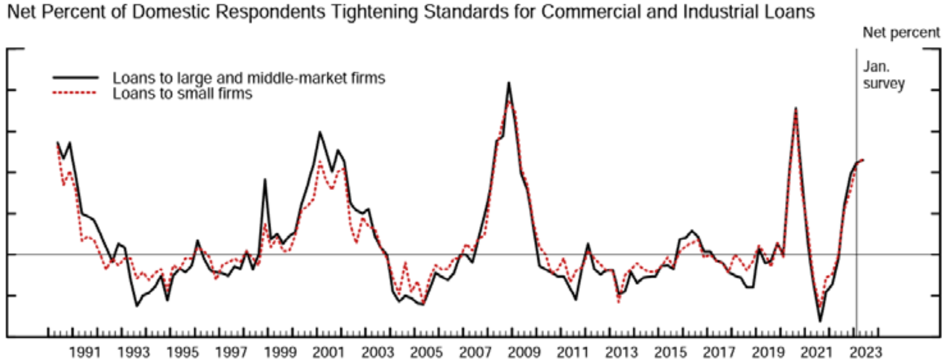


Data Source: Call Report data via S&P Global Note: Shaded area indicate U.S. Recessions

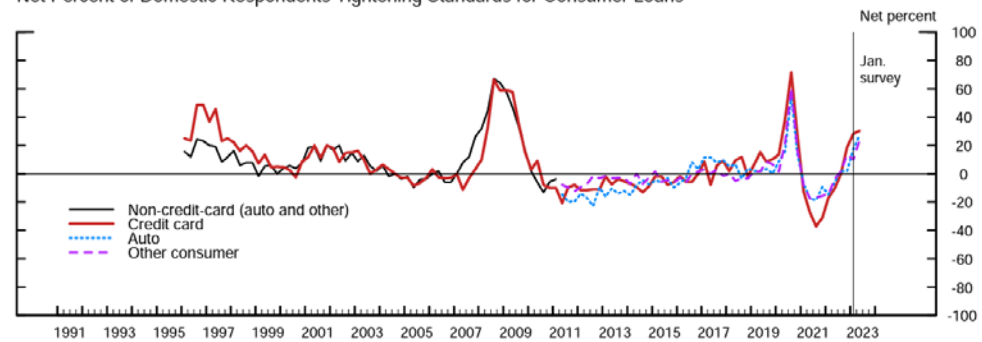
Banks Are Tightening Credit Standards…

Percentage of Banks Tightening Credit Standards For C&I, CRE, Consumer and Mortgage Loans

Net Percent of Domestic Respondents Tightening Standards for Commercial and Industrial Loans

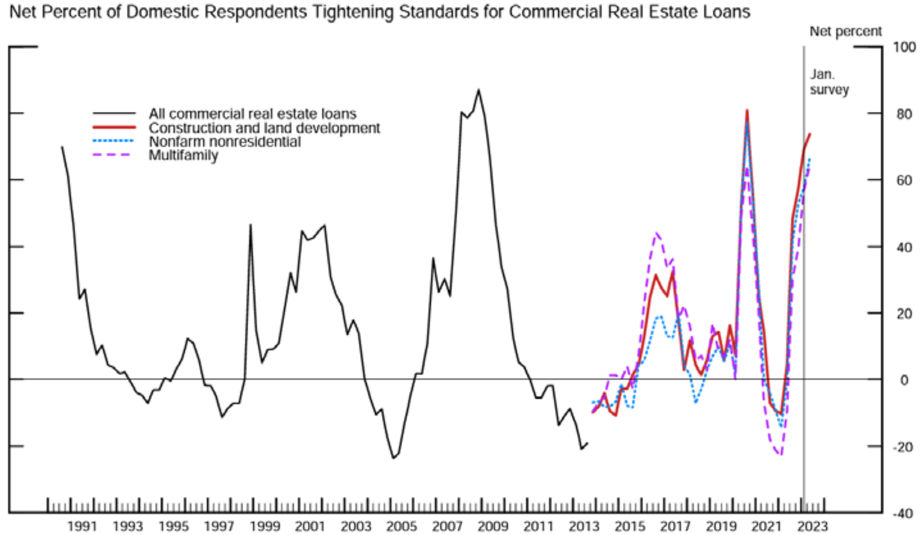


Net Percent of Domestic Respondents Tightening Standards for Consumer Loans

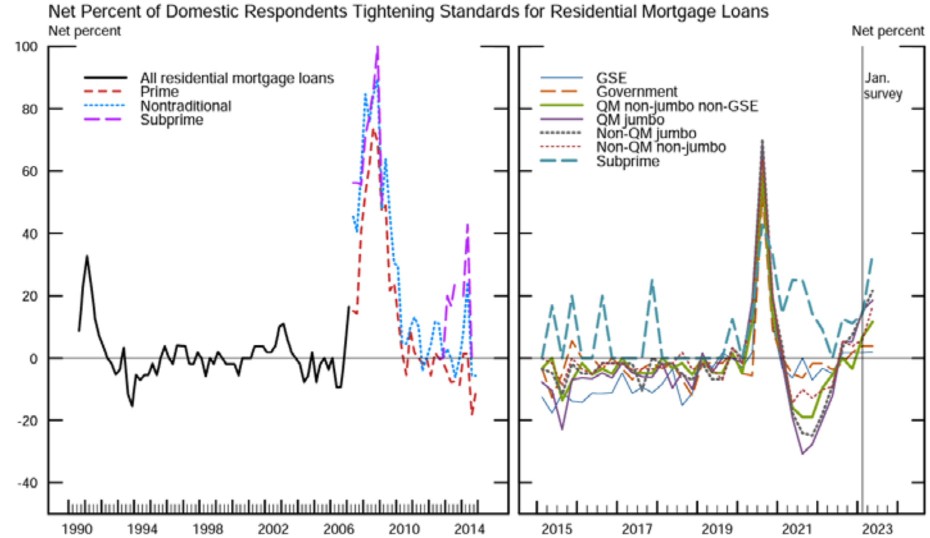


Note: For data starting in 2011:Q2, changes in standards for auto loans and consumer loans excluding credit card and auto loans are reported separately. In 2011:Q2 only, new and used auto loans are reported separately and equally weighted to calculate the auto loans series.

Net Percent of Domestic Respondents Tightening Standards for Commercial Real Estate Loans



Net Percent of Domestic Respondents Tightening Standards for Residential Mortgage Loans

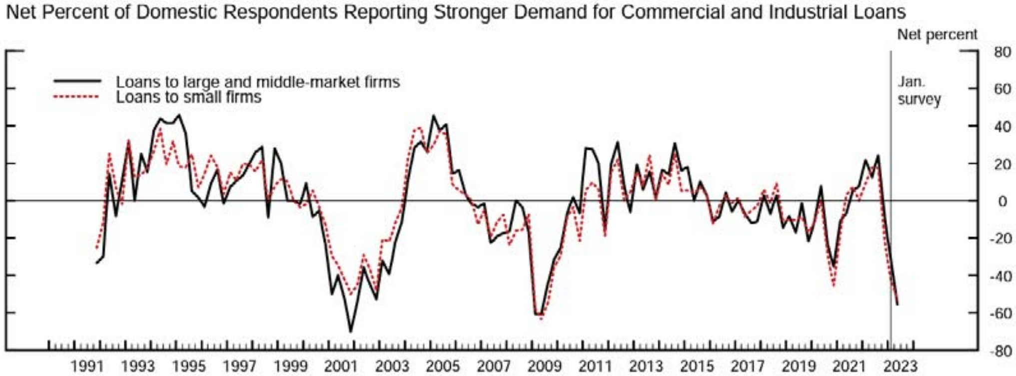


Data Source: *Senior Loan Officer Opinion Survey on Bank Lending Practices* – April 2023

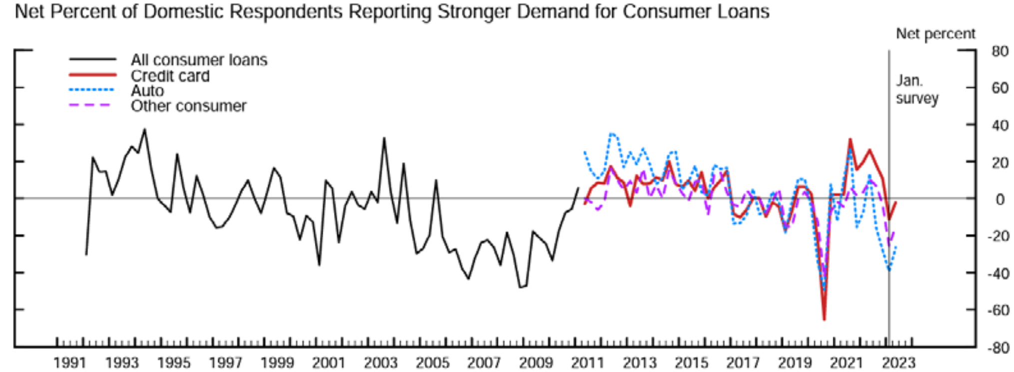
…As Demand For Loans Has Fallen Sharply

Percentage of Banks Reporting Stronger Demand For C&I, CRE, Consumer and Mortgage Loans

Net Percent of Domestic Respondents Reporting Stronger Demand for Commercial and Industrial Loans

