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# The Federal Reserve Balance Sheet and Monetary Policy

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## The Federal Reserve Balance Sheet and the Economy

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- ▶ As the economy has improved, there has been increased attention to the size of the Fed's balance sheet
    - ▶ Unemployment, at 4.5 percent, is below many estimates of full employment
    - ▶ Total PCE inflation is fluctuating around 2 percent
  - ▶ The balance sheet was an important tool for this recovery
    - ▶ Deployed when constrained from further reductions by the zero boundary
    - ▶ By purchasing assets and increasing the size of the Fed's balance sheet, long-term rates could be reduced
    - ▶ Provided additional, needed stimulus
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## Role of Expanded Balance Sheet

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- ▶ Some have suggested use of the balance sheets to be limited solely as a response to severe economic conditions
  - ▶ My view: structural changes in the macroeconomy may necessitate more frequent use of large-scale asset purchases during recessions
    - ▶ Low inflation, low rates of productivity growth, and slow population growth may imply an economy where normal rates remain relatively low by historical standards
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## Future Use of the Balance Sheet

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- ▶ The median forecast of Fed policymakers in March was that in the longer run, the federal funds rate was likely to be only 3 percent
  - ▶ During most of the previous economic downturns, the Federal Reserve has reduced interest rates by substantially more than 300 basis points
  - ▶ As a result, short-term rates may have to be lowered again to zero in response to future recessions, and the central bank may need to again deploy its balance sheet in order to augment traditional policy
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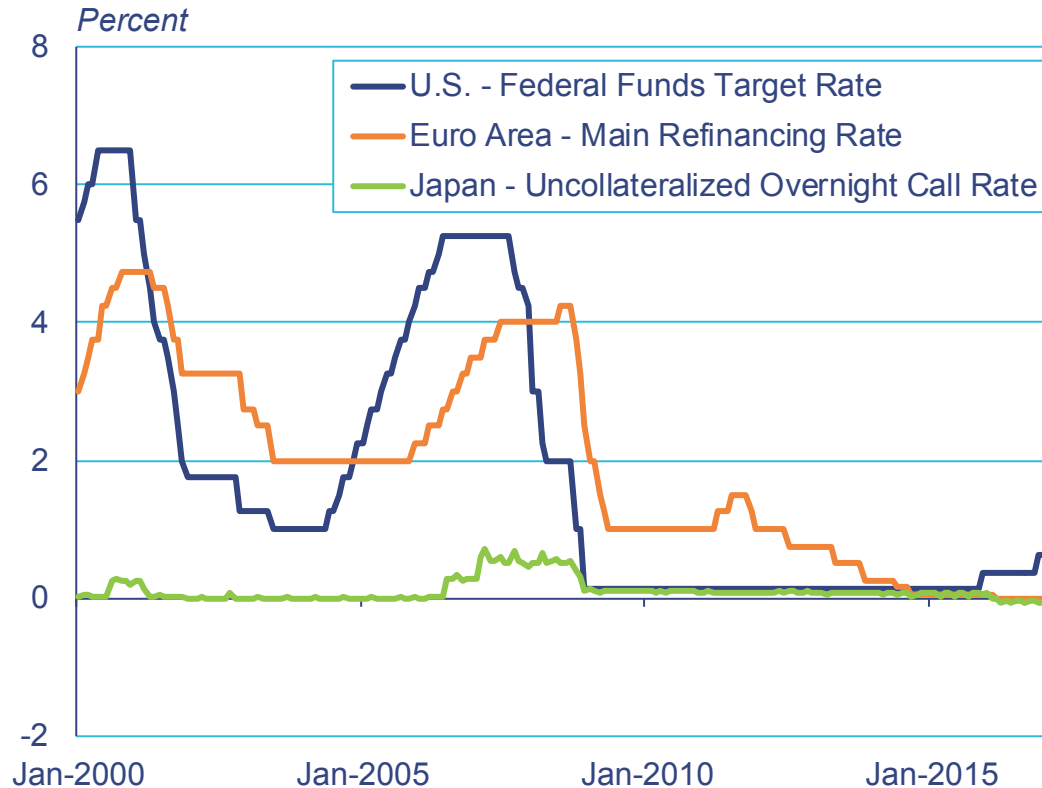
## The Balance Sheet as a Secondary Tool

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- ▶ Central banks have significant historical experience with moving short-term interest rates to achieve macroeconomic objectives
  - ▶ It makes sense to continue to use short-term interest rates as the primary tool for monetary policy
  - ▶ Implications for balance-sheet reduction, in my view:
    - ▶ An ideal policy would take a very gradual approach
    - ▶ That process could begin relatively soon
    - ▶ The tightening of short-term interest rates should not need to be much different than it would be in the absence of shrinking the balance sheet
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# Figure 1: Overnight/Policy Rates for the Euro Area, Japan, and the U.S.

