Economic Outlook and Monetary Policy

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Spencer Krane
Senior Vice President
Federal Reserve Bank of Chicago

Federal Reserve's Mandate

- **Promote maximum employment, stable prices, and moderate long-term interest rates[1]**

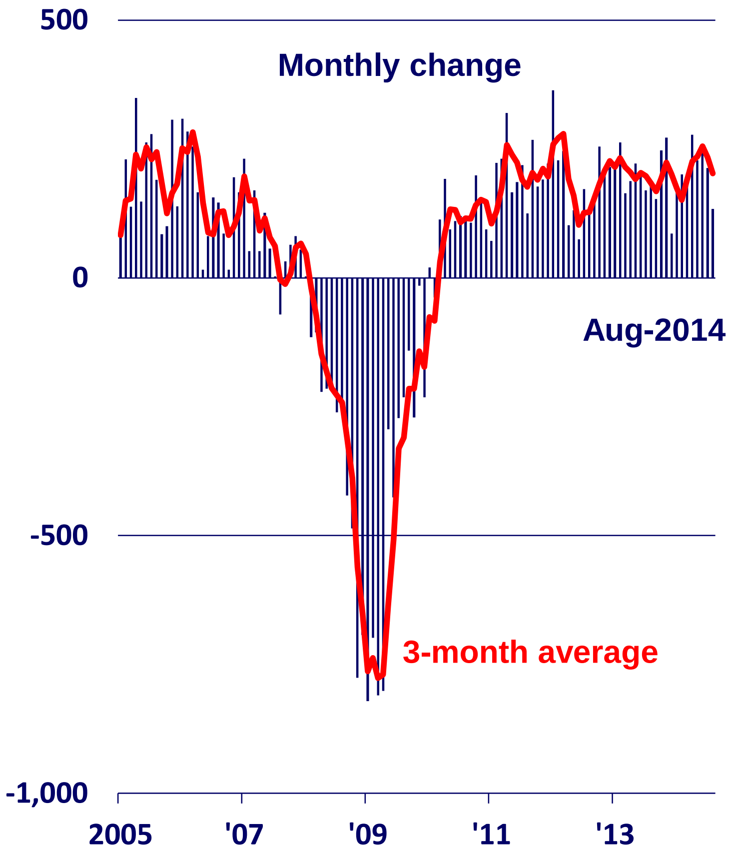
- **Price stability[2]**
  - 2 percent inflation in price index for total personal consumption expenditures (PCE)

- **Maximum employment[2]**
  - May change over time for non-monetary reasons
  - Current FOMC forecasts for long-run normal unemployment rate: 5.2-5.5 percent

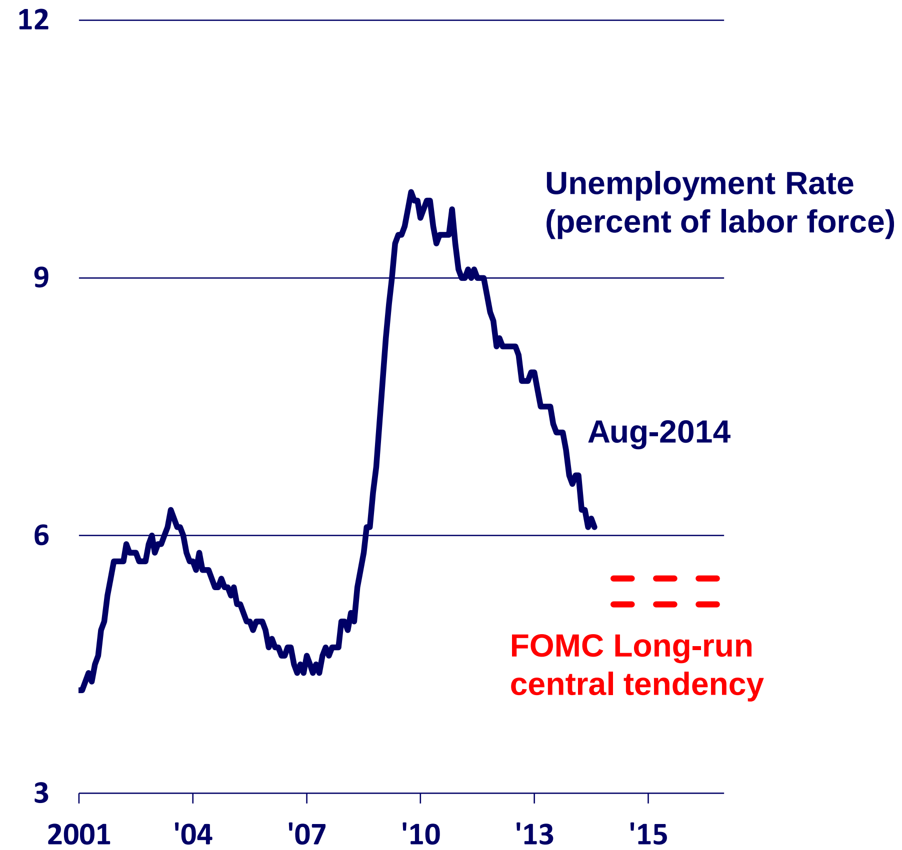
1. Federal Reserve Act Section 2a (monetary policy objectives)
2. Statement on Longer-Run Goals and Monetary Policy Strategy

Labor Market

Private Nonfarm Payroll Employment
(change, thousands)



Unemployment Rate
(percent)



