Central Bank Modelling: Retrospect and Prospects

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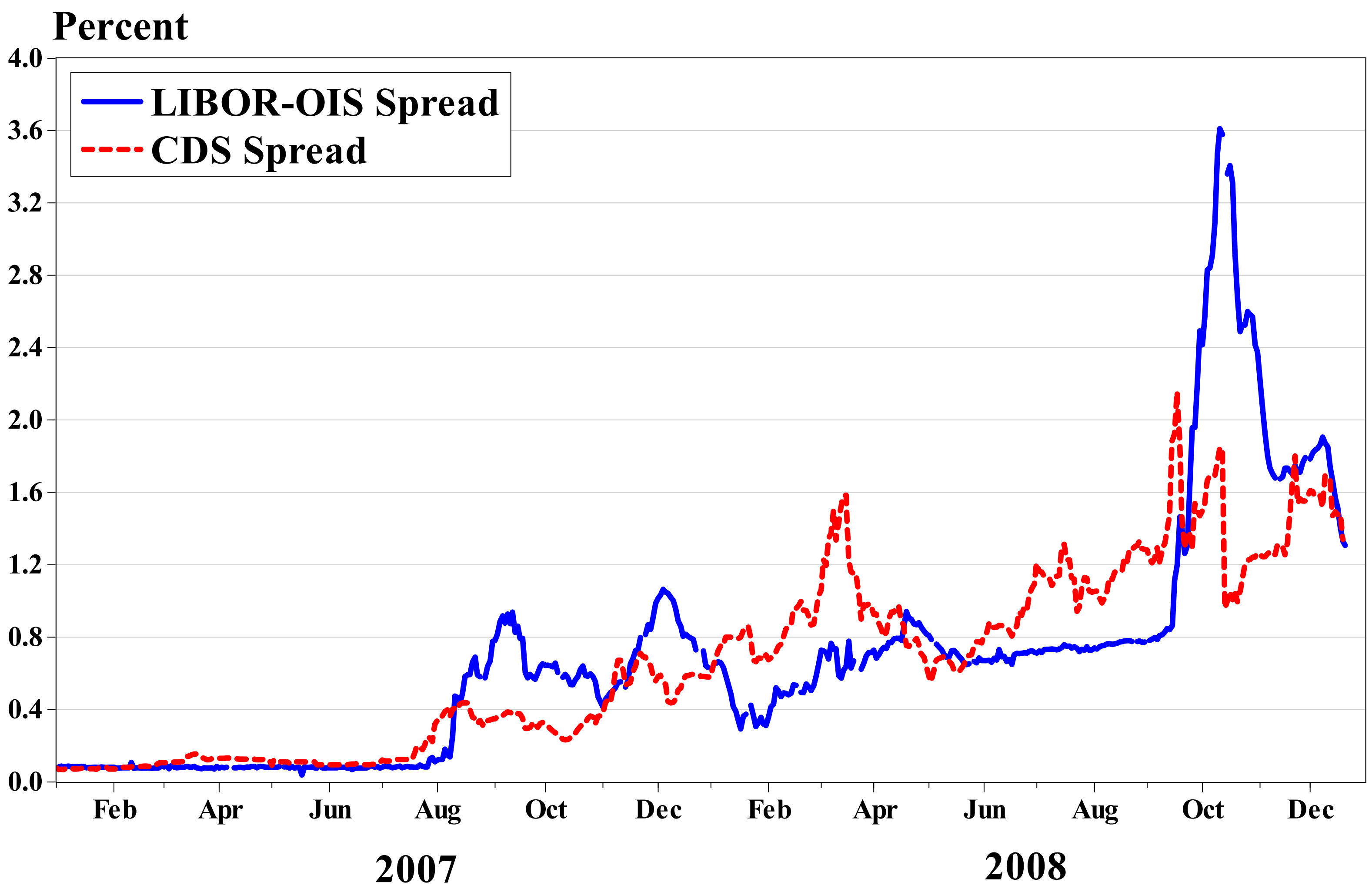
The Federal Reserve in 2005-2008

- **During 2005-06, officials at the Federal Reserve and other agencies overlooked warning signs regarding the risk of a collapse in house prices.**
- **During autumn 2007 and early 2008, Fed officials misattributed the widening of interbank spreads to liquidity factors rather than counterparty risk.**
- **The FOMC met on Tues. 16 Sept. 2008, two days after Lehman's failure, but still did *not* perceive that the U.S. might be heading into a financial crisis and a severe economic downturn.**

