The Economic Outlook and Recent Monetary Policy Developments

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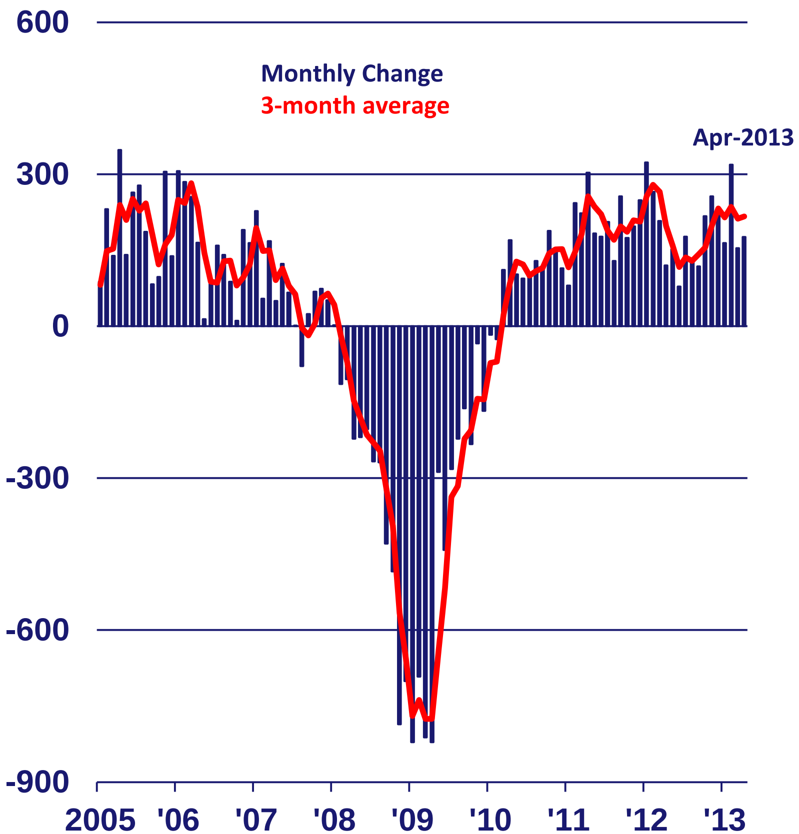
Kaufmann & Fabry

Outlook Summary

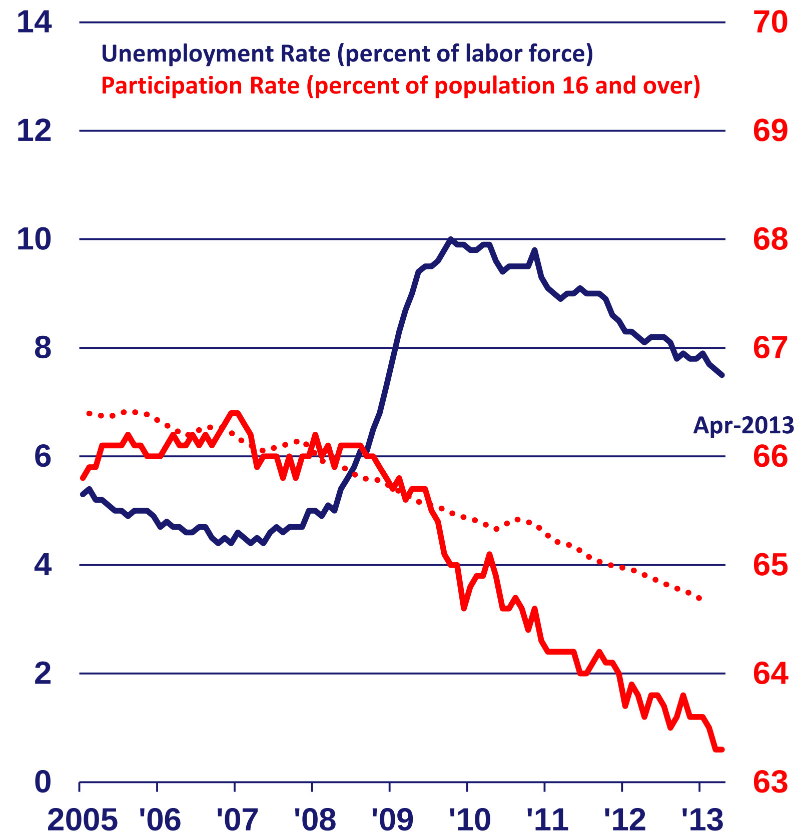
- **So far in 2013 we've seen:**
  - **Some improvement in labor market conditions, consumer spending, and housing markets**
  - **Business capital expenditures growing, but modestly**
  - **Fiscal restraint**
  - **Inflation is low**
- **Most forecasters see GDP growth picking up 2013:H2 and 2014**
- **Still have a way to go before economy returns to potential**
- **Monetary policy is accommodative and expected to be so for some time**

Labor Market

Private Nonfarm Payroll Employment
(change, thousands)

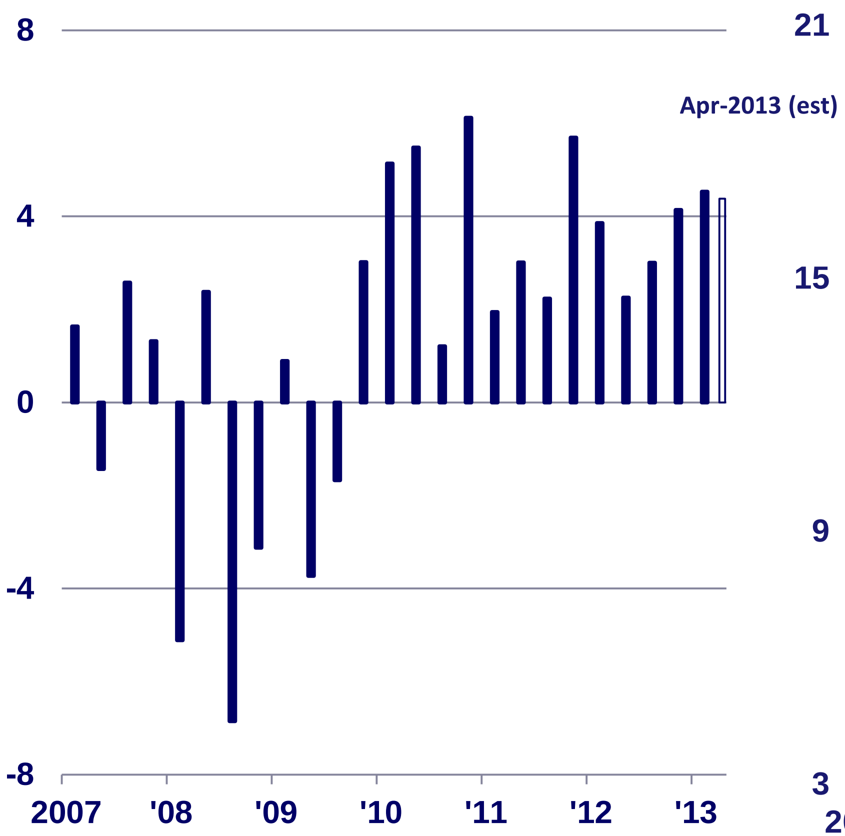


Unemployment and Participation Rates
(percent)

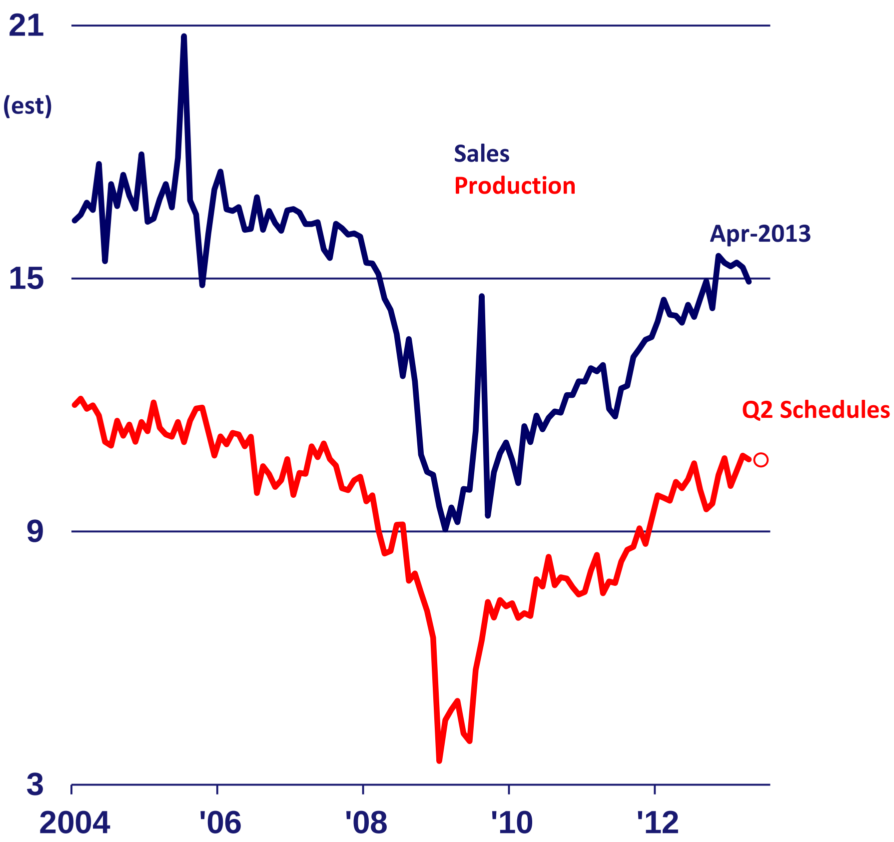


Consumer Spending Rising Moderately

Real Retail Sales excluding Autos
(percent increase, annual rate)

