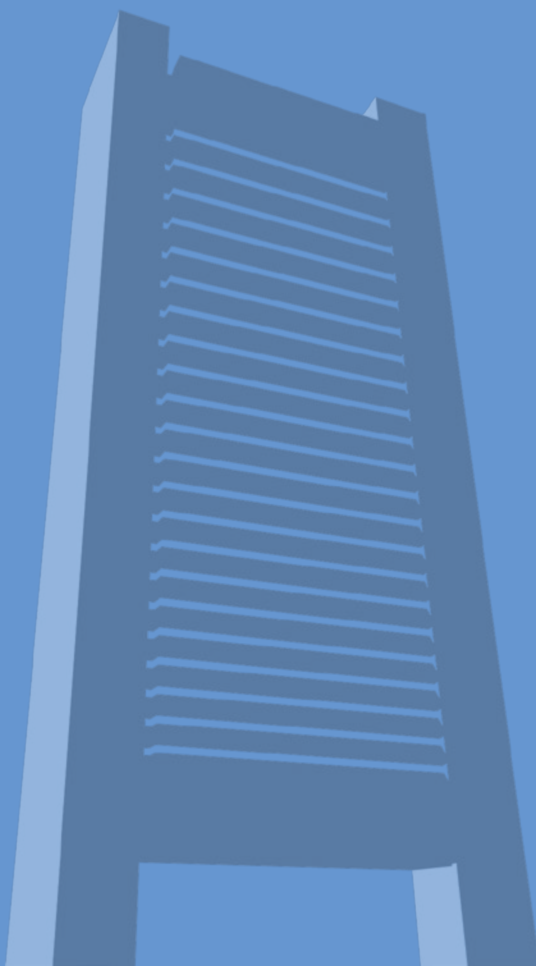
FEDERAL RESERVE
BANK OF BOSTON™

EMBARGOED UNTIL FRIDAY, OCTOBER 14 AT 8:30 A.M.; OR UPON DELIVERY



After the Great Recession, a Not-So-Great Recovery

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President & CEO
Federal Reserve Bank of Boston

October 14, 2016

Federal Reserve Bank of Boston's
60th Economic Conference:
The Elusive "Great" Recovery: Causes and Implications for Future Business Cycle Dynamics
Boston, Massachusetts

bostonfed.org

Our 60th Economic Conference, Considering the Causes and Implications of an Unusual Recovery

- Previous research has focused on the causes of the Great Recession – this conference explores the economic puzzles generated by the slow *recovery*
- Among the unusual features:
  - GDP has been quite subdued – with growth rates that are percentage points slower than the historical average
  - But even with that tepid growth, the unemployment rate has fallen quite a bit faster than many expected
  - Inflation has lingered stubbornly below the Federal Reserve's 2 percent inflation target

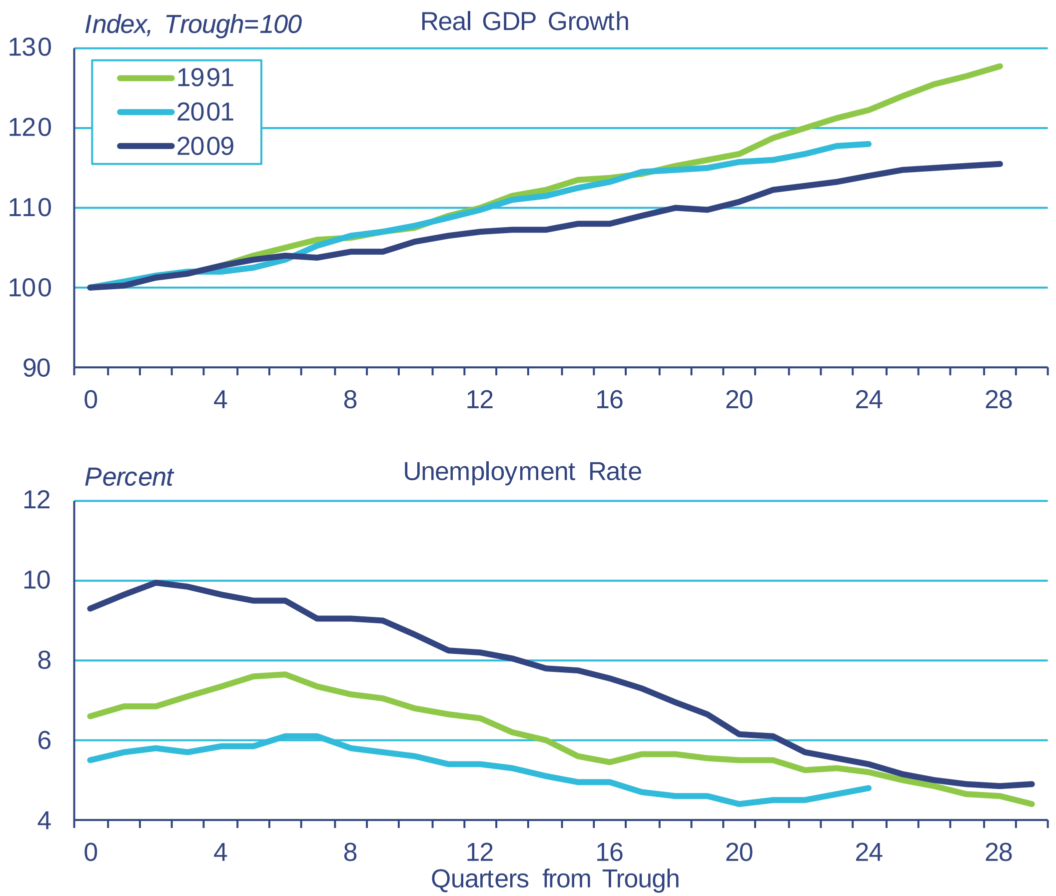
Questions Abound

- Is a slow recovery the unavoidable consequence of a severe recession or a financial crisis?
- What role is played by the changing demographics in the United States?
- Will what may seem like temporary anomalies become the “new normal” for the economy or economic cycles?
- Answers will shed light on whether:
  - Behavior has changed in ways that are likely to be more permanent than transitory
  - Slow growth in productivity is transitory or permanent
  - Recent trends in personal saving behavior are likely to persist well into the future

Understanding the Differences in this Recovery: Implications for Policy

- Will nontraditional monetary policy actions become part of the traditional “tool kit” of central banks?
- Has this recovery changed views around using monetary policy rather than fiscal policy to address slow recoveries?
- Does the experience of a persistently slow rebound alter views on how quickly to address any emerging risks to the current recovery?

