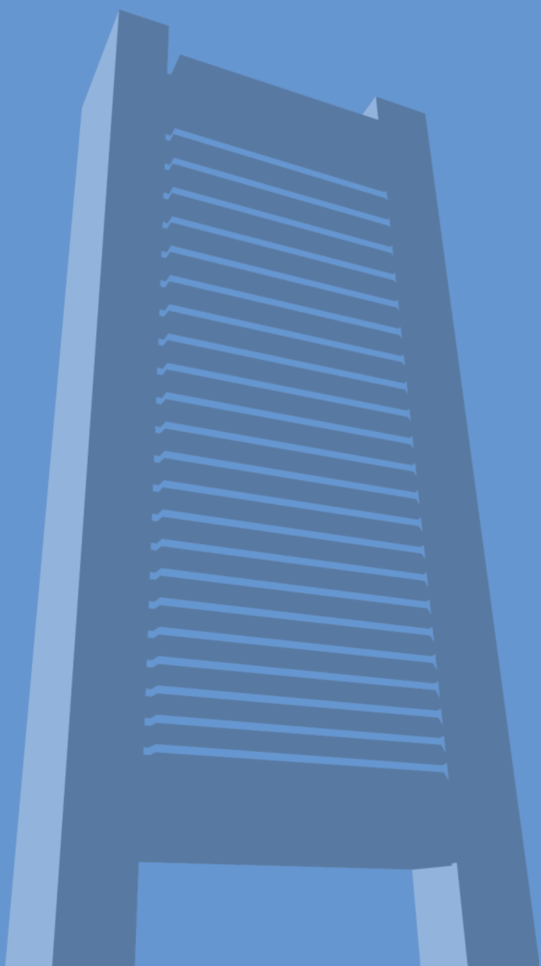
EMBARGOED UNTIL TUESDAY, SEPTEMBER 1, 2015 AT 1:10 P.M. EASTERN TIME OR UPON DELIVERY

This Time is Different: Lessons from Past Tightening Cycles



Eric S. Rosengren
President & CEO
Federal Reserve Bank of Boston

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The Forecasters Club of New York
New York, New York

bostonfed.org

Conditions for Increase in Target Range for Federal Funds Rate

- Some further improvement in labor markets
  - In my view, this condition has largely been met
    - Unemployment 5.3 percent
    - Continued growth in payroll employment – averaging in excess of 200,000 jobs per month, year-to-date through July
- Reasonably confident that PCE inflation will return to the 2 percent objective over the medium term
  - Data not as clear-cut – core PCE 1.2 percent
  - Oil and commodity prices have fallen recently
  - Wages and salaries growing relatively slowly

Can Policymakers Rely on Inflation Forecasts?

- SEP expects PCE inflation will return to 2 percent
- Over the past several years, inflation forecasts have not been borne out by data
  - Positive supply shocks
  - More slack than captured by U-3 unemployment
  - Weaker global conditions
- Growth above potential would make me more confident

