Safe Real Interest Rates and Fed Policy

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Introduction

This talk

- In this talk, I will discuss how a single equation can describe much of the state of the current monetary policy debate, and simultaneously, how the St. Louis Fed's new approach fits within this one-equation format.

- The bottom line: Low interest rates are likely to continue to be the norm over the next two to three years.

A new regime-based approach

- The St. Louis Fed recently changed its approach to near-term U.S. macroeconomic and monetary policy projections.

  - J. Bullard, "One Equation to Understand the Current Monetary Policy Debate," remarks delivered at AUBER 2016 Fall Conference, Fayetteville, Ark., Oct. 24, 2016.

  - J. Bullard, "Normalization: A New Approach," remarks delivered at the Wealth and Asset Management Research Conference, St. Louis, Aug. 17, 2016.

  - Wharton Business Radio interview, Aug. 12, 2016.

  - J. Bullard, "A Tale of Two Narratives," remarks delivered at the Gateway Chapter of NABE, St. Louis, July 12, 2016.

  - J. Bullard, "A New Characterization of the U.S. Macroeconomic and Monetary Policy Outlook," remarks delivered at the Society of Business Economists Annual Dinner, London, U.K., June 30, 2016.

  - J. Bullard, "The St. Louis Fed's New Characterization of the Outlook for the U.S. Economy," announcement, June 17, 2016.

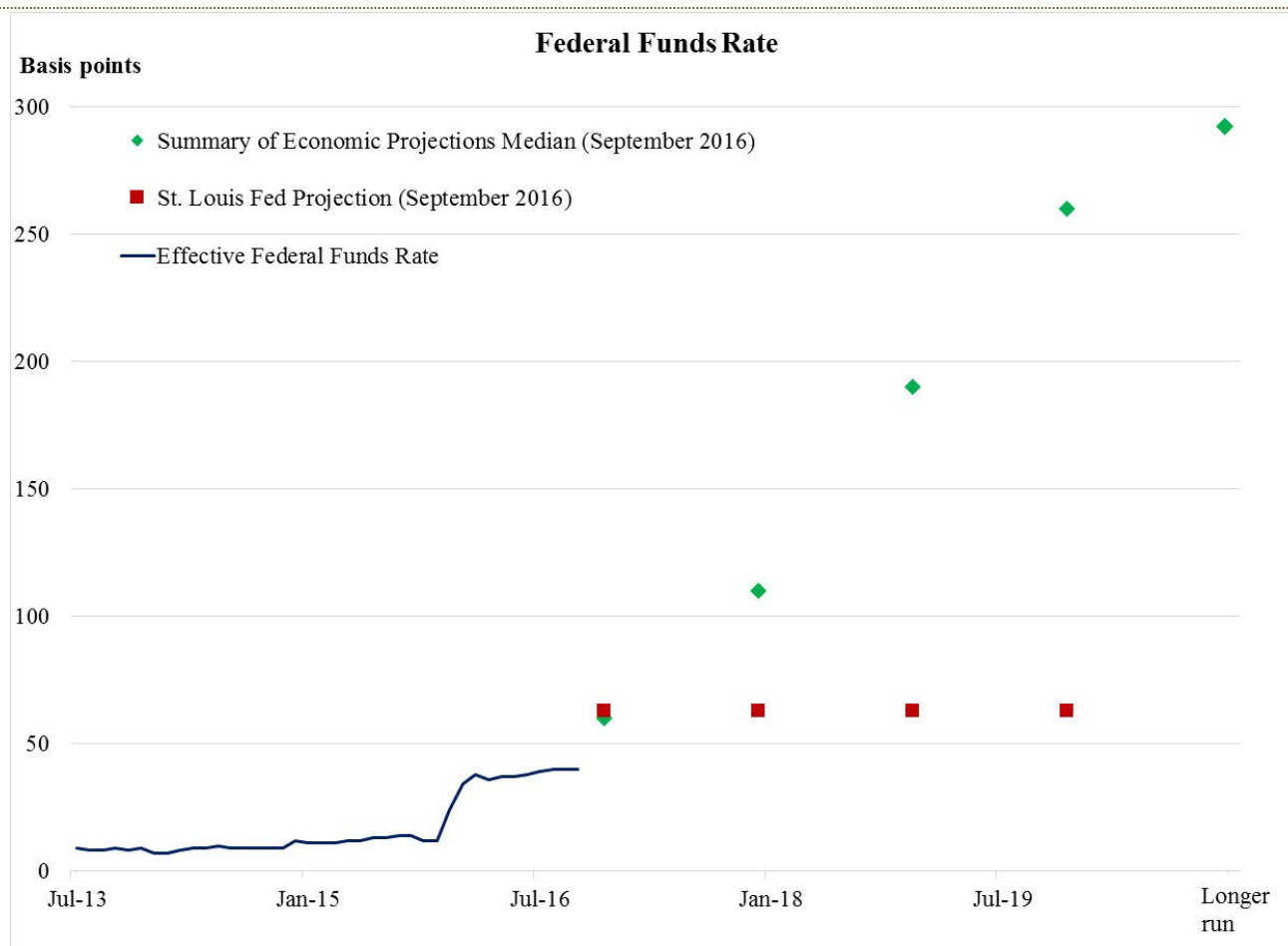 - All are available on my webpage under "Key Policy Papers."

