

Peer Analysis and Balance Sheet Strategies Update



May 16, 2023

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Presenters



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Overview

- Markets & Economy Update
- Peer Analysis & Call Report Trends
- Balance Sheet Strategies

It's Not Easy Out There Right Now...

Challenges are coming from all directions.



Markets & Economy Update



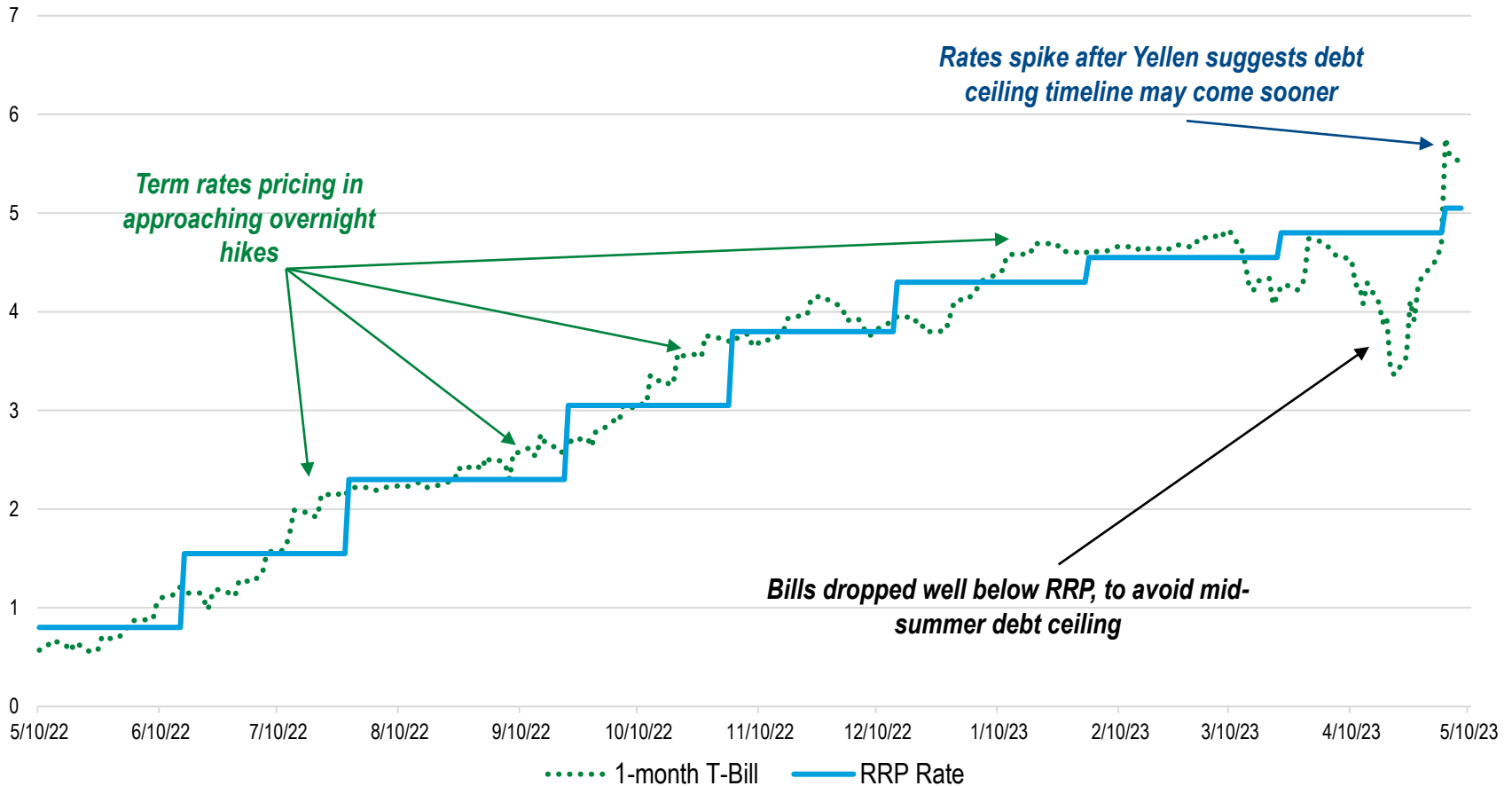
Markets & Economy Update

- What's Happening with the Yield Curve?
- Economic Indicators
- Market Sentiment

Short-Term Interest Rates

What do markets expect from the fast-approaching debt ceiling situation?

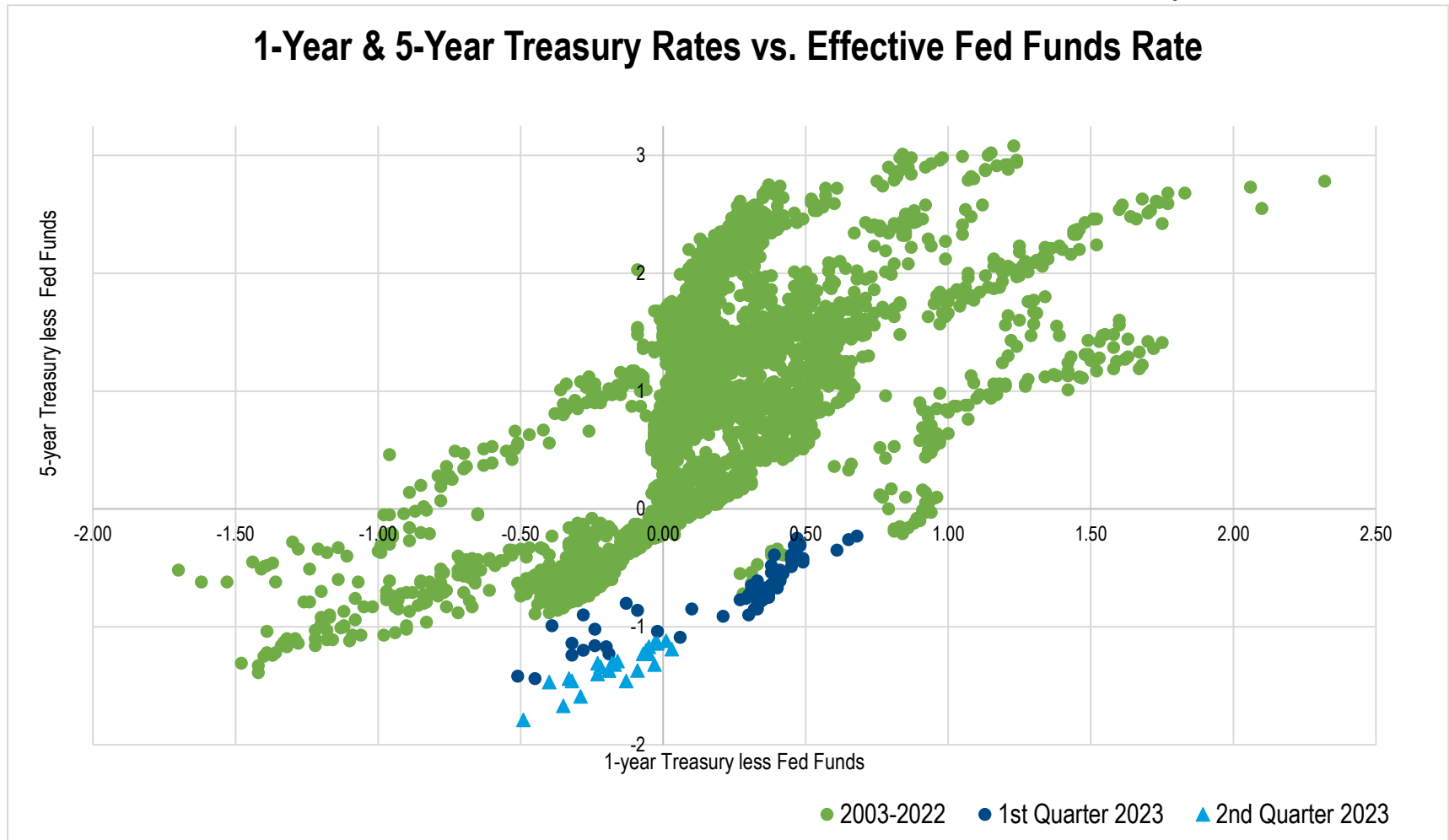
1-month T-Bill Rates & Fed Reverse Repo Rate



Source: Federal Reserve Bank of St. Louis, FHLBank Boston

Yield Curve Inversion

The yield curve is telling the Fed that many participants want cuts- a lot of them, and soon. So far, the Fed has charged ahead with hikes. The effect is that the current level of inversion has not been seen over the last 20 years.

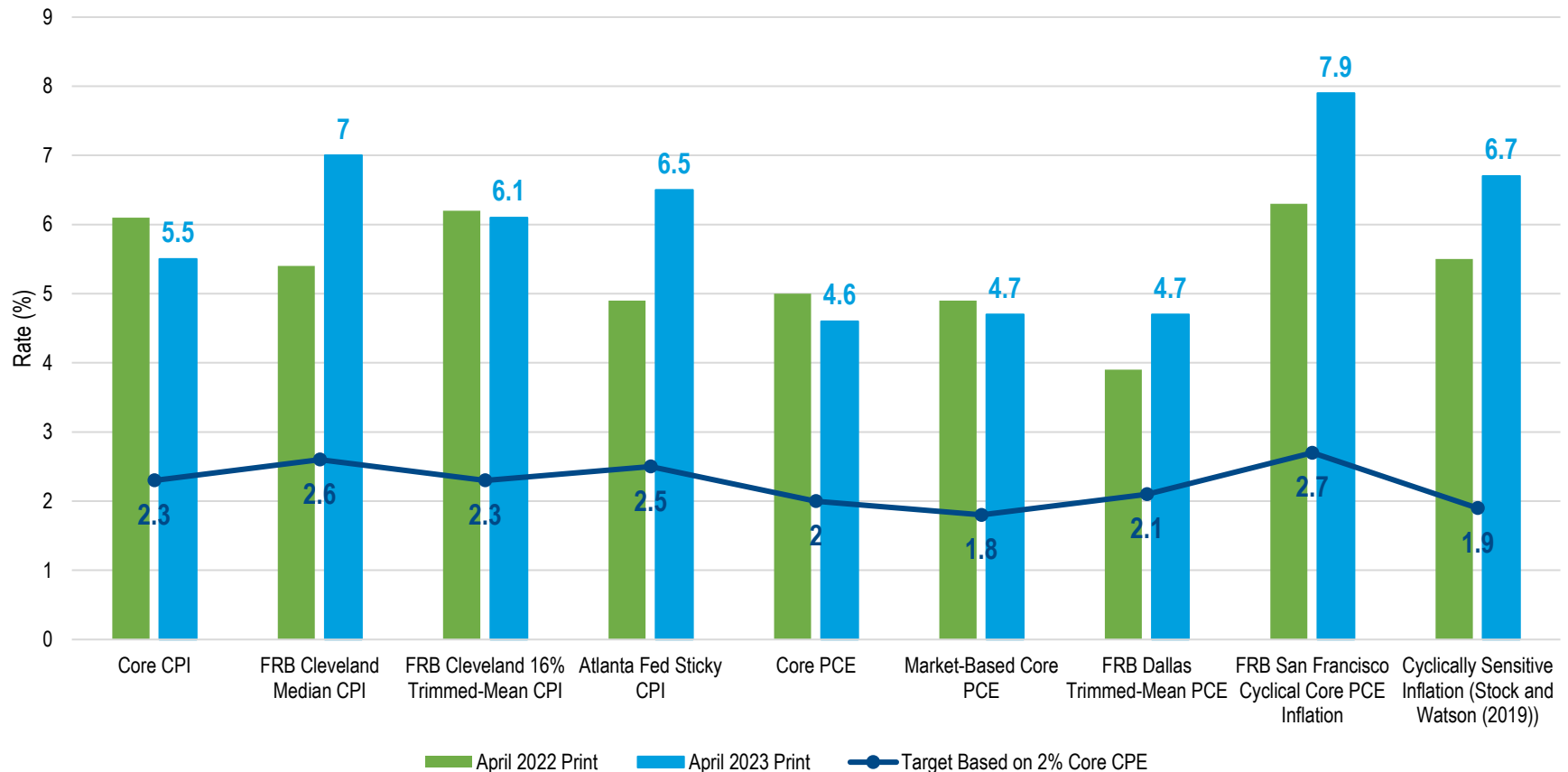


Source: Federal Reserve Bank of St. Louis, FHLBank Boston

Don't Forget About Inflation (and Unemployment)

Recent market activity has shifted focus away from the data that shows there may still be work to do for the Fed to rein in inflation. Last week's April print at 4.9% was promising- although shelter and gas costs remain high.