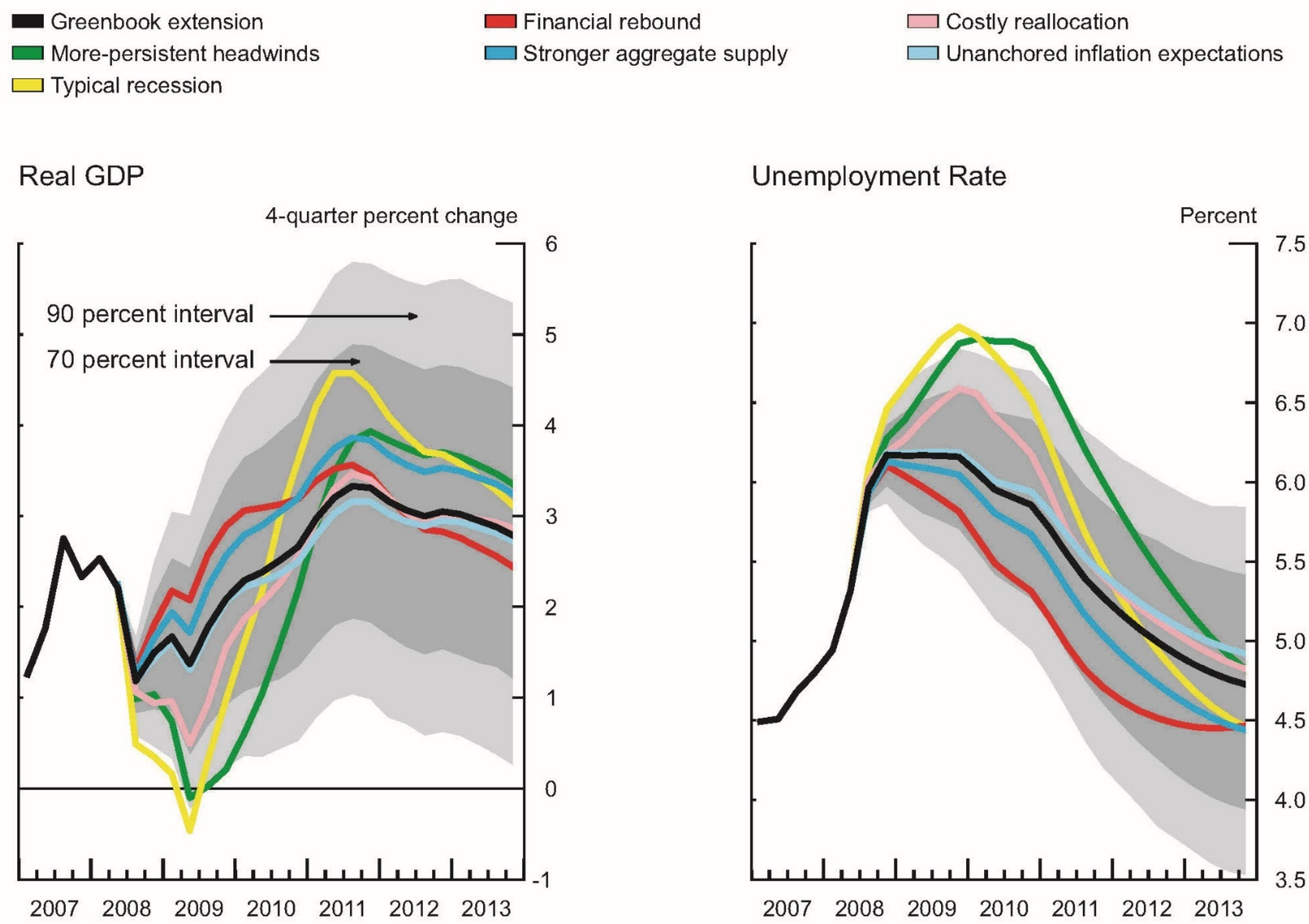
Strains in U.S. Interbank Markets



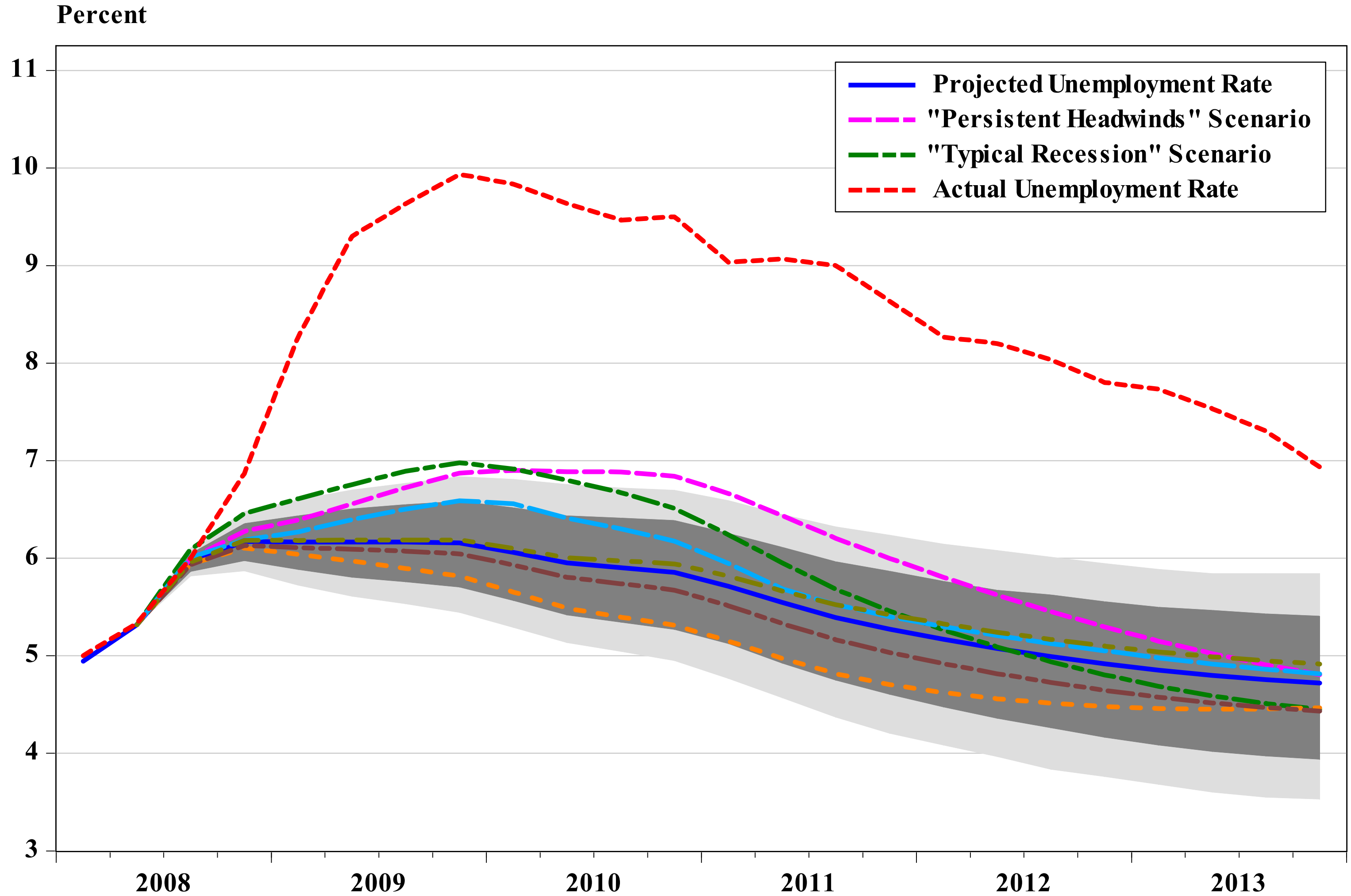
FOMC Statement, Tuesday 16 Sept. 2008

"Strains in financial markets have increased significantly and labor markets have weakened further....Tight credit conditions, the ongoing housing contraction, and some slowing in export growth are likely to weigh on economic growth over the next few quarters....The Committee expects inflation to moderate later this year.... The downside risks to growth and upside risks to inflation are both of significant concern."

