QE2: An Assessment

James Bullard

President and CEO, FRB-St. Louis

Quantitative Easing (QE) Conference

30 June 2011

St. Louis, MO

Any opinions expressed here are my own and do not necessarily reflect those of others on the Federal Open Market Committee.

Balance sheet policy is ordinary monetary policy

- How should stabilization policy be conducted once short-term nominal interest rates are effectively zero?
- The answer is that the central bank should pursue a balance sheet policy which substitutes for movements in short-term interest rates.
- The purchase and sale of liquid assets, such as Treasury securities, is very similar to ordinary monetary policy, except that a particular nominal interest rate target is not set.
- Balance sheet policy, like all monetary policy, should be conducted in a state-contingent way.

Has QE2 been effective?

- Reagan: An economist is a person who sees something work in reality and asks, "I wonder if that works in theory?"
- QE2 worked in reality, and I will provide evidence on this.
- I will also provide some responses to various theoretical objections.

QE2: What Happened?

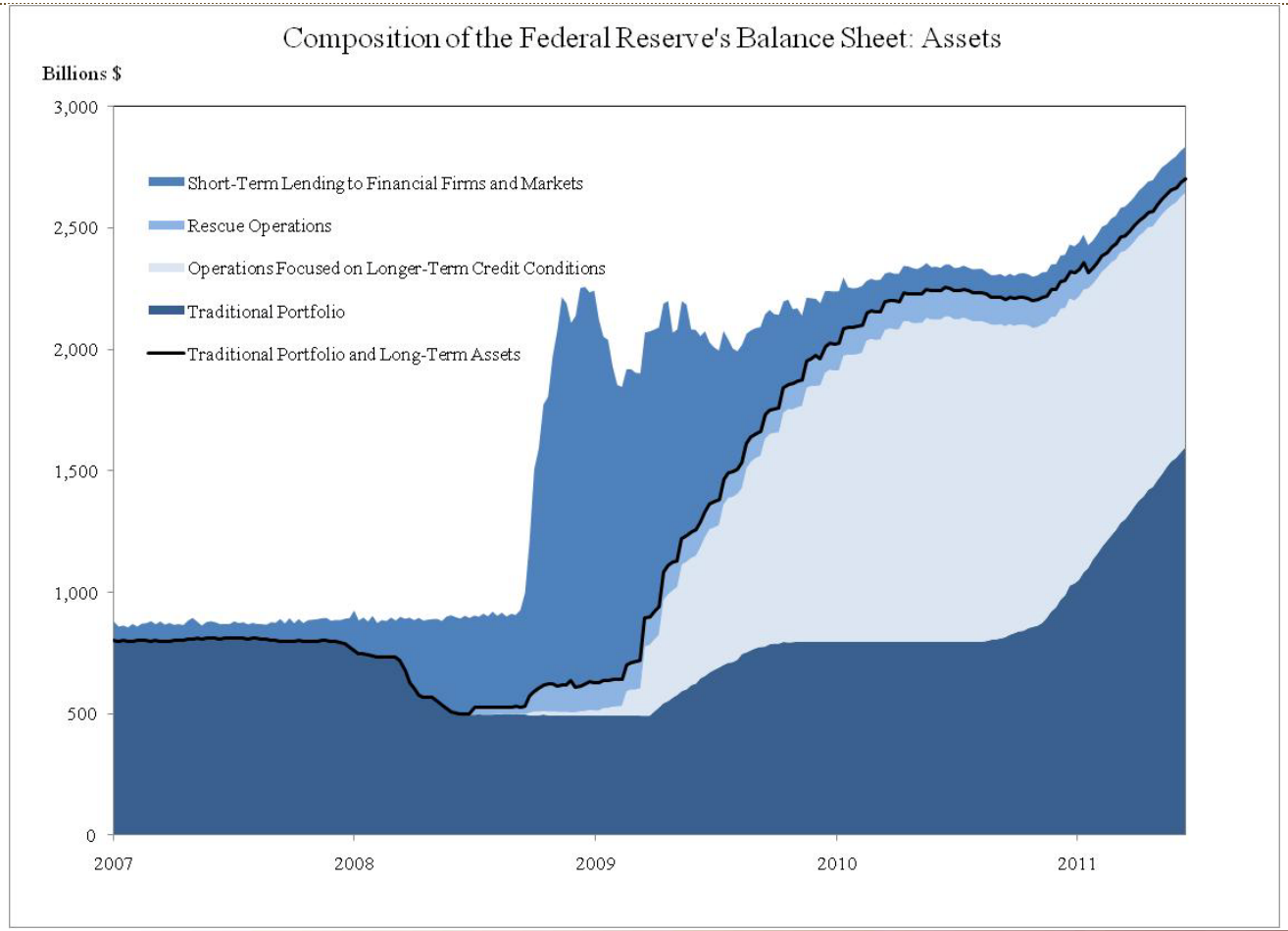
The basic story

- Ordinary monetary policy would lower short-term nominal interest rates during periods of economic weakness, but those rates have been near zero since December 2008.
- Asset purchases at longer maturities can substitute for ordinary monetary policy.
- This puts downward pressure on nominal interest rates further out the yield curve, along with upward pressure on expected inflation.
- Accordingly, the policy puts downward pressure on real interest rates.