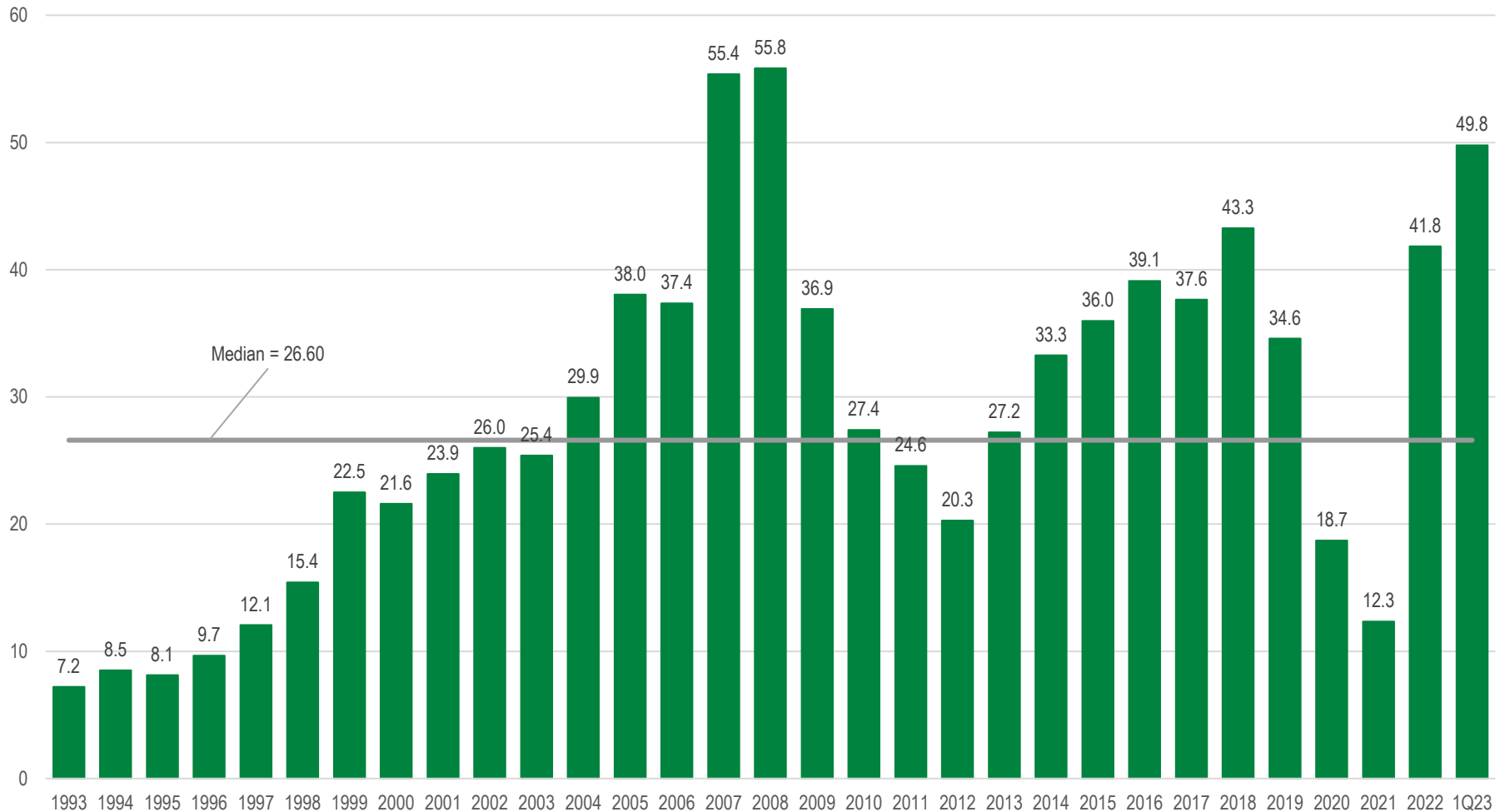
Measures of Underlying Inflation



Source: Federal Reserve Bank of Atlanta, FHLBank Boston

Tighter Liquidity Today...

FHLBank Boston headline advances outstanding approached \$50 billion at quarter-end, the highest level observed since the GFC (Great Financial Crisis) era.

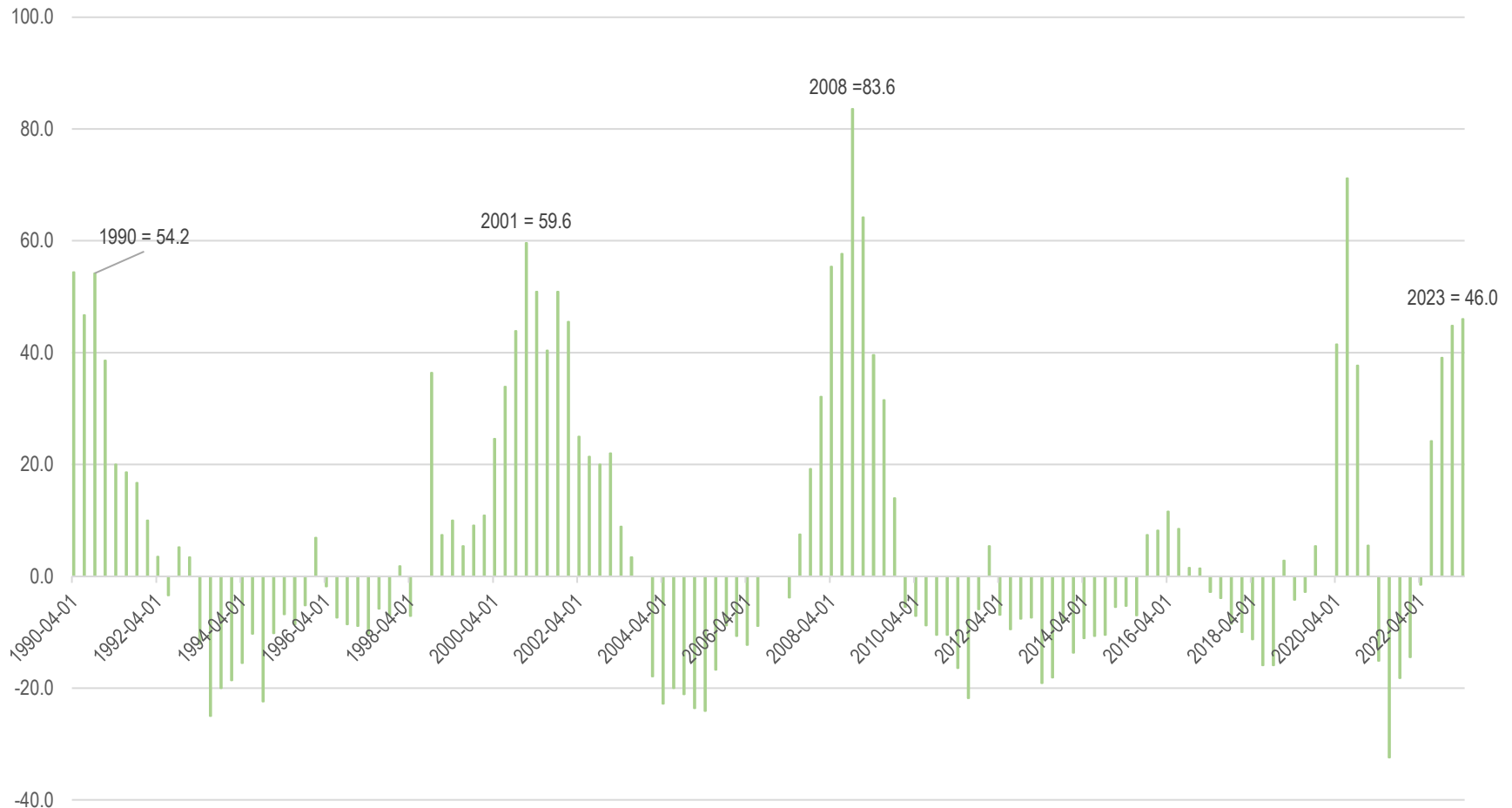


Source: FHLBank Boston

Leading to Tighter Lending Standards...

Recent Senior Lender Survey results suggests tighter lending standards seen during recessionary periods.

Net % of Banks Tightening Standards for C&I to Large + Middle Market

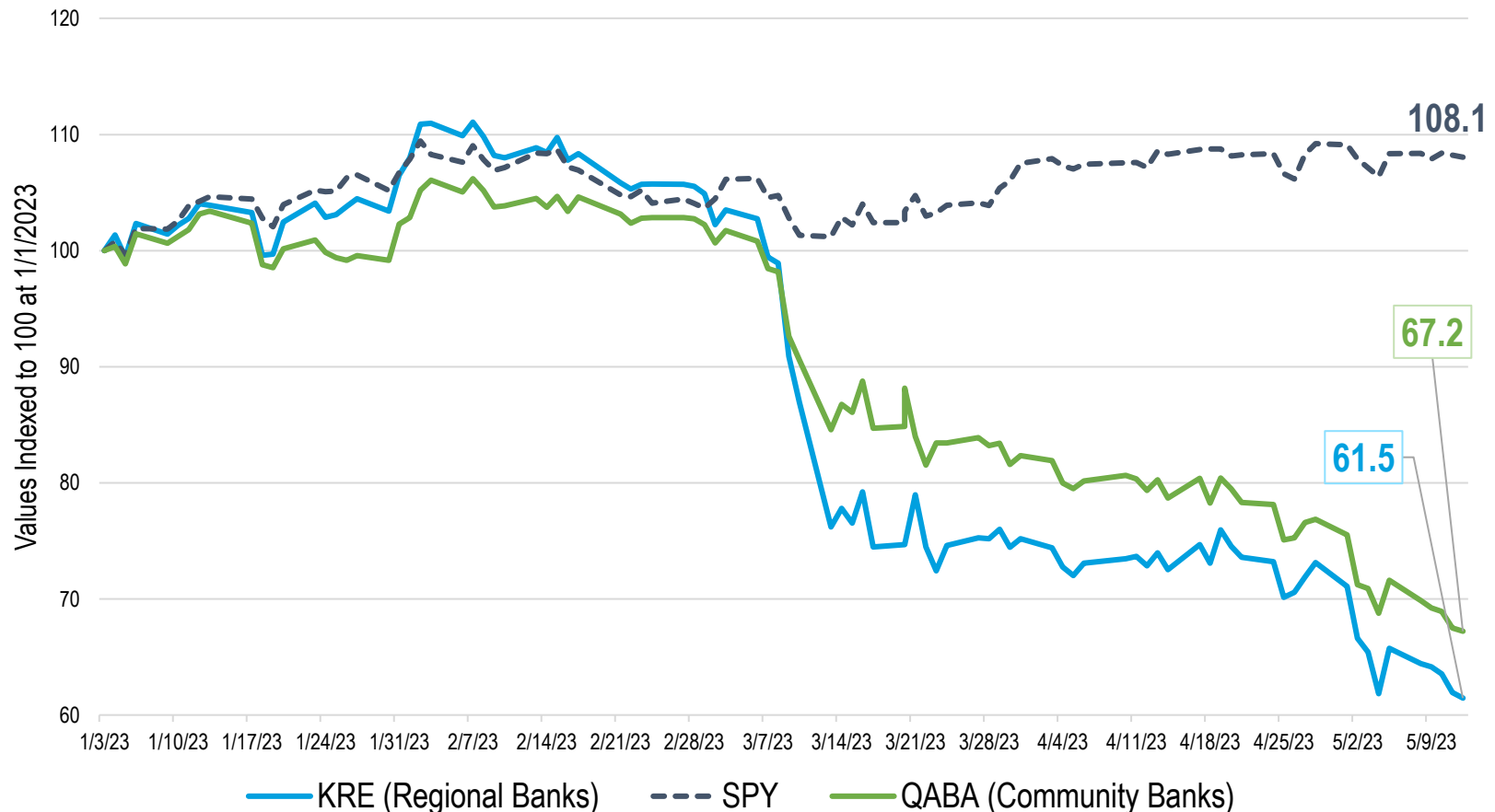


Source: Board of Governors of the Federal Reserve System, FHLBank Boston

Bank Stock Performance

Bank stocks exhibited price weakness in March and April, while the broader market was largely unaffected and went slightly higher.

