Monetary Policy Normalization in the U.S.

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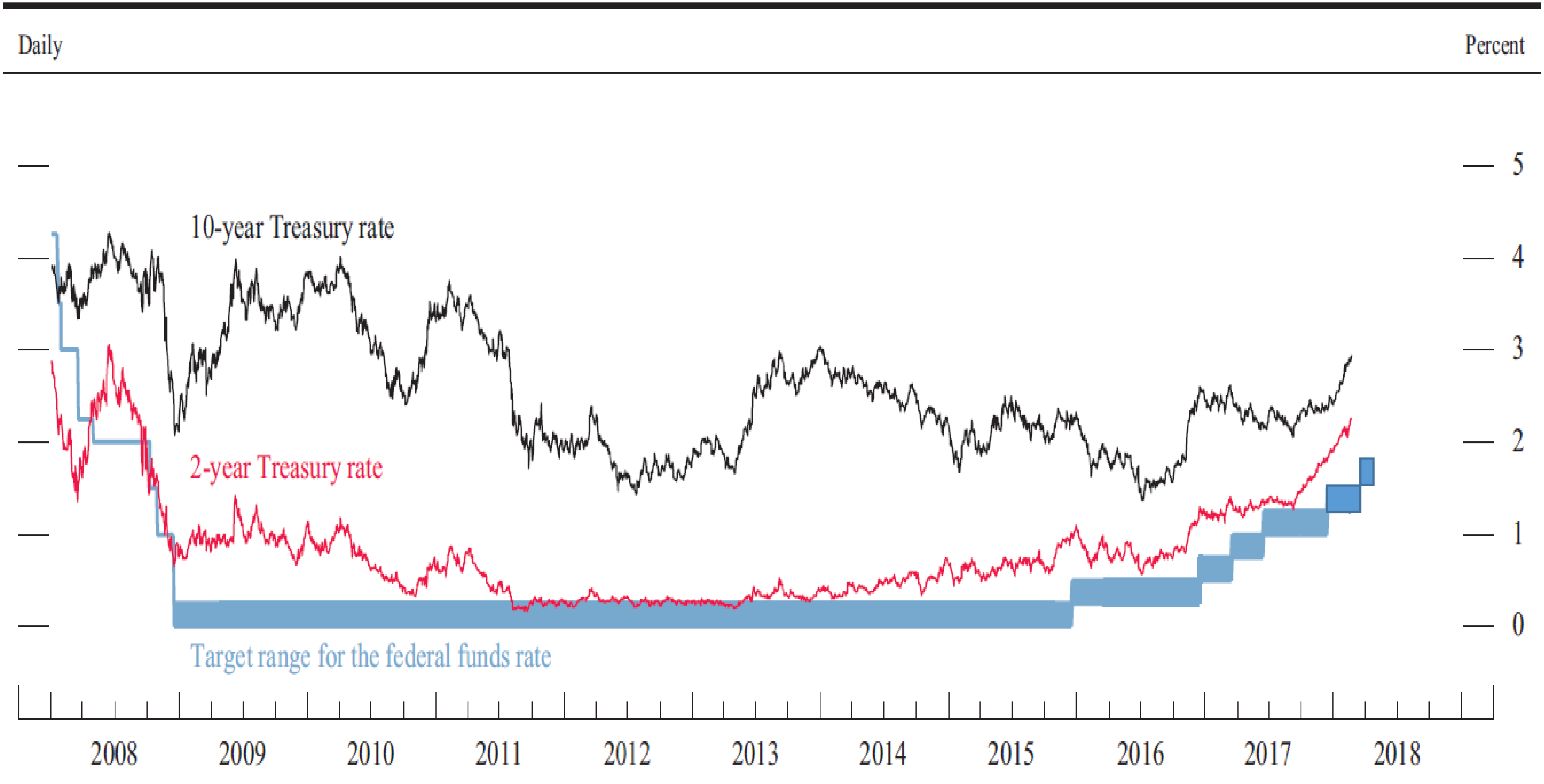
These represent my own views and not necessarily the views of the Federal Reserve Bank of Dallas or the Federal Reserve System

Outline

1. Monetary Policy Response to the Great Recession
2. Policy Normalization Principles and Plans
   - Interest rates
   - Balance sheet
3. Challenges

Monetary Policy Response to the Great Recession

- Short-term policy rate (FFR) rapidly lowered to 0 – ¼% in late 2008
- Forward guidance

