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# Does Low Inflation Justify a Zero Policy Rate?

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# Introduction

## The economy approaches normal

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- Labor markets have shown steady improvement this year.
- Unemployment has entered the range of FOMC estimates of longer-run normal values.
- Broader indexes of labor market performance have risen above their long-run averages.
- Lower longer-term interest rates and lower oil prices in recent months should provide additional tailwinds for U.S. macroeconomic performance.

## Inflation remains low

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- The inflation target of the FOMC is 2 percent.
- Currently, inflation is running below this target.
- Market-based measures of inflation expectations fell in recent months, but have reversed course.
- Global factors, including low inflation in Europe and lower oil prices, may be temporarily holding inflation down in the U.S.
- Inflation is generally projected to rise toward the FOMC's 2 percent target.

## The policy rate

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- The policy rate remains near zero, where it has been since December 2008, nearly six years ago.
- Can the current macro data configuration rationalize this exceptionally low setting for the policy rate?
  - One possibility is to cite the fact that inflation is running below target.
- Main point of this talk: Inflation at the current level is not enough to justify remaining at a near-zero policy rate.
  - Low inflation can justify a policy rate somewhat lower than normal, but not zero.

# Improving Labor Markets

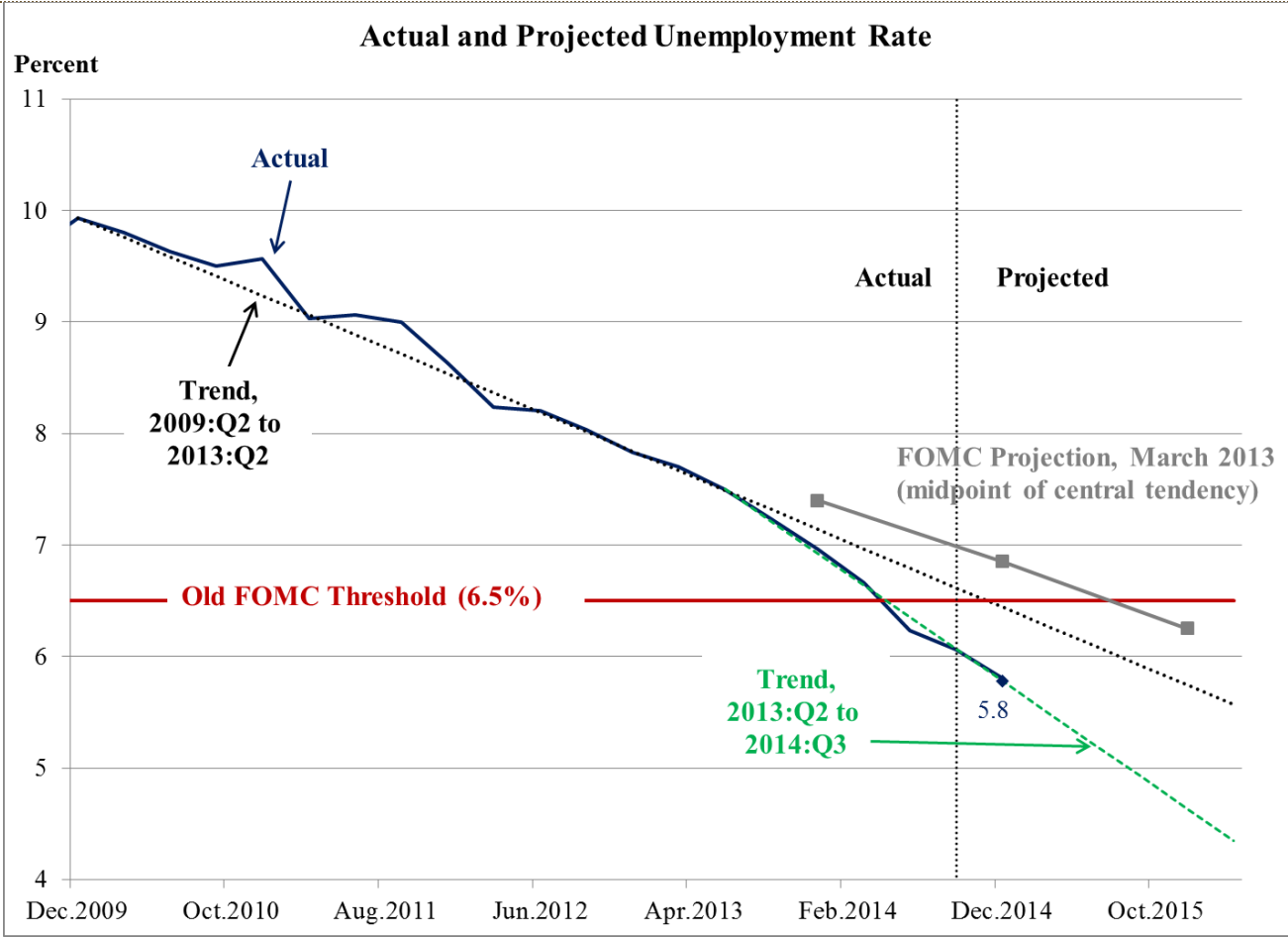
## Unemployment

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- The unemployment rate has fallen much faster than the FOMC expected, and the fall has recently accelerated.
- As of March 2013, the Committee's Summary of Economic Projections (SEP) suggested that the unemployment rate in December 2014 would be just below 7 percent.
  - The actual unemployment rate today is 5.8 percent, about a full percentage point ahead of schedule.
- In addition, today's unemployment rate has entered into the range of longer-run or normal values suggested by the SEP ranges.