Figure 1: Real GDP Growth and the Unemployment Rate over the Last Three Recoveries

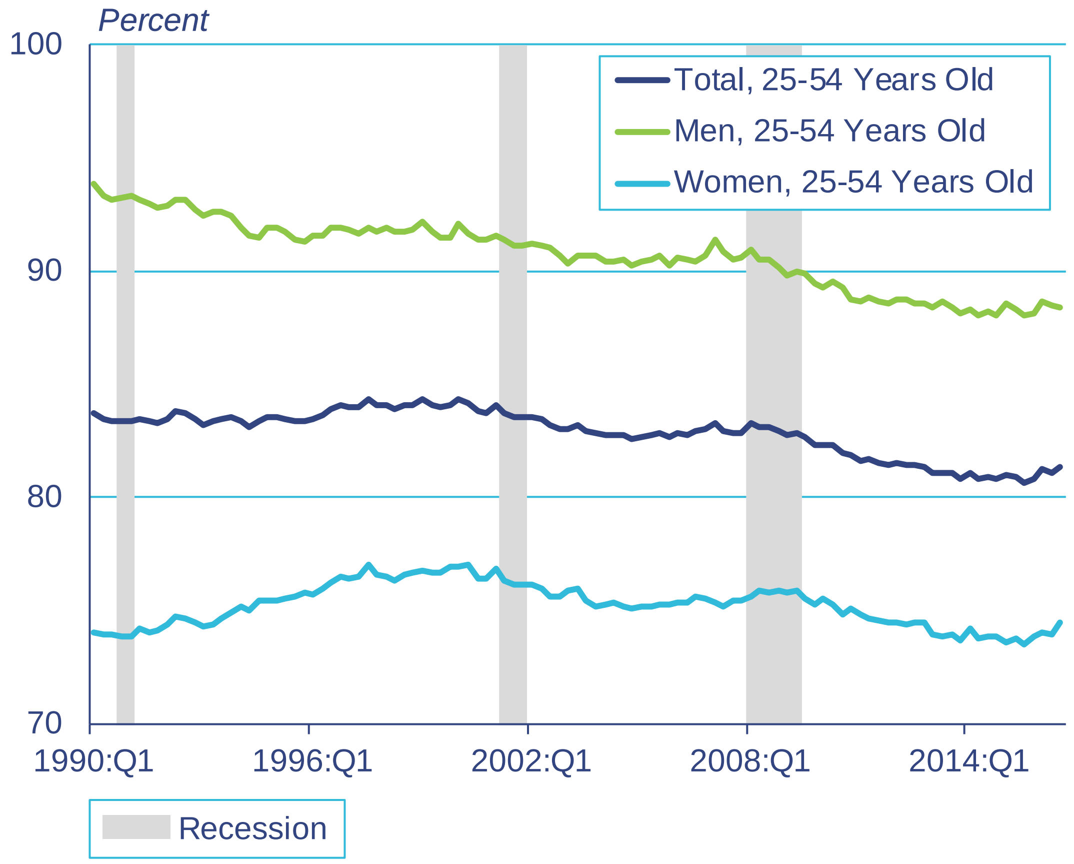


Note: The recovery from the 2001 recession lasted 24 quarters, with the next business cycle peak in 2007:Q4.