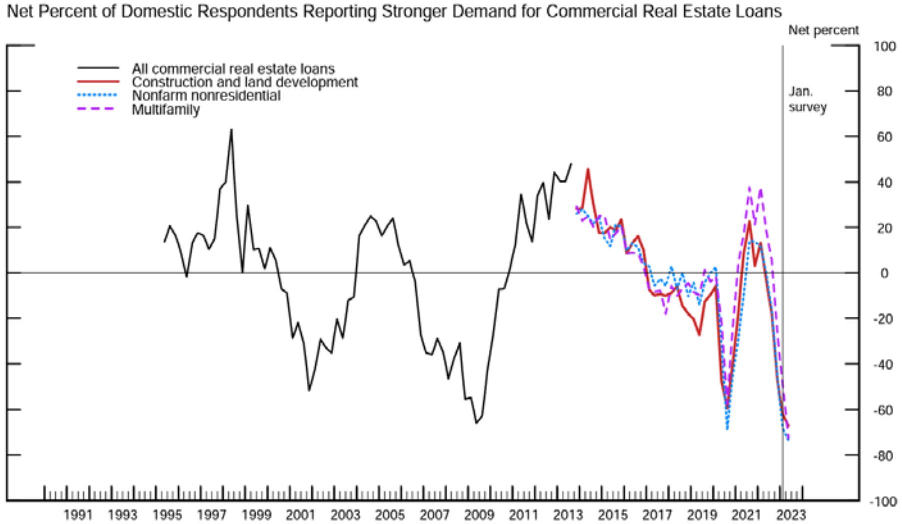


Net Percent of Domestic Respondents Reporting Stronger Demand for Consumer Loans

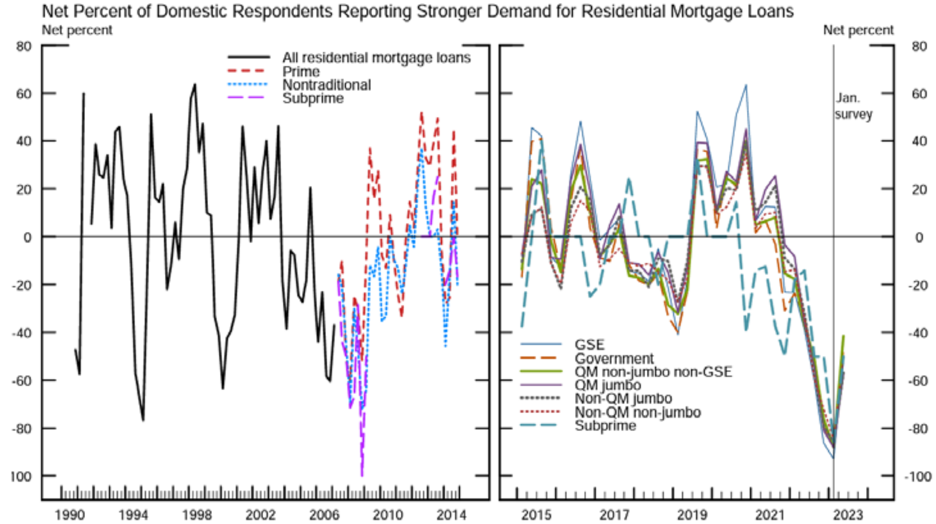


Note: For data starting in 2011:Q2, changes in demand for credit card loans, auto loans, and consumer loans excluding credit card and auto loans are reported separately.

Net Percent of Domestic Respondents Reporting Stronger Demand for Commercial Real Estate Loans



Net Percent of Domestic Respondents Reporting Stronger Demand for Residential Mortgage Loans

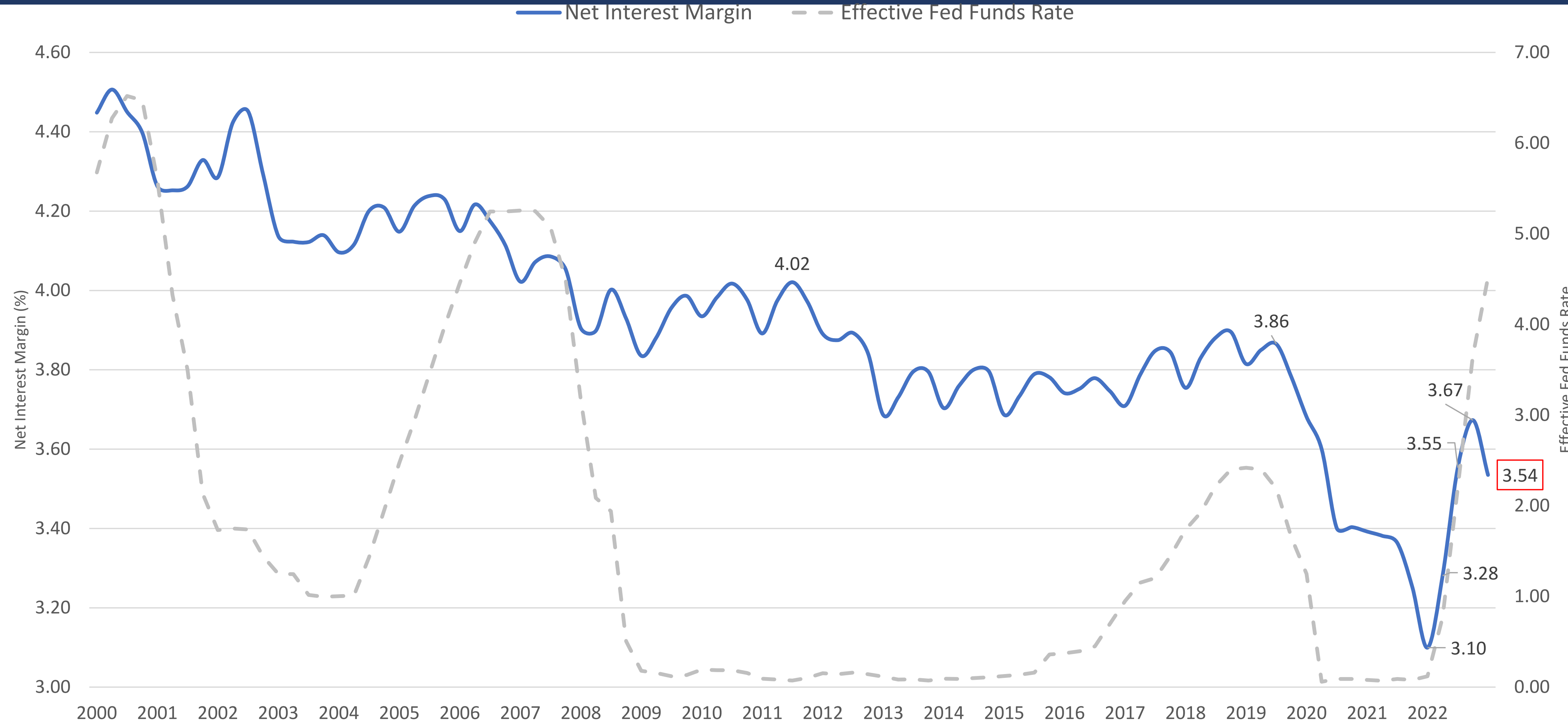


Data Source: *Senior Loan Officer Opinion Survey on Bank Lending Practices* – April 2023