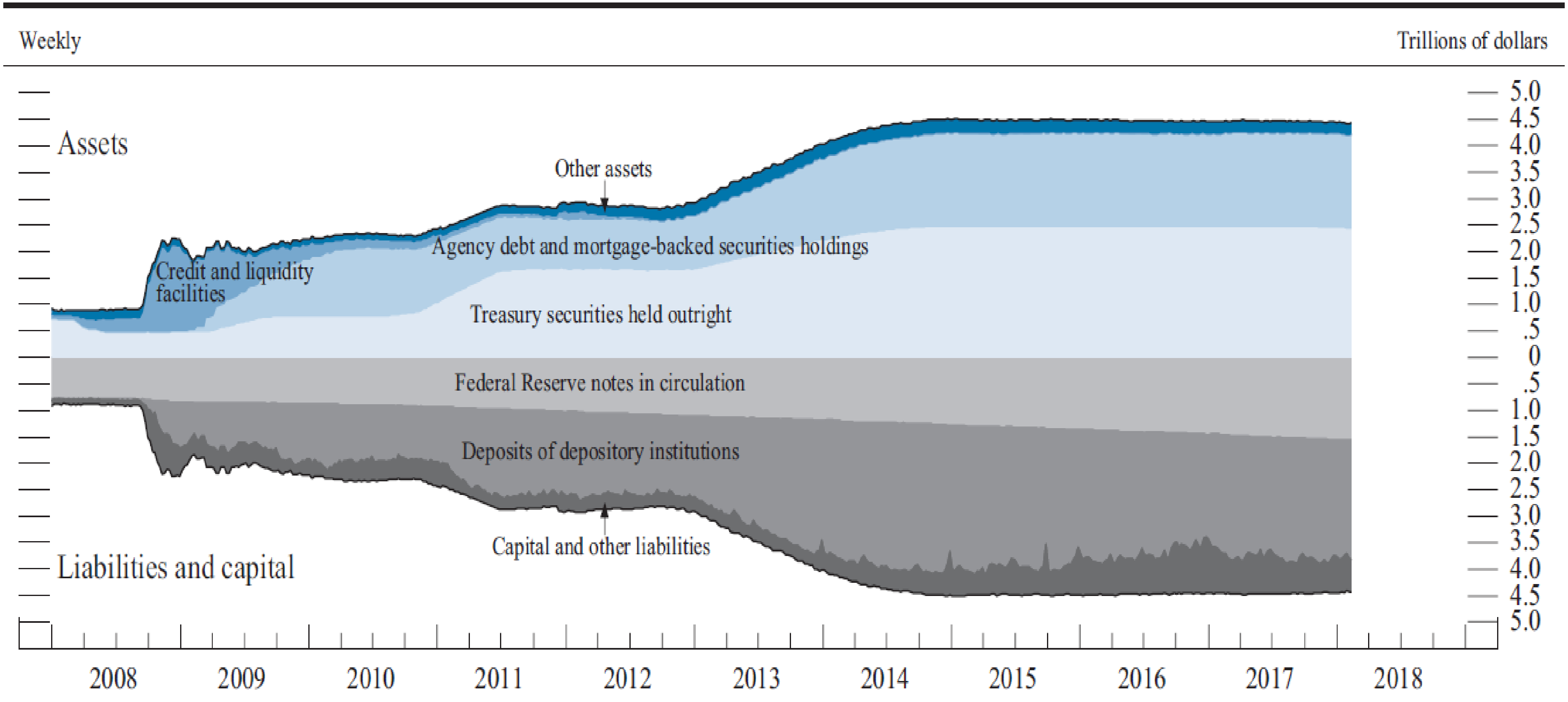


NOTE: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities.
SOURCE: Department of the Treasury; Federal Reserve Board.

Monetary Policy in Response to the Great Recession

- Large Scale Asset Purchases (LSAPs)

Federal Reserve Assets and Liabilities



NOTE: "Credit and liquidity facilities" consists of primary, secondary, and seasonal credit; term auction credit; central bank liquidity swaps; support for Maiden Lane, Bear Stearns, and AIG; and other credit facilities, including the Primary Dealer Credit Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, and the Term Asset-Backed Securities Loan Facility. "Other assets" includes unamortized premiums and discounts on securities held outright. "Capital and other liabilities" includes reverse repurchase agreements, the U.S. Treasury General Account, and the U.S. Treasury Supplementary Financing Account. The data extend through February 14, 2018.

SOURCE: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

Monetary Policy Response to the Great Recession

As the economy recovered

- Gradual increase of FFR since late 2015
- Gradual removal of forward guidance
- Gradual balance sheet normalization

Policy Normalization Principles and Plans

- **June 2011** (pre-LSAP 3): *Exit strategy principles* mentioned in FOMC minutes

- **Sep. 2014**: FOMC announces *policy normalization principles and plans*
  - "Normalize" monetary policy once economic conditions/outlook have improved
    - Timing/pace intended to promote the Fed's statutory mandate of maximum employment and price stability
  - 2 components:
    - **Gradually raise FFR target range** to "more normal levels"
      - Move FFR into target range by adjusting IOER; also use ONRRP facility to help control FFR (ONRRP = investment option at the Fed, for banks, money market funds, primary dealers, and GSEs)
    - **Reduce FR securities holdings** in a gradual and predictable manner
      - Phase out reinvestment of maturing securities held in SOMA
      - Start after FFR target range has been increased

  - FOMC does not anticipate selling MBS, and anticipates that in longer run, FR will hold a larger balance sheet than in the past, primarily in Treasuries

Policy Normalization Principles and Plans (cont.)

- **March 2015**: More operational details about **FFR target range**
  - Interest on excess reserves (IOER): top of FFR target range
  - Overnight reverse repo offering rate (ONRRP): bottom of FFR target range
  - ONRRP facility allowed to be temporarily elevated

- **Dec 2015**: FOMC initially raises FFR target range
  - The Committee judges that there has been **considerable improvement in labor market conditions** this year, and it is reasonably confident that **inflation will rise**, over the medium term, to its 2 percent objective. Given the economic outlook, and recognizing the time it takes for policy actions to affect future economic outcomes, the Committee decided to **raise the target range for the federal funds rate to 1/4 to 1/2 percent**.

Policy Normalization Principles and Plans (cont.)

- **June 2017**: More details about reduction of **FR holdings**, once normalization of the FFR is well under way

  - Decrease reinvestment of principal payments received from securities held in the SOMA

  - Such payments are reinvested only to the extent they exceed gradually rising caps

  - Reduction in securities holdings will result in a lower supply of reserve balances.
    - FOMC anticipates reducing reserve balances below the level seen in recent years, but larger than pre-crisis.
    - Level will reflect the banking system's demand for reserve balances

  - Federal funds rate (FFR) remains primary monetary policy tool.
    - However, reinvestment of principal payments received on securities would resume should the economic outlook warrant a sizable reduction in the FOMC's target FFR

Policy Normalization Principles and Plans (cont.)

