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# Monetary Policy Options in a Low Policy Rate Environment

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House of Finance—Goethe Universität Frankfurt

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# Introduction

## The EU-U.S. macroeconomic situation

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- Recovery from the financial crisis and the ensuing recession has been slower than expected in the U.S.
- 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

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- 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?

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- 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

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- 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.S. Macroeconomic Situation



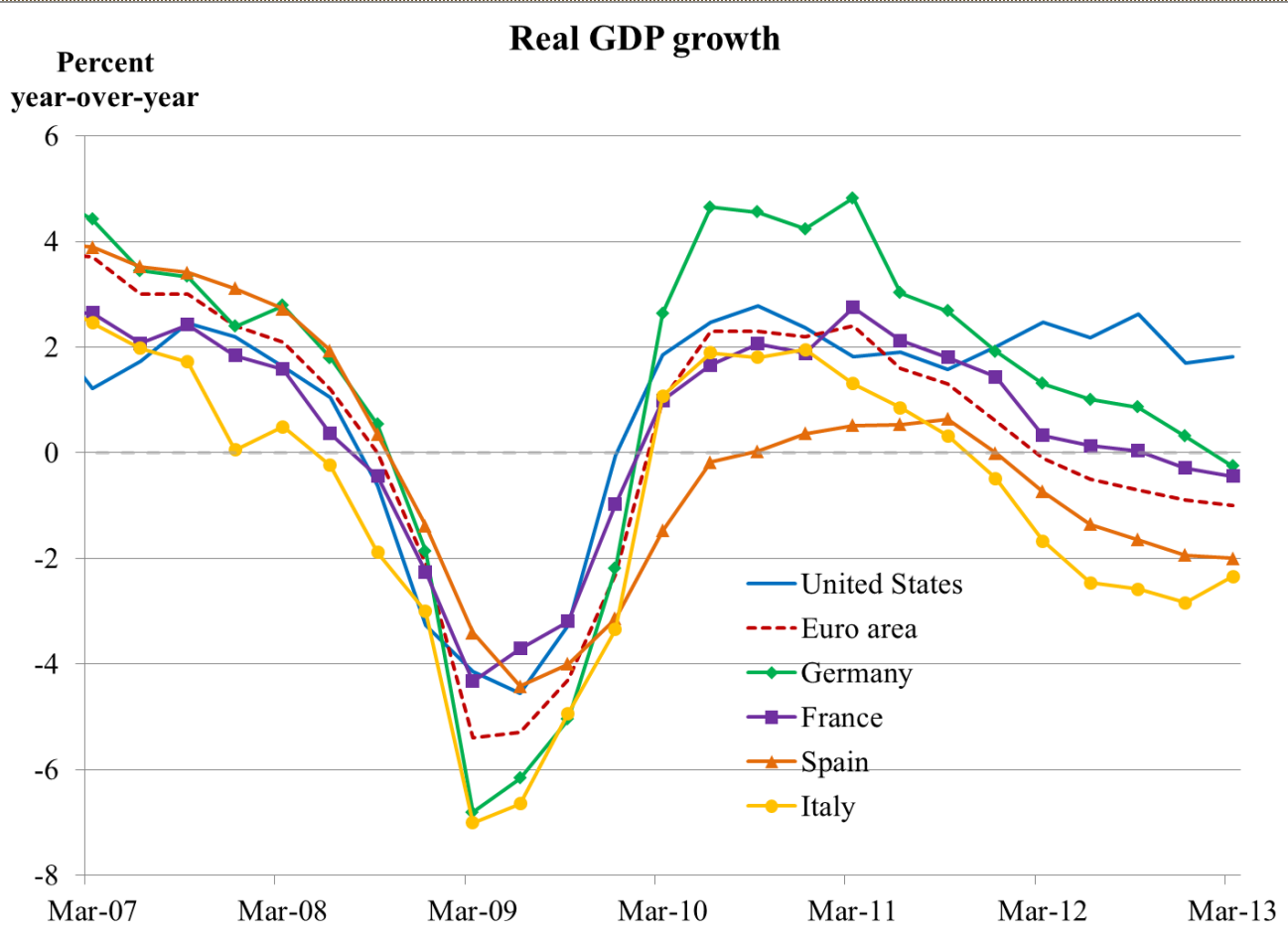
## The essentials of the EU-US situation

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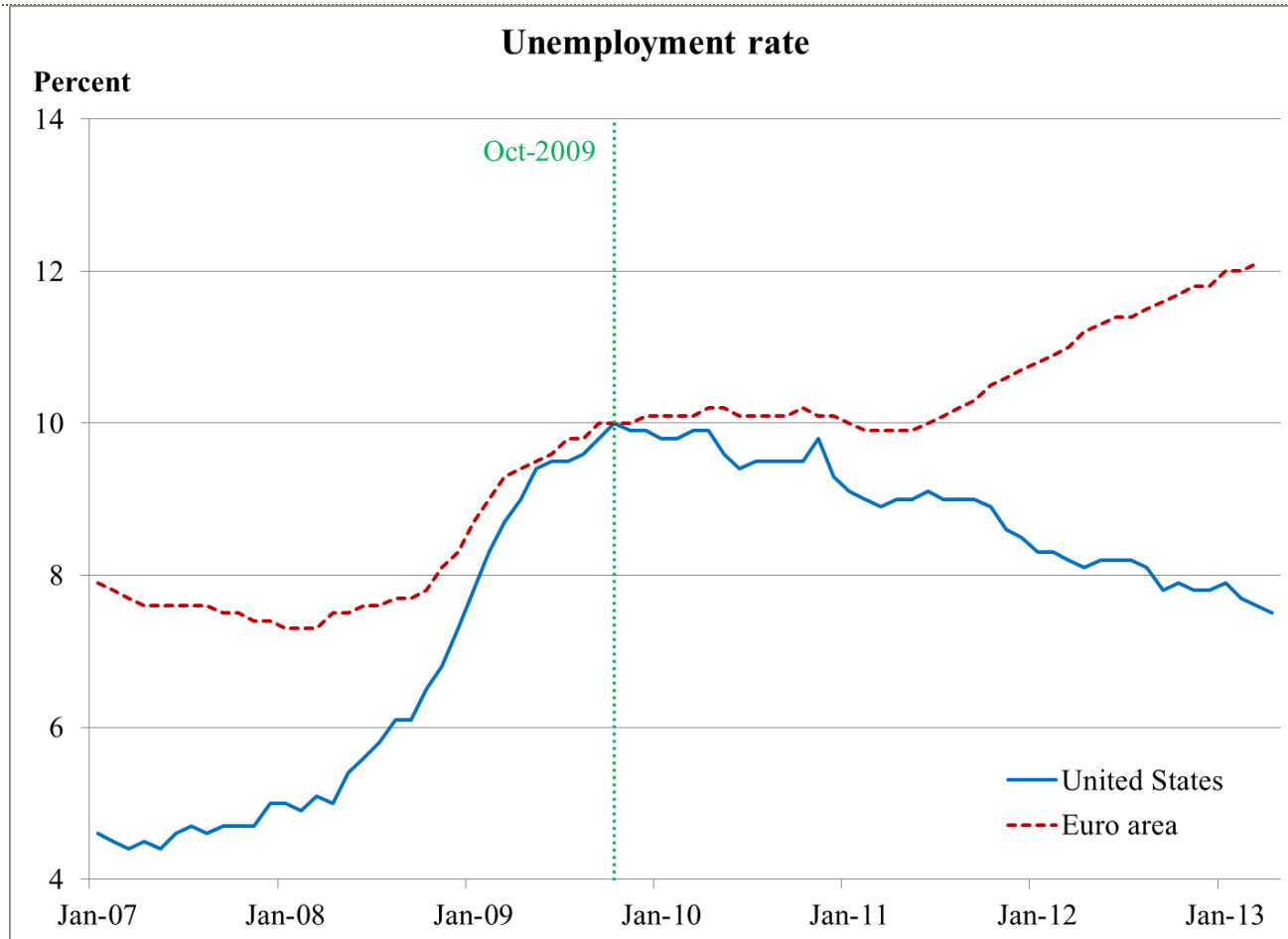
- The U.S. has continued to grow at a relatively slow rate following the end of the recession in 2009.
- The Euro area initially recovered at a similar rate, but recently fell back into recession.
- Unemployment has continued to fall in the U.S. despite relatively slow growth.
- Unemployment has increased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