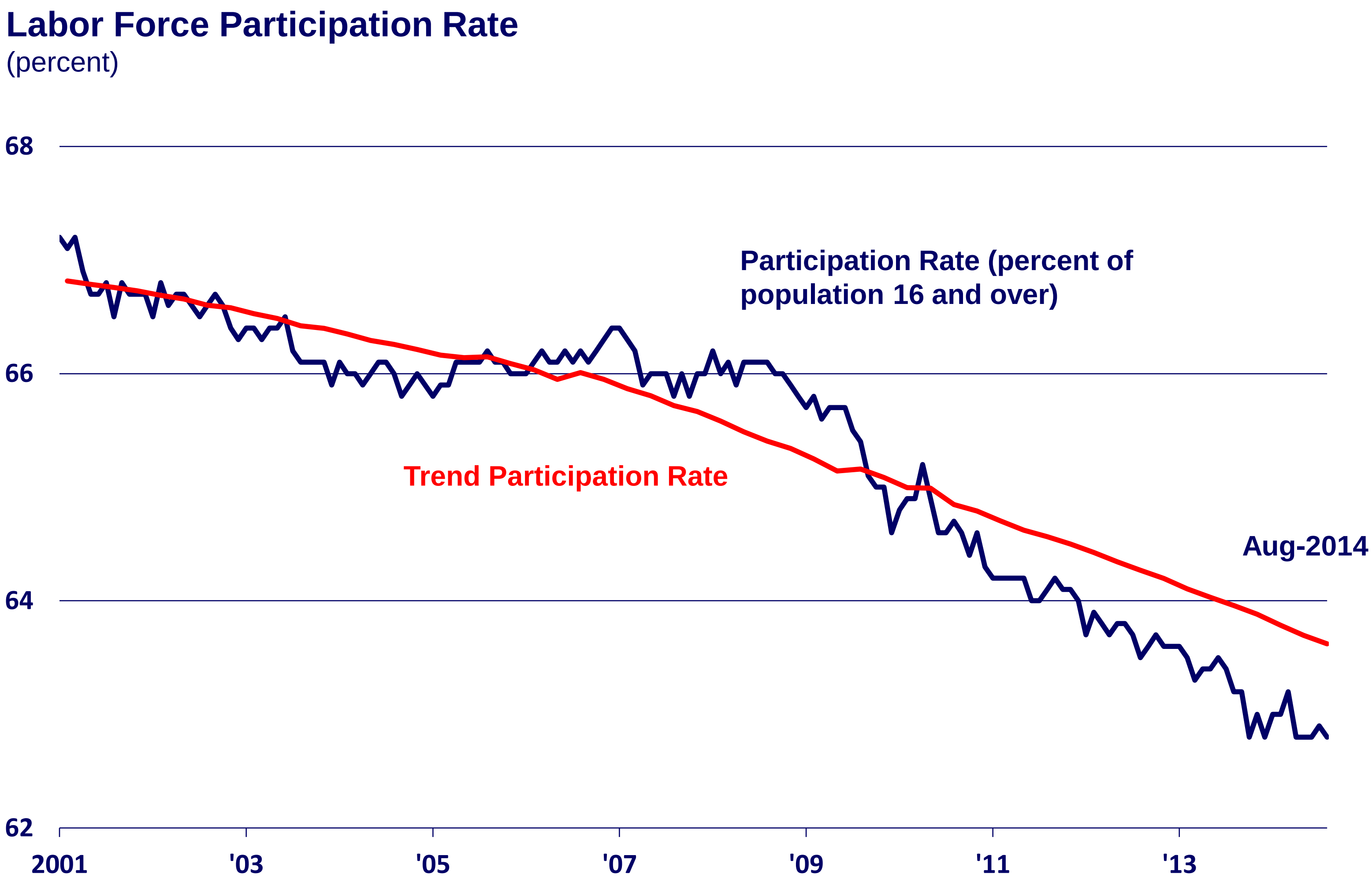
Source: Bureau of Labor Statistics, Haver Analytics, and Sep. 17, 2014 FOMC Summary of Economic Projections.

Multiple Indicators – Labor Market Dashboard

- **Substantial Progress**
  - Payroll employment
  - Unemployment rate
  - Job loss (unemployment insurance claims, layoff rates)
  - Job openings

- **Point to "Extra" Slack**
  - Labor force participation
  - Long-term unemployed
  - Part time for economic reasons
  - Hiring rate
  - Quit rate
  - Job finding rate
  - Wage growth

Labor Force Participation Rate



Source: Bureau of Labor Statistics, Haver Analytics, and Aaronson, Hu, Seifoddini, and Sullivan (2014).

Spending Outlook

- Consumption expanding at solid, but unspectacular, pace
- Strong orders for business capital goods
- Single-family housing slow to recover
- Government sector relatively neutral