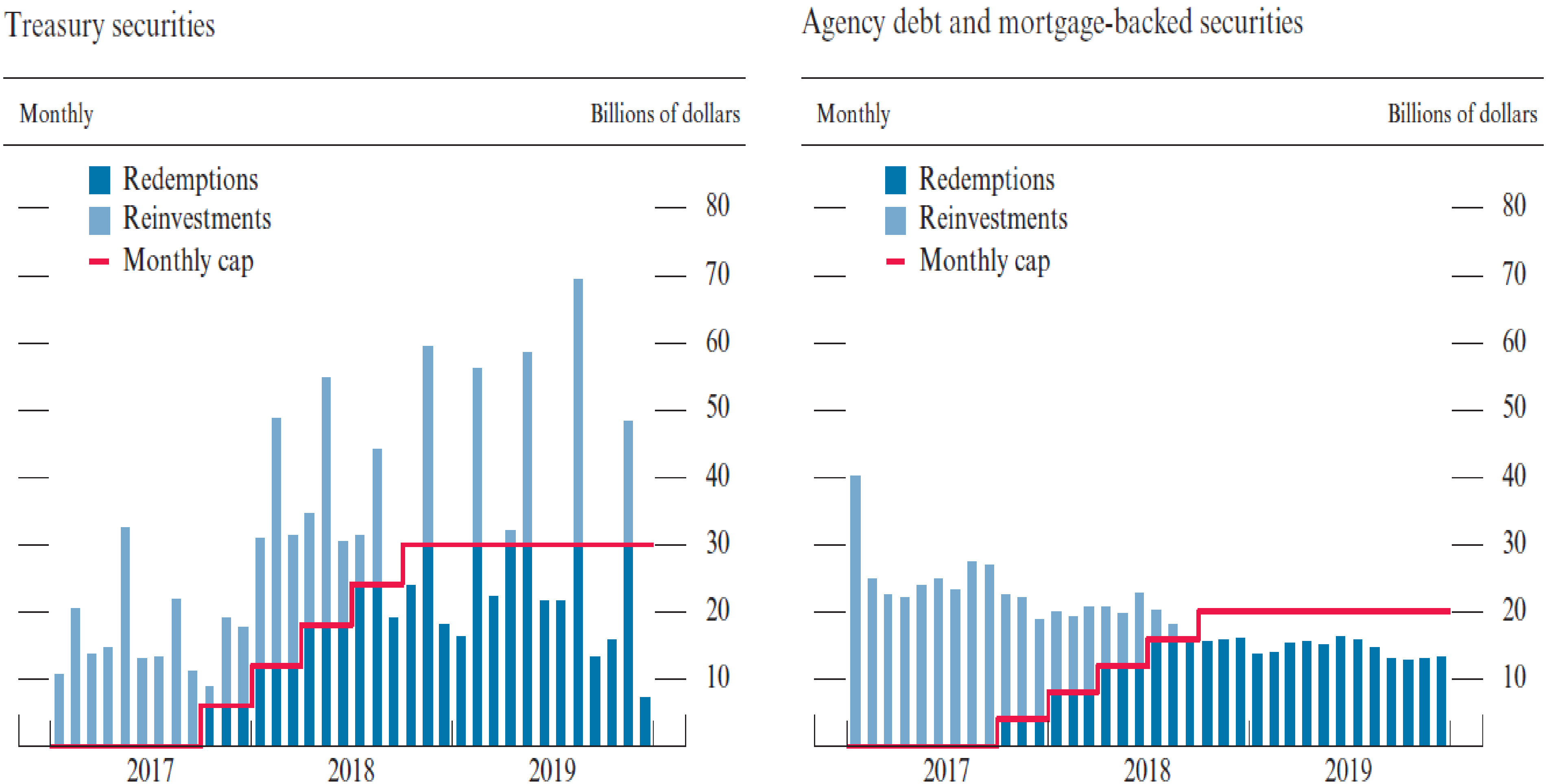
- **Sept. 2017**: FOMC announces that it would start balance sheet normalization in October 2017
  - Reinvestment of principal payments received from securities only to the extent they exceed gradually rising caps

Schedule of Monthly Caps on SOMA Securities Reductions

Billions of U.S. dollars, per month

	Oct – Dec 2017	Jan – Mar 2018	Apr – Jun 2018	Jul – Sep 2018	From Oct 2018
U.S. Treasuries	6	12	18	24	30
Agency Debt and MBS	4	8	12	16	20

