Safe Real Interest Rates and Fed Policy

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Any opinions expressed here are my own and do not necessarily reflect those of the Federal Open Market Committee.
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.
The St. Louis Fed recently changed its approach to near-term U.S. macroeconomic and monetary policy projections.

- J. Bullard, “A Tale of Two Narratives,” remarks delivered at the Gateway Chapter of NABE, St. Louis, July 12, 2016.
- All are available on my webpage under “Key Policy Papers.”
The Monetary Policy Problem
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.
The policy rate path dichotomy

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.
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 \( \phi_\pi \) and \( \phi_u \) are positive constants that will not matter for the argument made here, so they can be ignored.
Gaps Close to Zero
We have the Taylor rule written as:

\[ i = r^* + \pi^* + \phi_\pi \pi^{GAP} + \phi_u u^{GAP} \]

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

Source: Bureau of Labor Statistics and author’s calculations.
Last observation: October 2016.
Eliminating gap terms

- Now we have the Taylor rule written as:

  \[ i = r^* + \pi^* + \phi_\pi \pi^{GAP} \]

- 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.

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 \( \pi^* \), 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:

  \[ i = r^* + 200 \]

- The term \( r^* \) 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.
Real rate of return on short-term government debt, $r^+$

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.
  - 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 $r^*$ 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 $r^*$ at +200 basis points and viewed it as a constant that does not adjust to the changing economic environment.

- This value for $r^*$ 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 $r^*$ is fraught with empirical difficulties.

- Here we have presented measures of $r^*$ 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.
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.


This seems unlikely to change over the forecast horizon.
Real returns on capital and safe assets

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

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.