SPY vs. Regional Bank and Community Bank ETF



Peer Analysis & Call Report Trends



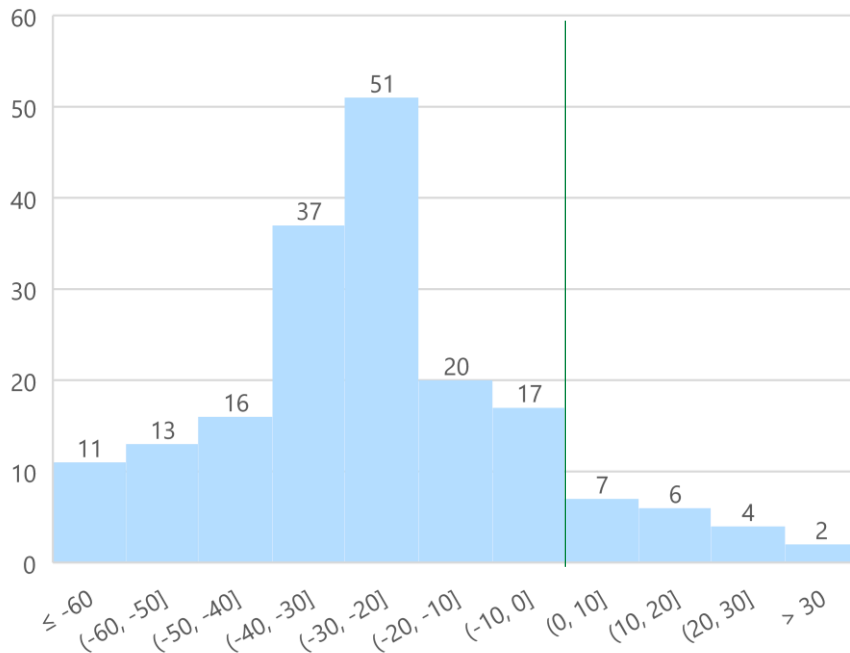
Peer Analysis & Call Report Trends

- Margin Decomposition
- Deposit Flows, Cost & Pricing
- Lending Growth
- Interest-Rate Risk Trends
- Investment Activity
- Credit Metrics
- Capital Levels

Declining NIM

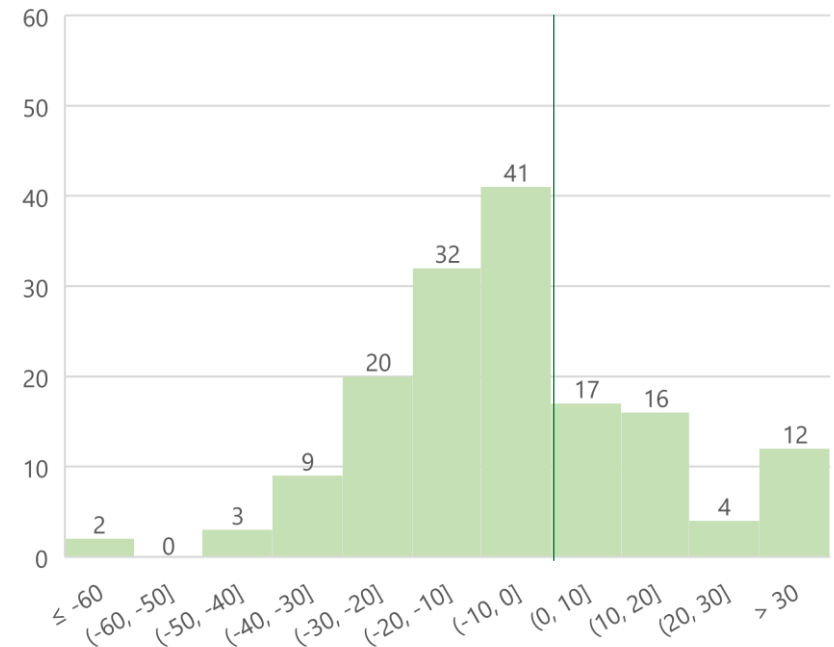
Most institutions saw declining NIM. Credit Unions fared significantly better than banks.

Member Banks NIM Change QoQ



Highest (bps)	137	# of Increases	19	10%
Lowest (bps)	-123	# of Decreases	162	89%
Median (bps)	-28	# of Unchanged	2	1%
WA Mean (bps)	-27	Total	183	100%

Member Credit Unions NIM Change QoQ

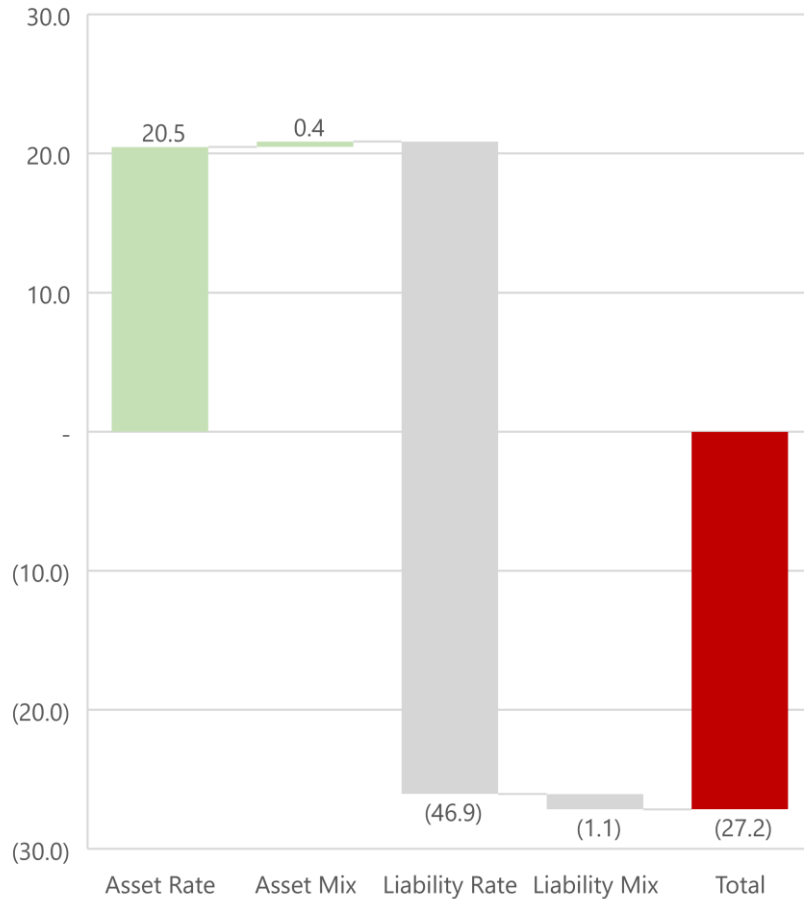


Highest	187	# of Increases	49	31%
Lowest	-148	# of Decreases	100	64%
Median (bps)	-5	# of Unchanged	7	4%
WA Mean (bps)	-7	Total	156	100%

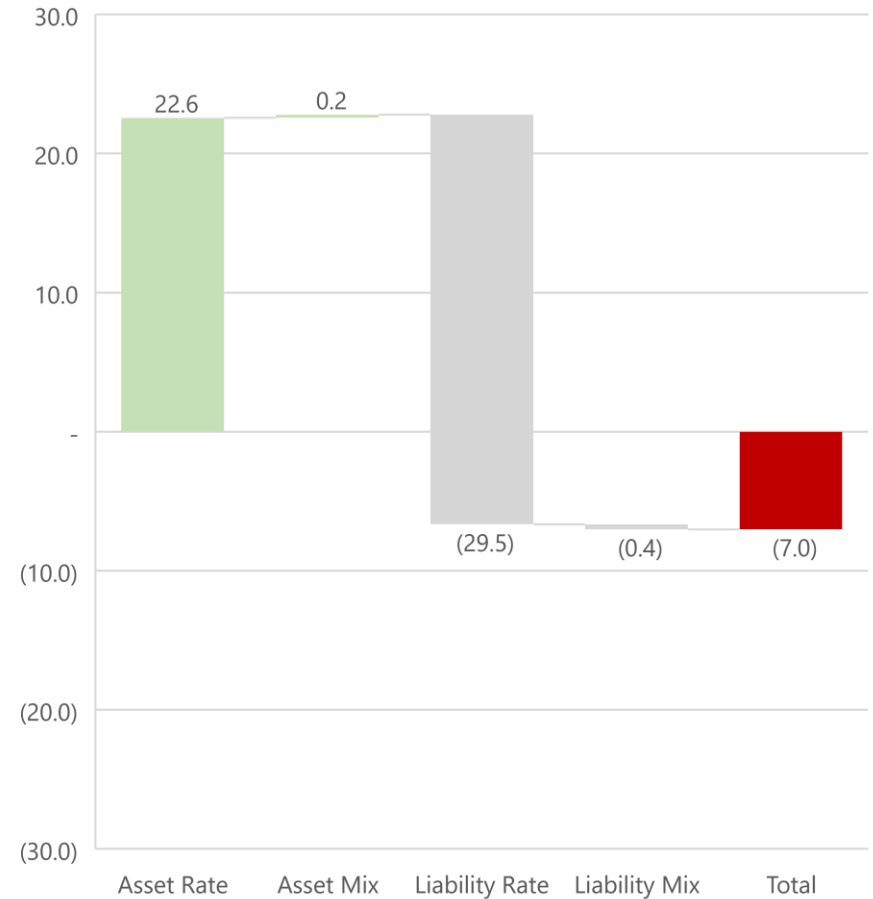
Deposit Pricing Pushing NIM

Liability rates were overwhelmingly the driver of lower NIMs.

Bank NIM Change Estimate, QoQ (bps)



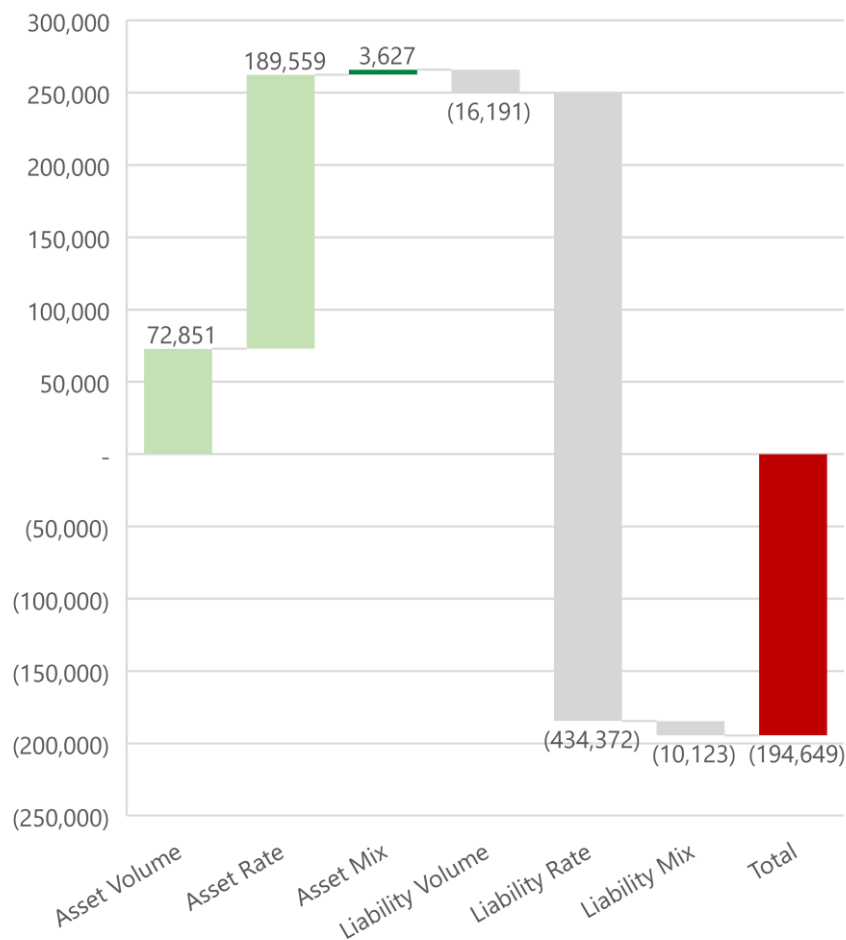
Credit Union NIM Change Estimate, QoQ (bps)



