Economics 302
Intermediate Macroeconomic Theory and Policy
(Fall 2010)

Prof. Menzie Chinn

Lecture 27

December 8, 2010

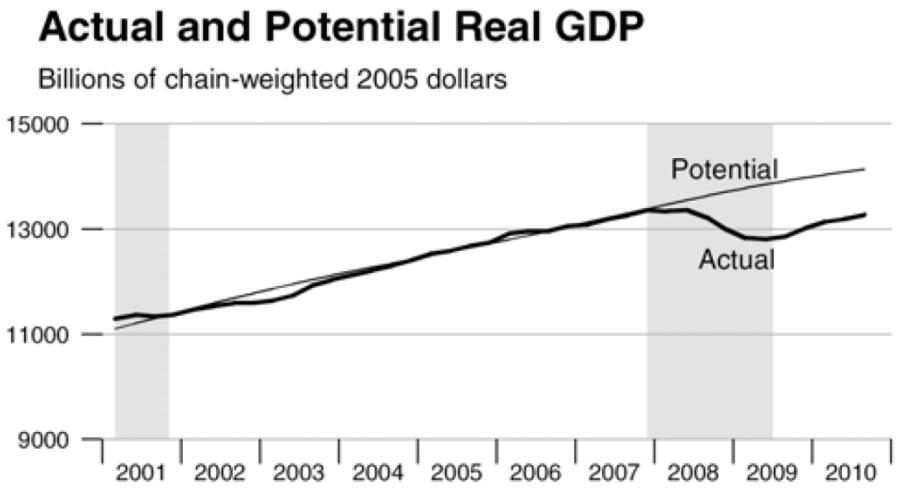
Macroeconomic Policy Model

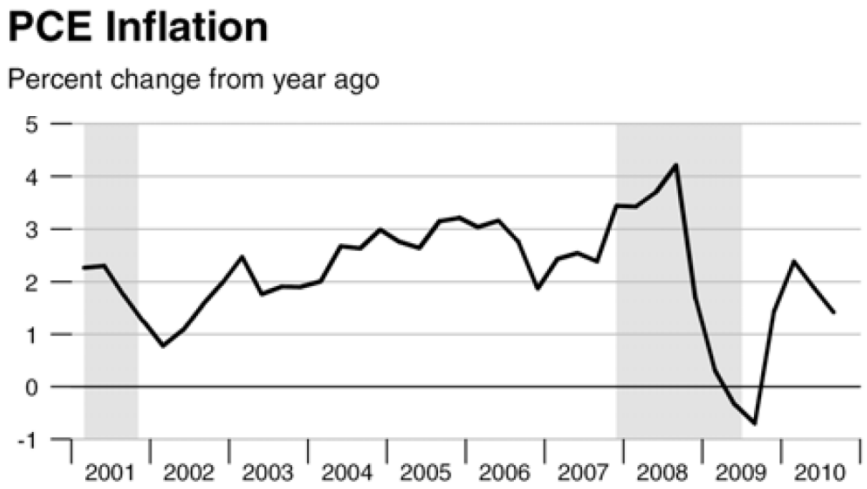
- Combines Taylor Rule, IS curve to obtain Macroeconomic Policy curve
- Reintroduce Phillips Curve
- Find equilibrium in output gap/inflation space
- Show effects of policy changes ***defined as changes in rules***

Taylor Rule

$$r_t = \pi_t + \beta\hat{Y}_t + \delta(\pi_t - \pi_t^*) + R_t^*$$

$$r_t = (1+\delta)\pi_t + \beta\hat{Y}_t + R_t^* - \delta\pi_t^*$$





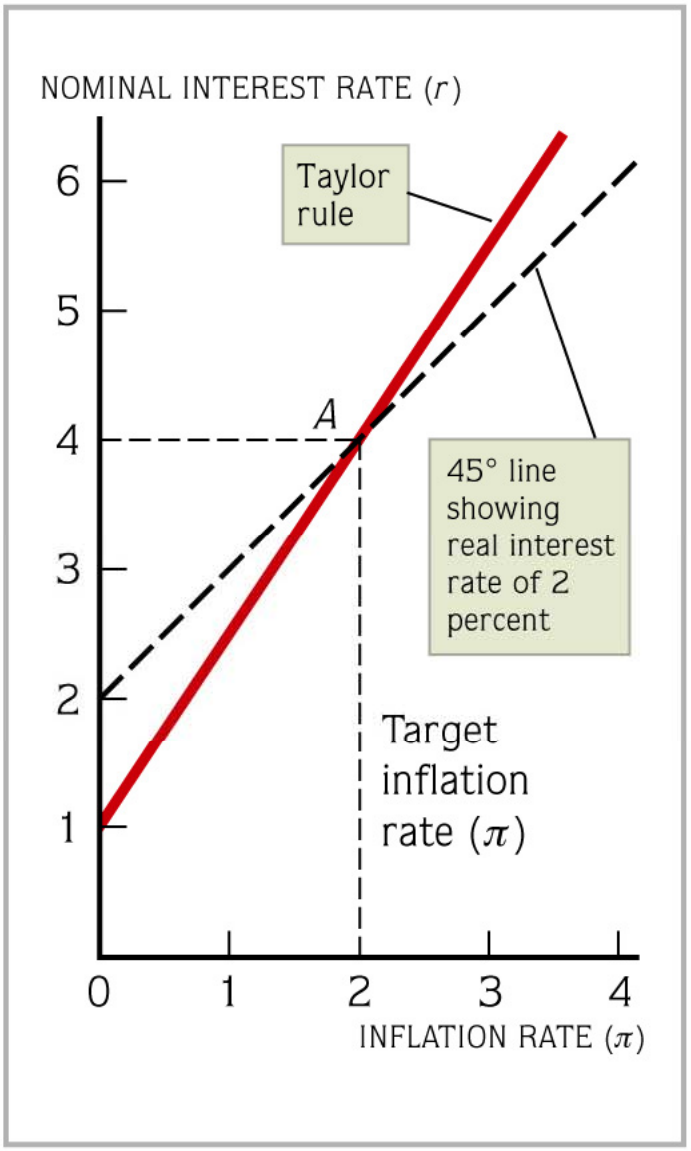
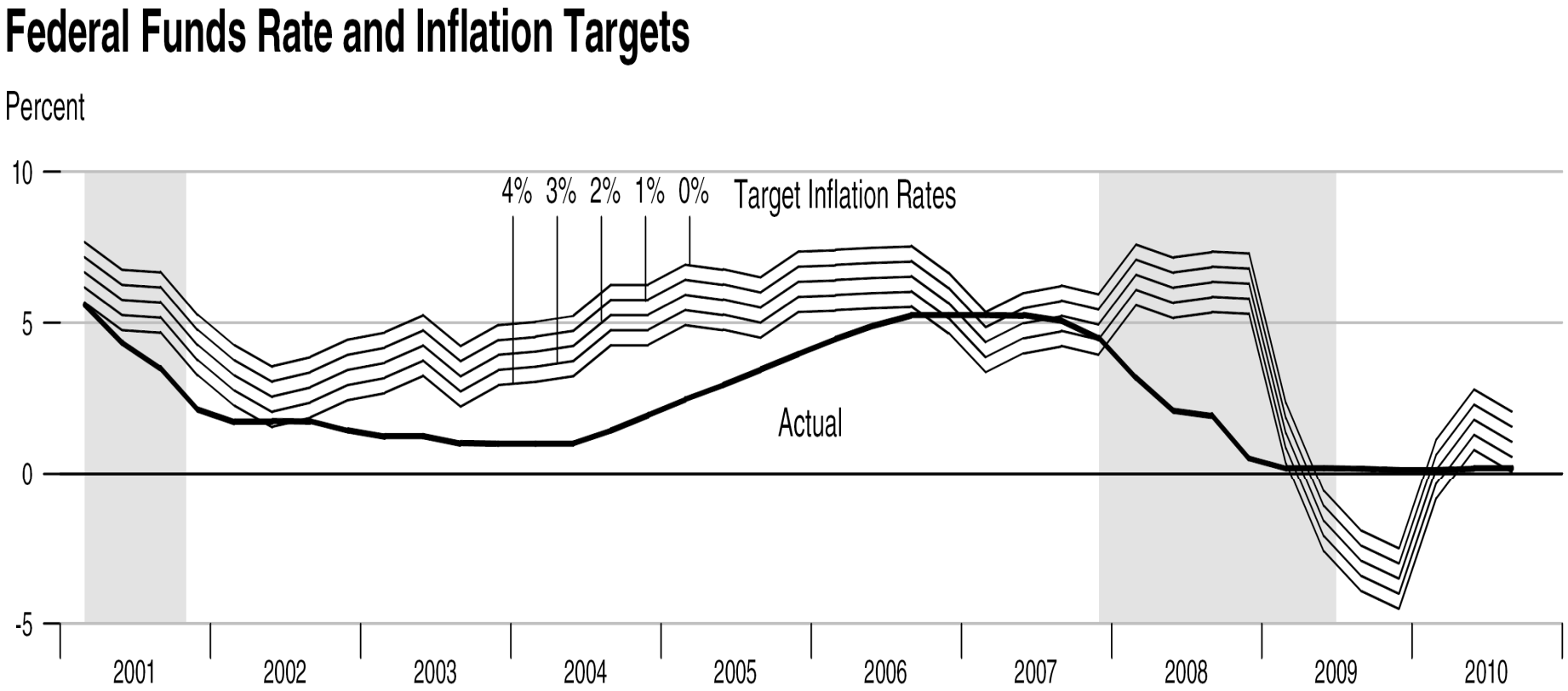