Loans and Leases – All Commercial Banks – Weekly Data

Net Interest Margins Are Officially Under Pressure

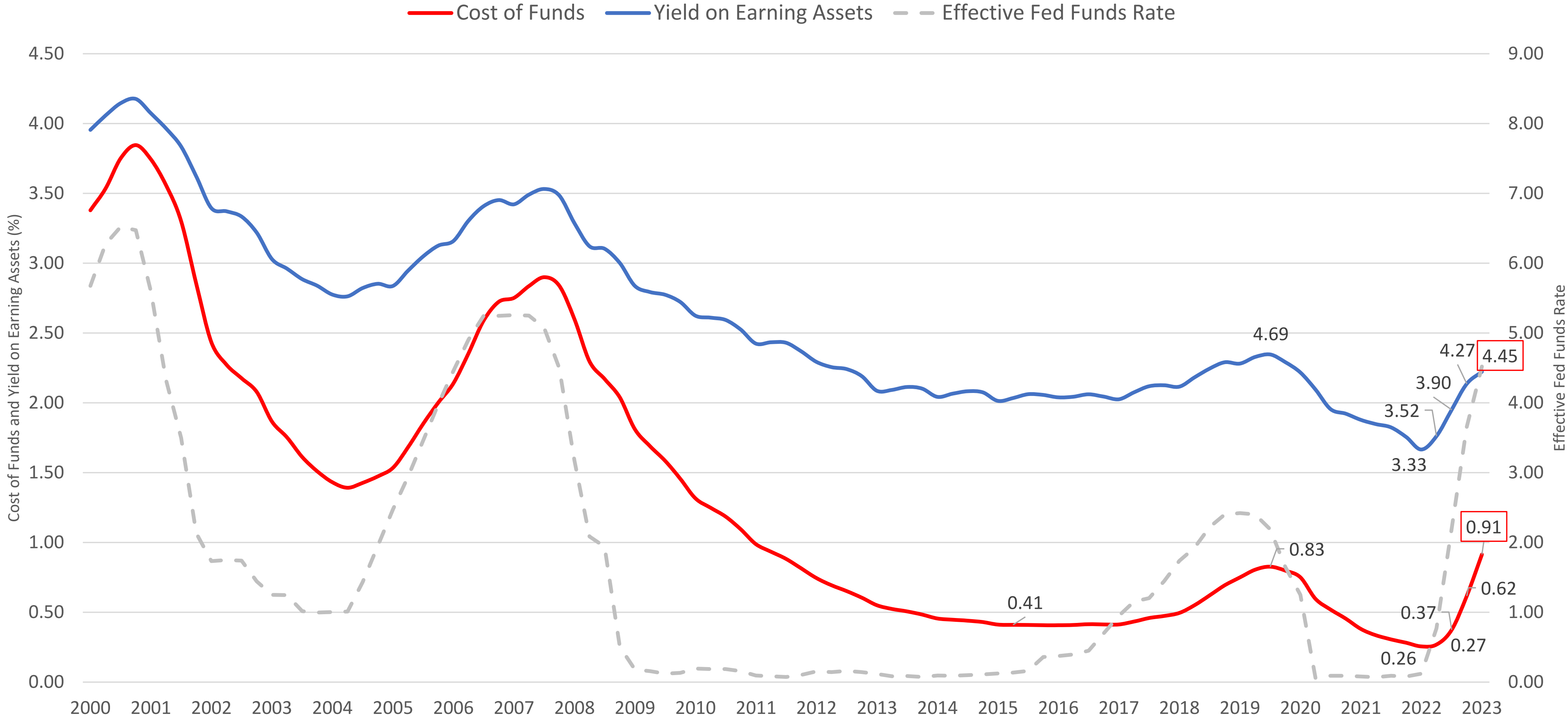
Averages for US Banks < $10B



Data Source: Call Report data via S&P Global

Cost of Funds Increases Are Outpacing Asset Yield Pickup

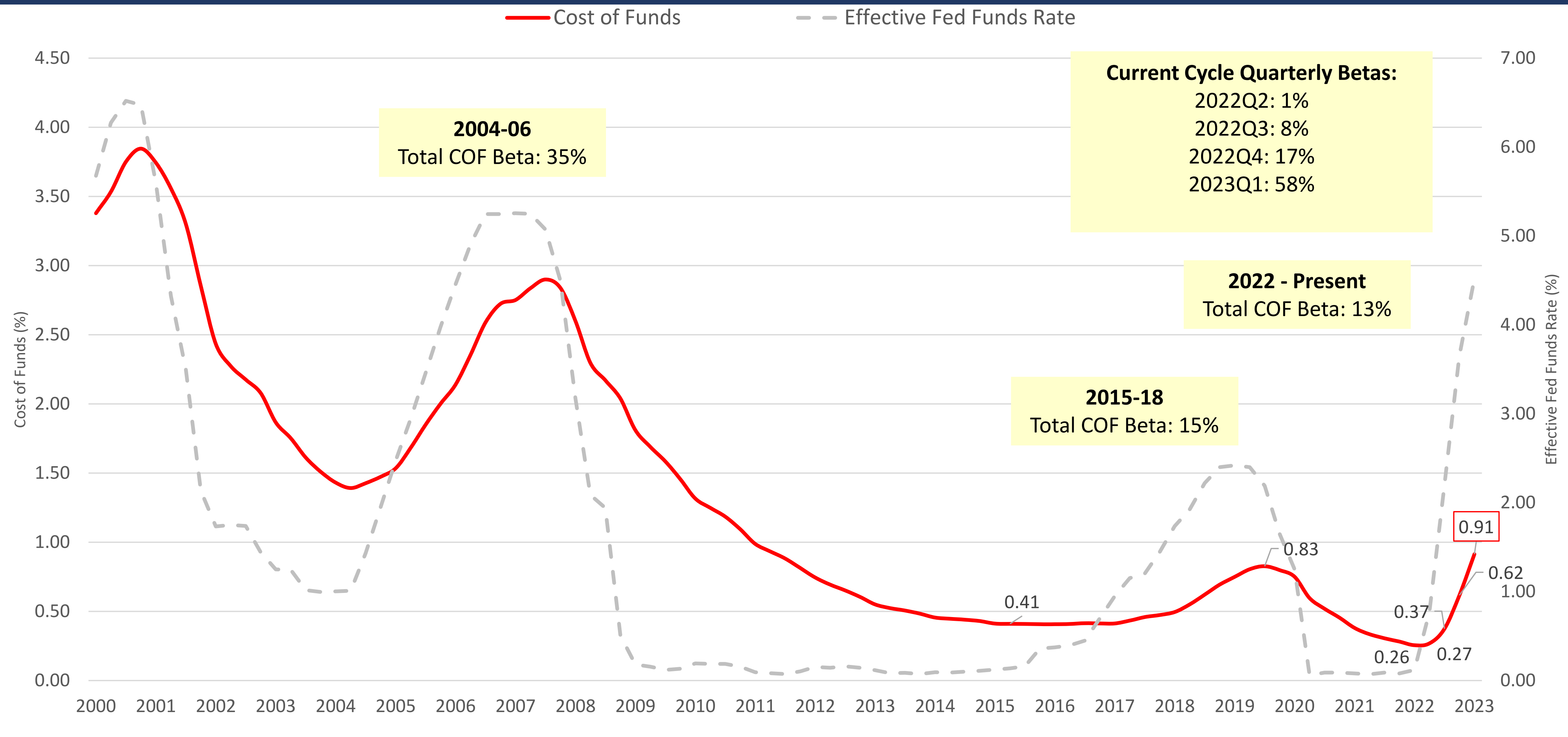
Averages for US Banks < $10B



Data Source: Call Report data via S&P Global

Total Bank Cost of Funds Betas are Rising Quickly

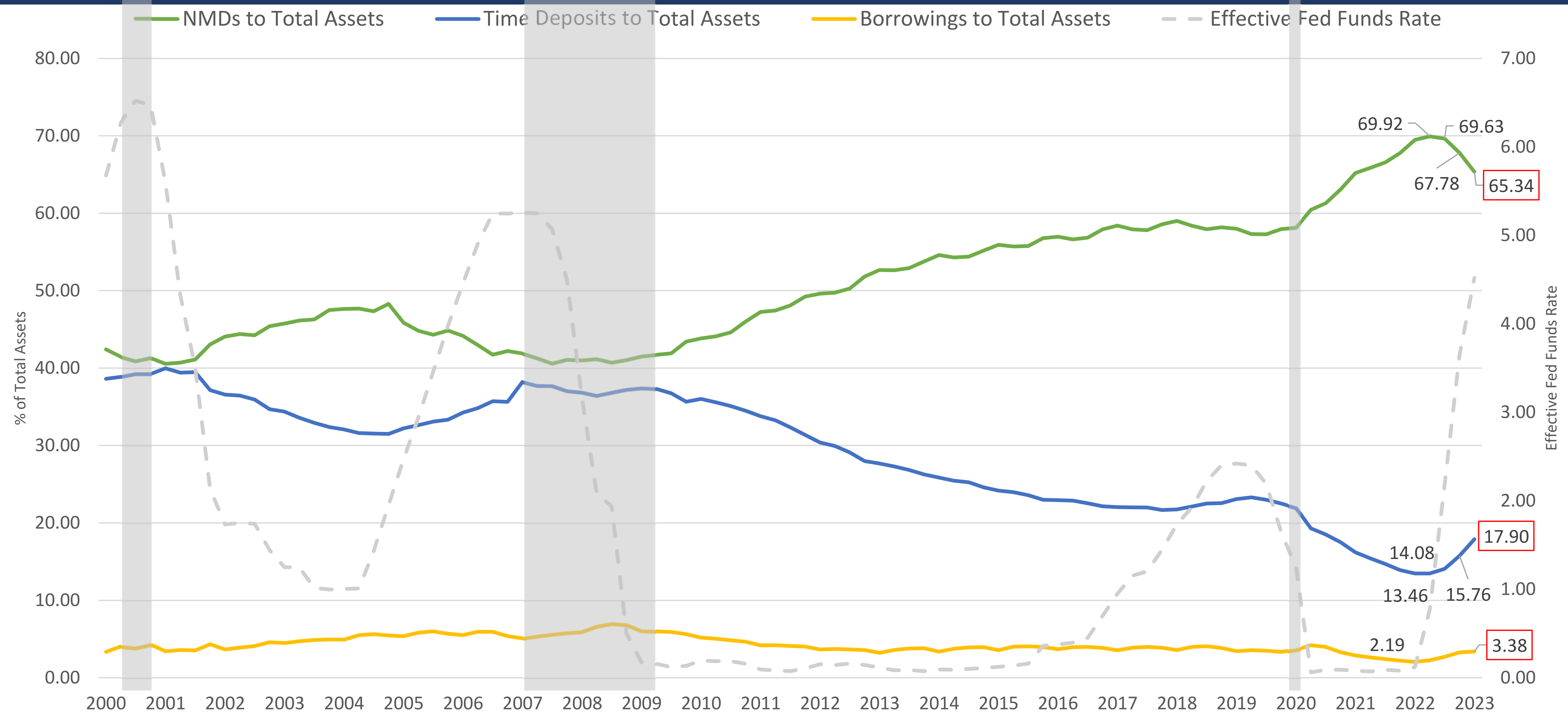
Averages for US Banks < $10B



Data Source: Call Report data via S&P Global

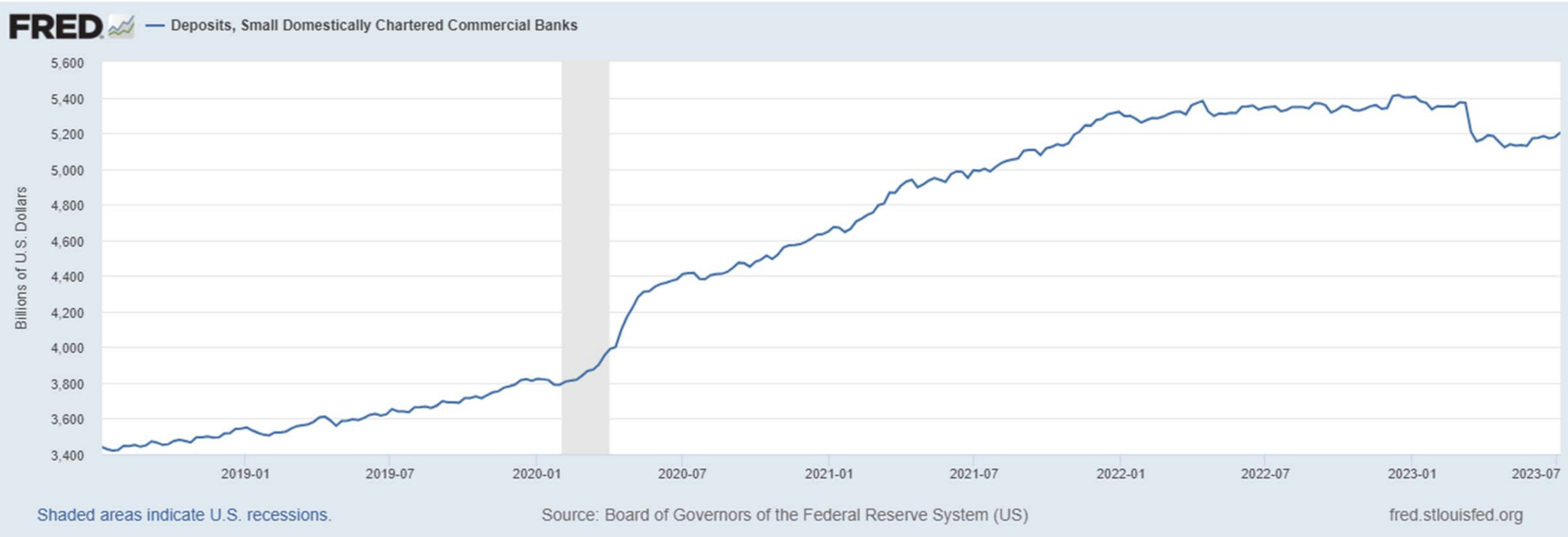
Balance Sheet Trends: Liability Mix

Averages for US Banks < $10B



Data Source: Call Report data via S&P Global

