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ECONOMY™

Monetary Policy in a Low Policy Rate Environment

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Introduction

The EU-U.S. macroeconomic situation

- Recovery from the financial crisis and the ensuing recession has been slower than expected in the U.S. since 2010.
- Europe has returned to recession, with uneven effects across countries.
- Inflation has recently been below target in both the U.S. and Europe.
- Monetary policy rates remain near zero.
- What are the monetary policy options?

The monetary policy options

- In this lecture I will address five monetary policy options in this situation:
 - Do nothing.
 - Forward guidance concerning future monetary policy.
 - Quantitative easing.
 - Negative interest rates on reserves.
 - Twist: Increase the duration of the central bank's holdings of government securities.
- I will also discuss some related topics within these categories.

Which option is best?

- My conclusion will be that quantitative easing remains the best monetary policy option in this situation.
 - Doing nothing risks the mildly deflationary situation experienced by Japan in recent years.
 - Forward guidance depends on the credibility of promises for future central bank behavior, and can send an unwitting pessimistic signal about future macroeconomic performance.
 - Negative deposit rates are likely to be only minimally effective.
 - Twist is minimally effective as well.
 - QE is closest to standard monetary policy, involves clear action, and has been effective.

Conclusions for near-term stabilization policy

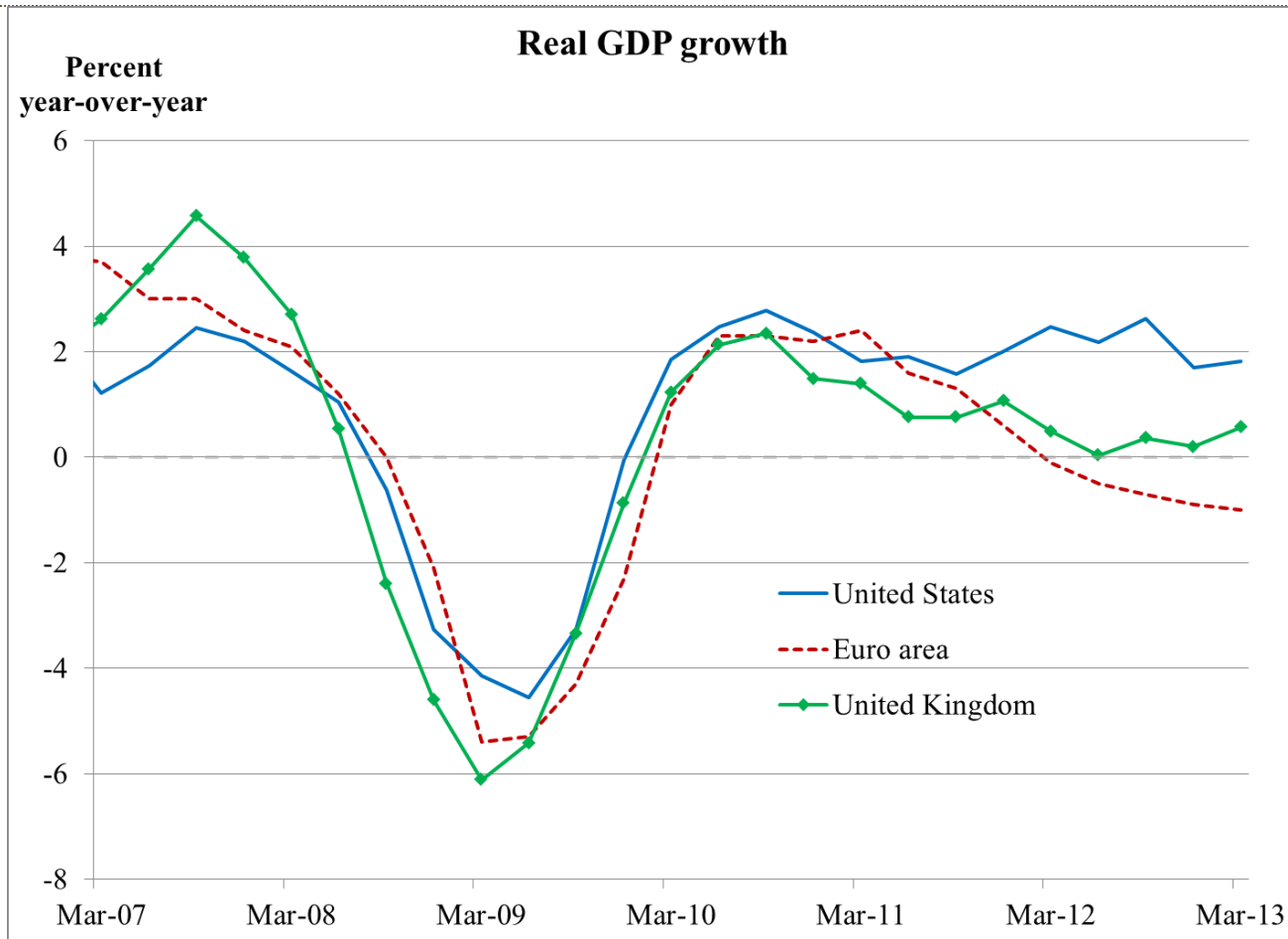
- For the U.S.:
 - Continue with the present quantitative easing program, adjusting the rate of purchases appropriately in view of incoming data on both real economic performance and inflation.
- For the Euro area:
 - If more monetary policy accommodation is desired, consider a GDP-weighted quantitative easing program.
 - This would provide policy accommodation for the Euro area as a whole, with the GDP weights providing a substitute for the lack of a European-wide government bond market.

