Taylor Rules

The Fed has historically (from the early 1980's through 2007) set the target Fed funds rate (i^T in our IS-LM handout) as a function of the output gap and the inflation gap. This rule is expressed in the following way:

$$i_t^{FedFunds} = \pi_t + \beta(y_t - y_t^*) + \delta(\pi_t - \pi_t^*) + r_t^*$$

$$i_t^{FedFunds} = (1 + \delta)\pi_t + \beta(y_t - y_t^*) + r_t^* - \delta\pi_t^*$$

Where y is (log of) GDP, y^* is the natural level of output (log of Y_n), also known as potential GDP, so that $(y-y^*)$ is the output gap; π is the actual inflation rate of the personal consumption expenditure deflator, and π^* is the target, usually considered 2%, but sometimes other values as well (0% to 4% shown below).

**Federal Funds Rate and Inflation Targets**
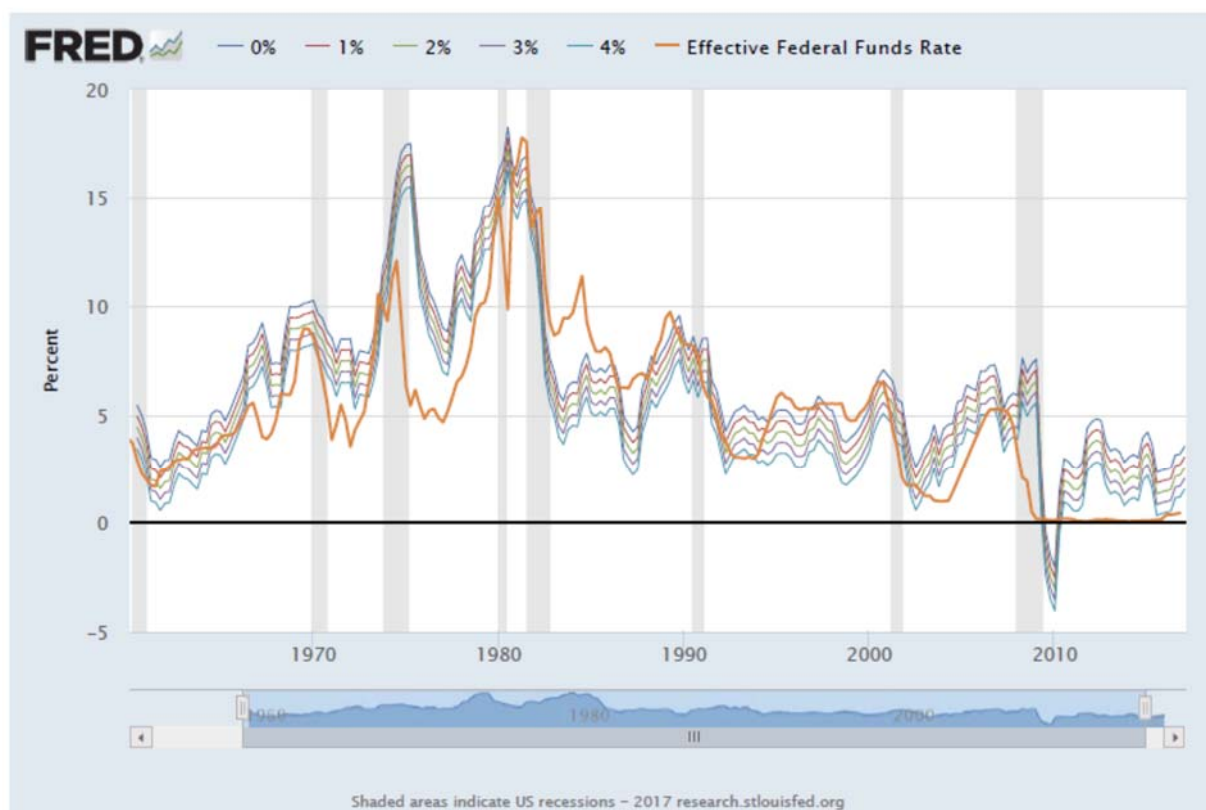
Federal Funds Rate and Inflation Targets shows the observed federal funds rate, quarterly, and the level of the funds rate implied by applying Taylor's (1993) equation to five alternative target inflation rates, n= 0, 1, 2, 3, 4 percent, where ft* is the implied federal funds rate, nt−1 is the previous period's inflation rate (PCE) measured on a year-over-year basis, yt−1 is the log of the previous period's level of real gross domestic product (GDP), and yt−1P is the log of an estimate of the previous period's level of potential output.

ft* = 2.5 + nt−1 + (nt−1 − n)/2 + 100 × (yt−1 − yt−1P)/2

Source: St. Louis Fed, https://research.stlouisfed.org/datatrends/mt/page10.php

Actual and Potential Real GDP

Billions of Chain-Weighted 2009 Dollars
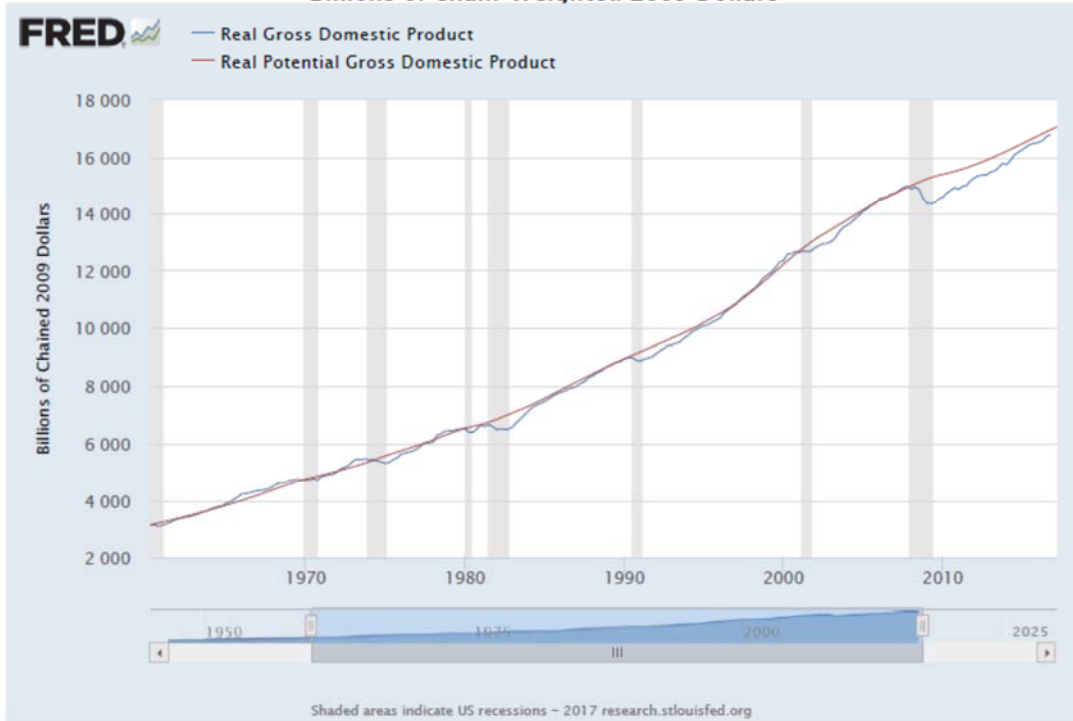
Potential Real GDP is estimated by the Congressional Budget Office (CBO).

PCE Inflation

Percent change from year ago

Source: U.S. Bureau of Economic Analysis