The Monetary Policy Problem

The policy rate

- The Federal Open Market Committee (FOMC) operates by setting a short-term nominal interest rate, which I will call the policy rate. This rate then influences all other nominal interest rates.

- The current policy rate setting is just 38 basis points, extraordinarily low by postwar historical standards.

- The FOMC is considering raising the policy rate to a somewhat higher level.

- The St. Louis Fed's rate path projection is much flatter than those of the rest of the Committee.

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The policy rate path dichotomy

Federal Funds Rate

Source: Federal Reserve Board and author's calculations. Last observation: October 2016.

The Taylor-type policy rule

- John Taylor of Stanford University is famous for his work on what has come to be known as the "Taylor rule."

- This rule provides a recommended setting for the FOMC's policy rate based on current values of observable macroeconomic variables.

- In some macroeconomic analyses, versions of the Taylor rule can provide an approximation to optimal monetary policy.
  - The rule is very credible in this sense.

- I will use a version of Taylor's equation to guide our discussion of why rates are so low today.

The Taylor rule as a simple equation with four terms

- A Taylor-type rule can be written as:

$$i = r^\dagger + \pi^* + \phi_\pi \, \pi^{GAP} + \phi_u \, u^{GAP}$$

- On the left-hand side is the object of interest, the short-term nominal policy rate set by the FOMC, denoted as i. The equation recommends a current value for i.

- On the right-hand side are four terms. The point of this talk is to argue that one of these terms, $r^\dagger$, is most interesting in the current macroeconomic environment.

- The parameters ϕ_π and ϕ_u are positive constants that will not matter for the argument made here, so they can be ignored.
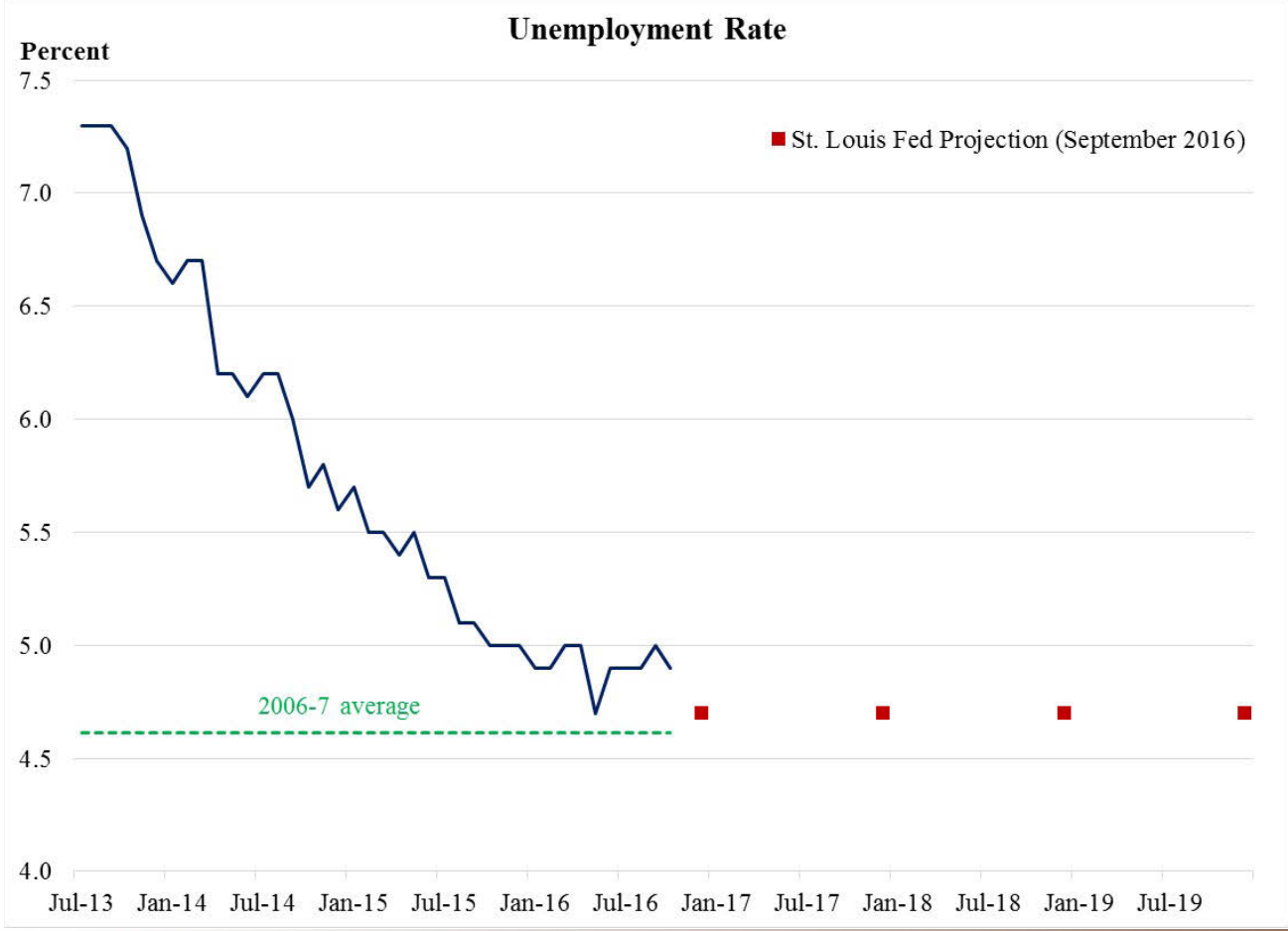
Gaps Close to Zero