My Forecast of Inflation Rests Largely on Continued Growth Above Potential

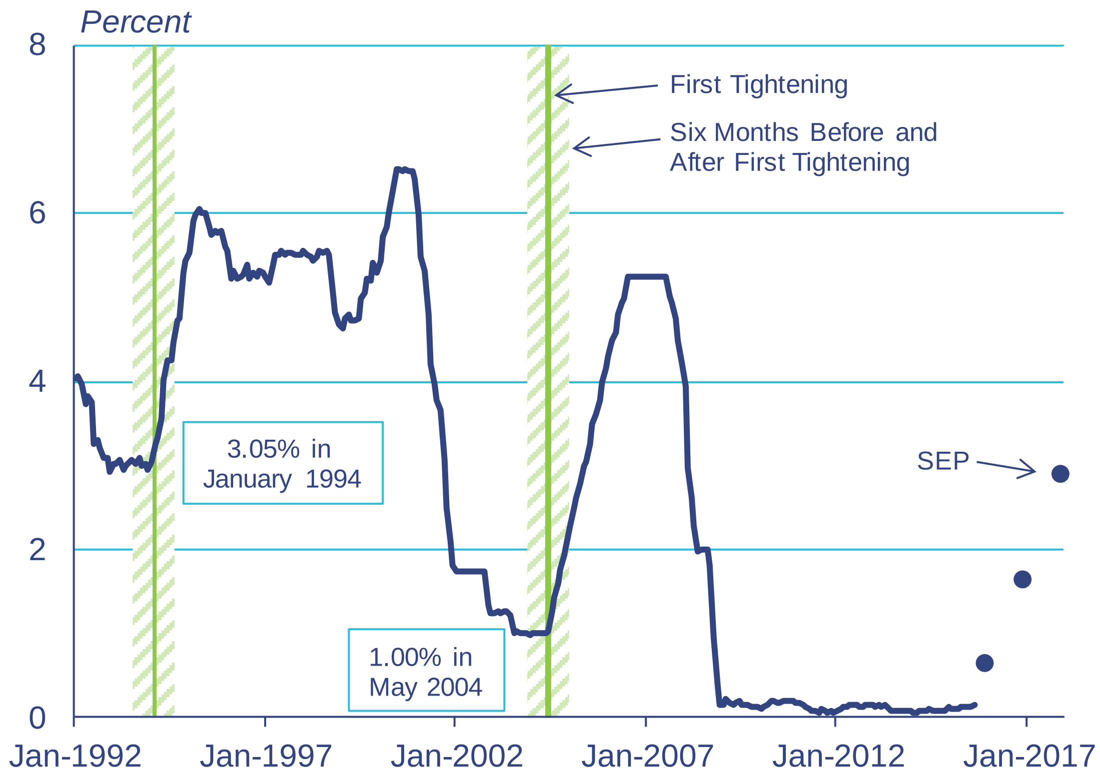
- Declining labor market slack is key to my confidence of return to 2 percent inflation
- Recent developments
  - Slowing foreign economies
  - Volatile stock prices and falling commodity prices
- May suggest a downward revision in my forecast or at least an increased downside risk that inflation will reach 2 percent in a reasonable time

Focus Today on Trajectory of Monetary Policy

- Macroeconomic models indicate little difference if the first rate increase is moved up or back a few months
- Future trajectory of interest rate increases – that is, whether increases to more normalized levels occur quickly or gradually – is likely to have a meaningful impact on employment and inflation
- Argue today that there are very good reasons to expect a much more gradual normalization process
- Consistent with the path described in the June SEP