FIGURE 16.1 Graph of the Taylor Rule

Taylor Rule



Notes: R* = 2.5%, β=0.5, δ=0.5

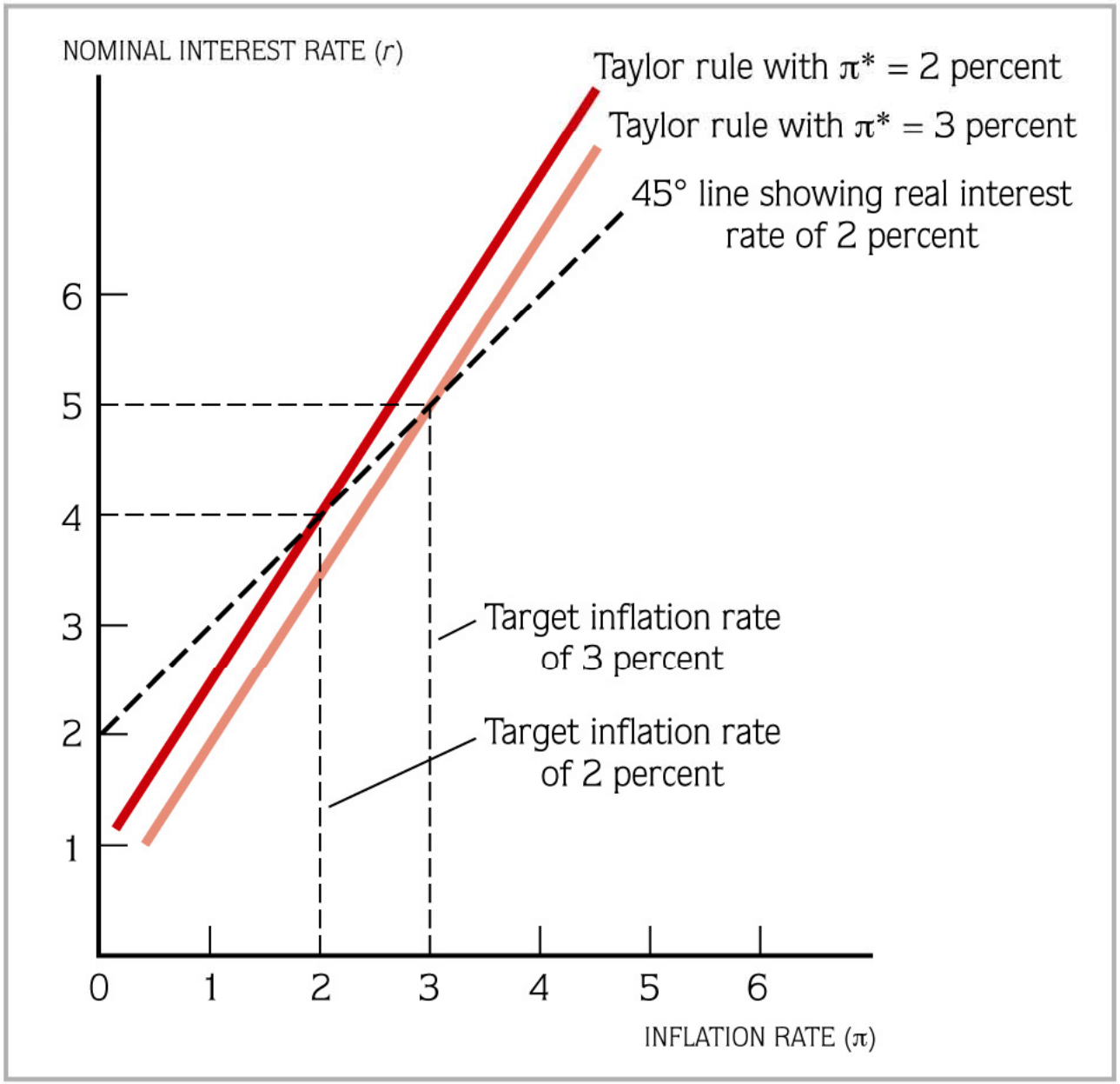


FIGURE 16.3 Shifts of the Taylor Rule

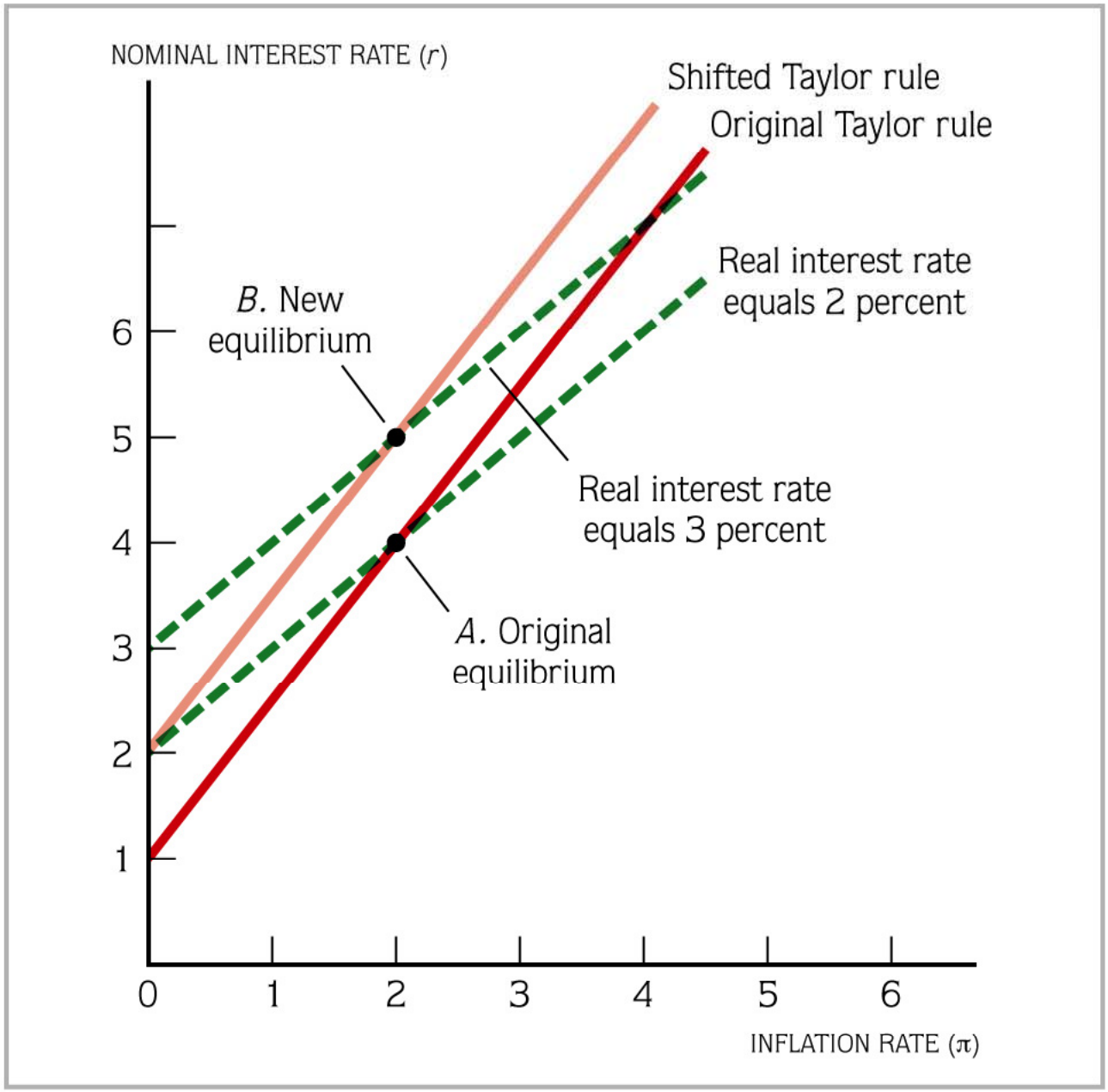


FIGURE 16.4 Effect of a Fiscal Policy Change

IS Curve Revisited

$$R_t = s_0 - s_1 Y_t + s_2 G_t \qquad (16.3),$$

$$R_t^* = s_0 - s_1 Y^* + s_2 G_t \qquad (16.4);$$

$$R_t - R_t^* = -s_1 (Y_t - Y^*) \qquad (16.5);$$

$$R_t - R_t^* = -s_1 Y^* \left(\frac{Y_t - Y^*}{Y^*} \right) \qquad (16.6)$$

$$R_t - R_t^* = -\sigma \hat{Y}_t \qquad (16.7)$$

$$r_t = \pi_t + \beta\hat{Y}_t + \delta(\pi_t - \pi_t^*) + R^* \qquad (16.1)$$

$$r_t - \pi_t - R_t^* = \beta\hat{Y}_t + \delta(\pi_t - \pi_t^*) \qquad (16.8);$$