Eliminating gap terms

- We have the Taylor rule written as:

$$i = r^\dagger + \pi^* + \phi_\pi \, \pi^{\,GAP} + \phi_u \, u^{\,GAP}$$

- The last term on the right, $u^{\,GAP}$, represents the distance between the unemployment rate and what the Committee views as a normal rate of unemployment.

- This gap is essentially zero today, so this term falls out of the calculation.

- Broader measures of labor market performance, as captured in a labor market conditions index, also suggest good labor market performance.
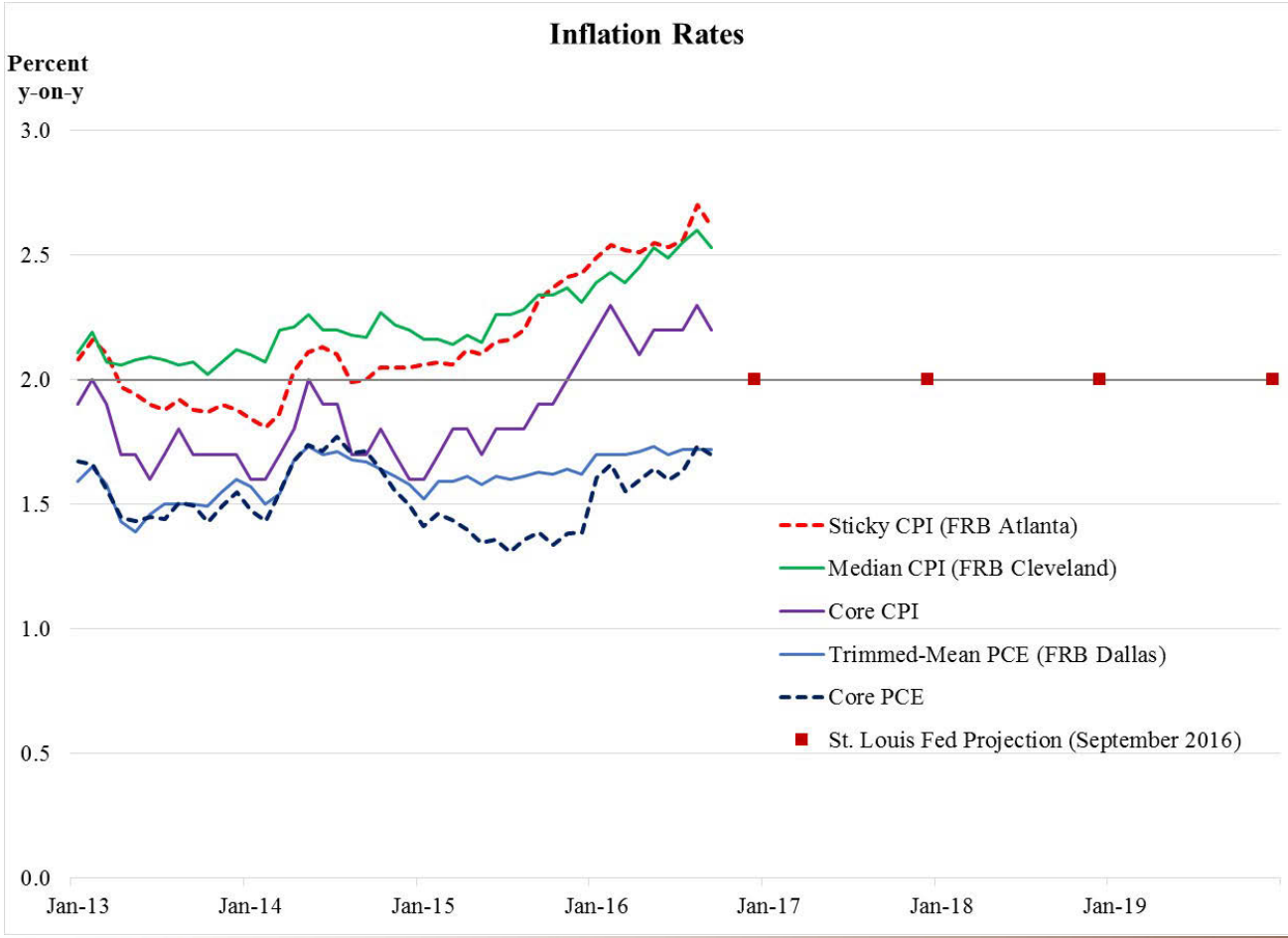
Unemployment has declined to a low level