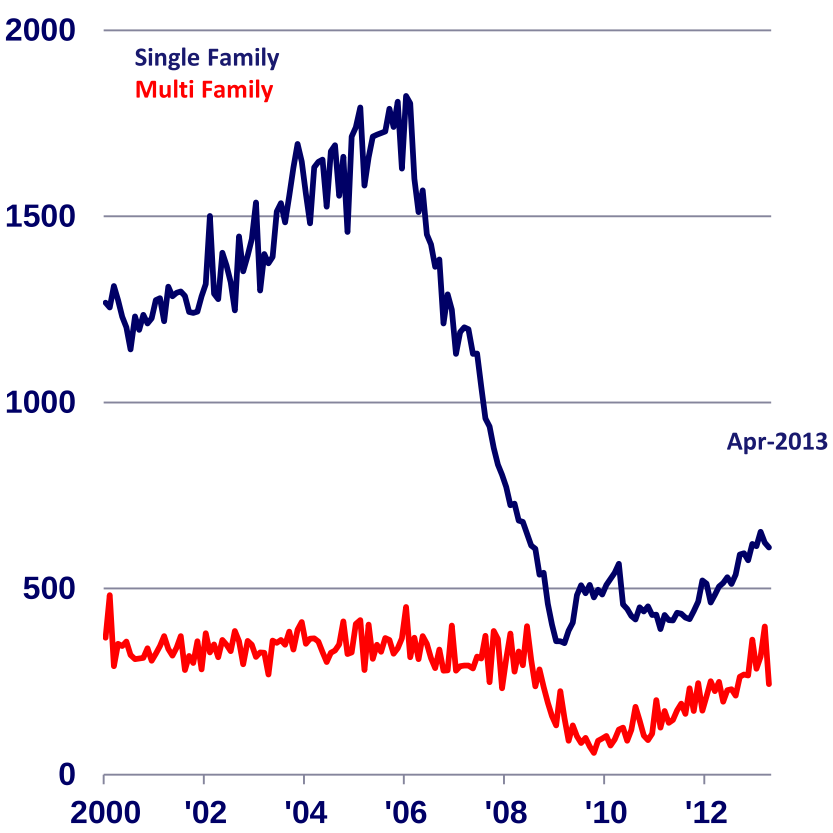


Light Vehicle Sales and Production
(millions of autos and light trucks, SAAR)

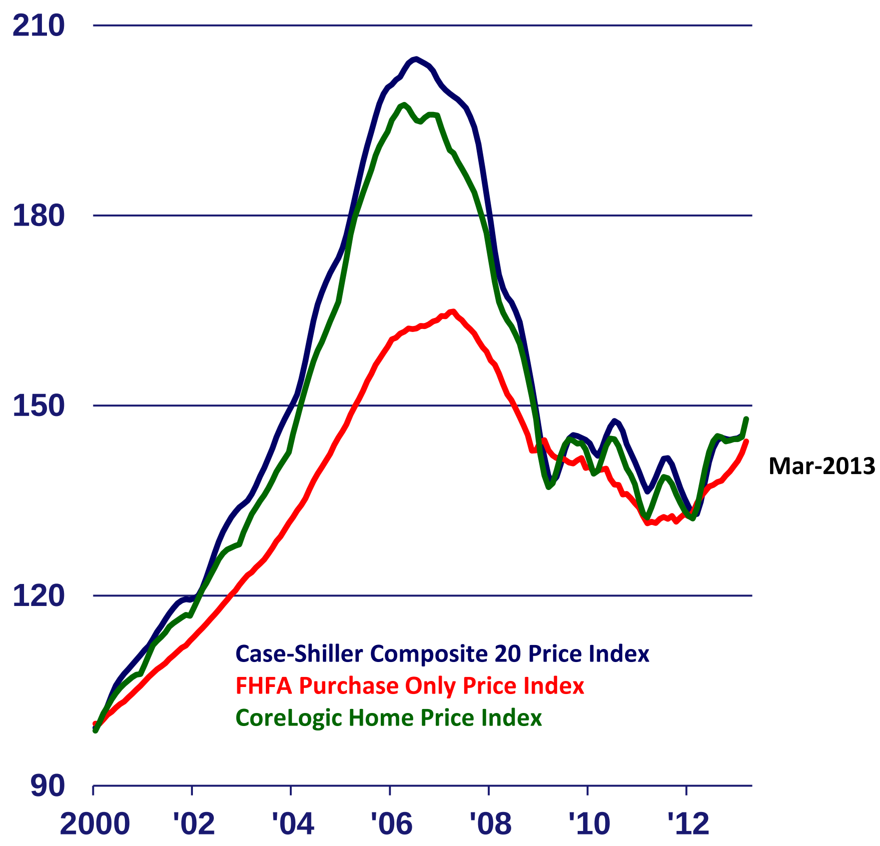


Residential Investment Gradually Improving

Housing Starts
(millions of units, annual rate)

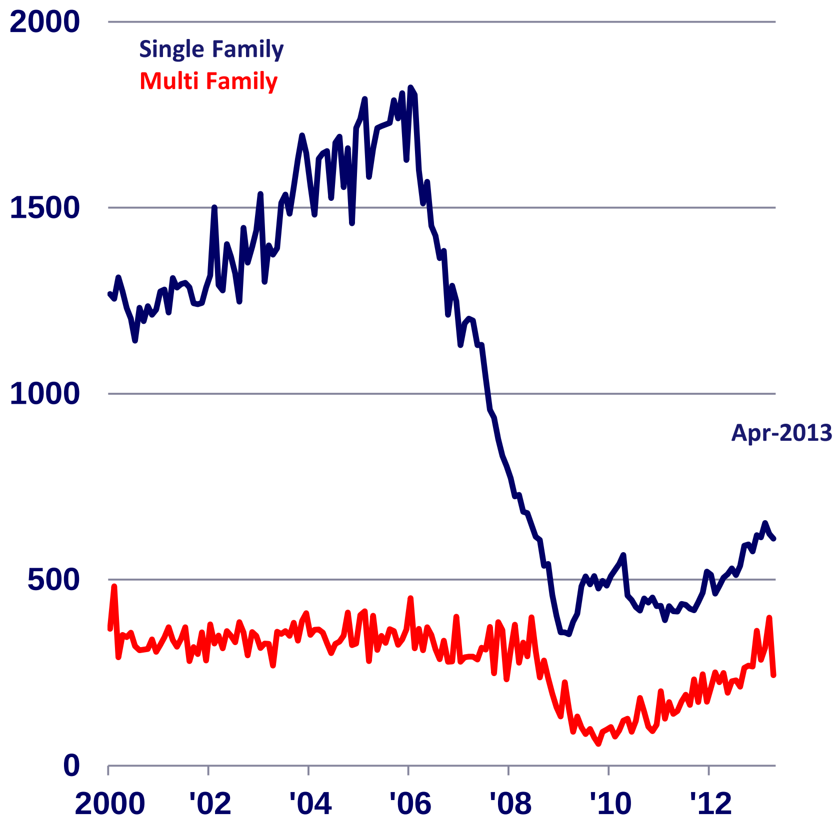


Home Price Indexes
(Q1-2000=100)



Improving Household Sector Spending

Housing Starts
(millions of units, annual rate)