The EU-U.K.-U.S. Macroeconomic Situation

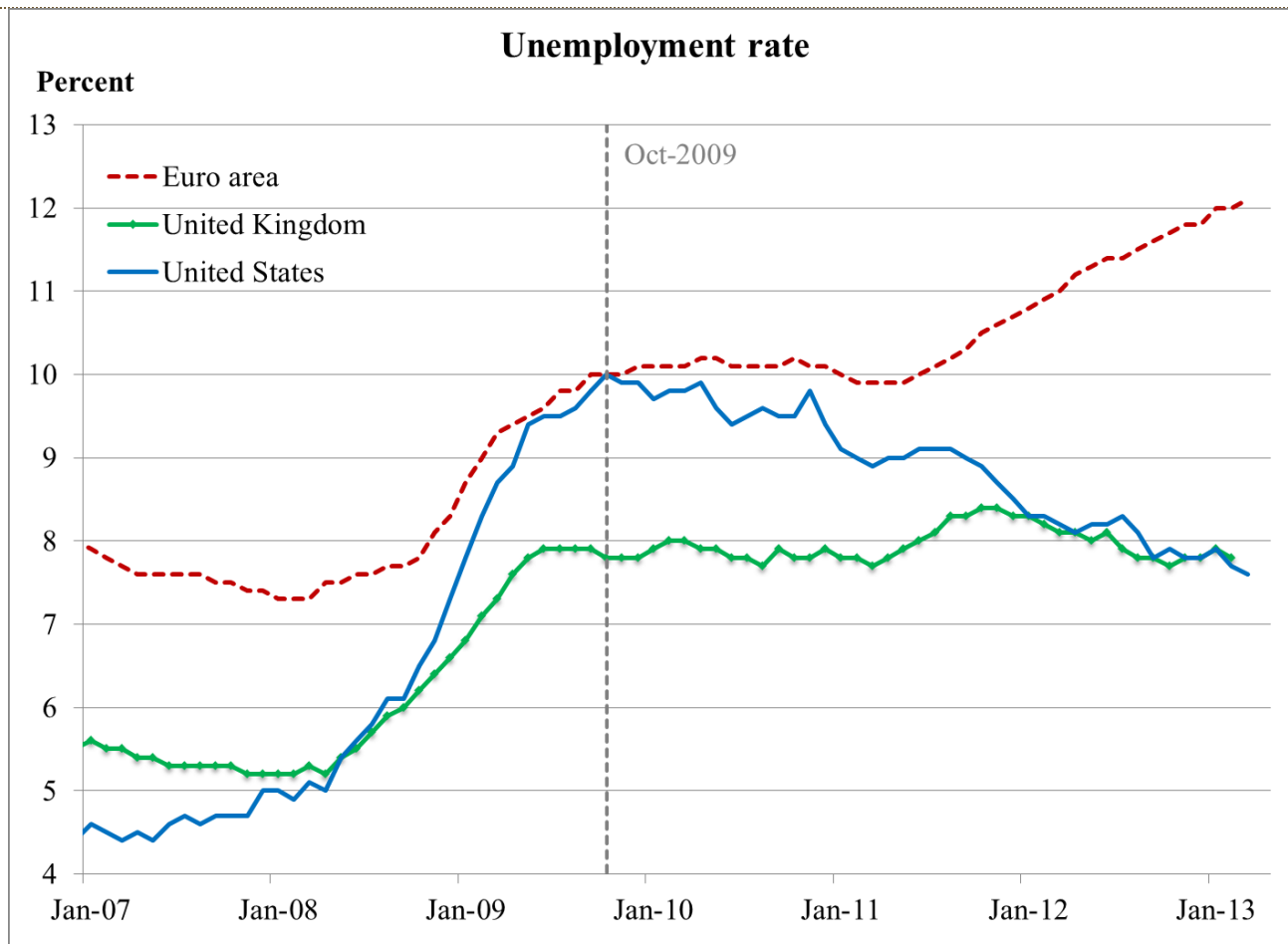
The essentials of the EU-U.S. situation

- The U.S. has continued to grow at a relatively slow rate following the end of the recession in 2009.
- The Euro area initially recovered at a similar rate, but recently fell back into recession.
- Unemployment has continued to fall in the U.S. despite relatively slow growth.
- Unemployment has increased in the Euro area.
- Inflation has recently been on a downward trend in both the U.S. and the Euro area.

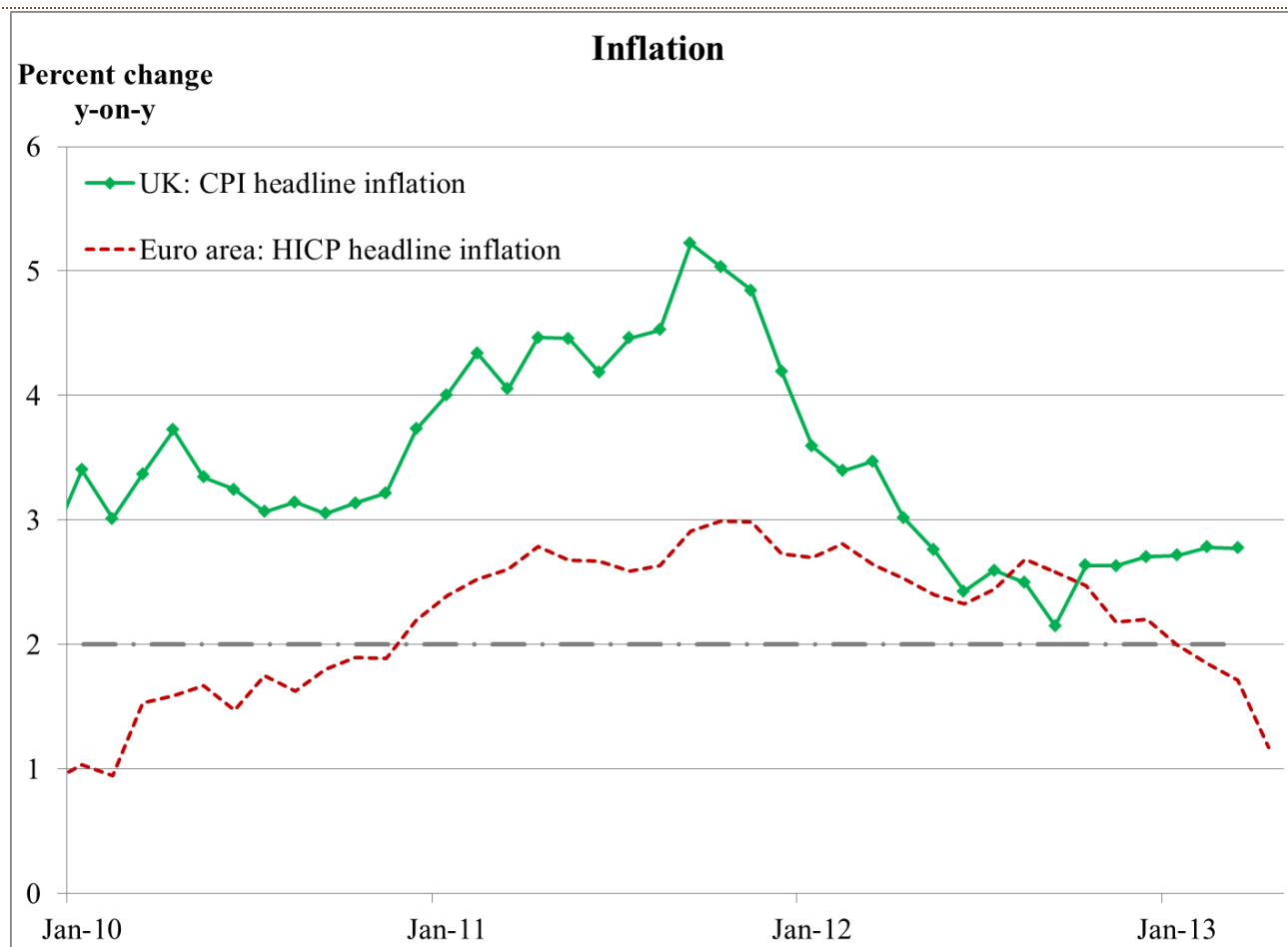
Real GDP growth: U.S., U.K., and Euro area