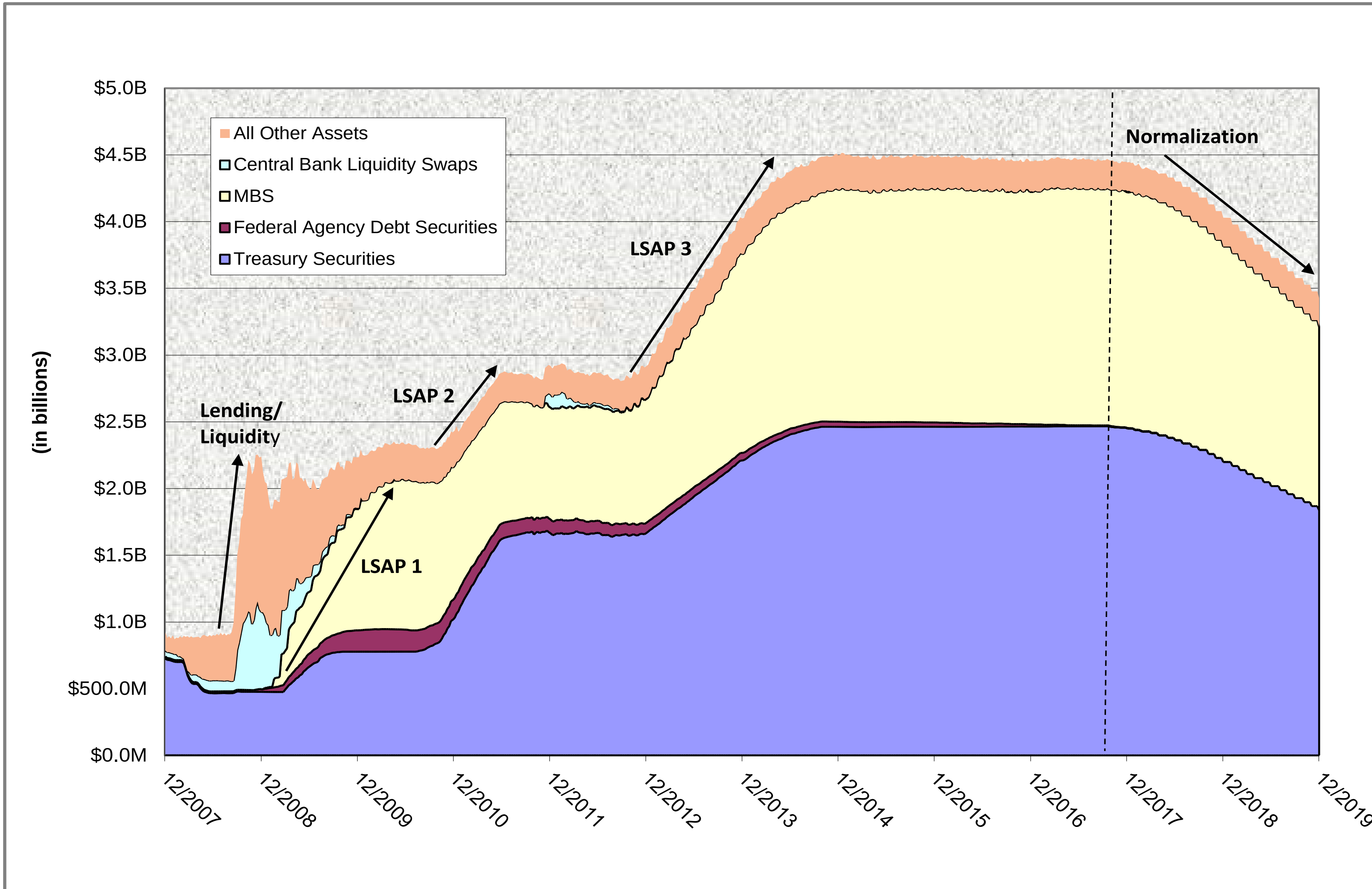
Principal Payments on SOMA Securities and Rising Caps



Note: Reinvestment and redemption amounts of agency mortgage-backed securities are projections starting in January 2018. The data extend through December 2019.

Source: Federal Reserve Bank of New York; Federal Reserve Board staff calculations.