# Unemployment rate



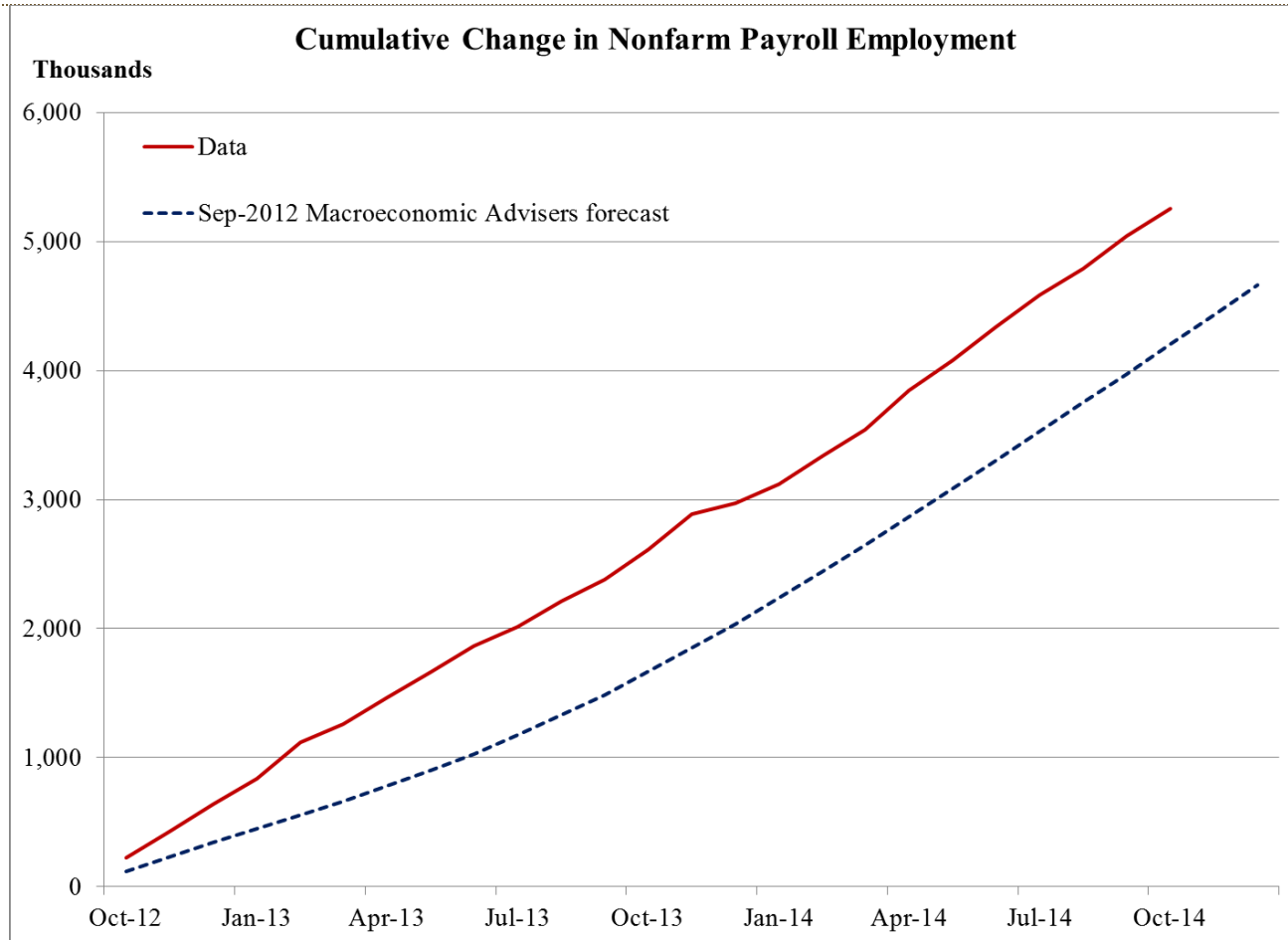


## Job creation

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- Nonfarm payroll employment has also increased faster than anticipated.
- Roughly a million more jobs have been added relative to private sector forecasts as of September 2012, the date of the launch of QE3.