Figure 1: Federal Funds Effective Rate

January 1992 - December 2017

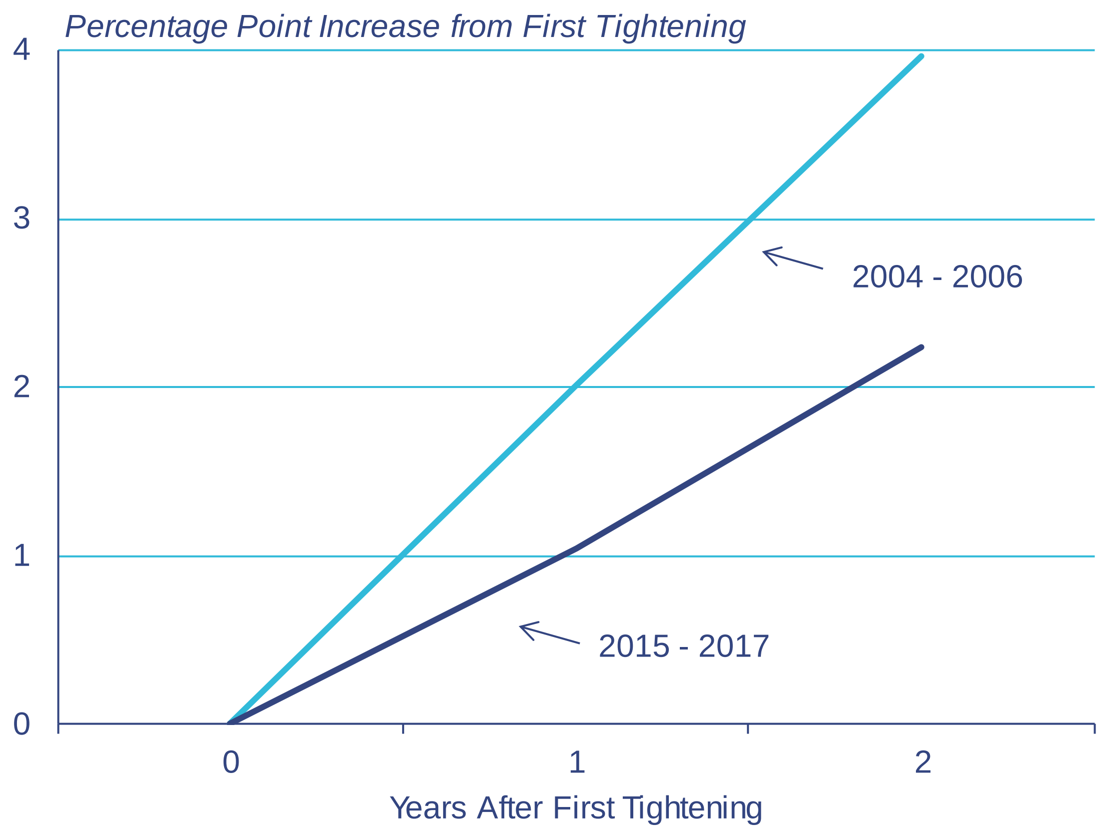


Note: The two previous first tightenings were February 4, 1994 and June 30, 2004. The figures from the Summary of Economic Projections are the medians of the projections for the midpoint of the federal funds target range at yearend for 2015 - 2017.

Source: Federal Reserve Board, FOMC, Summary of Economic Projections (SEP), June 2015, Haver Analytics

Figure 2: Interest Rate Path: Federal Funds Effective Rate

2004 - 2006 and 2015 - 2017

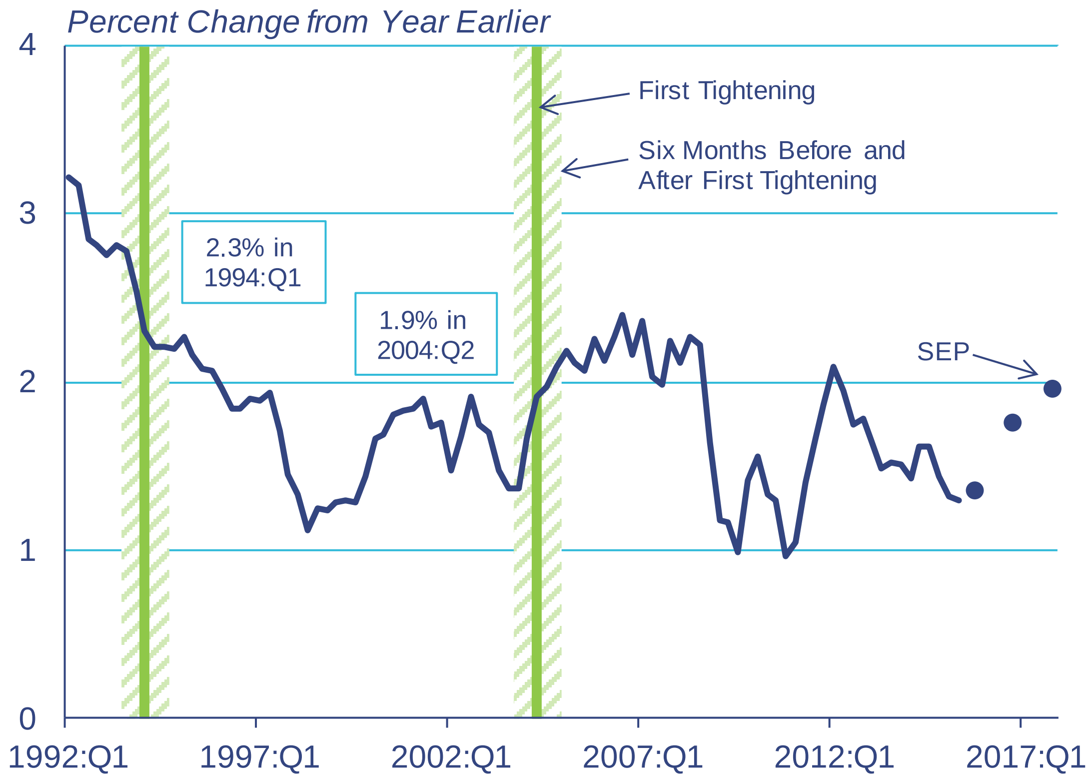


Note: The increases in the federal funds rate are from June 2004 for 2004 - 2006, and from September 2015 for 2015 - 2017. (The 2015 - 2017 figures were determined by interpolating, using the most recent monthly average federal funds rate (July 2015) and the SEP median values for yearend 2015 - 2017).