Source: BEA, BLS, NBER, Haver Analytics

Figure 2: Labor Force Participation Rate of Prime Working-Age Population

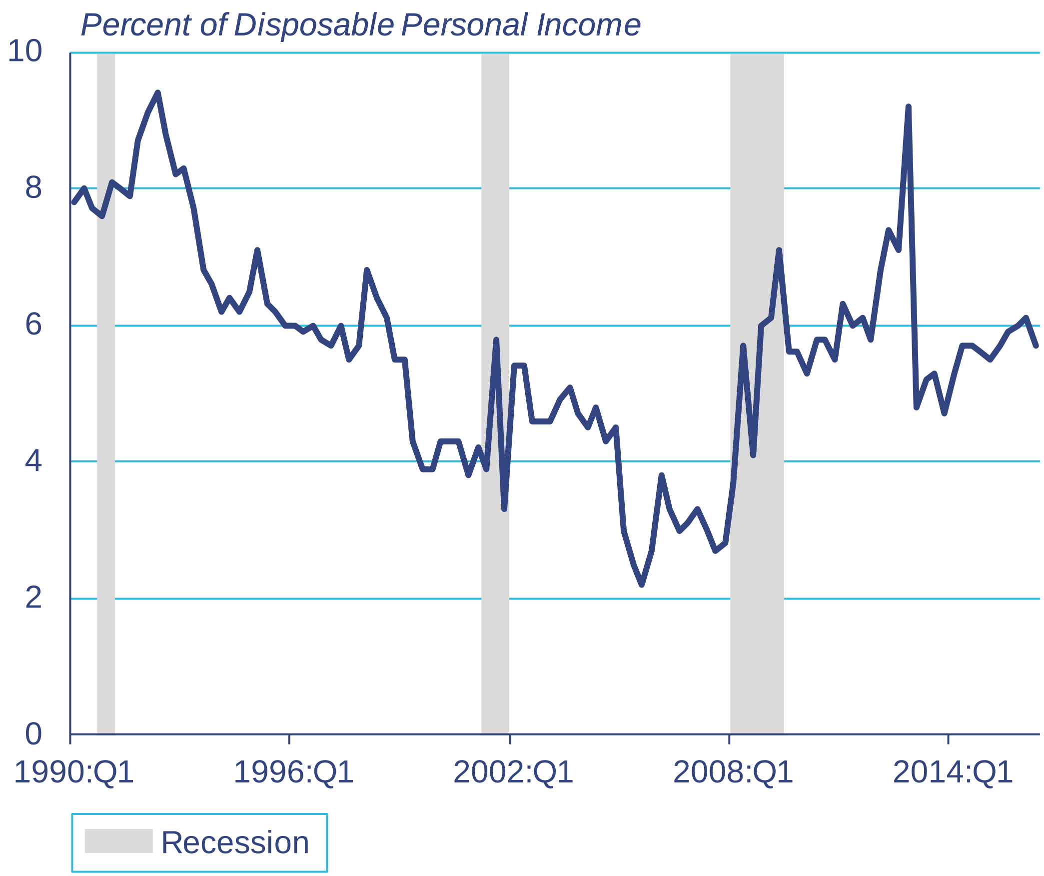
1990:Q1 - 2016:Q3



Source: BLS, NBER, Haver Analytics

Figure 3: Personal Saving Rate

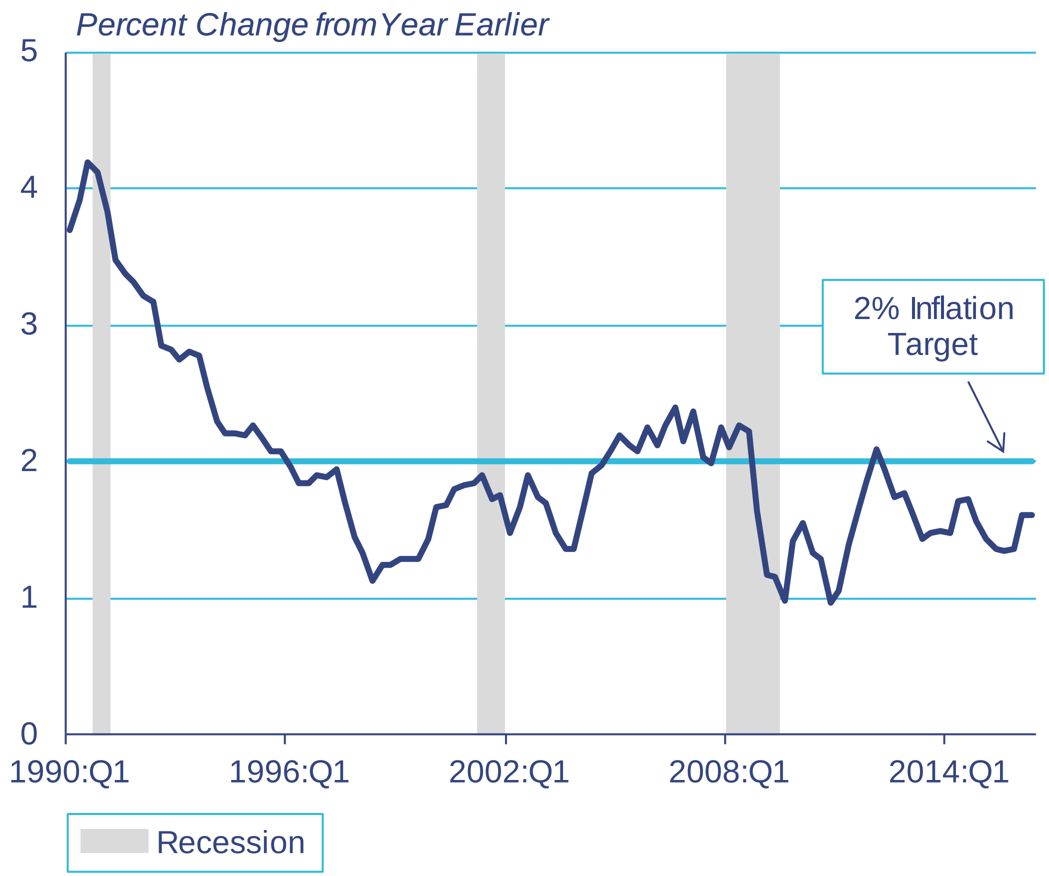
1990:Q1 - 2016:Q2



Source: BEA, NBER, Haver Analytics

Figure 4: Inflation Rate: Change in Core Personal Consumption Expenditures (PCE) Price Index