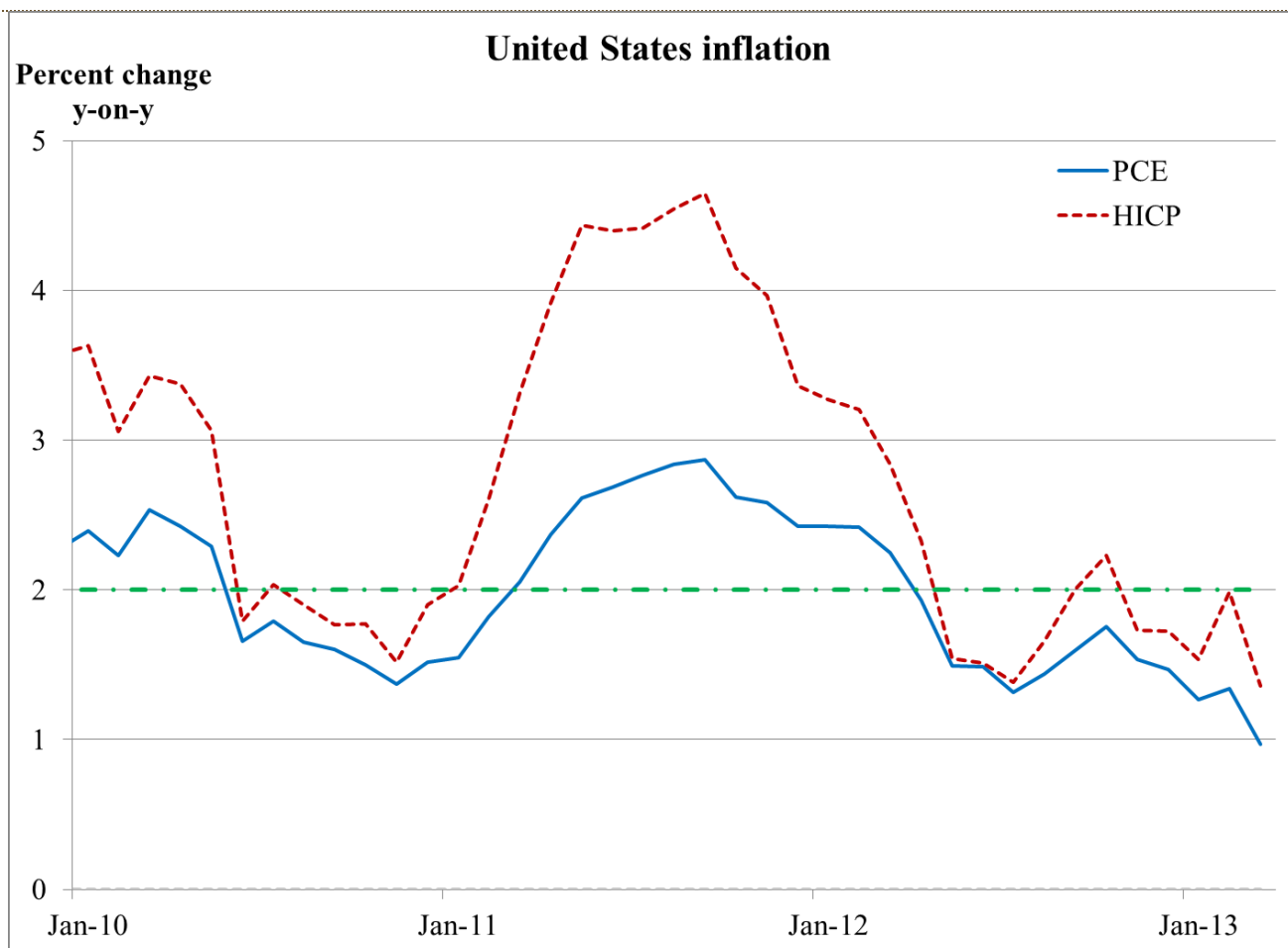
Unemployment: U.S., U.K., and Euro area



Inflation: U.K. and the Euro area



U.S. inflation



The Monetary Policy Question

The monetary policy question

- Given that inflation is trending down and the policy rate remains near zero, what can monetary policy do?
- This has been the key question in central banking since 2008.
- In response, policymakers around the world have tried a variety of unconventional approaches to monetary policy.
- If these policies are effective, they should be able to keep inflation and inflation expectations near target despite relatively weak macroeconomic performance.

Option 1: Do Nothing

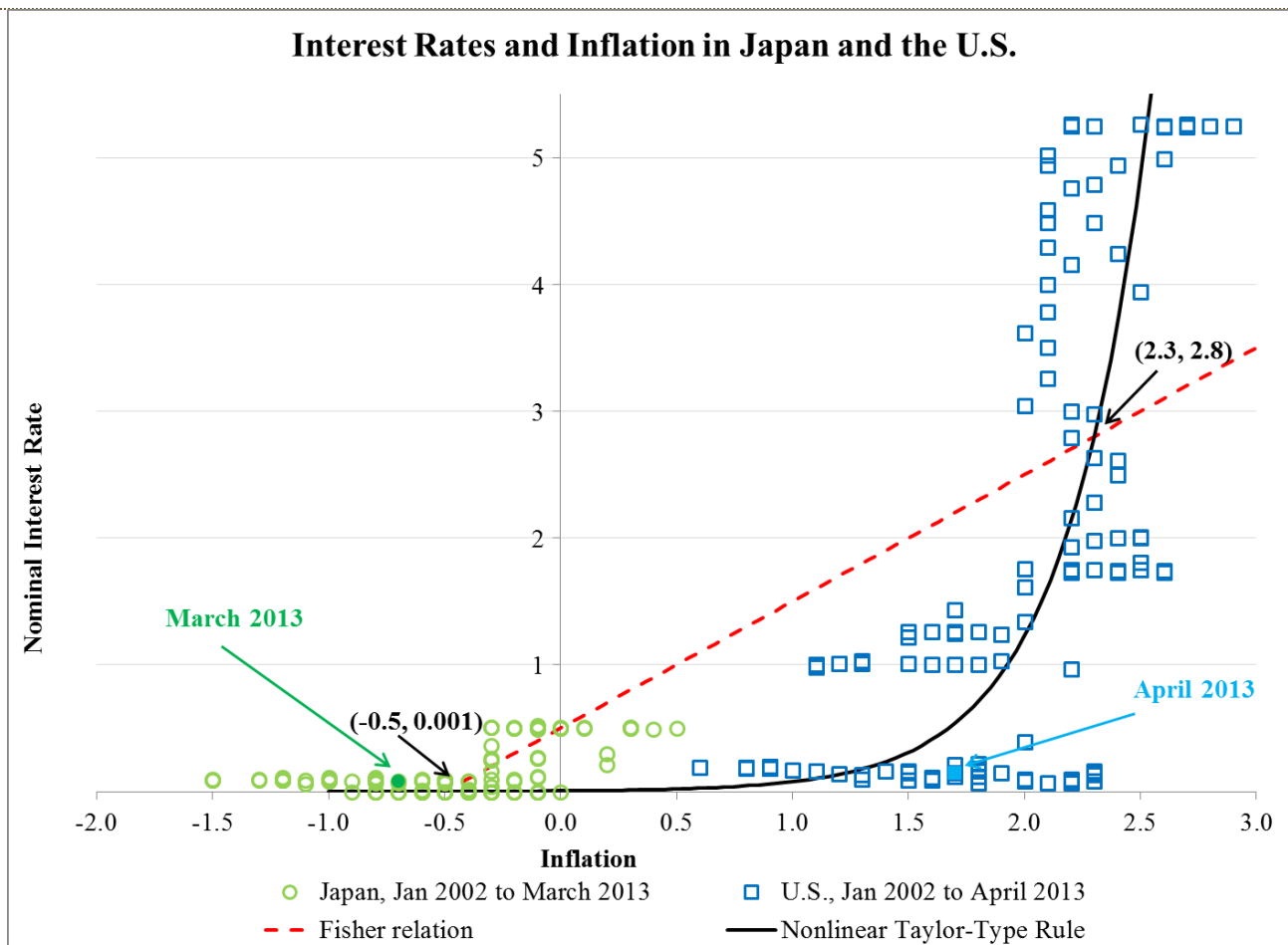
A problem with doing nothing

- One might plausibly argue that the near-zero policy rate provides sufficient monetary accommodation to keep inflation near target and to assist the real economy to the extent possible.
- The experience from Japan seems to indicate that merely keeping the policy rate near zero for an extended period of time does not by itself keep inflation positive.
- In particular, there seems to be a steady state equilibrium in which the nominal rate remains near zero and inflation remains mildly negative.

The academic debate on this question

- The academic debate on this issue has been led by Jess Benhabib, Stephanie Schmitt-Grohe, and Martin Uribe.
 - J. Benhabib, S. Schmitt-Grohe, and M. Uribe, 2001, “The Perils of Taylor Rules,” *Journal of Economic Theory*, 96(1-2), pp. 40-69.
- Their papers have argued that blind adherence to nominal interest rate targeting in a low interest rate environment can create a new steady state equilibrium in which policy rates remain very low and there is a mild deflation.
- For more background on this topic, see my paper “Seven Faces of ‘The Peril’.”
 - J. Bullard, 2010, “Seven Faces of ‘The Peril’,” FRB of St. Louis *Review*, 92(5), pp. 339-52.