Total Deposits – “Small” Domestic Commercial Banks – Weekly Data

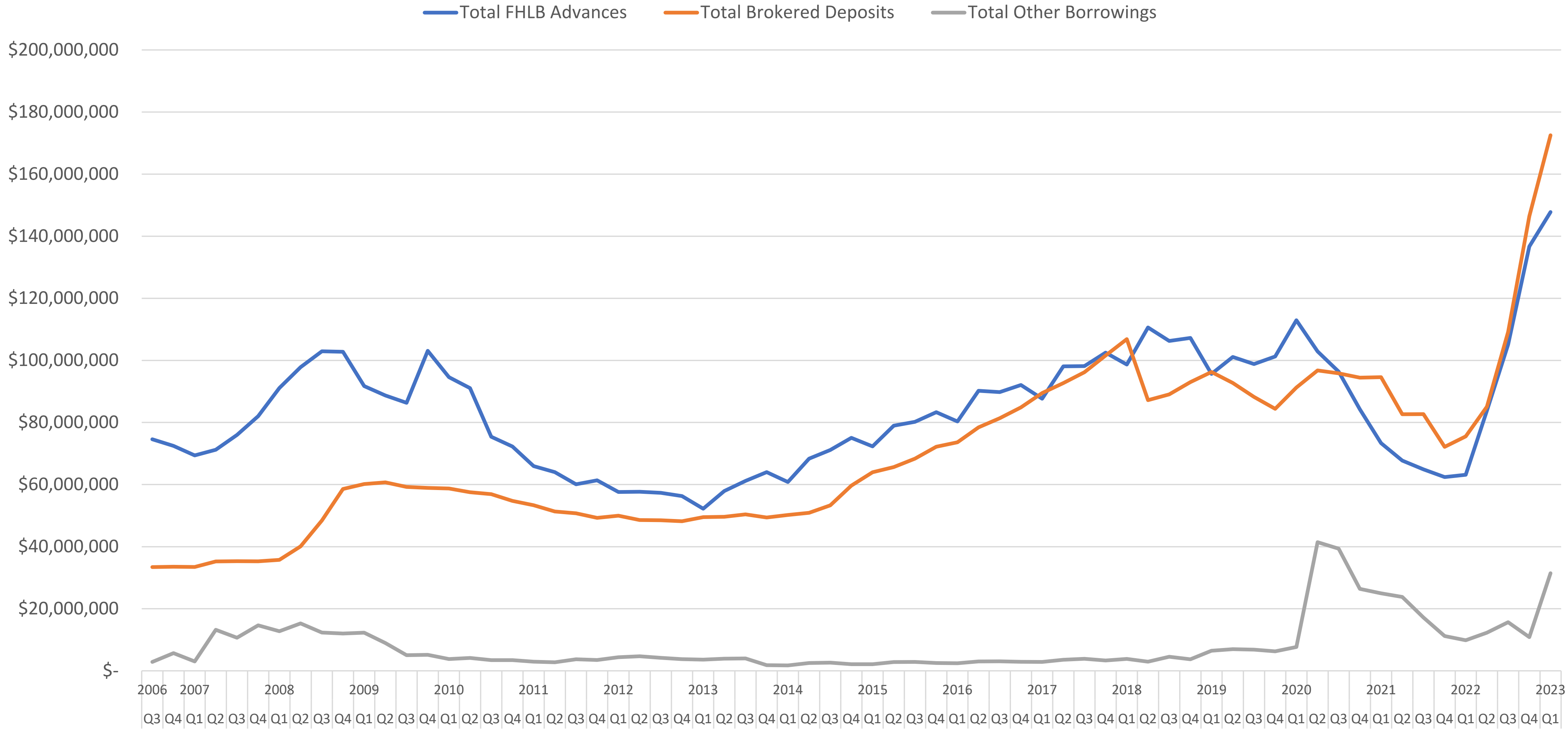


The H.8 release is primarily based on data that are reported weekly by a sample of approximately 875 domestically chartered banks and foreign-related institutions. Large domestically chartered commercial banks are defined as the top 25 domestically chartered commercial banks ranked by size.

Data Source: St. Louis FRED

Wholesale Funding Usage Surged in the 4th Quarter

Totals for US Banks < $10B



Data Source: Call Report data via S&P Global

Five Things You Should Be Doing Right Now In The Current Environment

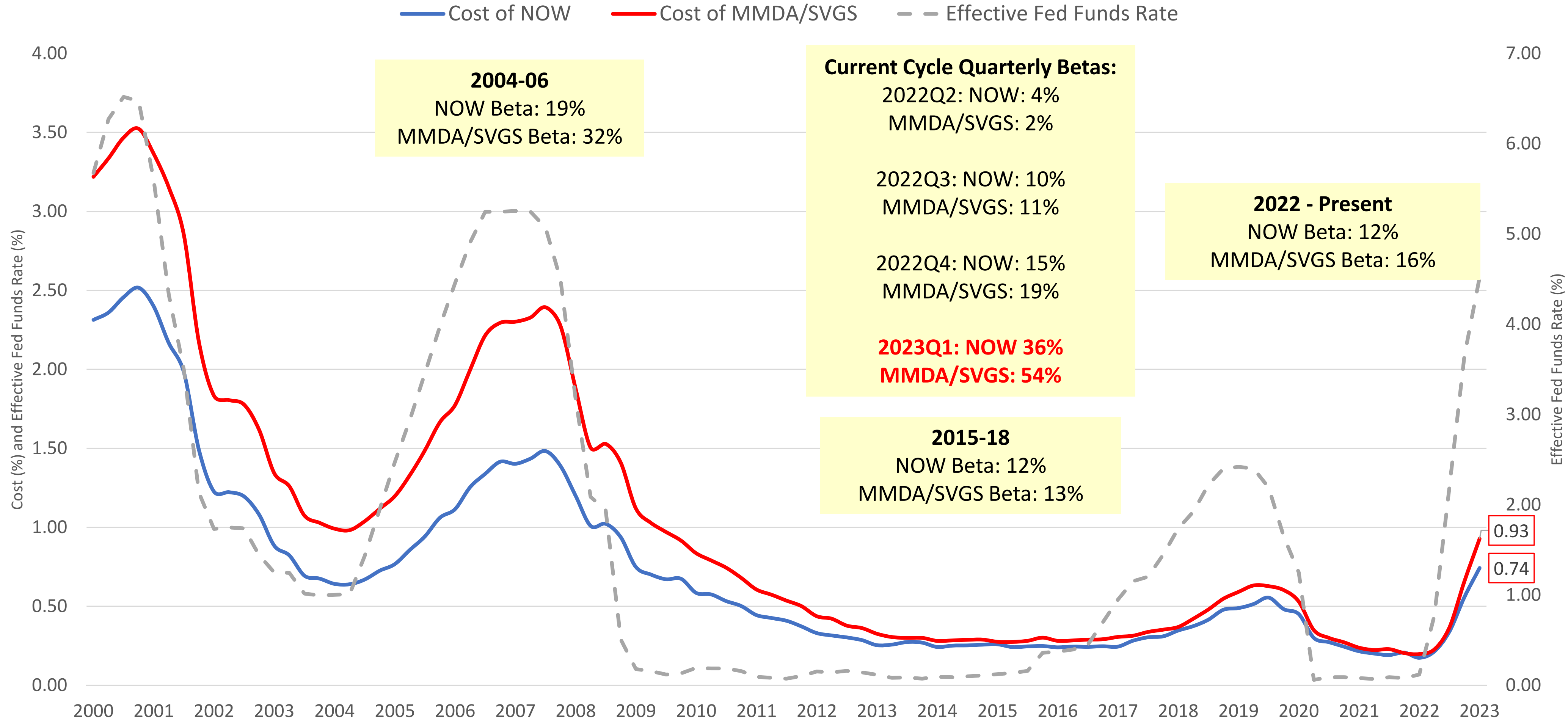
Five Things You Should Be Doing Right Now In The Current Environment