1990:Q1 - 2016:Q2



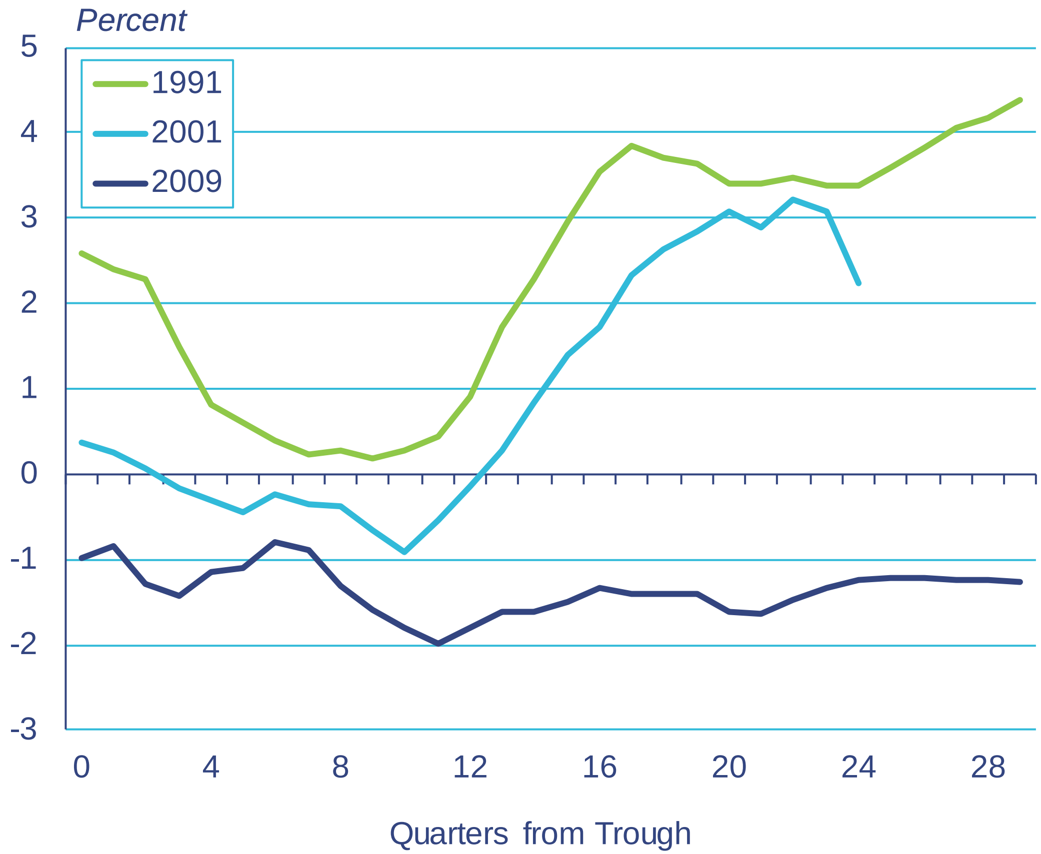
Note: Core PCE is the Personal Consumption Expenditures Price Index Excluding Food and Energy.

Source: BEA, NBER, Haver Analytics

Challenge for Authors and Discussants

- Papers will focus on answering questions posed by these charts
- Important to understand that the recovery is as interesting to understand as the financial crisis
- Two themes:
  - Important role of demographic changes that were beginning to occur at the time of the crisis
  - Given the persistence of these puzzles – do we need to look beyond explanations primarily rooted in the financial crisis?

Figure 5: Real Federal Funds Effective Rate over the Last Three Recoveries

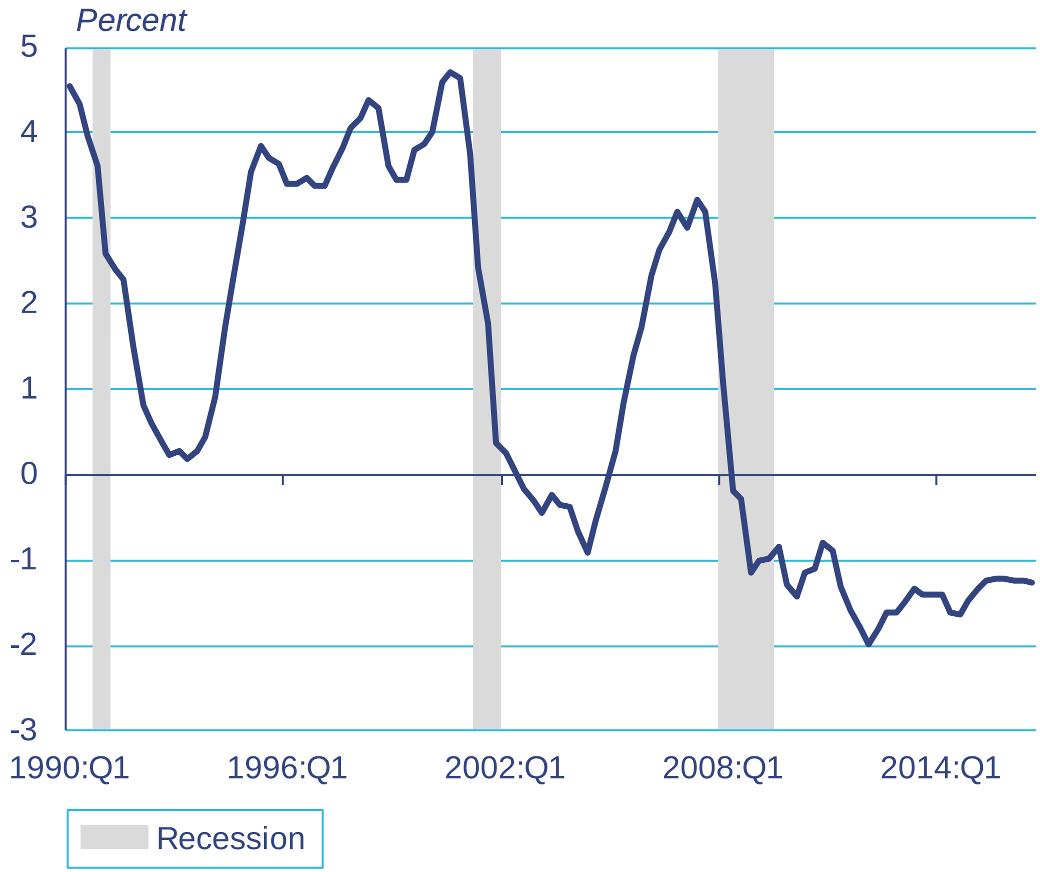


Note: The real federal funds effective rate is calculated by subtracting the core PCE inflation rate from the nominal federal funds effective rate. To calculate the real rate for 2016:Q3, we assume core PCE remained unchanged in September. The recovery from the 2001 recession lasted 24 quarters, with the next business cycle peak in 2007:Q4.

