Interest Rates and Liquidity Risk

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Recession: Are we there yet?

→ Persistent high inflation – but receding

→ Tight labor markets

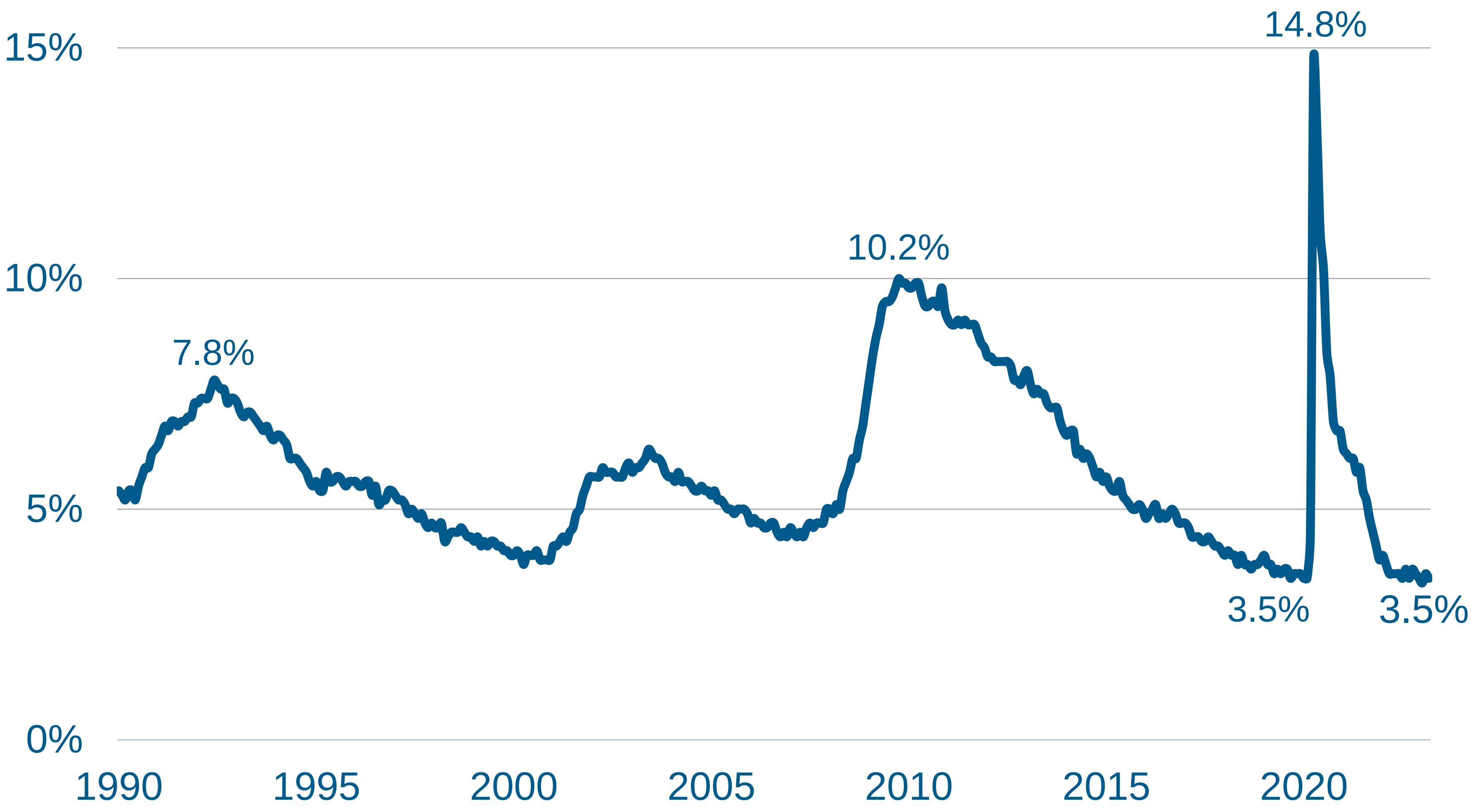
→ Resilient consumers

→ Supply chains mostly recovered

→ Business caution