January 2000 - March 2017



Note: Rates are as of end of period. U.S. target rate is the midpoint of the target range, beginning in December 2008.

Source: Bank of Japan, European Central Bank, Federal Reserve Board, Haver Analytics



## Figure 2: Central Bank Assets January 2000 - March 2017

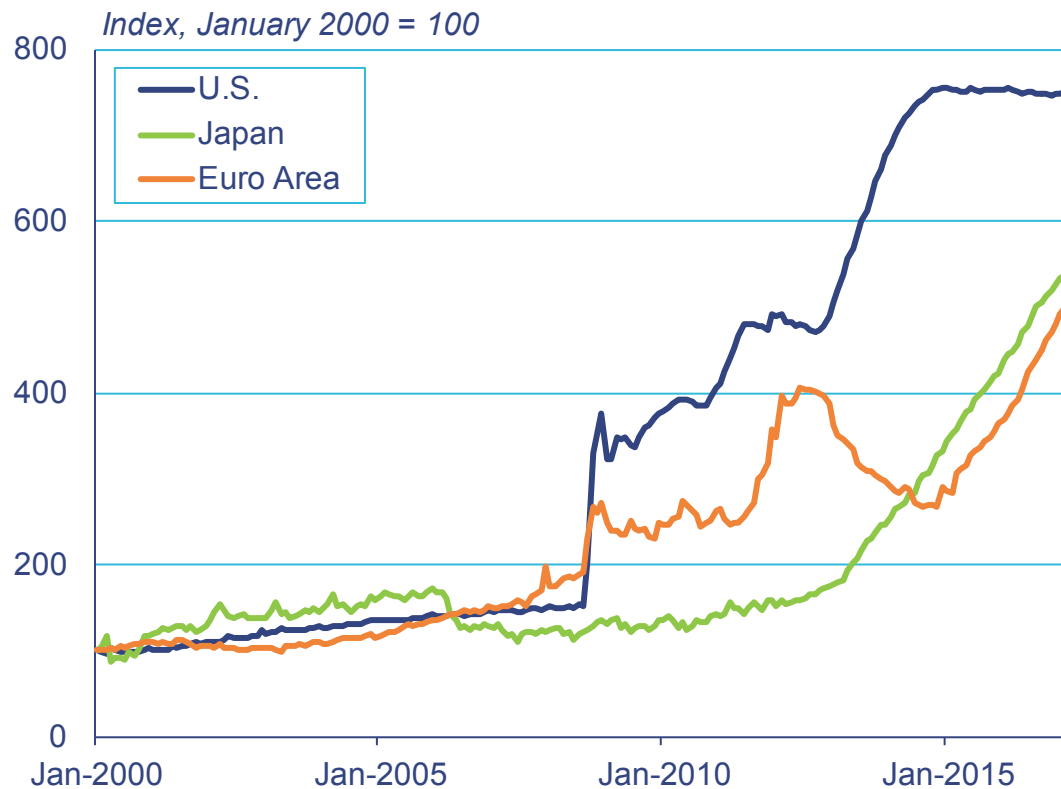


Figure 3: Central Bank Assets as a Share of GDP  
2000:Q1 - 2016:Q4

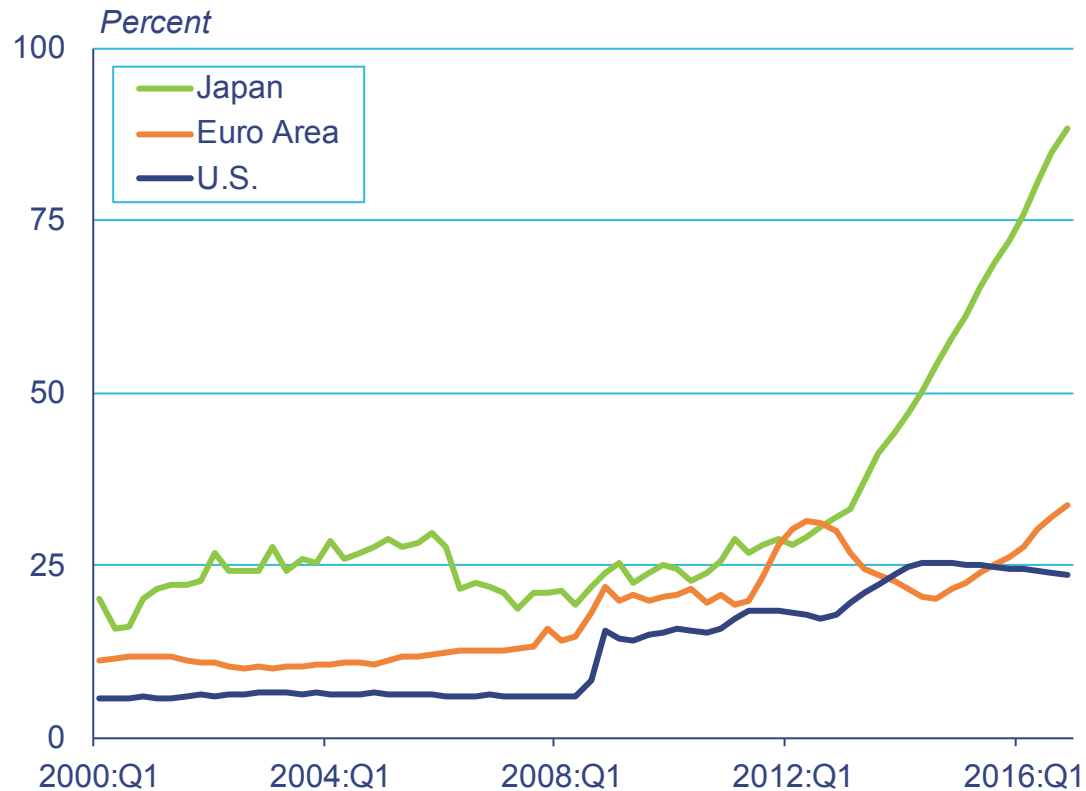
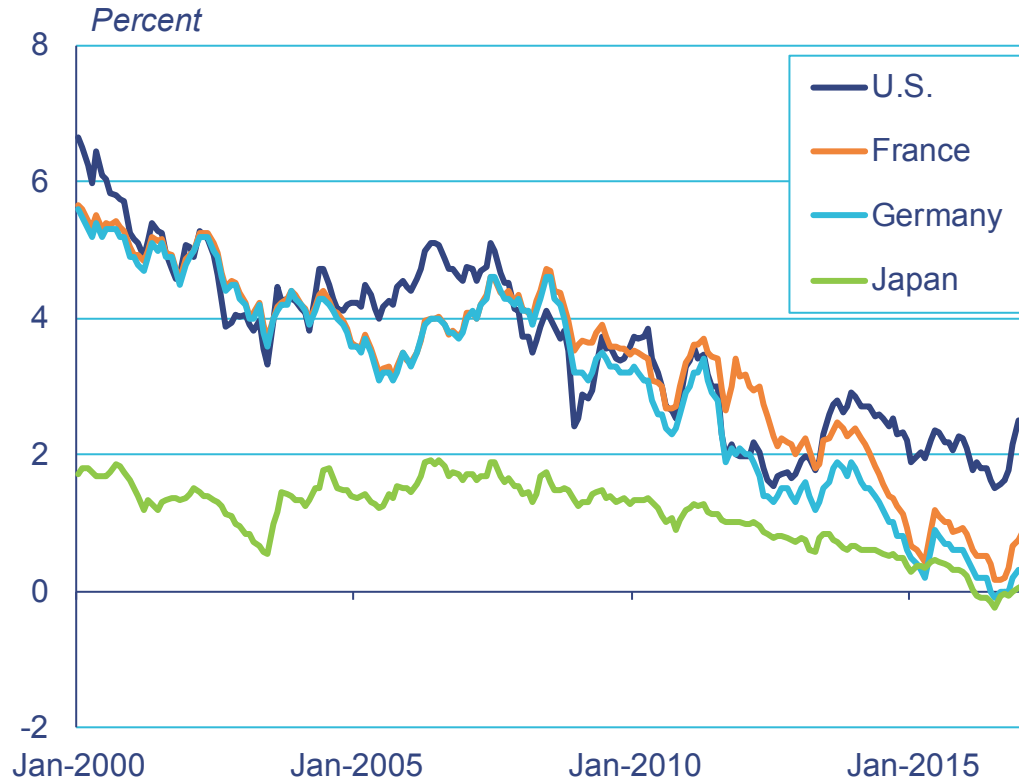