Light Vehicle Sales and Production
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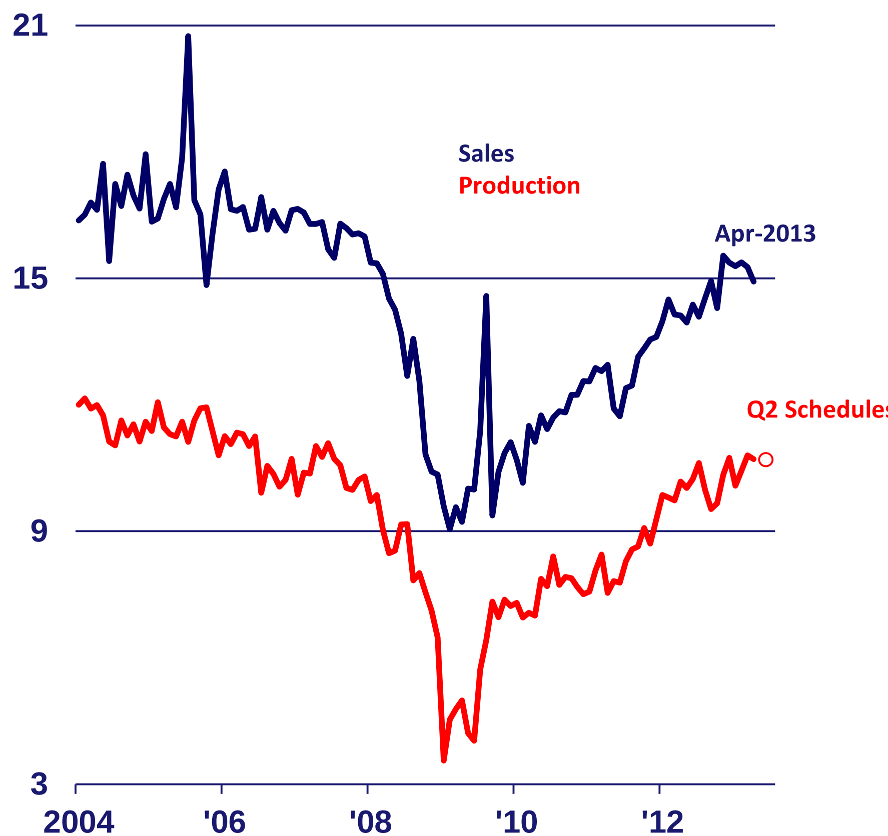
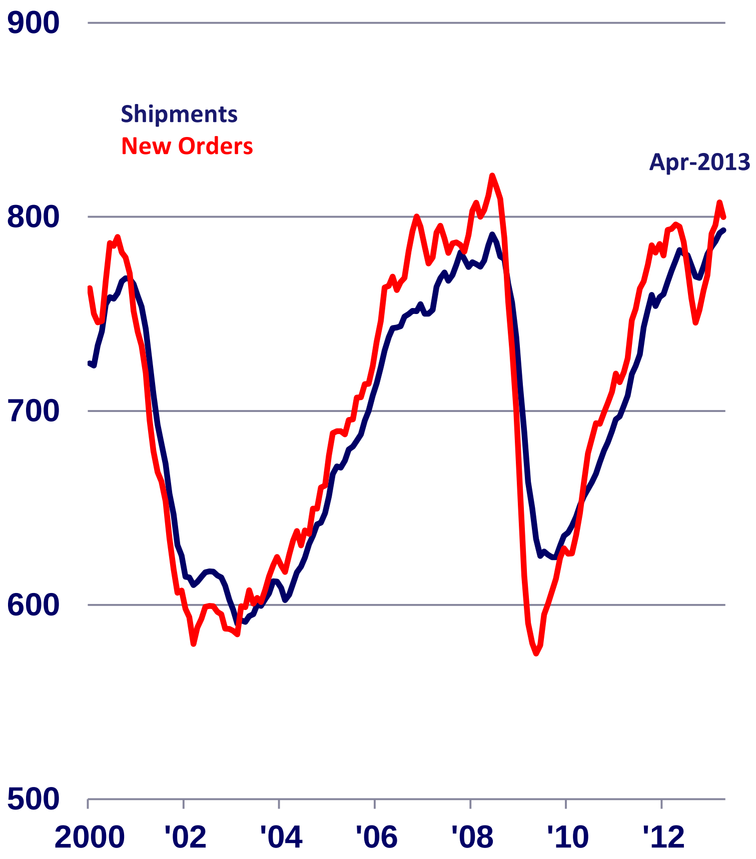
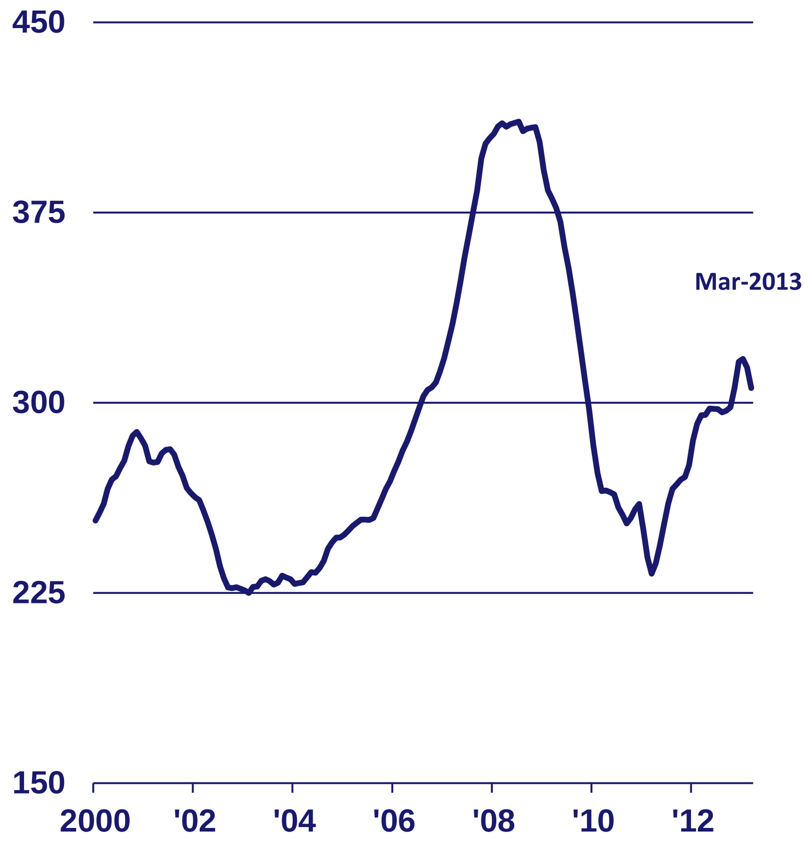


Nonresidential Investment

Nondefense Capital Goods ex. Aircraft
(Bils. $, 3-month MA)



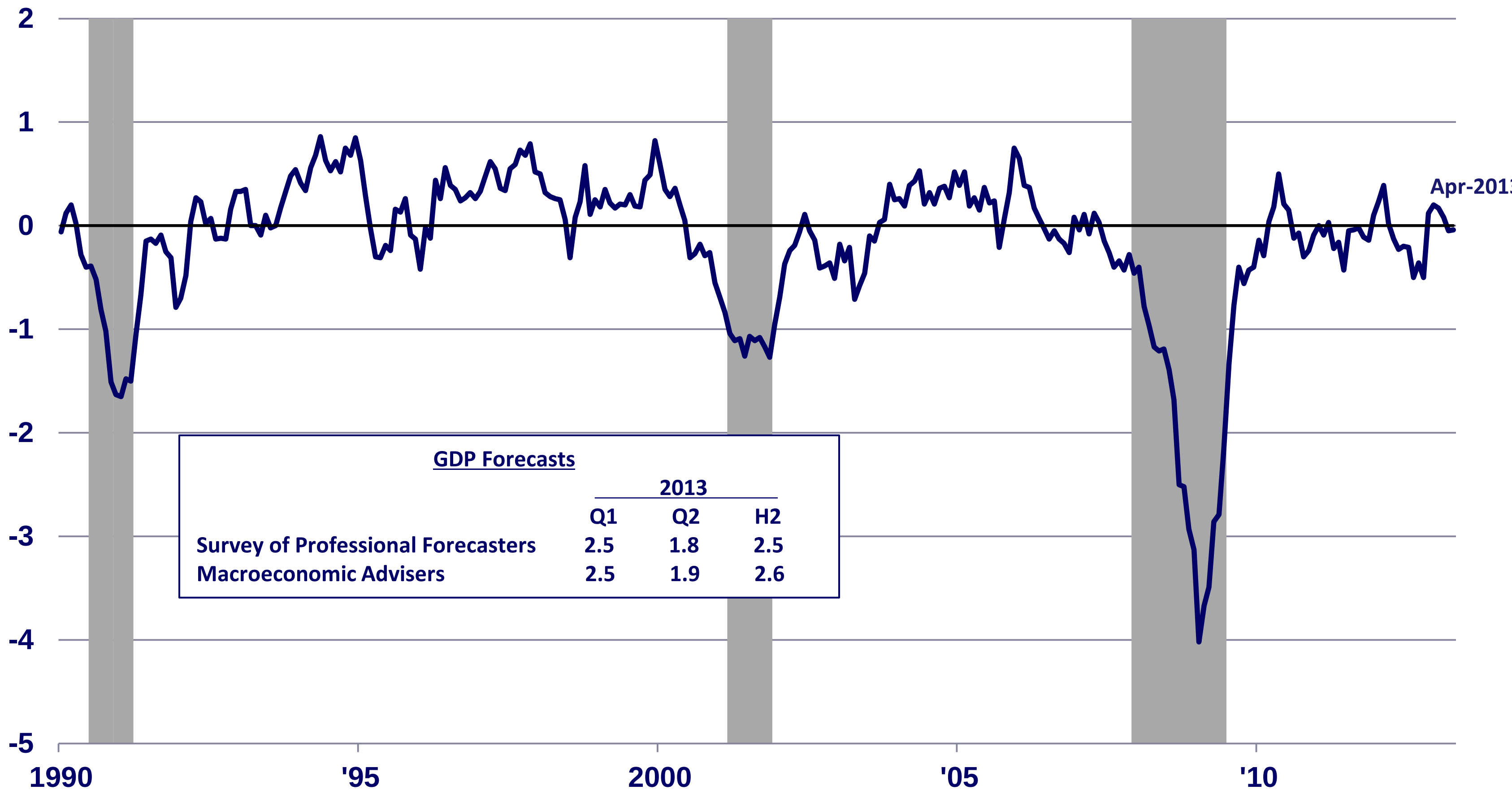
Nonresidential Private Construction
(Bils. $, 3-month MA)



Economic Activity Indicators: A Summary

Chicago Fed National Activity Index

(standard deviation from trend, 3-month average)