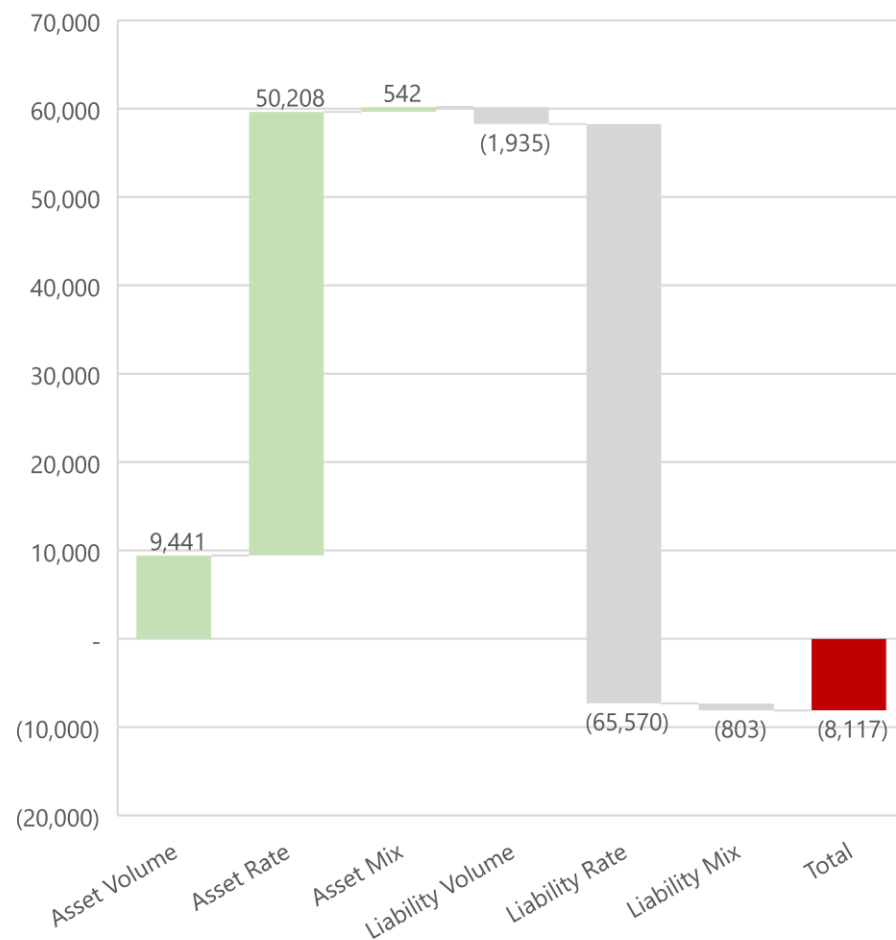
Growth Not Offsetting NIM Compression

Perhaps surprisingly, depositories continued to grow, but larger balance sheets could not counteract worsening margins.

Bank NII Change Estimate, QoQ (\$000s)



Credit Union NII Change Estimate, QoQ (\$000s)

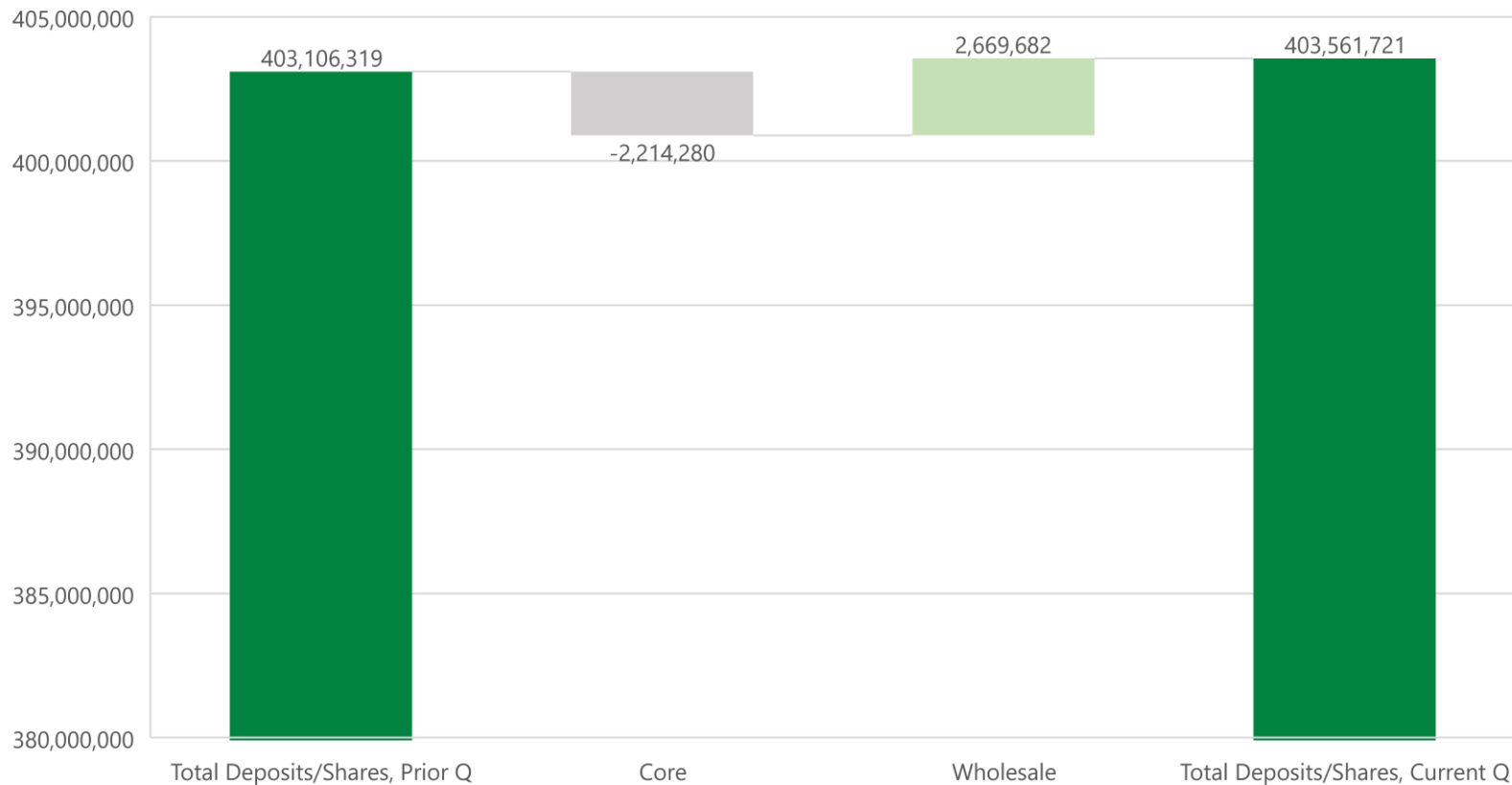


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Source: S&P Global, FHLBank Boston

Client Deposits Replaced with Wholesale

How did depositories <\$100 billion grow when liquidity is so tight? They replaced core deposit outflows with wholesale deposits like brokered CDs and, as shown previously, they borrowed more on top of that.



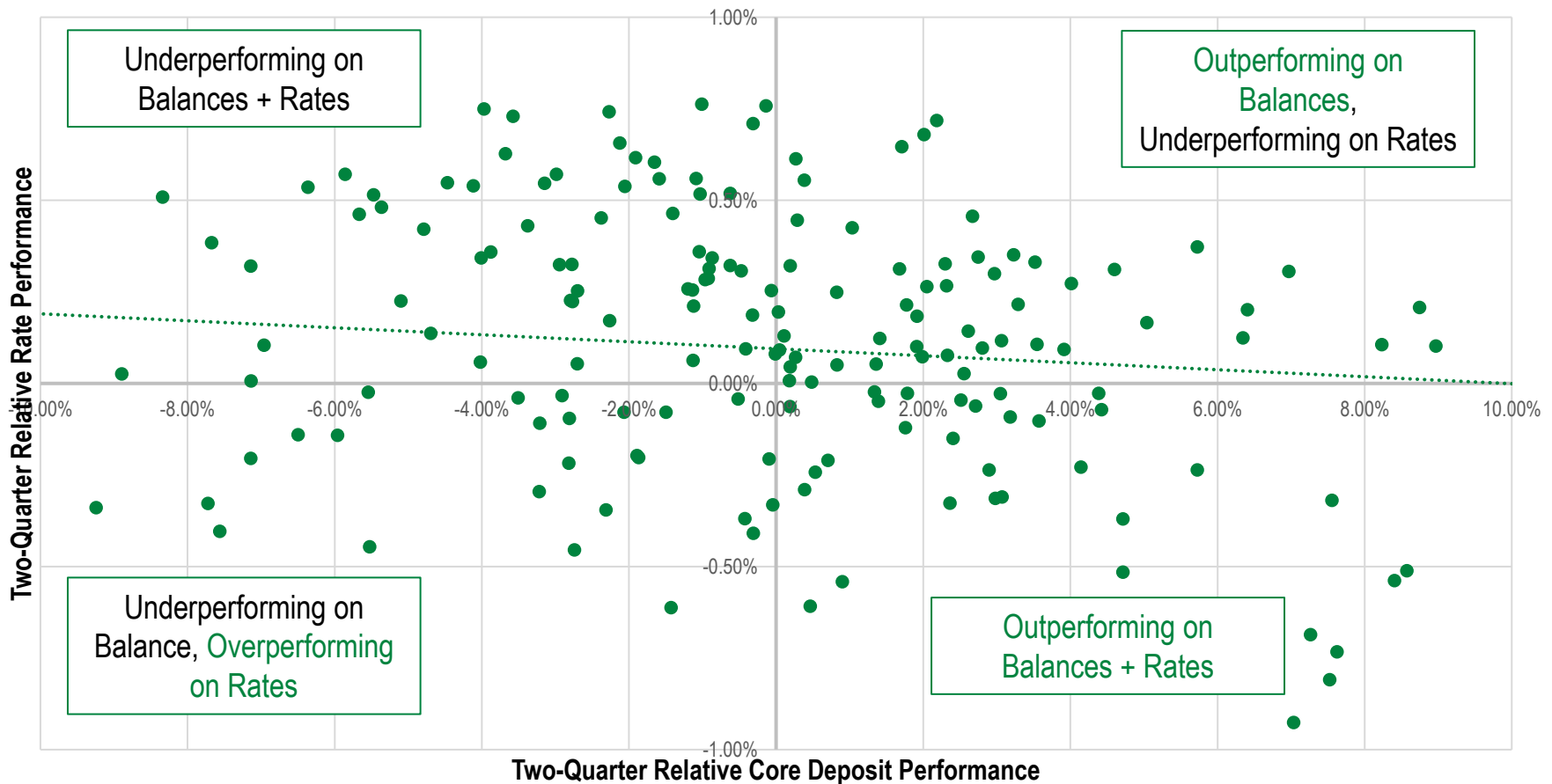
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Core Deposit Performance vs. Cost of Deposits

Scatter plot shows where member banks stack up at the intersection of core deposit performance and rates paid.

If there were a strong correlation between rates paid and core deposit performance, the trend line should go from the bottom left to the top right. In fact, however, it's just the opposite -- with a wide degree of variance.