# Nonfarm payrolls have exceeded expectations



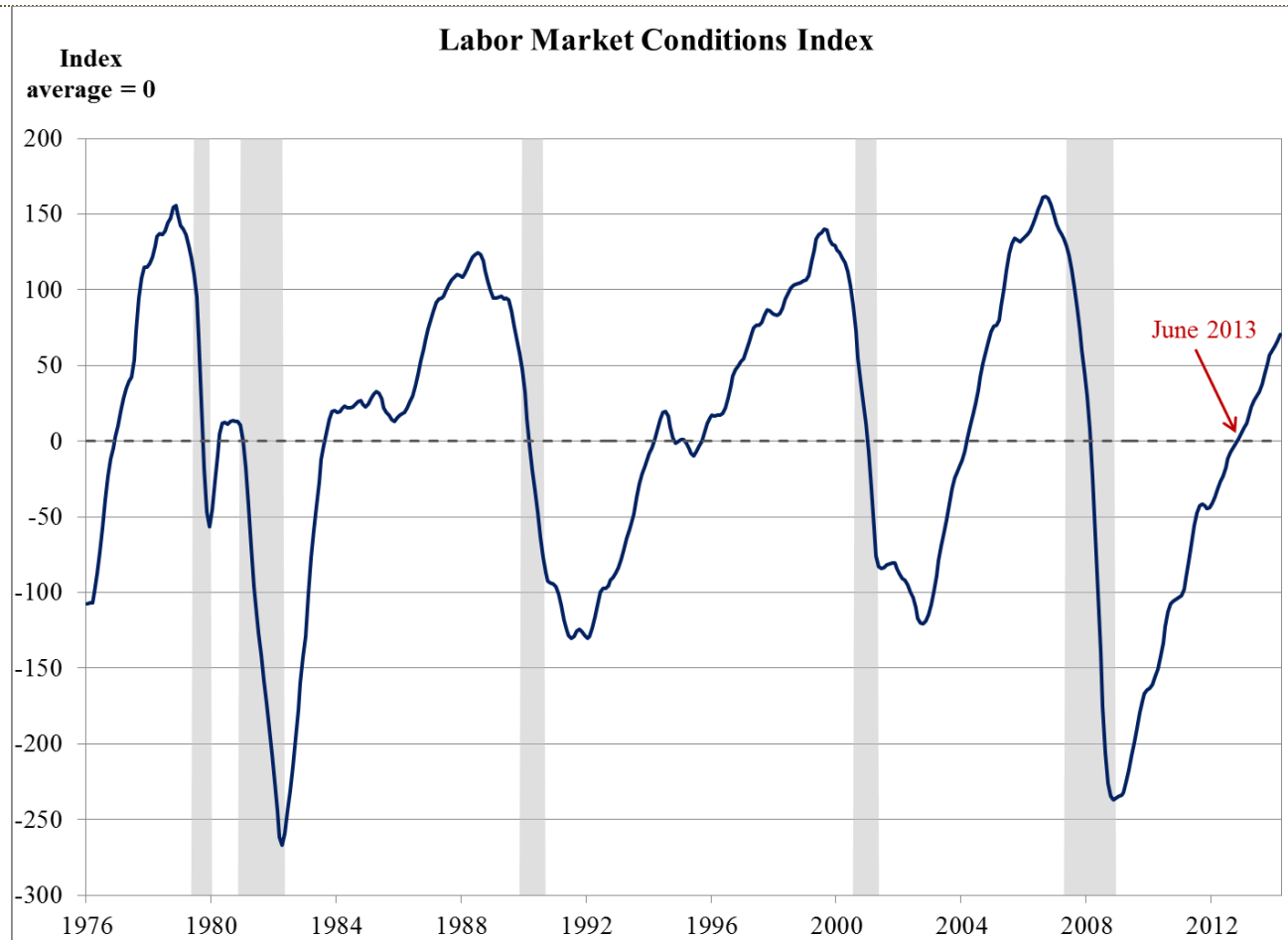
Source: Bureau of Labor Statistics, Macroeconomic Advisers, and author's calculations.  
Last observation: October 2014

## Broader measures of labor market performance

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- Unemployment and nonfarm payroll employment are the two workhorse indicators of U.S. labor market performance, but there are many other possible indicators.
- One way to account for the signal that several indicators are sending jointly is to create an index of labor market conditions. Such an index has been created by Fed Board staff.
- The level of this index has risen above its long-run average value.
- This suggests that accounting for a variety of labor market indicators, labor market performance today is above average.

## Labor market conditions index above average



Source: Federal Reserve Board and St. Louis Fed calculations. Last observation: October 2014.

See <http://www.federalreserve.gov/econresdata/notes/feds-notes/2014/updating-the-labor-market-conditions-index-20141001.html>.

## Summary for labor markets

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- In summary, labor markets continue to improve and are approaching or even exceeding normal performance levels.
- Normal labor markets have not been associated historically with a policy rate near zero.
- This suggests that over the next year, it will become more and more difficult to point to labor market performance as a rationale for a near-zero policy rate.

## If not labor markets, then inflation?

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- Rapid labor market improvement has changed the narrative concerning monetary policy relative to what it has been over the past five years.
- However, inflation is running below the Committee's target.
- Perhaps low inflation can be cited as a rationalization of a near-zero policy rate?