$$R_t - R_t^* = \beta\hat{Y}_t + \delta(\pi_t - \pi_t^*) \qquad (16.9);$$

$$-\sigma\hat{Y}_t = \beta\hat{Y}_t + \delta(\pi_t - \pi_t^*) \qquad (16.10)$$

$$\hat{Y}_t = \frac{-\delta}{(\beta+\sigma)}(\pi_t - \pi_t^*) \qquad (16.11)$$

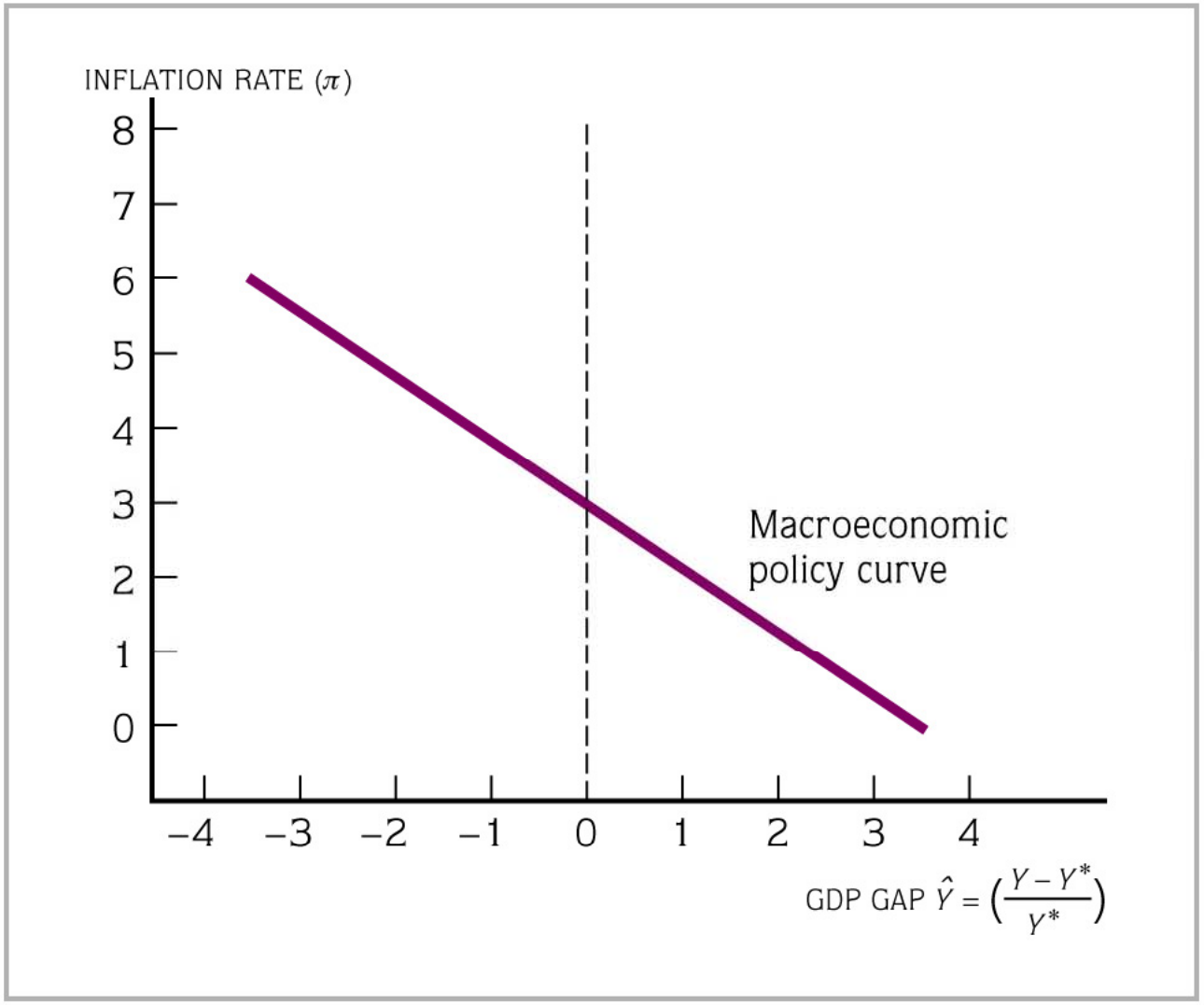


FIGURE 16.5 The Macroeconomic Policy Curve