Source: Federal Reserve Board, FOMC, Summary of Economic Projections (SEP), June 2015, Haver Analytics

Figure 3: Inflation Rate: Change in Core Personal Consumption Expenditures (PCE) Price Index

1992:Q1 - 2017:Q4

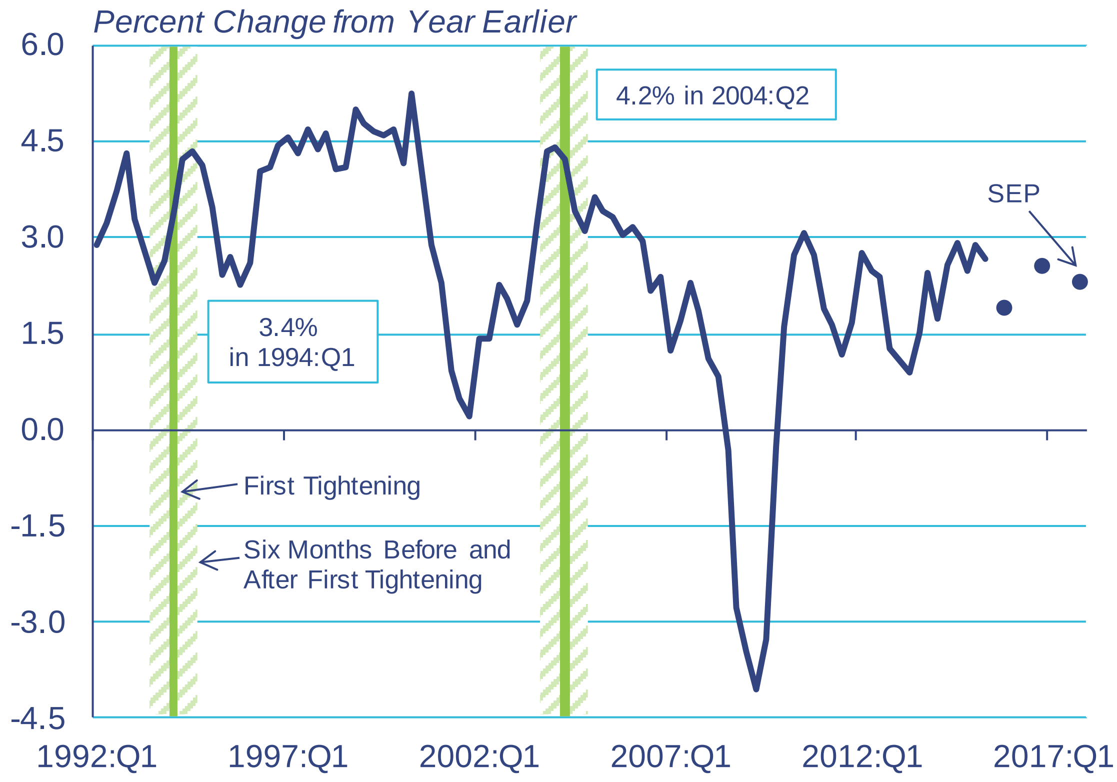


Note: The two previous first tightenings were February 4, 1994 and June 30, 2004. The figures from the Summary of Economic Projections are the midpoints of the central tendency for projections of the percent change in core PCE from one year earlier for the fourth quarter of each year, 2015 - 2017.