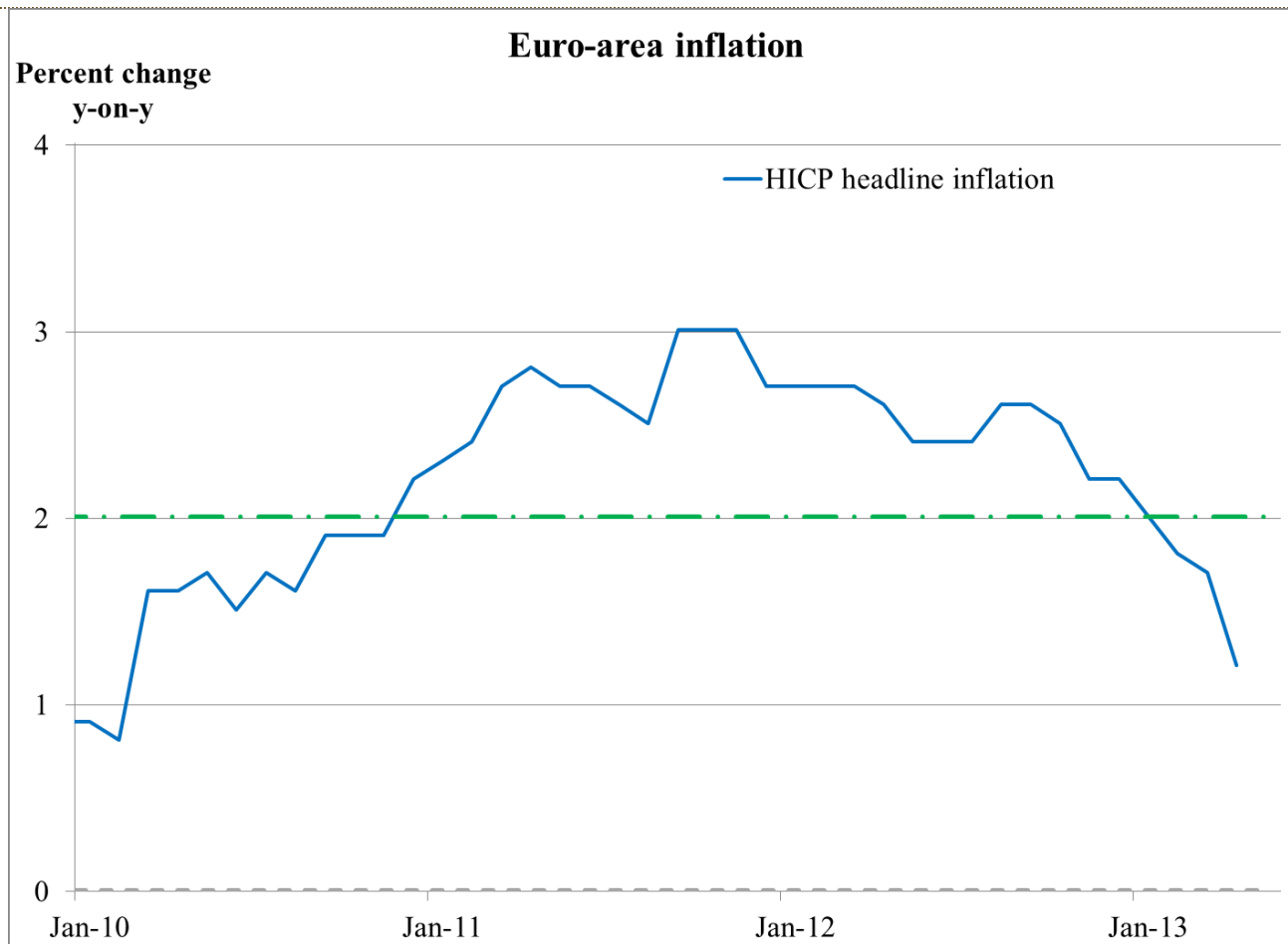
# Real GDP growth: U.S. vs. Euro area



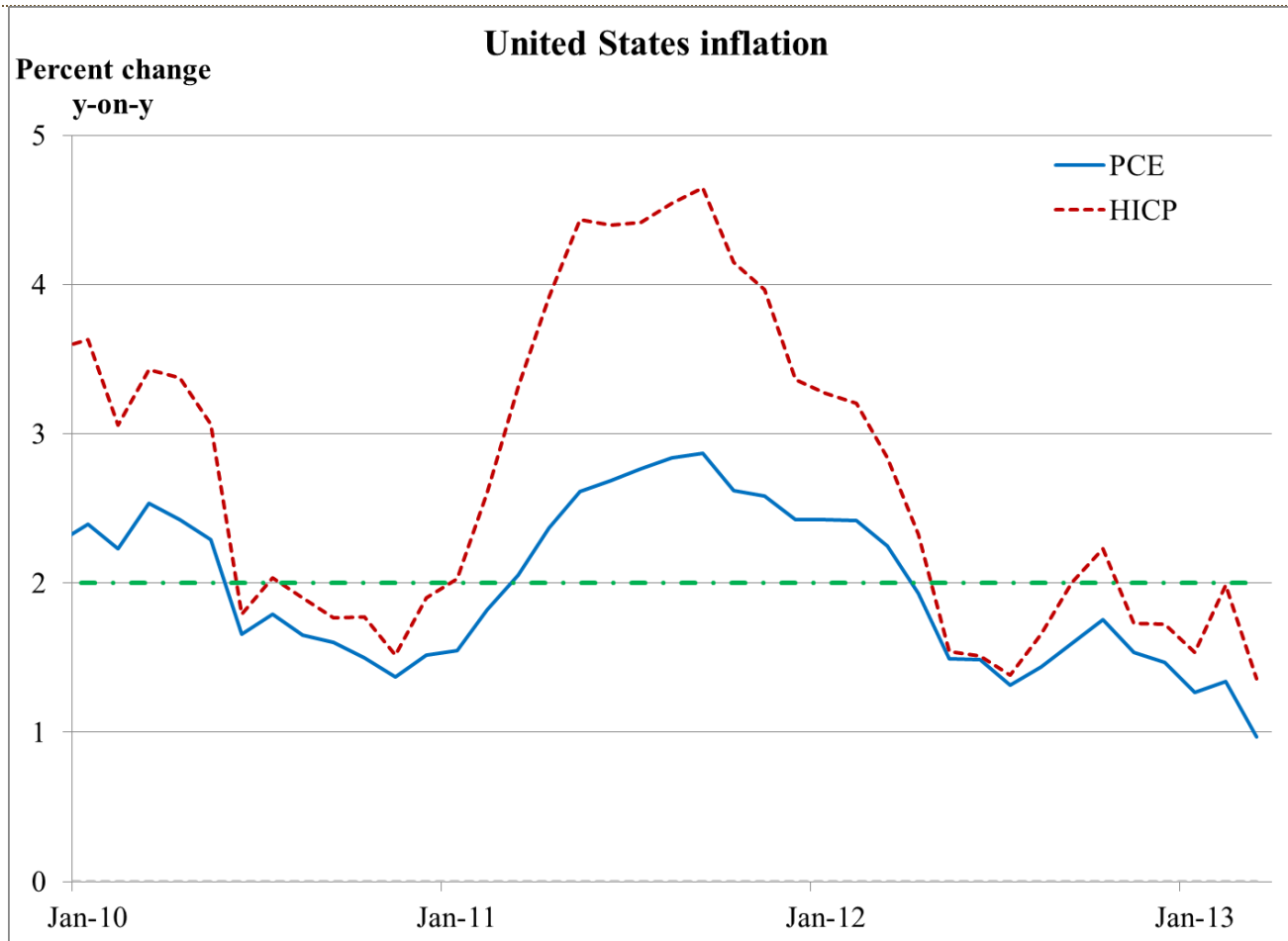
# Unemployment: U.S. vs. Euro area



# Euro-area inflation



# U.S. inflation



# The Monetary Policy Question

# The monetary policy question

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- 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