- ❑ Review, Update & Stress Your Current ALM/IRR Model Assumptions
- ❑ Review & Update Your Contingency Funding Plan
- ❑ Understand & Stress Your Liquidity Position
- ❑ Use Your Asset/Liability Model as a Strategic Tool
- ❑ Ensure Your Balance Sheet Is *Recession Ready*!

Review & Update Current Modeling Assumptions

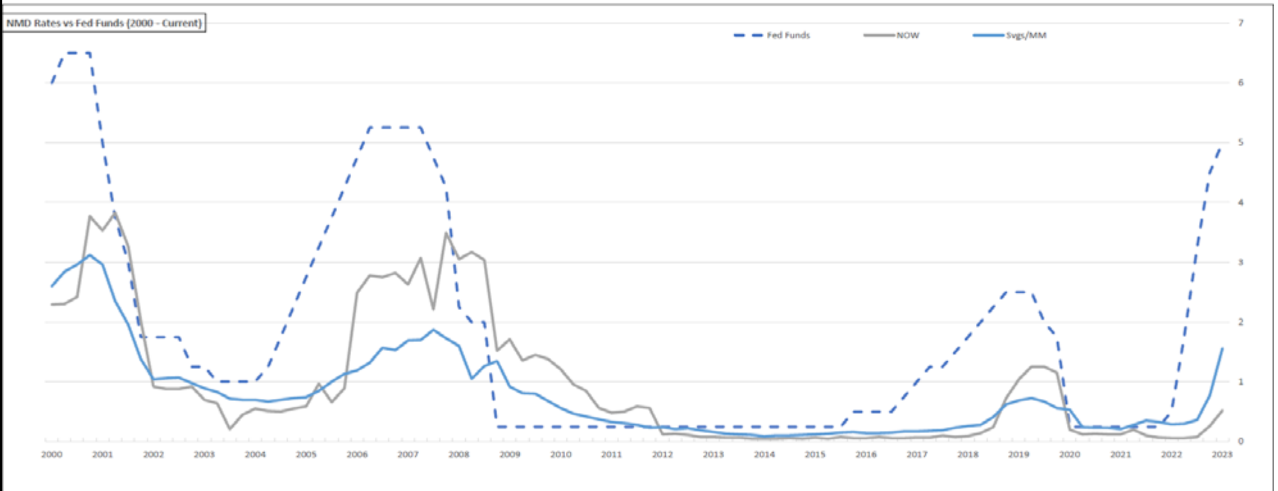
NMD Betas Are Accelerating

Averages for US Banks < $10B



Data Source: Call Report data via S&P Global

Run A “Quarterly Beta Analysis” On Your Institution



#3 Rising Rates: Q3 2015 to Q4 2018 - FF Increased 225bps

	2015Q3	2015Q4	2016Q1	2016Q2	2016Q3	2016Q4	2017Q1	2017Q2	2017Q3	2017Q4	2018Q1	2018Q2	2018Q3	2018Q4	Beta
NOW	0.08	0.06	0.06	0.08	0.06	0.06	0.07	0.07	0.10	0.08	0.09	0.14	0.24	0.73	16%
SVG/MM	0.15	0.16	0.14	0.14	0.15	0.17	0.17	0.18	0.19	0.23	0.26	0.28	0.41	0.62	16%
Fed Funds	0.25	0.50	0.50	0.50	0.50	0.75	1.00	1.25	1.25	1.50	1.75	2.00	2.25	2.50	

#4 Falling Rates: Q2 2019 to Q2 2021 - FF Decreased 225bps

	2019Q2	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3	2021Q4	Beta
NOW	1.25	1.25	1.15	0.20	0.12	0.13	0.12	0.12	0.20	0.10	0.07	57%
SVG/MM	0.73	0.67	0.56	0.53	0.24	0.23	0.23	0.21	0.28	0.35	0.33	19%
Fed Funds	2.50	2.00	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	

#5 Rising Rates: Q1 2022 to Q1 2023 - FF Increased 450bps

	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	Beta
NOW	0.06	0.06	0.08	0.26	0.52	9%
SVG/MM	0.29	0.30	0.36	0.77	1.56	23%
Fed Funds	0.50	1.75	3.25	4.50	5.00	
NOW Qtr Beta	-	0%	1%	14%	52%	
SVG/MM Qtr Beta	-	1%	4%	33%	158%	

- IRR models need to have “institution specific” assumptions rather than vendor supplied assumptions.
- Documentation of NMD assumptions typically comes from Call Report Data or Institution Provided Core Processor Data
- In this cycle, it is critical that you run a “Quarterly Beta Analysis” as beats are accelerating quickly
- Give me your card or email ryan@gobaker.com for Your Latest Call Report Based NMD Analysis Packet

Sample Call Report Based Historical NMD Beta Analysis Including Cycle Betas and 2022-23 Quarterly Betas

2023 Examination Prep - Stress/Sensitivity Testing Recommendations

- Increase shift sensitivities (betas) and reduce time lags on NMDs (rising rate scenarios)
- Reduce fixed rate loan betas
- Reduce NMD average lives by half
- Migrate a % of NMD into wholesale funding (simulation)
- Reduce shift sensitivities and increase time lags on NMDs (falling rate scenarios)
- Double all loan CPR speeds (lower rates)
- Reduce all loan CPR speeds by half (higher rates)

Key Stress/Sensitivity Tests to run in 2023

Recommendations: Interest Rate Risk Management

- **Underlying assumptions could come under scrutiny.**
  - Higher deposits betas than we've had in years may be needed
  - 50% NMD Betas are a good starting point.

- **Understand your most recent backtest and any significant variances.**
  - Most backtests we have reviewed recently show significant variances due to "betas" on deposits

- **Assumption reviews should happen soon if they haven't already.**
  - Use backtest to jump start those reviews.

- **Stress / Sensitivity Test Key Assumptions**
  - Increase beta factors and reduce time lags on NMDs
    - 75% or higher beta with zero month time lag in rising rate scenarios and 0% beta in falling rate scenarios (high stress)
  - Reduce average lives on NMD
    - Cut them in half
  - Migrate a % of NMD into wholesale funding (stressed simulation)
    - Double what you have typically done in the past. If you've never done any migration simulation, start with 20% NMD migration.

- **Annual Independent Review of ALCO Process**

Review & Update Your Contingency Funding Plan

Recommendations: Contingency Funding Plan

- **Review your contingency funding plan.**
  - Tailored to the current balance sheet, risk exposure and funding needs.