Source: Federal Reserve Board, FOMC, Summary of Economic Projections (SEP), June 2015, Haver Analytics

Figure 4: Growth in Real GDP

1992:Q1 - 2017:Q4

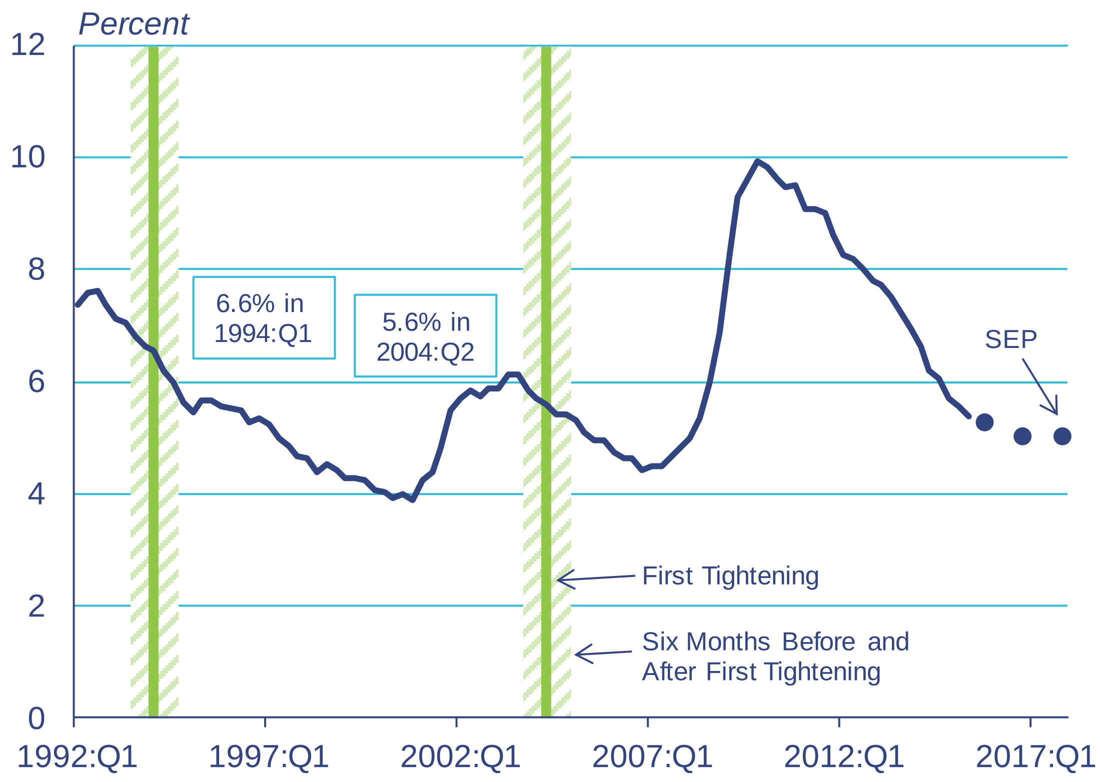


Note: The two previous first tightenings were February 4, 1994 and June 30, 2004. The figures from the Summary of Economic Projections are the midpoints of the central tendency for projections of the percent change in real GDP from one year earlier for the fourth quarter of each year, 2015 - 2017.

Source: Federal Reserve Board, FOMC, Summary of Economic Projections (SEP), June 2015, Haver Analytics

Figure 5: Civilian Unemployment Rate (U-3)