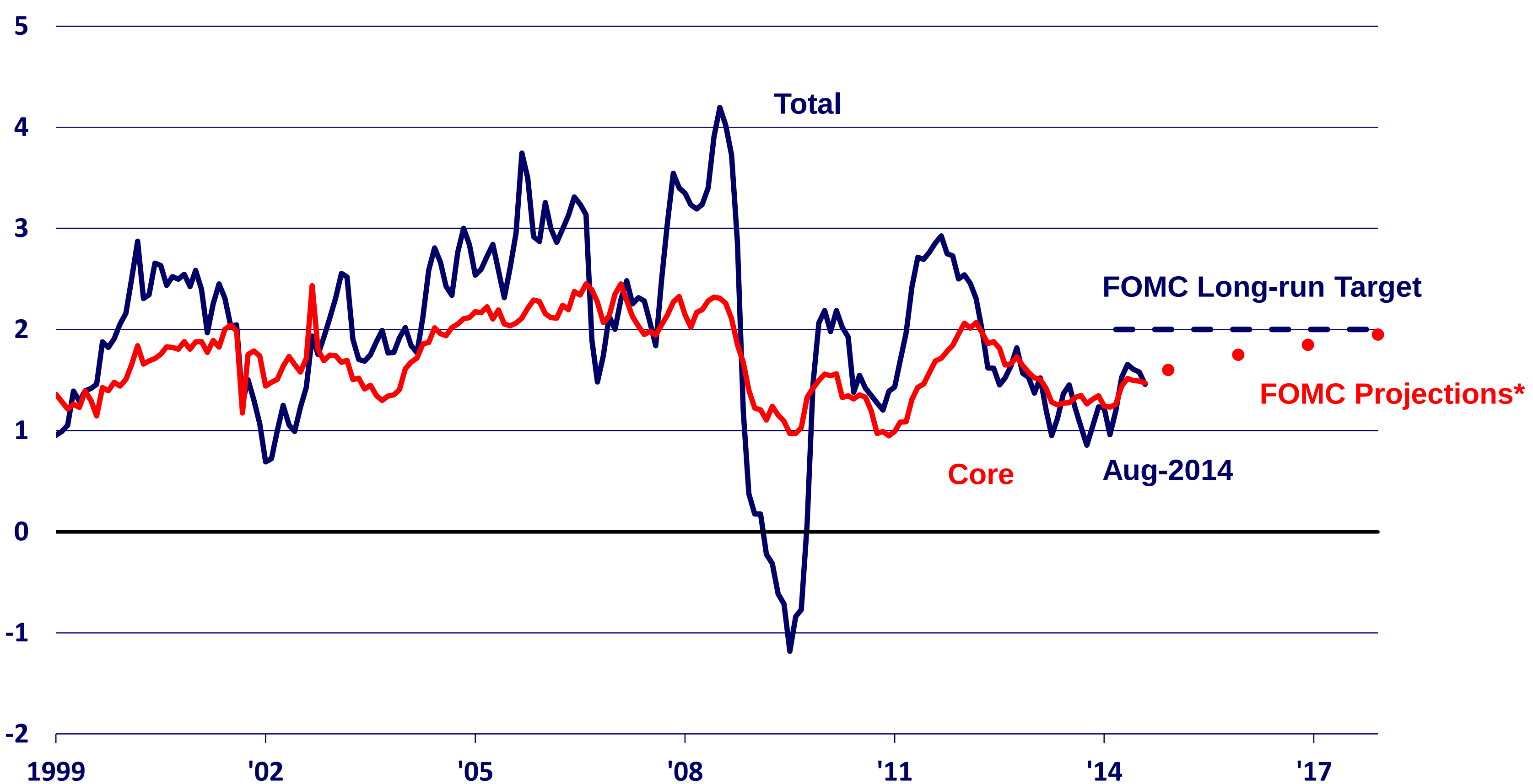
FOMC Economic Forecasts[1]

	2014	2015	2016	2017	Long-run[4]
GDP[2]	2.10	2.80	2.75	2.40	2.15
Unemployment rate[3]	5.95	5.50	5.25	5.10	5.35
PCE inflation[2]	1.60	1.75	1.85	1.95	2.00

1. Midpoint of central tendency of Sep. 17, 2014 FOMC Summary of Economic Projections
2. Fourth quarter to fourth quarter percent change
3. Quarter average for end of period
4. Assessment of rate to which each variable expected to converge under appropriate monetary policy and in the absence of further shocks to the economy

Inflation

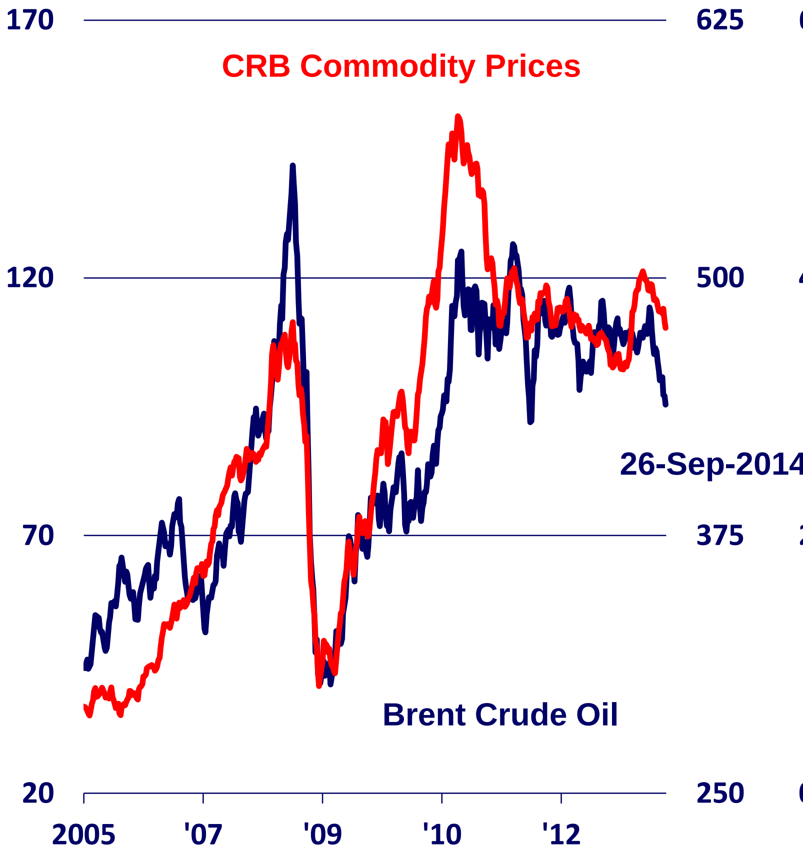
PCE Price Index
(12-month percent change)