Quantitative easing timeline

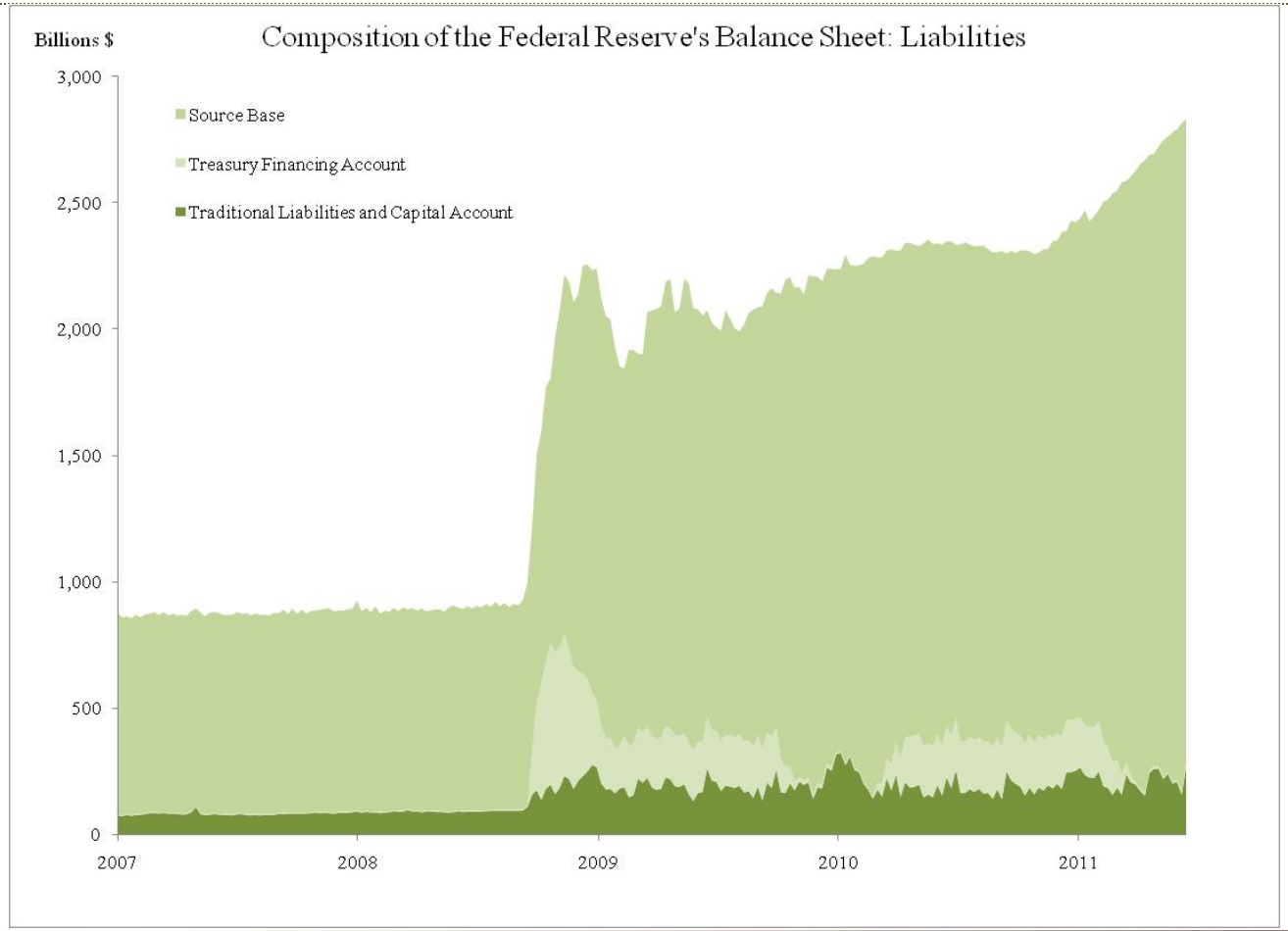
- November 25, 2008: FOMC announces purchases of $100bn agency debt + $500bn agency MBS.
  - Other liquidity programs also have effects on the balance sheet during this period; these programs mostly end by Q1 2010.
- March 18, 2009: FOMC announces purchases of $100bn agency debt + $750bn agency MBS + $300bn long-term Treasury debt.
- November 3, 2010: FOMC announces purchases of $600bn longer-term Treasury debt.
- This talk focuses mostly on "QE2," the November 2010 decision.

The Federal Reserve balance sheet



Source: Federal Reserve Board. Last observation: June 13, 2011.