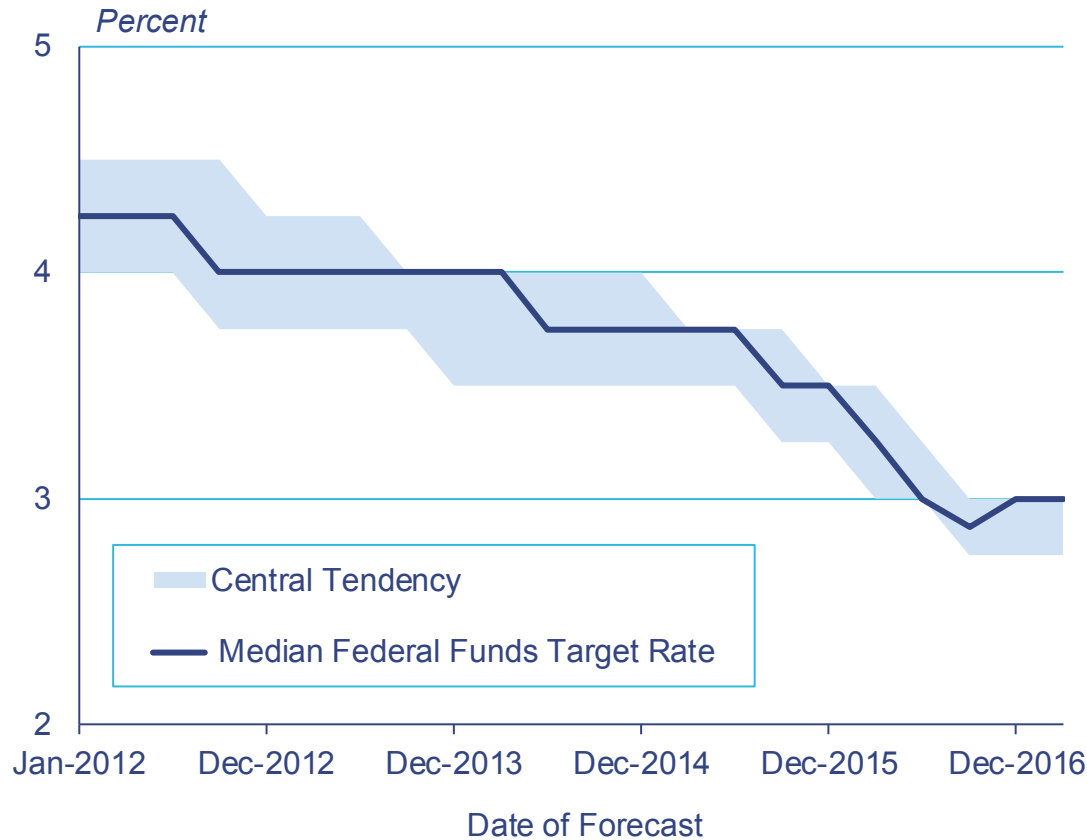


Figure 4: Ten-Year Government Bond Yields  
January 2000 - March 2017





## Figure 5: Forecasts for the Longer-Run Federal Funds Rate from the Summary of Economic Projections January 2012 - March 2017