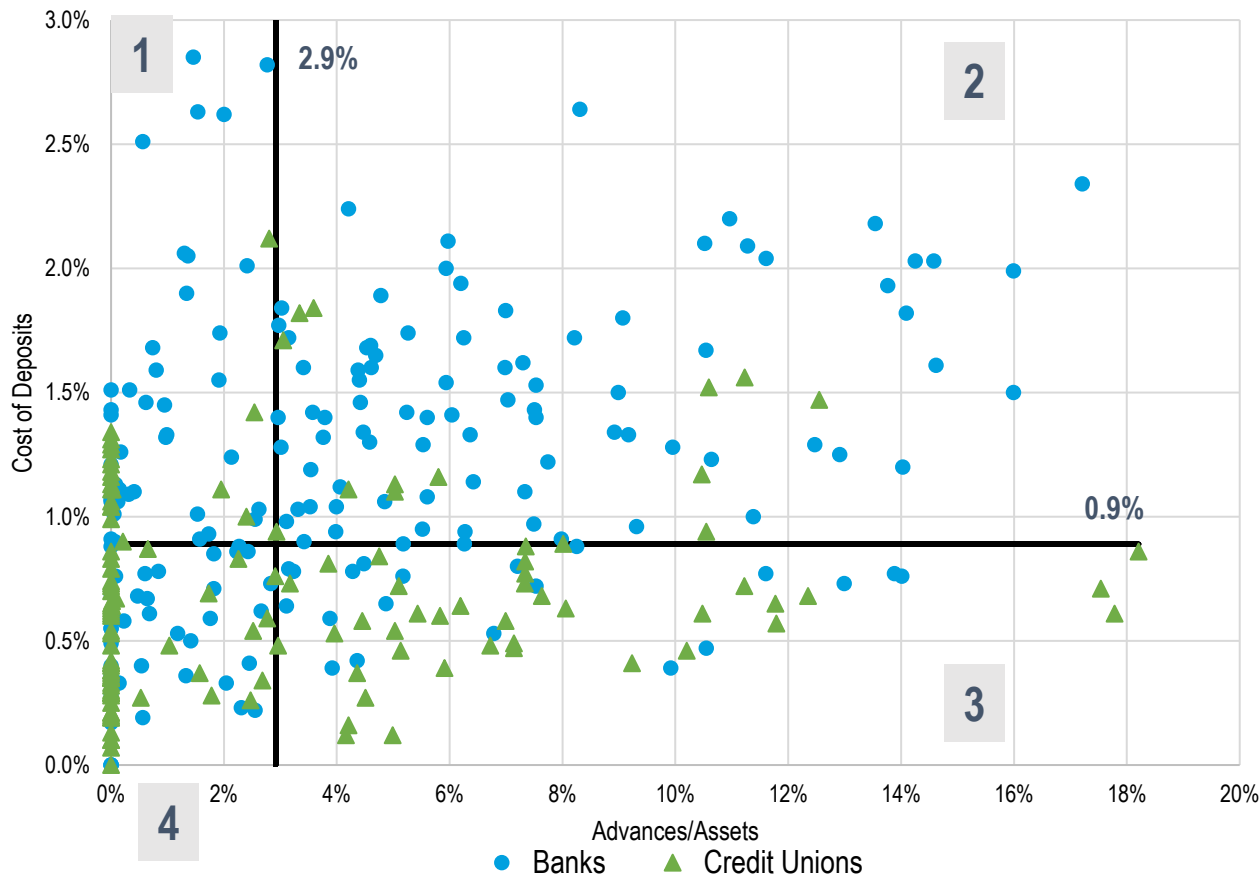
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Source: S&P Global, FHLBank Boston

Advances Usage and Deposit Costs

There's some correlation between advance usage and cost of deposits (up and to the right). However, there are instances where members have managed the marginal cost of funds well(#3), and where there is potential to use wholesale funding (#1).

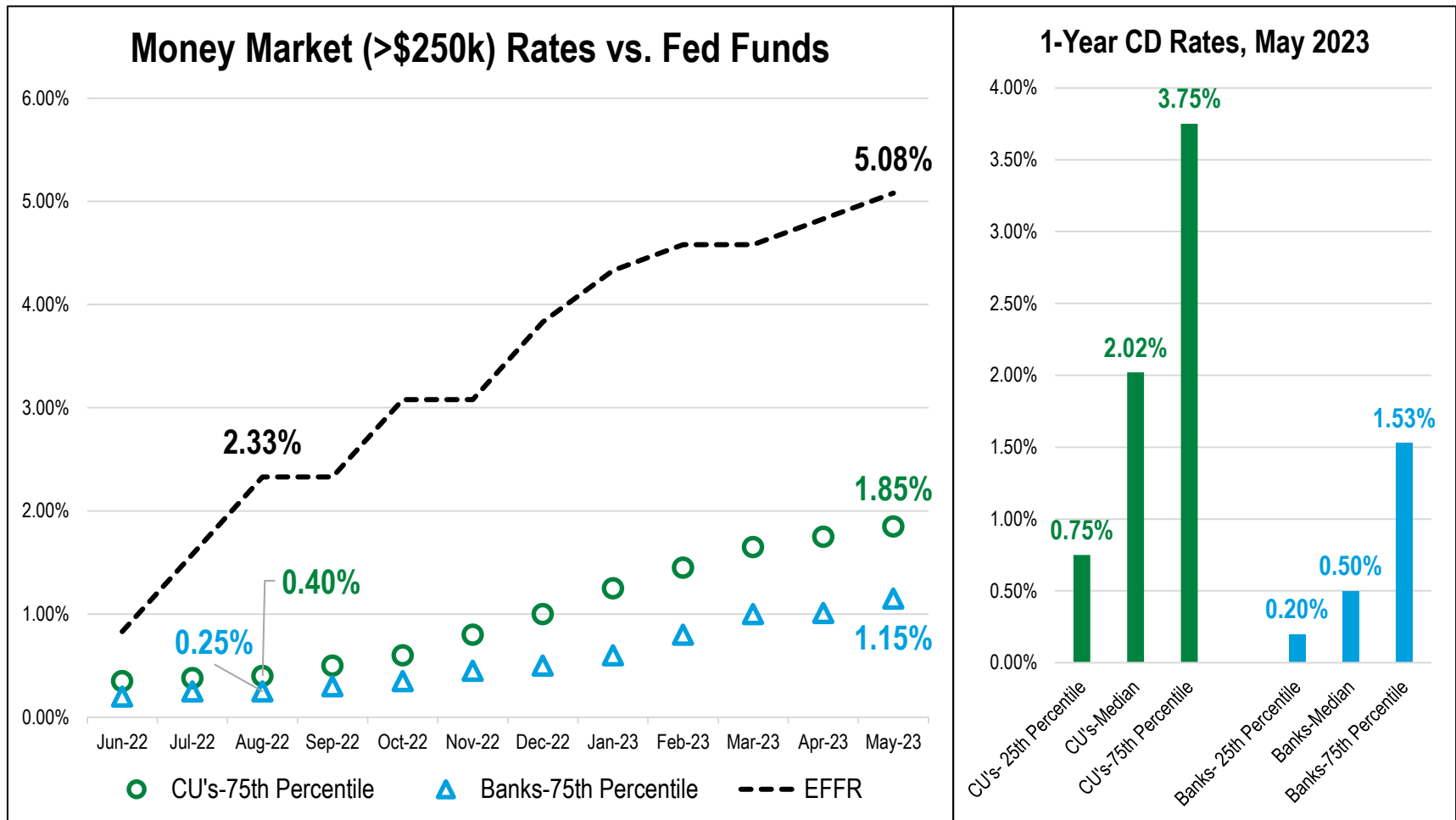
Advances/Assets & Cost of Deposits



Which Quadrant Are You In?	Impact
#1: Lower Advances + Higher Deposit Cost	Room to test deposit sensitivity and lean on borrowing capacity?
#2: Higher Advances + Higher Deposit Cost	Funding needs to keep up with loan growth, IRR/liquidity needs
#3: Higher Advances + Lower Deposit Cost	Maintain discipline on pricing approach, tweak as needed
#4: Lower Advances + Lower Deposit Cost	Good job managing funding costs!

Deposit Pricing

Given that posted rates have remained low (more for banks than credit unions), it's odd-term specials and exception pricing that appear to be the primary strategy. But the gap vs. wholesale rates is growing, and betas are accelerating.

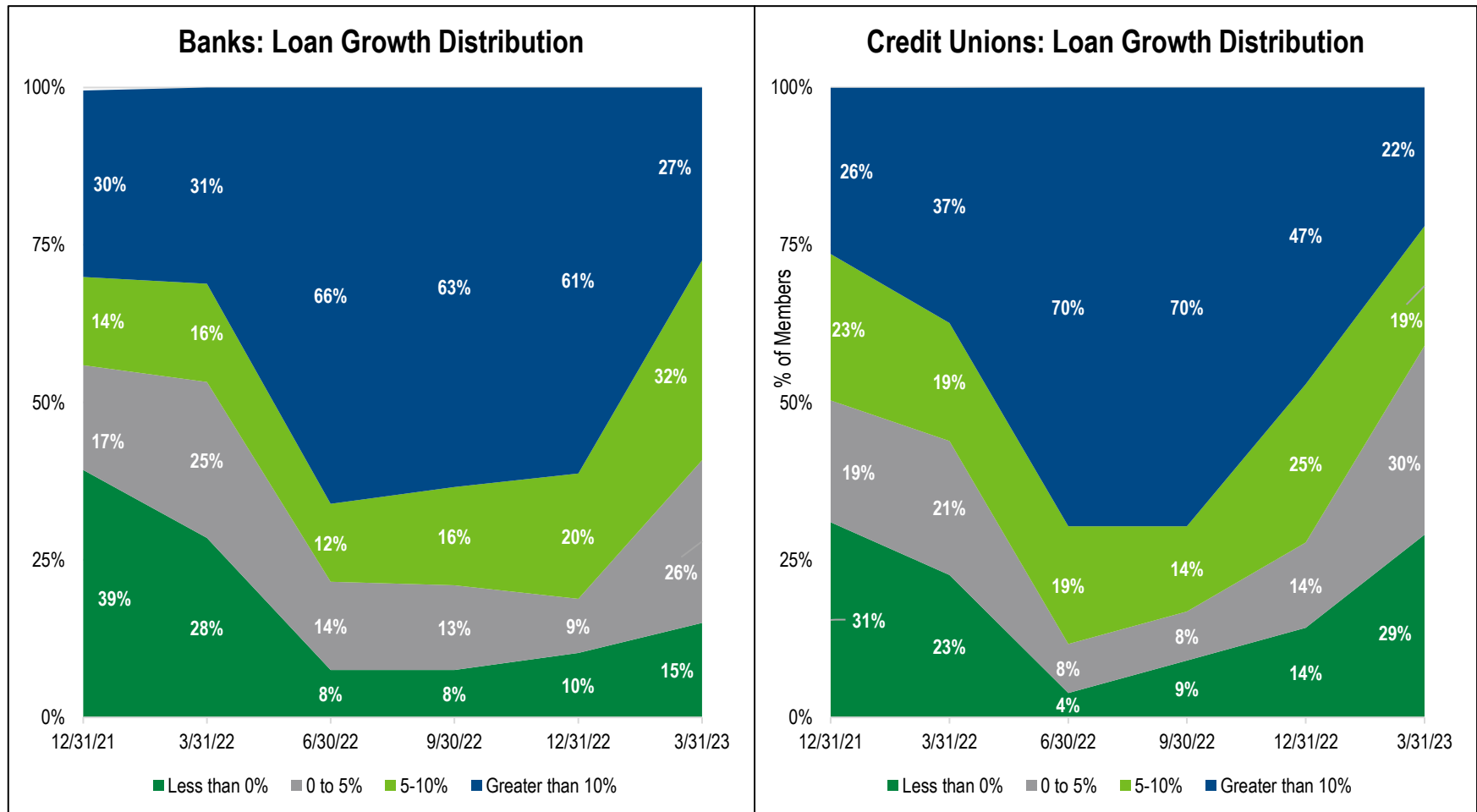


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Source: S&P Global, FHLBank Boston

Decelerating Loan Growth

After 3 consecutive quarters of median loan growth in double digits, loan growth predictably cooled off into the mid-single digits. What is driving it- customer demand, tighter liquidity, curve and spreads?



Peer Reported IRR

Semi-annually, the OCC produces an Interest Rate Risk Statistics Report that aggregates what their supervised institutions have identified as their IRR. Key NII results in the Spring 2023 report are shown below.

While the environment has been dynamic, OCC banks identified themselves as generally being asset-sensitive. Negative EVE results in both Up and Down environments implies that banks retain a high degree of negative convexity on their balance sheets.

12-Month NII Parallel Shocks				EVE Parallel Shocks		
	25th Percentile	Median	75th Percentile	25th Percentile	Median	75th Percentile
Down 200	-11%	-6%	-3%	-14%	-3%	8%
Down 100	-6%	-3%	-1%	-7%	-1%	4%
Up 100	0%	3%	6%	-5%	0%	4%
Up 200	0%	5%	11%	-10%	-2%	6%
Up 300	-1%	6%	16%	-17%	-5%	8%
Up 400	-4%	7%	19%	-24%	-9%	8%

Source: Office of the Comptroller of the Currency, FHLBank Boston

Implied Future Deposit Rates, Economics

The OCC IRR Report also identifies key modeling assumptions. Median bank deposit betas and lives by non-maturity type are highlighted in blue.