Source: Federal Reserve Board, BEA, NBER, Haver Analytics

Figure 6: Real Federal Funds Effective Rate

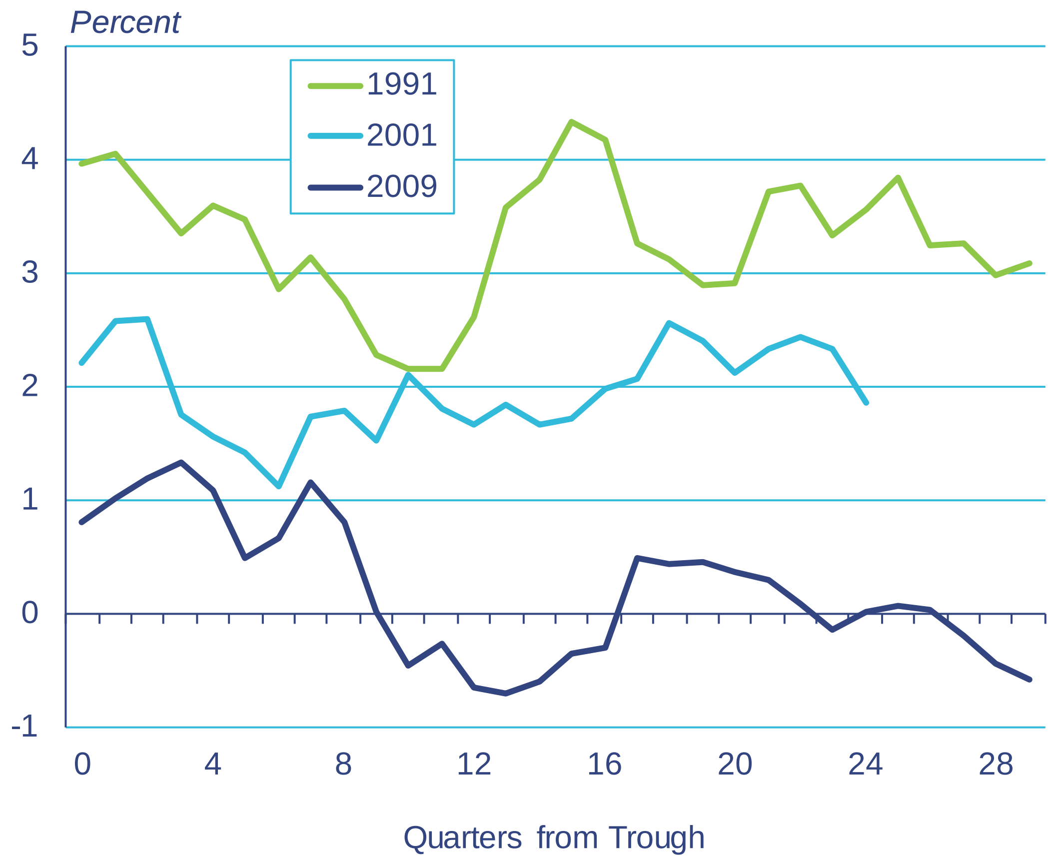
1990:Q1 - 2016:Q3



Note: The real federal funds effective rate is calculated by subtracting the core PCE inflation rate from the nominal federal funds effective rate. To calculate the real rate for 2016:Q3, we assume core PCE remained unchanged in September.

Source: Federal Reserve Board, BEA, NBER, Haver Analytics

Figure 7: Ten-Year Treasury Yield Minus Ten-Year Inflation Expectations over the Last Three Recoveries

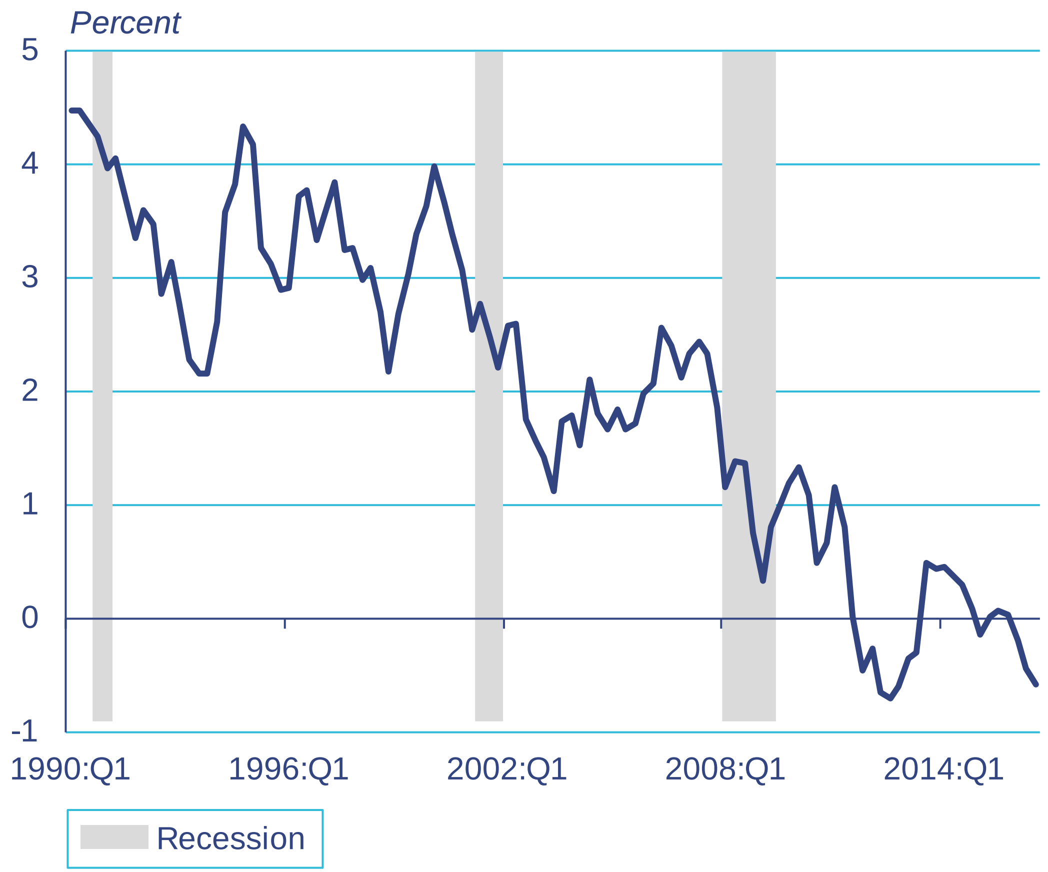


Note: The Survey of Professional Forecasters median projection for annual average CPI inflation over the next ten years is used for inflation expectations. The recovery from the 2001 recession lasted 24 quarters, with the next business cycle peak in 2007:Q4.