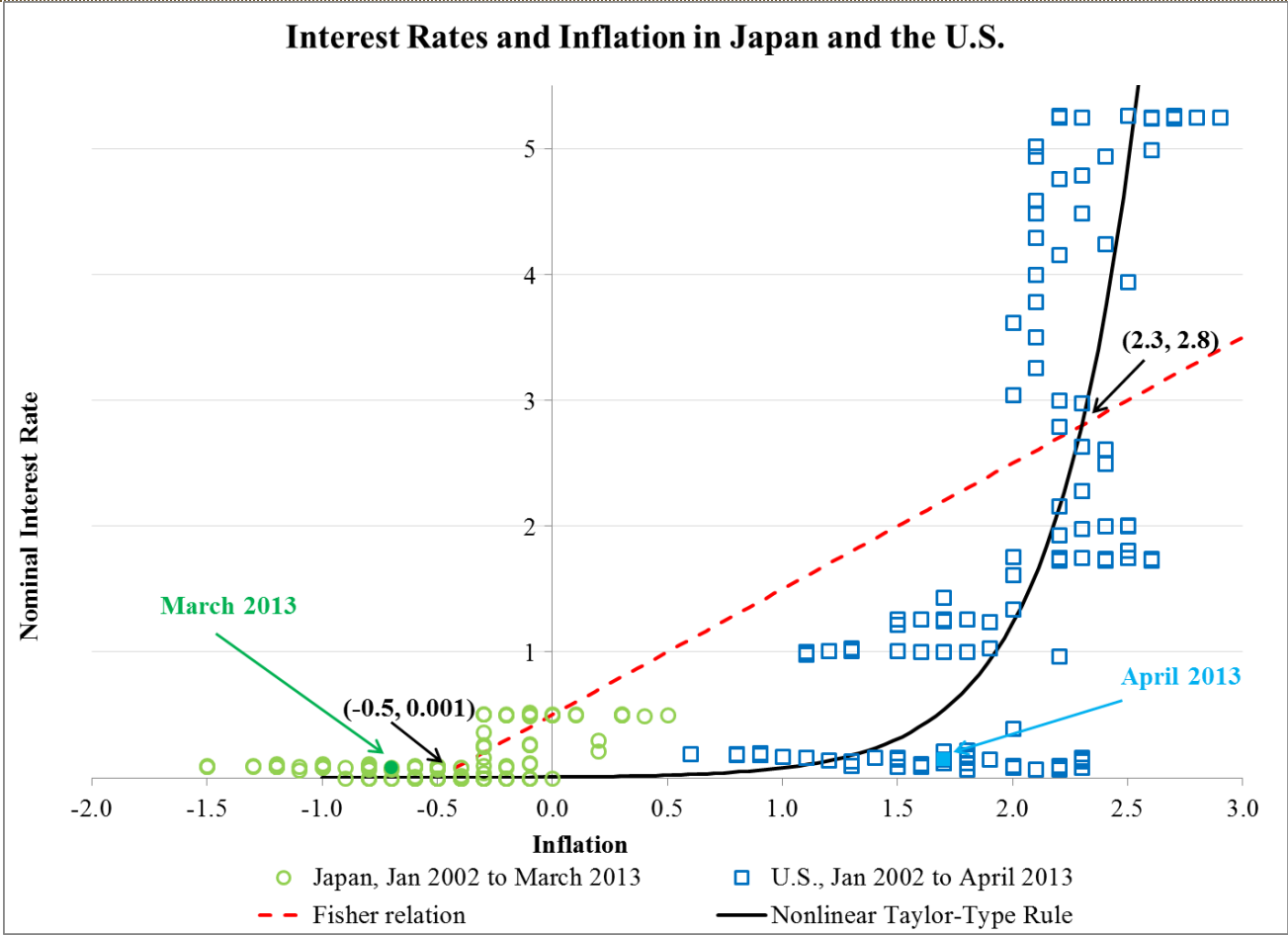
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- One might plausibly argue that the near-zero policy rate provides sufficient monetary accommodation to keep inflation near target and to assist the real economy to the extent possible.
- The experience from Japan seems to indicate that merely keeping 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.

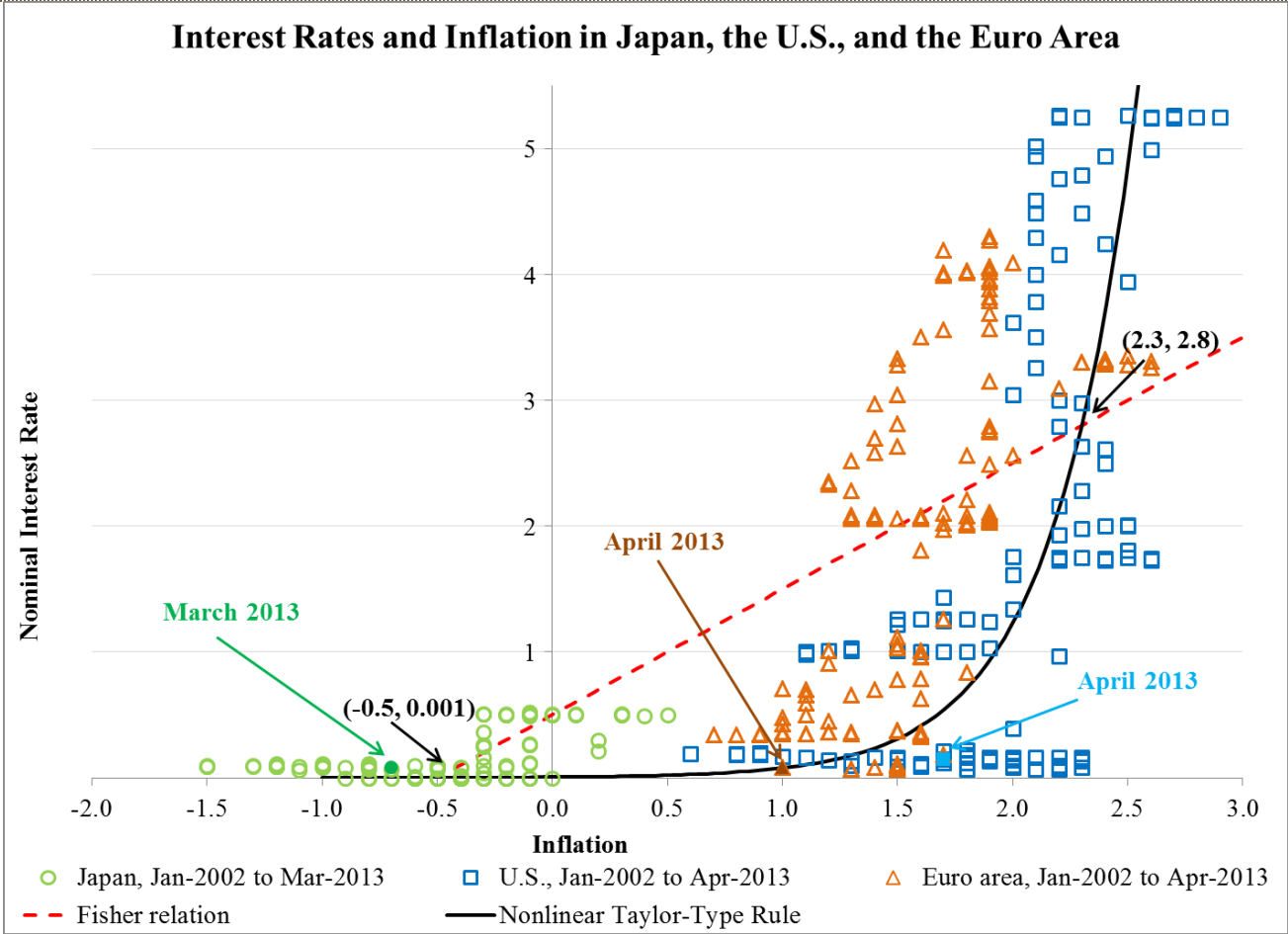
## The academic debate on this question

- 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



# Two steady states



## Widespread agreement

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- 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