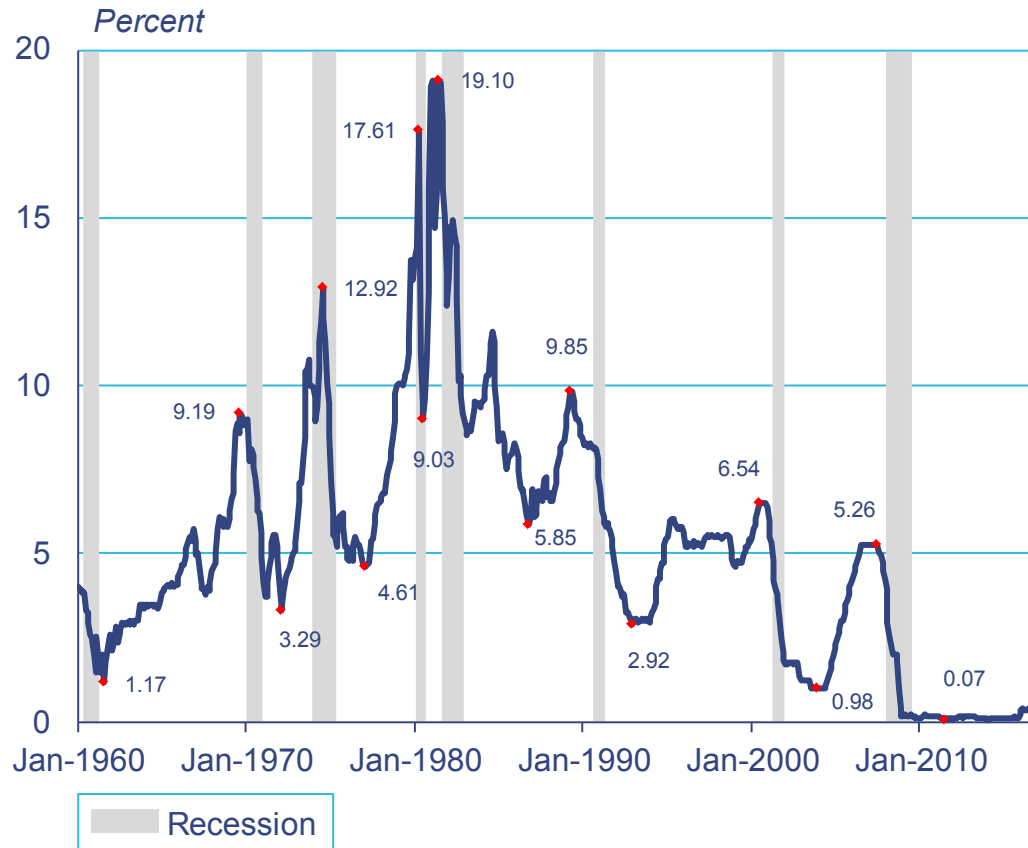
Note: The central tendency excludes the three highest and three lowest observations.

Source: FOMC, Summary of Economic Projections (SEP)



