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Commentary

Market Opinions and Topics of Interest

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What Is Taylor-Rule Neutrality For The Federal Funds Rate?

As noted in a recent [Market Facts](#), both the binary options market and the federal funds futures market are expecting **no move** at this month's September 16, 2008 meeting. If the Federal Reserve is holding at 2.00%, does this mean they have achieved a neutral funds rate? One popular way to measure "neutral" is to use the Taylor rule, created by Stanford economist John Taylor.

Taylor Rule Construction

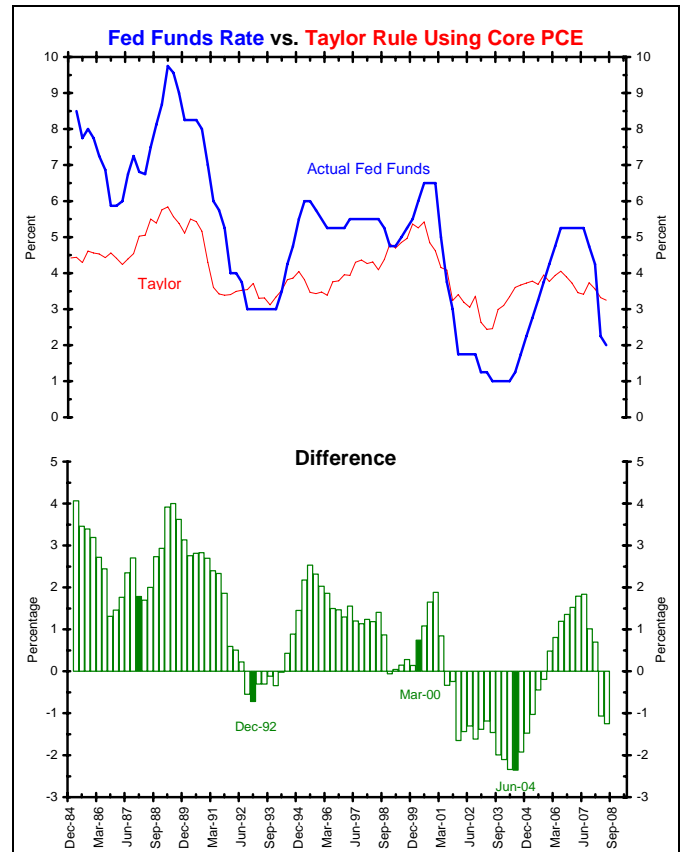
Taylor assumed a neutral real policy rate of 4%, composed of a 2% neutral inflation rate and a 2% neutral real short rate. This is denoted as r_{Neutral} in the equation below.

The most important components in the Taylor Rule are potential GDP and potential inflation. While both are calculated by many Wall Street firms, we will use the **Congressional Budget Office's** (CBO) measure. An "inflation gap" is calculated by comparing actual readings to the potential level. An "output gap" is calculated by comparing actual readings to potential GDP. Both gaps are multiplied by a coefficient of 0.5 and summed to produce the Taylor neutral rate per below:

$$\text{Taylor Rule Rate} = r_{\text{Neutral}} + 0.5(\text{Inflation Gap}) + 0.5(\text{Output Gap})$$

As of June 2008, the CBO estimates potential GDP is running 191 basis points above actual GDP, meaning this part of the calculation subtracts 95.5 basis points from the neutral federal funds target since the economy still has some spare capacity. Measured inflation has moved higher in recent quarters, thanks in large part to rising energy prices. Core PCE is 41 basis points above the preferred rate (2.00%) at present, meaning this part of the calculation adds 20.5 basis points to the target funds rate as inflation is running slightly higher than the preferred rate.

Using these variables and assumptions, the Taylor rule suggests the funds rate should be 3.25%, derived as $[4.00\% + 0.5(-1.91) + 0.5(0.41)]$. This is shown in the next chart.



Taylor Rule Using PCE vs. Core PCE

The inflation gap component of the Taylor Rule often accounts for most of the differences between various interpretations of the model. It is useful, therefore, to compare iterations of the Taylor Rule using core and headline PCE readings as the measure of inflation.

The chart on the next page shows the actual federal funds rate in blue versus the **PCE-derived** Taylor Rule in red. The bottom panel of this chart shows the degree to which the Federal Reserve is accommodative or restrictive.

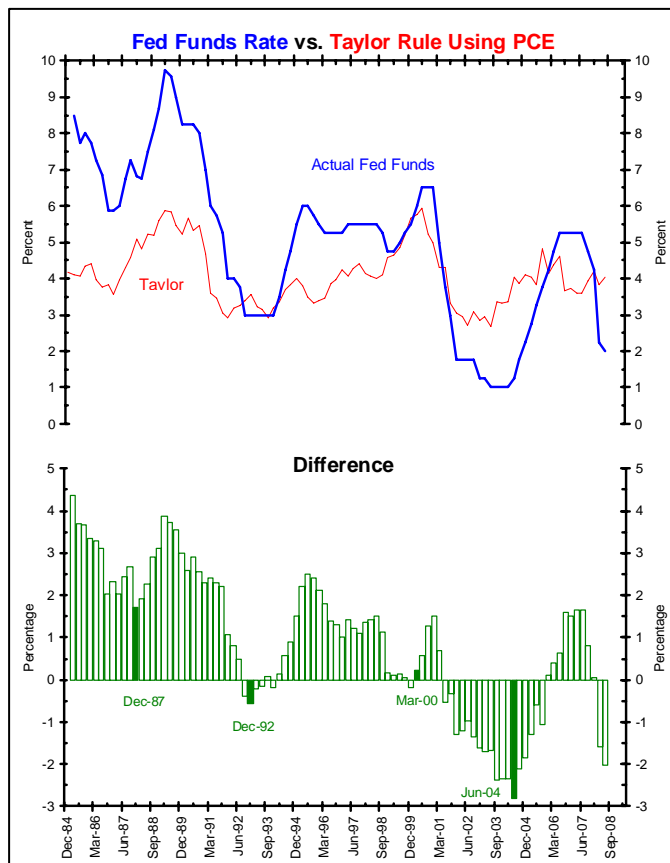
Through June 2008, the GDP measures are the same as shown in the Core PCE calculations - CBO estimates potential GDP is running 191 basis points

above actual GDP, meaning this part of the calculation subtracts 95.5 basis points from the neutral federal funds target since the economy still has some spare capacity. Using overall PCE as measured inflation shows it is running 199 basis points above the preferred rate (2.00%) at present, meaning this part of the calculation adds 99 basis points to the target funds rate.

Using these variables and assumptions, the Taylor rule suggests the funds rate should be 4.04%, derived as $[4.00\% + 0.5(-1.91) + 0.5(1.99)]$ or 204 basis point above the current target rate.

Conclusion

John Taylor says that while the funds rate is below neutral, one must adjust this for the credit/money market problems. One can apply whatever adjustment for the credit crisis deemed appropriate, but the fact is they are all guesses. Regardless of which measure of inflation is used (core or headline), the target funds rate remains below neutral according to this important measure.



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