FOMC Greenbook Alternative Scenarios as of 10 Sept. 2008



FOMC Greenbook Alternative Scenarios as of 10 Sept. 2008



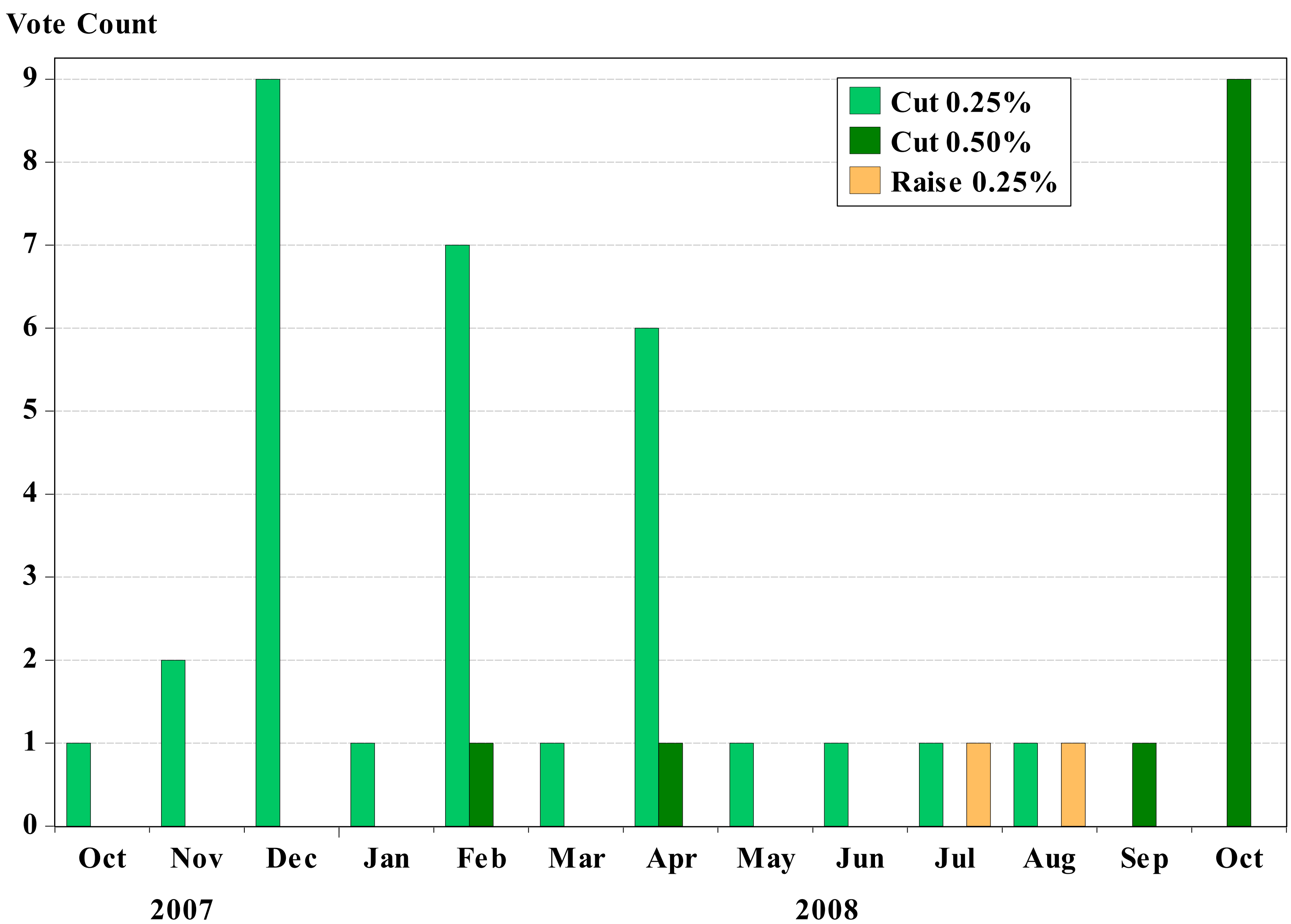
Note: Dark shading and light shading denote confidence intervals of 70 percent and 90 percent, respectively, based on stochastic simulations of the FRB/US model.