Two steady states



Widespread agreement

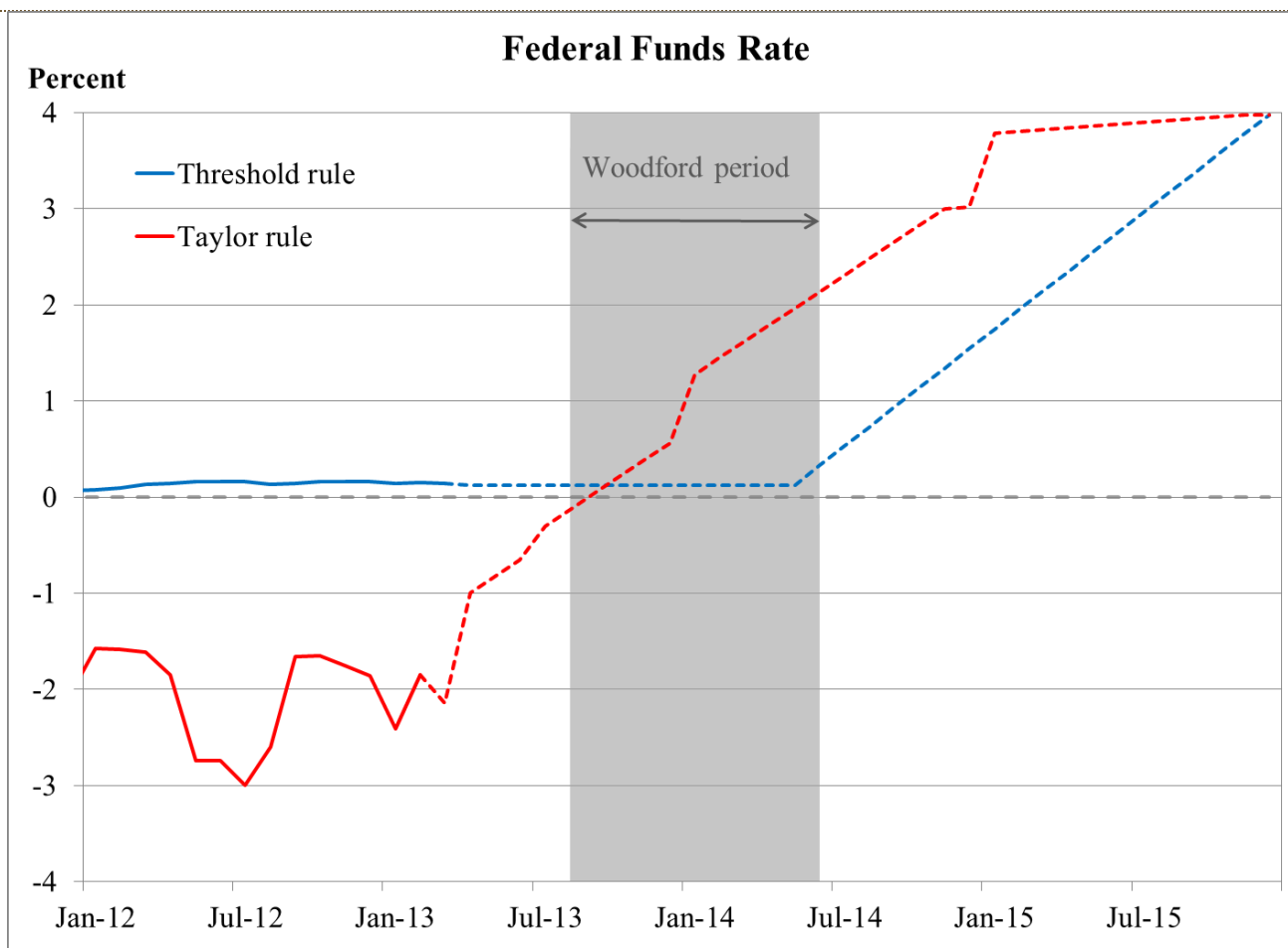
- Academic and policymaker reactions to the possible existence of a low nominal interest rate, deflationary steady state are varied.
- However, many seem to agree that it is insufficient to simply count on the fact that the policy rate is near zero to provide enough accommodation to maintain inflation near target.

Option 2: Forward Guidance

The case for forward guidance

- The New Keynesian, sticky price literature has been influential in U.S. monetary policymaking.
- The literature has been led by Michael Woodford.
- This line of research argues that policy accommodation can be provided even when the policy rate is near zero.
- The extra accommodation comes from a promise to maintain the near zero policy rate into the future, beyond the point when ordinary policymaker behavior would call for an increase in the policy rate.
- This promise must be credible to have an impact.

The Woodford period: An illustration



The credibility issue

- The “Woodford period” approach to forward guidance relies on a credible announcement made today that future monetary policy will deviate from normal.
- The central bank does not actually behave differently today.
- One might argue that such an announcement is unlikely to be believed—why should future monetary policy deviate from normal once the economy is growing and inflation is rising?
- But if the announcement is not credible, then the private sector will not react with more consumption and investment today—that is, any effects would be minimal.

The “pessimistic signal” issue

- Announcements that policy will be accommodative far into the future can be interpreted by the private sector as “the central bank thinks the economy will never recover.”
- This is the problem of pessimistic signaling.
- In general, any attempt to provide additional policy accommodation today by promising easy policy in the future can be viewed as suggesting the future will be characterized by poor macroeconomic performance.
- This can be extremely counter-productive, as firms and households may prepare for a prolonged stagnation.

Addressing credibility and signaling issues

- The FOMC has experimented with forward guidance.
- The Committee has tried to make a credible commitment to relatively easy future policy without sending a pessimistic signal.
- To do this, the Committee has turned to thresholds of 2.5 percent on inflation and 6.5 percent for unemployment as minimal criteria for a policy rate move.
- The adoption of threshold-based forward guidance was a clear improvement on the previous calendar-based forward guidance, which seemed to be plagued by the pessimistic signal problem.

The experience with forward guidance

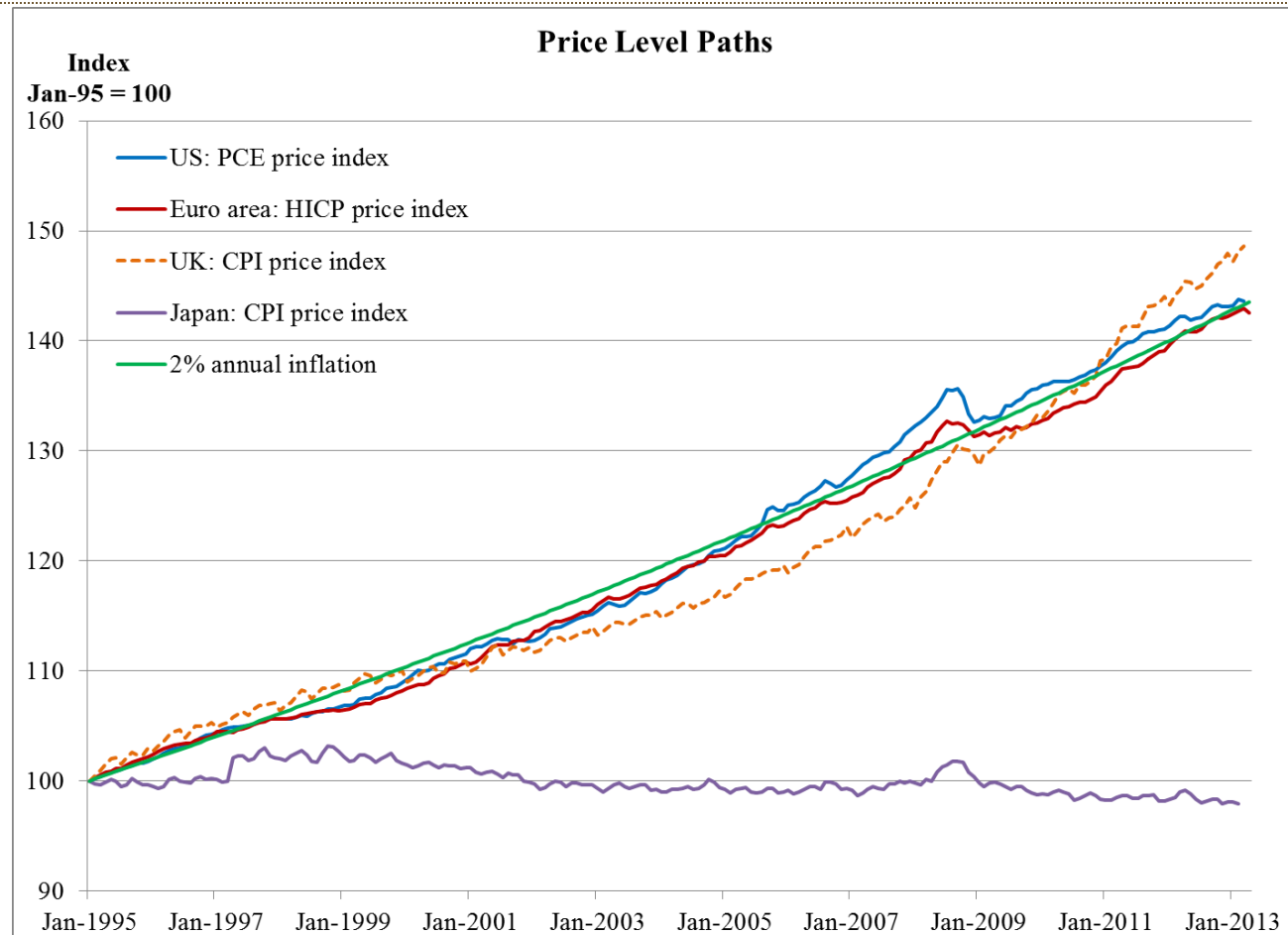
- Other central banks, including the ECB and the BoE, have been more circumspect concerning the use of forward guidance as a policy tool than the Fed. *
- There is a strong tradition in central banking that suggests that policymakers should never pre-commit to a particular policy course in part because future circumstances are unpredictable.
- At a minimum, the correct use of forward guidance as a policy tool is a subtle matter.
- For more on this topic, see Michael Woodford, Jackson Hole 2012.