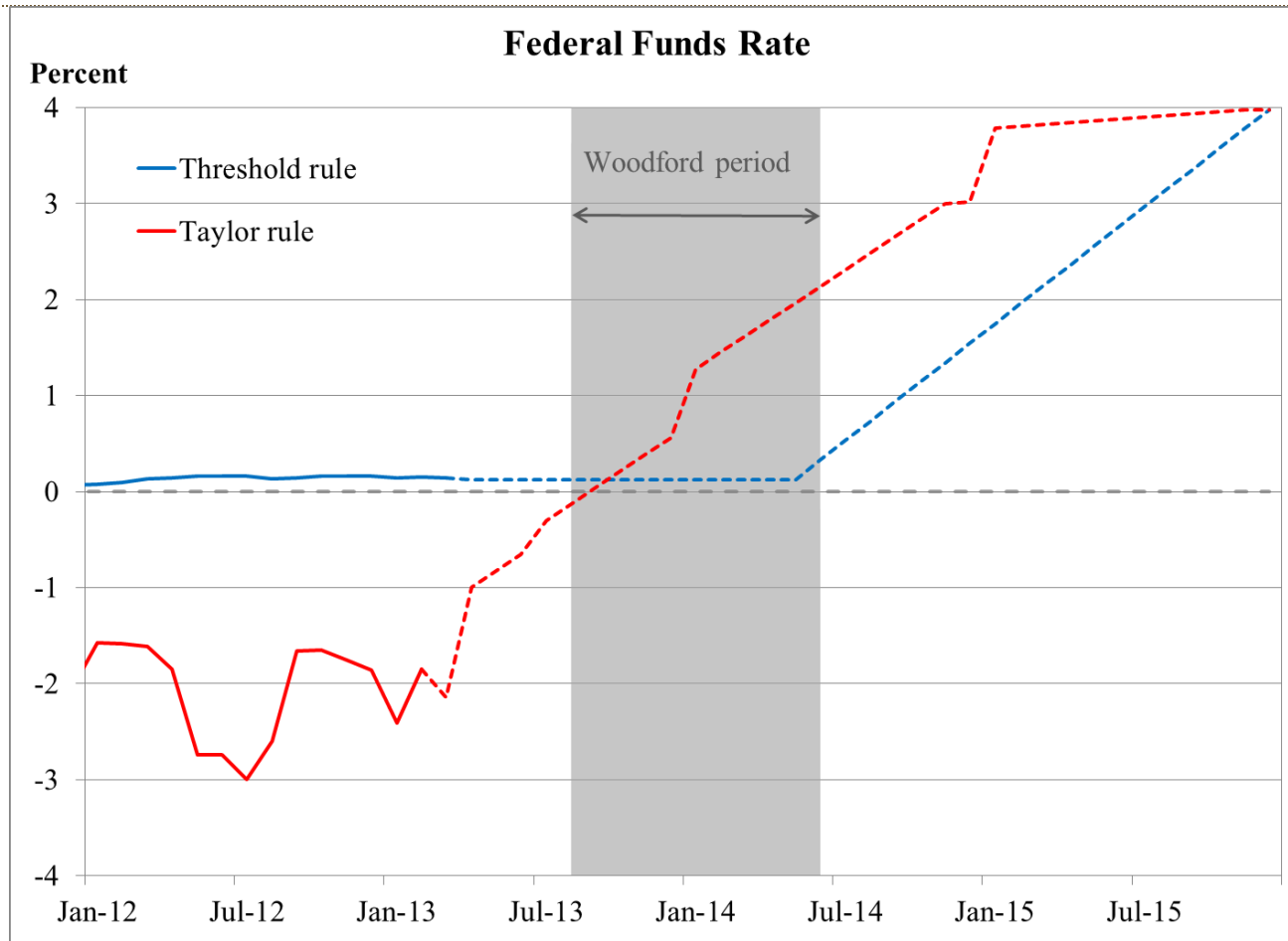
## The case for forward guidance

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- 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 perfectly credible to have an impact.



# The Woodford period: An illustration



## The credibility issue

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- 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

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- 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

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- 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

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- Other central banks, including the ECB, 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.

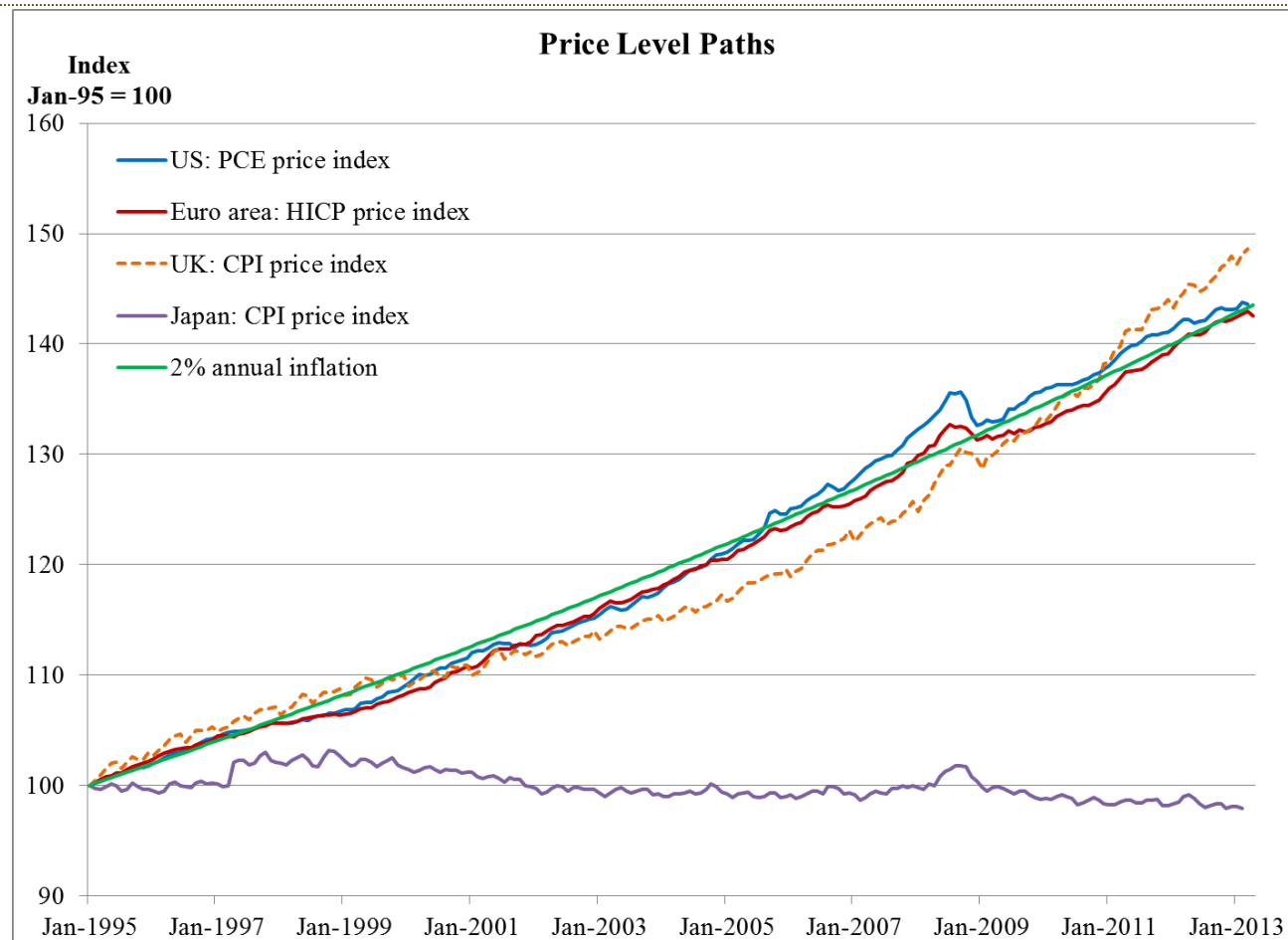
# Price Level Targeting as Forward Guidance