The Federal Reserve balance sheet



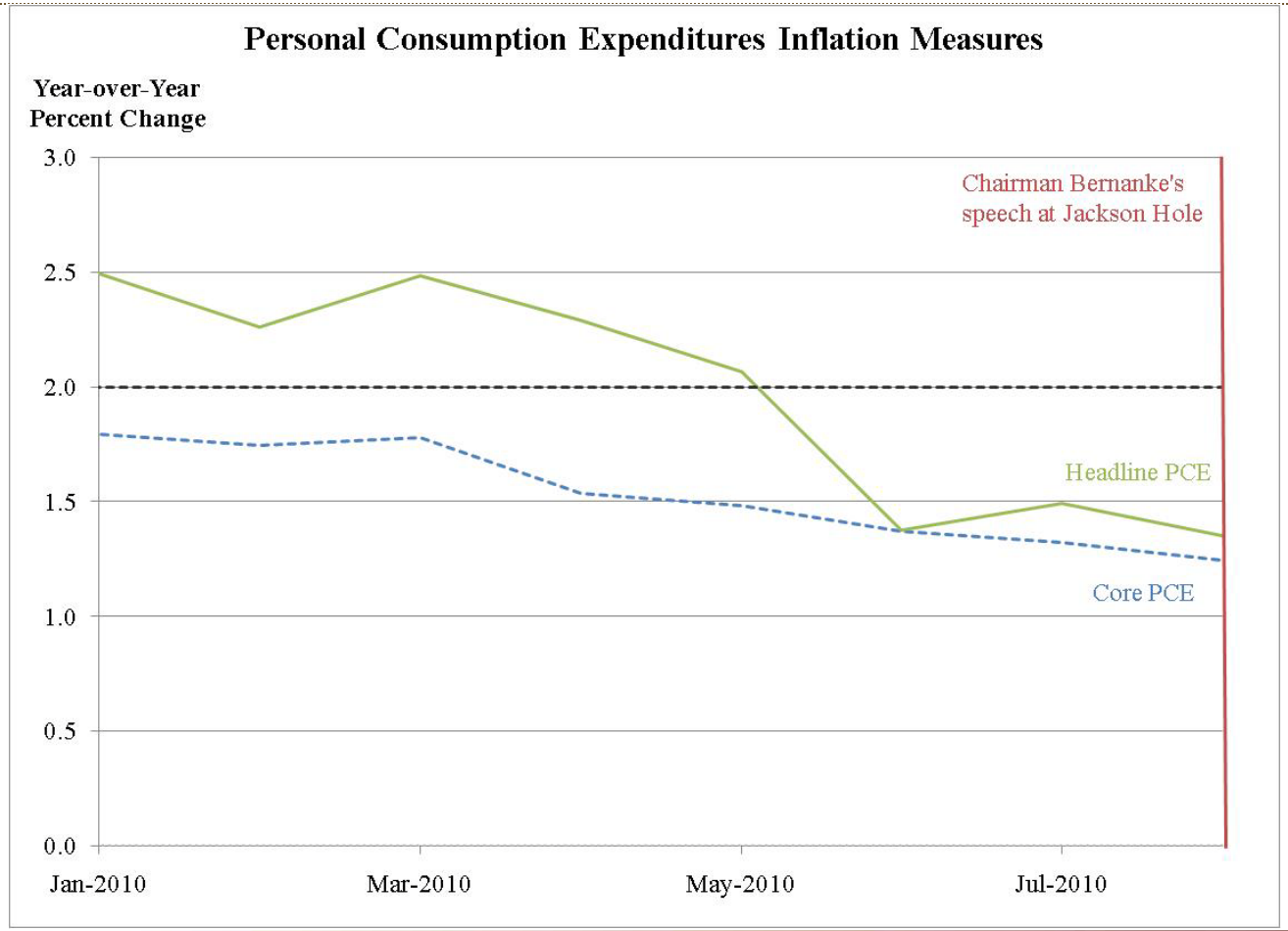
Source: Federal Reserve Board. Last observation: June 13, 2011.

QE2: Motivation

Motivation for QE2

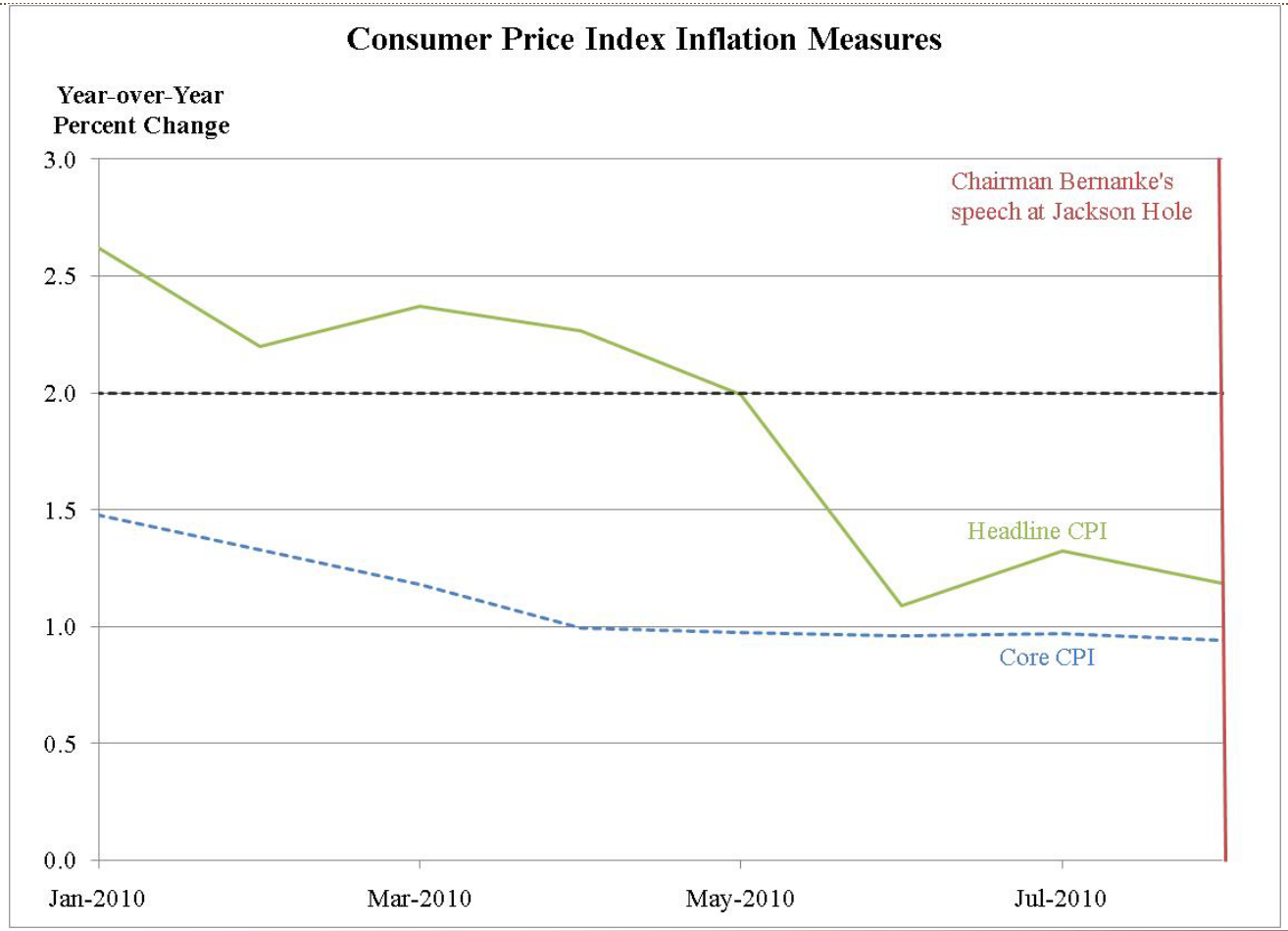
- Japanese experience with mild deflation and a near-zero nominal interest rate has been poor.
- Inflation was close to the implicit FOMC inflation target during the first part of 2010.
- During 2010, a renewed disinflation trend developed.
- The recovery slowed down during the summer of 2010.
- These developments left the U.S. at risk of a Japanese-style outcome.