Price Level Targeting as Forward Guidance

Price level targeting

- The New Keynesian literature suggests that optimal monetary policy can be characterized by price level targeting.*
- This means that the price level should be kept on a path consistent with a given inflation target.
- Monetary policy in the U.S., U.K., and the Euro area has been consistent with this advice since the 1990s.
- This suggests there would be little to gain from switching to nominal GDP or price level targeting.
- For more on this topic, see my Notre Dame lecture.
 - J. Bullard, 2012, “A Singular Achievement of Recent Monetary Policy,” presented at the *Theodore and Rita Combs Distinguished Lecture Series in Economics*, University of Notre Dame.

Price level targeting in the U.S., Euro area, and U.K.



Option 3: Quantitative Easing

Quantitative easing

- The central bank can also make outright purchases of government debt (or MBS) by creating base money.
- The quantitative easing approach to monetary policy has been adopted by the FOMC and the BoE.
- The Committee has stated that it will maintain an open-ended approach to purchases and will adjust the rate of purchases in response to economic conditions.
- Quantitative easing is relatively close to standard monetary policy in that it puts downward pressure on nominal and real interest rates.

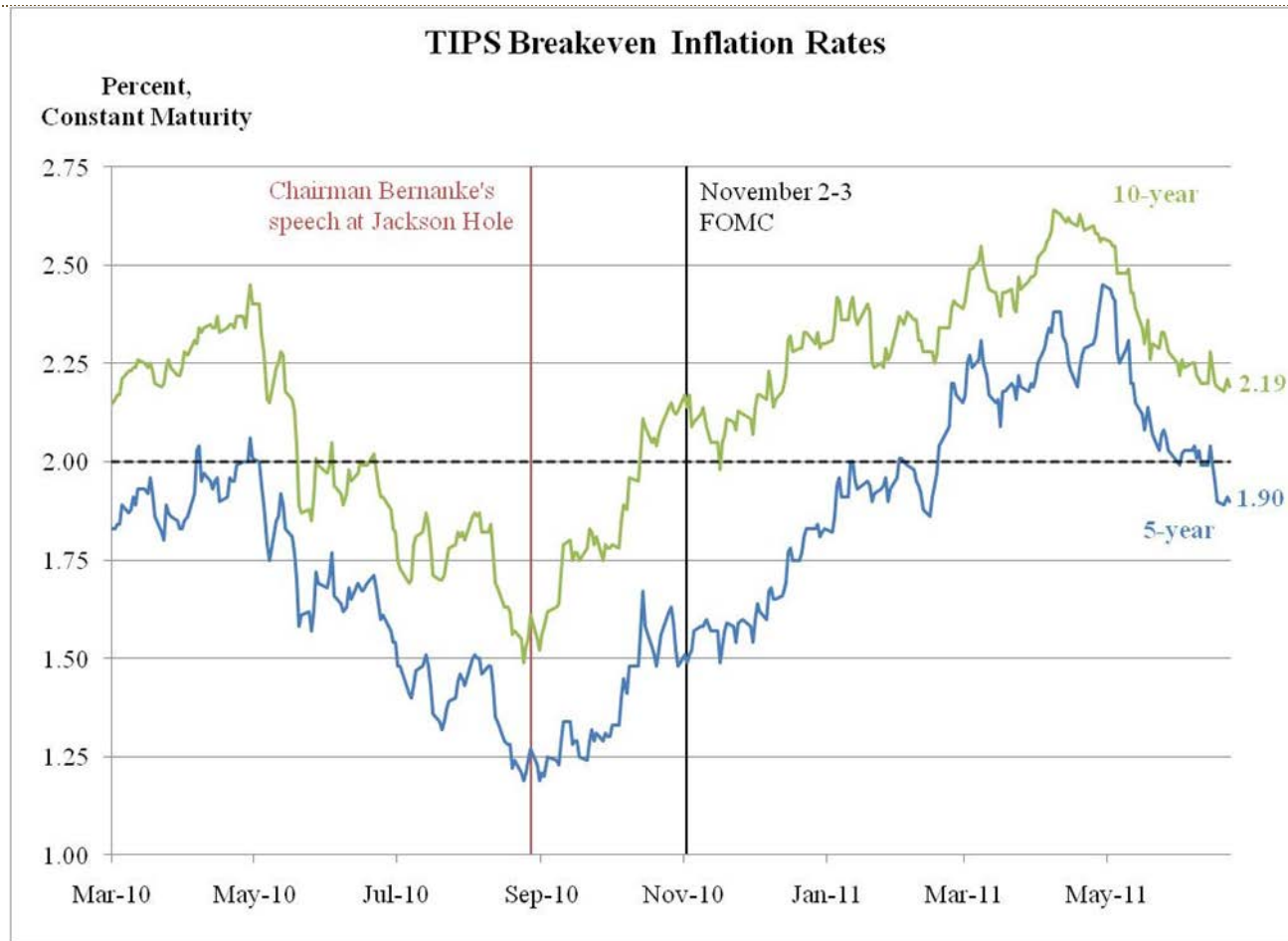
QE effectiveness

- Standard New Keynesian theory suggests that policy actions of this type will not be effective.
- However, the reaction in financial markets clearly indicates that such purchases are effective in easing financial conditions.
- Traditional effects of “easier monetary policy” include (1) higher inflation expectations (2) currency depreciation (3) higher equity valuations (4) lower real interest rates.
- All of these have been associated with QE in the U.S.