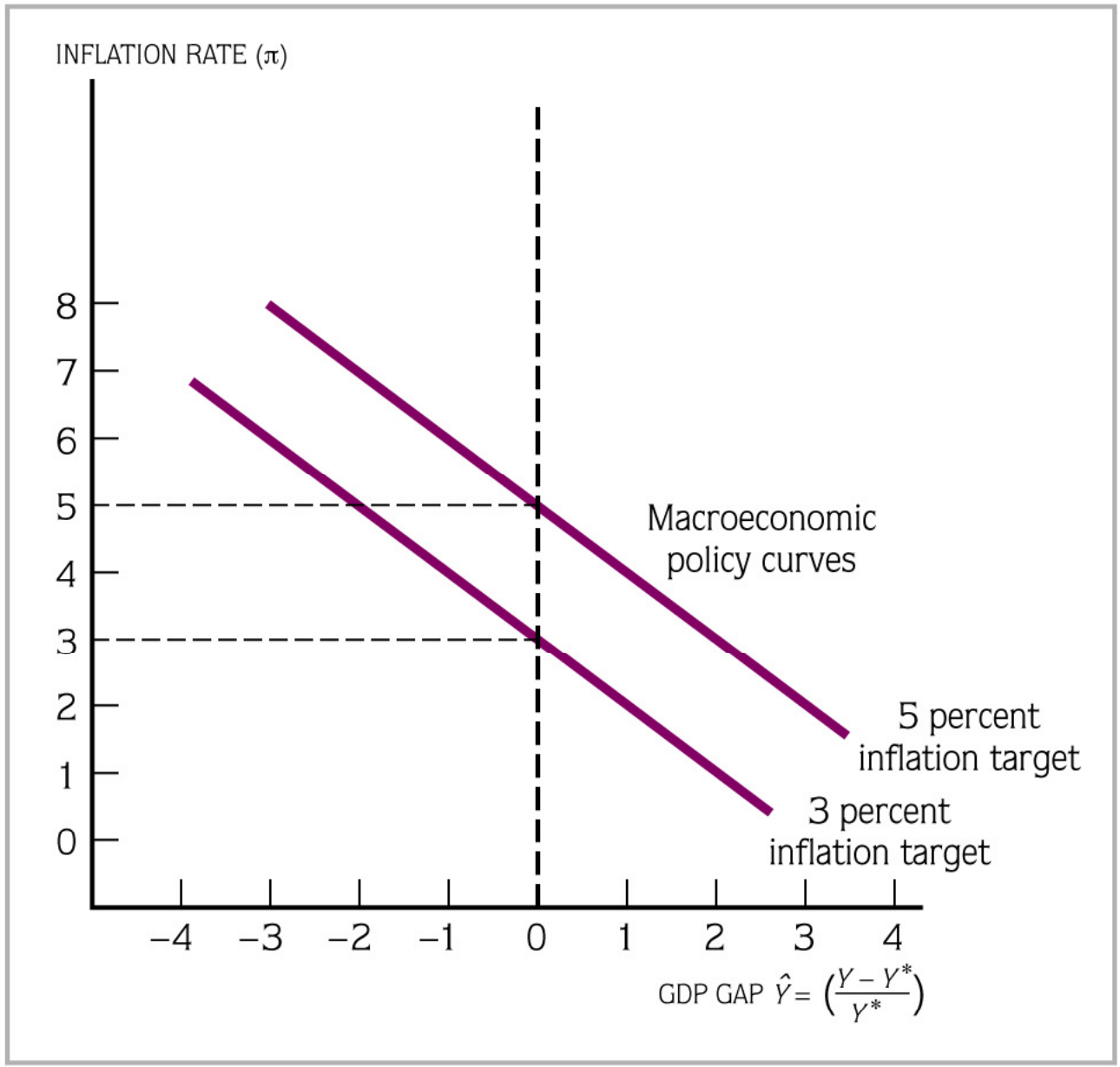


FIGURE 16.6 Shifts in the Macroeconomic Policy Curve

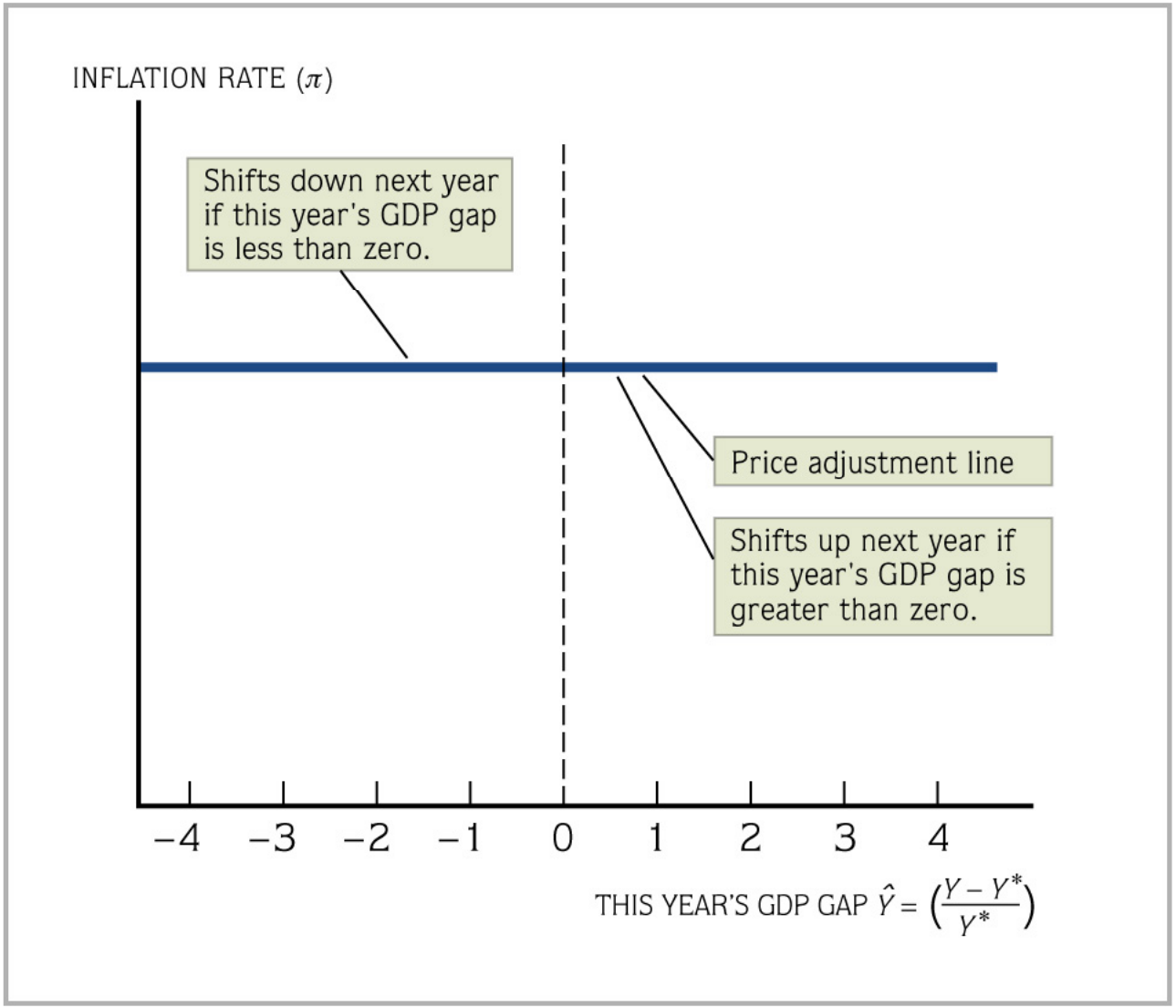


FIGURE 16.7 Price Adjustment Line Determining the Inflation Rate

Phillips Curve, Again

- Assume expectations augmented,
- Where expectations are adaptive
- Supply shocks allowed for