PCE inflation



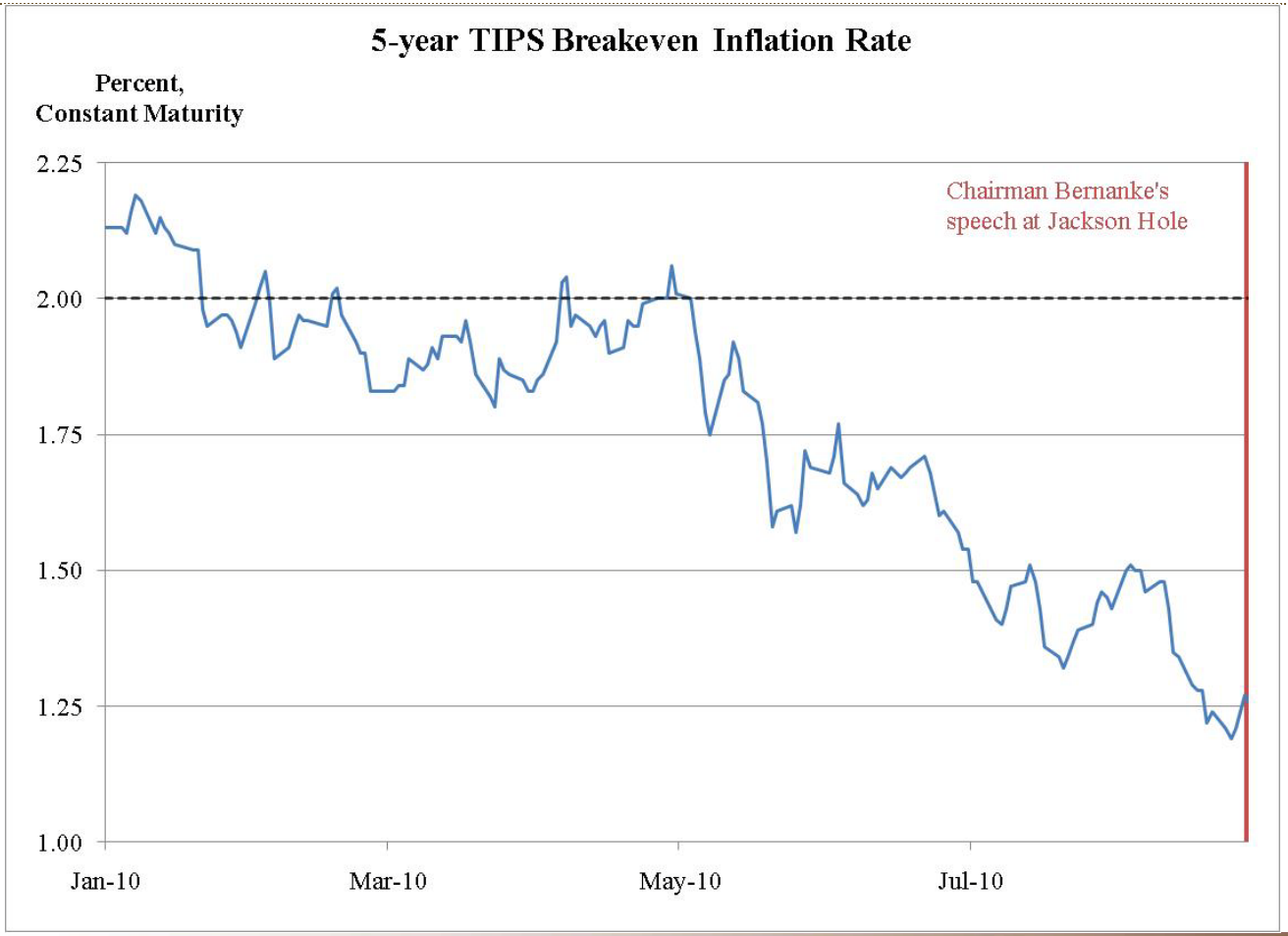
Source: Bureau of Economic Analysis. Last observation: August 2010.

CPI inflation



Source: Bureau of Labor Statistics. Last observation: August 2010.

Expected inflation



Source: Federal Reserve Board. Last observation: August 27, 2010.

