Taylor Rule, Macro Policy curve

\[ r_t = \pi_t + \beta \hat{Y}_t + \delta (\pi_t - \pi_t^*) + R_t^* \]  \hfill (16.1)

\[ r_t = (1 + \delta)\pi_t + \beta \hat{Y}_t + R_t^* - \delta \pi_t^* \]  \hfill (16.2)

\[ \hat{Y}_t = \frac{-\delta}{(\beta + \sigma)} (\pi_t - \pi_t^*) \]  \hfill (16.11)
Updated Fig. 16.2; Source: St. Louis Fed, *Monetary Trends*
FIGURE 16.5 The Macroeconomic Policy Curve
FIGURE 16.6 Shifts in the Macroeconomic Policy Curve
Price Adjustment

Notice that this is also sometimes called the “Phillips Curve”

\[ \pi_t = \pi_{t-1} + f\hat{Y}_{t-1} + Z_t \]  \hspace{1cm} (16.12)
**FIGURE 16.7** Price Adjustment Line Determining the Inflation Rate

This diagram illustrates the relationship between the inflation rate (\(\pi\)) and the GDP gap (\(\gamma\)). The price adjustment line (\(Y - Y^*\)) shifts down next year if this year's GDP gap is less than zero. Conversely, it shifts up next year if this year's GDP gap is greater than zero.

\[ \text{THIS YEAR'S GDP GAP } \gamma = \frac{Y - Y^*}{Y^*} \]
FIGURE 16.8 Simultaneously Determining Inflation and Output
FIGURE 16.9 A Boom

The figure illustrates a shift in the macroeconomic policy curve (MP) and the PA line. The GDP gap is given by the equation $\hat{y} = \left(\frac{y - y^*}{y^*}\right)$. The graph shows how a shift in the macroeconomic policy curve affects the inflation rate (π) and the GDP gap over the years.
FIGURE 16.10 Disinflation

Recession caused by shift in the macroeconomic policy curve

PA line then shifts down.

GDP GAP $\gamma = \left( \frac{y - y^*}{y^*} \right)$
FIGURE 16.11 A Boom-Bust Cycle
FIGURE 16.12 An Oil Price Shock

Price shock causes PA line to shift up, then gradually shift down during stagflation.
Updated Figure 16.14
Updated and revised Figure 16.15 (uses PCE deflator)
Federal Funds Rate and Inflation Targets

Calculated federal funds rate is based on Taylor's rule.

Components of Taylor's Rule

Actual and Potential Real GDP

Billions of chain-weighted 2005 dollars

See notes section for further explanation.

PCE Inflation

Percent change from year ago

Updated Fig. 16.2; Source: St. Louis Fed, Monetary Trends