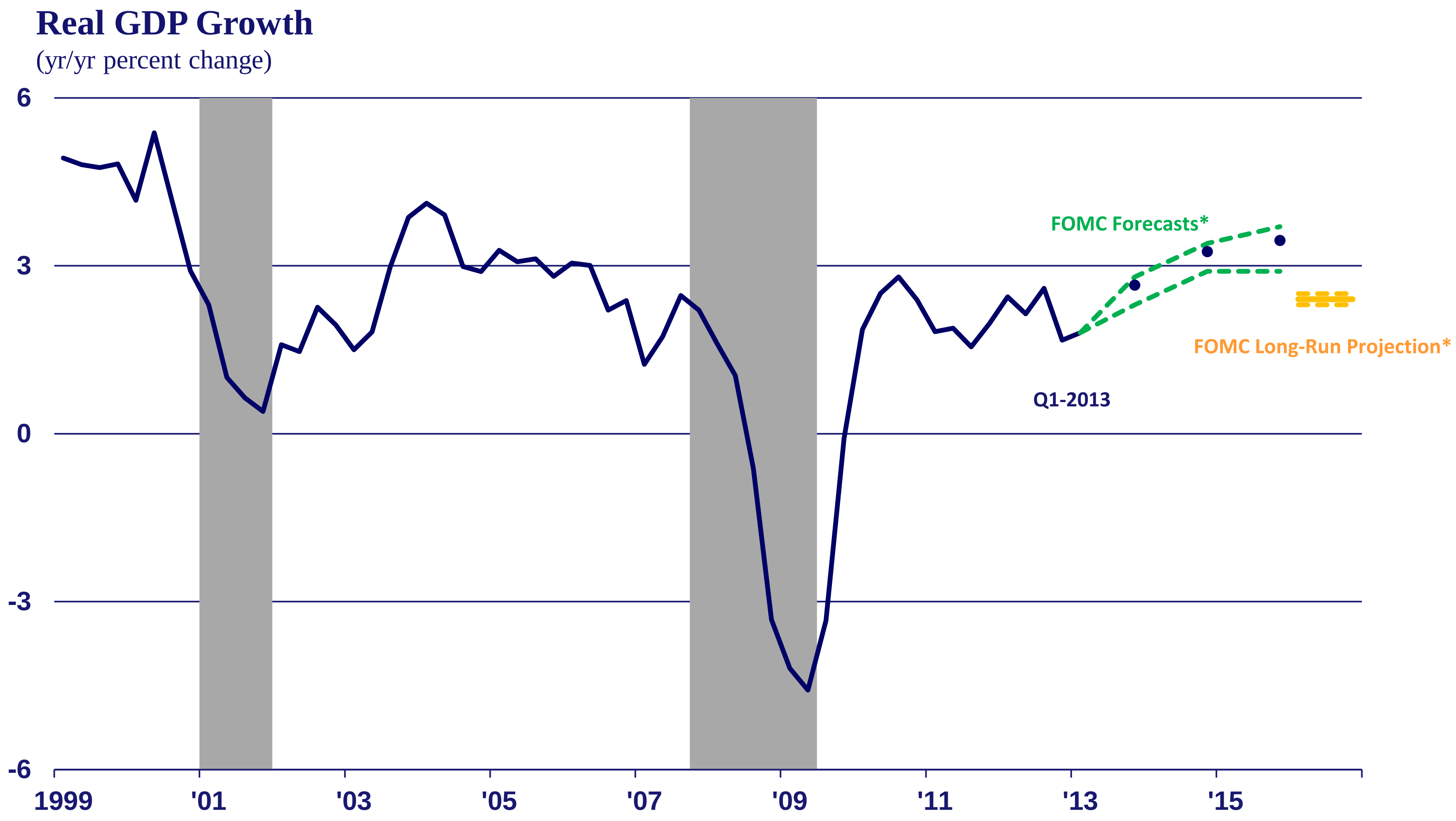


Shading corresponds with NBER recessions

GDP Forecasts

	2013 Q1	2013 Q2	2013 H2
Survey of Professional Forecasters	2.5	1.8	2.5
Macroeconomic Advisers	2.5	1.9	2.6

GDP Growth Forecast

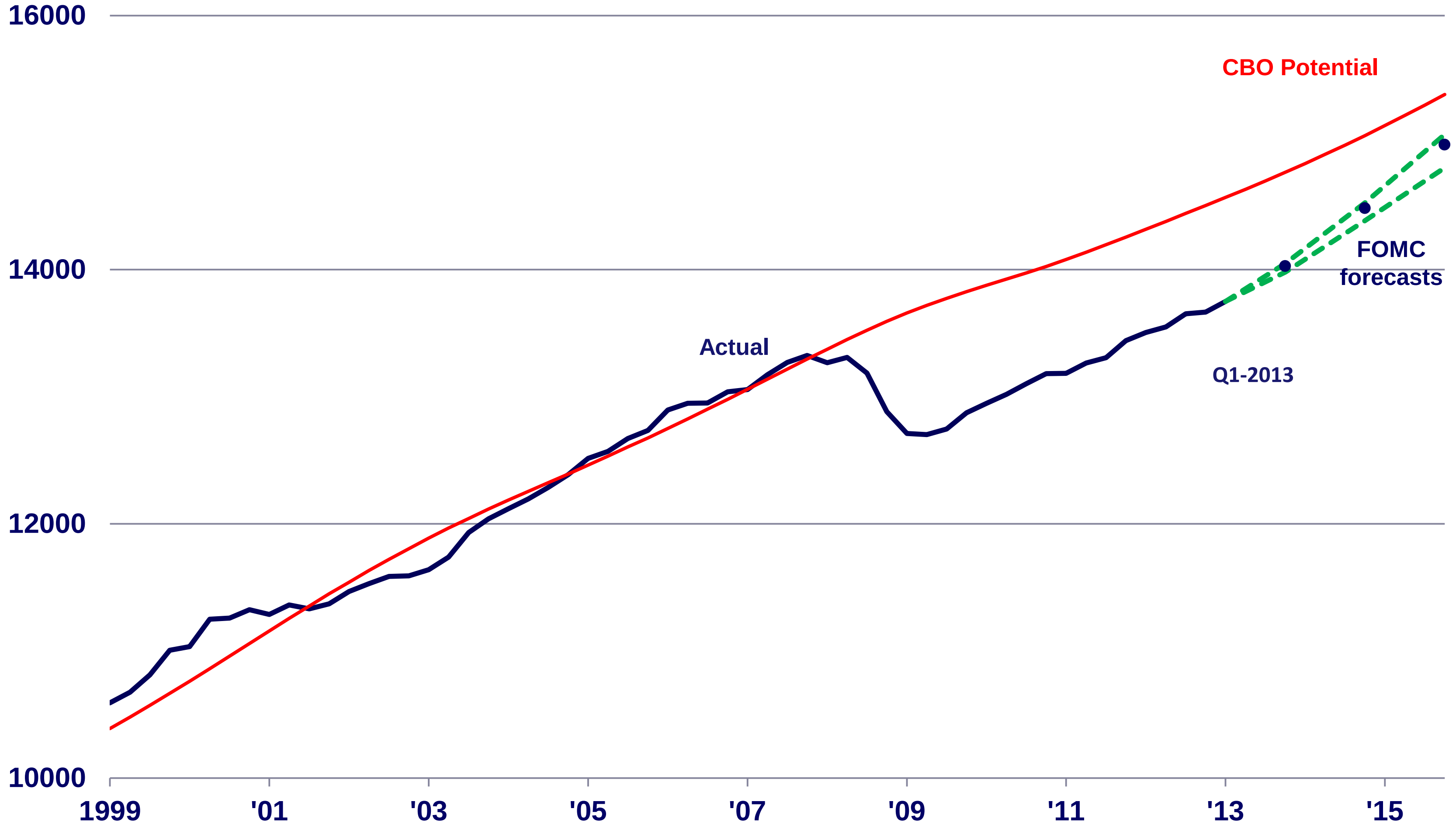


*Central tendency and "median" of Q4-toQ4 forecasts made by the FOMC participants, March 2013

GDP Level Forecast

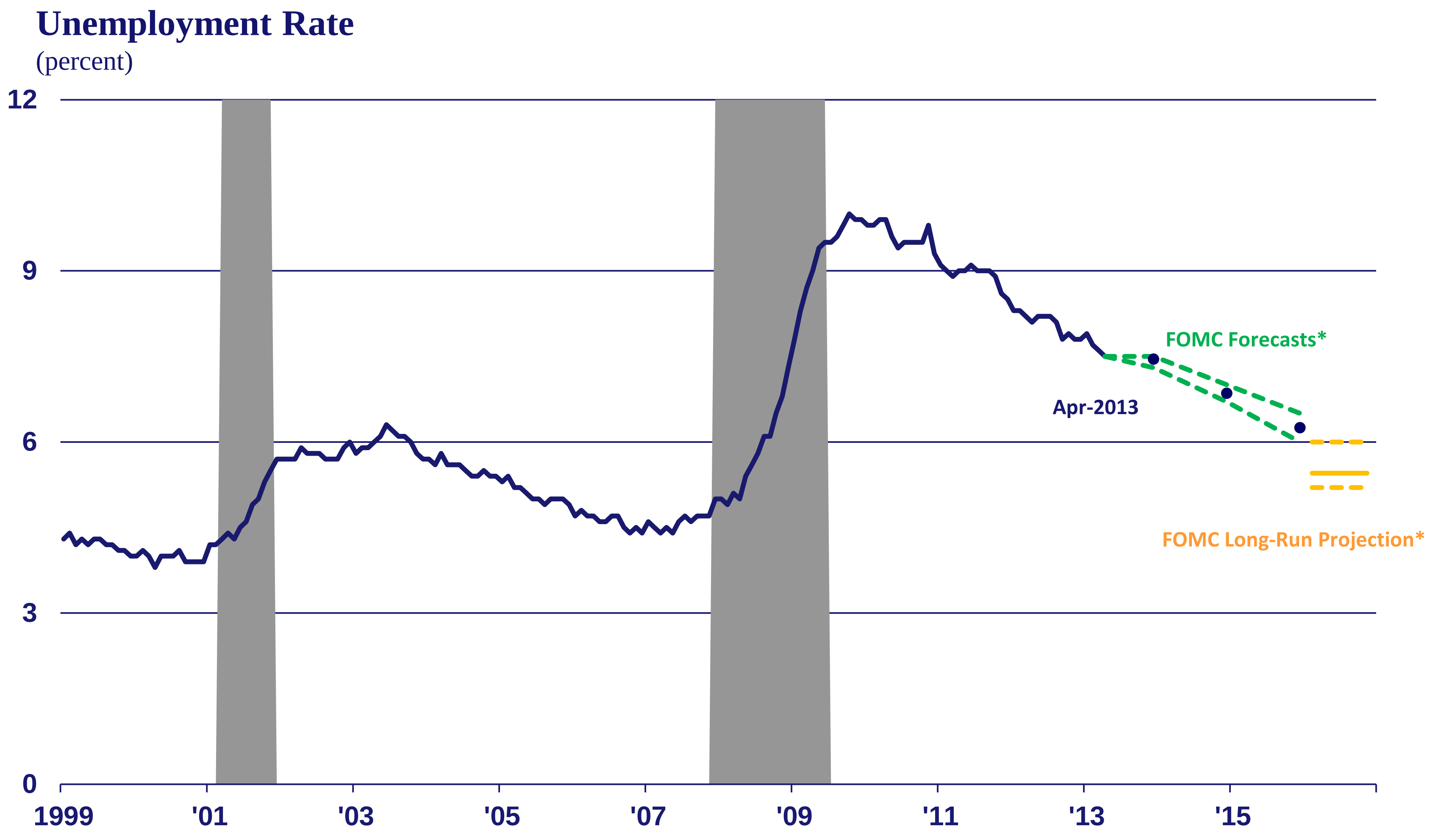
Actual and Potential GDP

(Bils. 2005$)