- **Consider adding more funding sources:**
  - Federal Home Loan Bank
  - Fed Discount Window
  - Fed's Bank Term Funding Program
  - Brokered Deposits / CD Funding

- **Ensure existing signed agreements are up to date and be aware of any specific criterion (tangible book equity).**

- **Consider Adding Two New Liquidity Stress Scenarios Given Current Events**
  - Uninsured depositors and/or large depositor runoff
  - Negative tangible equity capital (e.g. lose access to new FHLB borrowings, other contingent liquidity)

- **Test all your funding sources ASAP! Document the testing of those lines.**
  - Consider testing more frequently than annually until things calm down

Understand & Stress Your Liquidity Position

Recommendations: Liquidity Risk Management Practices

- **Large Depositors/Uninsured Depositors**
  - Be able to answer questions about these depositors
  - Do we have ways to provide more insurance coverage? Do we need to look into it?
  - Track and report potential funding concentrations to ALCO and Board
    - Potentially Volatile Funding Sources > 10% of Total Assets

- **Sources and Uses of Funds Reporting (Dynamic Liquidity Monitor)**
  - Critical, especially if liquidity is tight, loan growth is budgeted or any growth is planned
  - Incorporate realistic loan pipeline reports

- **Liquidity Stress Testing (Dynamic Liquidity Monitor)**
  - New scenarios considering current events
    - Uninsured depositors and/or large depositor runoff
    - Negative tangible equity capital
  - Asset quality implications (less than well-capitalized status)

Call Report Liquidity Stress Test – Easy To Generate, Basic First Step

Bank	Sample Bank
City	Anytown
State	MA
Total Assets	$606,558
Period	2022Q4
Liquid Assets / Total Assets (Base)	18.31%

Liquidity Ratios (Base)	Ratio %	Benchmarks*	Outside?
Dependency Ratio ($250M)	1.55%	< 20%	
Loans to Deposits	83.88%	< 75%	YES
Short-Term Investments* / Total Assets	2.38%	> 7.5%	YES
Reliance on Wholesale Funding	0.04%	< 15%	

Omit & Hide HTM Securities?	NO

Stress Test Assumptions

Runoff	Low	Moderate	High
Transaction Deposit Accounts	5%	10%	20%
MMDA	5%	10%	20%
Savings Deposits	5%	10%	20%
Time Deposits < $250M	5%	10%	20%
Time Deposits > $250M	5%	10%	20%
Haircut			
Fed Funds Purchased	10%	25%	50%
FHLB Advances < 1 Year	10%	15%	25%
Other Borrowings < 1 Year	10%	25%	50%
Liquidity Ratio Assumptions			
% Decrease of Short-Term Investments	10%	25%	50%
% Increase of Wholesale Funding	90%	75%	50%

Liquidity Stress Test Analysis

Low Stress

Liquid Assets				Total
Cash & Noninterest Bearing Balances			$	1,675
Interest Bearing Balances			$	14,462
Federal Funds Sold			$	-
Reverse Repos			$	-
HTM Securities (Fair Value)			$	23,483
AFS Securities (Fair Value)			$	71,737
Less: Pledged Securities			$	312
Total Liquid Assets			$	111,045
Deposit Stress Outflows (Runoff)	**Total**	**Runoff %**		**Total Runoff**
Transaction Deposit Accounts	$ 348,558	5%	$	17,428
MMDA	$ 23,648	5%	$	1,182
Savings Deposits	$ 92,388	5%	$	4,619
Time Deposits < $250M	$ 73,893	5%	$	3,695
Time Deposits > $250M	$ 23,055	5%	$	1,153
Total Deposit Stress Outflows			$	28,077
Borrowing Stress Outflows (Haircut)	**Total**	**Haircut %**		**Total Runoff**
Federal Funds Purchased & Repos	$ -	10%	$	-
FHLB Advances < 1 Year	$ -	10%	$	-
Other Borrowings < 1 Year	$ -	10%	$	-
Total Borrowing Stress Outflows			$	-
Total Stress Outflows			$	28,077
Liquid Assets Before Stress			$	111,045
Less: Stressed Outflows				($28,077)
Liquid Assets After Low Stress Test			$	82,968
Liquid Assets / Total Assets (Post Stress)				14.34%

Liquidity Ratios (Low Stress)	Ratio %	Benchmarks*	Outside?
Dependency Ratio ($250M)	6.55%	< 20%	
Loans to Deposits	88.29%	< 75%	YES
Short-Term Investments* / Total Assets	2.15%	> 7.5%	YES
Reliance on Wholesale Funding	4.56%	< 15%	

Moderate Stress

Liquid Assets				Total
Cash & Noninterest Bearing Balances			$	1,675
Interest Bearing Balances			$	14,462
Federal Funds Sold			$	-
Reverse Repos			$	-
HTM Securities (Fair Value)			$	23,483
AFS Securities (Fair Value)			$	71,737
Less: Pledged Securities			$	312
Total Liquid Assets			$	111,045
Deposit Stress Outflows (Runoff)	**Total**	**Runoff %**		**Total Runoff**
Transaction Deposit Accounts	$ 348,558	10%	$	34,856
MMDA	$ 23,648	10%	$	2,365
Savings Deposits	$ 92,388	10%	$	9,239
Time Deposits < $250M	$ 73,893	10%	$	7,389
Time Deposits > $250M	$ 23,055	10%	$	2,306
Total Deposit Stress Outflows			$	56,154
Borrowing Stress Outflows (Haircut)	**Total**	**Haircut %**		**Total Runoff**
Federal Funds Purchased & Repos	$ -	25%	$	-
FHLB Advances < 1 Year	$ -	15%	$	-
Other Borrowings < 1 Year	$ -	25%	$	-
Total Borrowing Stress Outflows			$	-
Total Stress Outflows			$	56,154
Liquid Assets Before Stress			$	111,045
Less: Stressed Outflows				($56,154)
Liquid Assets After Moderate Stress Test			$	54,891
Liquid Assets / Total Assets (Post Stress)				9.97%

Liquidity Ratios (Moderate Stress)	Ratio %	Benchmarks*	Outside?
Dependency Ratio ($250M)	11.53%	< 20%	
Loans to Deposits	93.20%	< 75%	YES
Short-Term Investments* / Total Assets	1.79%	> 7.5%	YES
Reliance on Wholesale Funding	7.73%	< 15%	

High Stress

Liquid Assets				Total
Cash & Noninterest Bearing Balances			$	1,675
Interest Bearing Balances			$	14,462
Federal Funds Sold			$	-
Reverse Repos			$	-
HTM Securities (Fair Value)			$	23,483
AFS Securities (Fair Value)			$	71,737
Less: Pledged Securities			$	312
Total Liquid Assets			$	111,045
Deposit Stress Outflows (Runoff)	**Total**	**Runoff %**		**Total Runoff**
Transaction Deposit Accounts	$ 348,558	20%	$	69,712
MMDA	$ 23,648	20%	$	4,730
Savings Deposits	$ 92,388	20%	$	18,478
Time Deposits < $250M	$ 73,893	20%	$	14,779
Time Deposits > $250M	$ 23,055	20%	$	4,611
Total Deposit Stress Outflows			$	112,308
Borrowing Stress Outflows (Haircut)	**Total**	**Haircut %**		**Total Runoff**
Federal Funds Purchased & Repos	$ -	50%	$	-
FHLB Advances < 1 Year	$ -	25%	$	-
Other Borrowings < 1 Year	$ -	50%	$	-
Total Borrowing Stress Outflows			$	-
Total Stress Outflows			$	112,308
Liquid Assets Before Stress			$	111,045
Less: Stressed Outflows				($112,308)
Liquid Assets After High Stress Test			$	(1,263)
Liquid Assets / Total Assets (Post Stress)				-0.26%

Liquidity Ratios (High Stress)	Ratio %	Benchmarks*	Outside?
Dependency Ratio ($250M)	21.50%	< 20%	YES
Loans to Deposits	104.85%	< 75%	YES
Short-Term Investments* / Total Assets	1.19%	> 7.5%	YES
Reliance on Wholesale Funding	11.15%	< 15%	

Liquidity Ratio Assumptions	
Dependency Ratio ($250M)	Volatile funding increases by the total amount of stress outflows in each stress scenario.
Loans to Deposits	Deposits decrease by the total amount of deposit stress outflows in each stress scenario.
Short-Term Investments* / Total Assets	Short-term investments decrease by the percentages listed in the stress test assumptions table under "% Decrease of Short-Term Investments."
Reliance on Wholesale Funding	Wholesale funding increases by the percentages listed in the stress test assumptions table under "% Increase of Wholesale Funding."

*Short Term Investments = Interest-Bearing Balances + Federal Funds Sold and Reverse Repos and Securities Maturing in Less Than 1 Year.
*Benchmarks are guidelines based on the OCC Canary Report and industry averages, they can be adjusted to better reflect an institution's risk appetite.

Give me your card or email ryan@gobaker.com for Your Latest Call Report Liquidity Stress Test

Dynamic Liquidity Stress Test – NMD Runoff, Loan Growth, Migration, etc.

Sample Bank - Anytown, MA

3/31/2023

The BakerGroup

SHOCK: +200|+200 (12 Mo.)