1992:Q1 - 2017:Q4

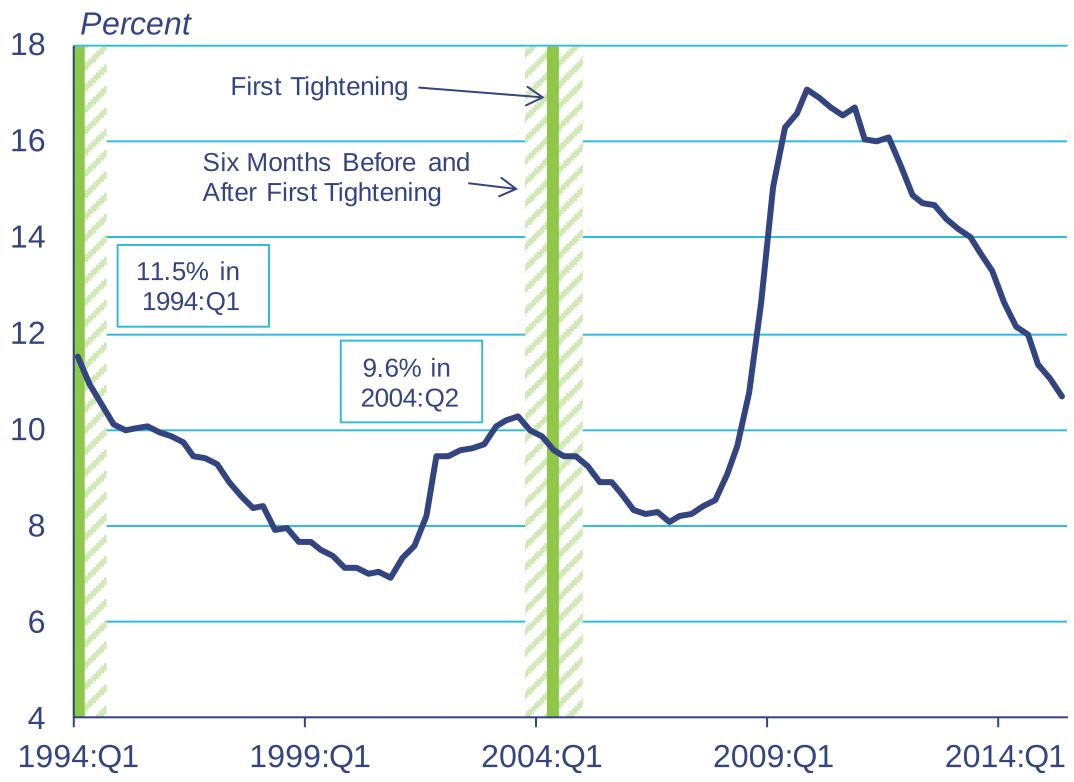


Note: The two previous first tightenings were February 4, 1994 and June 30, 2004. The figures from the Summary of Economic Projections are the midpoints of the central tendency for projections of the unemployment rate for the fourth quarter of each year, 2015 - 2017.

Source: Federal Reserve Board, FOMC, Summary of Economic Projections (SEP), June 2015, Haver Analytics