$$\pi_t = \pi_{t-1} + f\hat{Y}_{t-1} + Z_t \qquad (16.12)$$

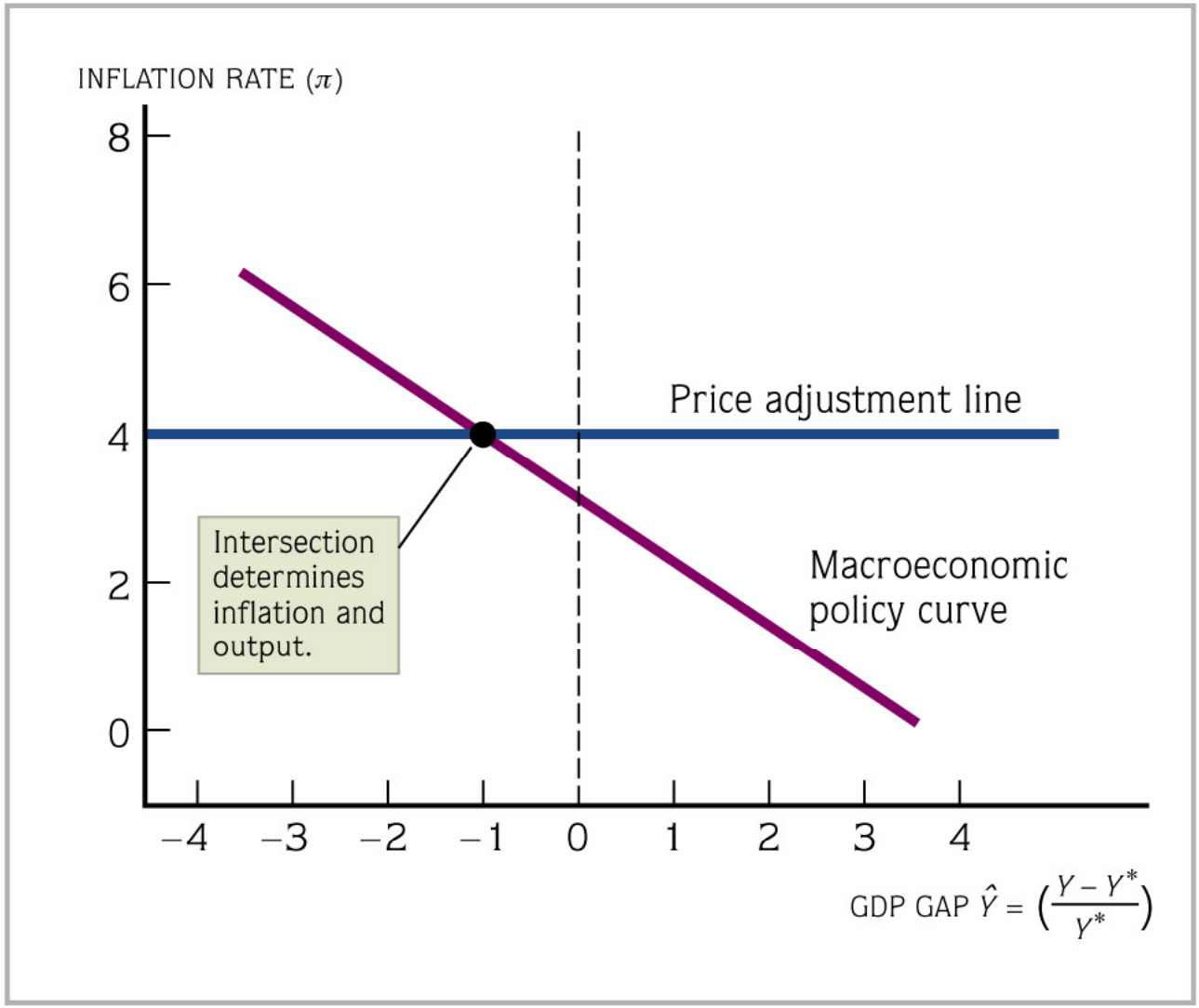


FIGURE 16.8 Simultaneously Determining