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# Inflation

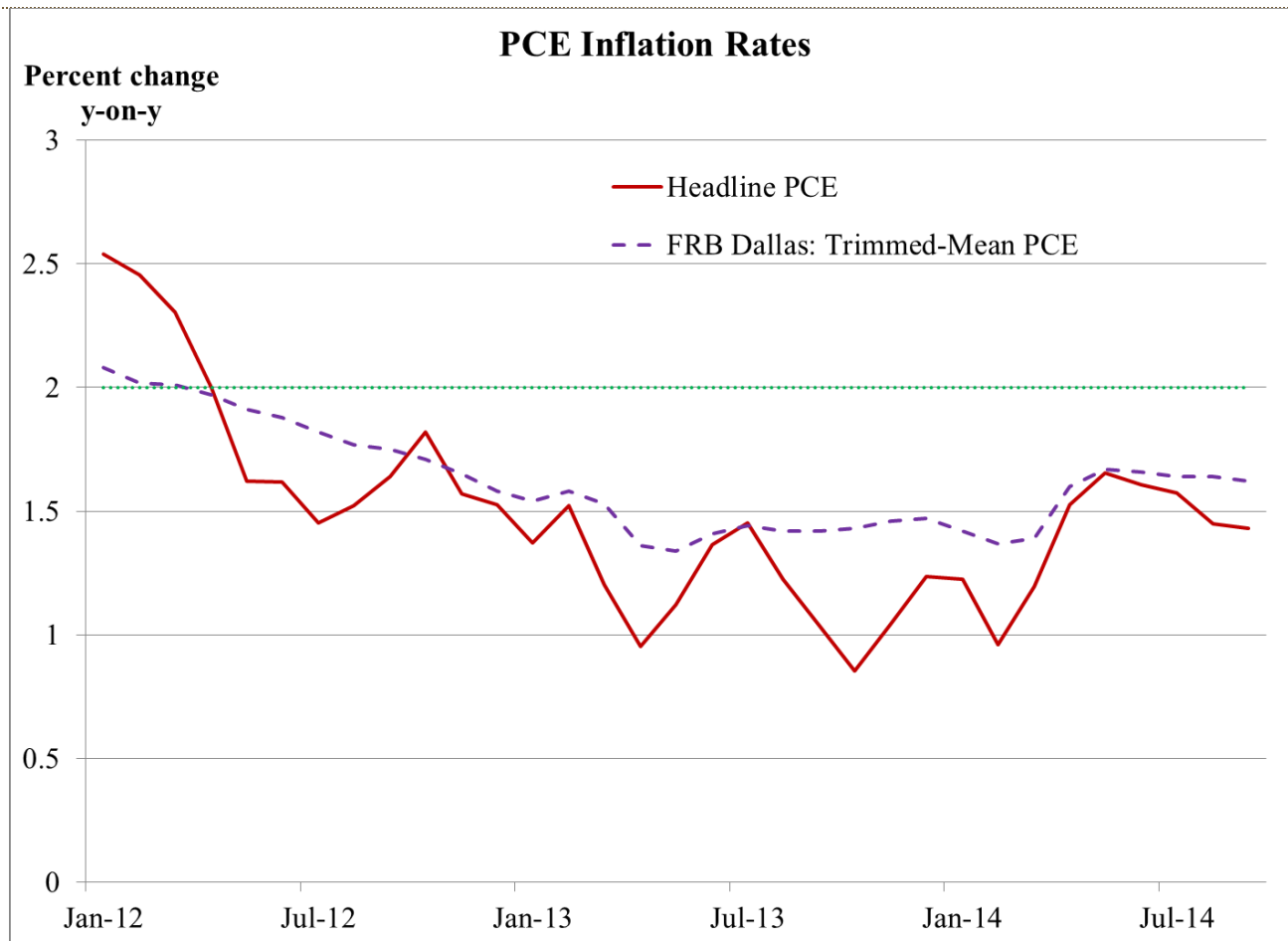


# Inflation

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- The FOMC's inflation target is 2 percent.
- Inflation was above target as of January 2012, but has been running below target in 2013 and 2014.

# Personal consumption expenditures (PCE) inflation



## Aside: Do not use “core” inflation

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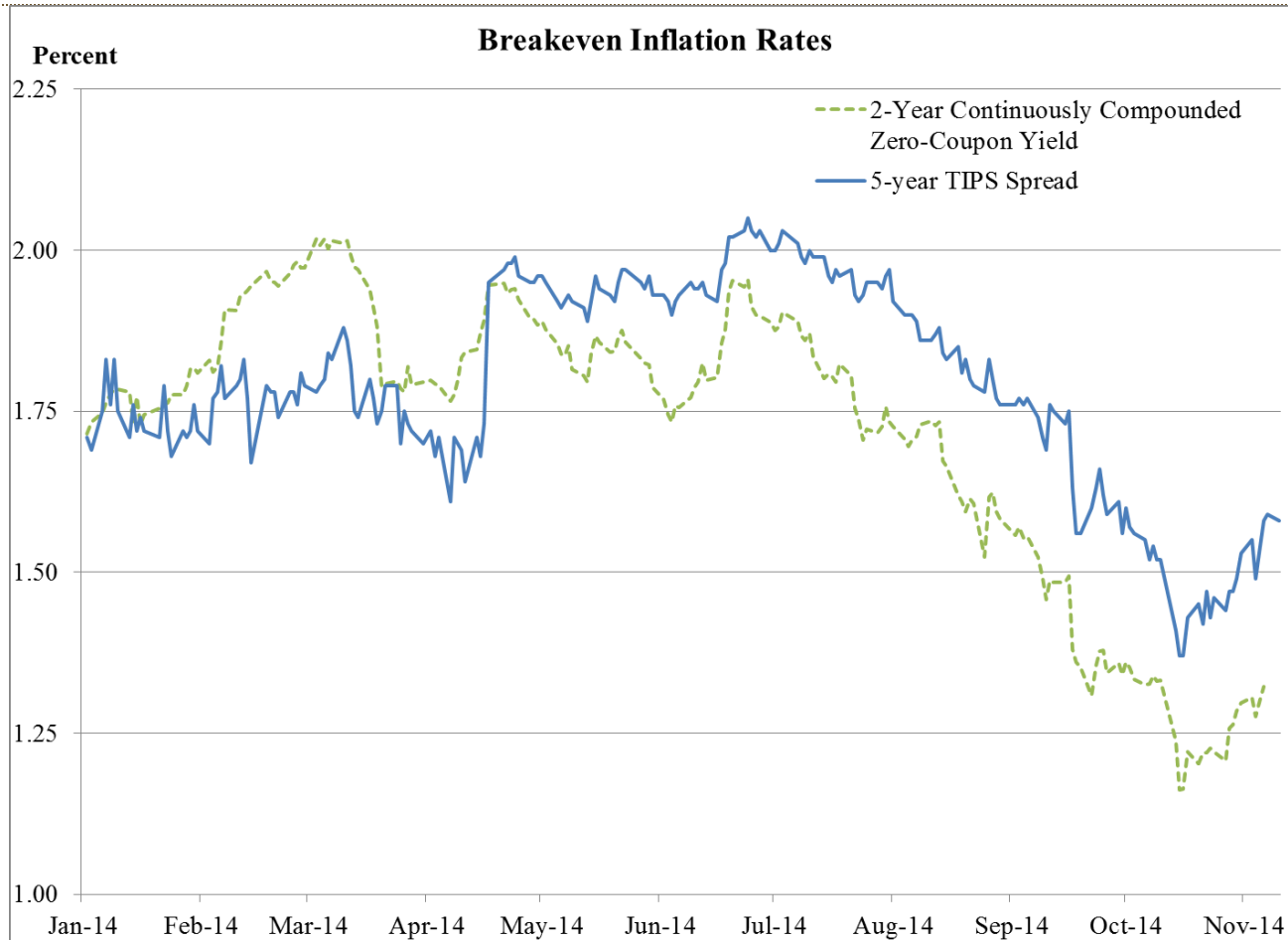
- I recommend against using so-called “core” inflation measures.
- These were developed in the 1970s and do not make a lot of sense.
  - See J. Bullard, 2011, “Measuring Inflation: The Core Is Rotten,” Federal Reserve Bank of St. Louis *Review*, July/August, 93(4), pp. 223-33.
- For those wishing to use a smoother measure of PCE inflation, I recommend the Dallas Fed’s trimmed-mean PCE inflation rate.