Figure 6: Alternative Measure of Labor Underutilization: U-6 Unemployment Rate

1994:Q1 - 2015:Q2

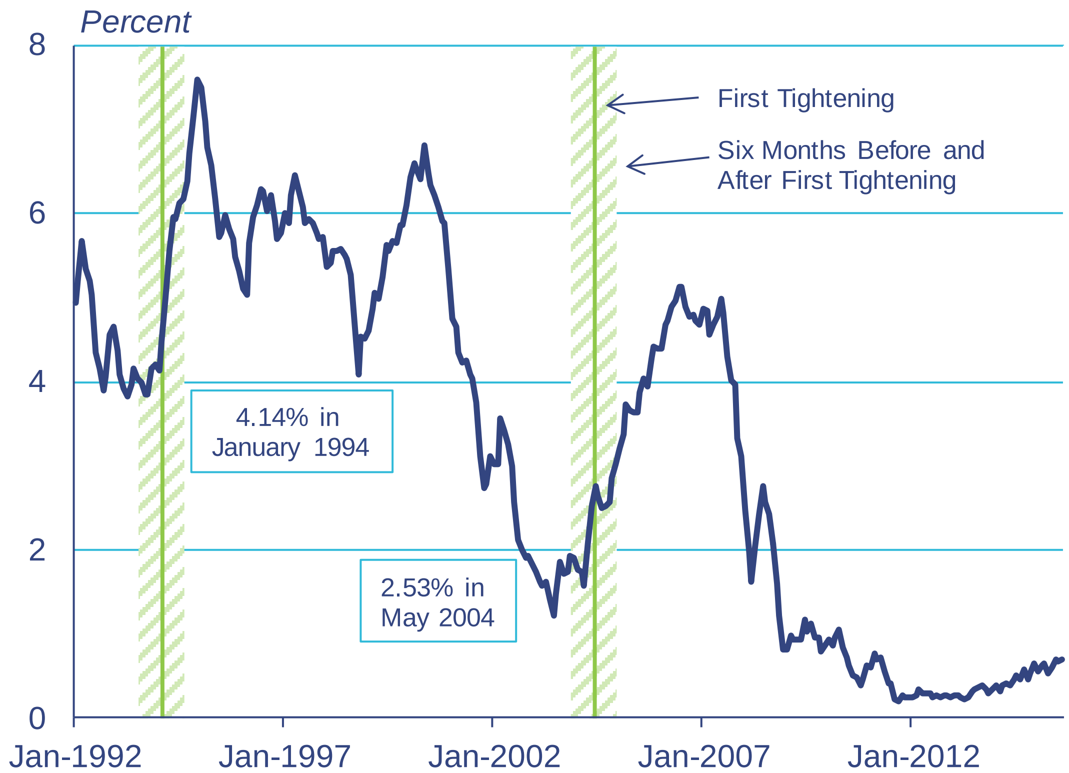


Note: The U-6 measure is total unemployed, plus all persons marginally attached to the labor force, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all persons marginally attached to the labor force. U-6, as currently defined, is available beginning in 1994.

Source: Federal Reserve Board, Haver Analytics

Figure 7: Two-Year Treasury Yield

January 1992 - August 2015

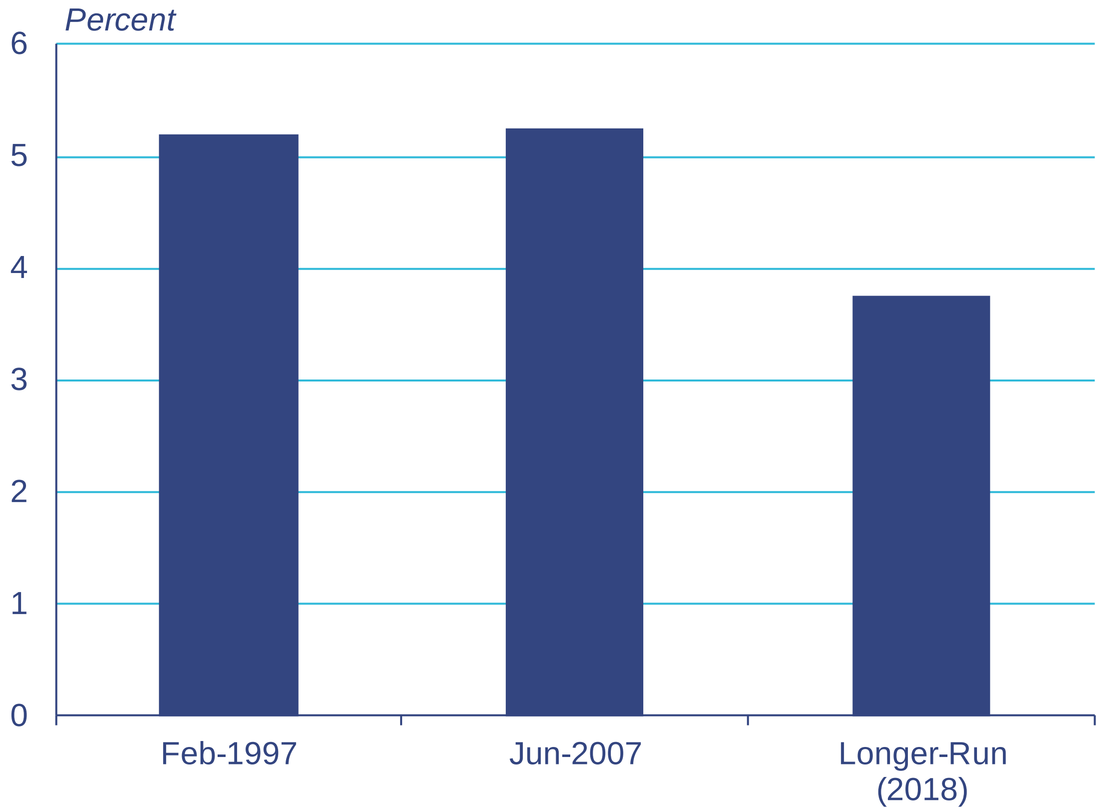


Note: The two previous first tightenings were February 4, 1994 and June 30, 2004.