Source: Federal Reserve Bank of Philadelphia, Federal Reserve Board, NBER, Haver Analytics

Figure 8: Ten-Year Treasury Yield Minus Ten-Year Inflation Expectations

1990:Q1 - 2016:Q3

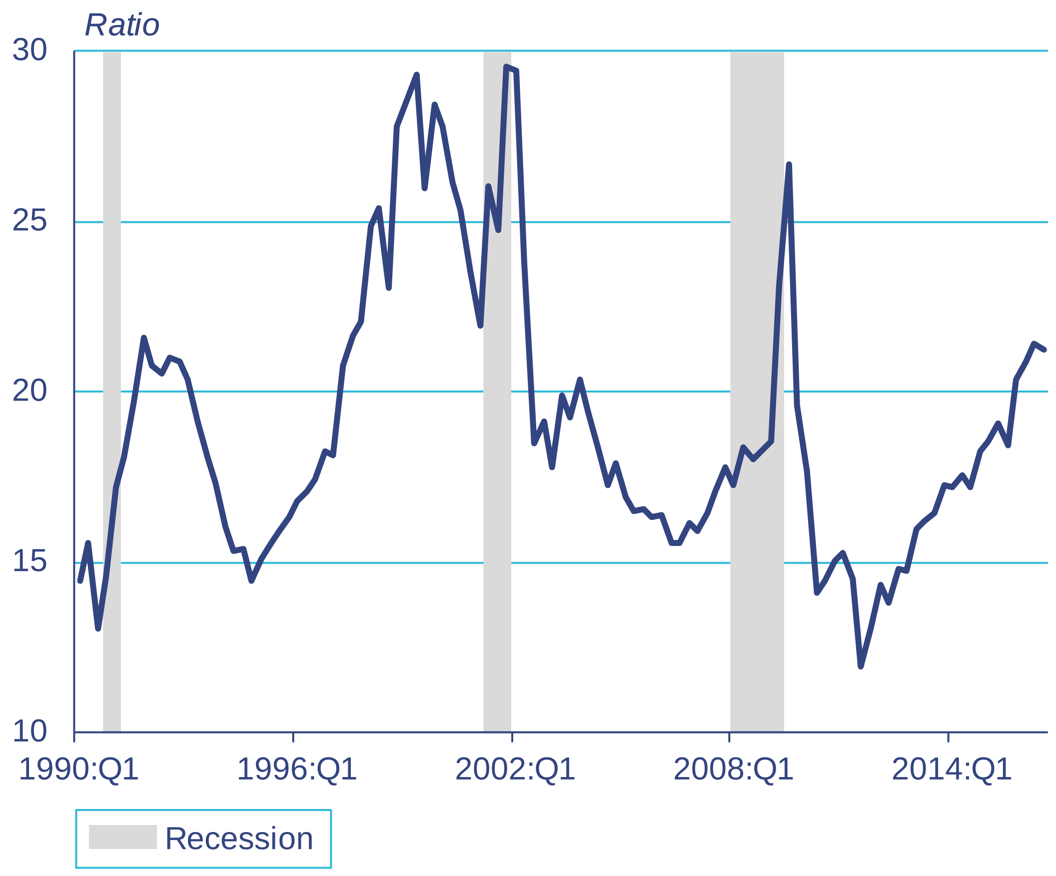


Note: The Survey of Professional Forecasters median projection for annual average CPI inflation over the next ten years is used for inflation expectations.

Source: Federal Reserve Bank of Philadelphia, Federal Reserve Board, NBER, Haver Analytics