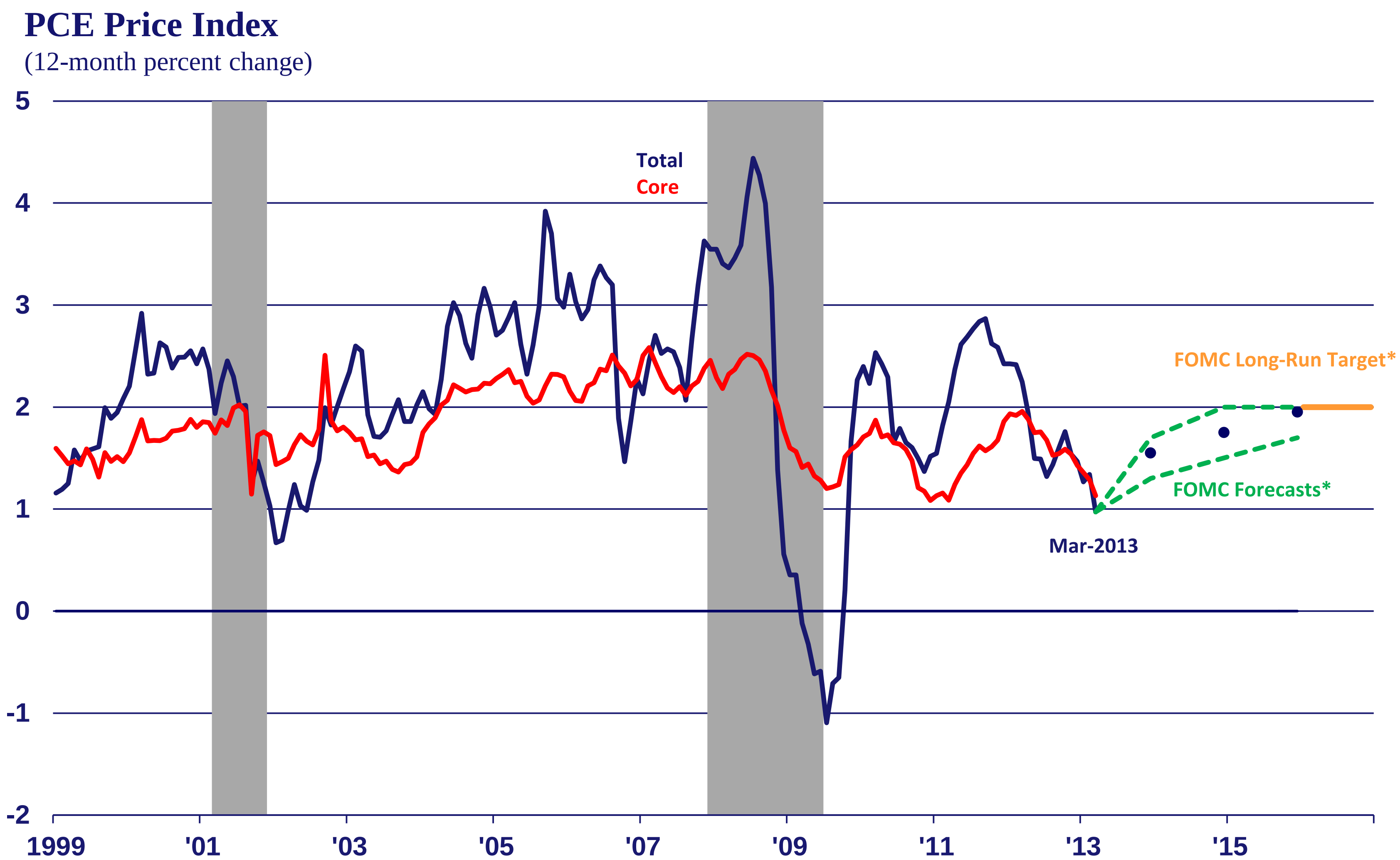
**Central tendency and "median" of Q4-toQ4 forecasts made by the FOMC participants, March 2013*

Unemployment Forecast



**Central tendency and "median" of Q4 forecasts made by the FOMC participants, March 2013*

Inflation Forecast

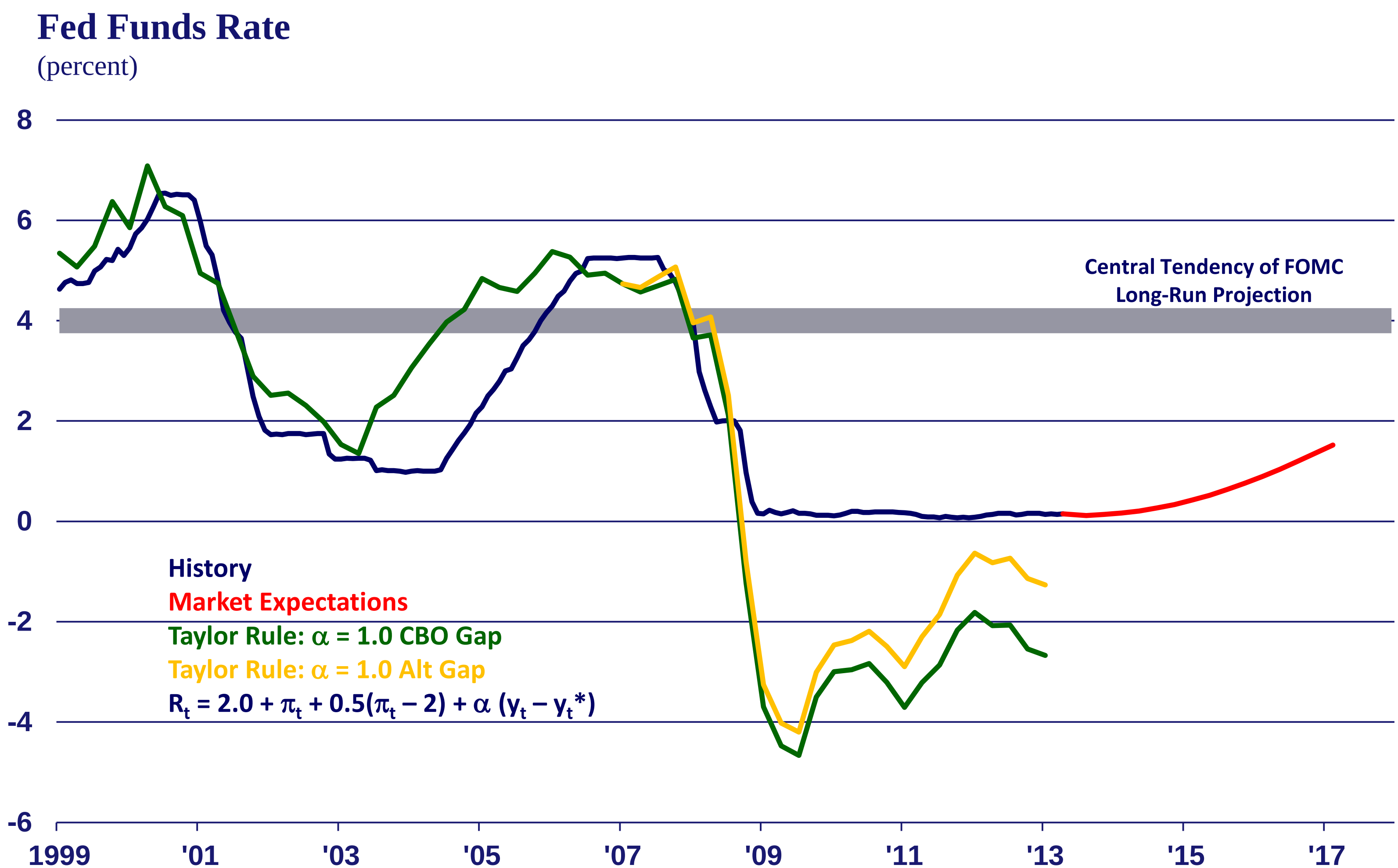


**Central tendency and "median" of Q4-toQ4 forecasts made by the FOMC participants, March 2013*

Why Has the Recovery Been so Disappointing?

- **Long-lasting damage from the recession**
  - Difficult balance sheet restructuring by households, nonfinancial businesses and financial institutions
  - Scars from long-term unemployment, low capital formation
- **Additional shocks**
  - European crisis
  - Fiscal issues in U.S.
- **Business and consumer pessimism and uncertainty**
  - Precautionary behavior
- **Monetary policy runs into the zero lower bound (ZLB)**

Policy Rate Constrained By Zero Lower Bound



Taylor Rules use core inflation. Alternative gap subtracts 0.3 percentage point a year from CBO potential growth over 2008-2012.

Monetary Policy At The Zero Lower Bound

- **What to do when can't cut current short-term rate any further?**
- **Lower longer-term interest rates**
- **Long-term rates = average expected future short rates plus term premia**
  - **Option 1: Lower expectations of average future short-term rates through "forward guidance" on future policy rates**
  - **Option 2: Buy long-term bonds**
    - **Reduce term premium**
    - **Reinforces option 1**

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Option 1: Forward Guidance on Funds Rate

- **Economic conditions likely to warrant exceptionally low level of the funds rate:**
  - **December 2008: "for some time"**
  - **March 2009: "for an extended period"**
  - **August 2011: "at least through mid 2013"**
  - **January 2012: "at least through late 2014"**

Forward Guidance on Funds Rate cont.

- **September 2012: "…the Committee expects that a highly accommodative stance of monetary policy will remain appropriate <u>for a considerable time after the economic recovery strengthens</u>….at least through mid-2015."**

  - **Make up for period of constraint by ZLB by committing to a lower rate path for rates in the future then you would "normally" do under discretion.**

Forward Guidance on Funds Rate cont.

- **December 2012: "Economic conditions likely to warrant exceptionally low level of the funds rate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half of a percentage point above the Committee's 2 percent long-run goal, and longer-term inflation expectations continue to be well-anchored."**

Forward Guidance on Funds Rate: Woodford

"If such an explicit criterion made it clear that short-term interest rates will not immediately be increased as soon as a Taylor rule descriptive of past FOMC behavior would justify a funds rate above 25 basis points, this would provide a reason for market participants to expect easier future monetary and financial conditions than they may currently be anticipating, and that should both ease current financial conditions and provide an incentive for increased spending. An example of a suitable target criterion would be a commitment to return nominal GDP to the trend path that it had been on up until the fall of 2008."