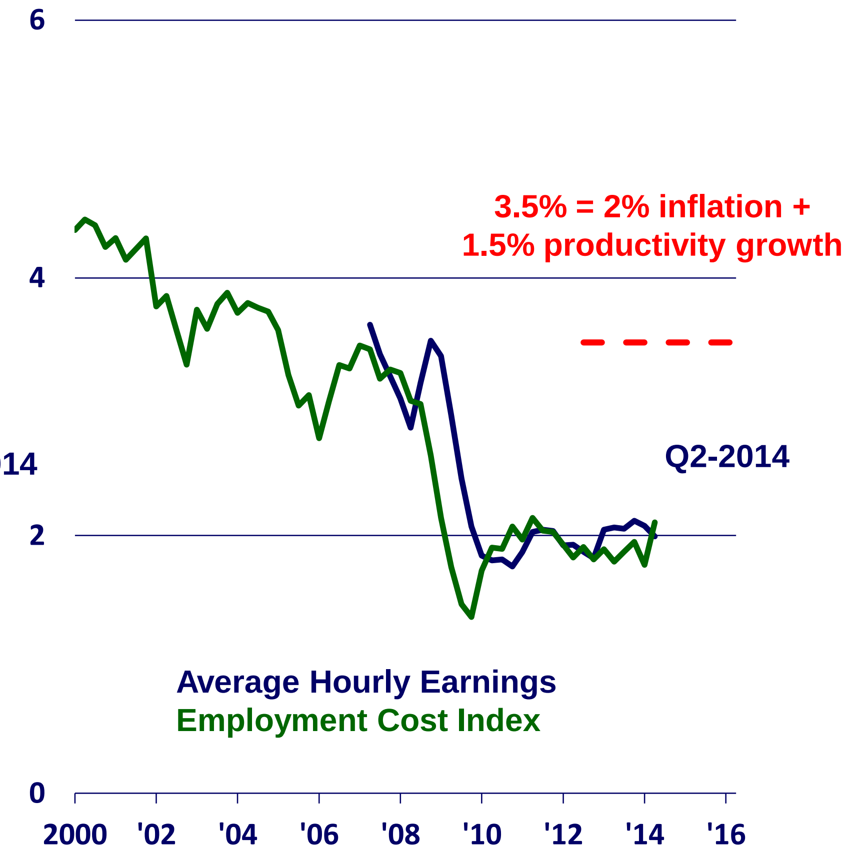
Source: Bureau of Economic Analysis, Haver Analytics, and Sep. 17, 2014 FOMC Summary of Economic Projections.

Little Cost Pressure

Commodity Prices
(dollars; index, 1967 = 100)



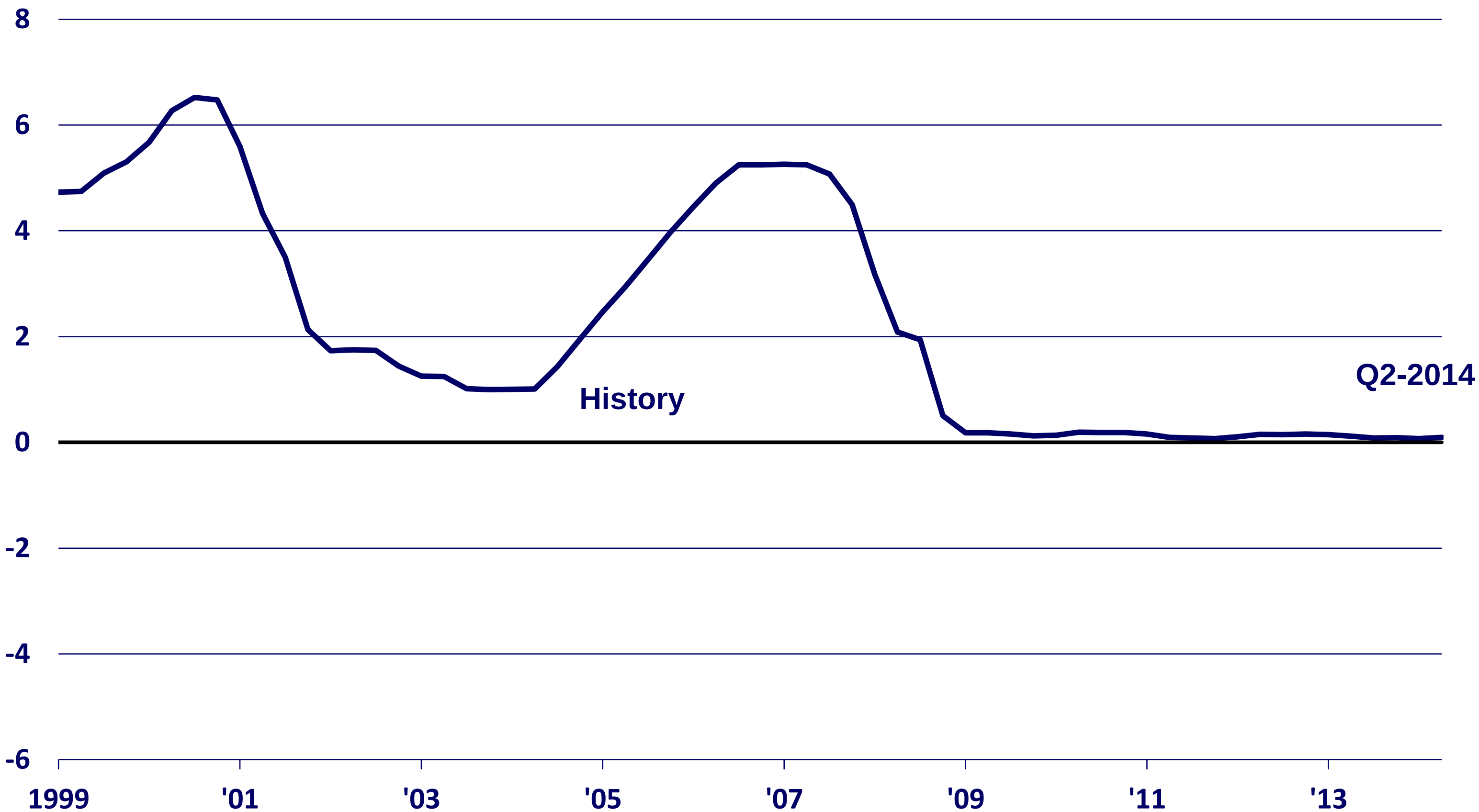
Wages and Compensation
(percent change from previous year)