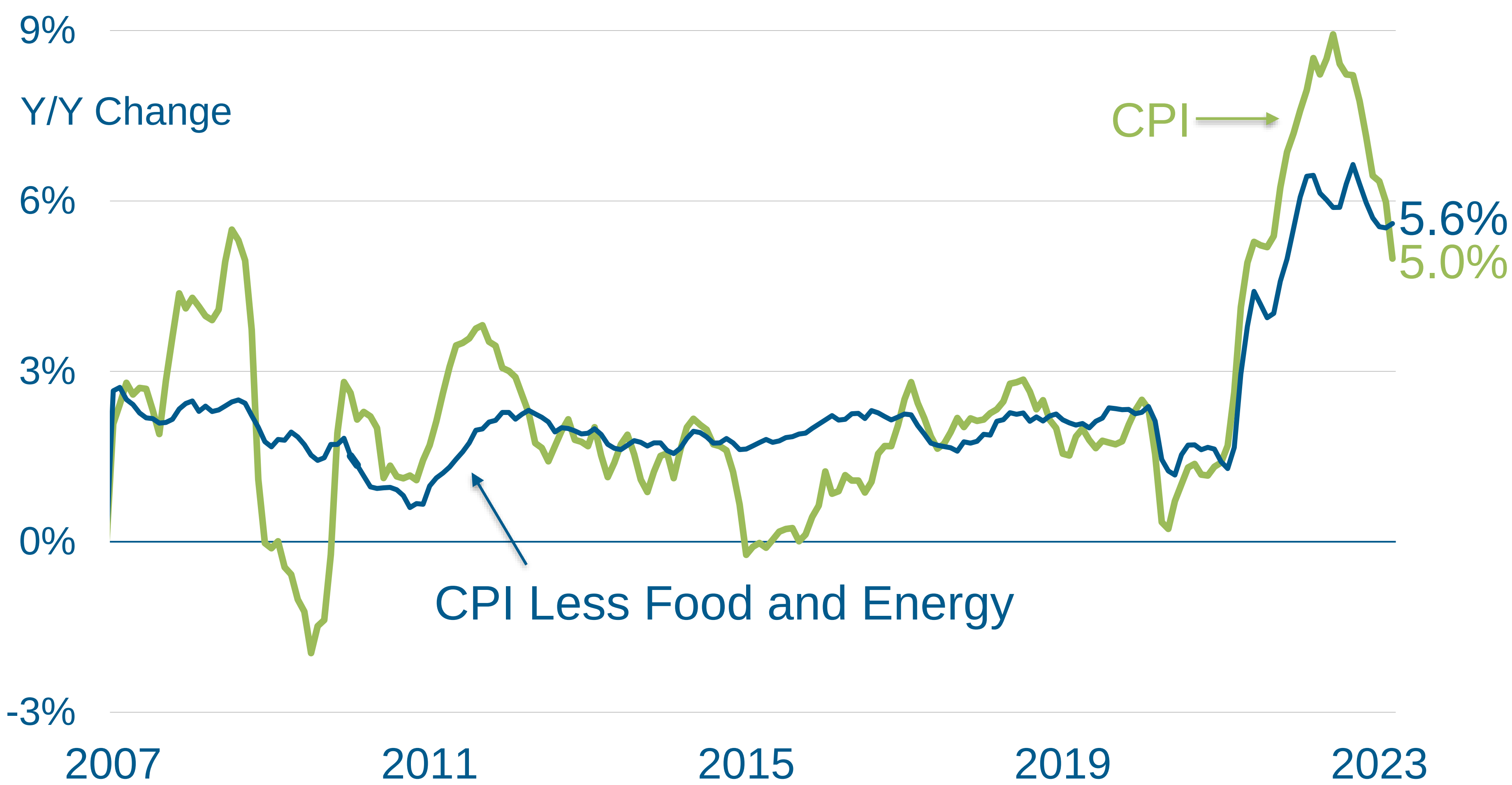
→ Rising interest rates

Unemployment Rate



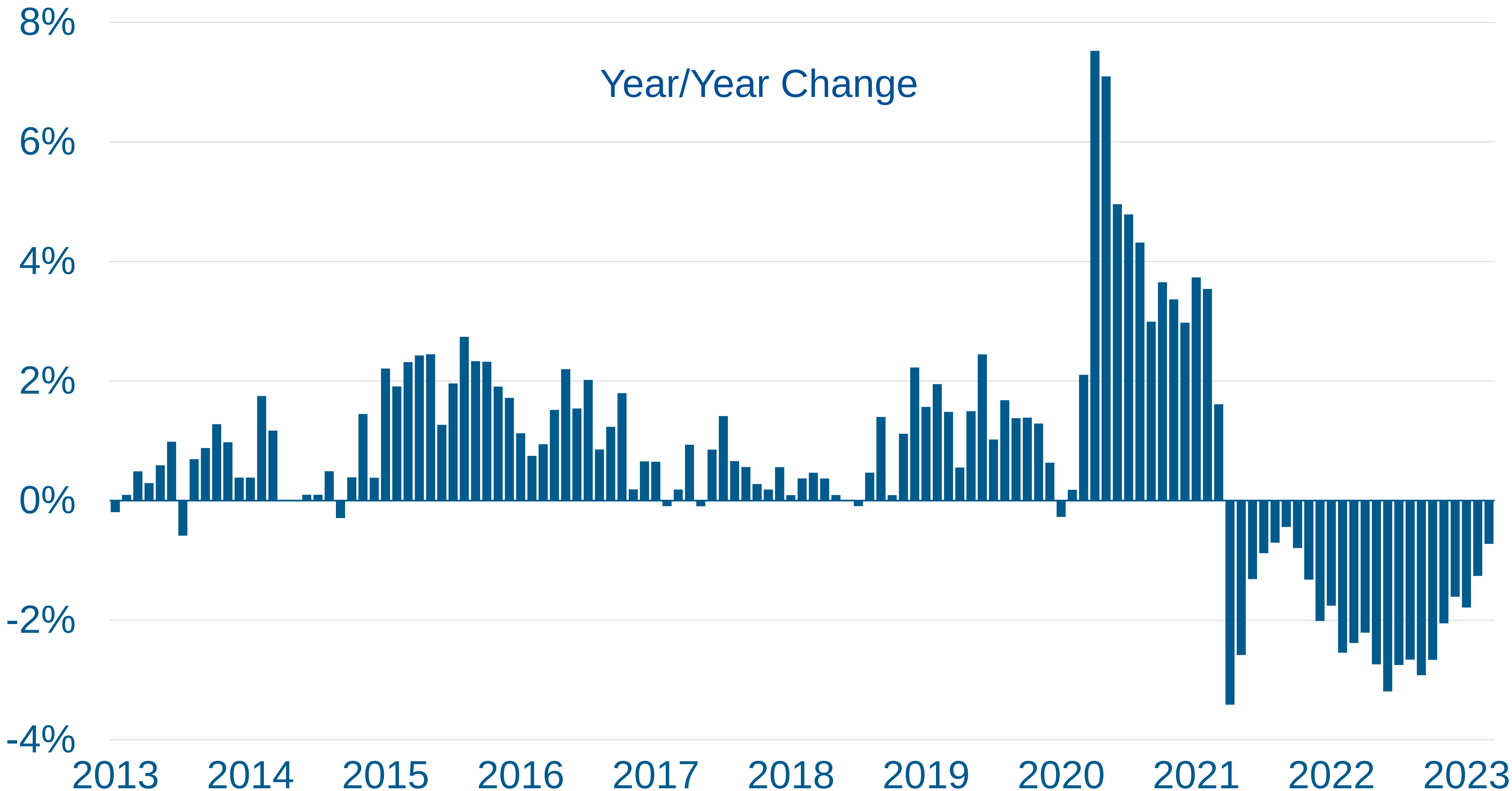
Source: U.S. Bureau of Labor Statistics

Consumer Price Inflation



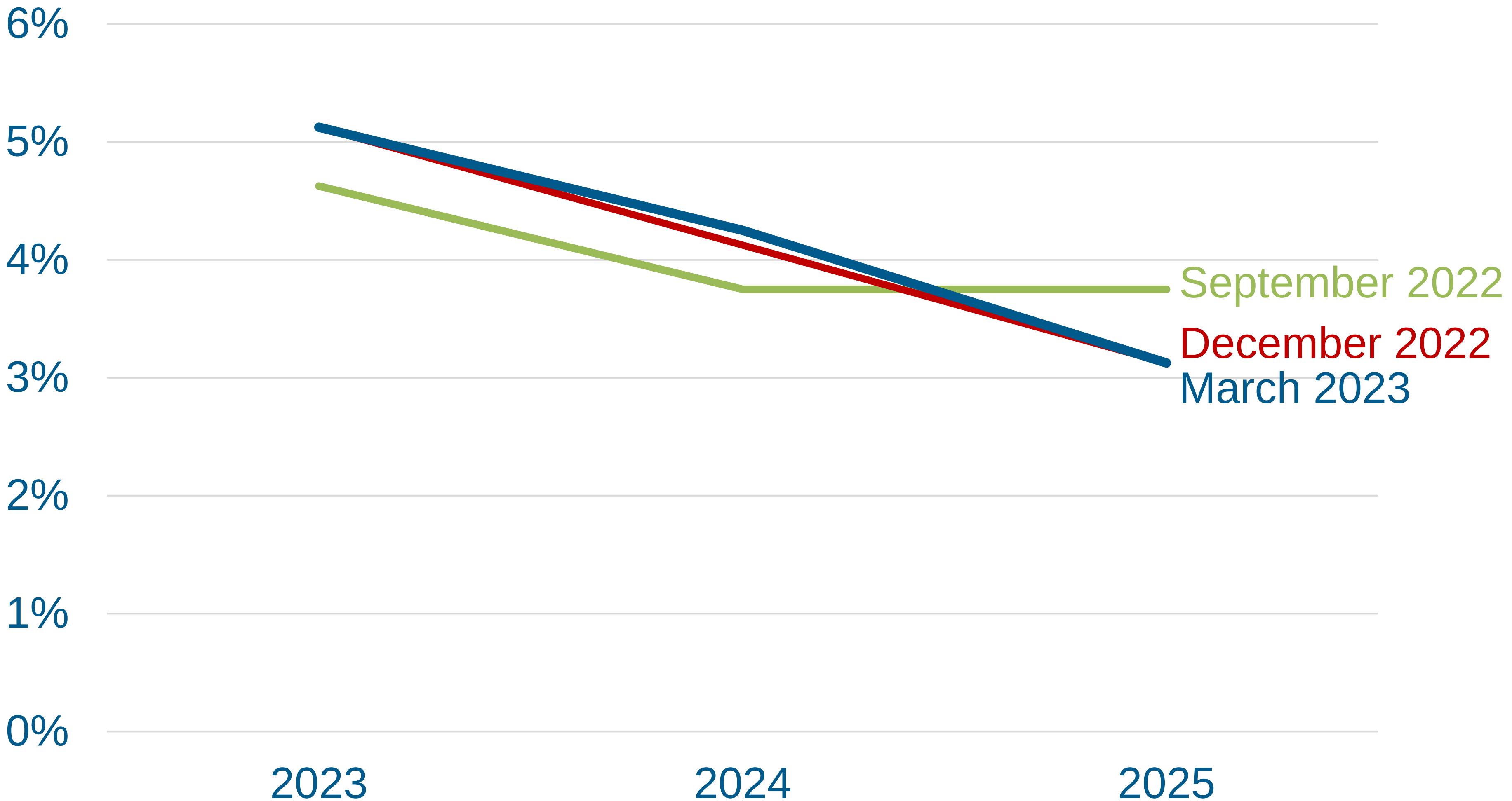
Source: U.S. Bureau of Labor Statistics

Inflation-Adjusted Average Hourly Earnings