## 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

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- 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.
- 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

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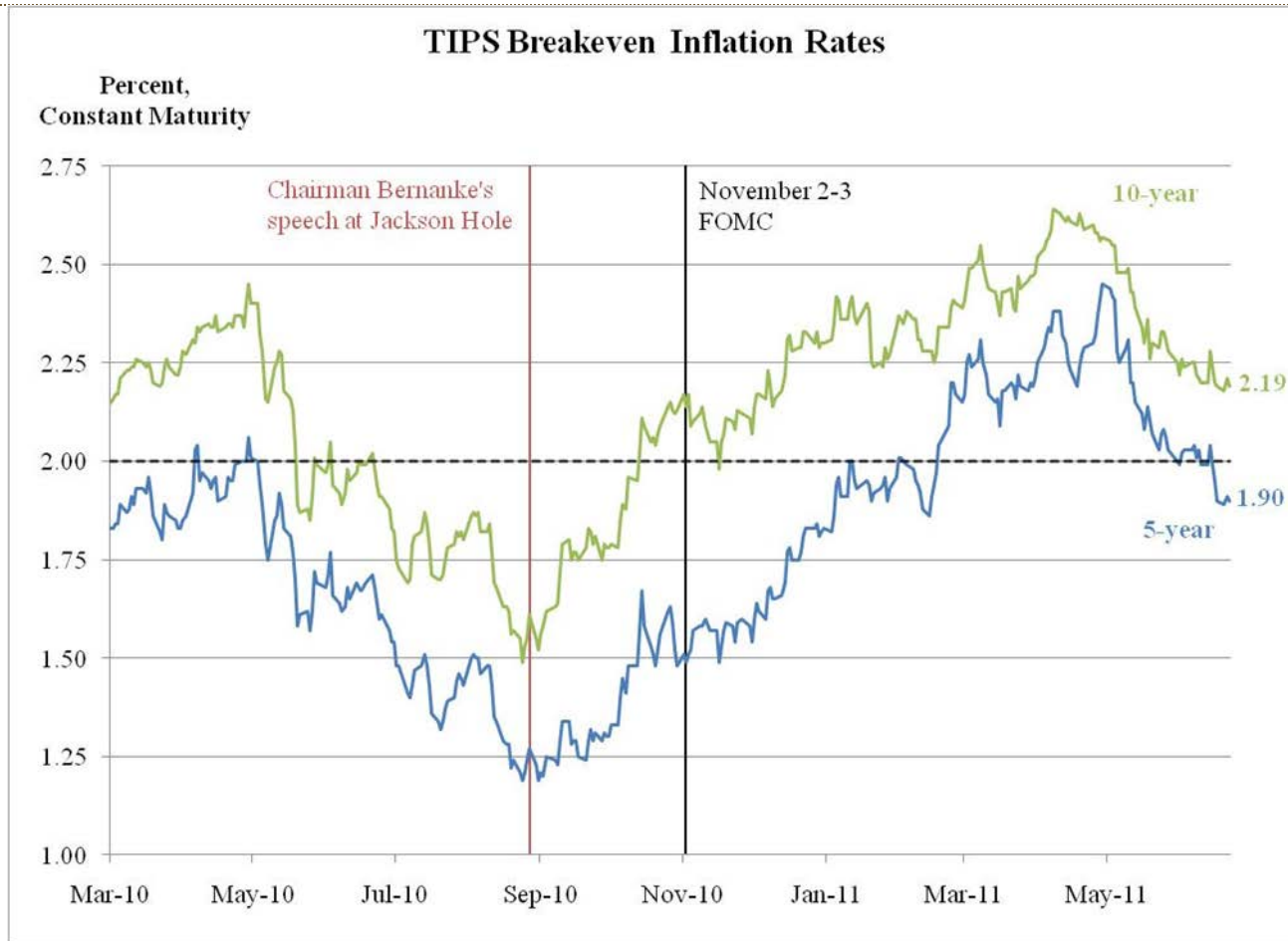
- Standard New Keynesian theory suggests that policy actions of this type will not be effective.
- However, the reaction in financial markets clearly indicates that such purchases are effective in easing financial conditions.
- Traditional effects of “easier monetary policy” include (1) higher inflation 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

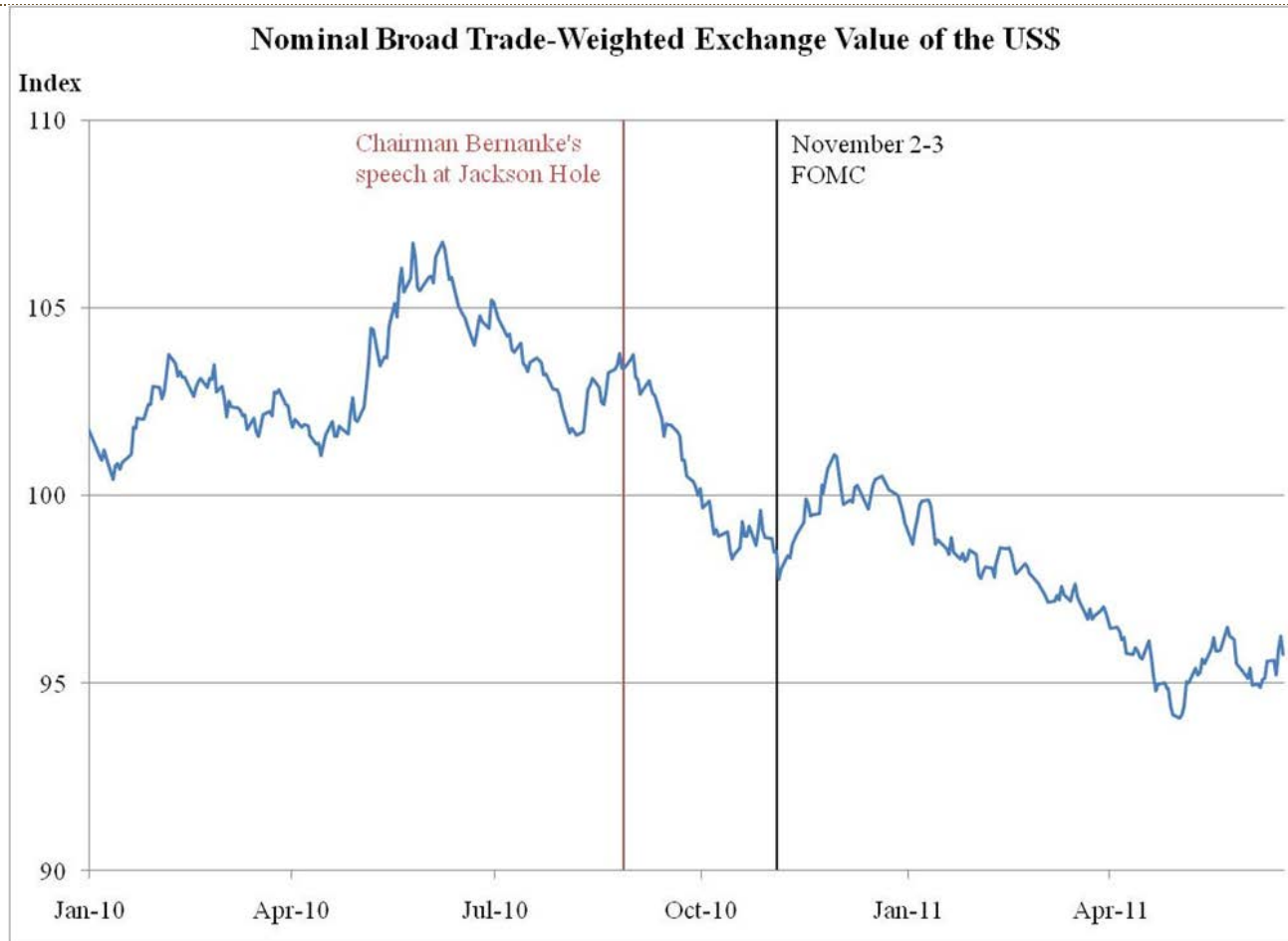
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- To see these effects in the data, one must recognize that financial markets tend to anticipate the change in policy ahead of the actual policy action.
- For QE2, this period occurred from Chairman Bernanke's speech at Jackson Hole in August 2010 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.