Source: Financial Times, Commodity Research Bureau, Bureau of Labor Statistics, and Haver Analytics.

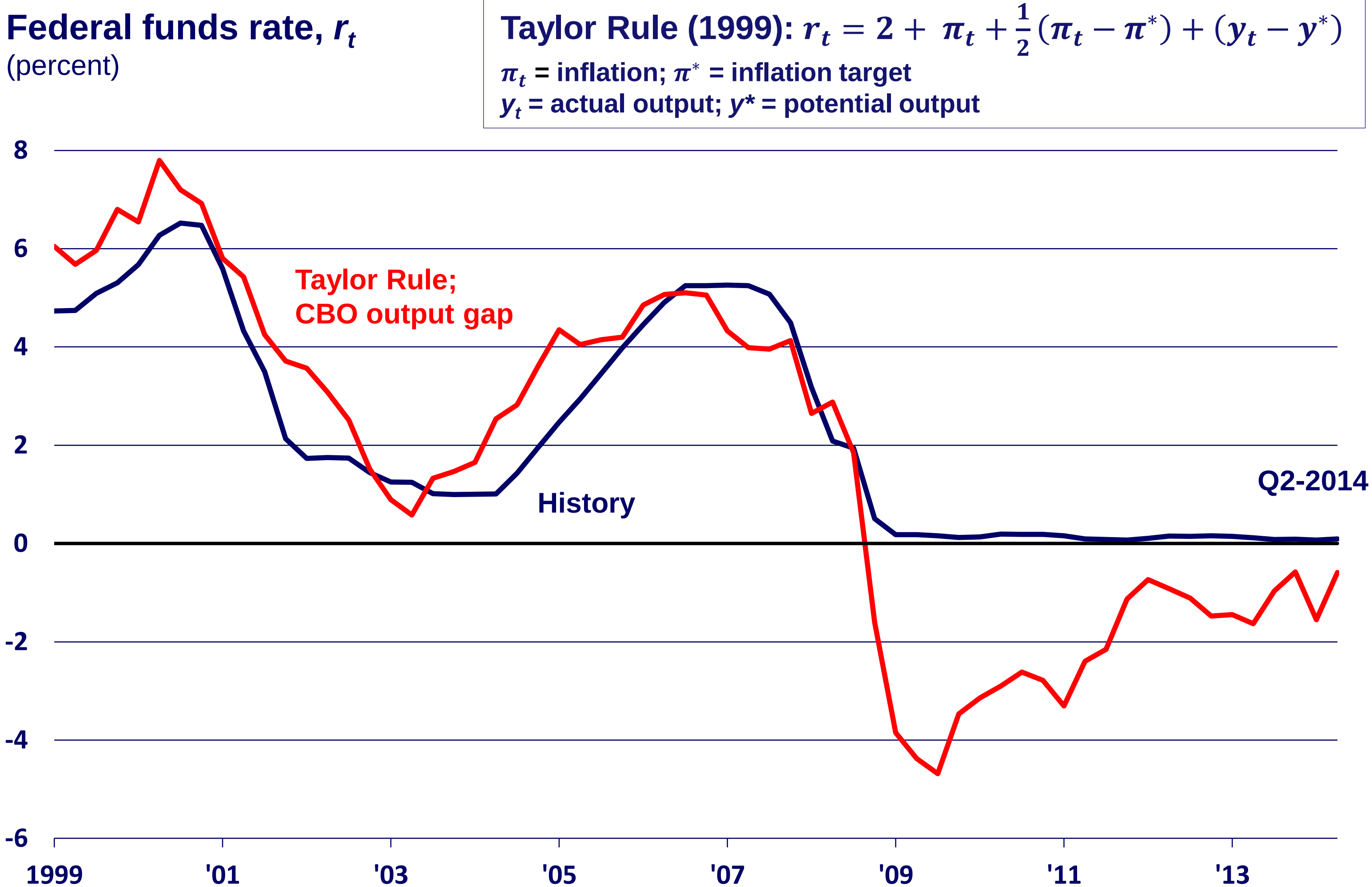
Policy Rate Constrained by Zero Lower Bound

Federal funds rate, r_t
(percent)



Source: Federal Reserve and Haver Analytics.