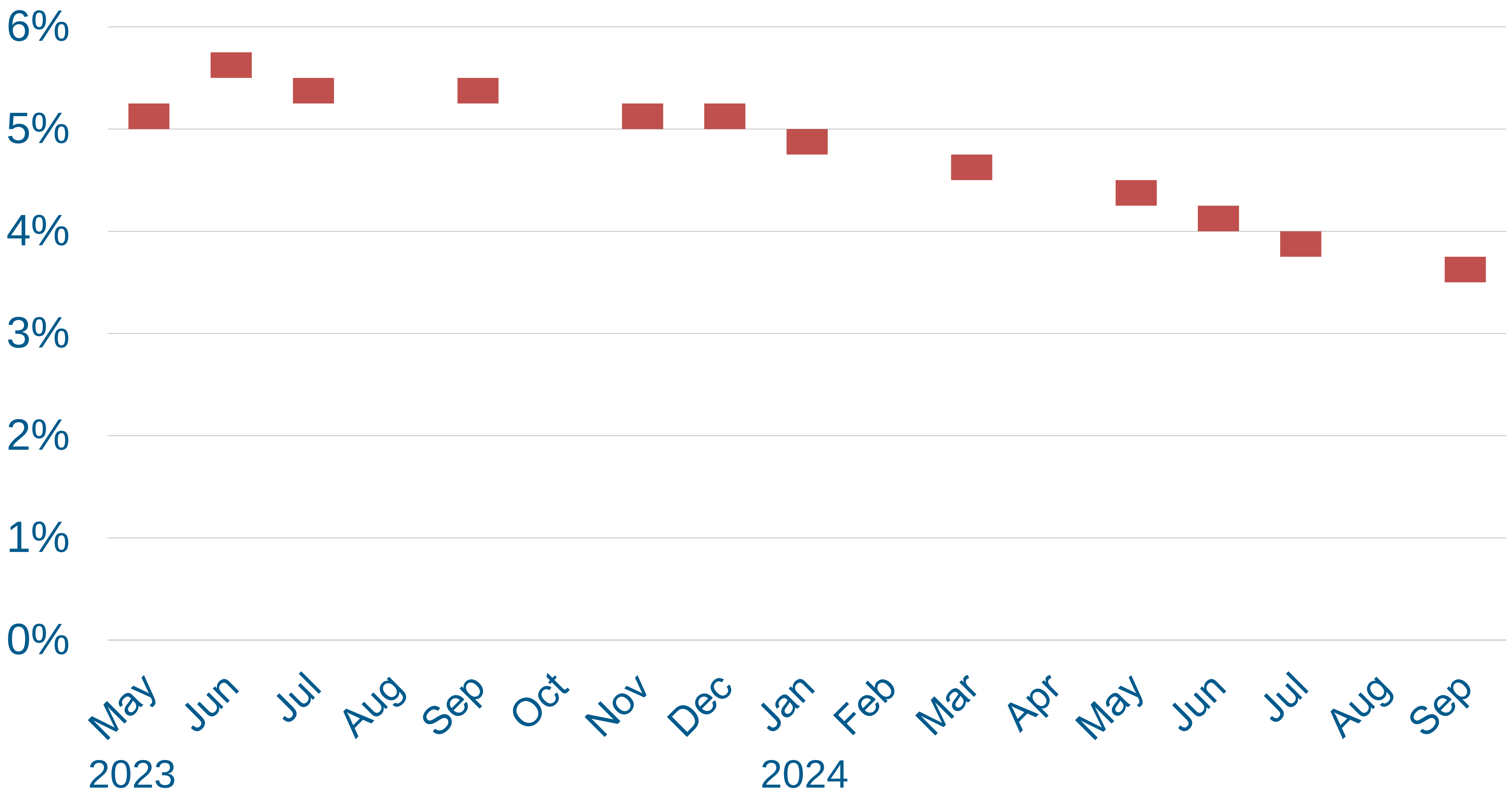
Source: U.S. Bureau of Labor Statistics

Federal Funds Rate: Median FOMC Forecast



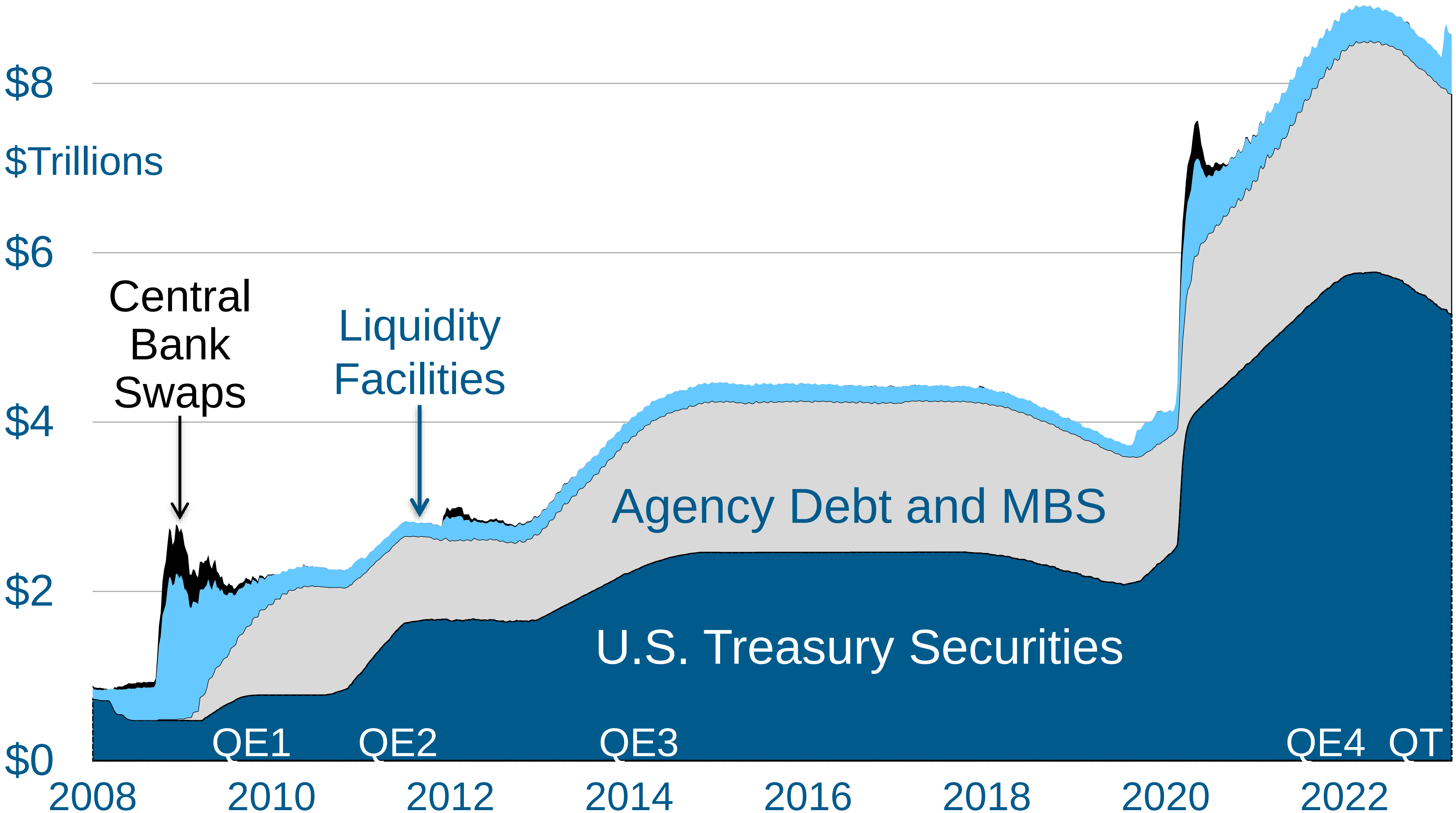
Source: Federal Reserve

CME Forecast of Federal Funds Target Range



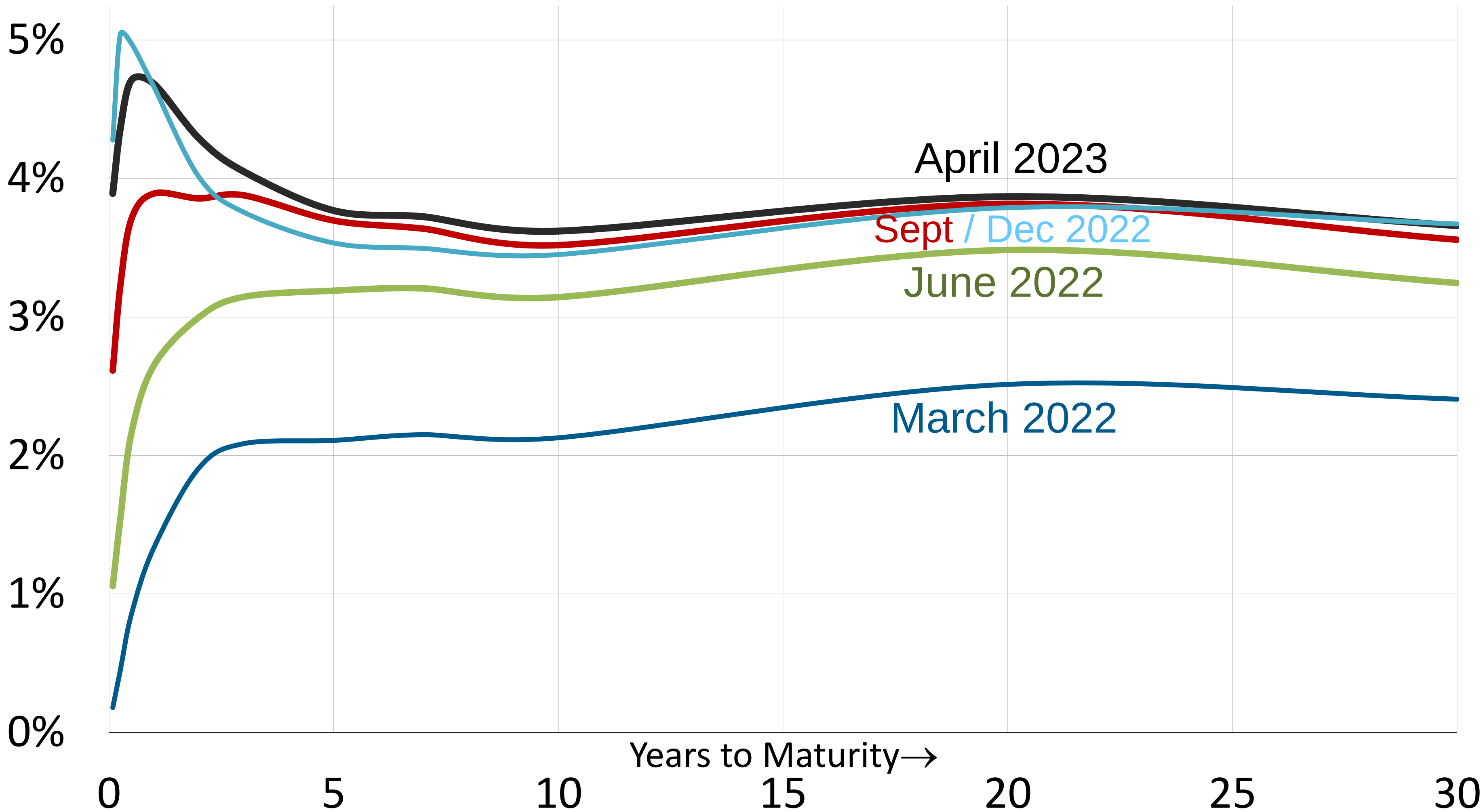
Source: CME Fed Funds Futures, April 21, 2023