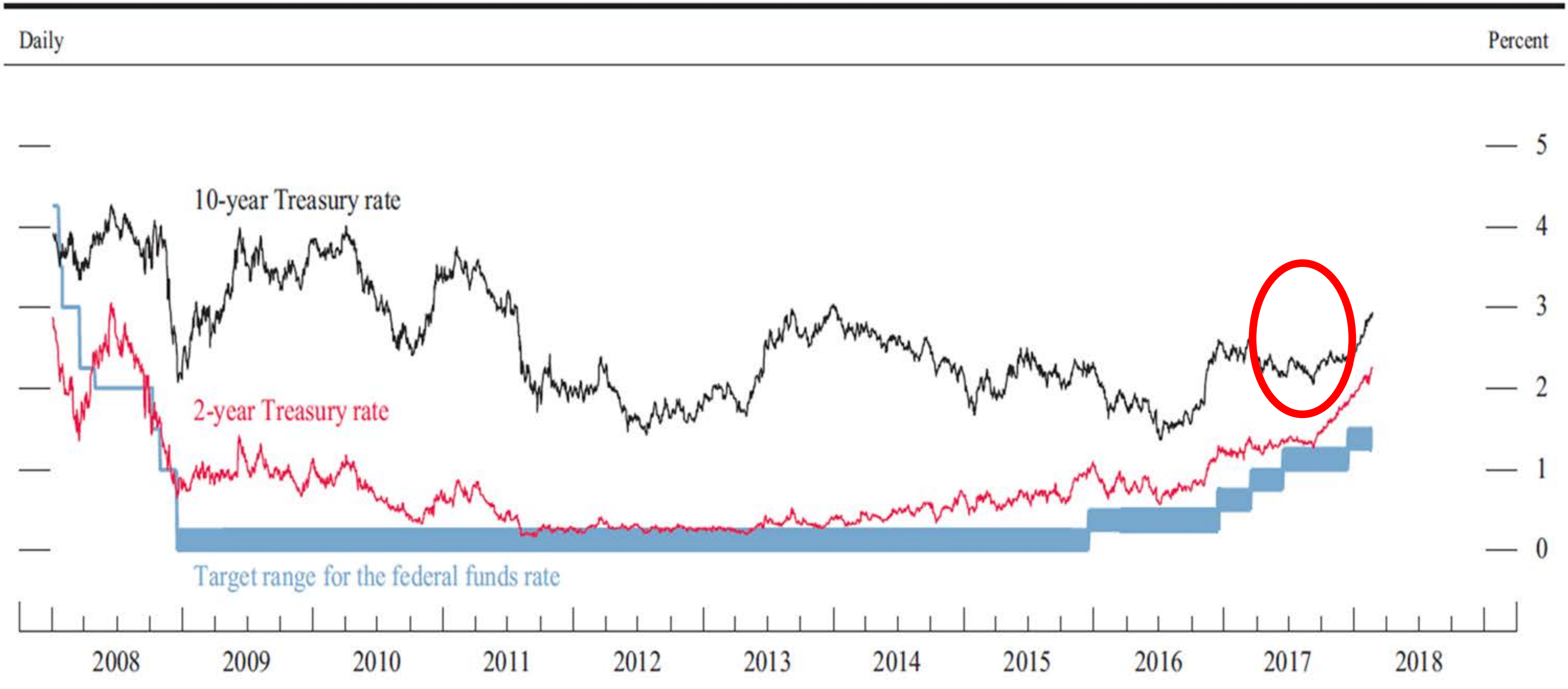
Federal Reserve Assets



Note: Projected normalization assumes binding caps

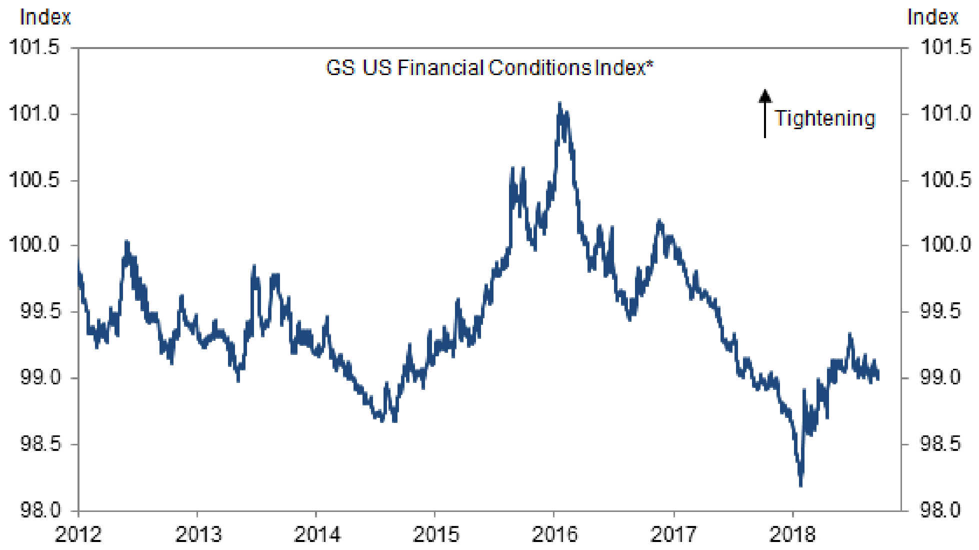
Gradual and Predictable Reduction

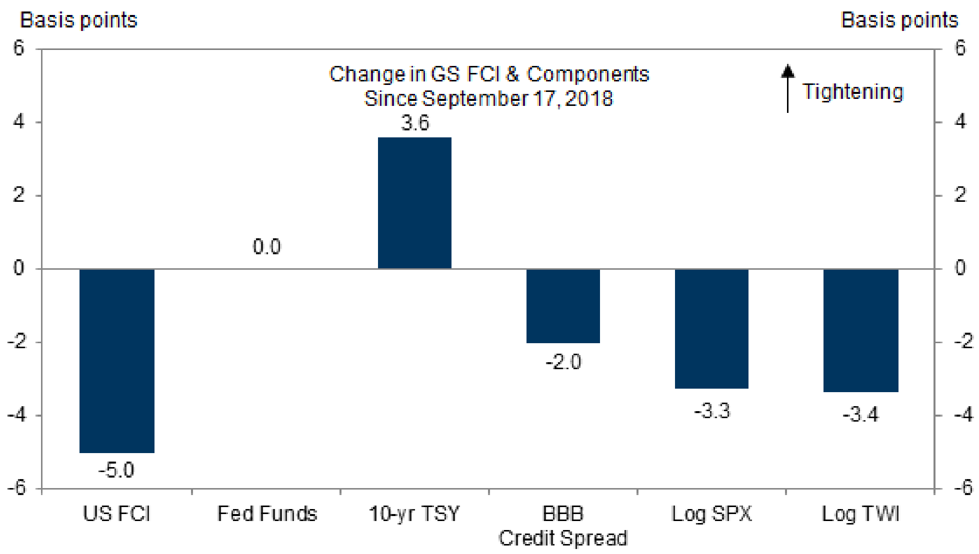
- FR balance sheet reduction gradual and predictable:
  - Minimizes effect on longer-term yields
  - Seems to have worked as intended



NOTE: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities.
SOURCE: Department of the Treasury; Federal Reserve Board.