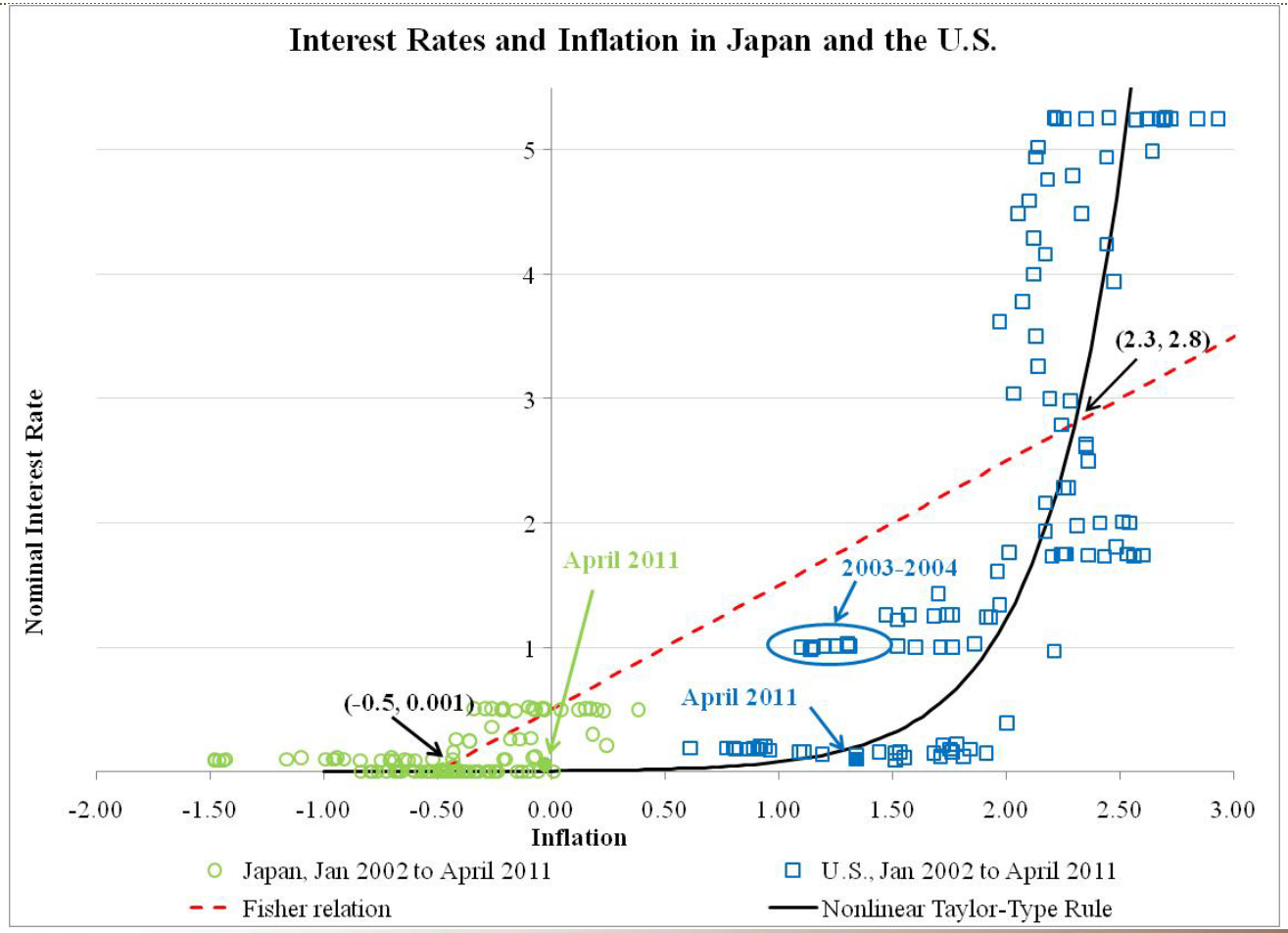
Existing monetary policy

- Near-zero policy rate.
- Large balance sheet.
- "Extended period" language for near-zero policy rate.
- Conventional wisdom reaction to a negative shock: *lengthen the "extended period."*
- Could such a policy be counter-productive, sending the U.S. to the Japanese-style outcome?

Benhabib, Schmitt-Grohe, and Uribe

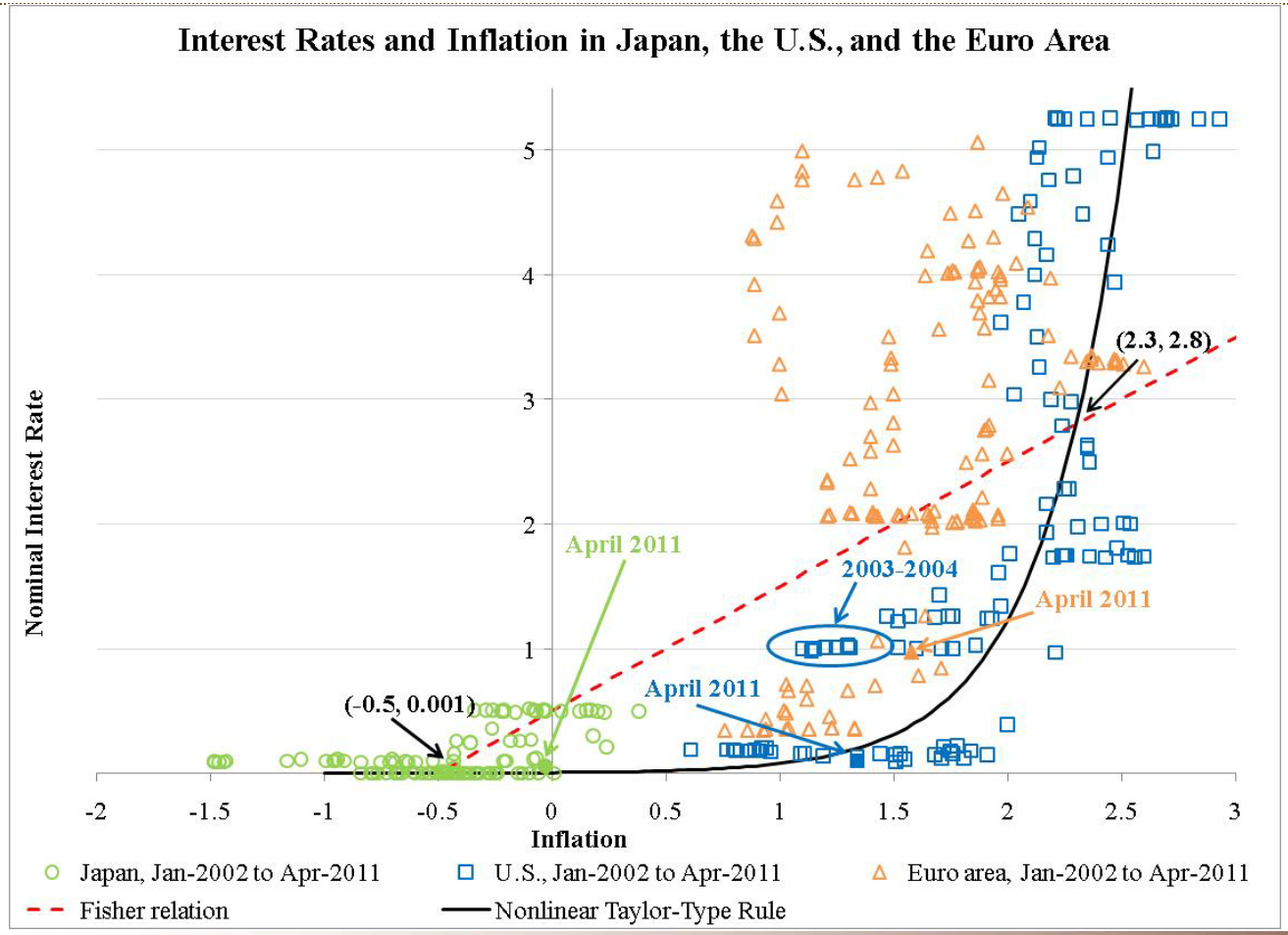
- Consider a model with three generic features:
  - A Fisher relation.
  - A monetary authority that follows a Taylor-type policy rule.
  - The zero bound on nominal interest rates.
- Models with these features possess an unintended steady state.
  - The unintended steady state is characterized by:
    - Short-term nominal interest rates at or near zero.
    - Inflation consistently below target.