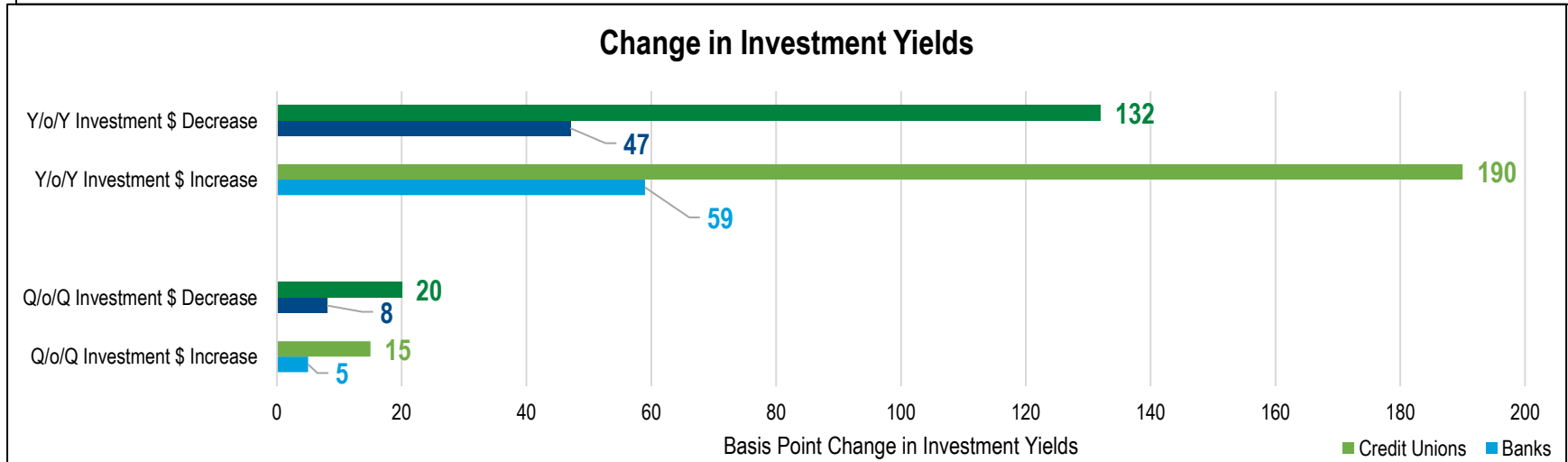
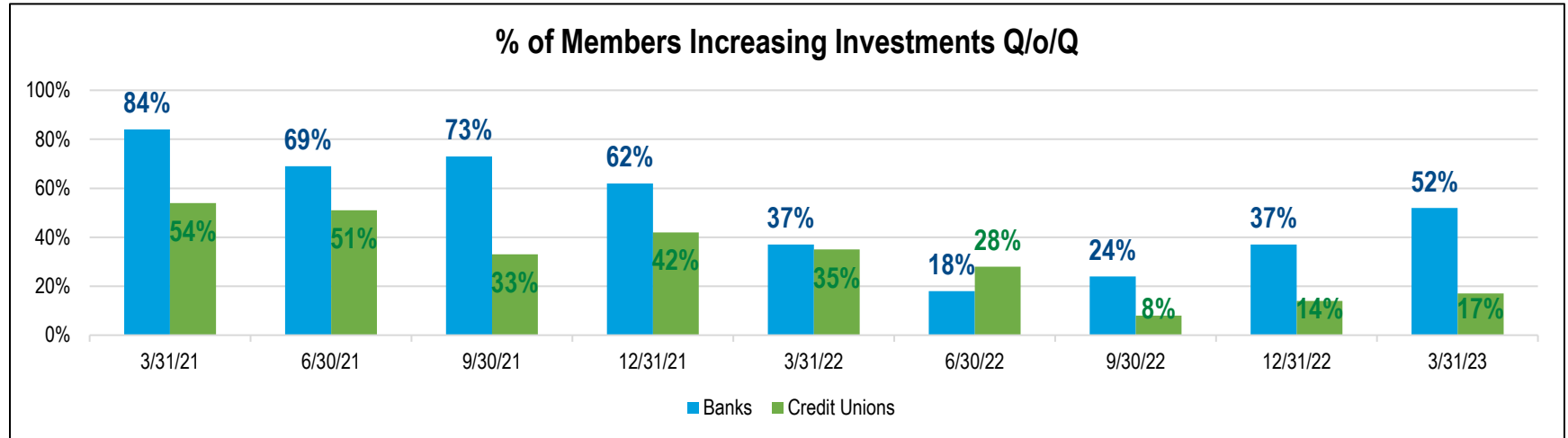
Estimated current rates from Call Report data are highlighted in green. If assumptions hold, much of the re-pricing in NOWs and Savings accounts has occurred, but MMDAs have some significant ways to go.

Finally, the implied economic profitability of these account types is estimated; essentially, this value is similar to loan spreads.

Deposit Type	Current Rate	Beta	Lag	Decay	Life	Net Costs	Implied Future Rate	Implied Future Profitability
DDA	0.00%	0%	n/a	20%	5.0	0.05%	0.00%	4.00%
NOW	1.00%	20%	4	21%	4.9	0.10%	1.10%	2.95%
Savings	1.00%	18%	3	20%	5.0	0.15%	1.10%	2.80%
MMDA	1.00%	35%	3	27%	3.7	0.15%	2.00%	2.32%
High Cost	4.75%	90%	0	40%	2.5	0.15%	4.75%	0.53%

Investment Activity

Despite the persistence of unrealized losses, members have been redeploying available liquidity, repricing the portfolio.

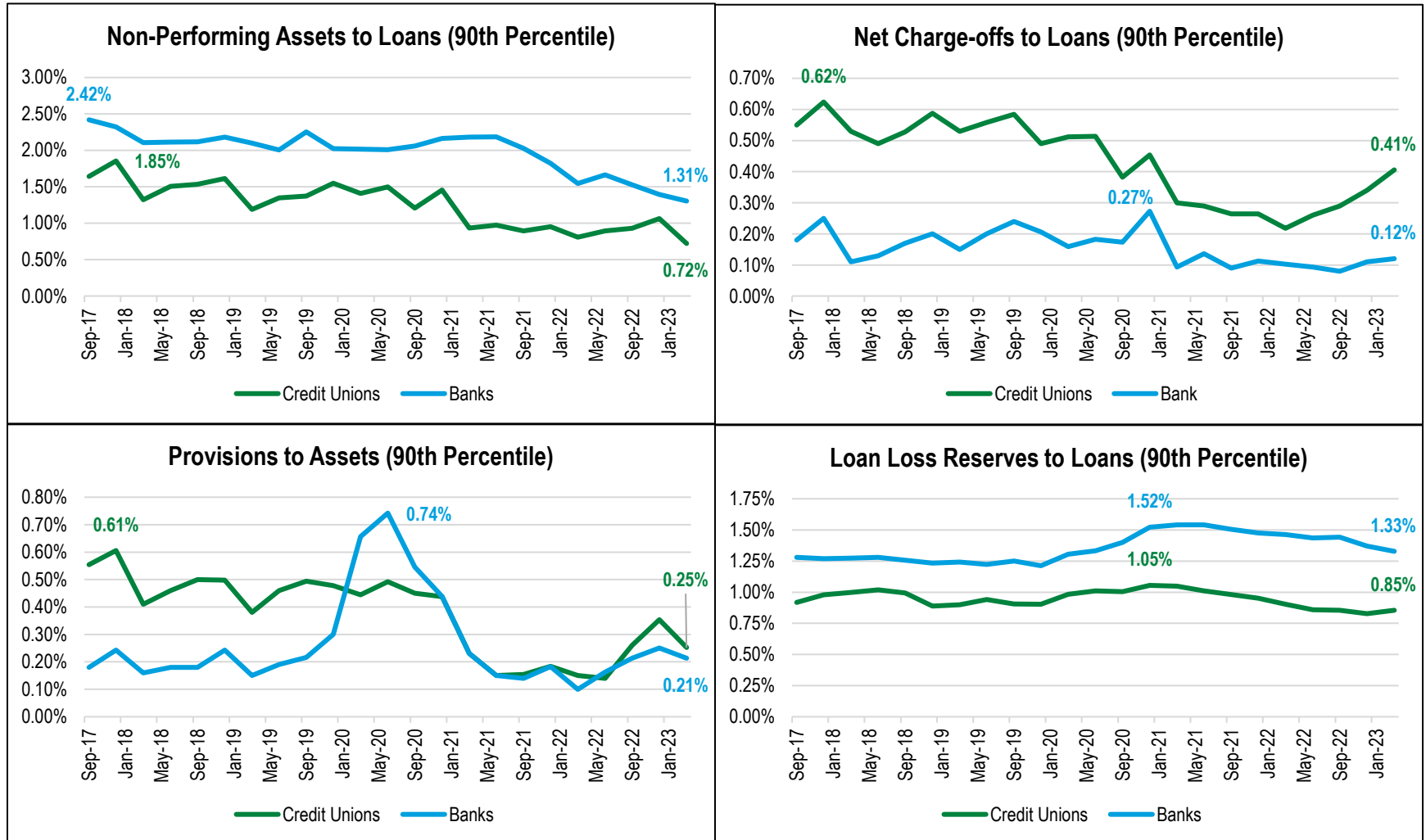


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Source: S&P Global, FHLBank Boston

Credit Metrics Look Good Today...

Credit quality continues to be solid, provisioning remains low, and reserves drift lower.



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Source: S&P Global, FHLBank Boston

...But Will There Be Credit Stress Tomorrow?

Looking at the intersection of CRE exposure and excess capital above the limiting ratio's "well" level at member banks shows the range of dispersion of potential risk. Many institutions with lower cushions are Community Bank Leverage Ratio (CBLR) reporters and may have additional room at the cost and risk of suddenly being required to calculate risk-weighted assets.



Capital At Risk from Risk Migration

Even before default, capital can decline from higher probability of default (PD) and/or higher loss-given-default (LGD) multiplicatively combining to increase ALLL.

The matrices below estimate how much capital could decline from model-induced change as the credit environment potentially worsens.

Growth in Tax-Effectuated ELs from Risk Migration*

	PD %		
	3%	10%	25%
LGD %			
10%	0.23%	0.75%	1.88%
20%	0.45%	1.50%	3.75%
30%	0.68%	2.25%	5.63%
40%	0.90%	3.00%	7.50%
50%	1.13%	3.75%	9.38%

Capital Change

	Change in Tax-Effectuated ELs			
	0.75%	1.50%	2.25%	5.63%
% of B/S				
10%	0.08%	0.15%	0.23%	0.56%
20%	0.15%	0.30%	0.45%	1.13%
30%	0.23%	0.45%	0.68%	1.69%
40%	0.30%	0.60%	0.90%	2.25%
50%	0.38%	0.75%	1.13%	2.82%

*Results assume a 25% effective tax rate

Balance Sheet Strategies



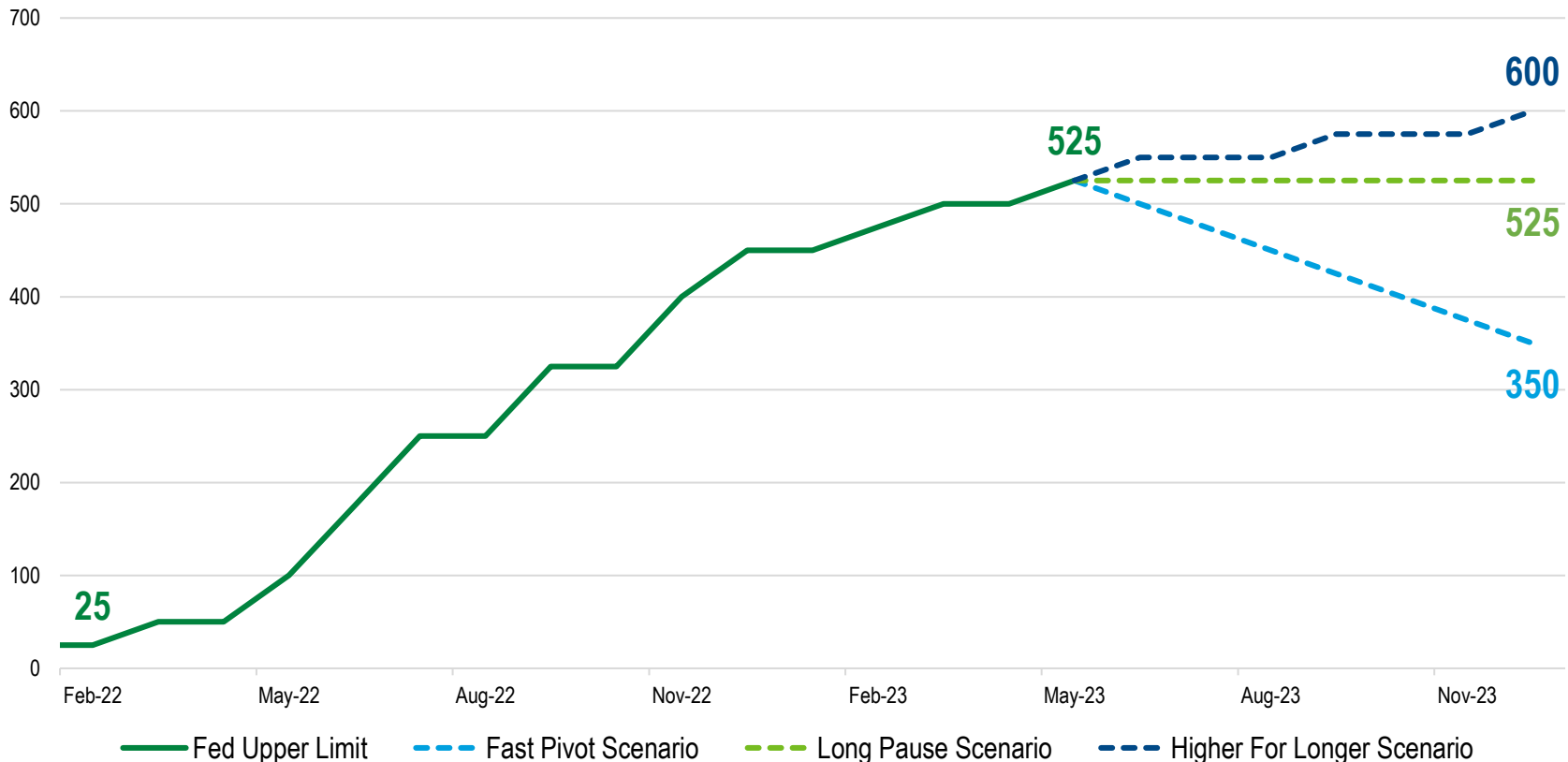
Balance Sheet Strategies

- Positioning for Different Fed Scenarios
- Strategies to Consider for Now
- Prepare Now for Opportunities Later