Federal Reserve Balance Sheet



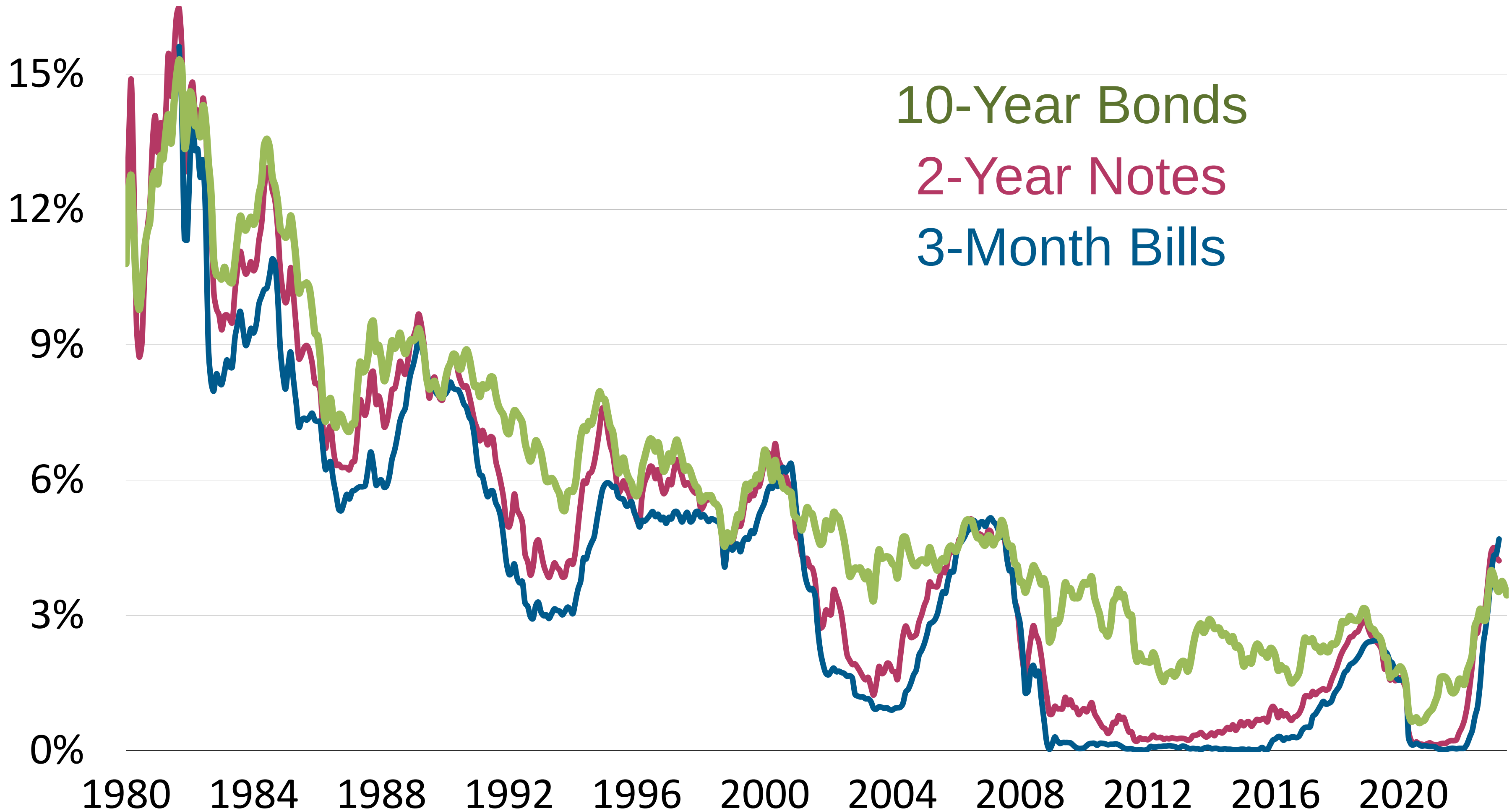
Source: Federal Reserve

Yield Curve for U.S. Treasury Securities



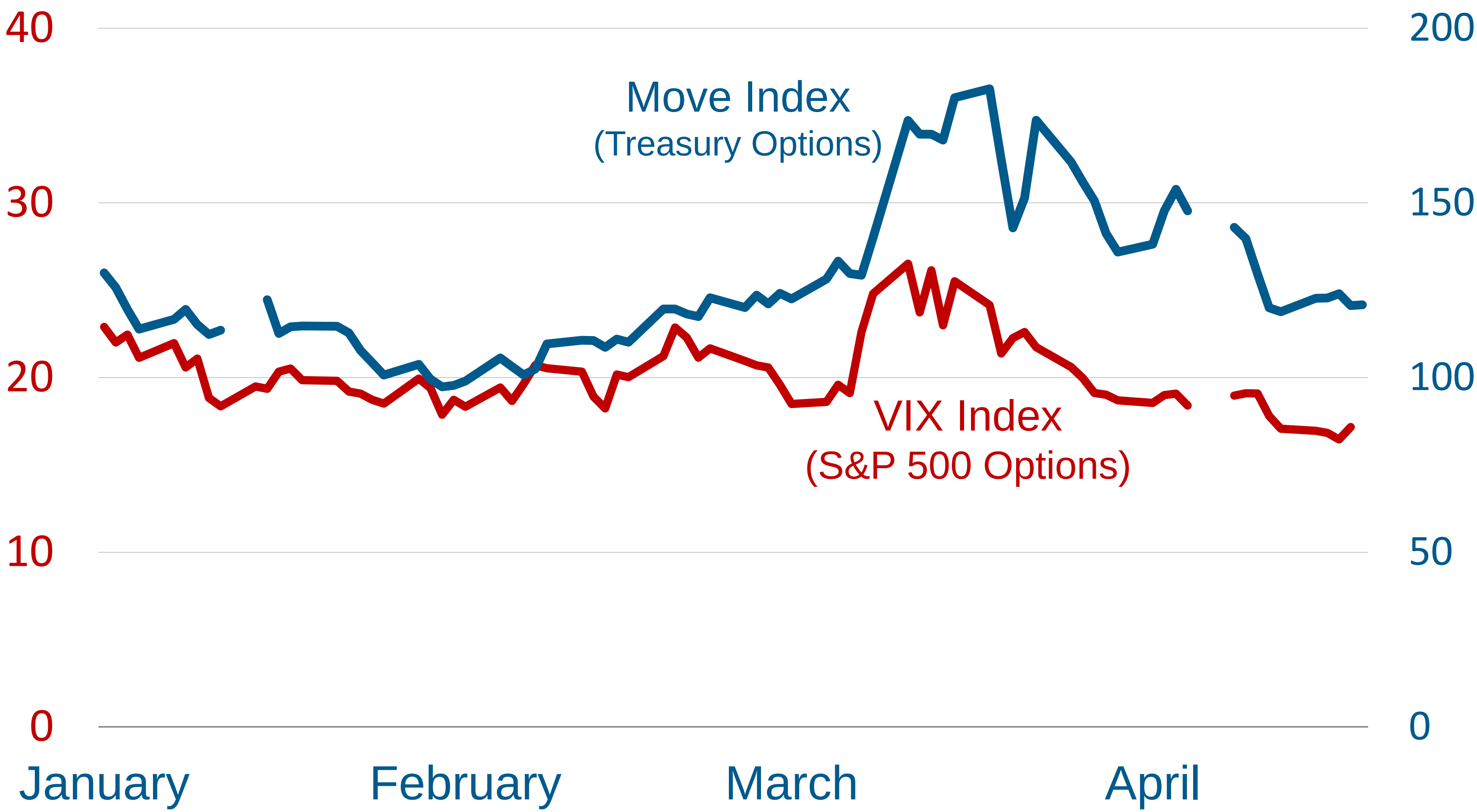
Source: Federal Reserve

Interest Rates on U.S. Treasury Securities



Source: Federal Reserve

Indexes of Financial Market Volatility



Sources: Merrill Lynch, Chicago Board Options Exchange

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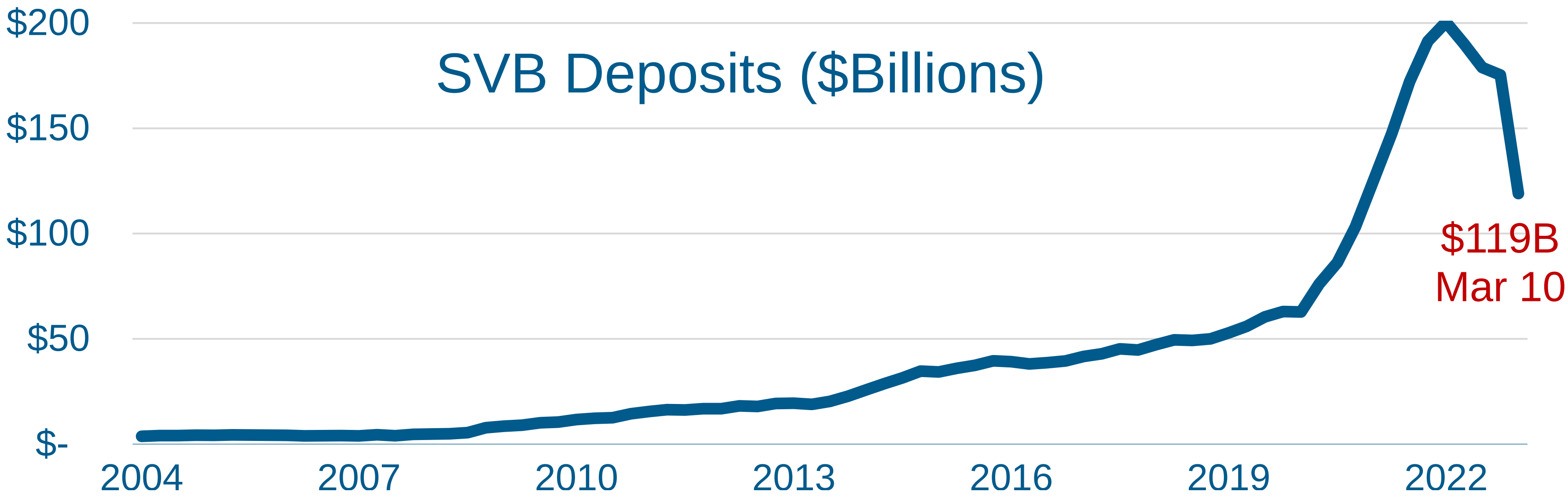
What happened to Silicon Valley Bank?