## Inflation expectations recently rebounded

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- Inflation expectations are one of the most important determinants of actual inflation, according to modern macroeconomic theories.
- Market-based measures of inflation expectations have declined to low levels in recent months, but rebounded since mid-October.
- Most likely, these expectations will rise back toward the FOMC's inflation target in coming months and quarters.
- However, this bears careful watching. Inflation and inflation expectations moving away from target is a concern.

# Expected inflation



## Recent volatility in financial markets

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- During the late summer and continuing into October, global financial markets began to price in the possibility of a global recession based largely on news of a weaker-than-expected European economy.
- My own view has been that such fears were overstated, in part because U.S. macroeconomic fundamentals seem strong.
- However, if such a scenario did develop, the Fed would most certainly respond.
- Since mid-October, this issue has faded as U.S. economic data has indicated continuing growth.

## Can low inflation justify the zero policy rate?

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- With improving labor markets, justifications for the current near-zero policy rate have shifted to the fact that inflation is below target.
- This can justify a policy rate somewhat lower than normal, but not a zero policy rate.
- Let's now turn to this argument.



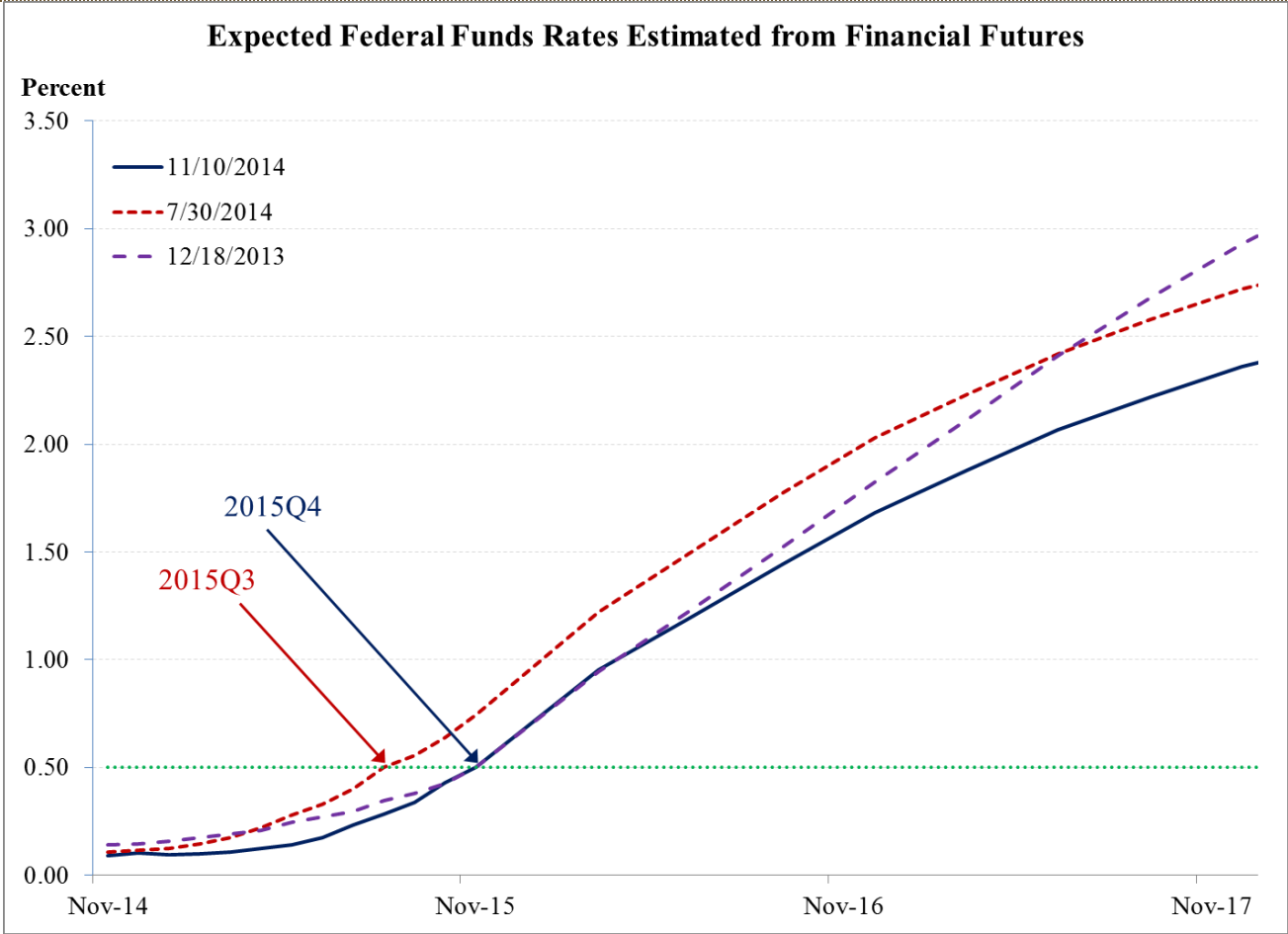