Figure 9: S&P 500 Composite Price to Operating Earnings Ratio

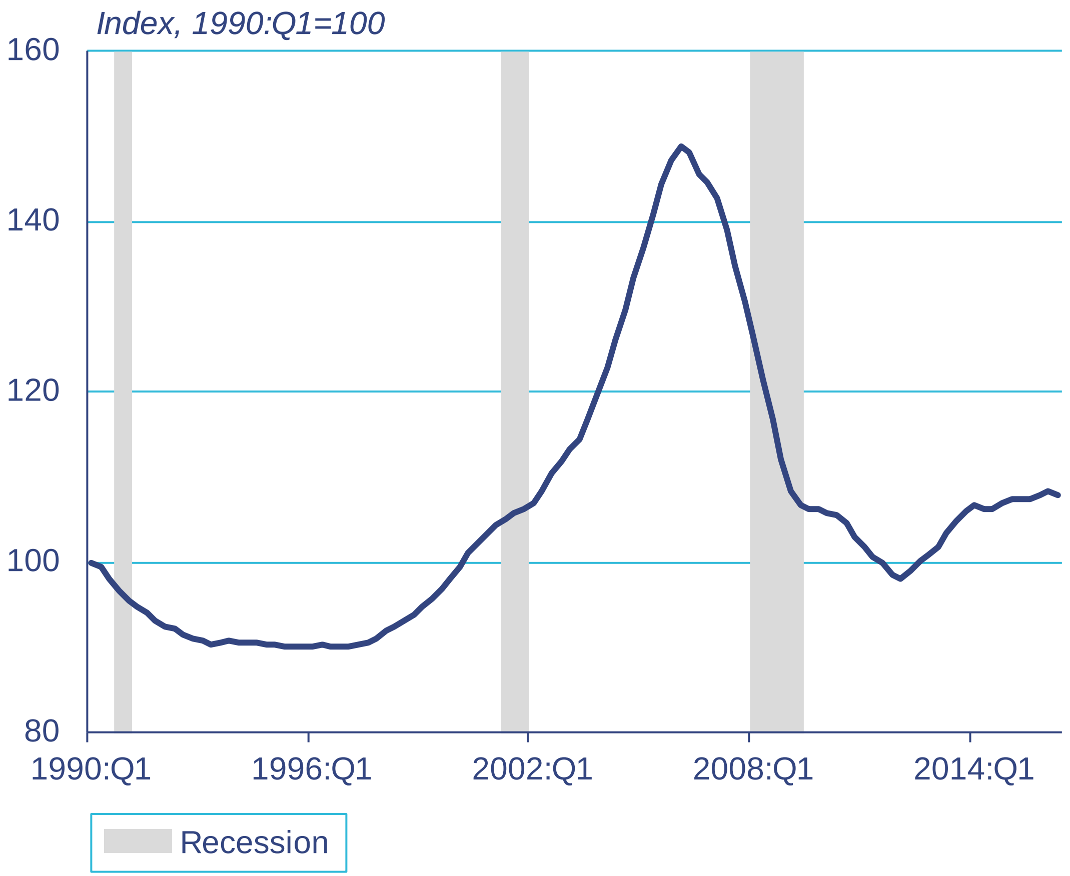
1990:Q1 - 2016:Q3



Source: S&P, NBER, Haver Analytics

Figure 10: Index of Price to Rent for Residential Housing

1990:Q1 - 2016:Q2

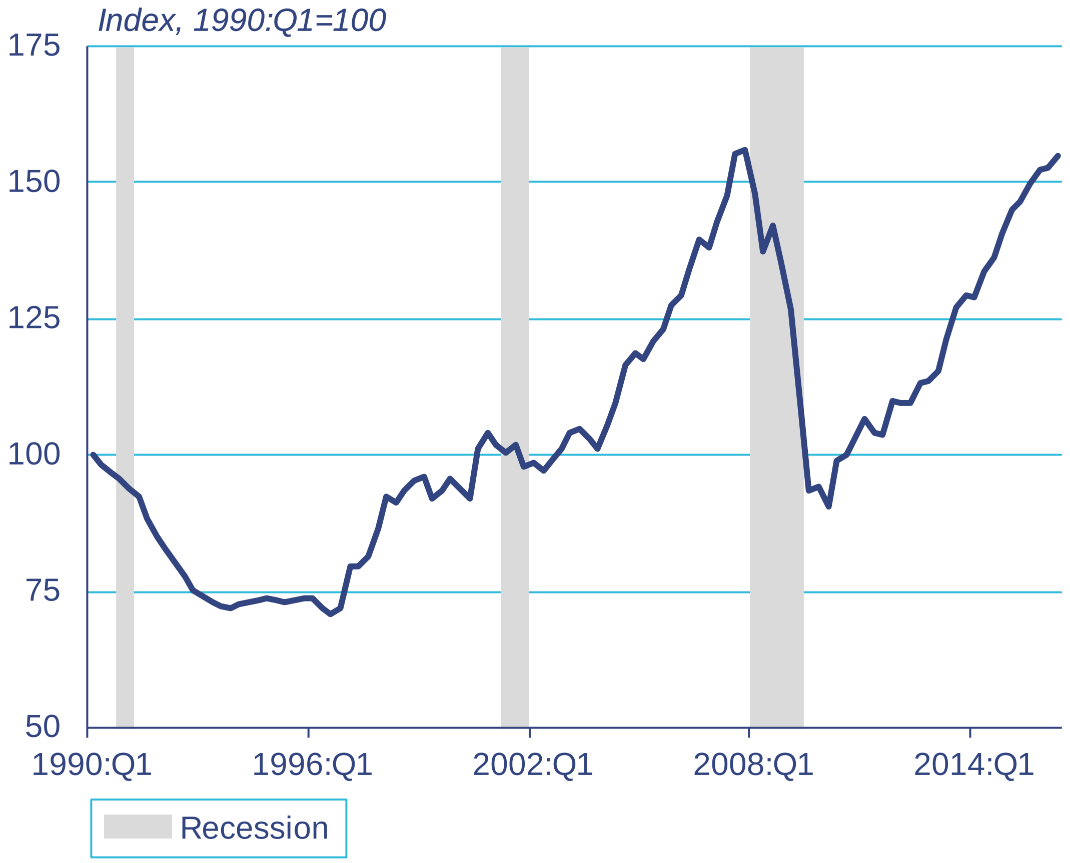


Note: Based on the ratio of the CoreLogic House Price Index excluding distressed sales to the CPI for Rent of a Primary Residence.