Policy Rate Constrained by Zero Lower Bound



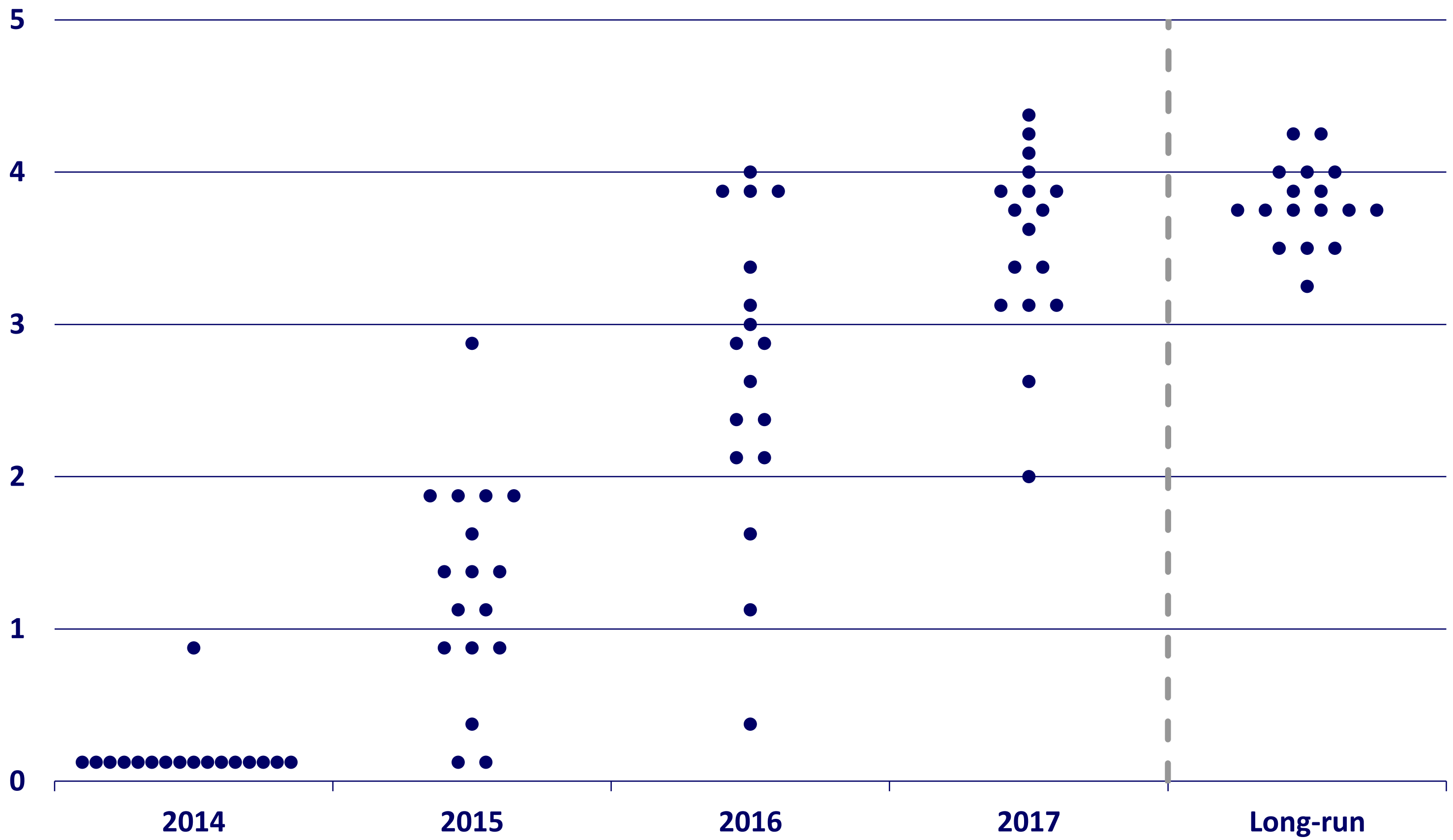
Source: Bureau of Economic Analysis, Federal Reserve Bank of Philadelphia, Congressional Budget Office, FOMC Summary of Economic Projections, and Haver Analytics. Prior to explicit inflation target set by FOMC, the Taylor Rule based on long-run inflation forecasts from the Survey of Professional Forecasters, or when available, from the Summary of Economic Projections. After 2012, Taylor Rule based on 2 percent long-run inflation target.

Policy Tools at the Zero Lower Bound

- **Two ways to provide additional accommodation at the ZLB; both work by lowering longer-term interest rates**
  - **Large Scale Asset Purchases (LSAPs)**
    - **Lower term premia in long term rates**
    - **Signaling effect about future short term rates**
    - **Latest program most likely to end in October**
  - **Forward guidance about path for the federal funds rate**