## Figure 6: Federal Funds Effective Rate, Noting Peaks and Troughs

January 1960 - March 2017





## Figure 7: Federal Funds Effective Rate: Declines from Peak to Trough

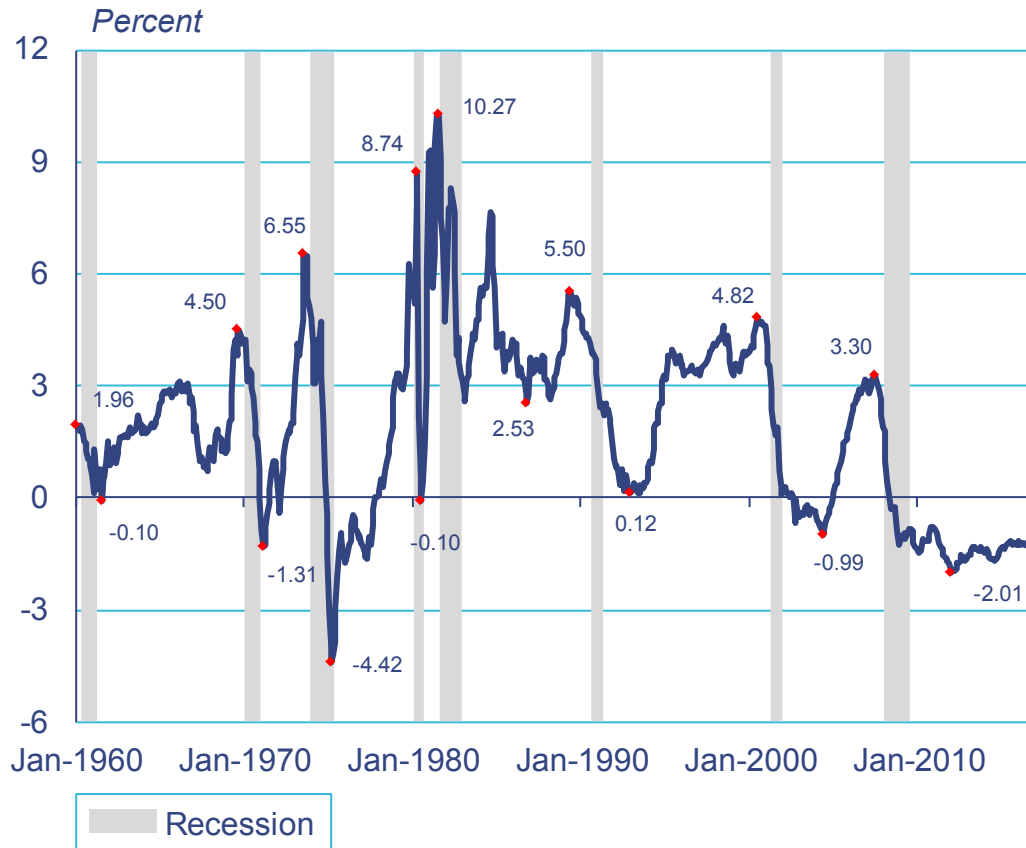
January 1960 - March 2017

| NBER Peak | Decline<br>(Percentage Points) | Dates of Decline    | Federal Funds Rate (%) |      |
|-----------|--------------------------------|---------------------|------------------------|------|
|           |                                |                     | High                   | Low  |
| Apr 1960  | 2.83                           | Nov 1959 - Jul 1961 | 4.00                   | 1.17 |
| Dec 1969  | 5.90                           | Aug 1969 - Feb 1972 | 9.19                   | 3.29 |
| Nov 1973  | 8.31                           | Jul 1974 - Jan 1977 | 12.92                  | 4.61 |
| Jan 1980  | 8.58                           | Apr 1980 - Jul 1980 | 17.61                  | 9.03 |
| Jul 1981  | 13.25                          | Jun 1981 - Oct 1986 | 19.10                  | 5.85 |
| Jul 1990  | 6.93                           | Mar 1989 - Dec 1992 | 9.85                   | 2.92 |
| Mar 2001  | 5.56                           | Jul 2000 - Dec 2003 | 6.54                   | 0.98 |
| Dec 2007  | 5.19                           | Jul 2007 - Jul 2011 | 5.26                   | 0.07 |



## Figure 8: Real Federal Funds Effective Rate, Noting Peaks and Troughs

January 1960 - March 2017



Note: The real federal funds effective rate is calculated by subtracting the core PCE inflation rate from the nominal federal funds effective rate. A core PCE inflation rate of 1.8% is assumed for March.

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

## Figure 9: Real Federal Funds Effective Rate: Declines from Peak to Trough

January 1960 - March 2017

| NBER Peak | Decline<br>(Percentage Points) | Dates of Decline    | Federal Funds Rate (%) |       |
|-----------|--------------------------------|---------------------|------------------------|-------|
|           |                                |                     | High                   | Low   |
| Apr 1960  | 2.06                           | Jan 1960 - Jul 1961 | 1.96                   | -0.10 |
| Dec 1969  | 5.81                           | Aug 1969 - Feb 1971 | 4.50                   | -1.31 |
| Nov 1973  | 10.97                          | Jul 1973 - Mar 1975 | 6.55                   | -4.42 |
| Jan 1980  | 8.84                           | Apr 1980 - Jul 1980 | 8.74                   | -0.10 |
| Jul 1981  | 7.74                           | Jul 1981 - Oct 1986 | 10.27                  | 2.53  |
| Jul 1990  | 5.38                           | May 1989 - Dec 1992 | 5.50                   | 0.12  |
| Mar 2001  | 5.81                           | Jun 2000 - Jun 2004 | 4.82                   | -0.99 |
| Dec 2007  | 5.31                           | Jun 2007 - Jan 2012 | 3.30                   | -2.01 |

*Note: The real federal funds effective rate is calculated by subtracting the core PCE inflation rate from the nominal federal funds effective rate. A core PCE inflation rate of 1.8% is assumed for March.*