In February SVB was:

- on Forbes list of Best Banks
- given clean bill of health by its auditor

SVB lost $25 billion in deposits March–December 2022 (over 88% uninsured)



$42 billion deposits run-off on March 9 forced sale of securities → capital ↓

Source: Federal Deposit Insurance Corp.

SVB & Signature Bank Timeline

Wednesday, March 8 – Silvergate Bank self-liquidated

Thursday, March 9 – More than $42 billion in deposits left SVB

Friday, March 10 – SVB taken into receivership by the FDIC

→ Depositor concern rose for uninsured deposits in banks with unrealized losses

→ Signature Bank saw significant deposit outflow

Sunday, March 12 – Signature Bank taken into receivership by the FDIC

→ FDIC invoked "systemic risk exception" to cover SVB & SB uninsured deposits

→ Fed Bank Term Funding Program to provide additional funding to eligible banks

Monday, March 13 – Fed internal review of supervision and regulation

SVB's failure was serious but a unique set of factors made the bank particularly vulnerable.

→ Rapid growth

→ Severe risk management failures

→ Narrow, concentrated customer base

→ Heavy use of uninsured deposits

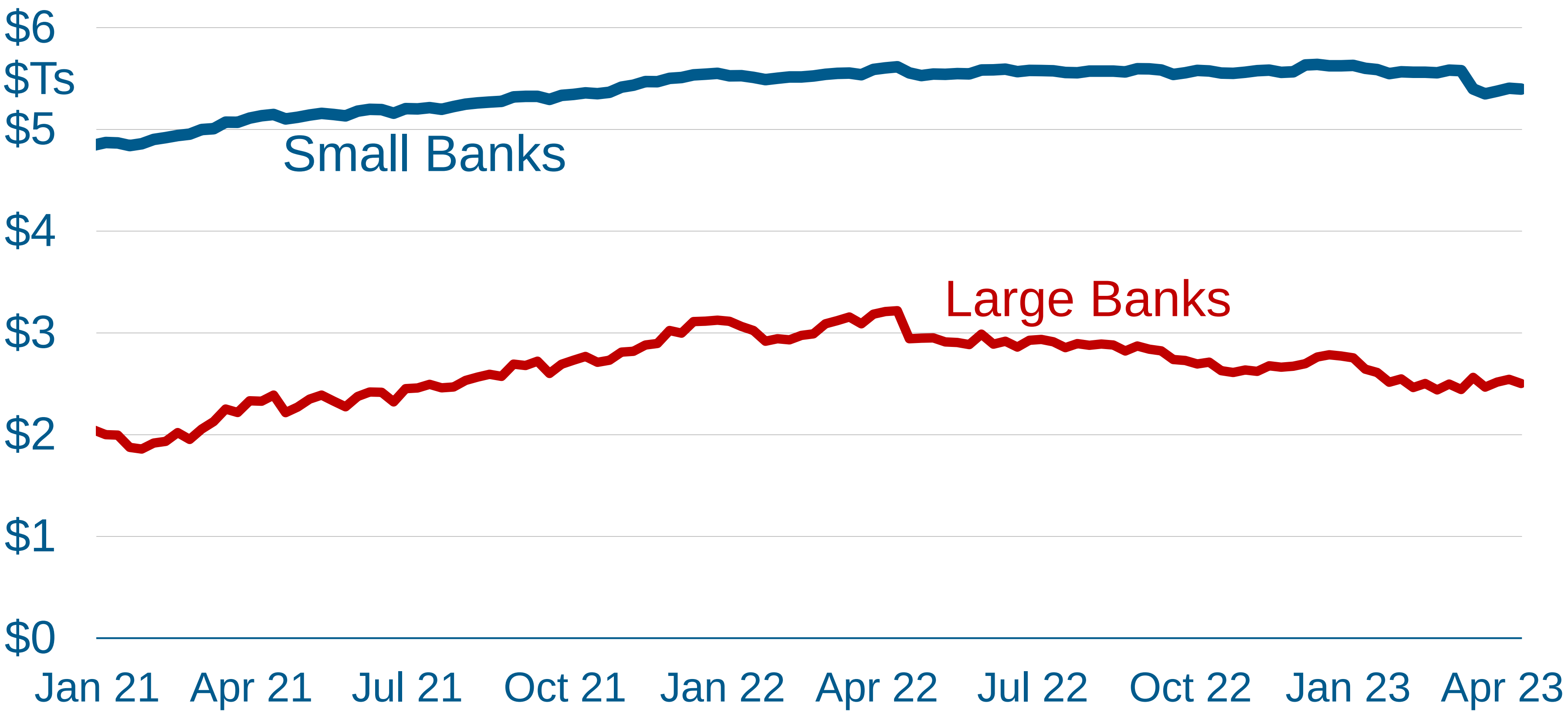
Unrealized securities losses increased as rates climbed, as is expected. The vast majority of banks are prepared.

Run risk via social media is a new wrinkle.

SVB is the first "Twitter bank run"

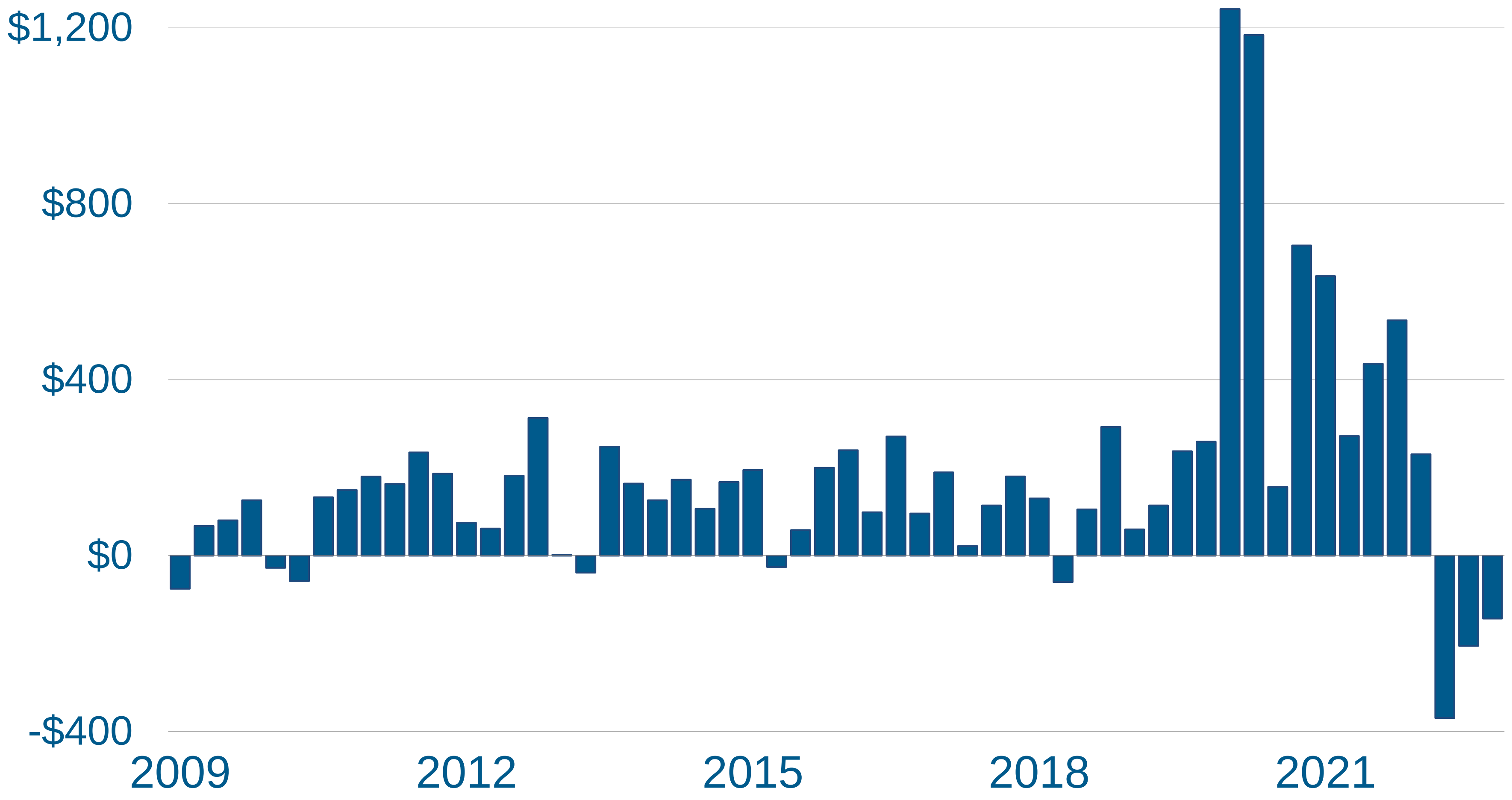
Some Post-Event Deposit Run-off from Small Banks

- 25 biggest banks gained $120 billion in the days after collapse
- Small–medium banks saw aggregate outflow of $119 billion



Source: Federal Reserve

Quarterly Change in Bank Deposits



Source: Federal Deposit Insurance Corp.