Inflation and Output

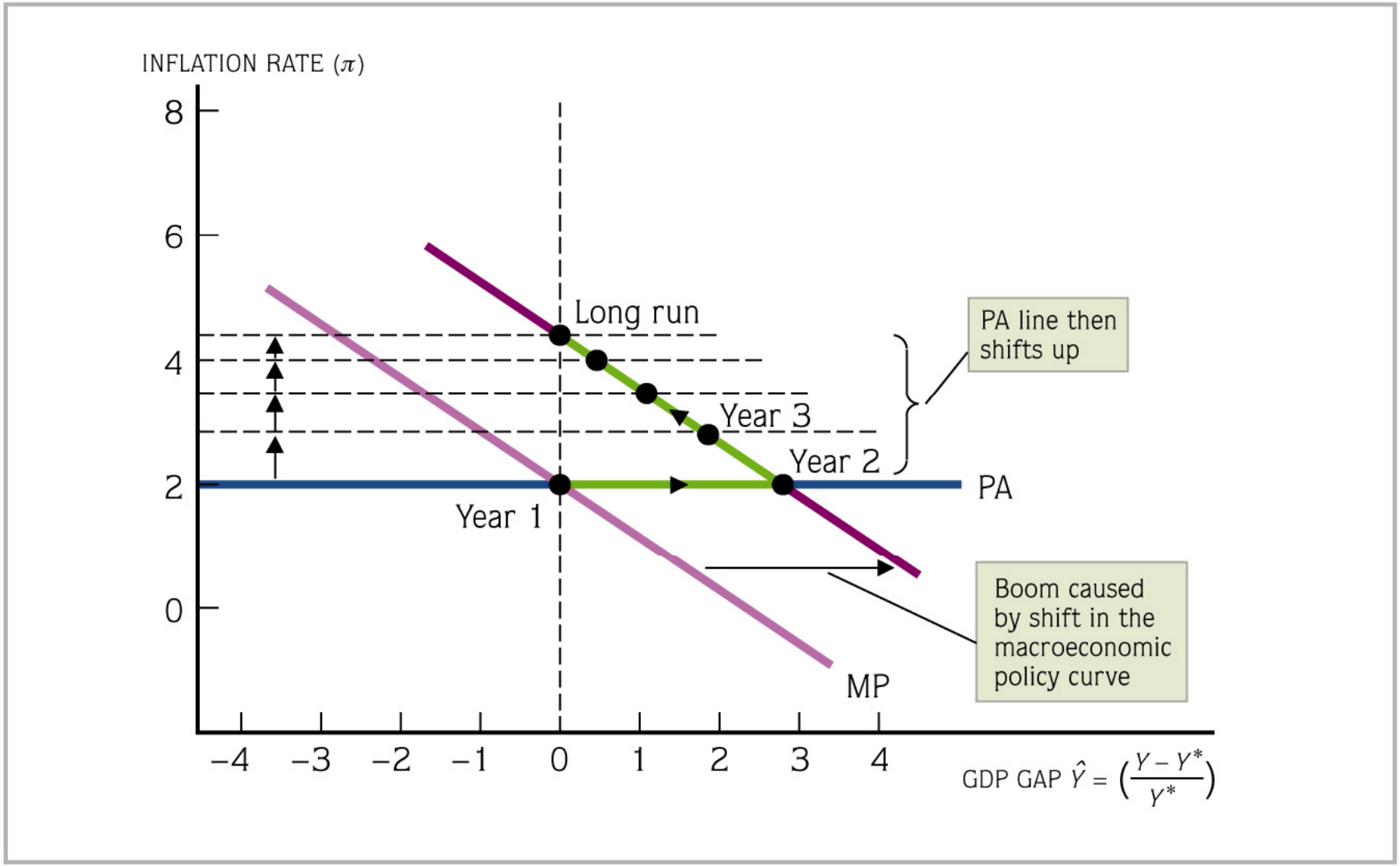


FIGURE 16.9 A Boom

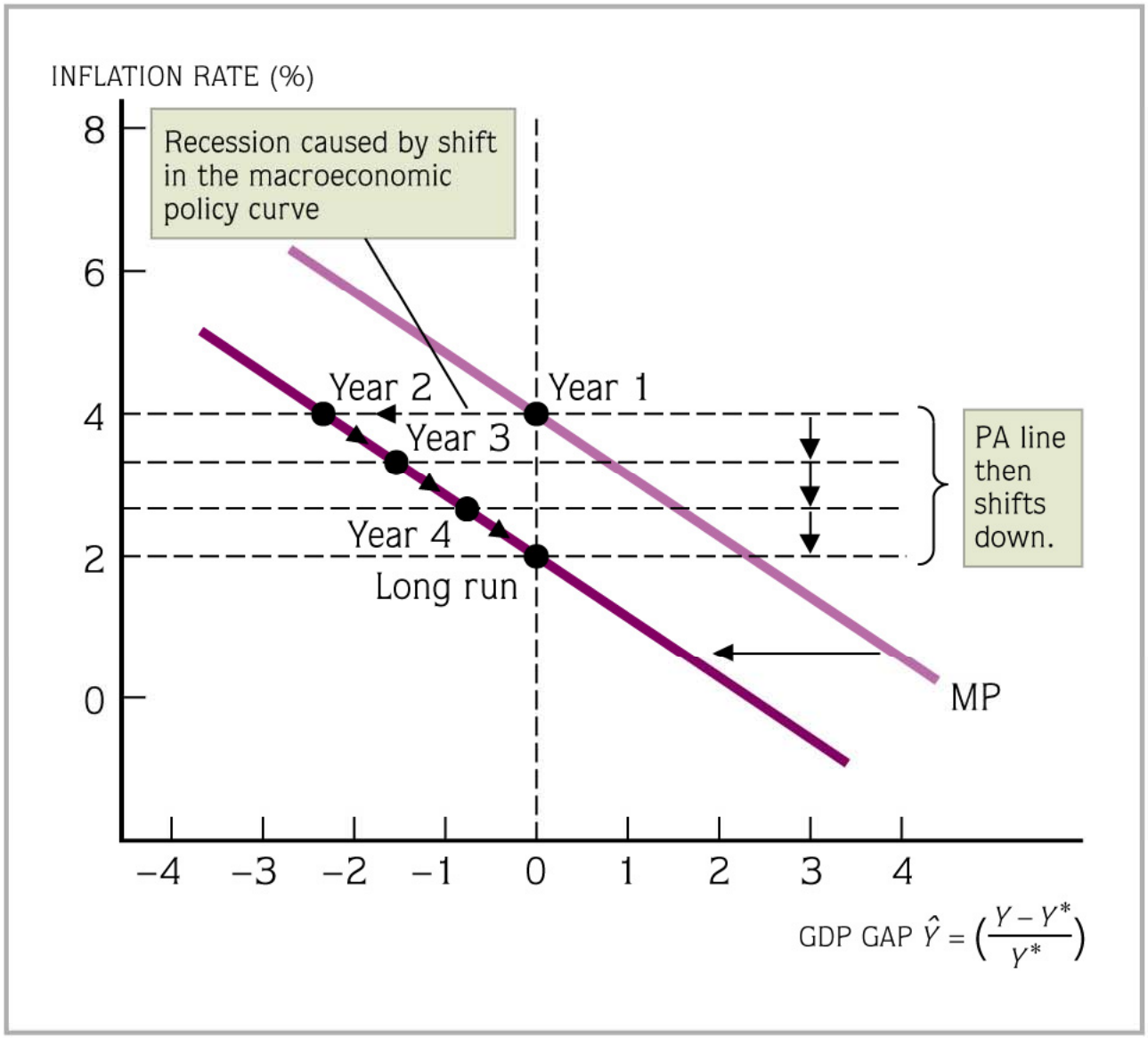