# The Policy Rate Path

## The current expected policy rate path

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- Currently, markets expect the policy rate to cross the 50 basis point level in the fourth quarter of 2015.
- This is somewhat later than the most current SEP projections indicate.

# Expected policy rate



## The low inflation argument

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- One might be tempted to argue that inflation is low, so why not wait on liftoff?
- However, low inflation does not rationalize the zero rate policy according to simple Taylor rule calculations.

## Reintroducing Taylor rules

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- Because the policy rate has been at zero for nearly six years, Taylor-type policy rules have been less relevant.
- However, as monetary policy approaches normalization, it is interesting to examine the prescriptions of Taylor-type policy rules.
- According to a Taylor-type rule, the short-term nominal interest rate should respond to deviations of inflation from target and of actual output from potential output.

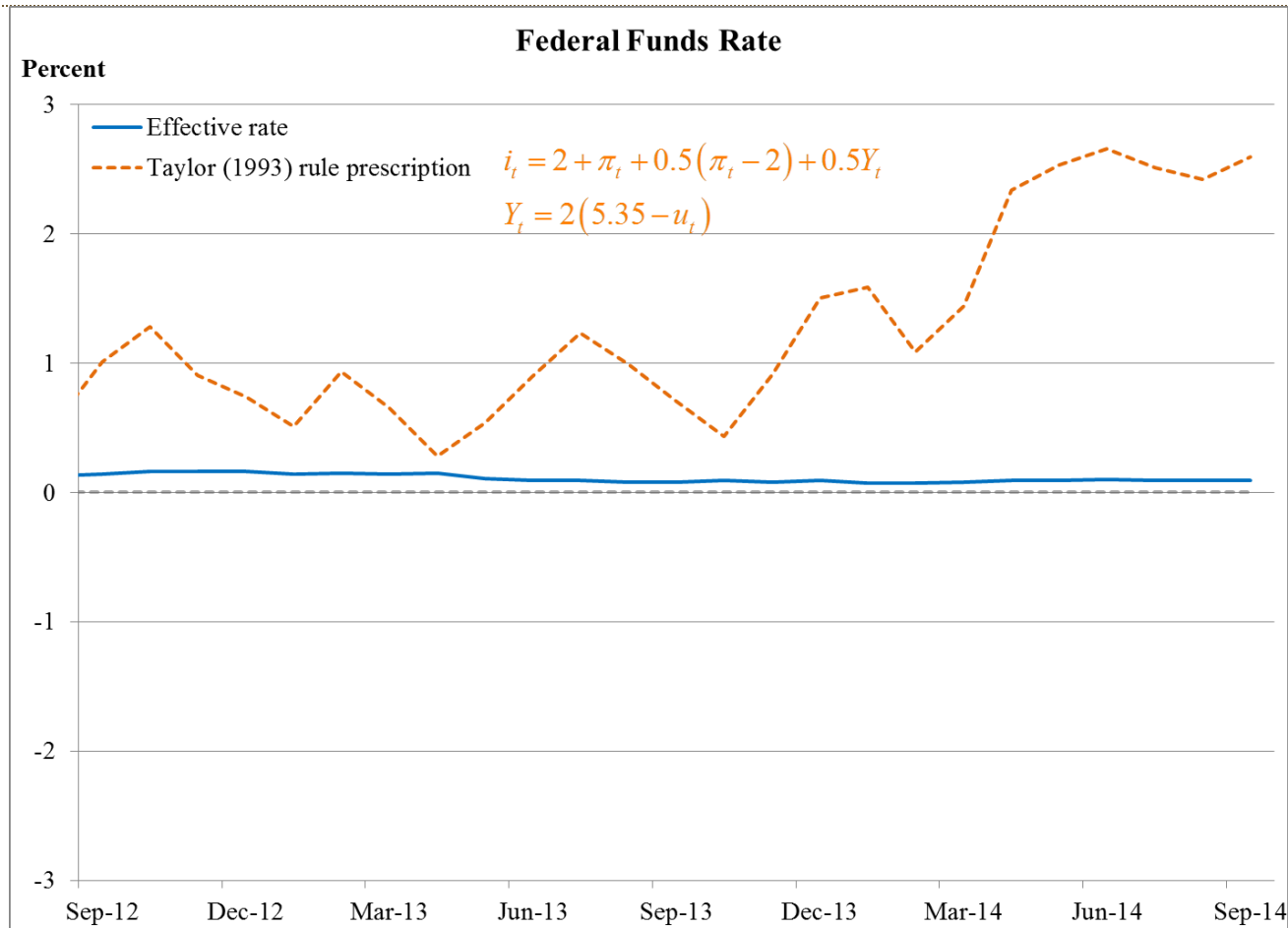
## Taylor (1993) rule

- In the early 1990s, monetary policy was well described by the Taylor (1993) rule:†

$$R_t = 2 + \pi_t + 0.5 (\pi_t - \pi^*) + 0.5 Y_t$$

- $\pi_t$ : headline PCE inflation (year-over-year)
- $\pi^*$ : Fed's longer-run inflation goal (2%)
- $Y_t = 2.3 (U^* - U_t)$ : output gap
- $U_t$ : unemployment rate
- $U^*$ : long-run unemployment (5.35% midpoint of the September 2014 SEP central tendency)

# Policy rate path suggested by the Taylor (1993) rule



Source: Federal Reserve Board, Bureau of Labor Statistics, Bureau of Economic Analysis and author's calculations.  
Last observation: September 2014.