Source: CoreLogic, BLS, NBER, Haver Analytics

Figure 11: Real Commercial Real Estate Price Index

1990:Q1 - 2016:Q2

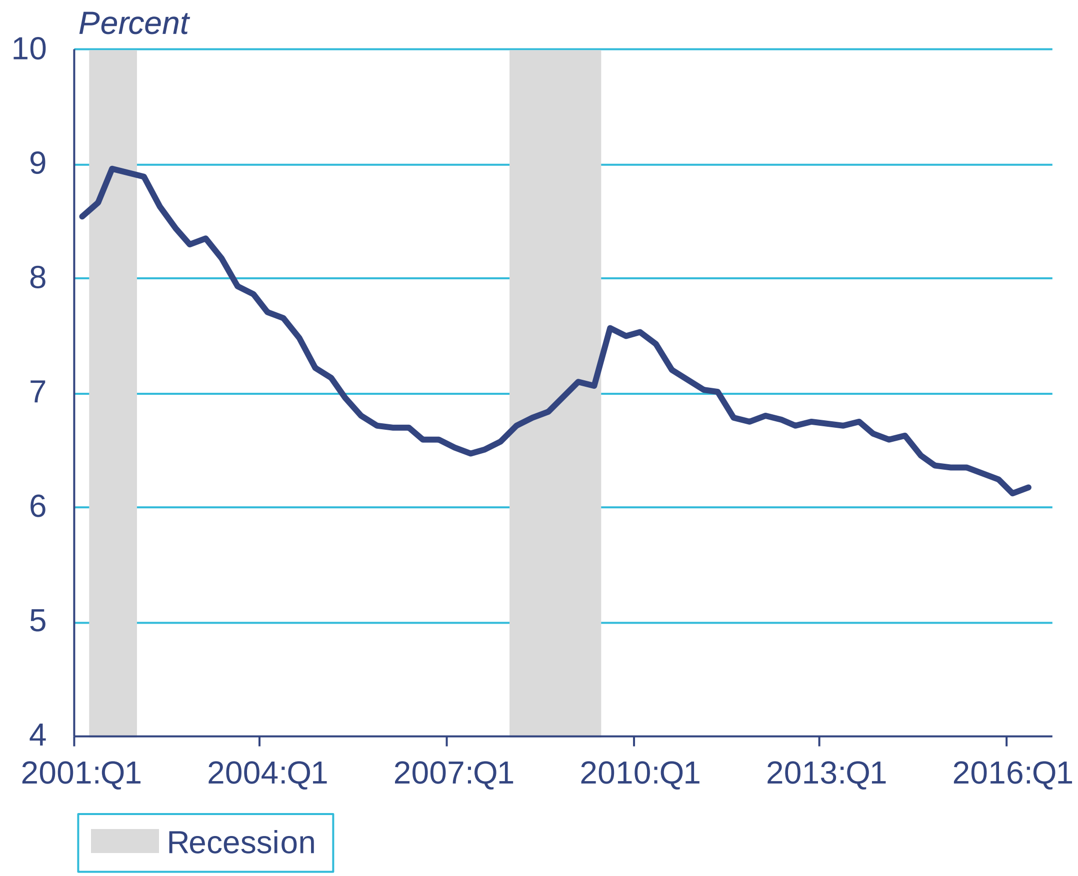


Note: Price index is adjusted for inflation using the GDP deflator.

Source: Federal Reserve Board, BEA, NBER, Haver Analytics

Figure 12: Commercial Real Estate Capitalization Rate

2001:Q1 - 2016:Q2

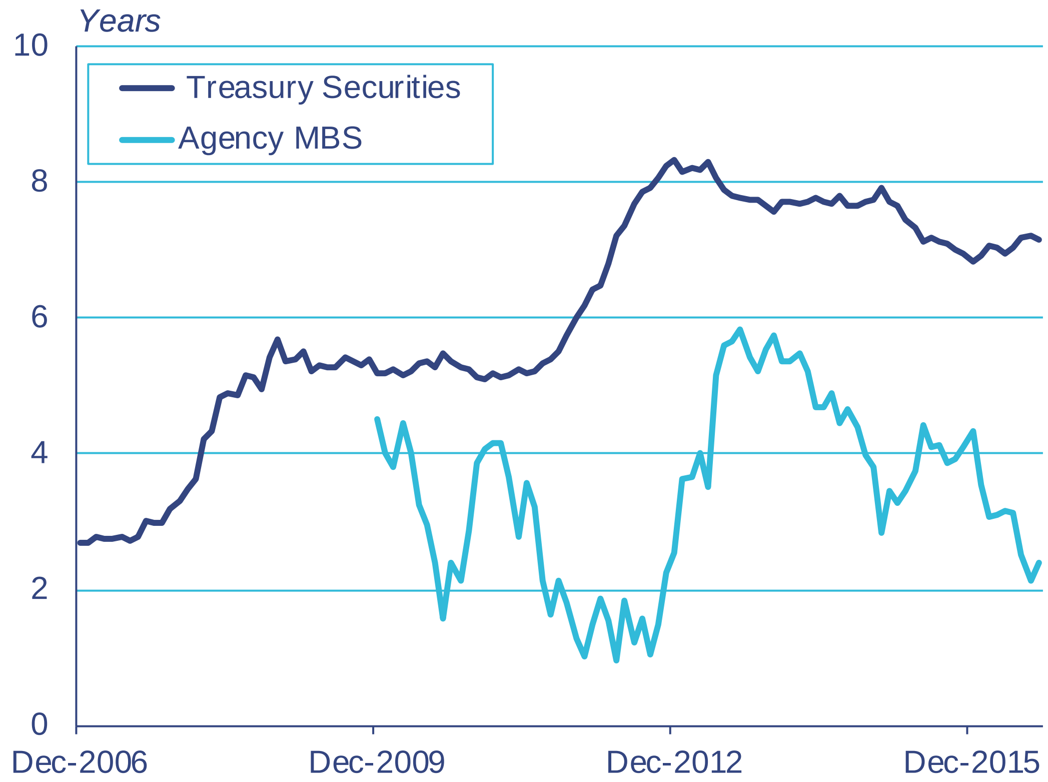


Note: The capitalization or "cap" rate is the ratio of net operating income produced by a property to the price paid, calculated at the time of a transaction.

Source: Real Capital Analytics, NBER, Haver Analytics

Figure 13: Duration of the Federal Reserve System Open Market Account (SOMA) Holdings of U.S. Treasury and Agency Mortgage-Backed Securities

December 2006 - August 2016



Note: The duration for Treasury securities is the market value weighted modified duration. For Agency MBS, the duration is the market value weighted effective duration. Figures are as of month-end.

Source: Federal Reserve Bank of New York

Potential Financial Stability Concerns

- Some asset markets are only somewhat elevated, by historical standards
- Two outliers:
  - Historically low 10-year Treasury rates
  - Commercial real estate capitalization rates also quite low by historical standards
- An observation: in the presence of financial stability concerns, the balance sheet composition could be adjusted to steepen the yield curve

Concluding Observations

- This recovery has been full of surprises, most of which have not been good
- We should be cautious about assuming that current trends reflect something different from historical experience
- But it is important to consider whether this time has indeed been different, and whether there is a "new normal"
- Lessons from this recovery may impact how we think about monetary policy going forward