A Lone Voice at the Bank of England

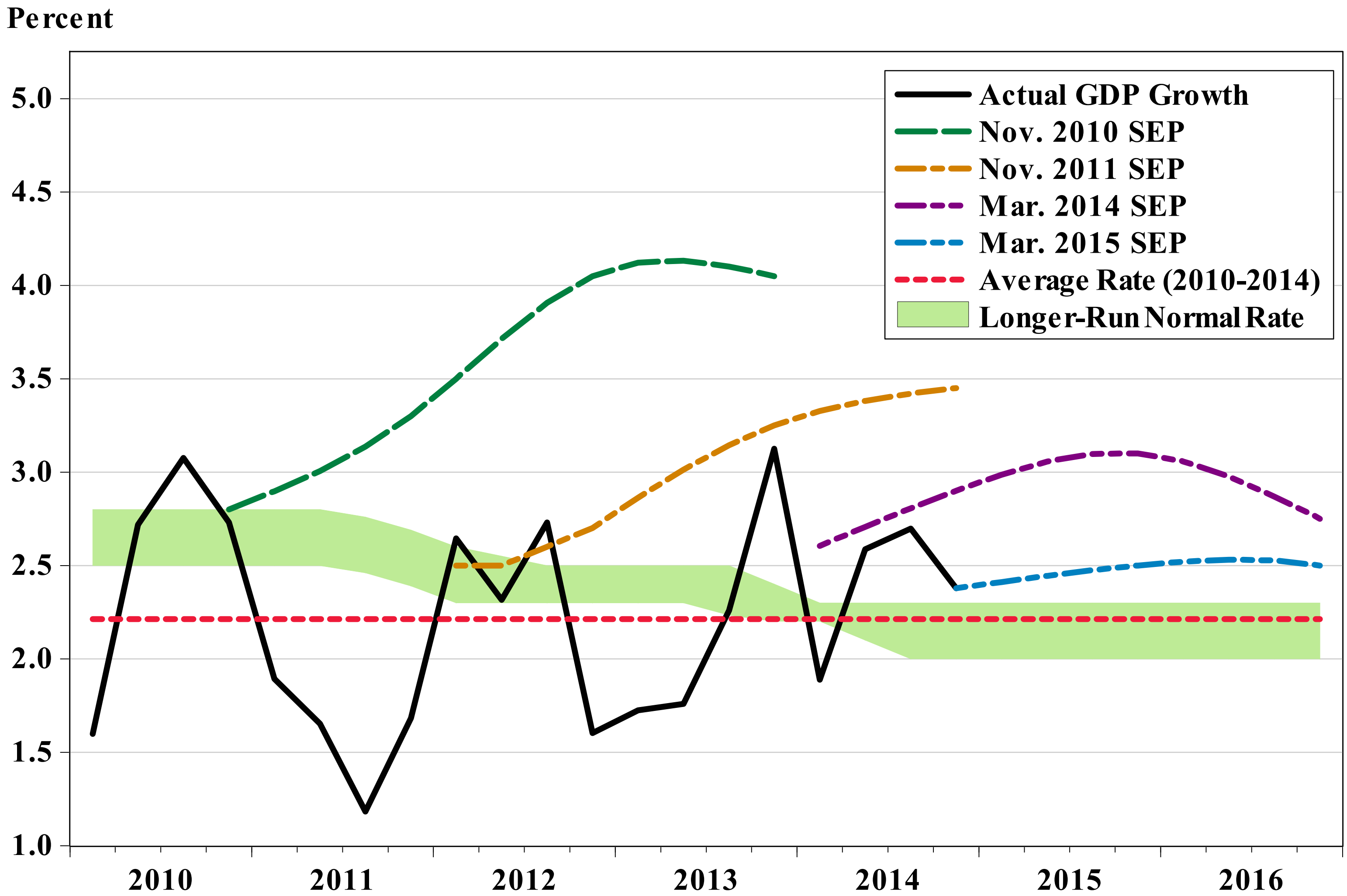
"For some time now I have been gloomy about prospects in the United States, which now seems clearly to be in recession. Developments in the U.K. are starting to look eerily similar....My biggest concern right now is that the credit crisis will trigger a rapid downward spiral in activity. Now it is time to get ahead of the curve."