Unemployment Rate

Percent

- St. Louis Fed Projection (September 2016)

2006-7 average

Source: Bureau of Labor Statistics and author's calculations.
Last observation: October 2016.

Eliminating gap terms

- Now we have the Taylor rule written as:

$$i = r^\dagger + \pi^* + \phi_\pi \, \pi^{\,GAP}$$

- The last term on the right is now $\pi^{\,GAP}$, which represents the distance between the current inflation rate and the Committee's inflation target of 2 percent.

- Inflation has been below target in recent years, due in part to commodity-price effects. Net of those effects, this gap is relatively close to zero today as well.

- As a consequence, this term also falls out of the calculation.

Smoothed measures of U.S. inflation are close to 2 percent

Source: Bureau of Labor Statistics, FRB Cleveland, FRB Atlanta, Bureau of Economic Analysis, FRB Dallas and author's calculations. Last observations: September 2016.

The inflation target term

- Now we have the Taylor rule written with just two terms on the right-hand side:

$$i = r^\dagger + \pi^*$$

- The last term on the right is now π^*, which is the easiest term of all—it is just the inflation target of 2 percent.

- I want to talk in terms of basis points—one basis point is one one-hundredth of a percent.

- Therefore, I will put in 200 for the inflation target.

- This leaves only $r^\dagger$ to be deciphered.

The Short-Term Real Interest Rate

The real interest rate term

- The Taylor rule is now just:

  $$i = r^\dagger + 200$$

- The term $r^\dagger$ on the right is the real interest rate on safe, short-term assets like short-term government debt.

- *While the Fed is thought to be able to influence real rates over short periods of time (perhaps a few quarters), real rates are determined by market forces over longer time periods.*

Measuring the real interest rate

- One simple way to measure the real return on short-term safe assets is to consider the one-year nominal Treasury security and subtract a one-year smoothed inflation rate from it.

- This produces an ex-post one-year real return on a safe asset.

- There are other methods of calculation, but this one is simple, model-free, and uses a relatively short maturity that allows use of year-over-year inflation measures.