However, “financial conditions” have eased





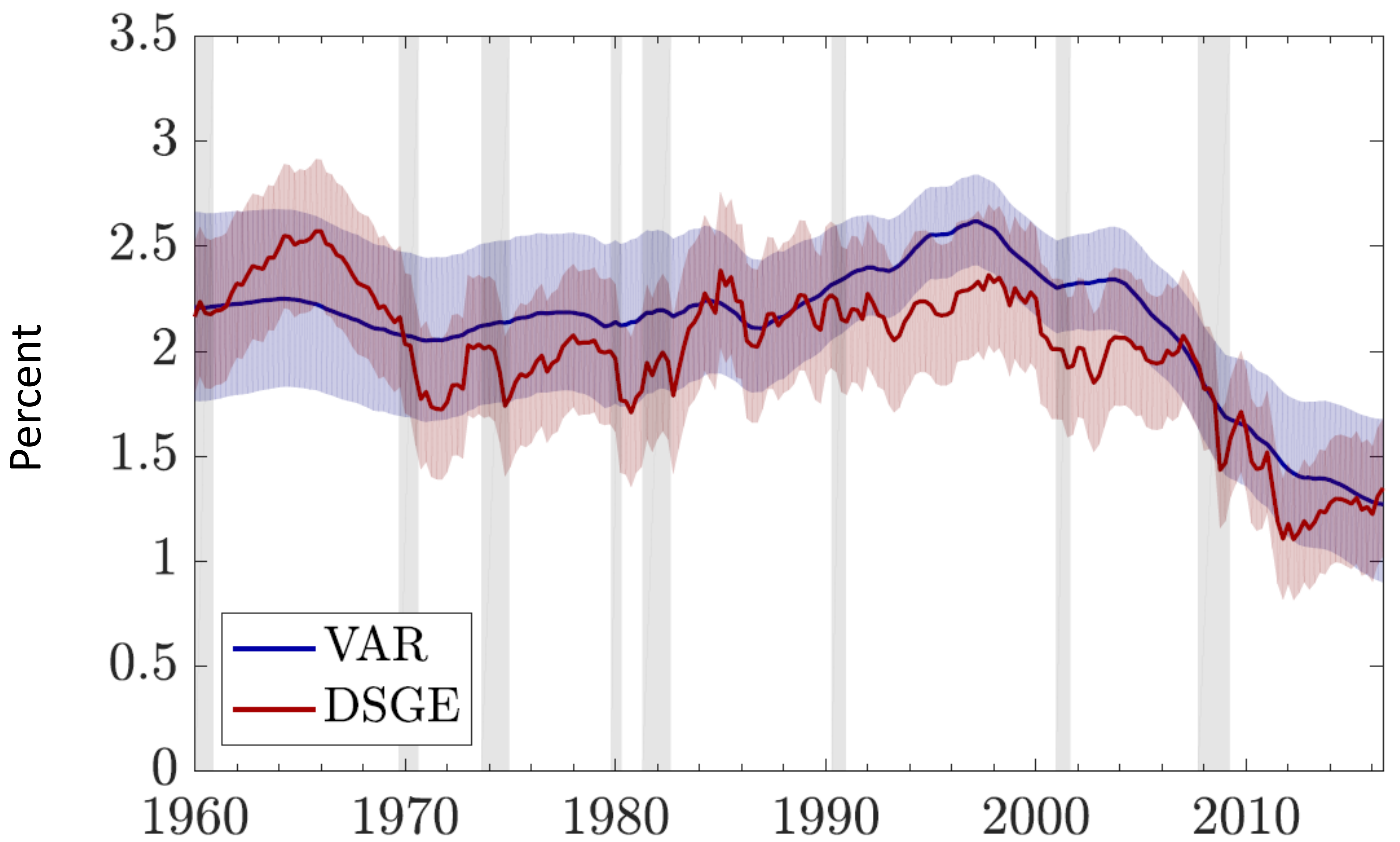
Challenges

Challenge 1: Lower neutral rate, r*

- The degree of monetary policy accommodation is given by the level of **real** interest rates *relative* to *r**
- A lower long-run *r** implies that policy rate would remain lower than in past decades
  - Implication is less ability to reduce the policy rate when the economy faces adverse shocks
  - Would likely imply more frequent (and perhaps longer) episodes at the interest-rate lower bound

Estimates of Long-Run *r** Have Decreased

- Estimates from two different models
  - Blue (VAR): statistical model involving data on inflation, interest rates, survey expectations…
  - Red (DSGE): economic model involving many more data series