Source: Federal Reserve Board, Haver Analytics

Figure 8: Longer-Run Federal Funds Rate

February 1997, June 2007, and 2018

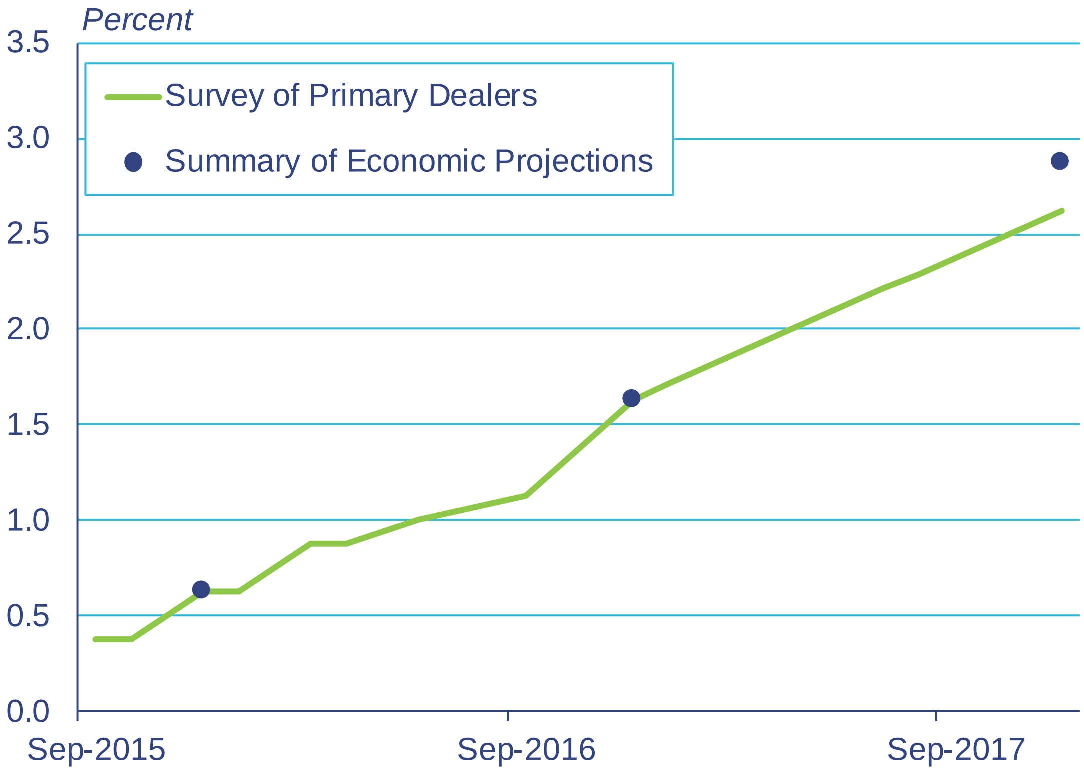


Note: The federal funds effective rate from three years after the first tightening is used for the longer-run federal funds rate and compared with the median of the projections for the midpoint of the longer-run federal funds target range from the Summary of Economic Projections.

Source: Federal Reserve Board, FOMC, Summary of Economic Projections (SEP), June 2015, Haver Analytics

Figure 9: Estimates for the Target Federal Funds Range from the Survey of Primary Dealers and the Summary of Economic Projections

September 2015 - December 2017



Note: Estimates from the Survey of Primary Dealers are the midpoints of the median estimates for the top and bottom of the target range, for respondents expecting a range. Estimates from the Summary of Economic Projections are the medians of the projections for the midpoint of the target range at yearend for 2015 -2017 and in the longer run.

Source: FOMC, Summary of Economic Projections, June 2015, Survey of Primary Dealers, July 2015

Concluding Observations

- This period of tightening is likely to differ from those experienced in 1994 and 2004
  - Inflation is low, and projected to return to 2 percent only slowly
  - While U-3 is lower, U-6 is not particularly low in comparison
  - Both SEP and Survey of Primary Dealers provide a consistent view of only gradual increases
- Provides an opportunity to gauge how tight labor markets can be while maintaining stable prices
- With low wage and price inflation to date, and increased uncertainty about global growth, it will be particularly important to closely monitor and depend on incoming data