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Real rate of return on short-term government debt, $r^\dagger$
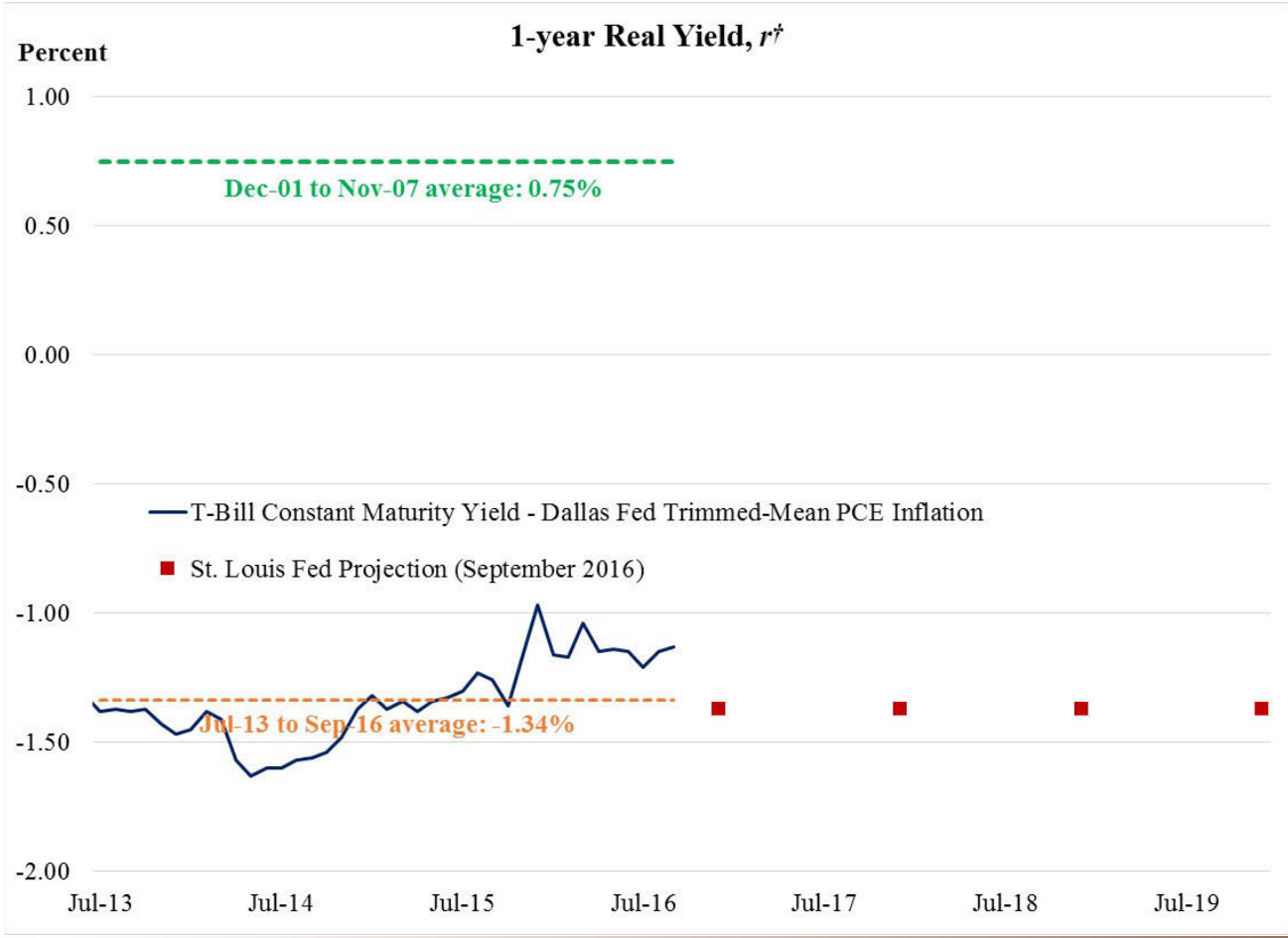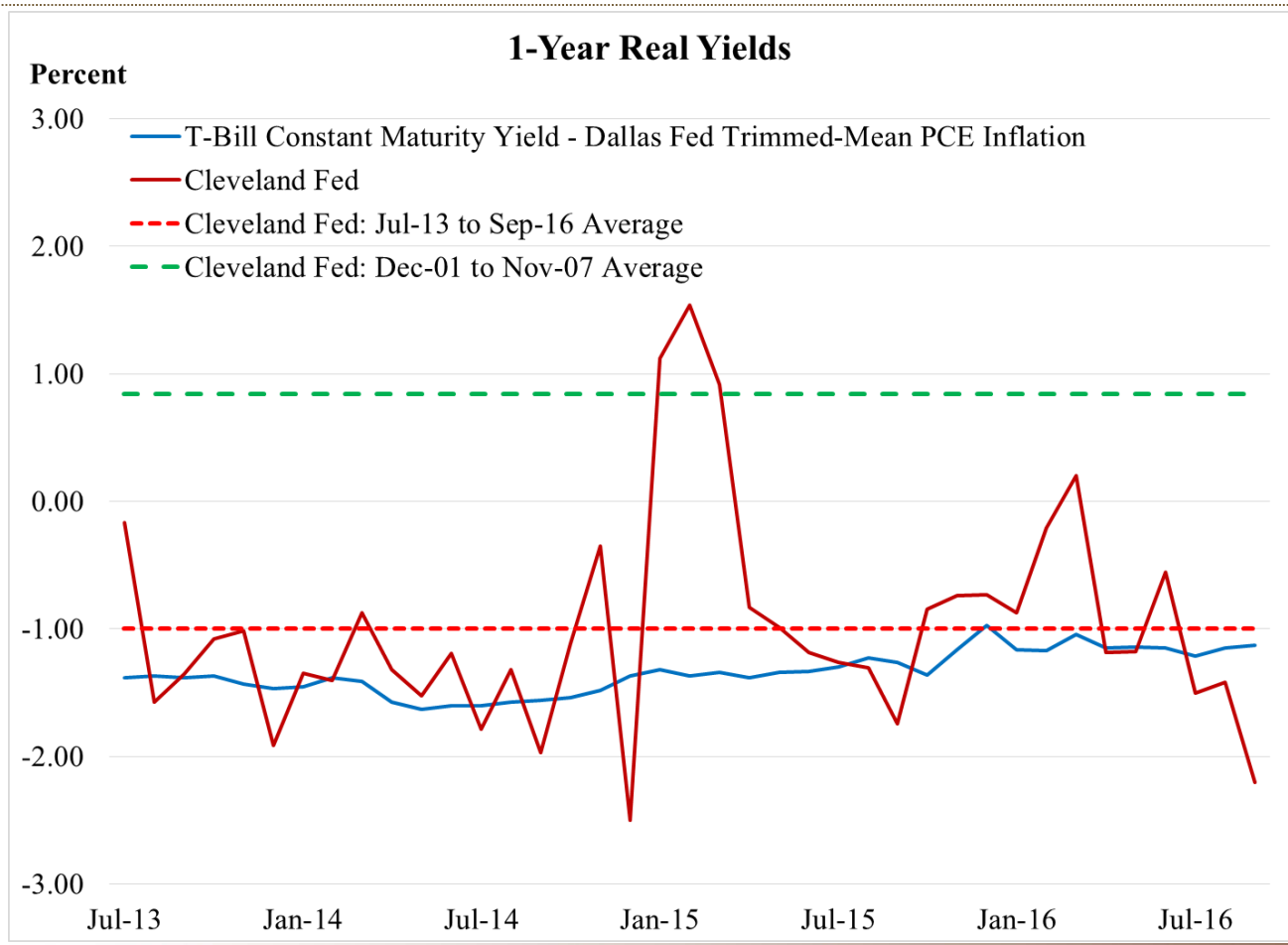
Safe real returns are a lot lower than they used to be