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

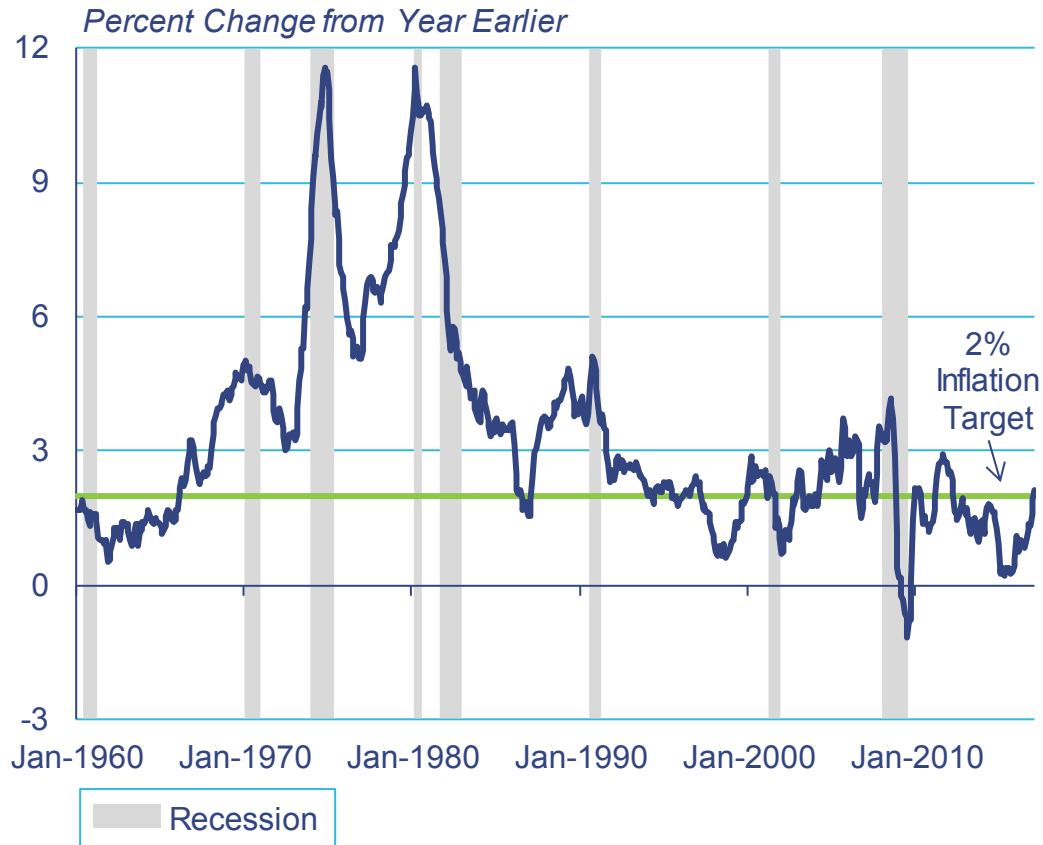


## Implications

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- ▶ With low short-term interest rates there will be a limited buffer for monetary policy to respond to economic slowdowns
  - ▶ *Real* short-term federal funds rates are likely to be negative more frequently
  - ▶ *Nominal* federal funds rates are likely to reach zero more frequently
  - ▶ It is likely to be common for central banks to engage in asset purchases to stimulate the economy by reducing longer-term rates
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Figure 10: Inflation Rate: Change in Personal Consumption Expenditures (PCE) Price Index  
January 1960 - February 2017





# Figure 11: Productivity Growth: Change in Real Output Per Hour, Nonfarm Business Sector, All Persons, 40-Quarter Moving Average