Interest rates and inflation in Japan and the U.S.



Source: OECD data and author's calculations. Last observation: April 2011.

Interest rates and inflation in Japan, the U.S., and the euro area



Source: OECD data and author's calculations. Last observation: April 2011.

Reactions to Benhabib et al.

- Macroeconomists and policymakers are generally very fragmented on this issue.
- Reactions are both formal and informal.
  - Denial.
  - Learnability.
  - Appeal to the FOMC experience in 2003.
  - Discontinuity.
  - Traditional.
  - Fiscal expansion.
  - Deterministic paths for the policy rate. (SGU, NBER #16514)
  - QE.

QE2: Was It Effective?

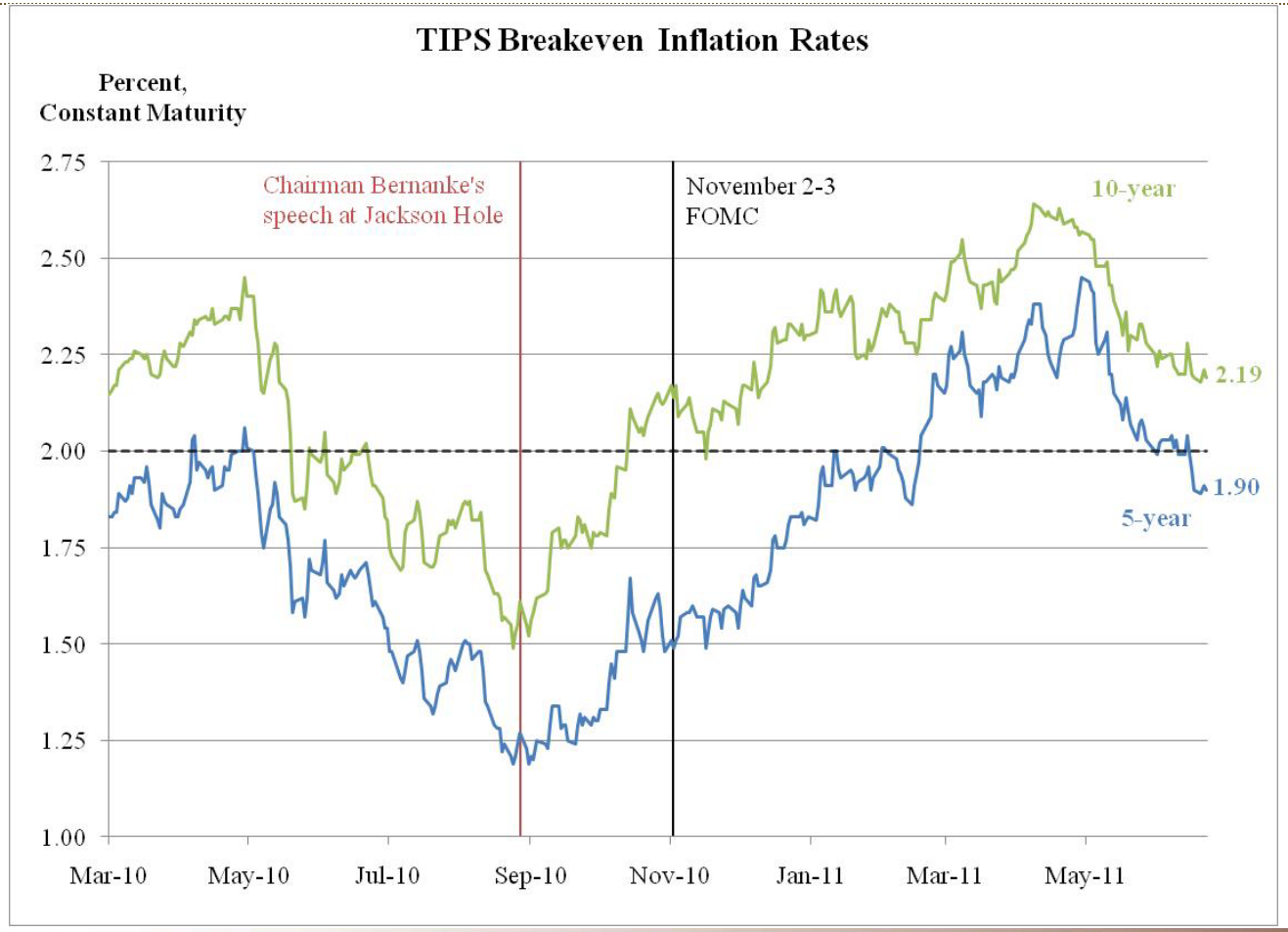
What the FOMC did

- The FOMC began replacing the run-off of the balance sheet in August 2010.