- The real rate of return on safe assets measured this way has been more than 200 basis points lower in recent years as compared to the 2001-2007 expansion.

- This goes a long way toward explaining why the policy rate is low today.

- Furthermore, it seems unlikely that the real rate of return on safe assets will return to its historical level over the next two to three years.

- At the St. Louis Fed, we call this a "low-safe-real-rate regime."

An alternative measure of the safe real interest rate

- Another way to measure the real return on short-term safe assets is to consider a factor model of real yields, estimated using nominal yields, survey inflation forecasts and inflation swap rates.

  - See J. Haubrich, G. Pennacchi and P. Ritchken, 2012, "Inflation Expectations, Real Rates, and Risk Premia: Evidence from Inflation Swaps," *RFS*, 25(5), 1588-629.

  - Up-to-date estimates are provided by the Cleveland Fed.

- This is a measure of a one-year expected real return on a safe asset.

- The relevant measure of inflation for this real return is CPI inflation, not PCE inflation.

Ex-ante and ex-post real yields

Source: FRB of Cleveland, Federal Reserve Board, FRB of Dallas and author's calculations. Last observation: September 2016.

Real returns are a lot lower than they used to be

- The real rate of return on safe assets measured this way has been more than 180 basis points lower in recent years as compared to the 2001-2007 expansion.

- This evidence remains consistent with the idea of a "low-safe-real-rate regime."

What Does the Taylor-type Rule Recommend?

What does the Taylor-type rule recommend?

- I have argued that the gap terms in the Taylor-type rule are small.

- I have also argued that the $r^\dagger$ term is low and is unlikely to change over the forecast horizon.

- Using the ex-post one-year real rate from earlier, the Taylor-type rule now reads

    i = -134 + 200 = 66

- I conclude that a single 25-basis-point increase in the policy rate–from 38 to 63 basis points–will get us very close to the recommended Taylor rule value over the forecast horizon.

What does John Taylor say?

- The original Taylor rule put a value for $r^\dagger$ at +200 basis points and viewed it as a constant that does not adjust to the changing economic environment.

- This value for $r^\dagger$ would be an eye-popping 334 basis points larger than the one I am recommending, and we would reach a very different policy conclusion.

- John Taylor and Volker Wieland (2016) have argued that the practice of estimating a model-based $r^\dagger$ is fraught with empirical difficulties.

  - See J. Taylor and V. Wieland, 2016, "Finding the Equilibrium Real Interest Rate in a Fog of Policy Deviations," *Business Economics,* 51(3), 147-54; and T. Laubach and J. Williams, 2016, "Measuring the Natural Rate of Interest Redux," *Business Economics,* 51(2), 57-67.

- Here we have presented measures of $r^\dagger$ that are less model-driven.

Multiple Regimes

Multiple regimes

- The St. Louis Fed's new approach to forecasting and monetary policy suggests thinking of the macroeconomy in terms of regimes.

- When the real rate of return on safe assets is relatively high, a Taylor-type rule would recommend relatively high settings for the policy rate. This is one possible regime.

- When the real rate of return on safe assets is relatively low, as it is now, a Taylor-type rule recommends relatively low settings for the policy rate. This appears to be the current regime.

Regime-dependent monetary policy

- The regimes lead to very different settings for the policy rate, one high and the other low.

- But policy is following a Taylor-type rule in both circumstances, meaning that the policy rate can be adjusted for deviations of output and inflation from long-run levels.

- The monetary policy is "equally good" in each of the regimes.

- If there is a change of regime, monetary policy would have to adjust to the new circumstance.

Why Are Real Returns Low?

# Why are safe real returns low?

- The reasons behind the exceptionally low real rate of return on safe assets have been widely debated.
- I will focus on three factors that may be putting downward pressure on safe real rates of return:
    - A declining trend in real rates of return on safe assets in the U.S. over recent decades.
    - The fact that investors are willing to pay premium prices for safe assets like government debt.
    - Low productivity growth.