Appropriate Pace of Policy Firming

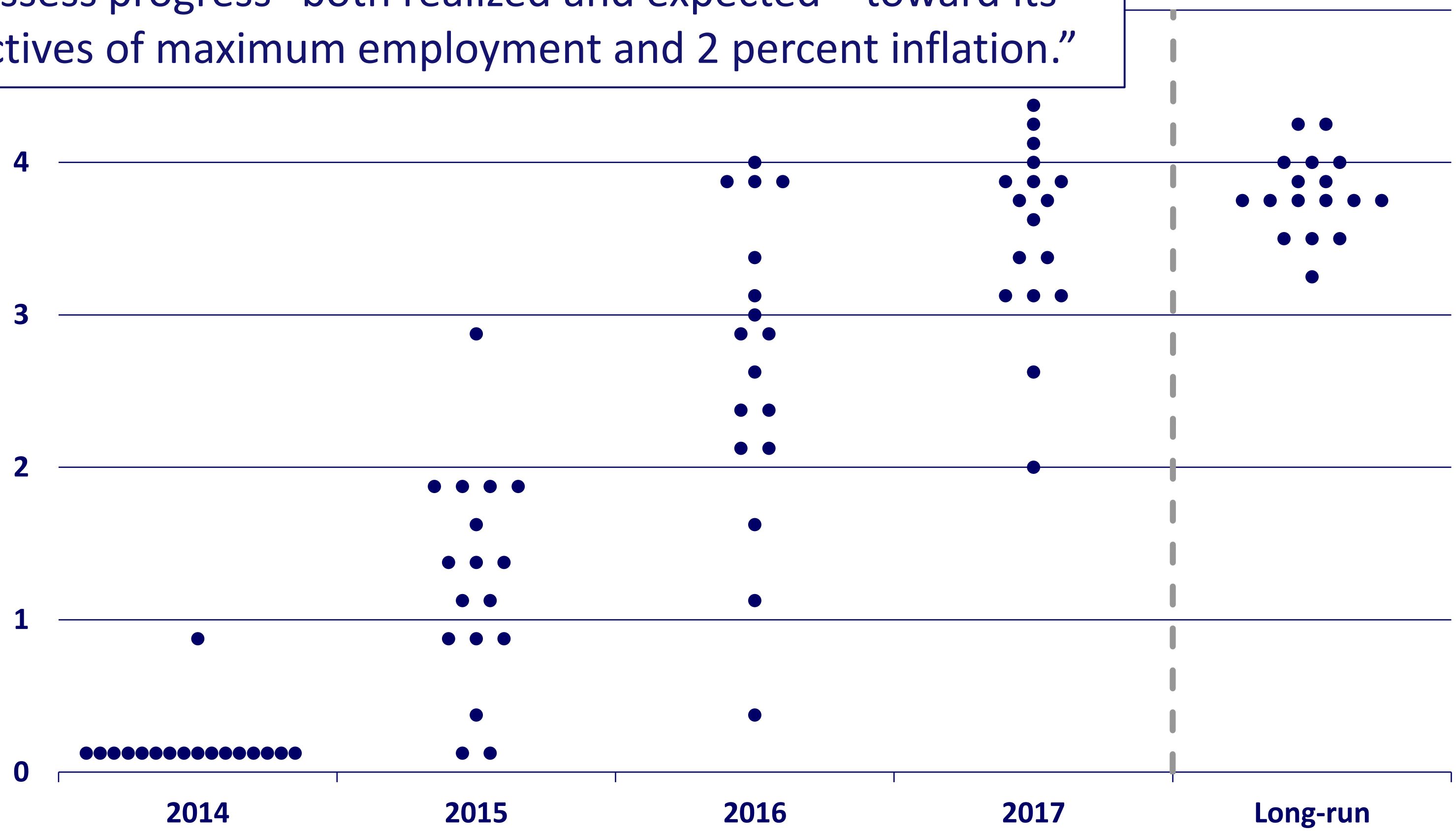
Federal Funds Rate at Year-End
(percent)



Source: Sep. 17, 2014 FOMC Summary of Economic Projections and Haver Analytics.

Appropriate Pace of Policy Firming

"In determining how long to maintain the current 0 to 1/4 percent target range for the federal funds rate, the Committee will assess progress--both realized and expected—toward its objectives of maximum employment and 2 percent inflation."



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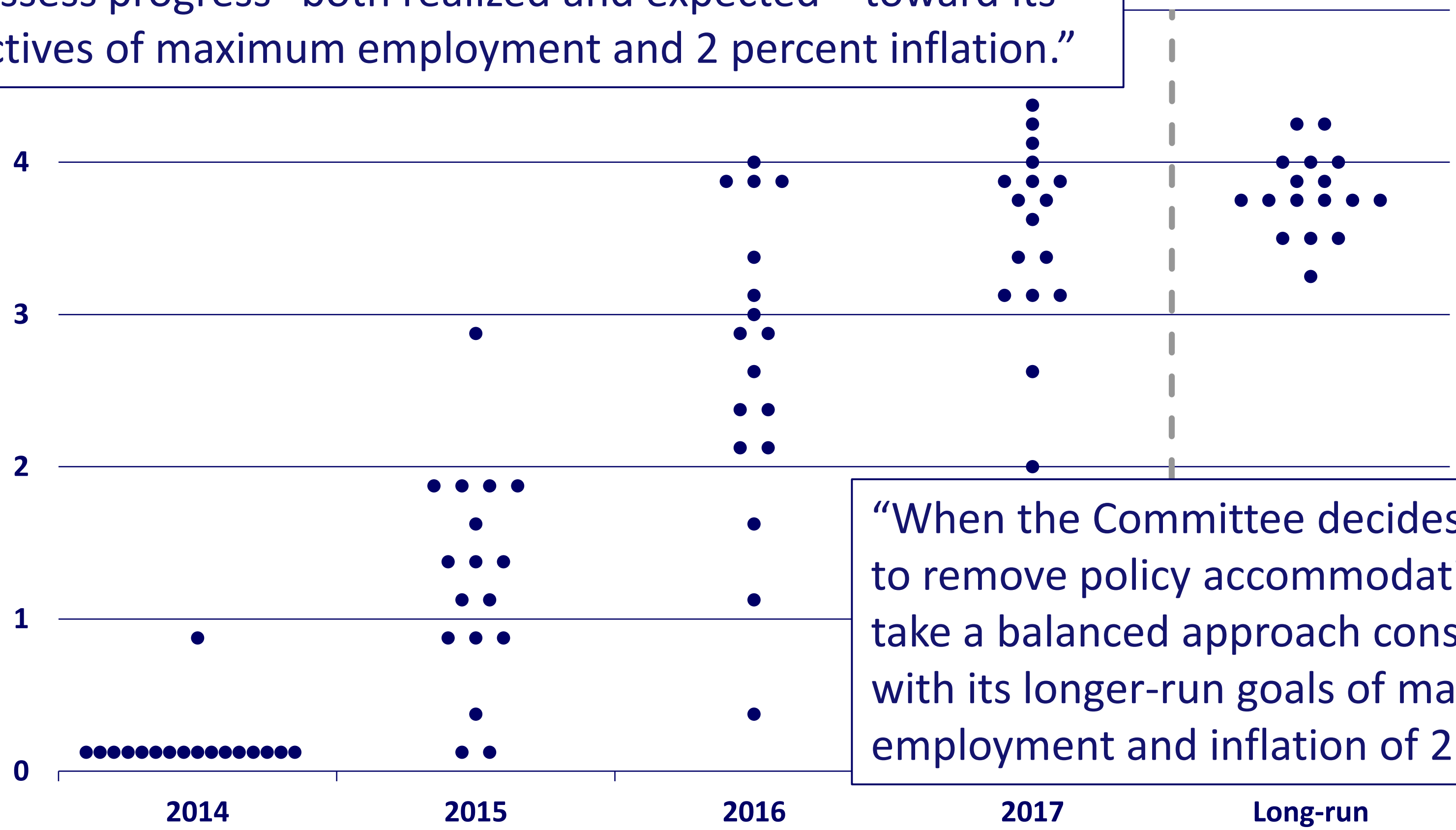