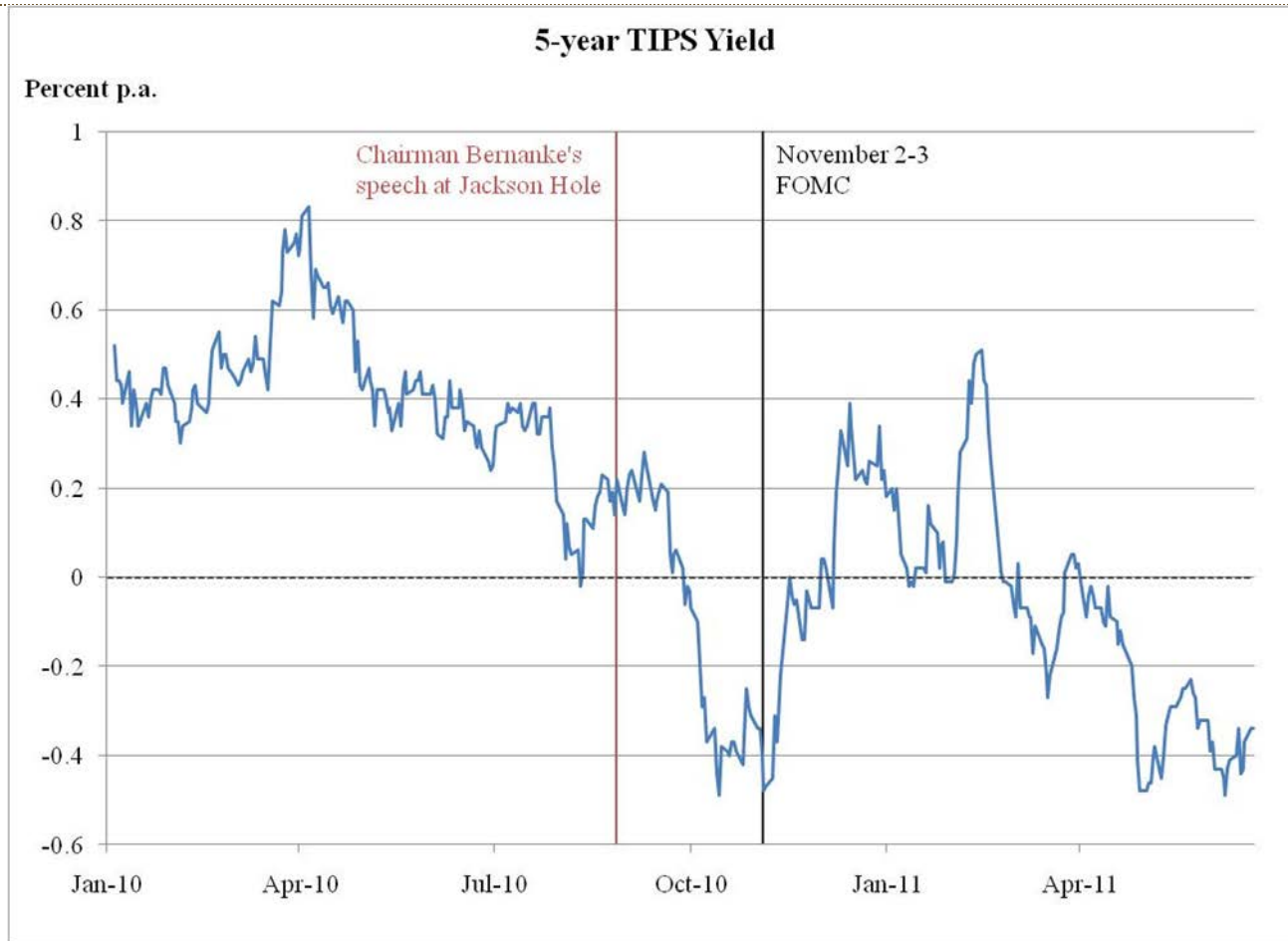
# QE2: Expected inflation increased



# QE2: The dollar depreciated



# QE2: Real interest rates declined

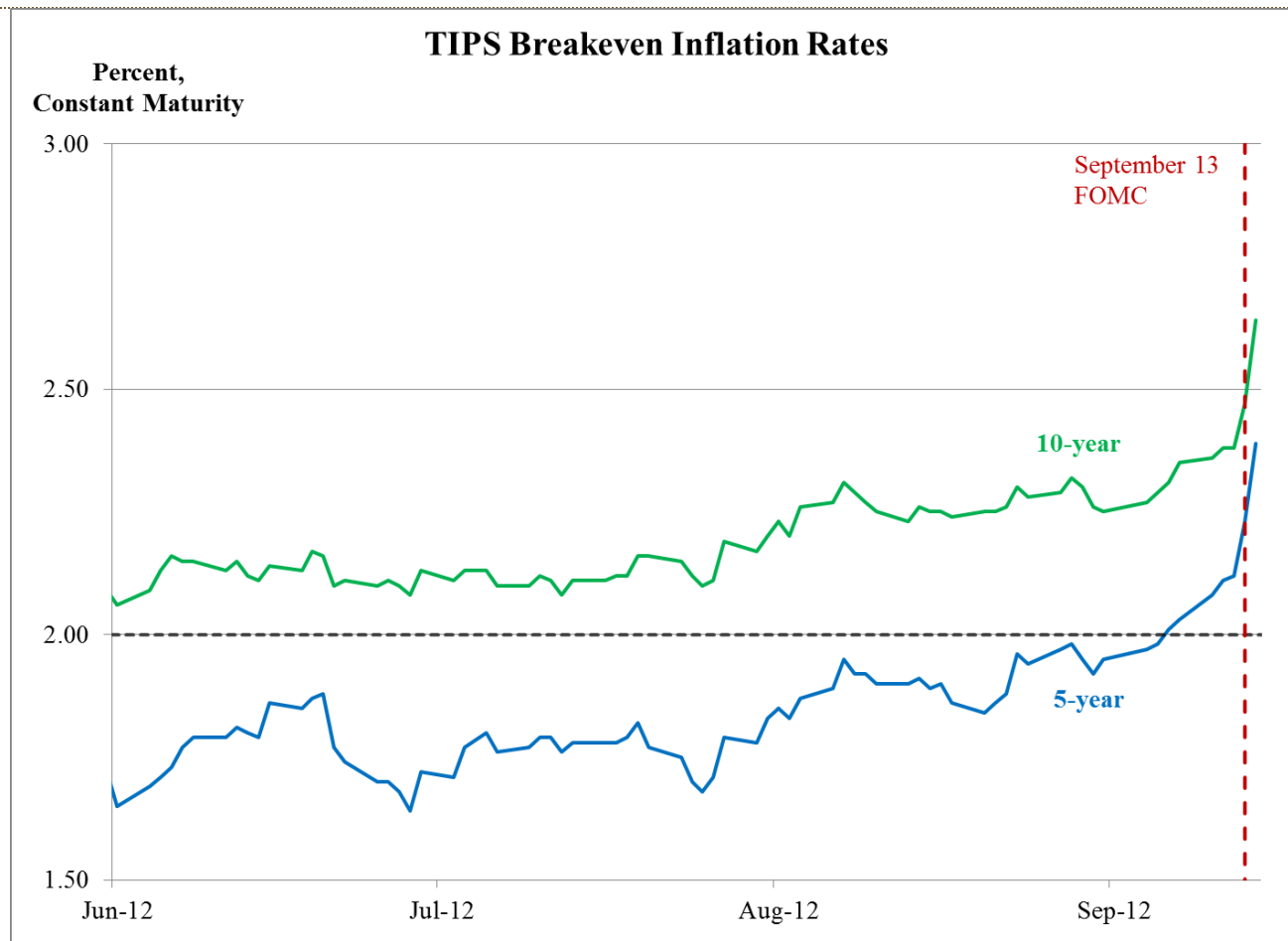




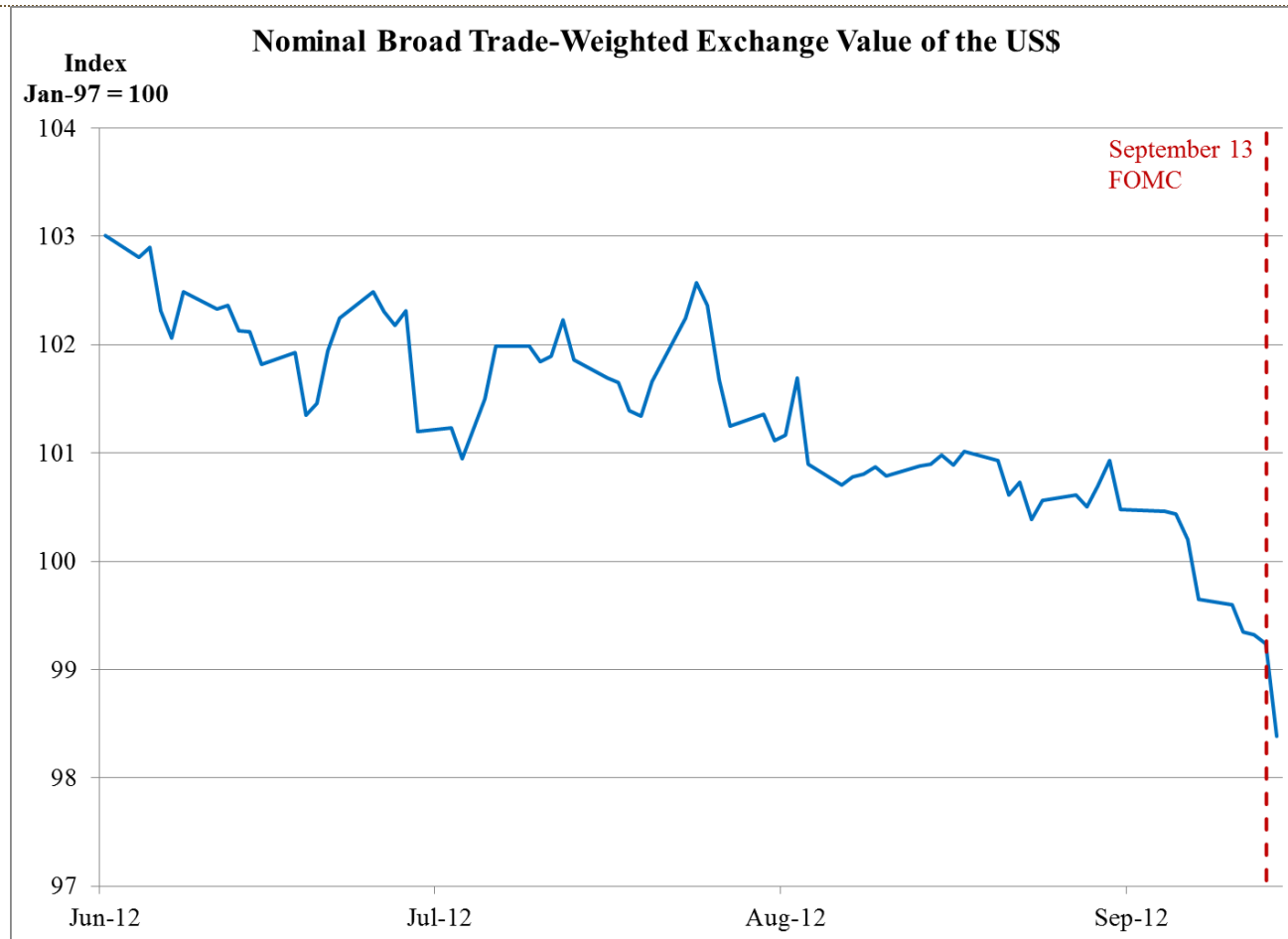
# QE2: Equity prices increased



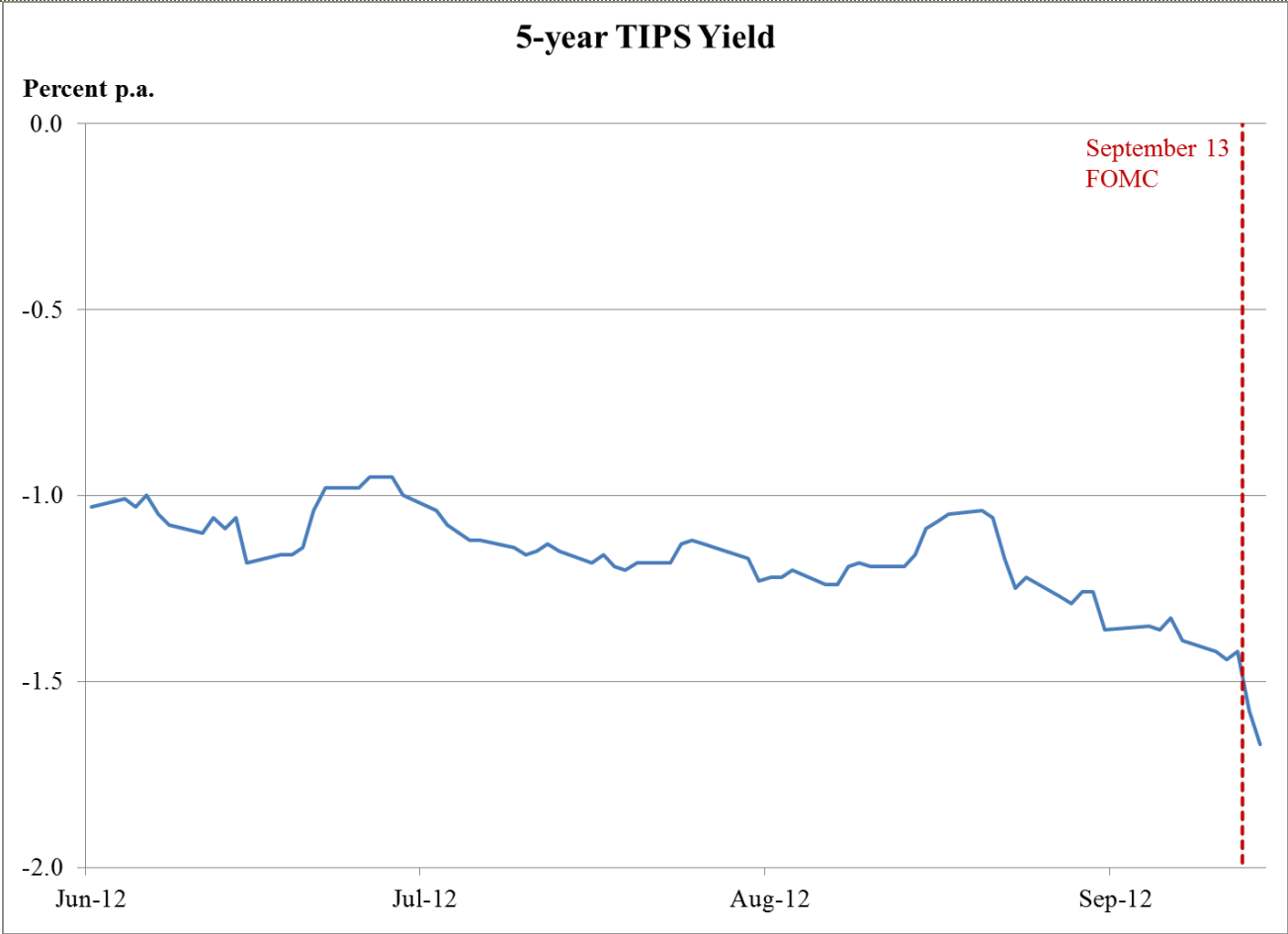
# QE3: Expected inflation increased



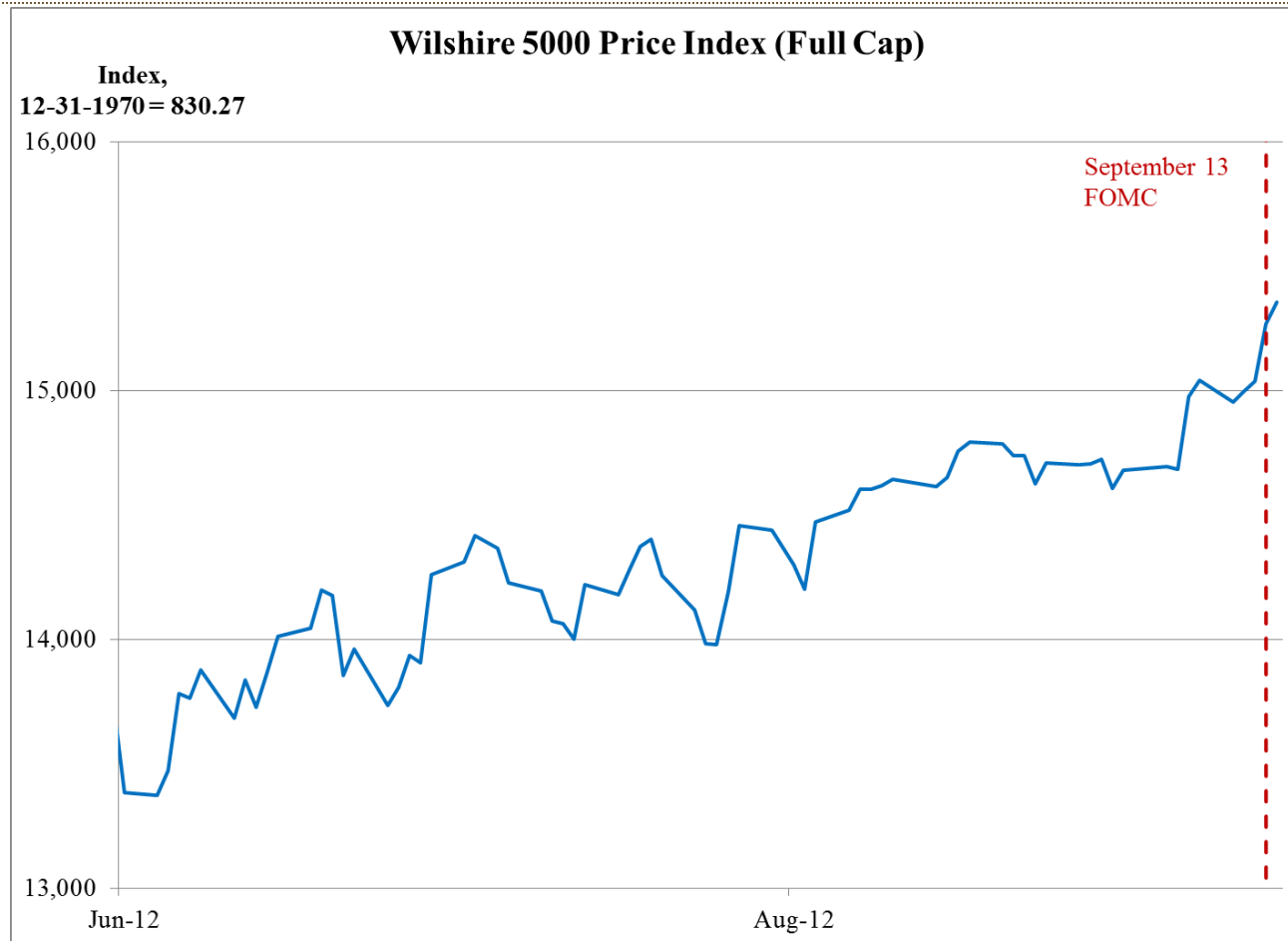
# QE3: The dollar depreciated



# QE3: Real interest rates declined



# QE3: Equity prices increased

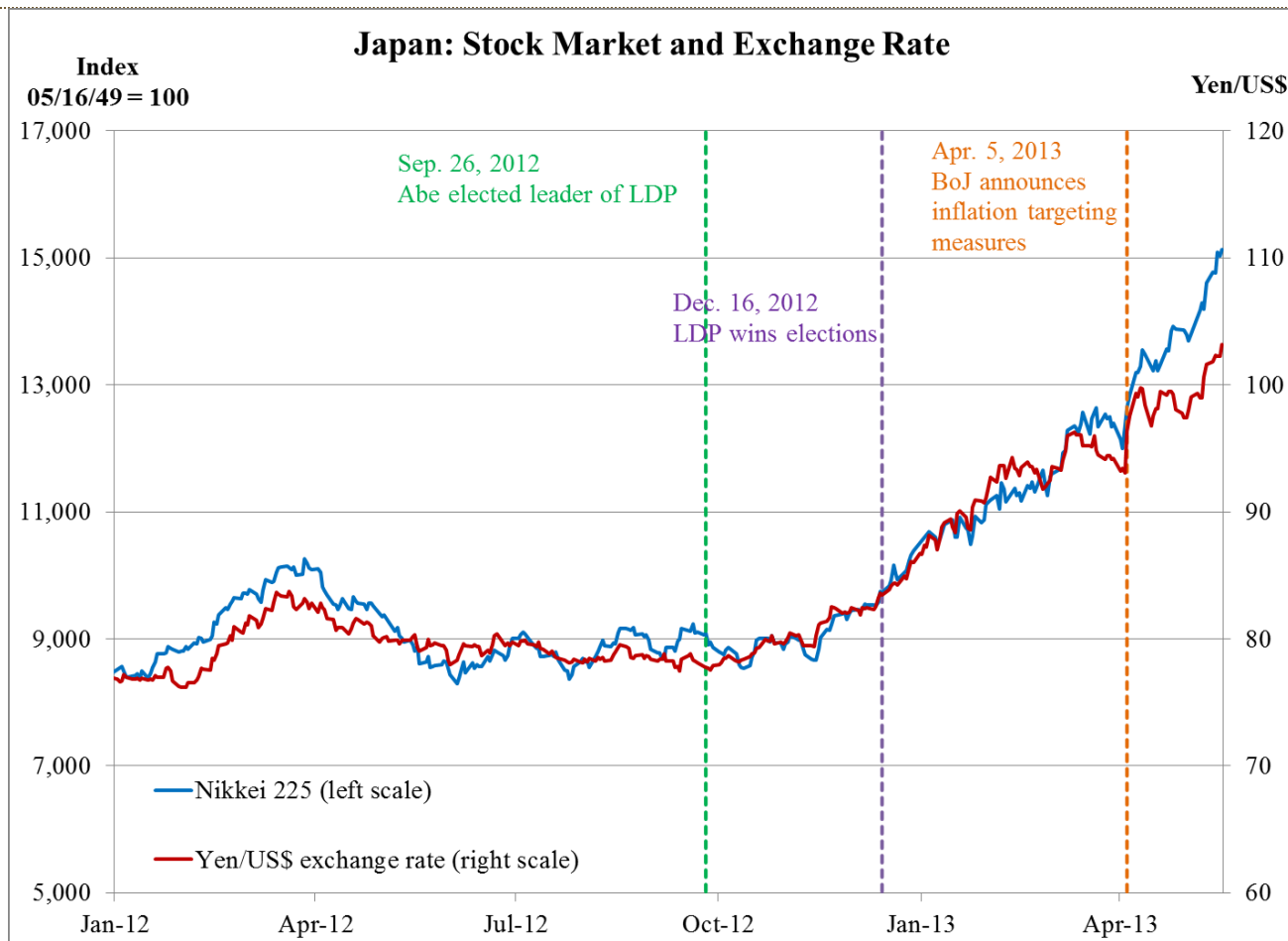


## Recent QE in Japan

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- 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

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- 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

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- 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

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- 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.

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# Conclusions

# The key monetary policy question

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- 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

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- 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

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- For the U.S.:
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