David Blanchflower, MPC Member
Speech to the Royal Society
29 April 2008

Bank of England MPC Votes, 2007-08

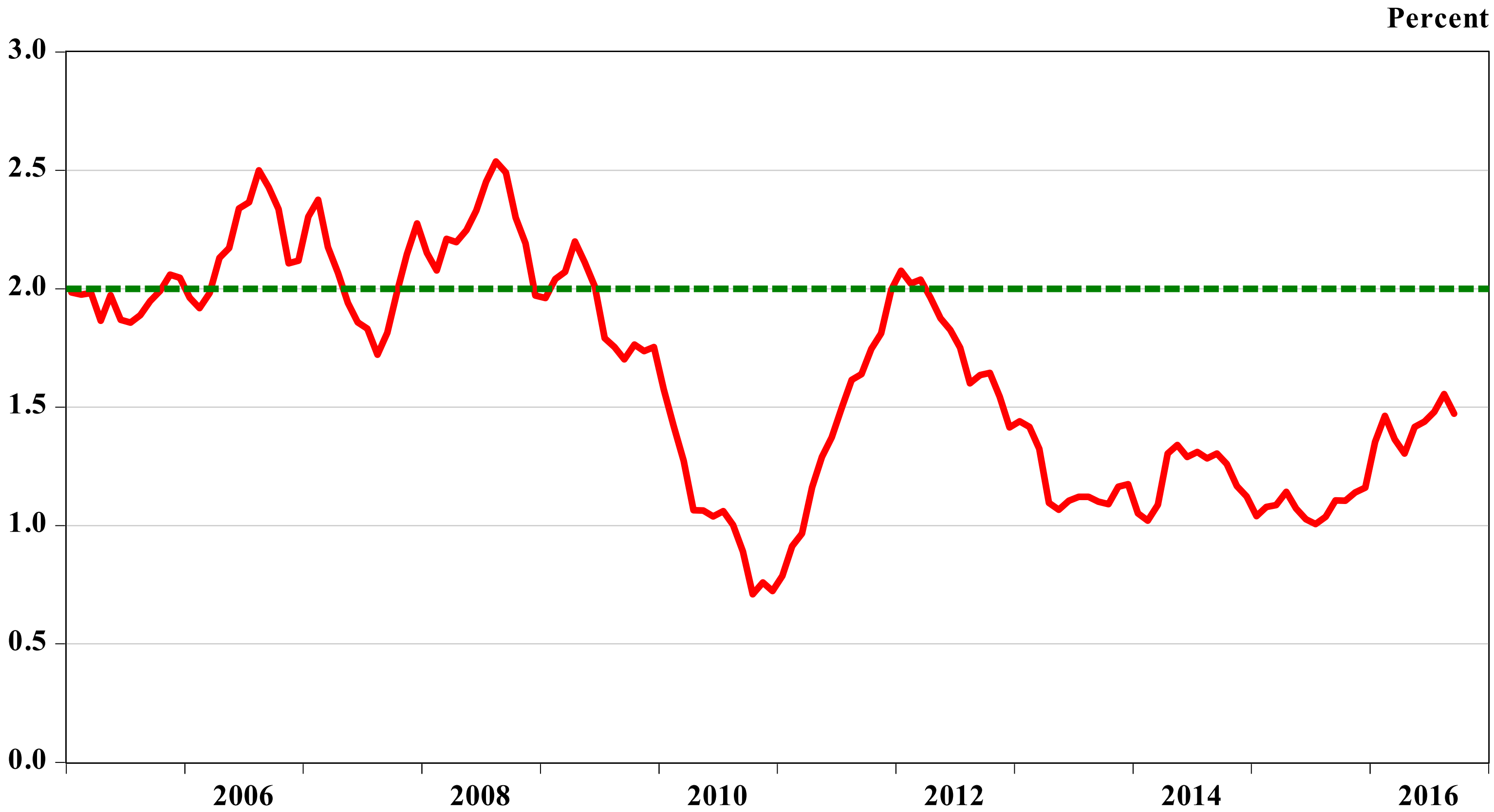


The Evolution of the FOMC's Outlook for Real GDP Growth

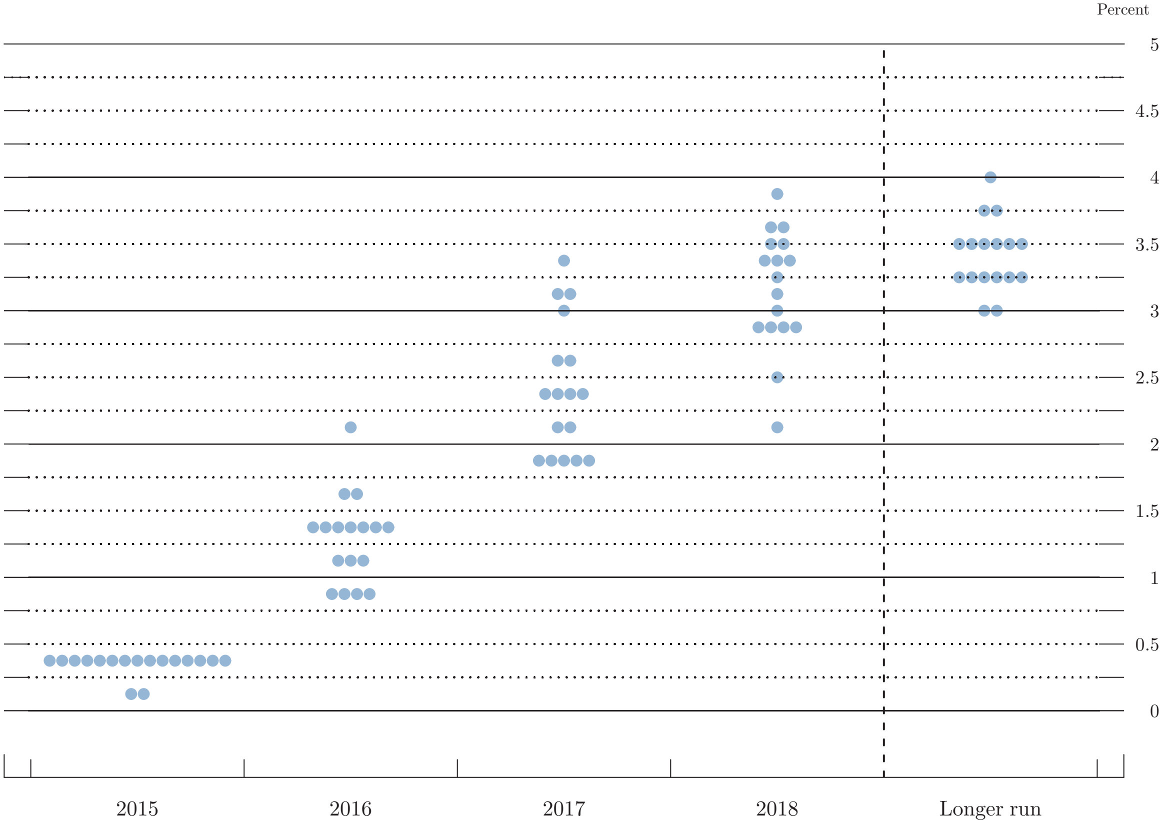


Persistent Inflation Shortfalls