A declining trend

- The low real return on safe assets does not mean that all real returns in the economy are low.
- Real rates of return on safe assets have been declining relative to the real return on capital (as calculated from GDP accounts) in the U.S. for several decades.
  - This decline cannot be attributed to monetary policy.
- This suggests that there has been an increasing demand for safe assets during this period.
- We call this the "high-liquidity-premium" regime.
  - See D. Andolfatto and S. Williamson, 2015, "Scarcity of Safe Assets, Inflation, and the Policy Trap," *JME*, *73*(1), 70-92; R. Lagos, 2010, "Asset Prices and Liquidity in an Exchange Economy," *JME*, *57*(8), 913-30; and S.D. Williamson, 2016, "Scarce Collateral, the Term Premium, and Quantitative Easing," *JET*, *164*(1), 136-65.
- This seems unlikely to change over the forecast horizon.

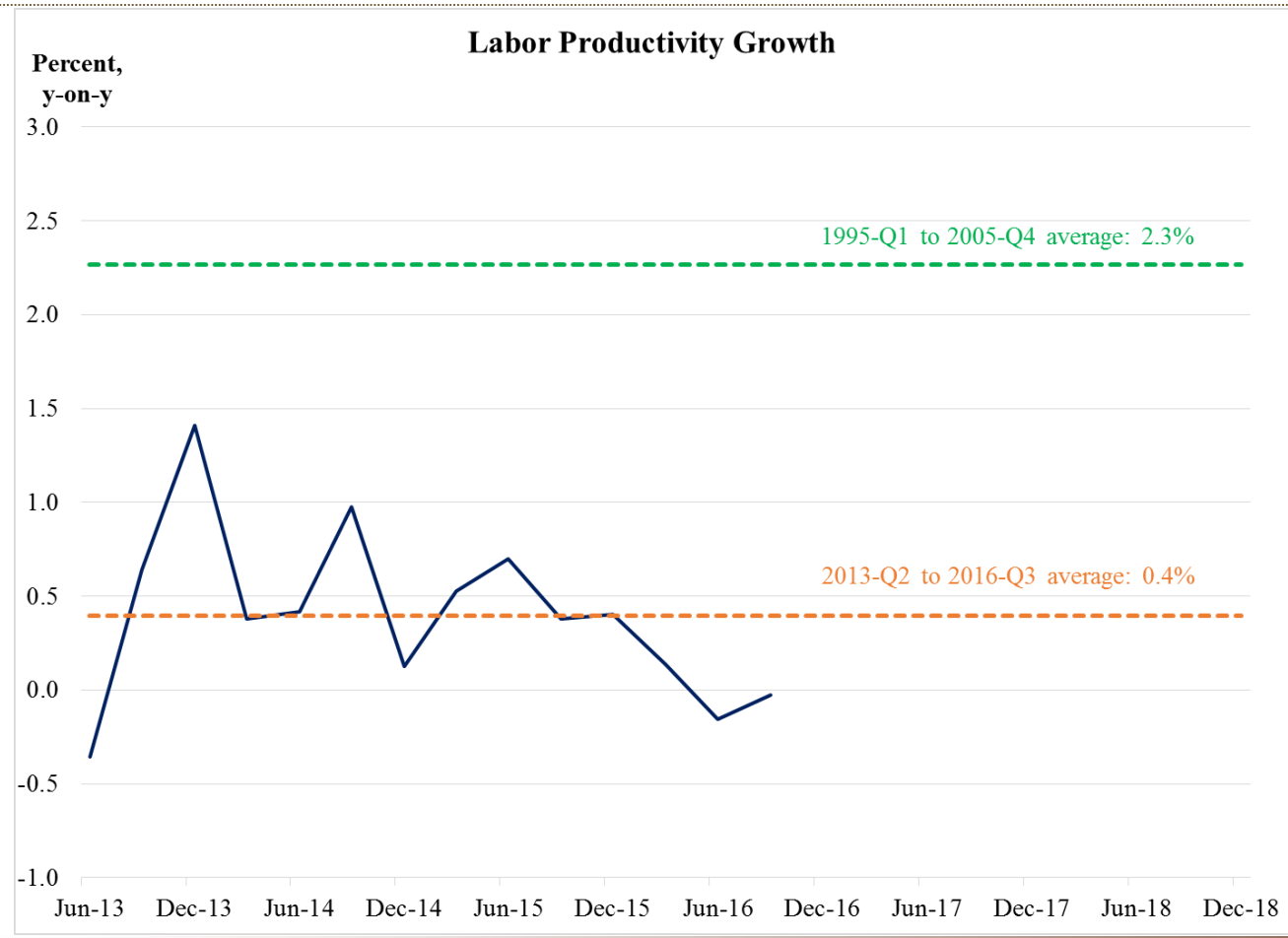# Real returns on capital and safe assets
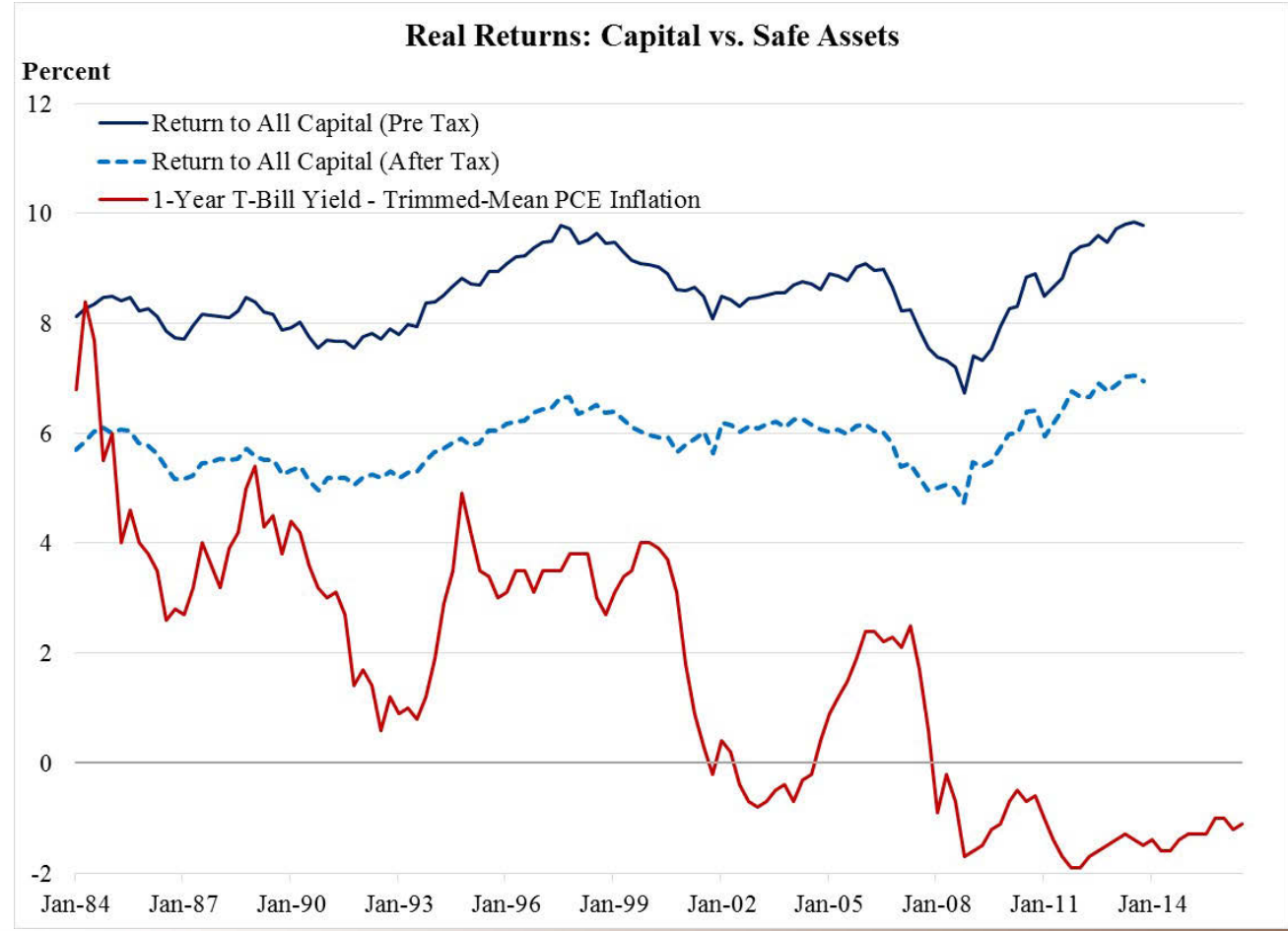
Source: P. Gomme, B. Ravikumar and P. Rupert. "Secular Stagnation and Returns on Capital," FRB of St. Louis Economic Synopses No. 19, 2015; Federal Reserve Board, FRB of Dallas and author's calculations.

The low-productivity-growth regime

- In addition, we are in a low-productivity-growth regime in the U.S.

- The low-productivity-growth regime is feeding into lower rates of real GDP growth and lower rates of consumption growth than would otherwise be the case.

- This is likely putting downward pressure on safe real rates of return.

- This also appears to be unlikely to change over the forecast horizon.

The high- and low-productivity-growth regimes

Source: Bureau of Labor Statistics, Bureau of Economic Analysis and author's calculations.
Last observation: 2016-Q3.

Conclusion

Conclusion

- Because unemployment and inflation are relatively close to their long-run values, the recommended policy rate from a Taylor-type rule depends mostly on the safe real rate of return.

- Safe real rates of return are exceptionally low and are not expected to rise soon, a "low-safe-real-rate regime."

- This means, in turn, that the policy rate should be expected to remain exceptionally low over the forecast horizon.

- This can still be viewed as a high-quality monetary policy, as the Taylor rule is followed even though the level of the policy rate is lower.

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