Dynamic Liquidity Monitor (DLM)

% Adj		Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	12Mo Totals
	Starting Cash Balances (Cash & Due & FFS)	13,592	9,848	6,140	2,401	(1,577)	(5,378)	(9,189)	(12,456)	(16,187)	(19,868)	(22,743)	(26,471)	
% Adj	**SOURCES**													
	Loan Maturities	366	610	1,558	1,606	343	629	486	16	172	7	58	10	5,861
	Loan Paydowns	666	681	648	659	643	612	624	597	613	608	564	599	7,514
	Investment Maturities & Prepayments	454	210	383	207	206	203	702	450	448	1,198	196	195	4,852
0%	New Deposits @ 0.00% Ann. Rate	-	-	-	-	-	-	-	-	-	-	-	-	-
90%	Time Deposit Renewals (90.00%)	3,502	527	2,696	3,369	1,468	1,551	1,082	3,317	2,771	2,166	608	1,536	24,592
15%	Migration from Time Deposits to NMD (15.00%)	58	9	45	56	24	26	18	55	46	36	10	26	410
	Extra Rows for Deposit Inflows or Other Large Inflows													-
	Total Projected Sources of Funds	**5,046**	**2,036**	**5,330**	**5,897**	**2,684**	**3,021**	**2,912**	**4,435**	**4,050**	**4,015**	**1,436**	**2,366**	**43,228**
% Adj	**USES**													
100%	Loan Cash Flow (100.00%)	1,032	1,291	2,206	2,265	986	1,241	1,110	613	785	615	622	609	13,375
20%	New Loans @ 20.00% Ann. Growth	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	20,571
	Net Change in Loans	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	20,571
0%	Investment Purchases (0.00%)	-	-	-	-	-	-	-	-	-	-	-	-	-
0%	New Securities @ 0.00% Ann. Growth	-	-	-	-	-	-	-	-	-	-	-	-	-
20%	NMD Runoff @ 20.00% Ann. Rate	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	25,840
	Time Deposit Maturities	3,891	585	2,996	3,743	1,631	1,723	1,202	3,685	3,079	2,407	675	1,707	27,324
	Borrowing Maturities	-	-	-	-	-	-	-	-	-	-	-	-	-
	Extra Rows for Bond Purchases, New Loans, or Other Large Outflows													-
	Total Projected Uses of Funds	**8,791**	**5,744**	**9,070**	**9,876**	**6,485**	**6,832**	**6,180**	**8,166**	**7,732**	**6,890**	**5,165**	**6,184**	**87,110**
	Projected Net Monthly Cash Flow	**(3,744)**	**(3,707)**	**(3,739)**	**(3,979)**	**(3,800)**	**(3,811)**	**(3,268)**	**(3,731)**	**(3,681)**	**(2,874)**	**(3,729)**	**(3,818)**	
	Cash Balance (Cash Liquidity)	**9,848**	**6,140**	**2,401**	**(1,577)**	**(5,378)**	**(9,189)**	**(12,456)**	**(16,187)**	**(19,868)**	**(22,743)**	**(26,471)**	**(30,289)**	
	Cash Balance / Total Assets	**5.4%**	**3.4%**	**1.3%**	**-0.9%**	**-2.9%**	**-5.0%**	**-6.8%**	**-8.8%**	**-10.8%**	**-12.4%**	**-14.5%**	**-16.5%**	
	Target - Cash Balance / Total Assets	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	
	Above Target?	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	
	Primary Liquidity (Primary Liquidity = Cash Liquidity + Unpledged Inv. Port.)	**50,896**	**47,188**	**43,449**	**39,471**	**35,670**	**31,859**	**28,592**	**24,861**	**21,180**	**18,305**	**14,577**	**10,759**	
	Primary Liquidity / Total Assets	**27.8%**	**25.8%**	**23.7%**	**21.6%**	**19.5%**	**17.4%**	**15.6%**	**13.6%**	**11.6%**	**10.0%**	**8.0%**	**5.9%**	
	Target - Primary Liquidity / Total Assets	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	
	Above Target?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	
	Total Liquidity (Primary + Secondary)	**80,896**	**77,188**	**73,449**	**69,471**	**65,670**	**61,859**	**58,592**	**54,861**	**51,180**	**48,305**	**44,577**	**40,759**	
	Total Liquidity / Total Assets	**44.2%**	**42.1%**	**40.1%**	**37.9%**	**35.9%**	**33.8%**	**32.0%**	**30.0%**	**27.9%**	**26.4%**	**24.3%**	**22.3%**	
	Target - Total Liquidity / Total Assets	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	
	Above Target?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	

Available Funding Strategies (Secondary = Contingent Liquidity Sources)	**Base Case**	**Stress**	**Starting Liquid Assets Breakdown**	
FHLB Availability (Secured)	**25,000**	**-**	**Cash & Due**	**8,538**
Fed Discount Window (Secured)	**10,000**	**10,000**	**Fed Funds Sold**	**5,054**
Back-up Lines (Unsecured)			**Securities**	**59,048**
Brokered Deposits	**20,000**	**20,000**	**Less: Pledged Inv.**	**18,000**
Total Borrowing/Funding Availability	**55,000**	**30,000**	**Total Liquid Assets**	**54,640**

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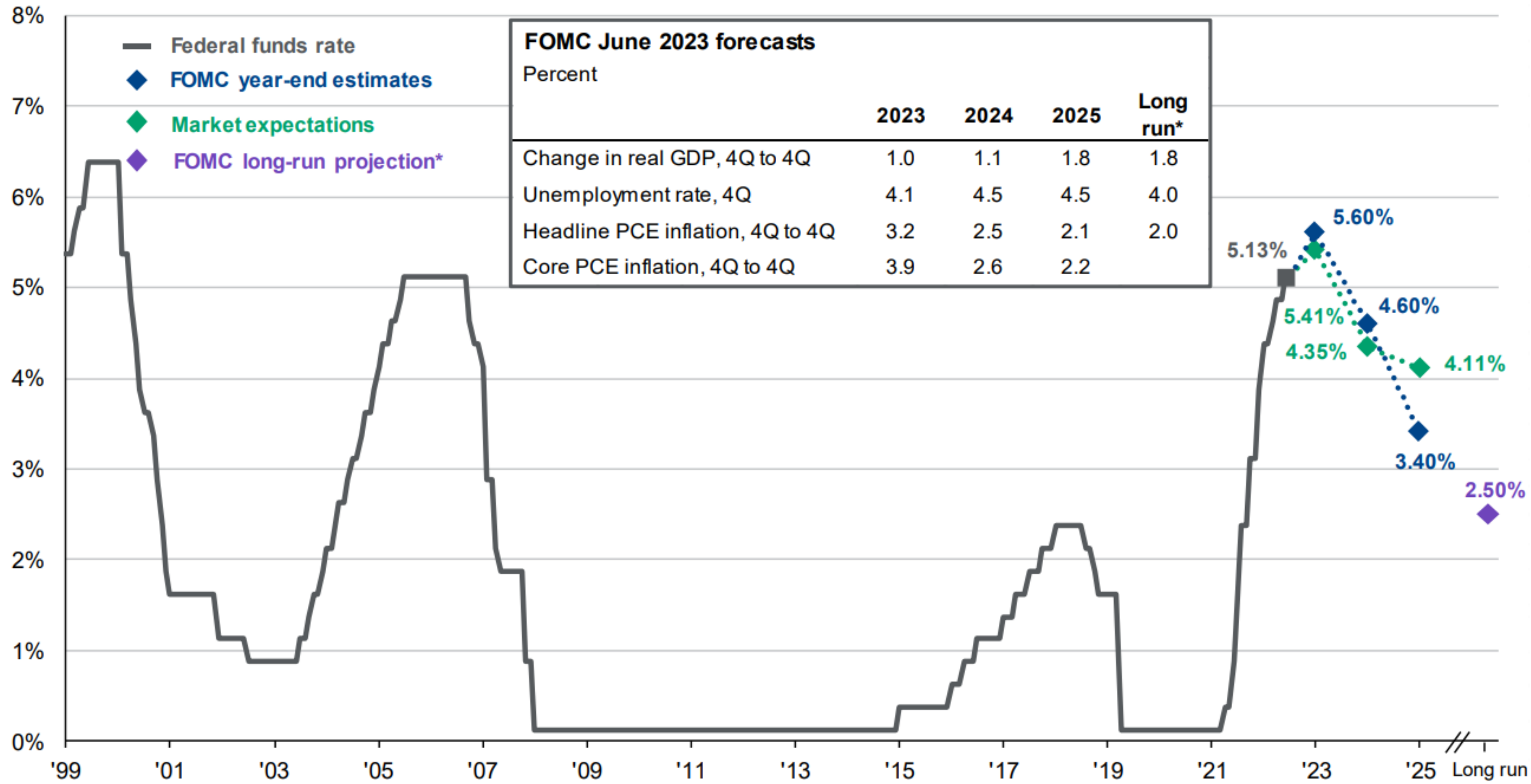
Use Your A/L Report as a Strategic Tool

Federal Funds Rate Expectations – **Are Rates Headed Higher or Lower?**

FOMC and market expectations for the federal funds rate



FOMC June 2023 forecasts

Percent

	2023	2024	2025	Long run*
Change in real GDP, 4Q to 4Q	1.0	1.1	1.8	1.8
Unemployment rate, 4Q	4.1	4.5	4.5	4.0
Headline PCE inflation, 4Q to 4Q	3.2	2.5	2.1	2.0
Core PCE inflation, 4Q to 4Q	3.9	2.6	2.2	

Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.