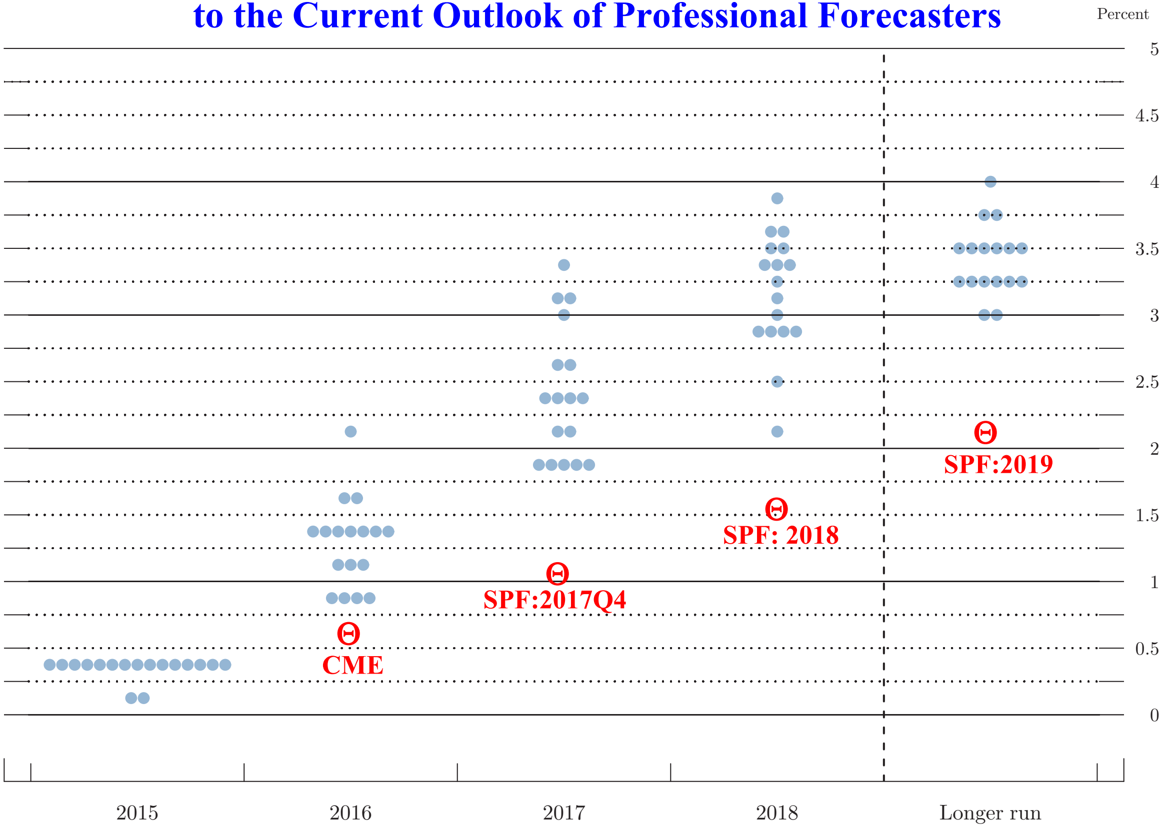
Market-Based Core PCE Price Index
(12-month change)



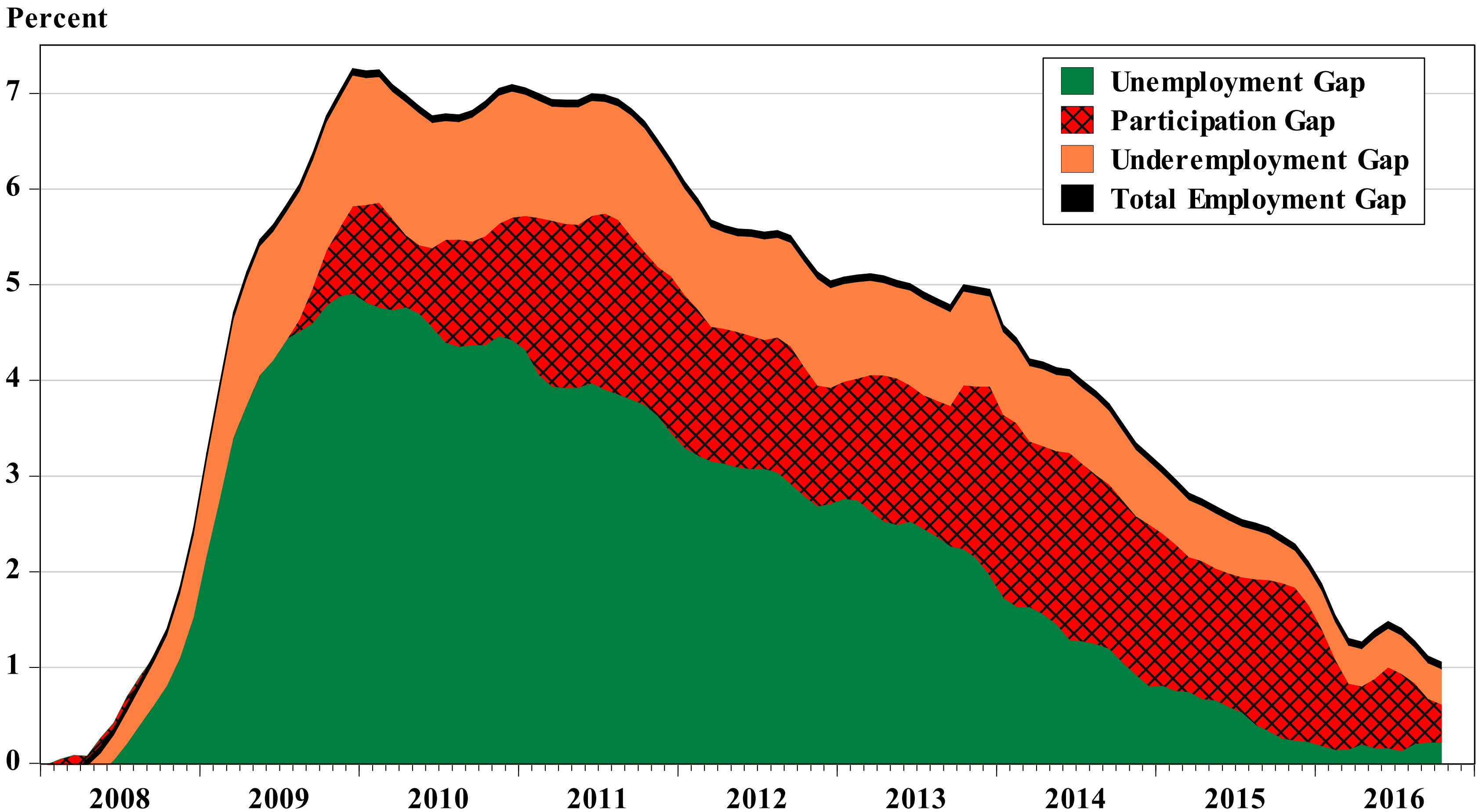
The FOMC "Dot Plot" as of December 2015



Comparing the Dec. 2015 FOMC "Dot Plot" to the Current Outlook of Professional Forecasters