FIGURE 16.10 Disinflation

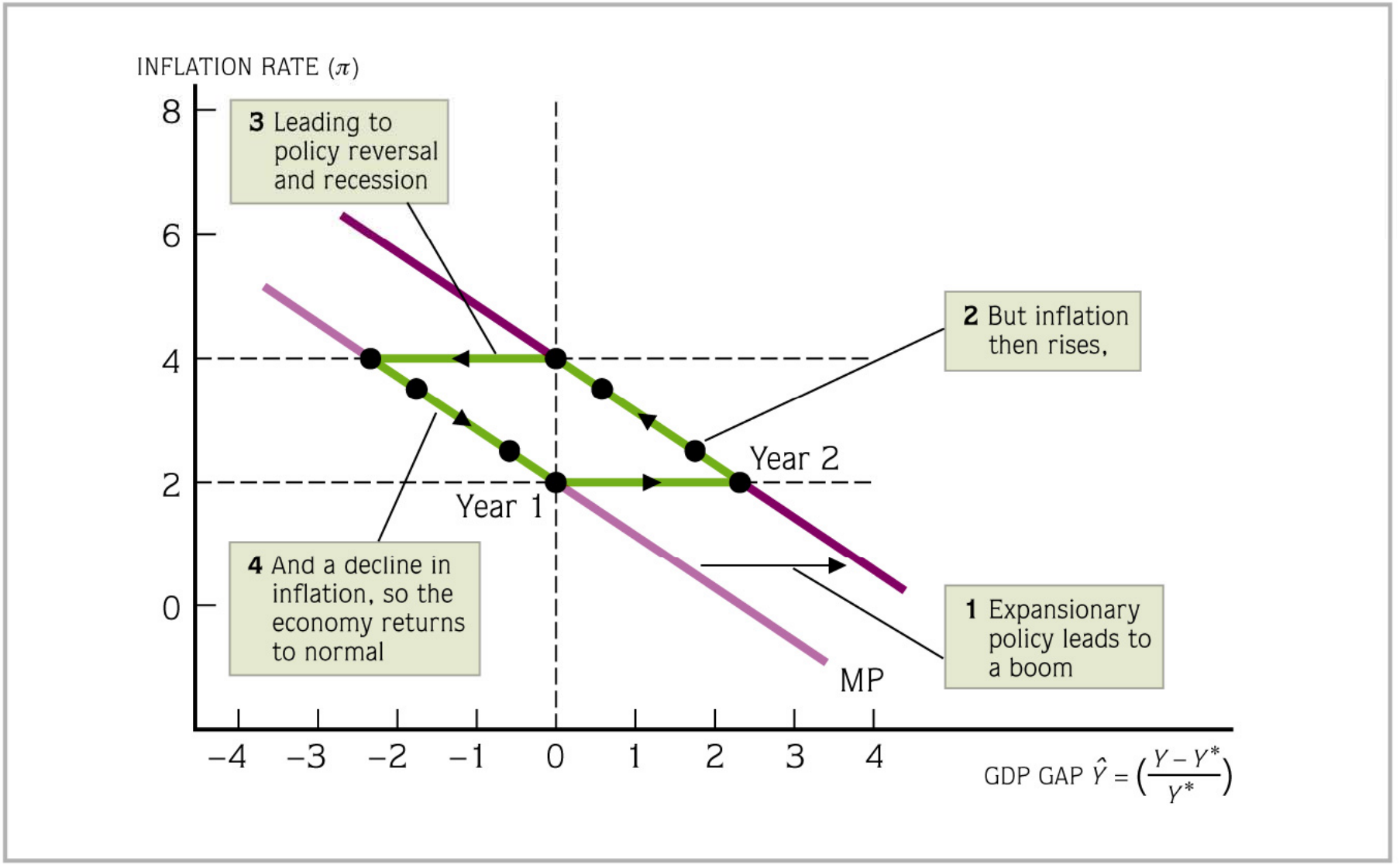


FIGURE 16.11 A Boom-Bust Cycle

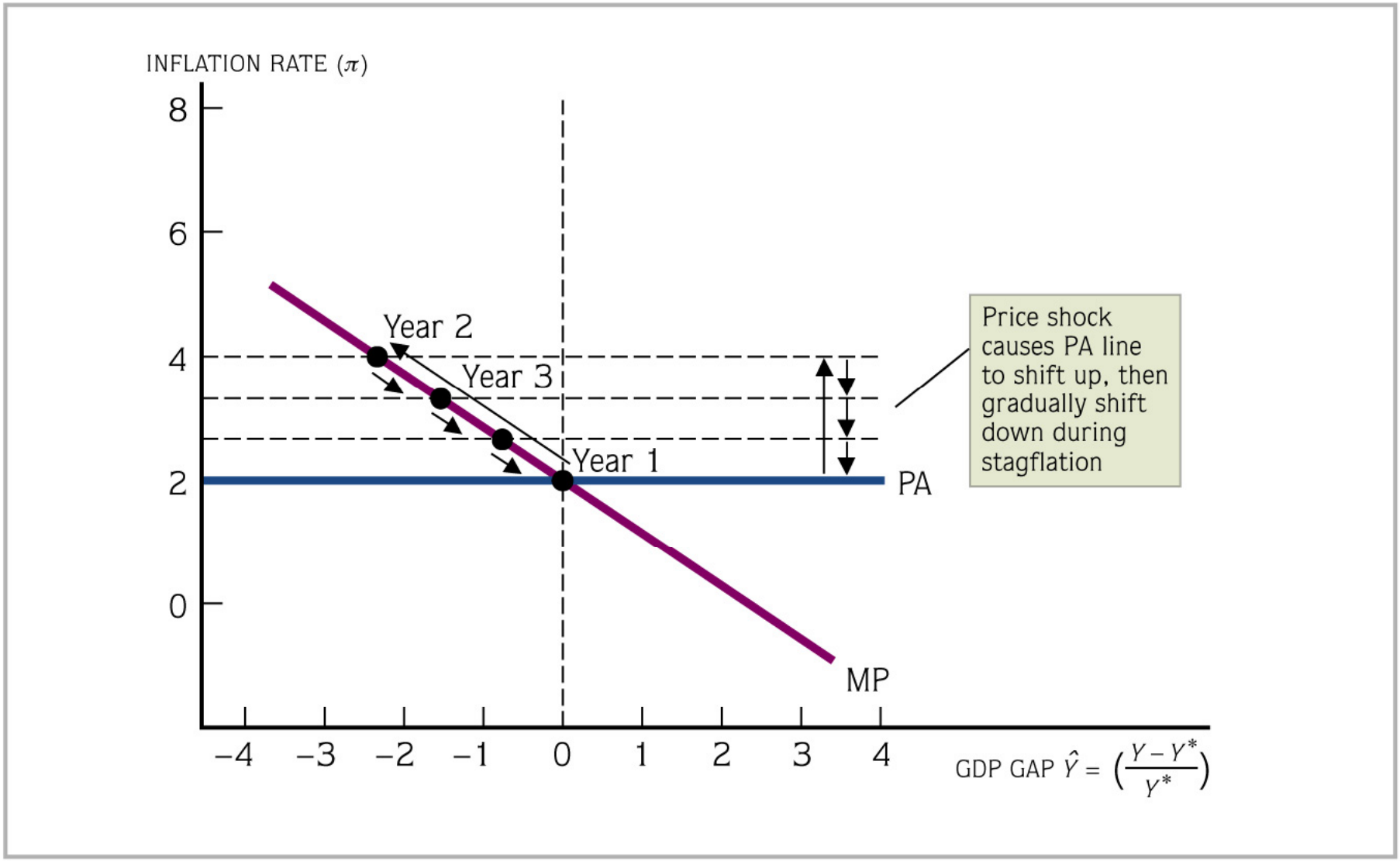