- Markets began pricing in additional action after the Chairman's Jackson Hole speech later in August.
- The decision to take additional action was made at the November 2010 FOMC meeting.
- Most effects were already priced into financial markets at that point.

The effects of QE2 in financial markets

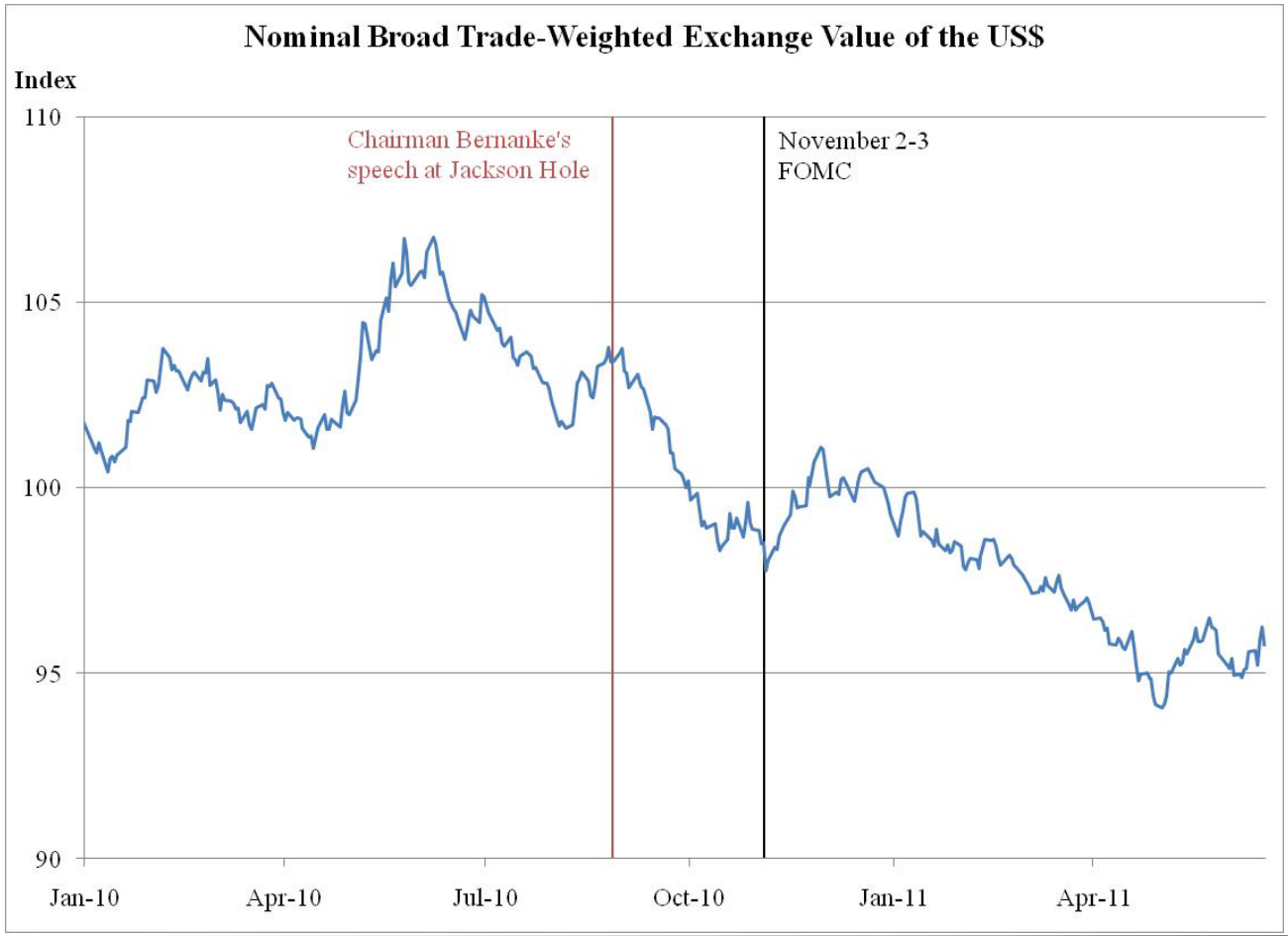
- The financial market effects of QE2 looked the same as if the FOMC had reduced the policy rate substantially.
- In particular, real interest rates declined, inflation expectations rose, the dollar depreciated, and equity prices rose.
- These are the "classic" financial market effects one might observe when the Fed eases monetary policy in ordinary times (that is, in an interest rate targeting environment).