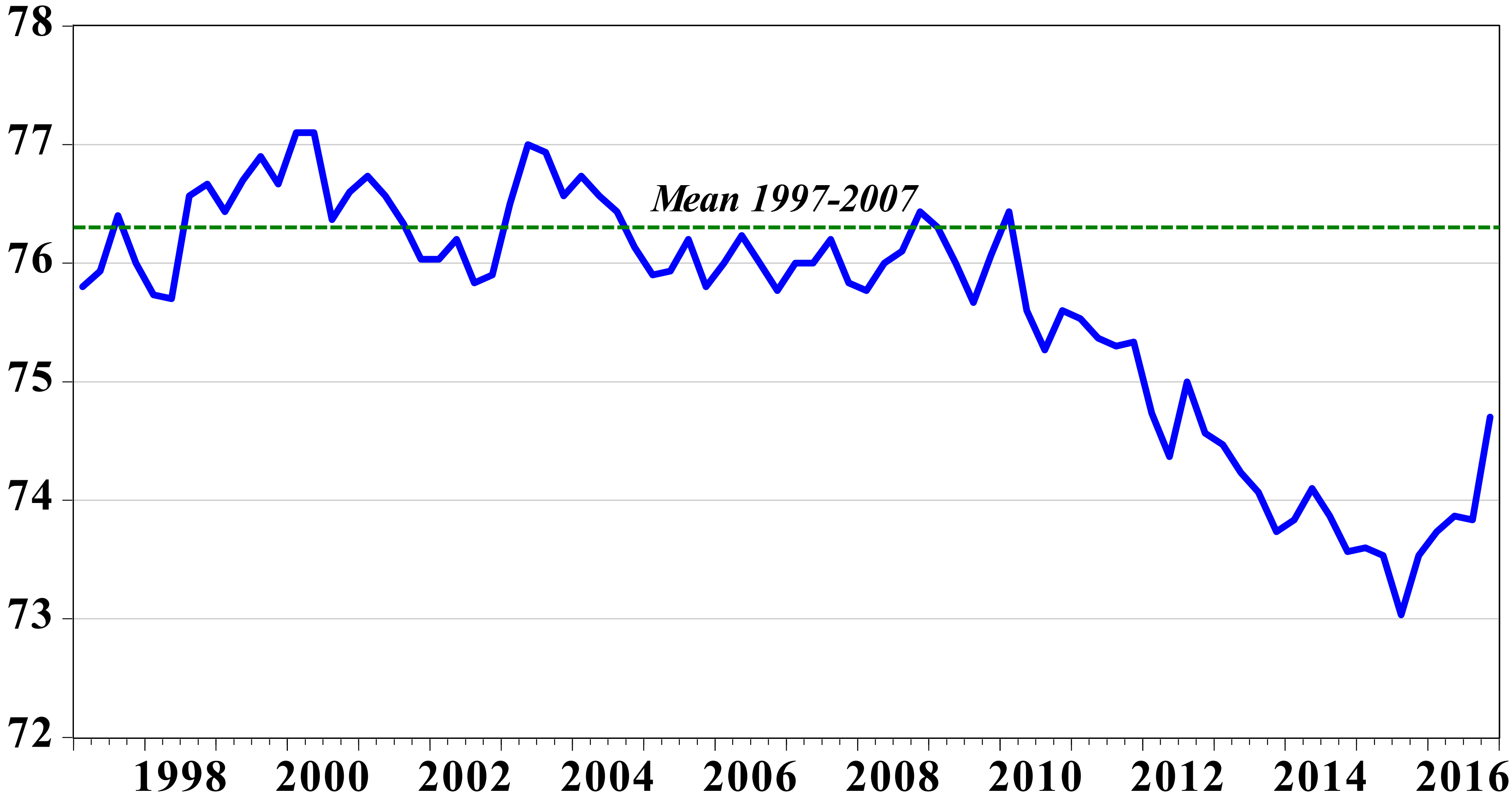


Persistent Employment Shortfalls

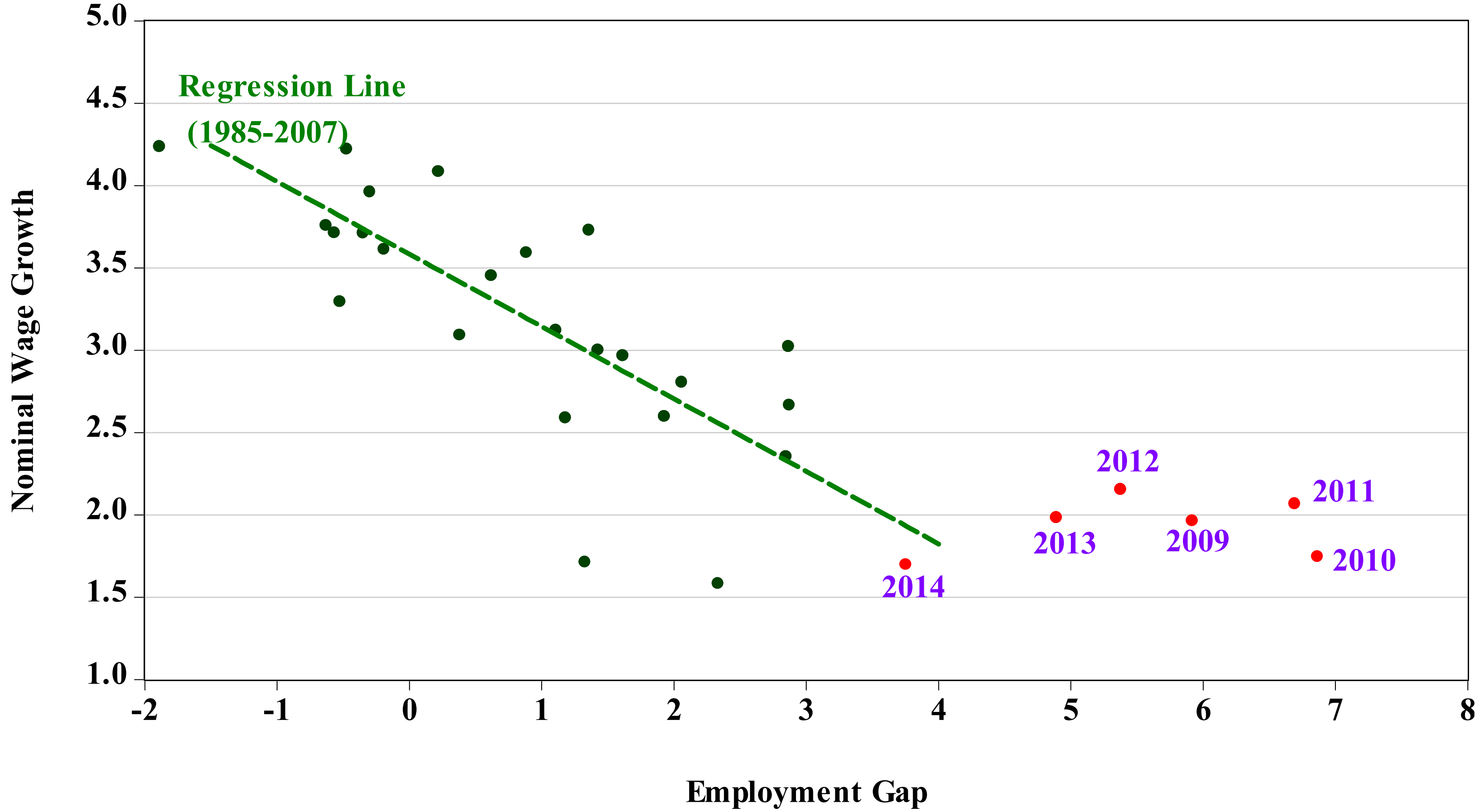


Source: Levin (JEDC 2014) extended thru Nov. 2016

Labor Force Participation Rate
Females, 45-54 Years Old

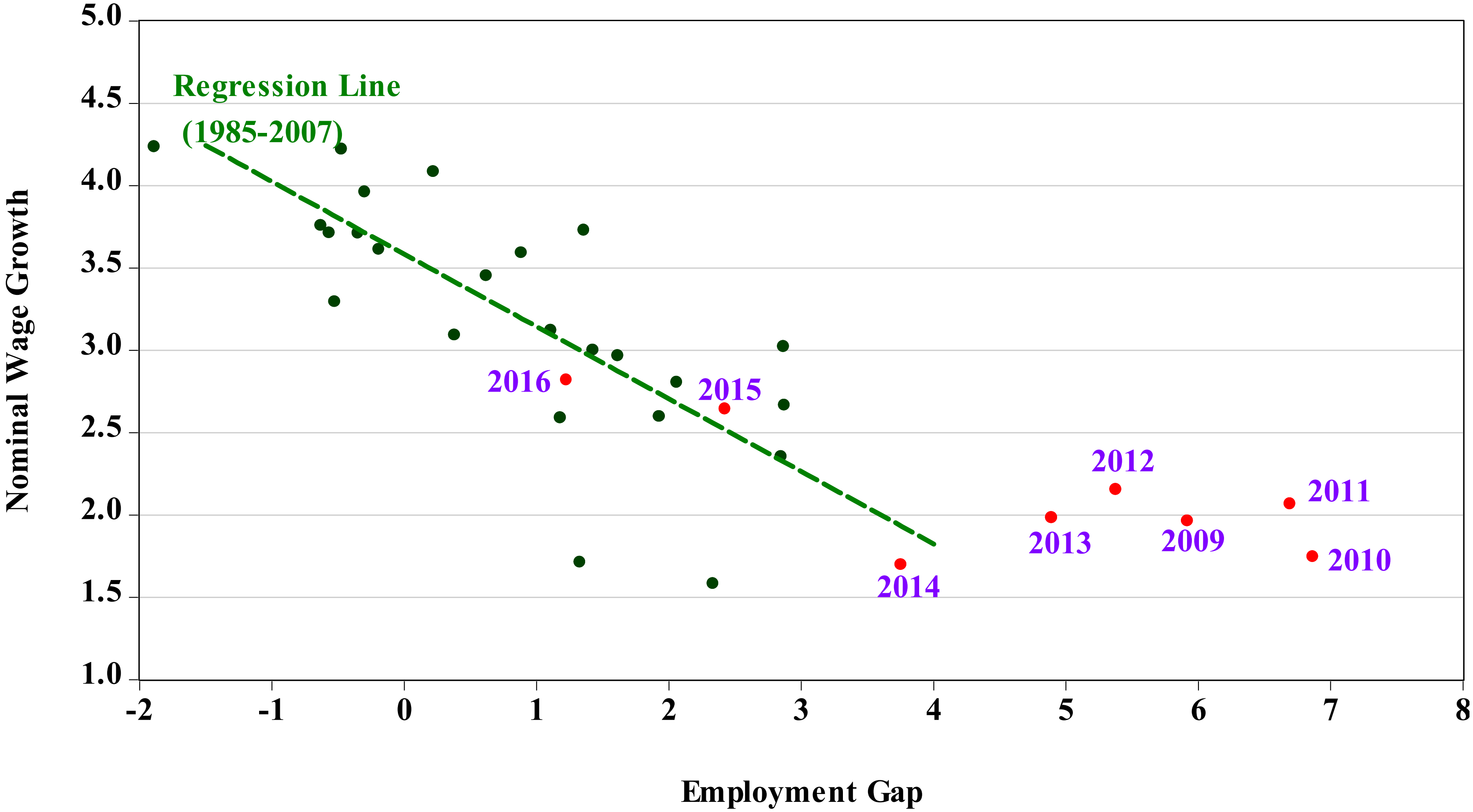


The Wage Curve



Source: Blanchflower & Levin (NBER WP, April 2015)

The Wage Curve as of Late 2016



Some Key Directions for Model R&D

- Heterogenous Agents
- Demographics
- Adverse Feedback Loops
- Threshold Effects
- Occasionally Binding Constraints

What Can Central Banks Do?

- **Foster an environment of creativity & diversity and encourage "outside-the-box" thinking.**
- **Formulate transparent & systematic policy strategies that are robust to model uncertainty**
- **Identify material risks and formulate contingency plans for mitigating such risks; i.e., *"stress tests for monetary policy."***