Rates: Which Way From Here?

The yield curve wants cuts, but the Fed appears committed to tackling inflation and comfortable with the tools at its disposal. Case in point- the last two rate hikes came within days of multiple large banking institutions being taken over by the FDIC.

Fed Funds Rate & 3 Possible Scenarios



Source: Federal Reserve Bank of St. Louis, FHLBank Boston

Strategies for Different Fed Paths

The Fed's actions related to short-term rates indirectly impact intermediate and long-term rates. With much uncertainty around where short rates may be in the near term, there are more viable funding and asset deployment strategies to consider.

Fast Pivot

Shorten Funding

Daily Cash Manager &
Term Floaters

Sell seasoned loans into
any rallies

Long Pause

Favor Margin Support

HLB-Option Advance &
Classic Advance

Selectively sell
mortgages

Higher for Longer

Mitigate interest-rate risk

Symmetrical Prepayment
Advance & Forward
Starting Advance

Sell new and seasoned
loans

MPF* Value Proposition

Sell mortgages directly to FHLBank Boston and earn fees for your borrower's credit performance

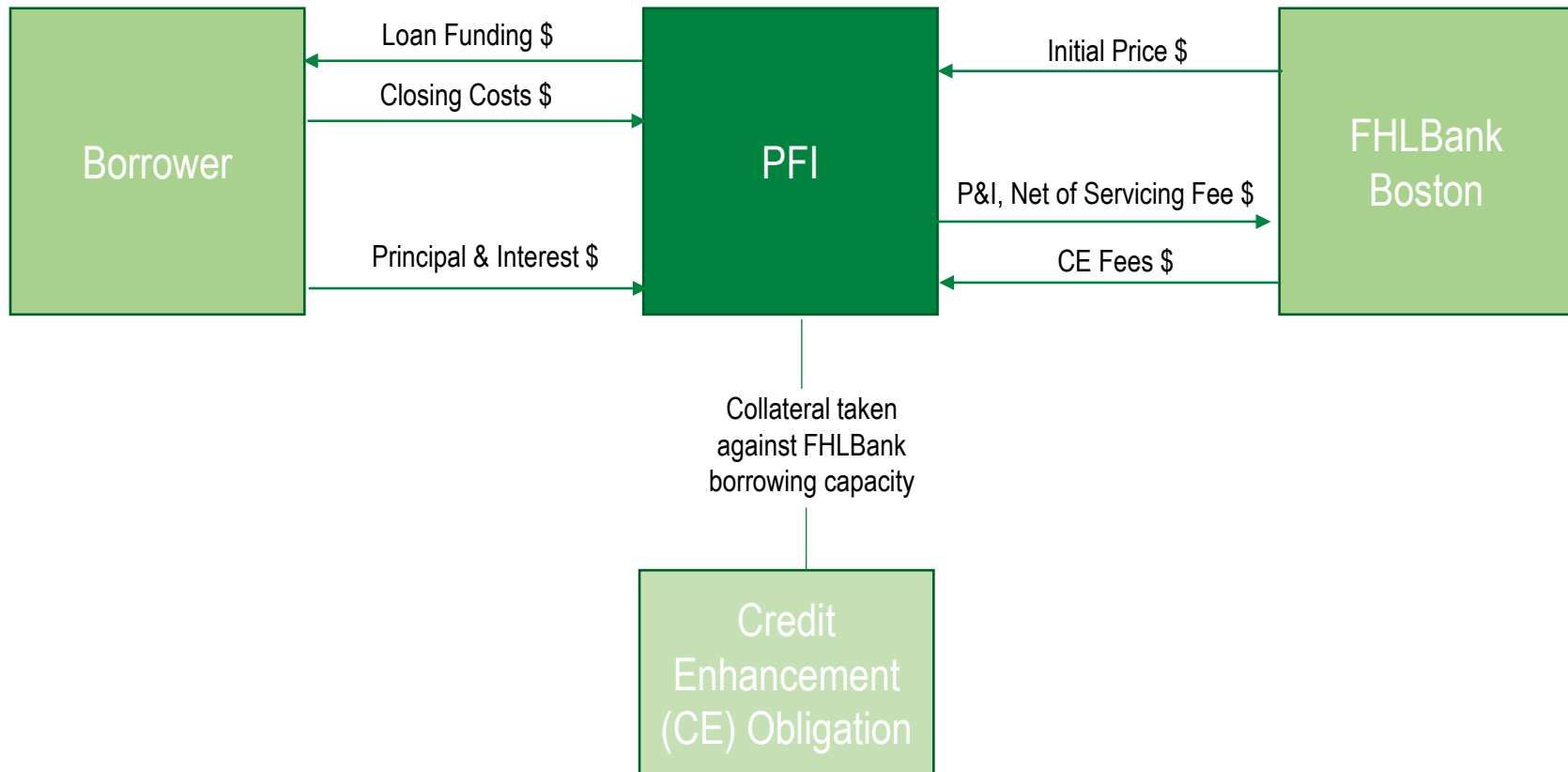
- ✓ Highly competitive, recently re-vamped pricing on conforming mortgages – particularly on 30-yr fixed rate
- ✓ Earn fee income as loans perform over time
- ✓ Retain your relationships with your clients
- ✓ Improve flexibility in your offering to clients
- ✓ No required annual minimum deliveries**
- ✓ Enjoy access to Desktop Underwriter (DU)*** software

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MPF Cash Flow Structure Overview



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MPF 35 Product Types Compared

	MPF35	MPF 35 Upfront
At Sale	Quoted price based on loan product, commitment horizon, loan rate, and current markets	Quoted price + 25 bps (for 30-yr or 20-yr fixed; 20 bps for 15-yr fixed)
Year 1	7 bps trailing fee, based on loan performance	No fee
Years 2+	14 bps trailing fee, based on loan performance	7 bps trailing fee, based on loan performance

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Cash Flows Compared

Input Assumptions for Cash Flows

Estimated FNMA Price	100.02
Estimated MPF 35 Price	99.94
Estimated MPF 35 Upfront Price	100.19
Loan Principal	\$ 10,000,000.00

- Recent pricing estimates at left assume a master commitment (MC) of \$10 million in mid-size (\$250K-\$726K) conforming 30-yr fixed mortgages at a typical market interest rate
- Cash flows below translate these inputs under competing programs/products

Estimated Cash Flows Annually

	Other Providers	MPF 35	MPF 35 Upfront
Year 0	10,001,860.00	9,994,042.33	10,019,042.33
Year 1	0.00	6,959.15	0.00
Year 2	0.00	13,733.39	6,866.69
Year 3	0.00	13,537.55	6,768.77
Year 4	0.00	13,330.14	6,665.07
Year 5	0.00	13,110.50	6,555.25
Total	10,001,860.00	10,054,713.06	10,045,898.12

Cash flow analysis examines actual cash, not necessarily accounting income or expenses.

Estimated Cumulative Cash Flows

	MPF 35	MPF 35 Upfront
Year 0	9,994,042.33	10,019,042.33
Year 1	10,001,001.49	10,019,042.33
Year 2	10,014,734.87	10,025,909.02
Year 3	10,028,272.42	10,032,677.80
Year 4	10,041,602.56	10,039,342.87
Year 5	10,054,713.06	10,045,898.12

On a nominal basis, income earned in MPF 35 only exceeds income earned in MPF 35 Upfront just before the 4-yr mark

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LLPAs vs. MPF Credit Enhancement

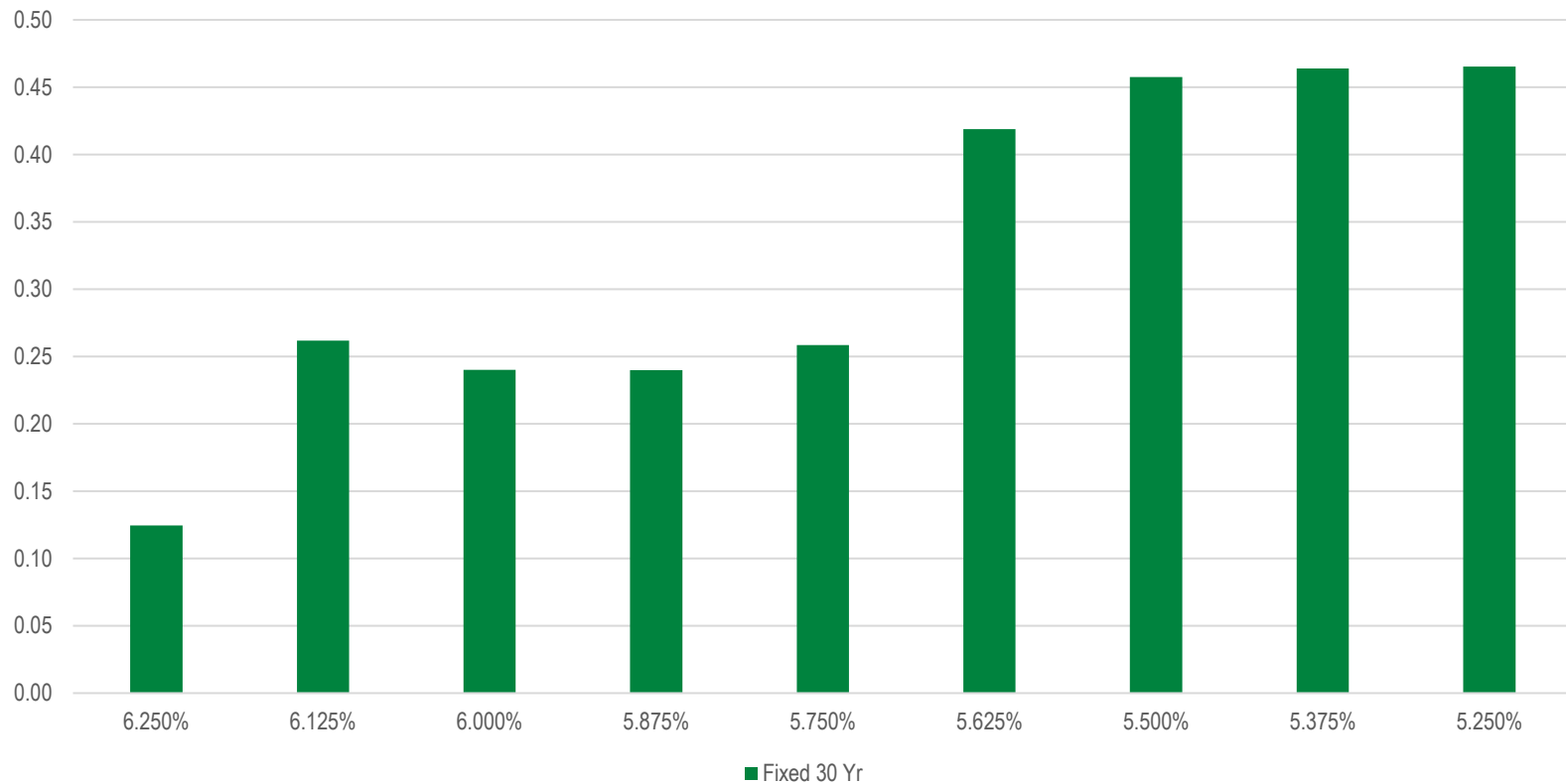
	GSE LLPAs	MPF Credit Enhancement
Cost	Realized expenses that are either paid upfront by the borrower or lender, or capitalized by adding basis points to the rate	Unrealized loss sharing arrangement, if all loans perform as agreed
Borrower Competitiveness	If capitalized through borrowers, higher ongoing mortgage rates	Does not necessarily affect borrowers
Determination	Formulaic , matrix-determined	Granular , credit model-based
Ongoing Accounting/Regulatory	Depends on lender offering; members should seek professional accounting advice	CE Obligation must be taken into consideration for reporting risk-weighted assets ; members should seek professional accounting advice

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MPF Pricing

While pricing changes multiple times per day, the chart below illustrates that MPF 35 Upfront typically compares favorably to Fannie Mae's (FNMA) estimated "best efforts" pricing across a variety of coupons on 30-yr fixed rate product.