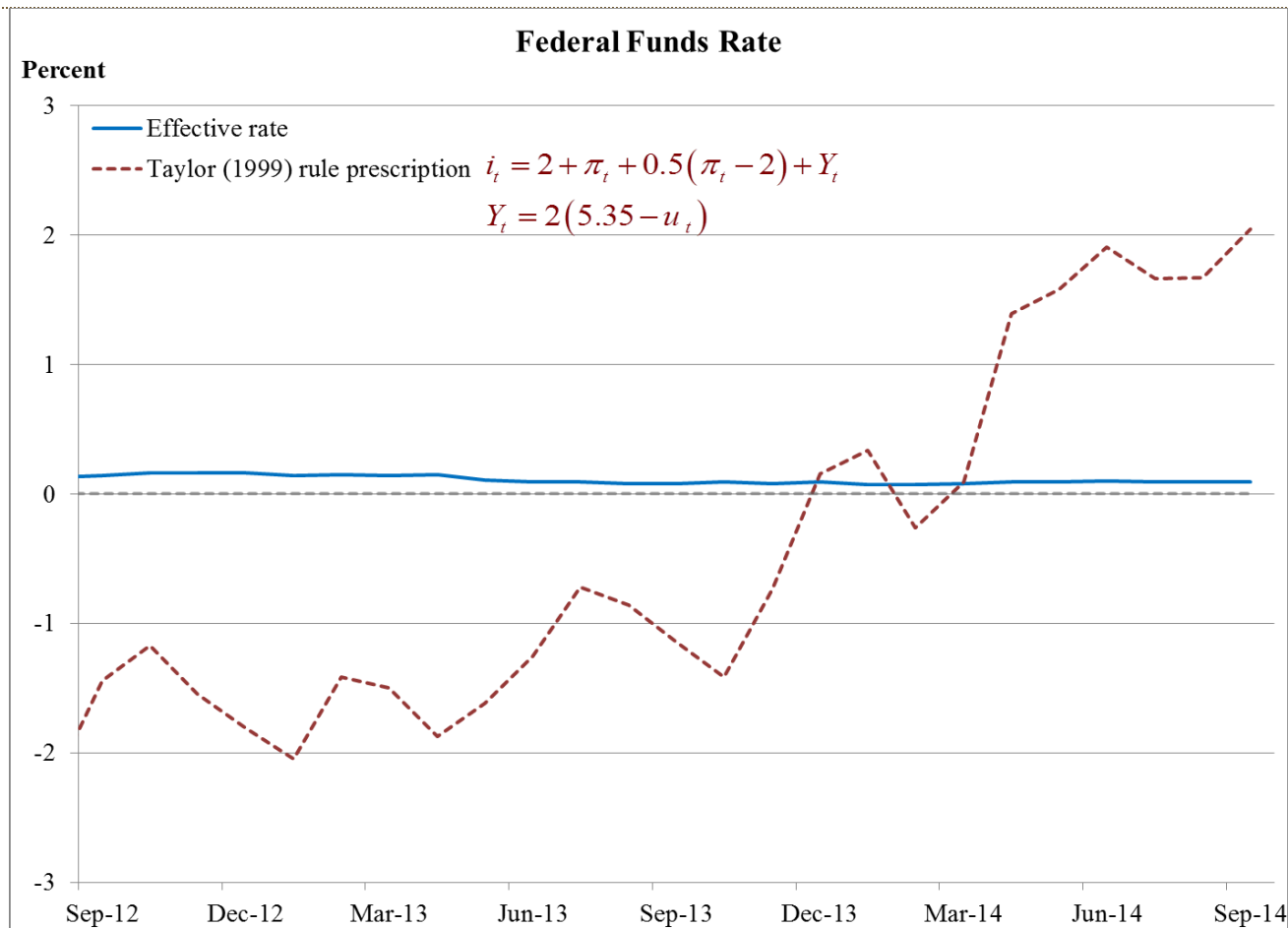
## Taylor (1999) rule

- A later version of the monetary policy rule is often called the Taylor (1999) rule:†

$$R_t = 2 + \pi_t + 0.5 (\pi_t - 2) + 1.0 Y_t$$

- This version of the policy rule attaches a higher weight to the output gap than the Taylor (1993) rule.
- Fed officials have sometimes used this rule to describe monetary policy.

# Policy rate path suggested by the Taylor (1999) rule



Source: Federal Reserve Board, Bureau of Labor Statistics, Bureau of Economic Analysis and author's calculations.  
Last observation: September 2014.