Source: Michael Woodford, "Methods of Policy Accommodation at the Interest-Rate Lower Bound," Jackson Hole Symposium, September 16, 2012.

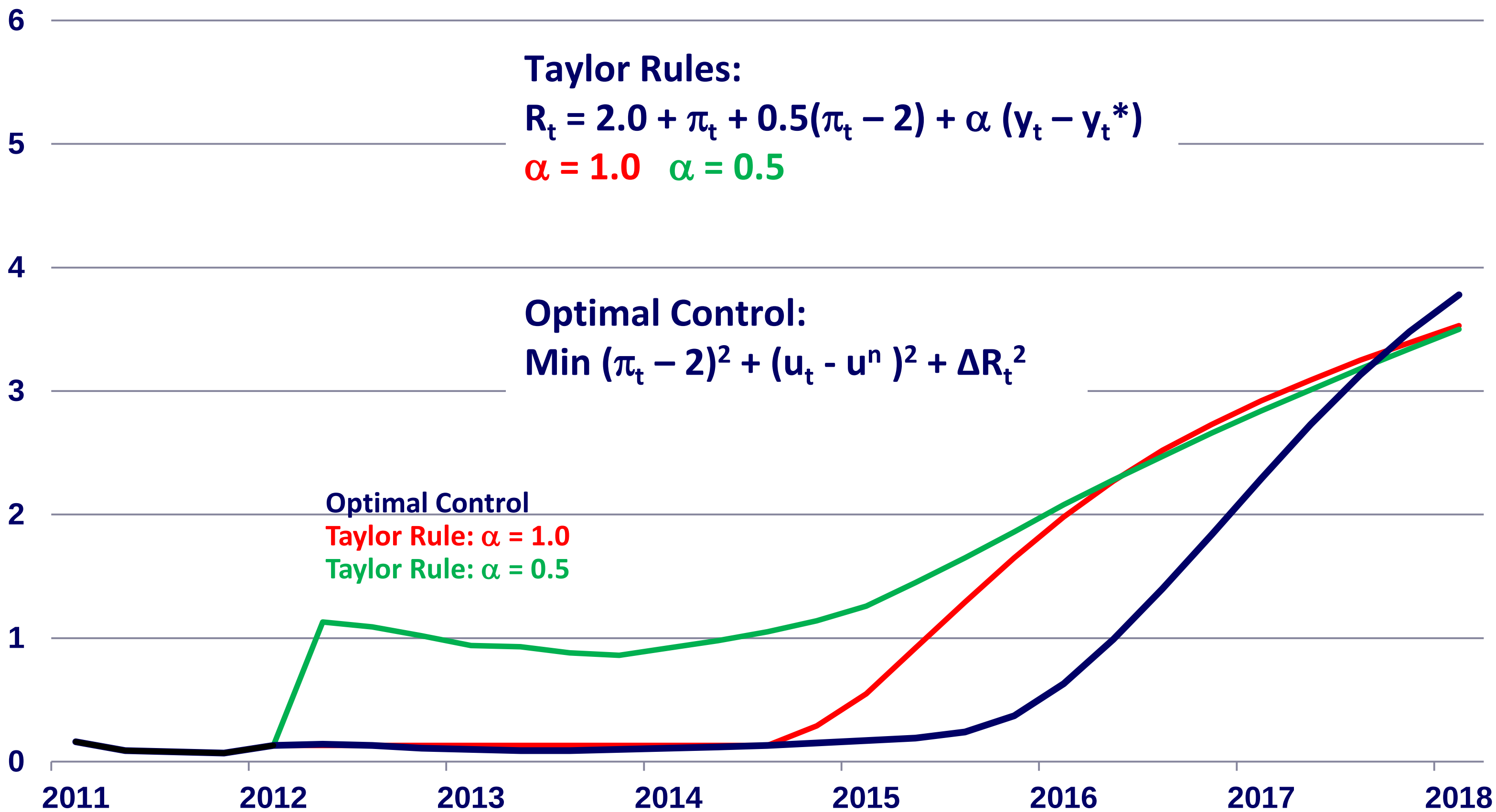
Forward Guidance on Funds Rate: Woodford

"Standard New Keynesian models imply that a higher level of expected real income or inflation in the future creates incentives for greater real expenditure and larger price increases now; but in the case of a conventional interest-rate reaction function for the central bank, short-term interest rates should increase, and the disincentive that this provides to current expenditure will attenuate (without completely eliminating) the sensitivity of current conditions to expectations. If nominal interest rates instead remain unchanged, the degree to which higher expected real income and inflation later produce higher real income and inflation now is amplified…. it is precisely when the interest-rate lower bound is expected to be a binding constraint for some time to come that expectations about the conduct of policy after the constraint ceases to bind should have a particularly large effect on current economic conditions…"

Source: Michael Woodford, "Methods of Policy Accommodation at the Interest-Rate Lower Bound," Jackson Hole Symposium, September 16, 2012.

Optimal Control vs. Taylor Rules

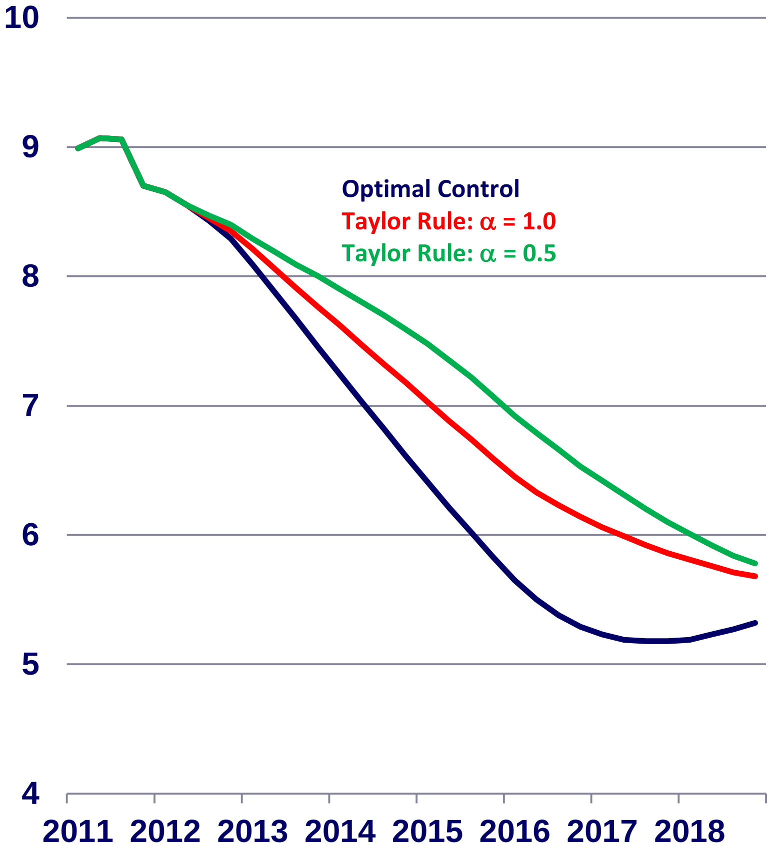
Federal Funds Rate
(percent)



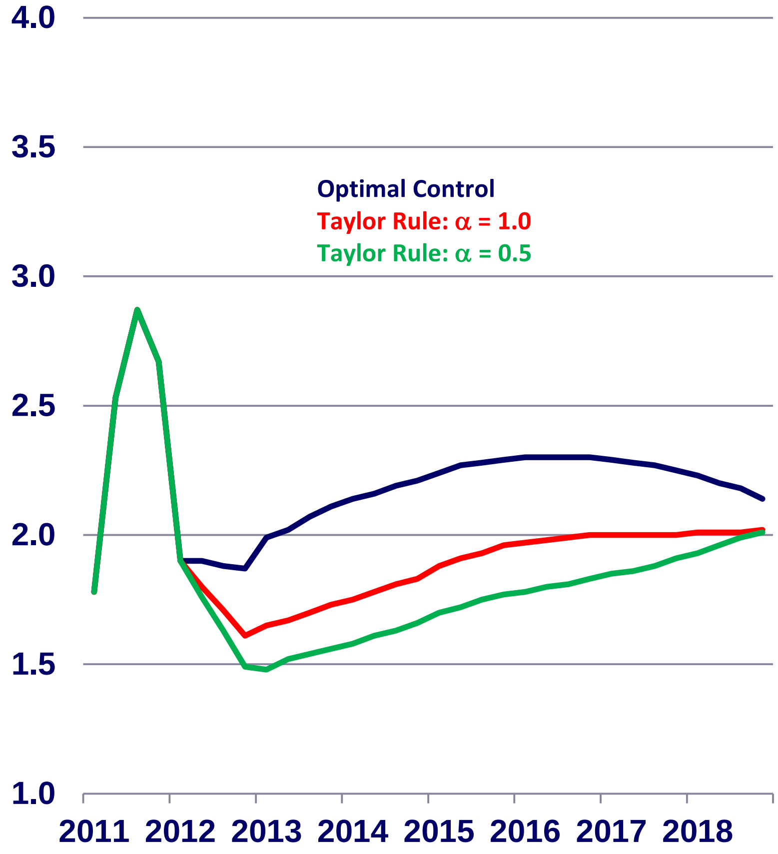
Source: Janet L. Yellen, "Perspectives on Monetary Policy," Boston, June 6, 2012

Forecasts Under Alternative Policy Rules

Unemployment Rate
(percent)