From the Regulators in May

May 1

Fed & FDIC reviews of SVB & Signature Bank Failures

FDIC review of the deposit insurance system

- Deposit insurance coverage levels
- Excess deposit insurance
- Implications for risk-based pricing and deposit insurance fund adequacy

May – FDIC proposal on a "special assessment"

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Policy Implications

- Some policymakers on the Hill are focusing on:
  - → Executive compensation and "clawbacks"
  - → Oversight of the Federal Reserve
  - → Regulatory "tailoring" of regulations
  - → Deposit insurance issues

- Regulators are focusing on:
  - → Heightened scrutiny of interest rate and liquidity risk
  - → Should unrealized losses be filtered from capital?
  - → Increased scrutiny, especially for regional banks

One Perspective

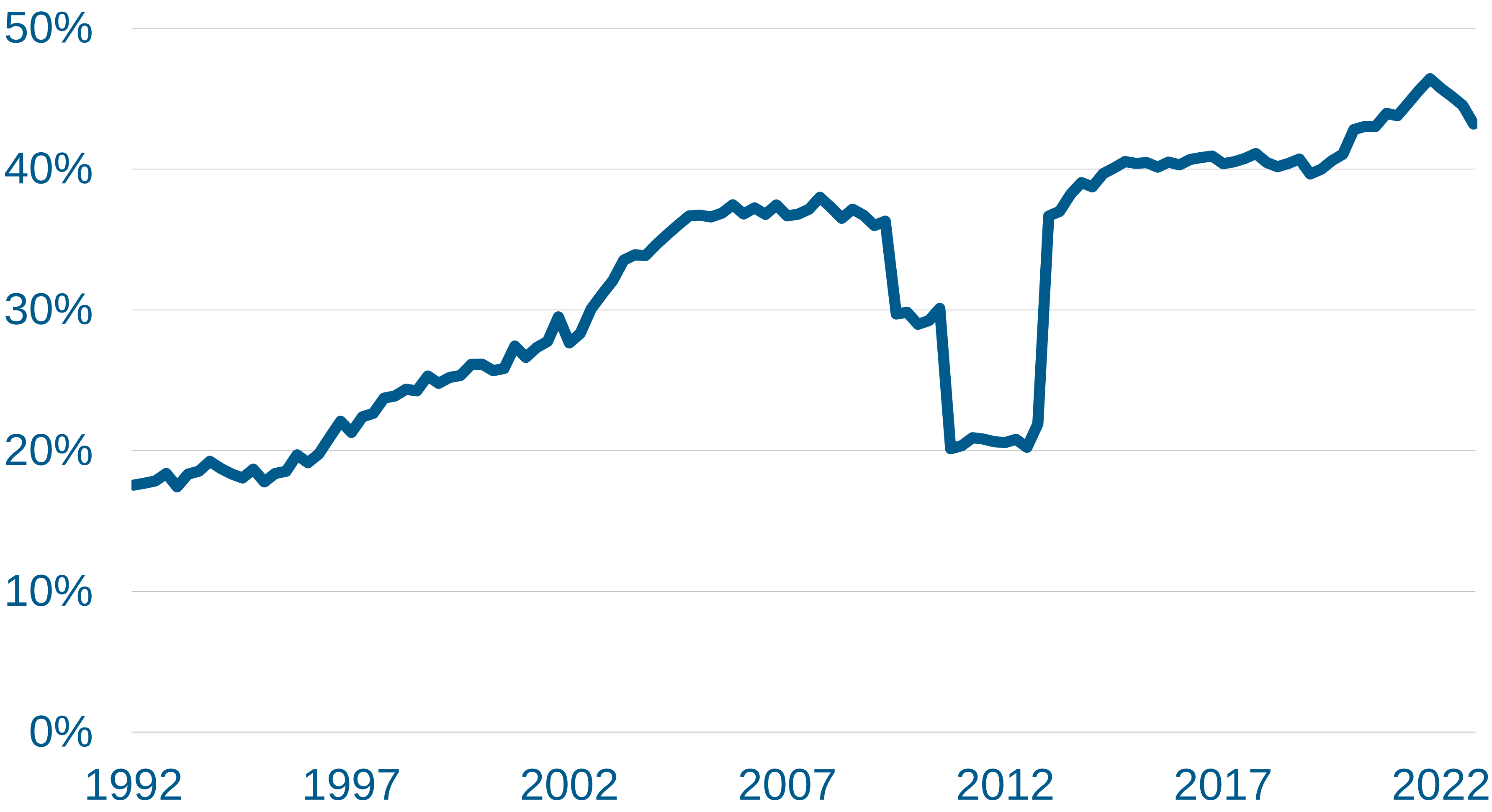
The worrisome scenario unfolding is that many lenders, particularly smaller ones, can simply no longer count on the cheap, stable deposits they have grown accustomed to in recent years. The flood of money into higher-yielding money market funds should be setting off alarm bells.

“Initially people wanted to move money out of certain banks for safety reasons. But it also reminded them they were getting nothing on that cash… After the fear went away, the greed factor came in.”

[T]the problem of being locked into still relatively low yields for a long time remains. Banks with the flexibility to sell down some of those portfolios could pay off expensive government funding and preserve their earnings potential in the future – though likely at a cost to their earnings today, as losses on the sales are reflected in net income.

Telis Demos, *Wall Street Journal*, April 12, 2023

Historically High Uninsured Deposits Share

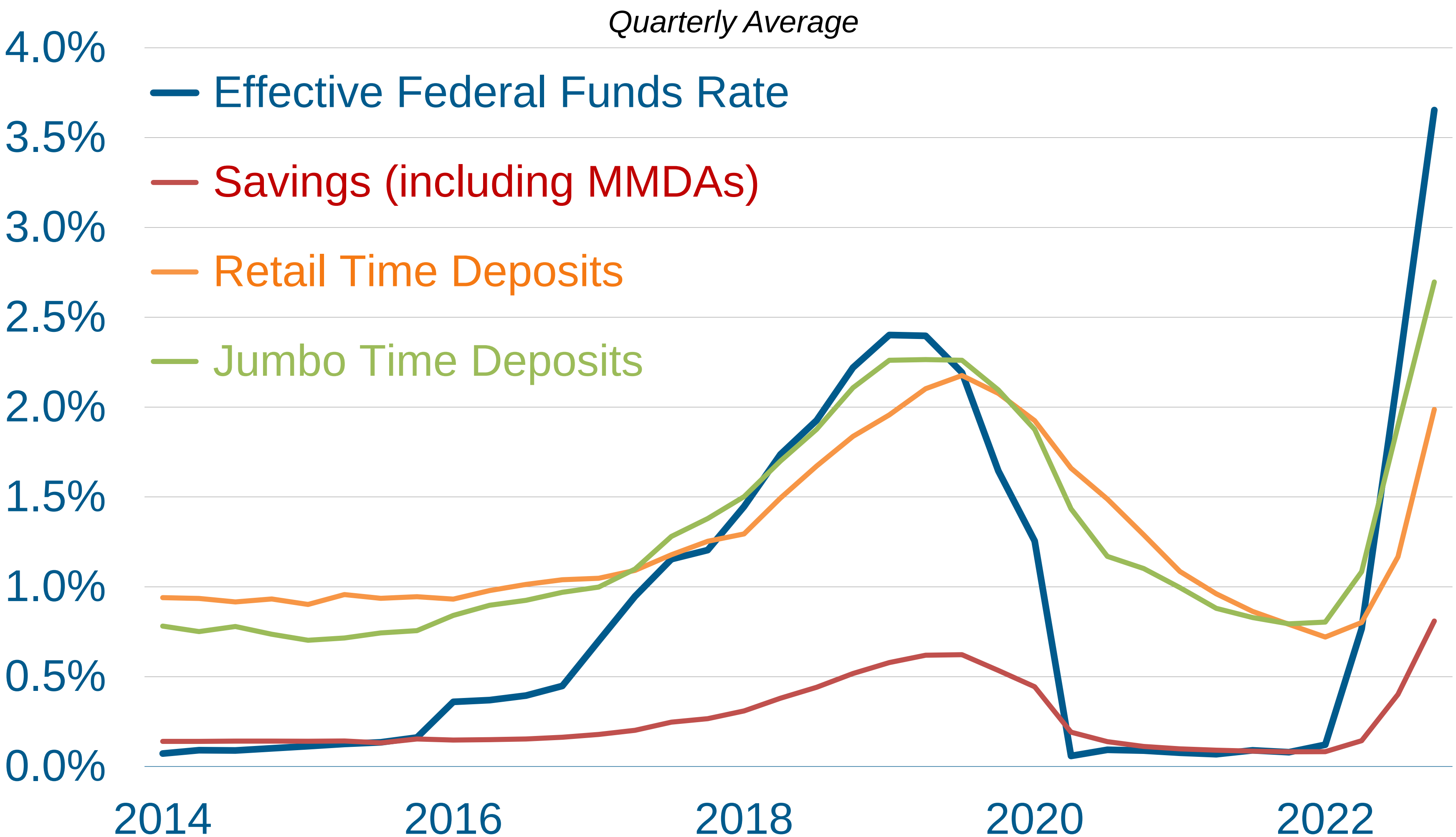


Source: Federal Deposit Insurance Corp.