1960:Q1 - 2016:Q4

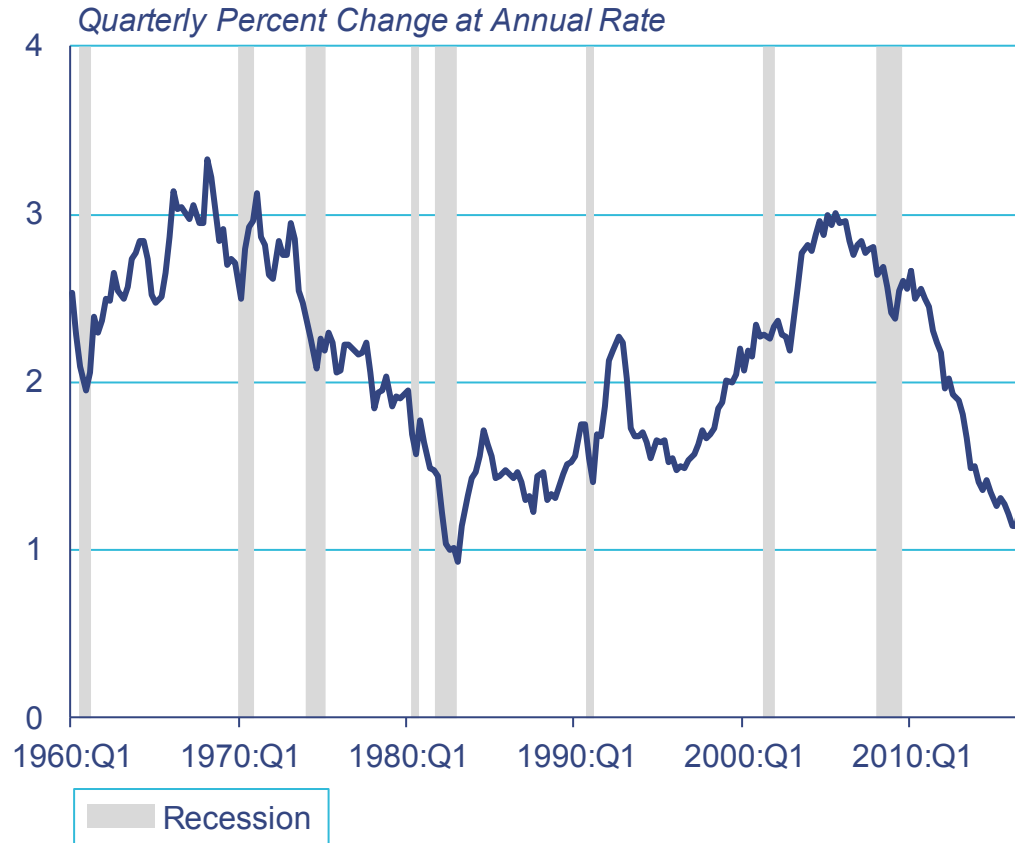
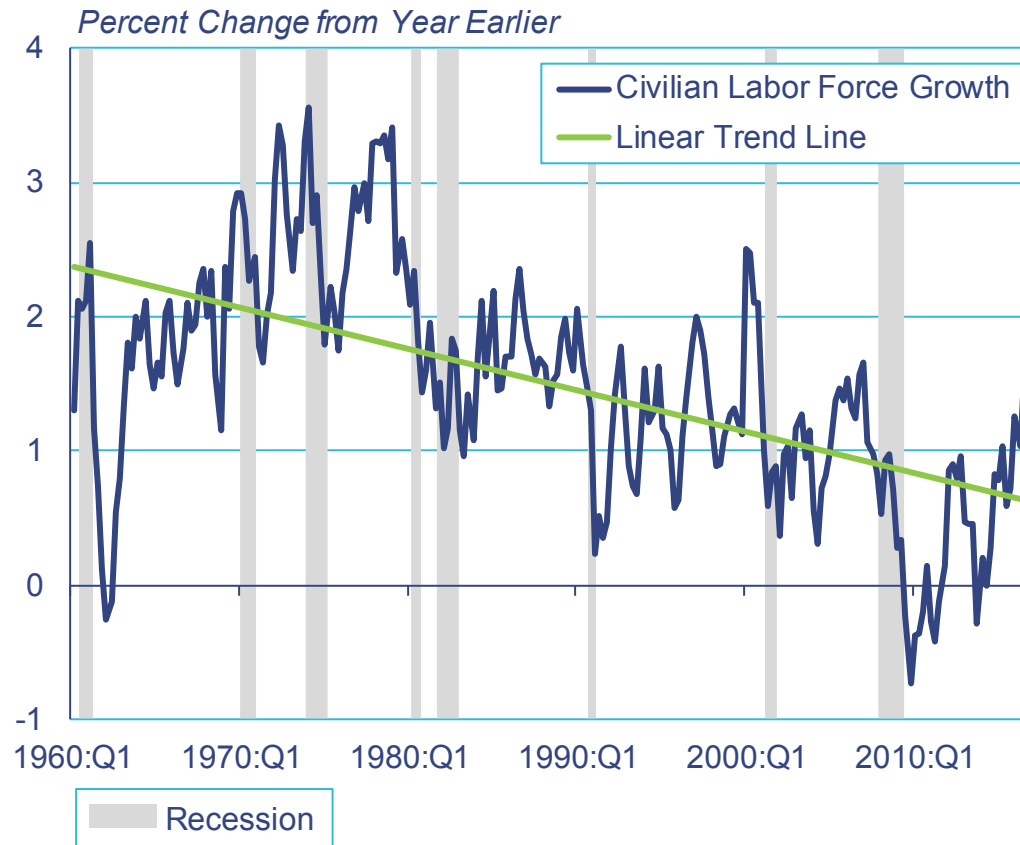




Figure 12: Civilian Labor Force Growth  
1960:Q1 - 2017:Q1





## Implications (Continued)

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- ▶ There may be a trade-off with a low inflation target that policymakers may be willing to make, depending on their willingness to manipulate the balance sheet
  - ▶ Many developed countries are experiencing low inflation rates and demographic trends that have resulted in lower short-term interest rates
  - ▶ Balance-sheet tools are likely to be a more common and necessary feature of monetary policy in combating future recessions in many economies around the world
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## Concluding Observations

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- ▶ I see it as quite likely that use of the central bank balance sheet will be necessary in future economic downturns
  - ▶ In my view, starting to shrink the balance sheet earlier – and doing so in a very gradual fashion – implies very little reduction in the degree of monetary stimulus coming from the U.S. central bank's balance sheet
  - ▶ Policymakers can then focus on gradual increases in the federal funds rate target as the primary mechanism for normalizing monetary policy and calibrating the economy
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