Note: Shaded areas correspond to 68% confidence bands

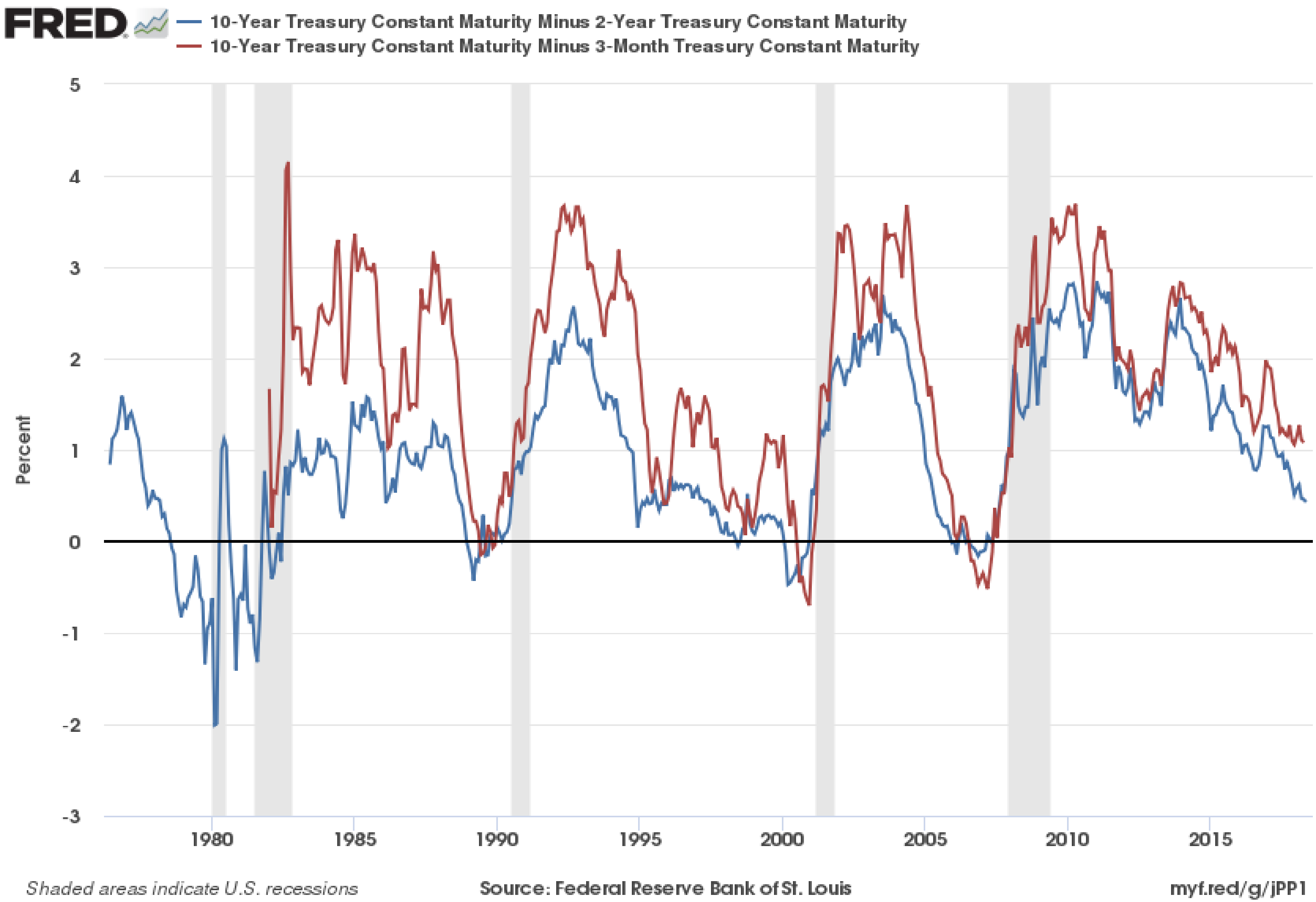
Source: Del Negro et al. "Safety, Liquidity, and the Natural Rate of Interest", Brookings Papers on Economic Activity, 2017

Key Drivers of a Lower *r**?

- Lower potential <u>growth rate of the economy</u>
  - Slower labor force growth
  - Lower productivity growth
- Increased <u>scarcity of “safe assets”</u>:
  - Global financial flows chasing a limited supply of safe and liquid assets (e.g., Treasury securities) likely depressed *r** globally

Challenge 2: Inverted Yield Curve in Near Future?