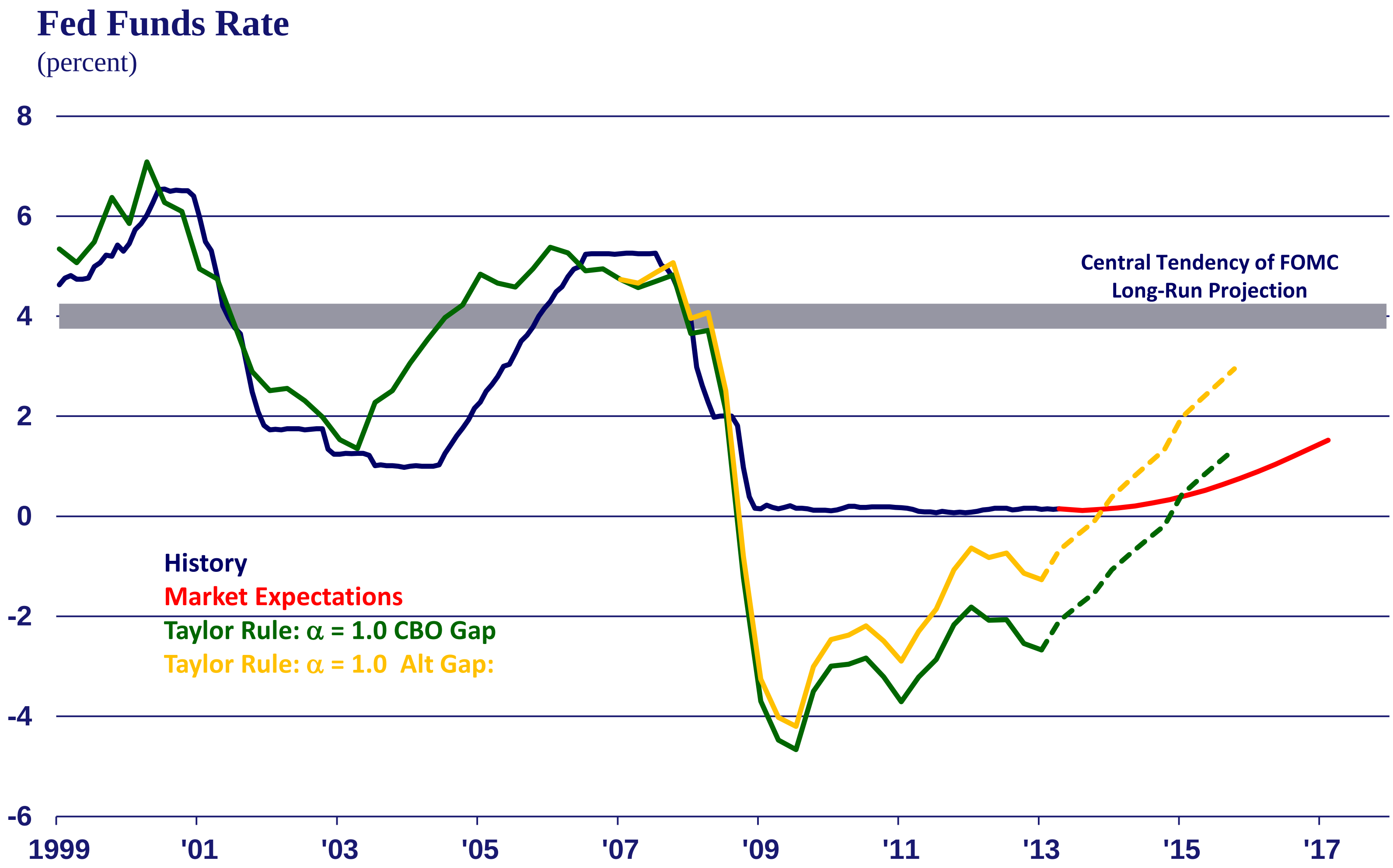


PCE Inflation
(4-quarter percent change)



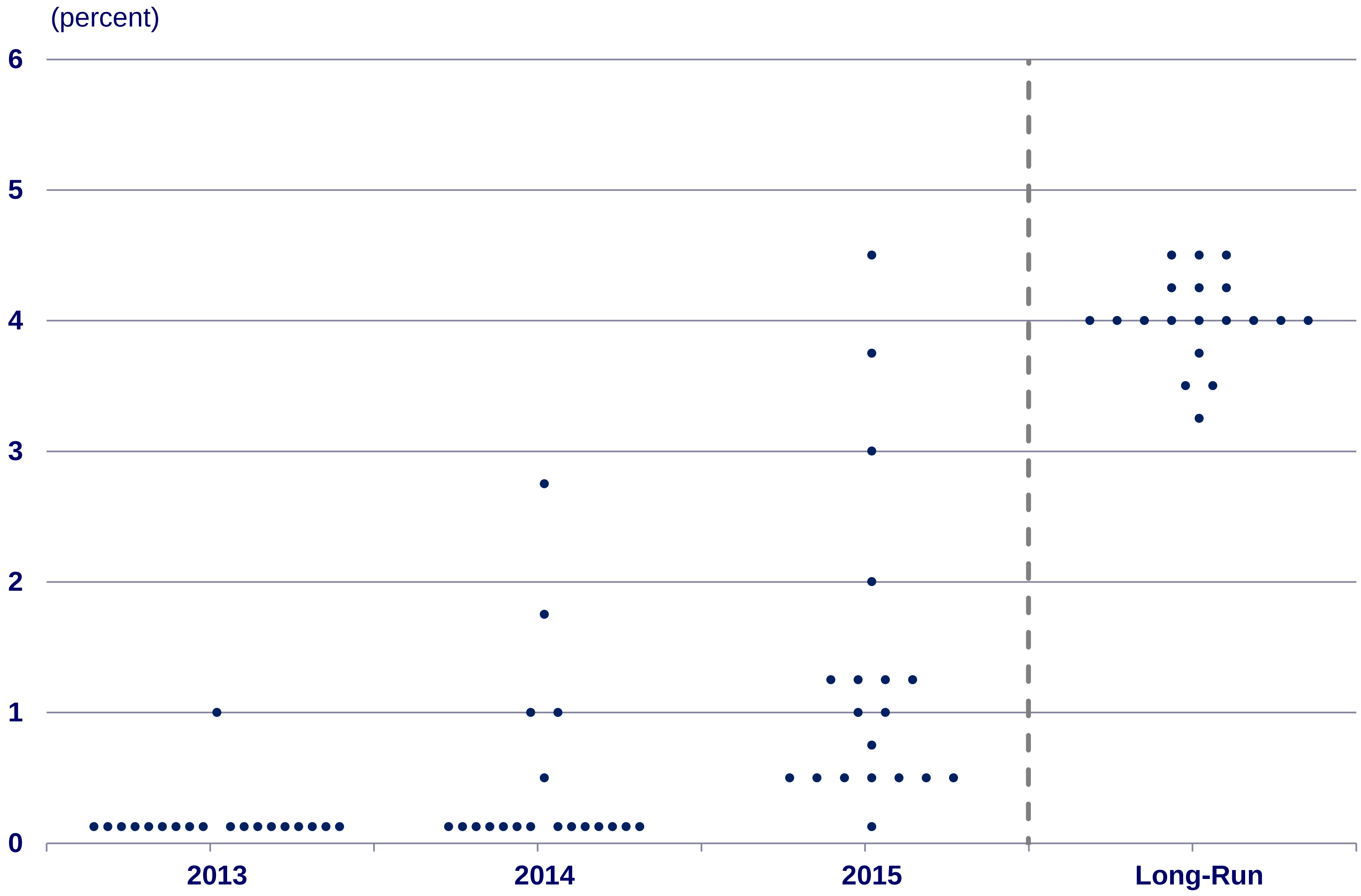
Source: Janet L. Yellen, "The Economic Outlook and Monetary Policy," New York, April 11, 2012

Alternative Policy Rates Going Forward



Taylor rules constructed using "median" March 2013 FOMC GDP and core inflation forecasts; gaps based on CBO potential and an alternative gap calculated by subtracting 0.3 percentage point a year from CBO potential growth over 2008-2012.