Deposit Considerations

- Higher interest rates means the era of cheap deposits is over
- Many depositors are looking for higher, more competitive rates
- Many banks are raising deposit interest rates in response to steady deposit outflows, particularly for near-term products
- Consider efforts to retain stickier deposits and adjust the mixes of deposits and funding
- Increase deposit monitoring, especially for concentrations in higher-than-normal volumes and uninsured deposits
- Pressure-test non-maturity deposits to assure adequate liquidity coverage and accurate interest-rate sensitivities

Savings Rates vs. Policy Rate



Sources: S&P Global, Federal Reserve

Analysis of Deposits

Deposit Segmentation

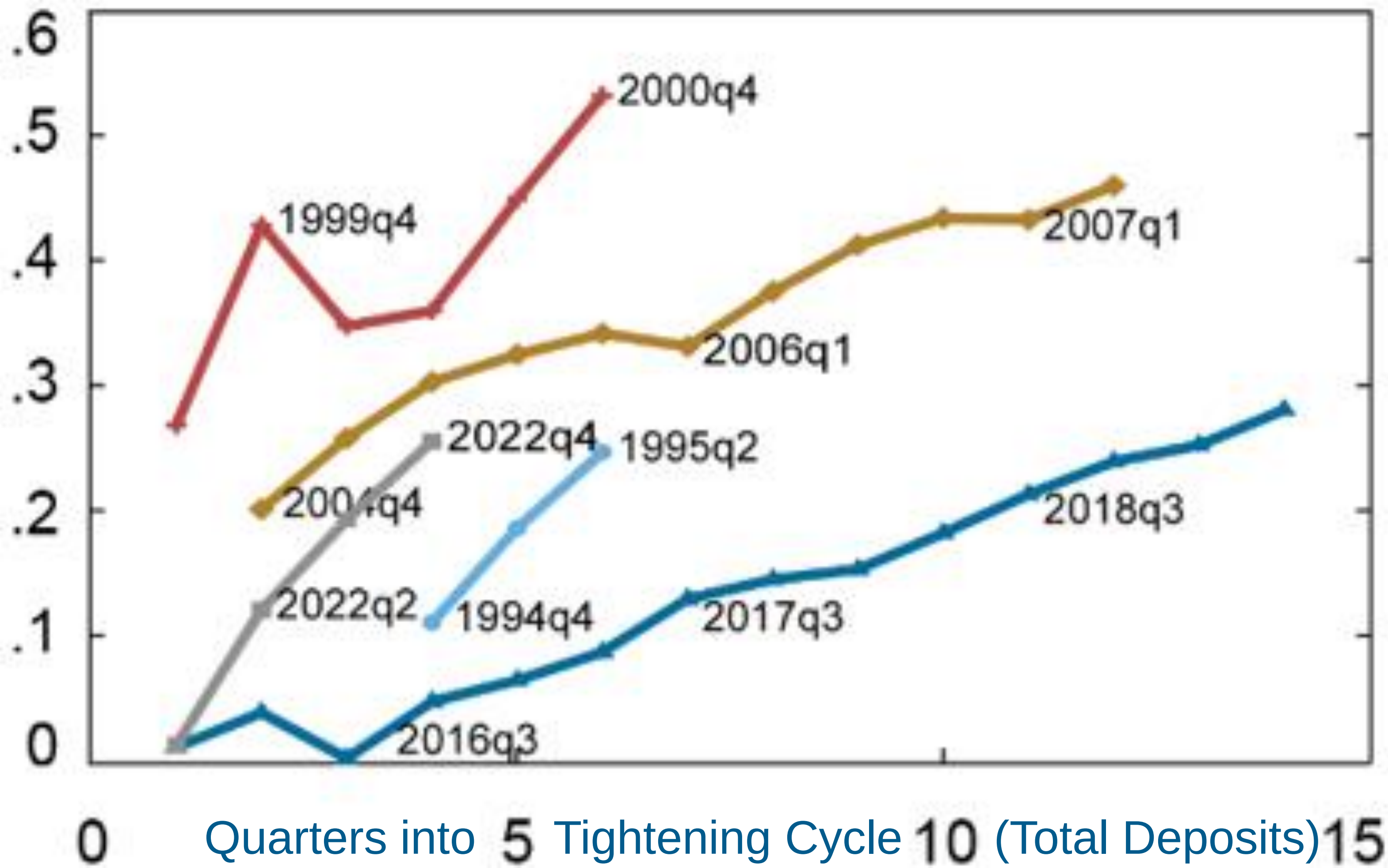
- Surge money and abnormal growth accounts
- Non-maturity deposits – decay rates
- CDs – prepayments
- Uninsured deposits
- Business vs. retail vs. municipal accounts
- New vs. existing accounts
- Single, high balance vs. multi-product relationship accounts

Analysis of Deposits

Things to Monitor and Think About

- Uninsured deposits
- Deposits withdrawals and closings
  – including from CDs
- Beta, growth/decay and account retention rates
  – in normal vs. stress environments
- Variance tolerance limits and thresholds
- Sensitivity analysis and alternative scenarios
- Herd behavior for outflows and account closures
  – Reactions to market events, regulator actions

Deposit Betas are Rising Quickly



Quarters into Tightening Cycle (Total Deposits)

Source: Federal Reserve Bank of New York

THE WALL STREET JOURNAL.

Few Banks Are Hedging Interest-Rate Risk

A recent paper focuses on how banks handle rising rates

Silicon Valley Bank was taken over by the FDIC last month.

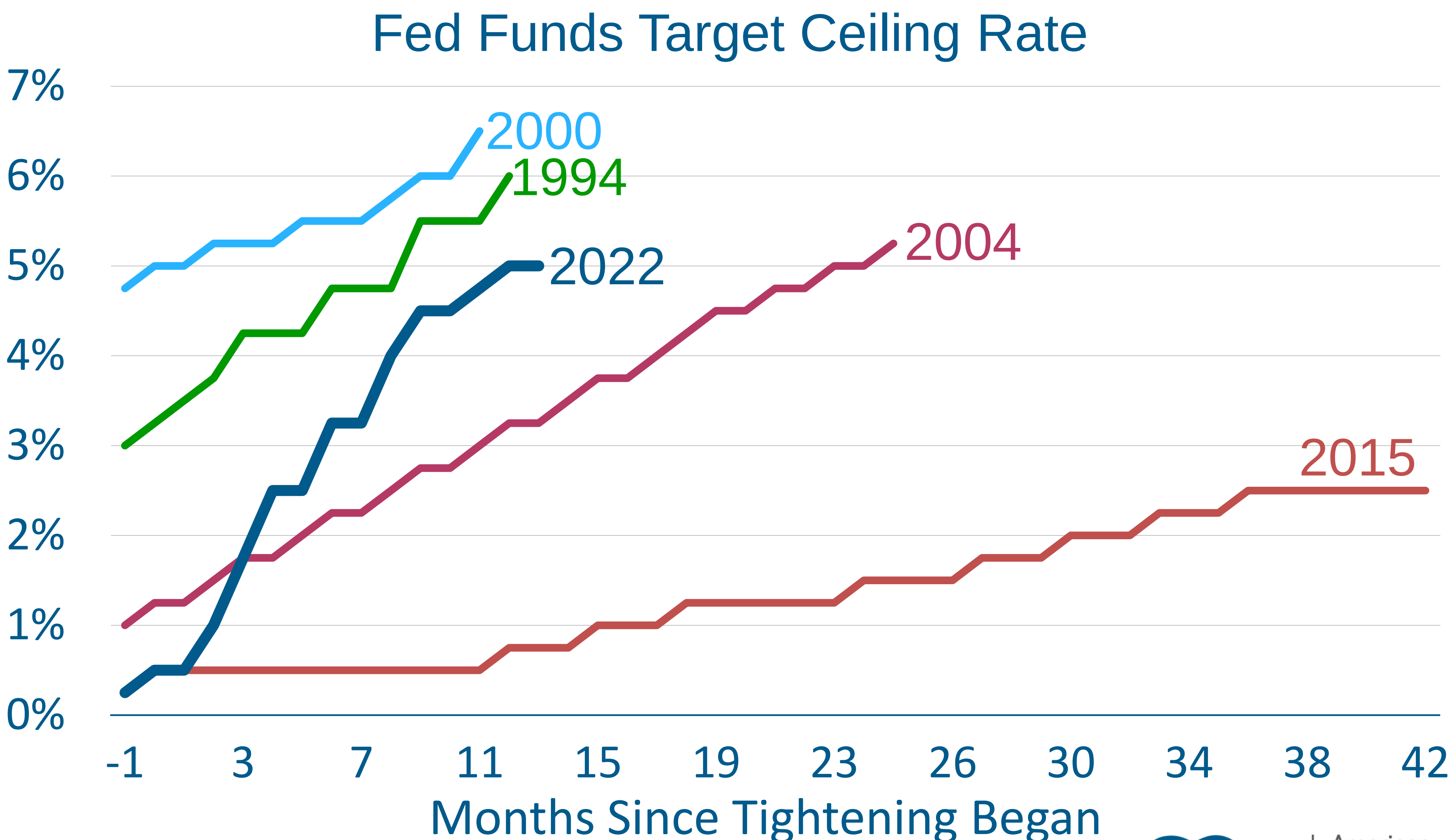
PHOTO: PATRICK T. FALLON/AGENCE FRANCE-PRESSE/GETTY IMAGES