Headline MPF 35 Upfront - FNMA Pricing

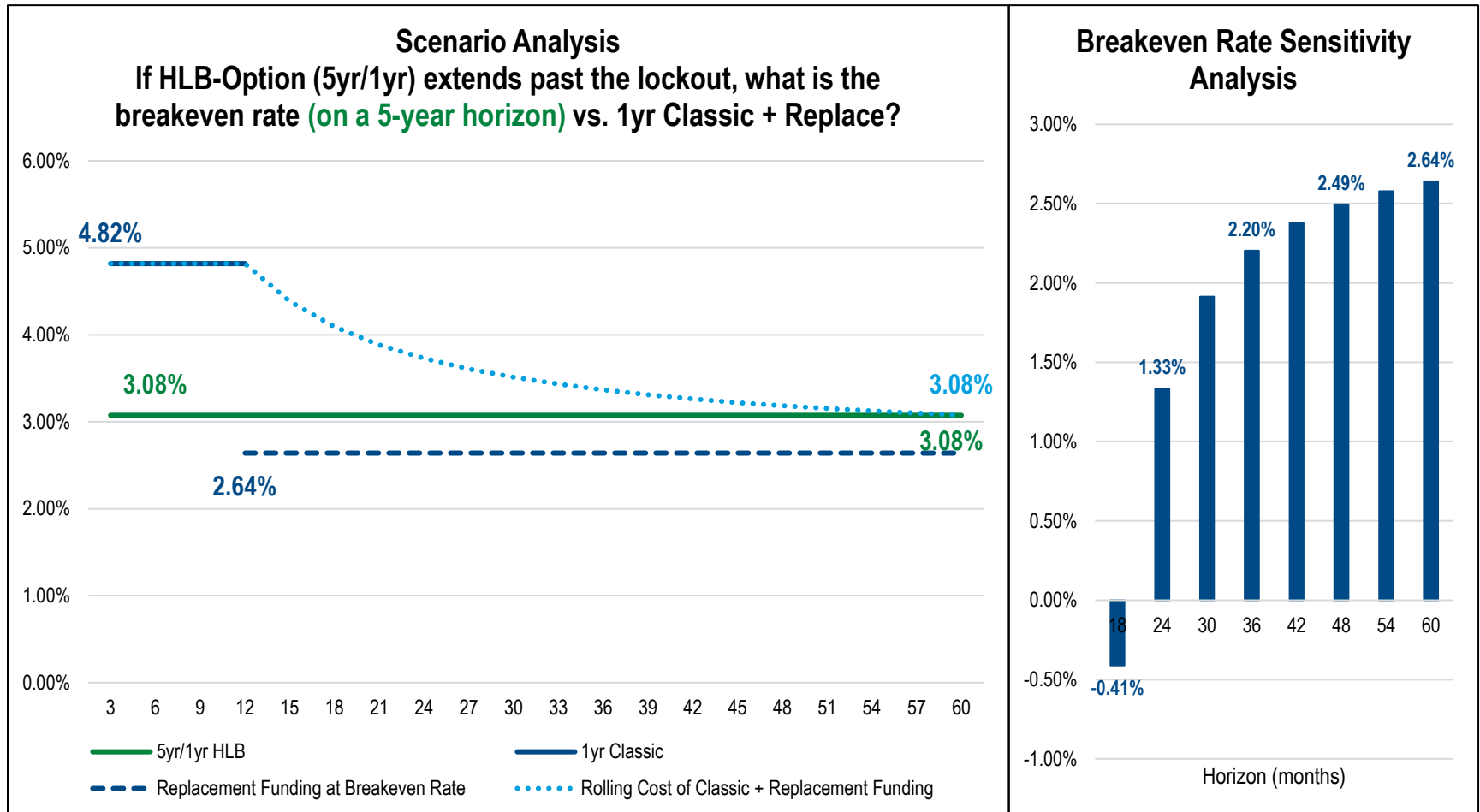


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HLB-Option Advance

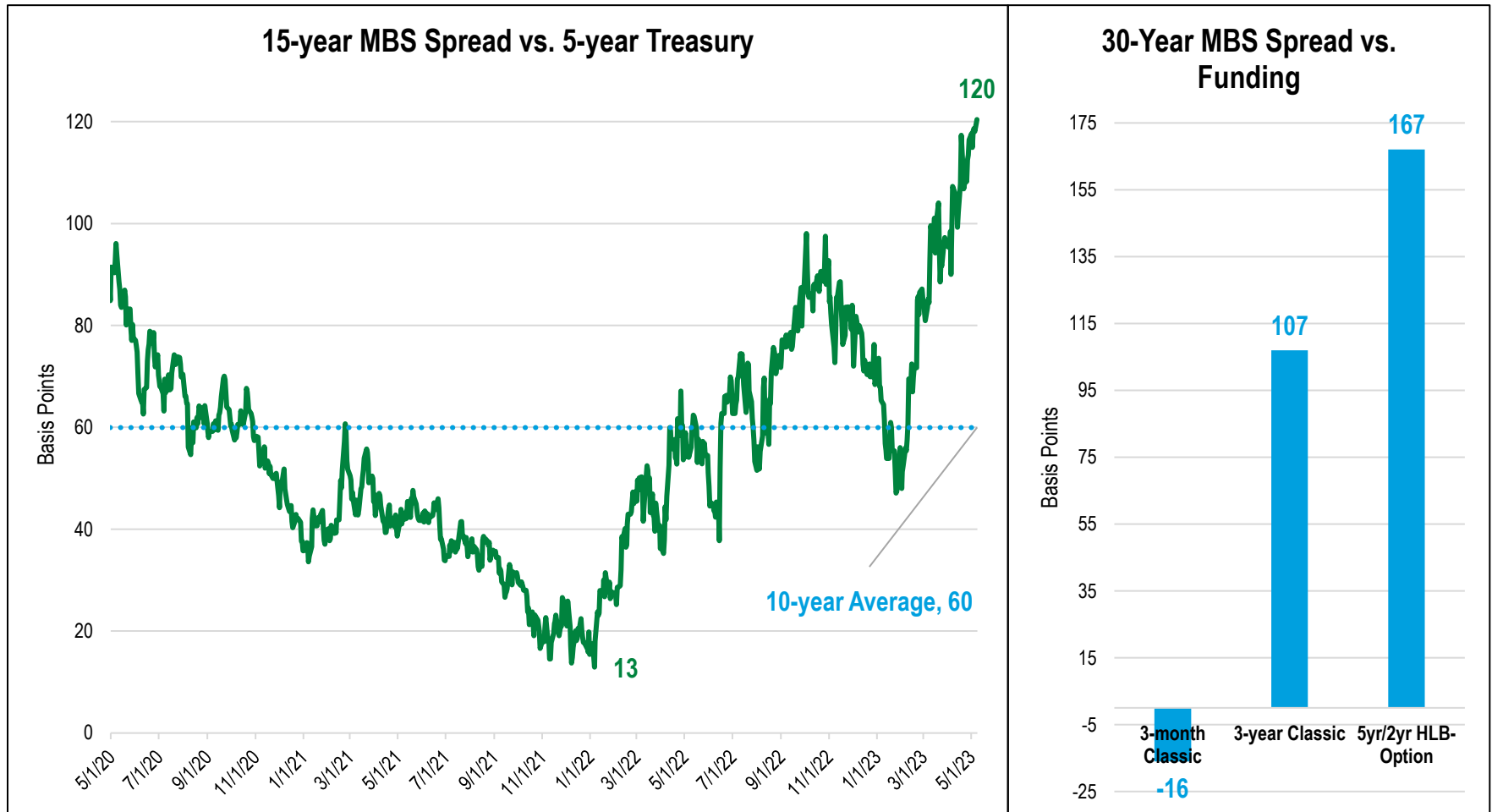
The initial savings on HLB-Option Advances vs. alternatives provide cushion for marginal funding rates to drop and still have the advance produce a lower total interest expense.



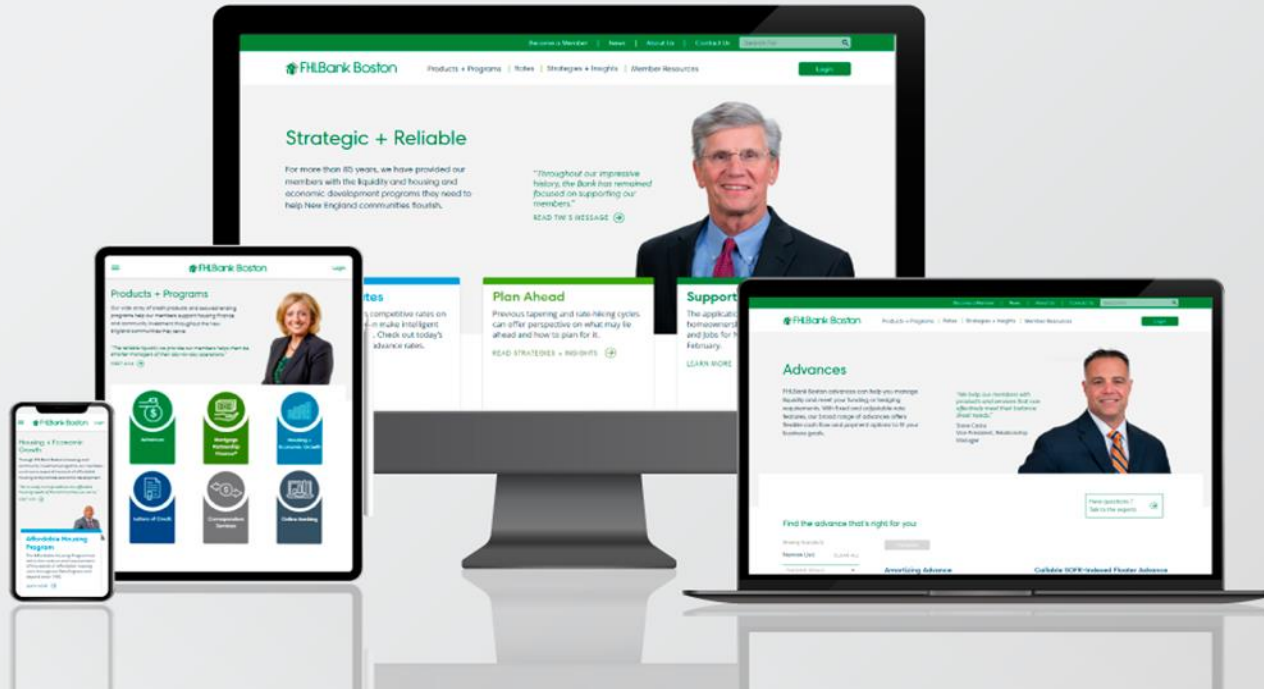
Source: FHLBank Boston

Opportunities in Investments

Despite lack of organic supply due to the drop-in refi activity, less demand from depositories (plus overhang of FDIC sales) has pushed spreads wider. The inverted curve makes margin on short-funding MBS challenging, but extending can help to mitigate the interest-rate risk and isolate the spread component.



Source: Federal Reserve Bank of St. Louis, Fannie Mae, FHLBank Boston



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