Target Federal Funds Rate at Year End

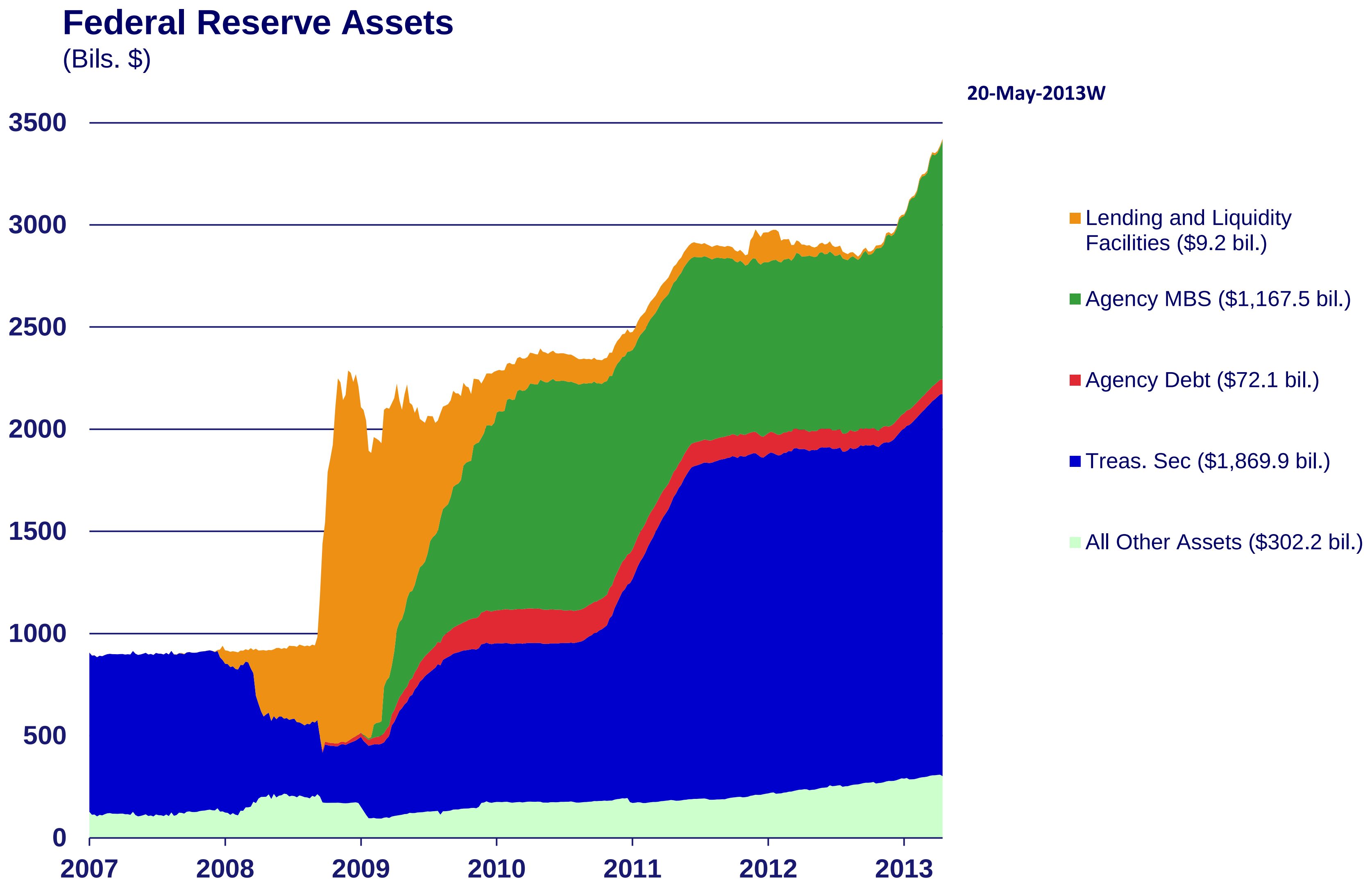


Source: Projections made at the March 19-20, 2013 FOMC meeting, available at www.federalreserve.gov

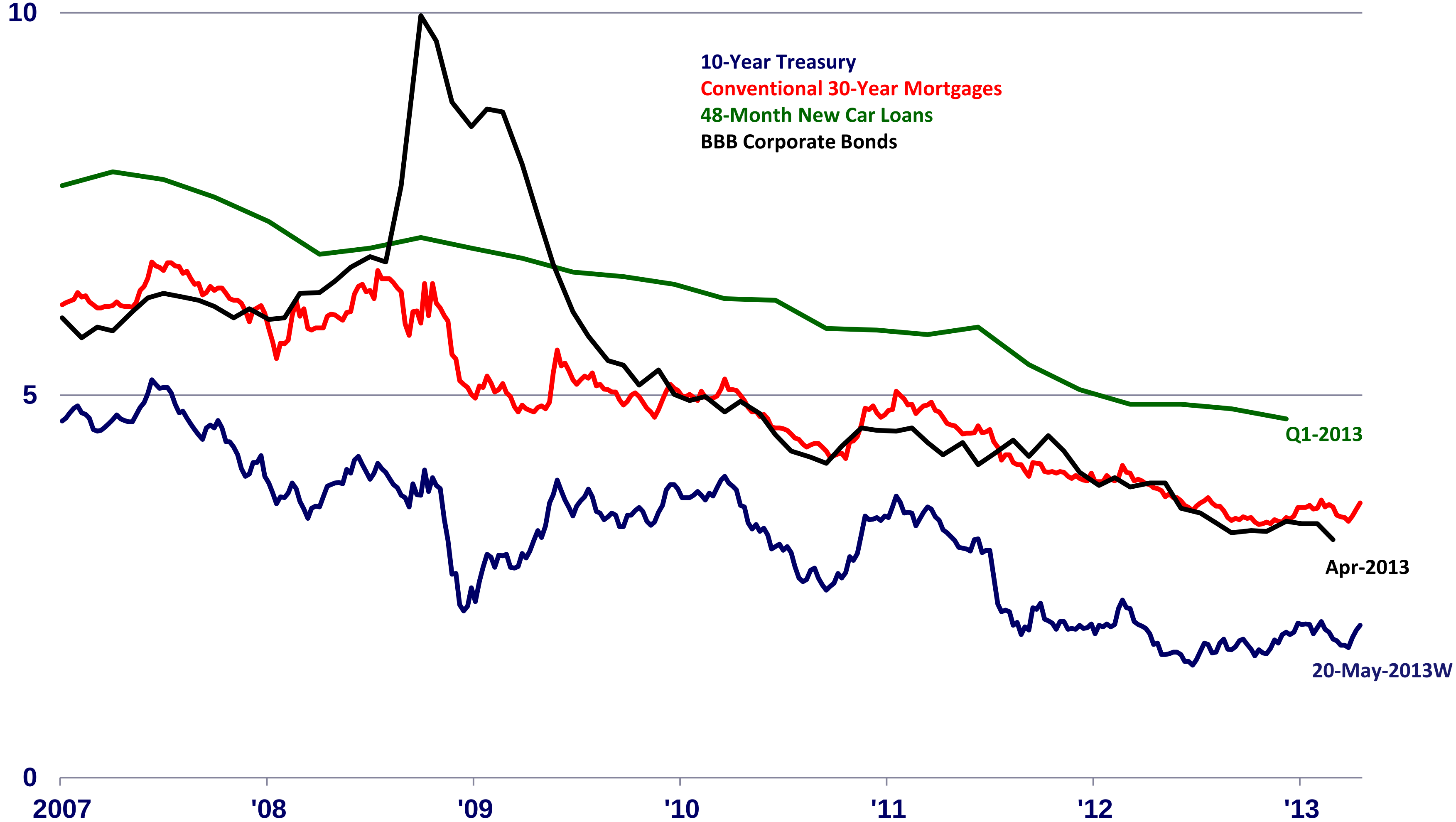
Option 2: Large Scale Asset Purchases (LSAP)

- **LSAP I (11/08): $600 bill agency debt/MBS**
- **LSAP Ia (3/09): $850 bill agency debt/MBS; $300 bill Treas.**
- **LSAP II (11/10): $600 bill Treas.**
- **MEP (9/11): Exchange $400 bill short-term for $400 bill long-term Treas.**
- **MEP extension (6/12): Extend MEP through end of 2012**
- **LSAP III (9/12): $40 bill per month MBS, no fixed end date -- "until labor market outlook improved substantially"**
- **LSAP IIIa (12/12): $40 bill per month MBS and $45 bill per month long-term Treas; no fixed end date**

Large-Scale Asset Purchases cont.



Long-Term Rates Down Significantly

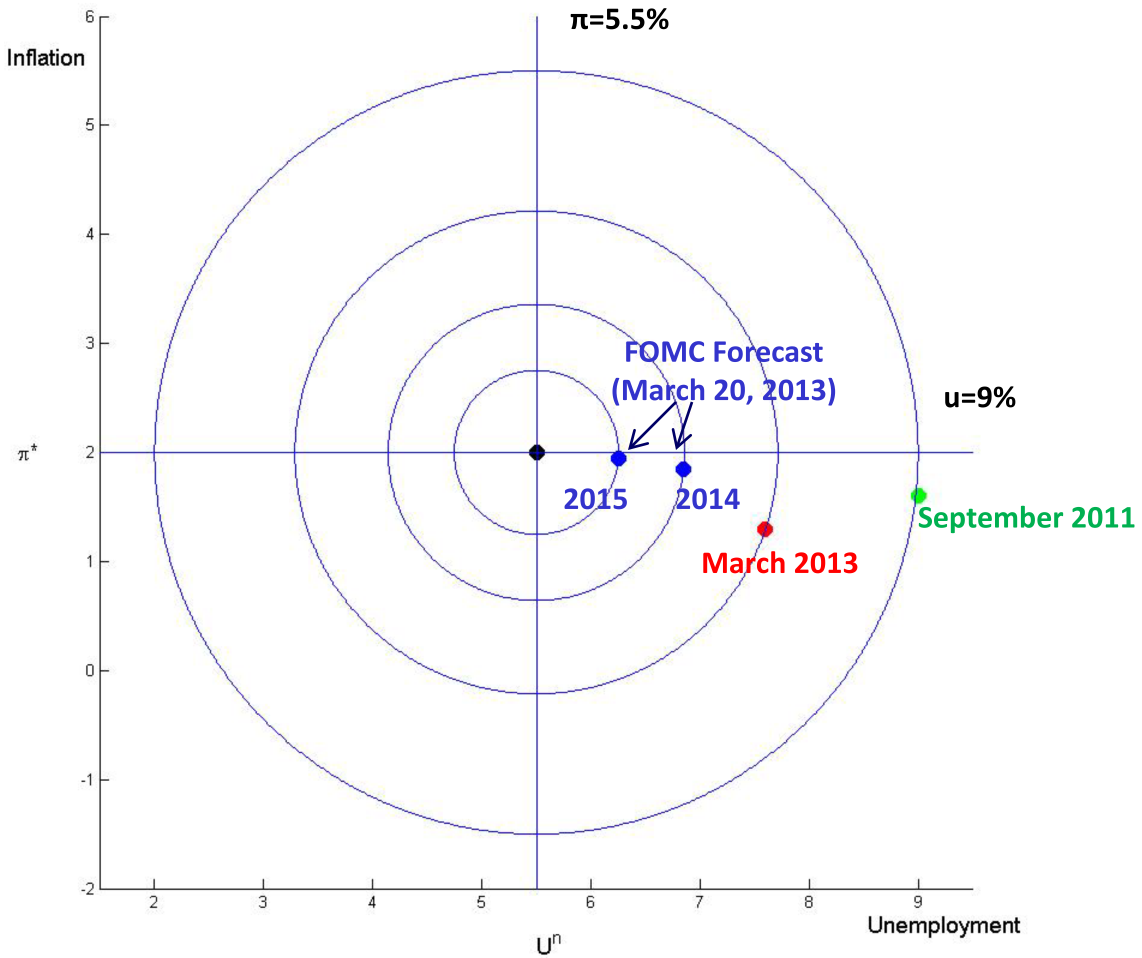


A Policy Loss Function

Loss Function
(percent)

$$L = (\pi - \pi^*)^2 + 0.25\,(y - y^*)^2$$

$$L = (\pi - 2)^2 + (u - u^n)^2$$



Source: Charles Evans, "A Mainstream Case for Monetary Accommodation," Boston, April 13, 2013