https://www.wsj.com/articles/few-banks-are-hedging-interest-rate-risk-21ed1947

By Matt Grossman, matt.grossman@wsj.com

April 18, 2023 5:30 am ET

Federal Reserve Tightening History



Source: Federal Reserve

Thoughts on Rate Risk Management

- Most aggressive Federal Reserve rate hikes in recent history
- Consider the possibility of continuously rising rates – or a sudden jump in rates if Congress delays in raising the federal debt ceiling
- Uncertainty about the economy, inflation, the Fed's policy rate trajectory, and Congress are challenging rate risk management
- Rising rates improve net interest income (NII) and the short-term earnings outlook, but undermine the economic value of equity (EVE)
- Consider long-term (economic value) <u>and</u> short-term (earnings at risk) measures to identify exposures from longer-term repricing and gaps
- Analyze alternative interest rate scenarios, e.g., large rate jumps and dips, yield curve twists, and inverted yield curves
- Review the overall risk appetite and limits, hedging strategies and techniques, and controls for monitoring risk exposure

Today deposits can move faster than Contingency Funding

Final hours for SVB …

Thursday, March 9

- SVB applied for $20 billion of advances from FHLB-SF. FHLB-SF needed time to issue debt and process SVB's collateral, so offered a smaller amount
- SVB asked FHLB-SF to move $20 billion of collateral to FRB-SF for a Discount Window loan. FHLB-SF had to first determine uncommitted collateral
- SVB applied to custodial bank Bank of New York Mellon to get $20 billion of assets to FRB-NY to support a Discount Window loan – too late for daily cut-off
- At SVB's request, BoNYM requested an extension from FRB-NY and FRB. Fed needed to test trade the securities wire, and there wasn't time that day.
- $42 billion of deposit withdrawals left ($1 billion) SVB cash balance at COB.

Friday, March 10

- BoNY's transfer to FRB-NY processed, supporting $20 billion Discount Window
- Before noon EDT, SVB was in FDIC receivership.

 Miao, Zuckerman & Eisen, *Wall Street Journal*, 3/22/23

Analysis of the Liquidity Position

- Careful evaluation of liquidity stress points – simulations
- Recent experience suggests new liquidity stress scenarios
- Reconsider the significance of deposit segments and concentrations when in liquidity stress scenarios
- Reassess liquidity thresholds and how frequently you measure them to detect a rapid increase in cash outflows
- Don’t ignore unrealized losses for AFS and HTM securities
- Reexamine the Contingency Funding Plan

Scenarios for a Liquidity Event

- Plausible and impactful
- Low probability but high impact

- Bank-specific and local
  – financial and operational threats
- Market-wide events in the economy, financial markets, or due to regulatory, judicial, legislative actions
- Significant rise in rates
- Short-term and long-term in duration

Update the Contingency Funding Plan

- Identify new and meaningful vulnerabilities
- Revisit liquidity monitoring – metrics and frequency
- Reconfirm early warning indicators, tolerance limits and thresholds
- Compare the limits and thresholds to early warning measures
- Evaluate liquidity capacity after relief strategies
- Document strategies for relief, crisis steps, roles and responsibilities

Liquidity Governance

- Revisit liquidity risk management policies
- Routinely test contingency funding to confirm access and speed of response
- Consider a liquidity fire drill
- More liquidity discussions with stakeholders

Takeaway Points A

- It looks like short-term rates will trend down and longer-term rates may hold steady.
- Could persistent elevated inflation, delay in raising the federal debt limit, another large bank failure, or something else change the outlook?
- Interest rate risk and liquidity management is not at all easy today
- Prepare for more rigorous examinations

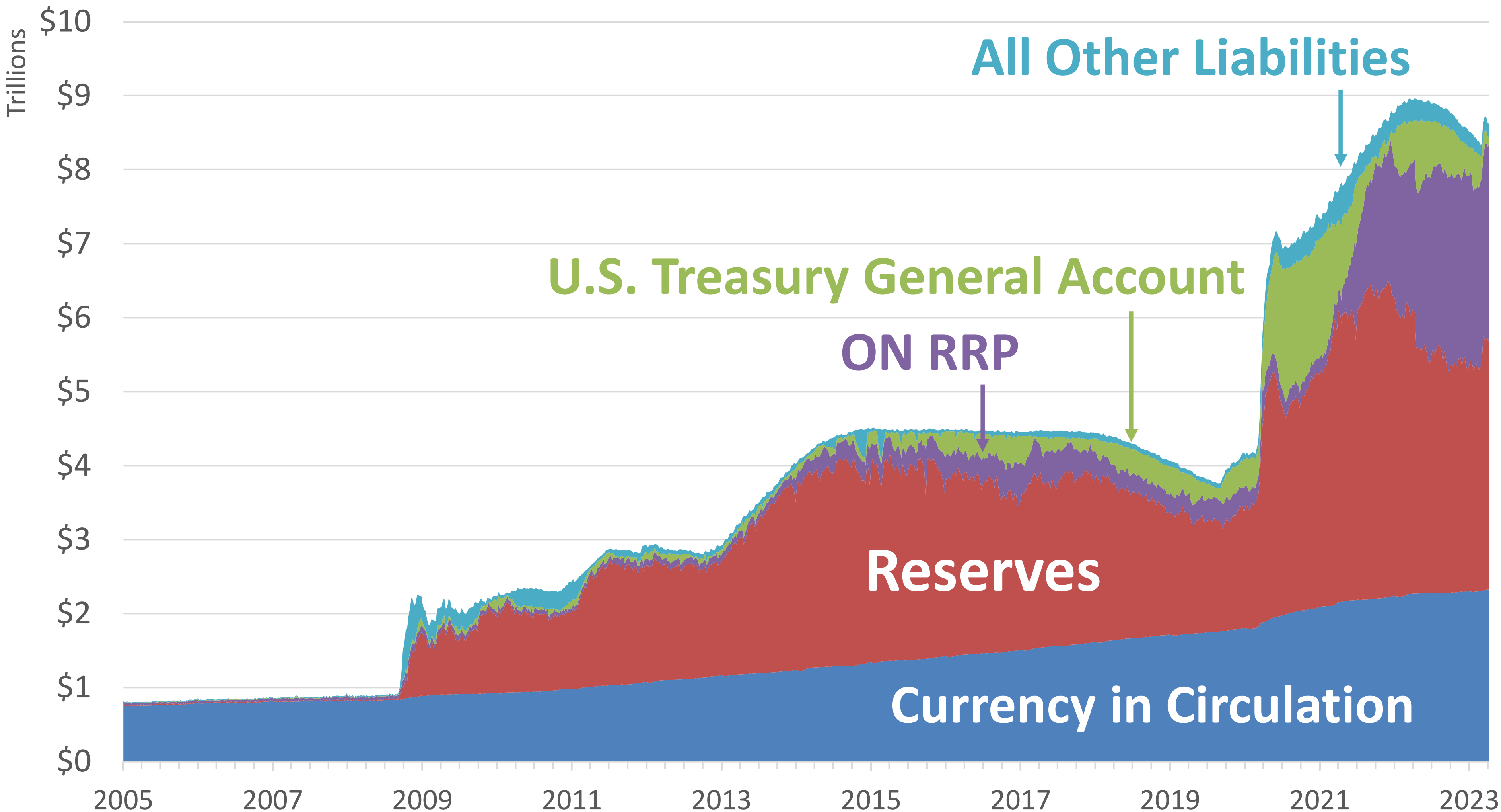
Takeaway Points B

- What have we learned about herd behavior for deposit withdrawals?
- Enhance deposit analysis and monitoring by deposit segments – especially uninsured and non-maturity deposits
- Consider deposit concentrations and segmentation, as well as sensitivity testing
- The A/CO should reevaluate the range of possible interest rate scenarios – e.g., larger rapid and prolonged rate changes, yield curve twists and inversion
- Both NII and EVE are important

Takeaway Points C

- Deposits can run faster than contingency funding can replace
- Recent experience suggests new liquidity stress scenarios
- Don’t ignore unrealized losses for AFS and HTM securities
- Routinely test contingency funding to confirm access
- Reexamine the Contingency Funding Plan
- Don’t confuse strong liquidity with sound liquidity management
- Reconsider measures used to gauge interest rate risk and liquidity risk exposures
- Also reconsider tolerance thresholds for those measures, and how frequently the measures are calculated and assessed against these limits

Federal Reserve Balance Sheet Liabilities



Source: Federal Reserve