"When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent."

Source: Sep. 17, 2014 FOMC Summary of Economic Projections and Haver Analytics.

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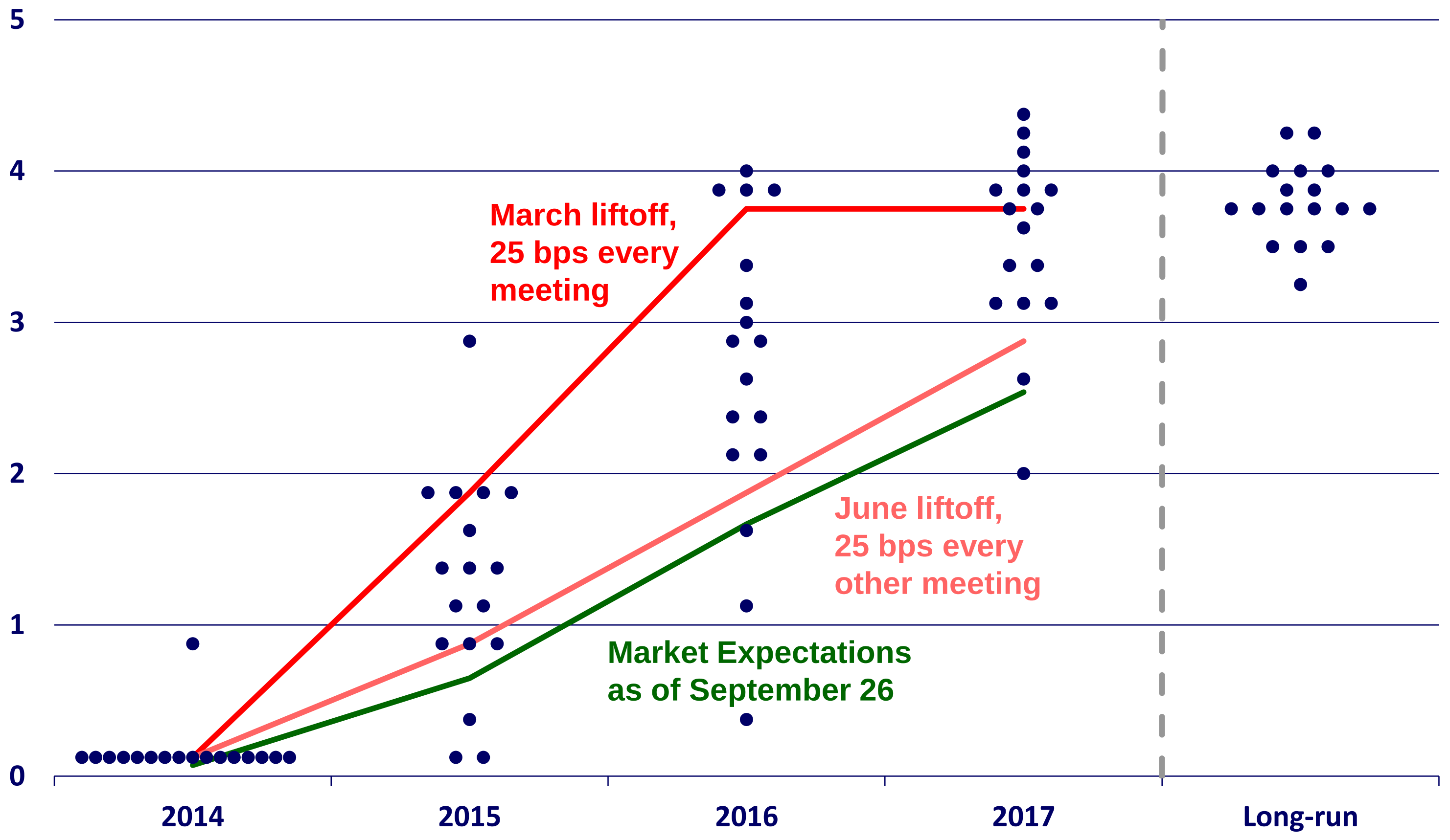

Source: Sep. 17, 2014 FOMC Summary of Economic Projections, Federal Reserve Board, and Haver Analytics.

Monetary Policy Normalization

- **FOMC will determine timing and pace of increases in rates so as to promote maximum employment and price stability**
- **Federal funds rate will continue to be the key policy rate**
  - Target a 25bp range initially, instead of a single number
- **Interest paid on excess reserves primary tool to raise rates**
  - Overnight Reverse Repo Facility to play temporary supporting role to help provide control over federal funds rate
- **Reduce the size of the balances sheet gradually and predictably**
  - Reduce reinvestments sometime after the first rate hike
  - In the long-run, the balance sheet at smallest level for efficient implementation of monetary policy