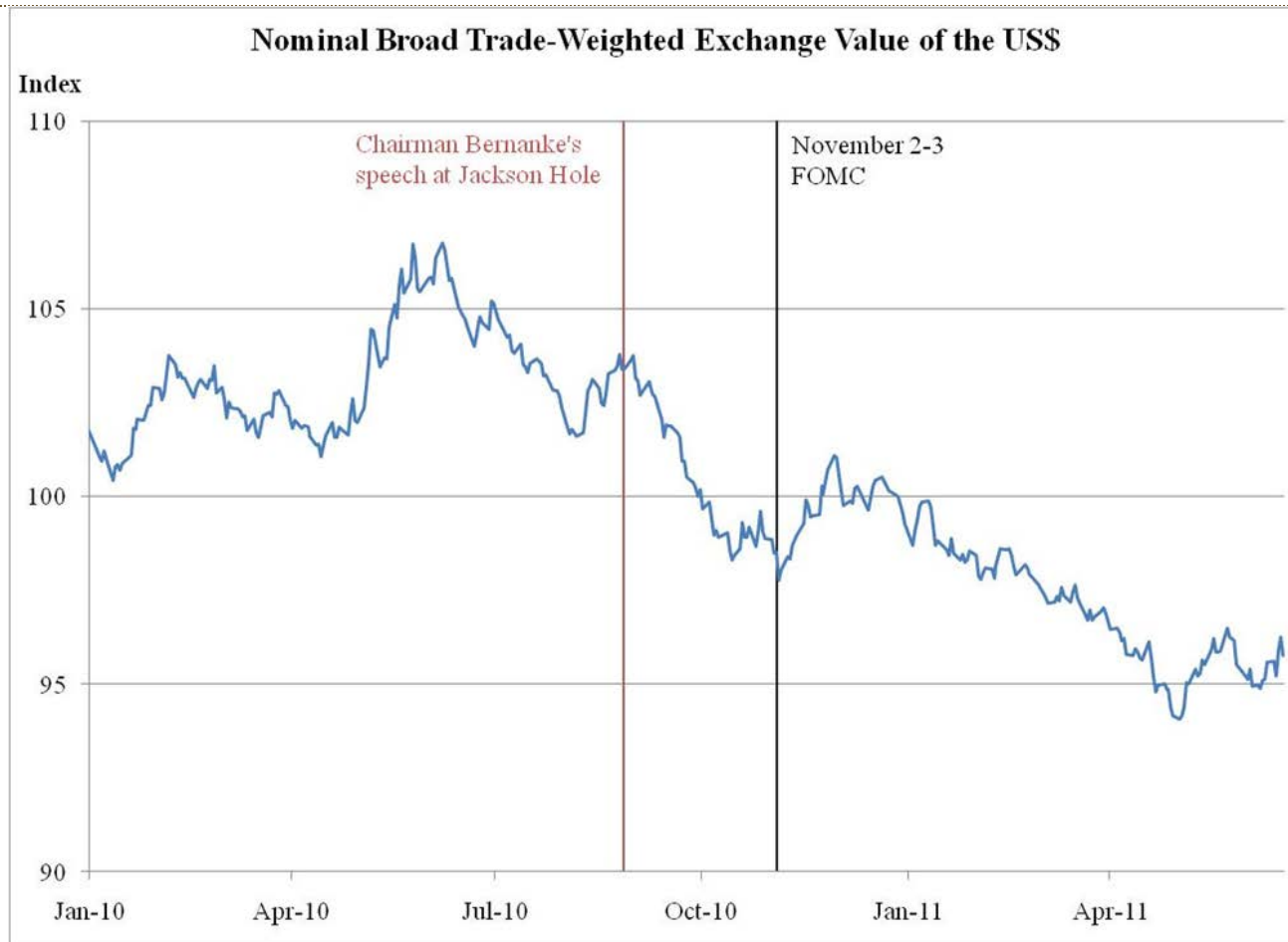
Timing

- To see these effects in the data, one must recognize that financial markets tend to anticipate the change in policy ahead of the actual policy action.
- For QE2, this period occurred from Chairman Bernanke's speech at Jackson Hole in August 2010 until the Committee's decision in November 2010.
- For the most recent changes in monetary policy, the relevant period was between the June 2012 FOMC meeting and the actual decision made at the September 2012 FOMC meeting.