Inverted yield curve has been a good predictor of US recessions

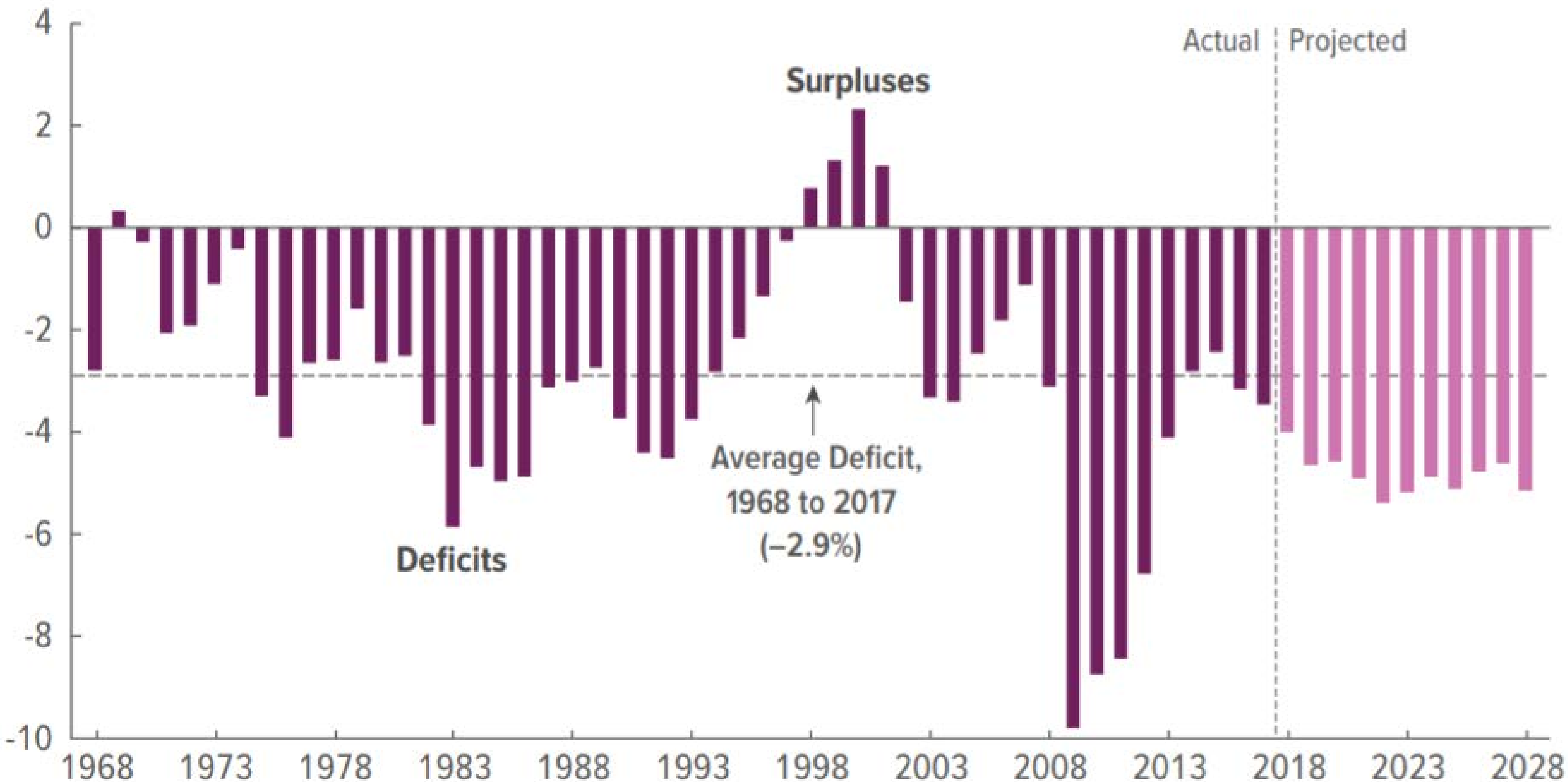


Challenge 3: Rising Deficits and Public Debt

… when the economy is at full employment

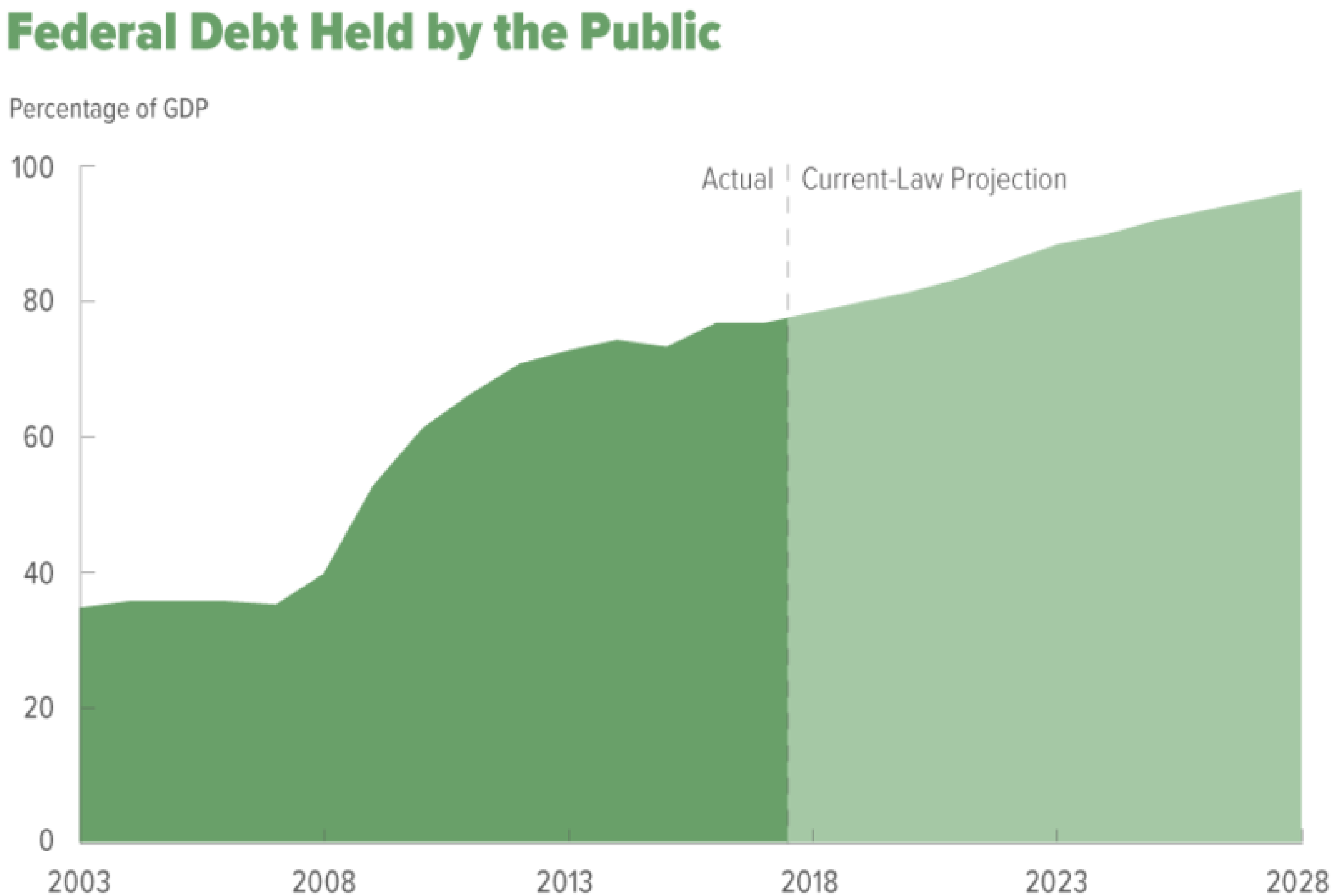
Total Deficits or Surpluses

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

Rising Public Debt



What are (or will be) the effects on long-term rates? Higher risk premium?

- May “solve problem” of low r* or inverted yield curve, but…
- Makes normalization of balance sheet more difficult?

Challenge 4: Engineering a Soft Landing?

- Not many precedents
- When the unemployment rate drops below the natural rate, it rarely rises back to the natural rate w/o a recession taking place

Conclusions

- Fed carried out extraordinary interventions during the recent financial crisis
- Monetary policy is currently in unchartered territory – hard to evaluate effectiveness of balance sheet policies
- Normalization of interest rates and balance sheet has so far been much more successful than many had anticipated
- But many challenges remain