Bank Remain Well Positioned For Higher Rates – But Not Falling Rates

OCC Data – NII % Change (Spring 2023)

Table 4a: Banks With $250 Million to Less Than $500 Million in Assets – Earnings at Risk: 12-Month, Net Interest Income, Parallel Shocks

Scenario	Largest loss	25th percentile	Median	75th percentile	Largest gain
–200	–21%	–9%	–6%	–2%	6%
–100	–13%	–5%	–3%	–1%	7%
+100	–6%	–1%	2%	4%	20%
+200	–12%	–2%	3%	9%	36%
+300	–18%	–3%	4%	13%	53%
+400	–23%	–5%	5%	18%	71%

Table 5a: Banks With $500 Million to Less Than $1 Billion in Assets – Earnings at Risk: 12-Month, Net Interest Income, Parallel Shocks

Scenario	Largest loss	25th percentile	Median	75th percentile	Largest gain
–200	–24%	–11%	–5%	–2%	6%
–100	–13%	–5%	–3%	0%	6%
+100	–8%	–1%	3%	5%	28%
+200	–17%	–3%	5%	11%	56%
+300	–19%	–5%	5%	16%	84%
+400	–29%	–7%	7%	19%	112%

Earnings at Risk

Stop focusing so much attention over here…

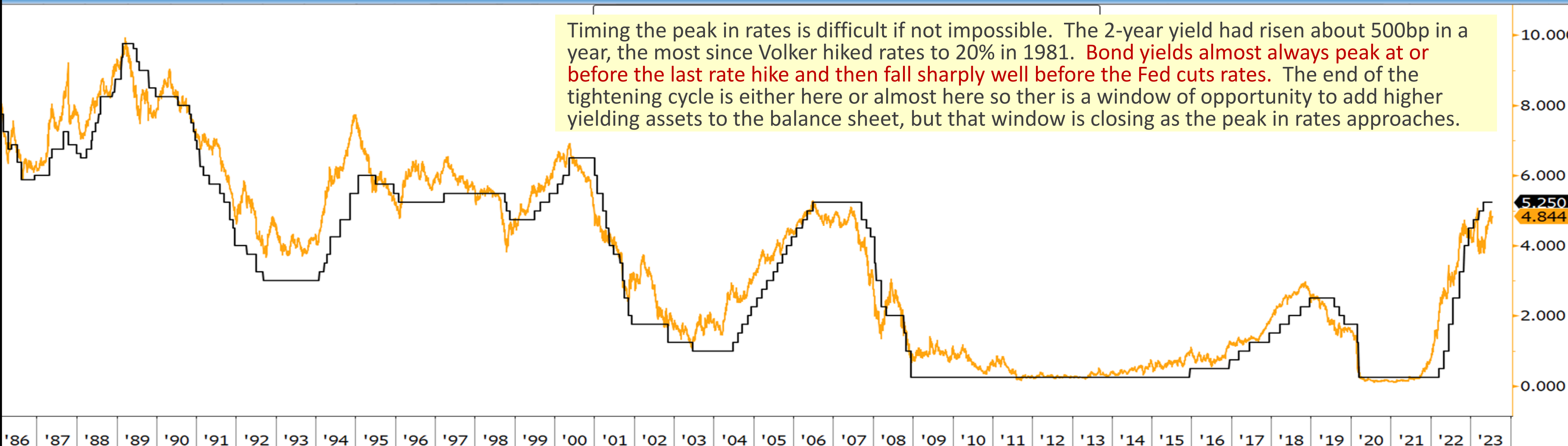
And start focusing more attention over here!

Summary ALCO - Earnings Simulation - 12 Month Horizon

12/31/2022

Interest Rate Risk ($'s) Shift Horizon	YTD Annualized	Constant Balance Sheet **	Non-Parallel +100/+50 bp (5) 12 Mo.	Parallel -200/ -200 bp (2) 12 Mo.	Parallel -100/ -100 bp (3) 12 Mo.	*Unchanged Rate Scenario*	Parallel +100/+100 bp (5) 12 Mo.	Parallel +200/+200 bp (6) 12 Mo.	Parallel +300/+300 bp (7) 12 Mo.
12 Month Horizon in $'s									
Change in Interest Income *	$27,669	$27,796	910,449	(933,834)	(210,147)	378,813	936,925	1,453,163	1,942,934
Change in Interest Expense	$3,281	$3,584	331,455	(508,494)	(354,933)	(62,747)	333,235	627,053	904,459
Net Interest Change			578,994	(425,340)	144,786	441,560	603,690	826,110	1,038,475
Projected Impact in $000's									
Net Interest Income *	$23,693	$24,212	24,791	23,787	24,257	24,653	24,816	25,038	25,250
Net Interest Margin *	3.76	3.66	3.75 ✓	3.52 ✓	3.67 ✓	3.72 ✓	3.75 ✓	3.78	3.81
ALCO Benchmark	> 3.75%								
NIC as a % of NII			2.39	(1.23)	1.42	1.82	2.49	3.41	4.29
ALCO Risk Limits			> (12.50)%	> (15.00)%	> (12.50)%	> (10.00)%	> (12.50)%	> (15.00)%	> (20.00)%
Net Income (Loss)	$8,376	$8,828	9,327	8,434	9,025	9,209	9,348	9,540	9,723
Return on Assets	1.21	1.29	1.36	1.26	1.33	1.34	1.36	1.39	1.42
ALCO Benchmark	> 1.05%								
Return on Equity	11.60	12.23	12.92	11.96	12.64	12.76	12.95	13.22	13.47
ALCO Benchmark	> 9.26%								

2-Year Yield, Fed Funds & ALM Strategies Through The Cycles



Trough	Rising	Peak	Falling
Asset Sensitive	Transition from Asset Sensitive to Liability Sensitive	Liability Sensitive	Transition from Liability Sensitive to Asset Sensitive
Assets Shorter term loans, more floating than fixed, shorter resets, shorter duration bond portfolio	Transition from shorter to longer term assets	**Assets** Longer term/reset loans, more fixed than floating, add floors & prepayment penalties, longer duration bond portfolio	Transition from longer to shorter term assets
Liabilities Longer term CD specials, longer more fixed rate borrowings	Transition from longer to shorter term liabilities	**Liabilities** Shorter term CD specials, short or floating rate borrowings	Transition from shorter to longer term liabilities

The Investment Portfolio Is Your Best IRR Tool – Use It!

"The investment portfolio is the vehicle or tool with which we can most easily correct & improve asset / liability exposures."

…*"Asset/Liability Management"* - Dr. James V. Baker (1981)

Low Rate (Trough) Strategies	Transition	High Rate (Peak) Strategies
Minimum duration	→	Maximum duration
Premiums	→	Discounts
High coupon	→	Low coupon
Negative convexity OK	→	Reduce negative convexity
High cashflow bonds	→	Lockouts
Buy ARMs & floaters	→	Sell ARMs & floaters
Current pay CMBS	→	Lockout CMBS
Prepay protection less important	→	Prepay protection more important
1X Callable Agencies	→	Bullet agencies or call protection
Cushion callables	→	Discount callables

Investment strategies have been focused on **protecting the value (price)** of the portfolio (i.e. shorter duration, more cash flow) as rates were low and rising. Now that the tightening cycle may be getting closer to an end, strategies need to shift to **increasing/protecting the earnings (yield)** of the portfolio (i.e. longer duration, less cash flow).

Is Your Balance Sheet ***Recession Ready***?

1. **Keep your assets fully deployed.**
   - Assess your level of cash liquidity to ensure you have enough to meet your needs but not too much that margin suffers further.
   - Liquidity levels tend to rise during and following recessions.
   - Have we been able to add income/margin with the recent market moves? Ensure you are pricing loans appropriately.
2. **Ensure you are pricing loans appropriately.**
   - Are we chasing loan growth by lowering pricing and going away from our usual terms / structure?
   - Price loans for a possible recession and/or credit cycle.
   - Current level of delinquencies and charge-offs likely suppressed by government stimulus, payment extension and deferrals and the PPP loan program.
3. **Develop a deposit pricing and liability management strategy.**
   - Banks' ability to "lag and drag" the Fed is essentially over – deposit cost/betas are soaring!
   - Ensure you have a deposit pricing strategy to minimize the increase in cost of funds. Exception pricing, tiered accounts, specials, etc.
   - Utilize wholesale funding to extend liability duration if needed. Additionally, utilize wholesale funding to reduce the marginal cost of adding new deposits to the balance sheet.
4. **Evaluate your overall interest rate risk position including risk to earnings and risk to capital.**
   - Most banks' ALM models say they do better if rates rise.
   - Booking loans at higher rates is a key assumption for the projected increase to interest income. How much margin have we added to our loan portfolio?
   - What is loan demand like now? How will it be if Prime Rate is up another 100 to 200bps?
   - Do we have exposure to falling rates? Rates tend to fall during and after recessions as the Fed lowers interest rates. This historical tend could be slightly delayed until inflation falls.
5. **Review your credit risk within the investment portfolio and loan portfolios.**
   - Review the credit risk of non-government secured securities (explicit and implicit) like corporates, asset-backed, private label MBS, bank sub debt, etc. Consider reducing these allocations.
   - Perform a thorough credit analysis of your municipal bond holdings to weed out any weak credits, bonds with potential pension problems or issues that could perform poorly in a recession.
6. **Add an agenda item to your next ALCO or Board Meeting to discuss: "How Can We Better Prepare For A Possible Recession?"**

Questions?

Thank You For Attending

If you like to receive a copy of any of the following, please give me your card or email me:

- Copy of these slides
- Chart pack comparing your bank to peers for the trends highlighted in this presentation
- Balance Sheet Overview Analysis
- Non-Maturity Deposit Analysis and Quarterly Beta Study
- Sample Contingency Funding Plan, ALM Policy Template and/or Investment Policy Template
- Investment Portfolio Review with specific recommendations

Ryan Hayhurst @ 800.962.9468 ryan@gobaker.com

The BakerGroup

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