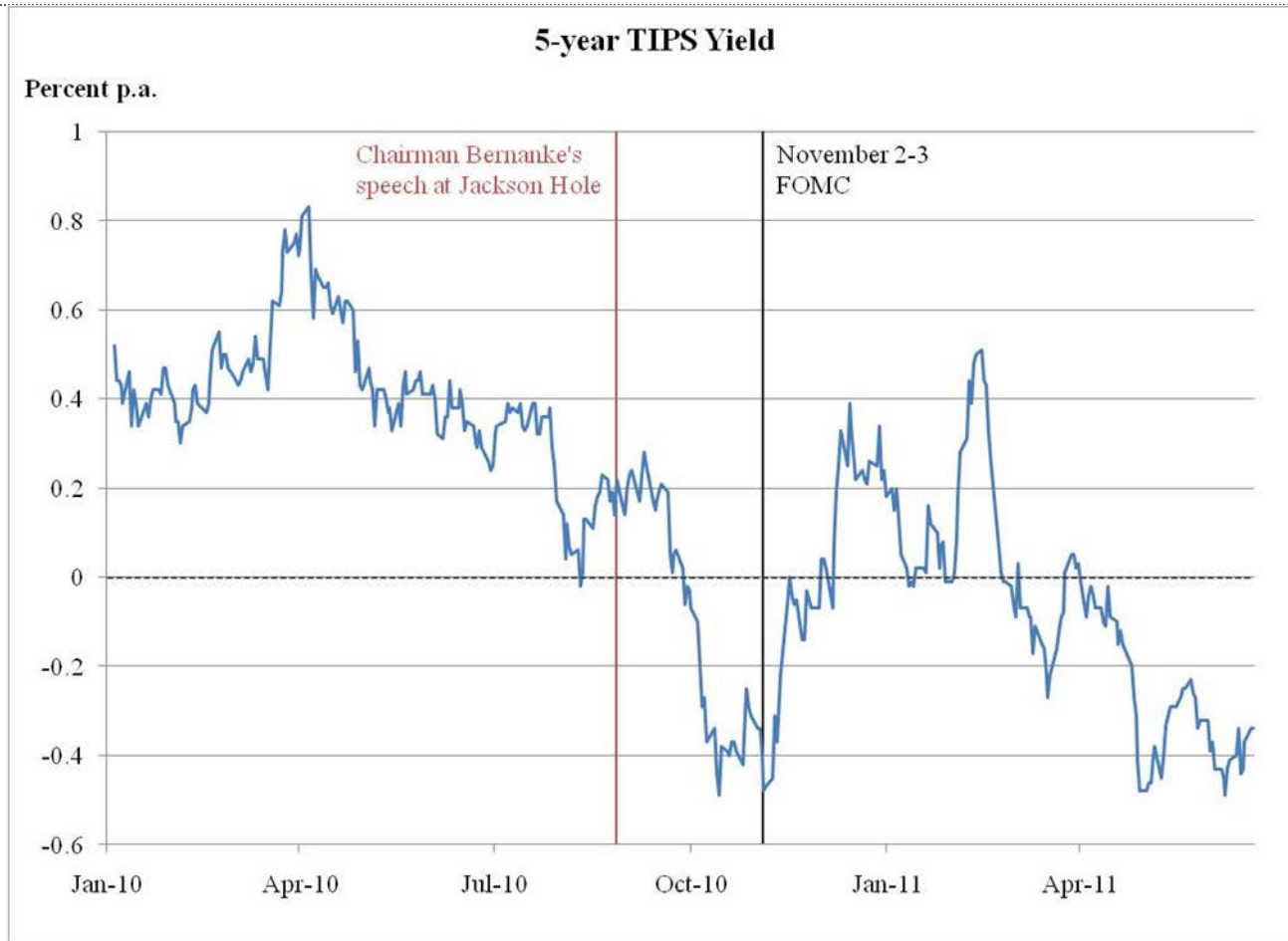
QE2: Expected inflation increased



QE2: The dollar depreciated



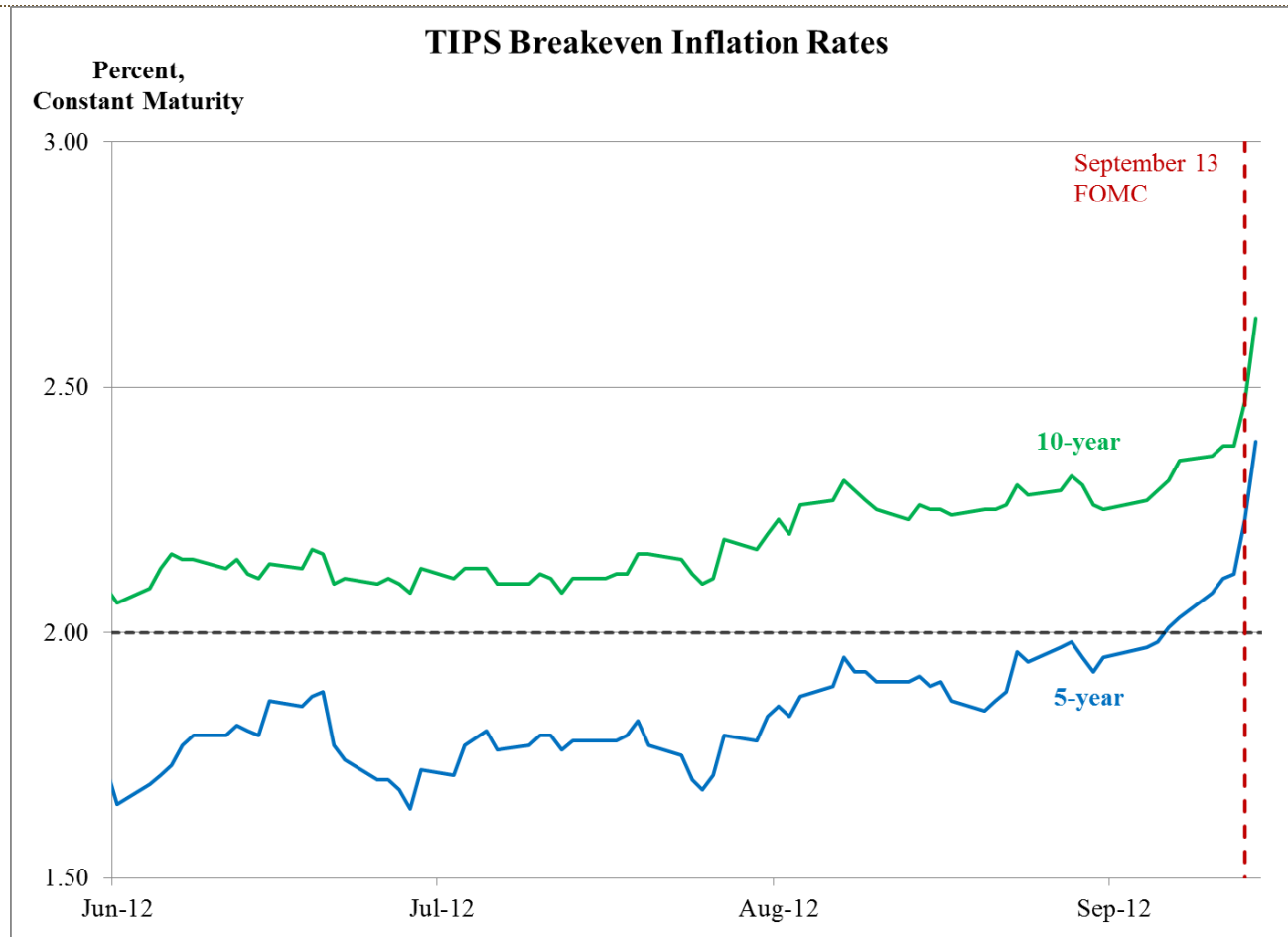
QE2: Real interest rates declined



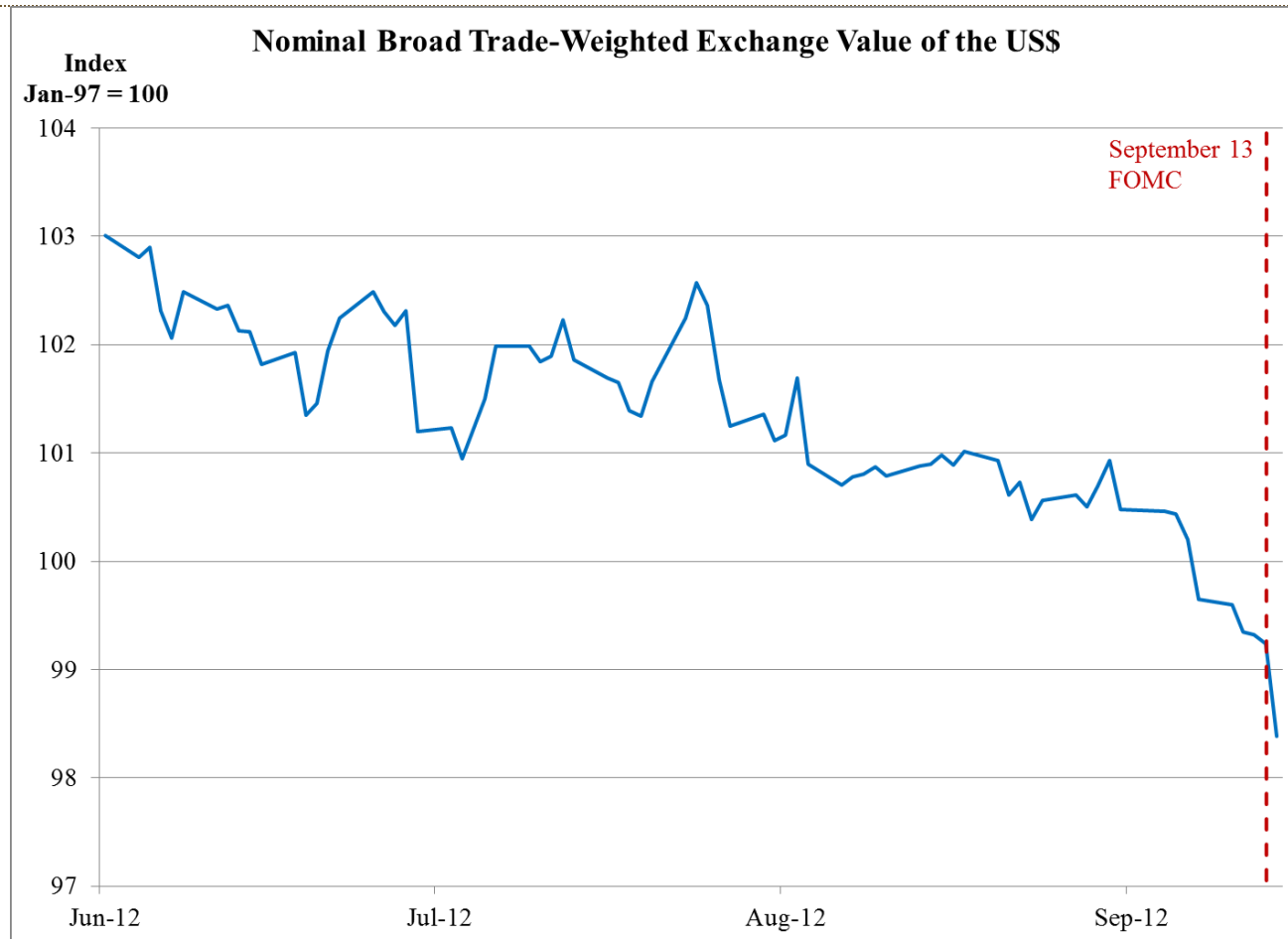
QE2: Equity prices increased



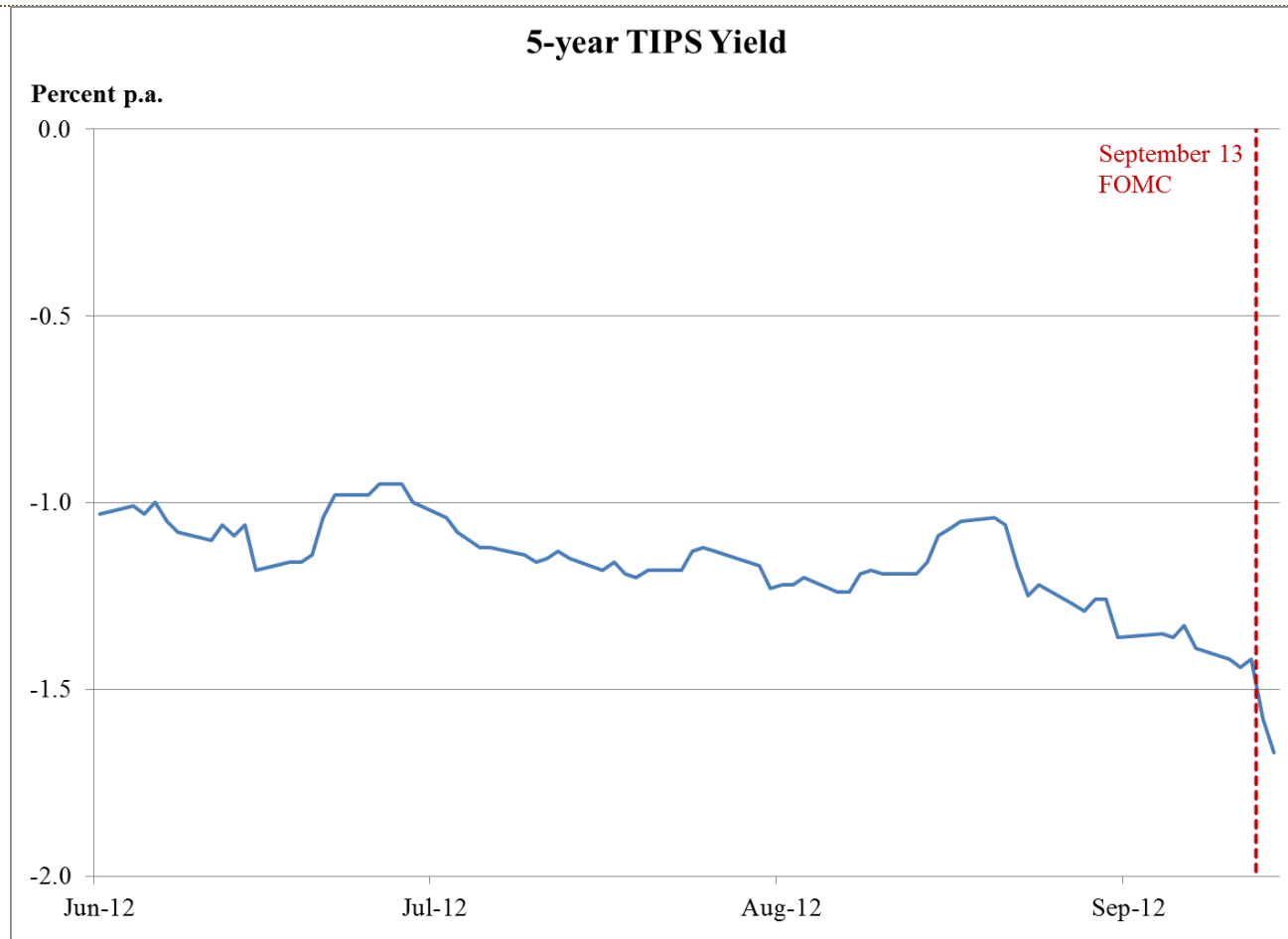
QE3: Expected inflation increased



QE3: The dollar depreciated



QE3: Real interest rates declined



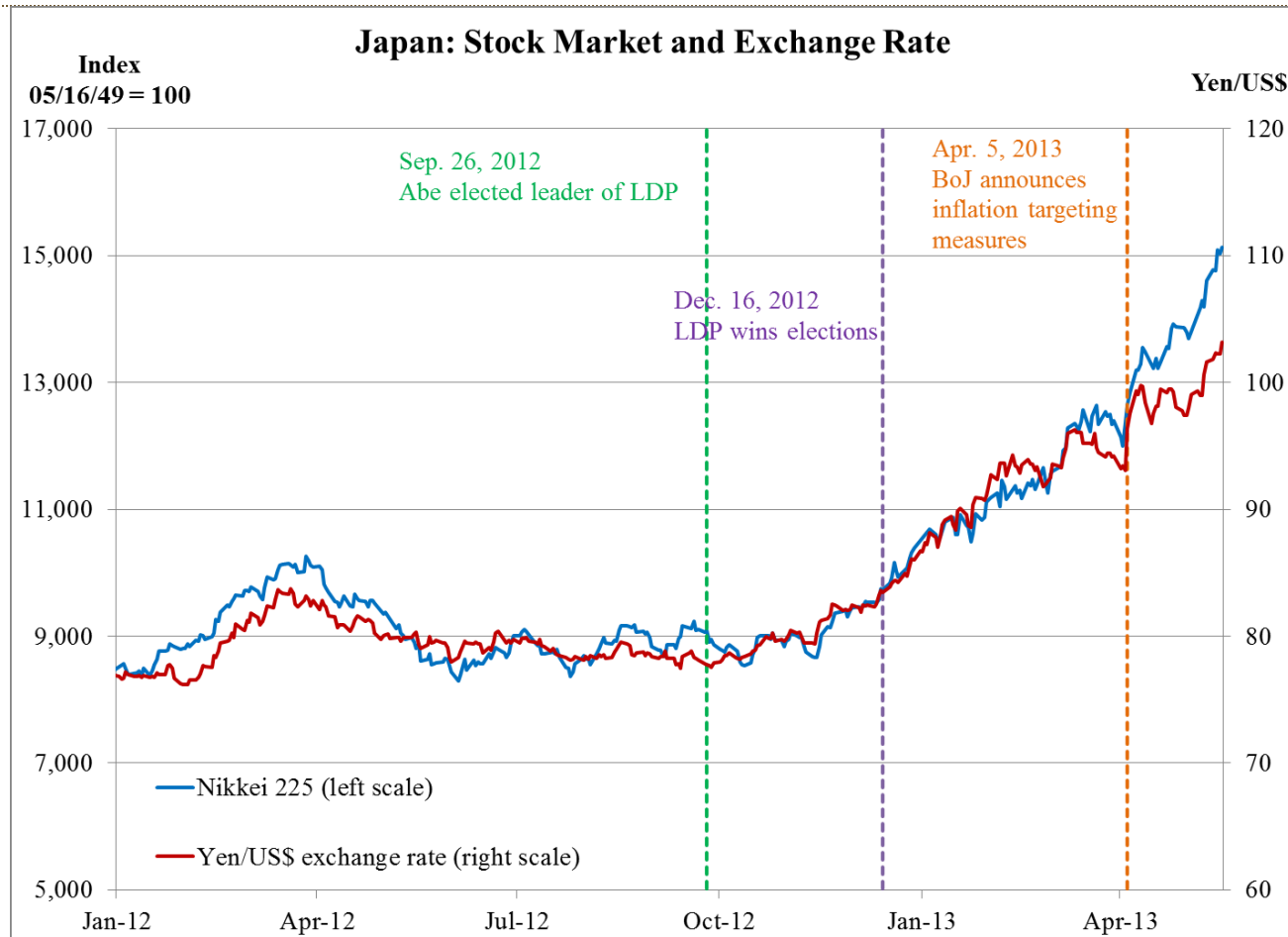
QE3: Equity prices increased



Recent QE in Japan

- Japanese policymakers have recently embarked on a new QE policy.
- Financial markets anticipated the actual policy move.
- The relevant period is between the initial rise of Shinzo Abe as a potential winner in Japanese elections and the actual adoption of the new policy at the April 2013 BOJ monetary policy meeting.
- The yen depreciated and Japanese equity valuations rose.
- Effects on real interest rates and expected inflation are harder to discern in Japanese data.

Market responses to recent QE in Japan



Real effects of QE

- The evidence presented above suggests that QE eases financial conditions according to conventional definitions.
- The academic literature has argued that the ultimate effects of easier financial conditions like these can be linked to changes in real activity at horizons of approximately 6 to 18 months.
- Discerning these effects on real activity requires careful econometrics because other shocks are influencing the economy during the period of interest.

Option 4: Negative Interest on Reserves

Negative interest on reserves

- The Fed and other central banks pay interest on reserves.
- The current rate is 25 basis points.
- One could argue that this rate is too high if the objective is to encourage banking institutions to lend out available funds.
 - I have been sympathetic to this argument.
- The extent to which the central bank could charge for the holding of reserves is probably limited.