## Taylor (1999) rule with interest rate smoothing

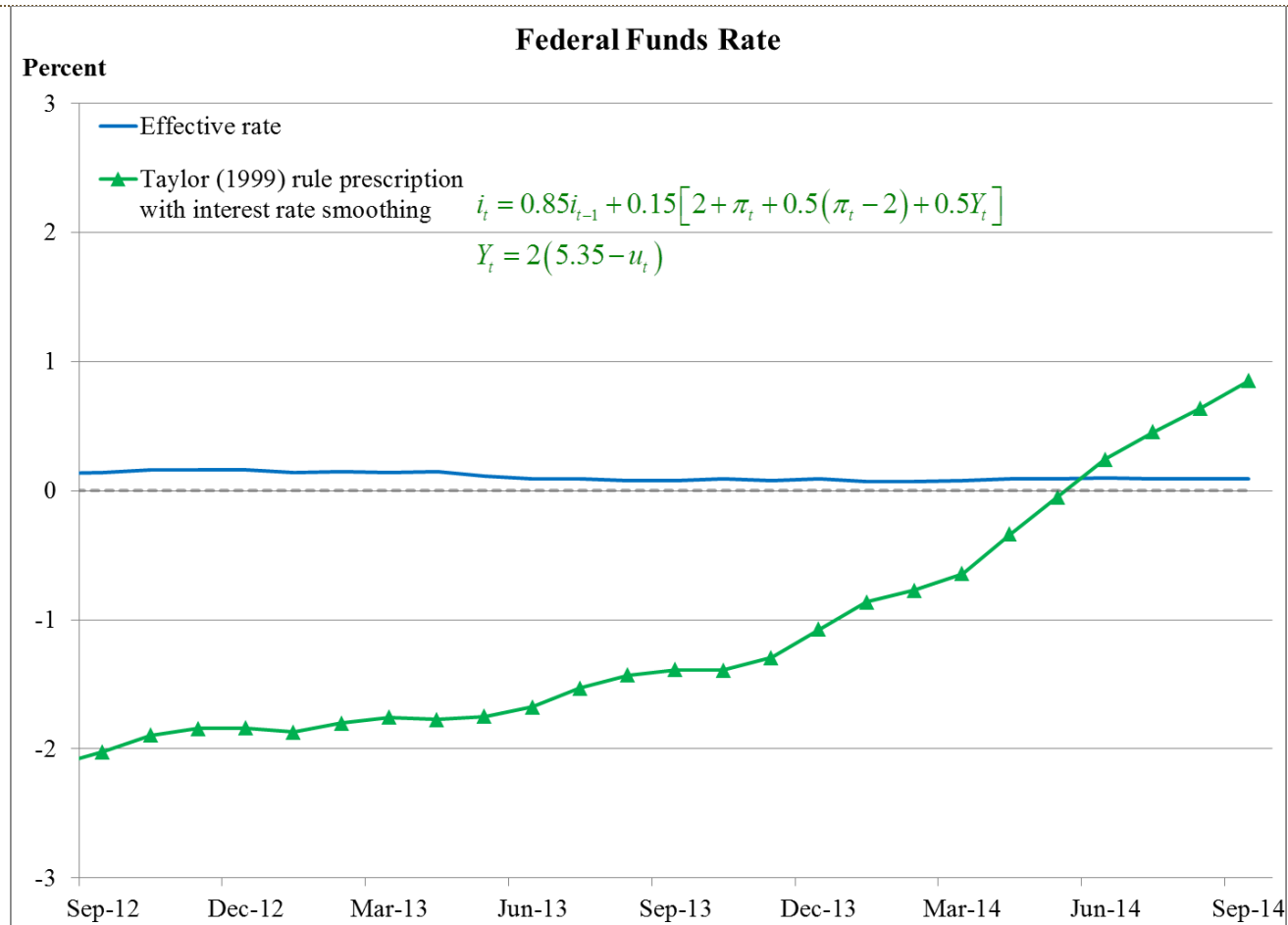
- Another version of the policy rule often used in the empirical analysis of monetary policy allows for a gradual adjustment of the actual short-term interest rate ( $R_t$ ) to the target value ( $R_t^*$ ):

$$R_t = \rho R_{t-1} + (1 - \rho) R_t^*$$

$$R_t^* = 2 + \pi_t + 0.5 (\pi_t - 2) + 1.0 Y_t$$

- This version of the policy rule implies a smoother interest rate.
- The parameter  $\rho$  is a number between 0 and 1 and determines the degree of smoothness.

# Policy rate path suggested by the Taylor (1999) rule with interest rate smoothing



Source: Federal Reserve Board, Bureau of Labor Statistics, Bureau of Economic Analysis and author's calculations.  
Last observation: September 2014.

## The message from policy rules

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- The effect in a Taylor rule prescription coming from inflation below target is not large enough to rationalize the zero interest rate policy.
- All three rules examined here suggest liftoff should already have occurred, at the latest in June 2014.
- The Committee has not moved off of the zero interest rate policy so far, and in this sense the Committee is already exhibiting considerable patience.

## What is the rationale?

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- It is of course reasonable to deviate from Taylor rule prescriptions, but one would have to cite something other than labor market data or inflation data.
- One possible rationale for deviating from these rules is that residual risk of declining inflation and inflation expectations exists.
  - Recent data from Europe are suggestive in this regard.
- Patience may allow the Committee to make sure such a risk does not materialize.

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# Summary

## Summary

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- The FOMC has indicated that the policy rate is likely to rise next year, with the exact timing dependent on macroeconomic data in coming quarters.
- Analysts sometimes cite the current low level of inflation as a reason why the FOMC may wish to remain at the zero lower bound for even longer.
- However, while a low inflation rate may suggest a somewhat lower-than-normal policy rate, that effect is not large enough to justify remaining at the zero lower bound.





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