Expected inflation increased



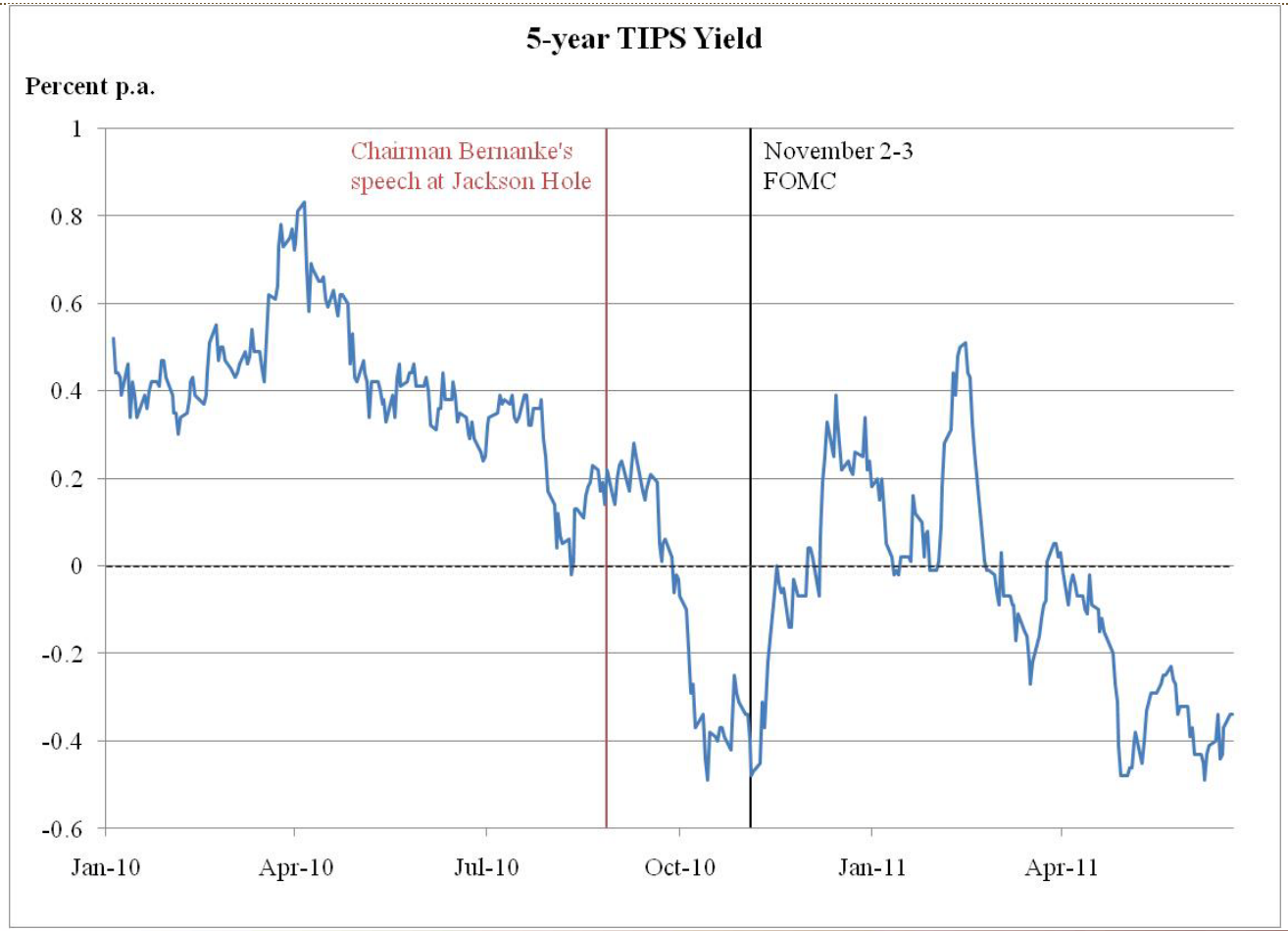
Source: Federal Reserve Board. Last observation: June 22, 2011.

The dollar depreciated



Source: Federal Reserve Board. Last observation: June 17, 2011.

Real interest rates declined



Source: Federal Reserve Board. Last observation: June 21, 2011.

Equity prices increased

Source: Wall Street Journal. Last observation: June 22, 2011.

Classic monetary policy easing

- This experience shows that monetary policy can be eased aggressively even when the policy rate is near zero.

- Effects on the real economy would be expected to lag by six to twelve months.
  - Real effects are difficult to disentangle because other shocks hit the economy in the meantime.
  - That has apparently happened during the first half of 2011.
  - This is a standard problem in the evaluation of monetary policy.

QE2: Theoretical Objections

Versions of Modigliani-Miller arguments

- Wallace (1981) enjoys a resurgence.
- The main idea is that open market operations are swaps of one type of government liability for another and should have limited or no impact on resource allocation.
- This argument has been around for a long time and applies to all conventional monetary policy, not specifically to QE.

Woodford arguments

- Curdia and Woodford (FRB-St. Louis *Review*).
- Temporary increases in the balance sheet are irrelevant, more permanent increases might matter more.
- Emphasizes the date that the policy rate moves off of the zero bound as the key policy instrument.
  - One motivation for "extended period" language.
- QE2 could be viewed as a more effective way to communicate on the date of moving off the zero bound.
- Generally does not address Benhabib et al.

The inflation risk argument

- The QE policy causes a large build-up of monetary base.
- This could cause a lot of inflation.
- However, there are no other effects.
- Response.
  - This should lead to higher expected inflation.
  - With the policy rate at zero, real interest rates should fall.
  - Hard to argue such a policy is neutral.
- Does not address Benhabib et al.

Conclusions

Conclusions

- QE2 has shown that the Fed can conduct an effective monetary stabilization policy even when policy rates are near zero.

Welcome to the conference

- I welcome the speakers and discussants who have agreed to share their insights with us today.
- I would like to thank Chris Neely and Dan Thornton for organizing this conference.
- I trust that we will all learn quite a lot.
- Thank you for being here and have a great conference.

CENTRAL to AMERICA'S ECONOMY™

Federal Reserve Bank of St. Louis
stlouisfed.org

Federal Reserve Economic Data (FRED)
research.stlouisfed.org/fred2/

James Bullard
research.stlouisfed.org/econ/bullard/