- Effects of moving in this direction are probably minor.

Option 5: Twist

Twist

- The central bank can sell short-term government debt and buy longer-term government debt in a “twist” operation.
- This policy tool removes duration from the market.
- The FOMC has experimented with this tool between mid-2011 and the end of 2012.
- The nature and pace of issuance will also affect the duration of the government debt outstanding in private sector hands.
- There is little historical evidence that the maturity structure of the U.S. debt is an important macroeconomic variable.
- Any effects from the twist operation were probably minor.

Conclusions

The key monetary policy question

- The most important monetary policy question during the last five years has been how to pursue easier monetary policy when the policy rate is already near zero.
- I have reviewed a number of policy options ranging from doing nothing to quantitative easing.
- My review suggests that QE has been the most reliable tool in this situation.

Differences between the ECB and the Fed

- If inflation slows further in Europe, the ECB governing council may wish to take actions beyond those, such as the OMT, that have been taken to mitigate the continent's debt crisis.
 - The choices reviewed here include (1) forward guidance and (2) quantitative easing.
- Forward guidance may be easier to implement, but there is some risk of sending a “pessimistic signal.”
- In Europe there is no “federal government debt market.”
 - To implement QE a decision has to be made on the debt shares to purchase (e.g., GDP-weighted shares).

Conclusions for near-term stabilization policy

- For the U.S.:
 - Continue with the present quantitative easing program, adjusting the rate of purchases appropriately in view of incoming data on both real economic performance and inflation.
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