FIGURE 16.12 An Oil Price Shock

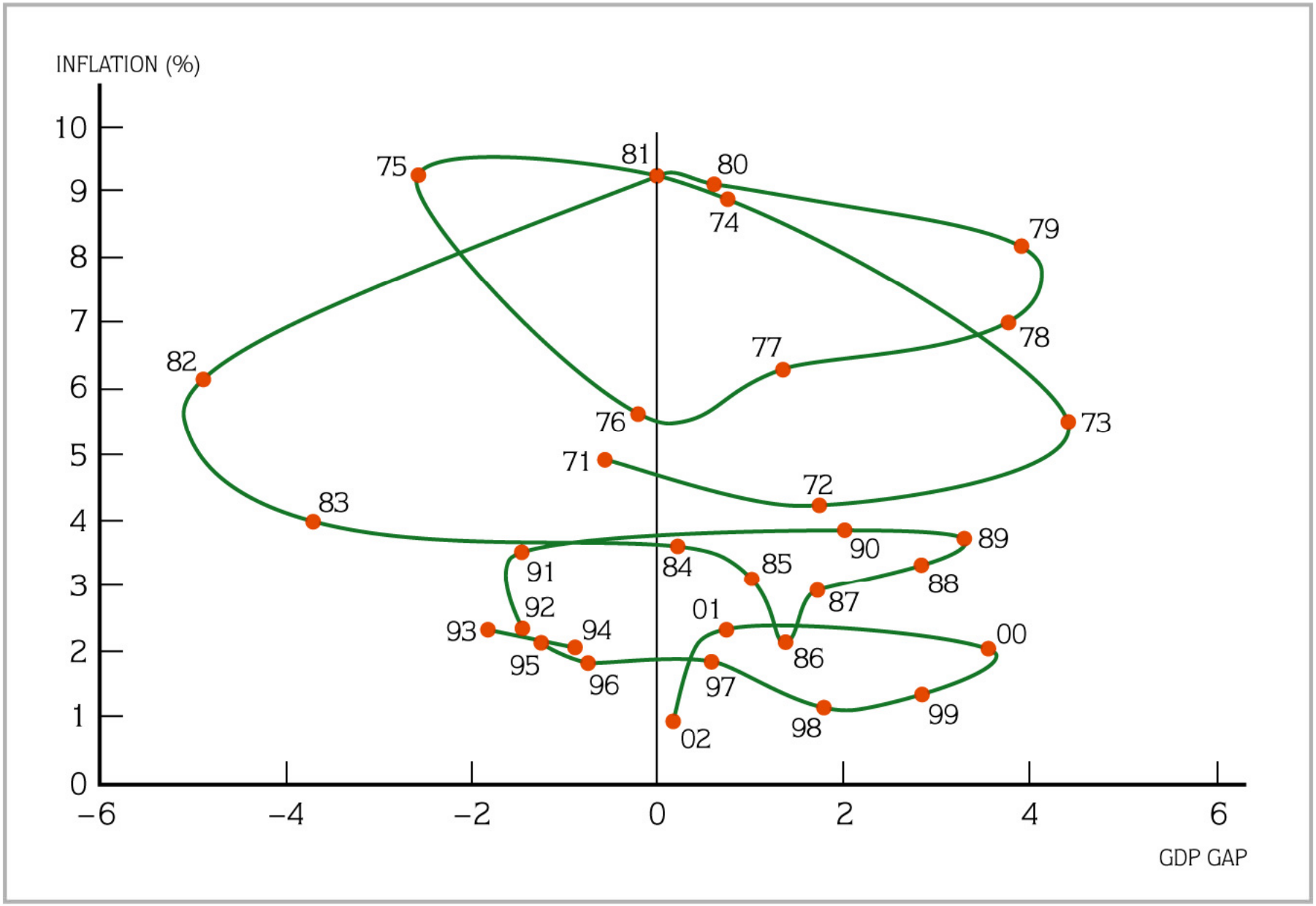


FIGURE 16.13 **Inflation–GDP Gap Loops in the United States, 1971–2002**

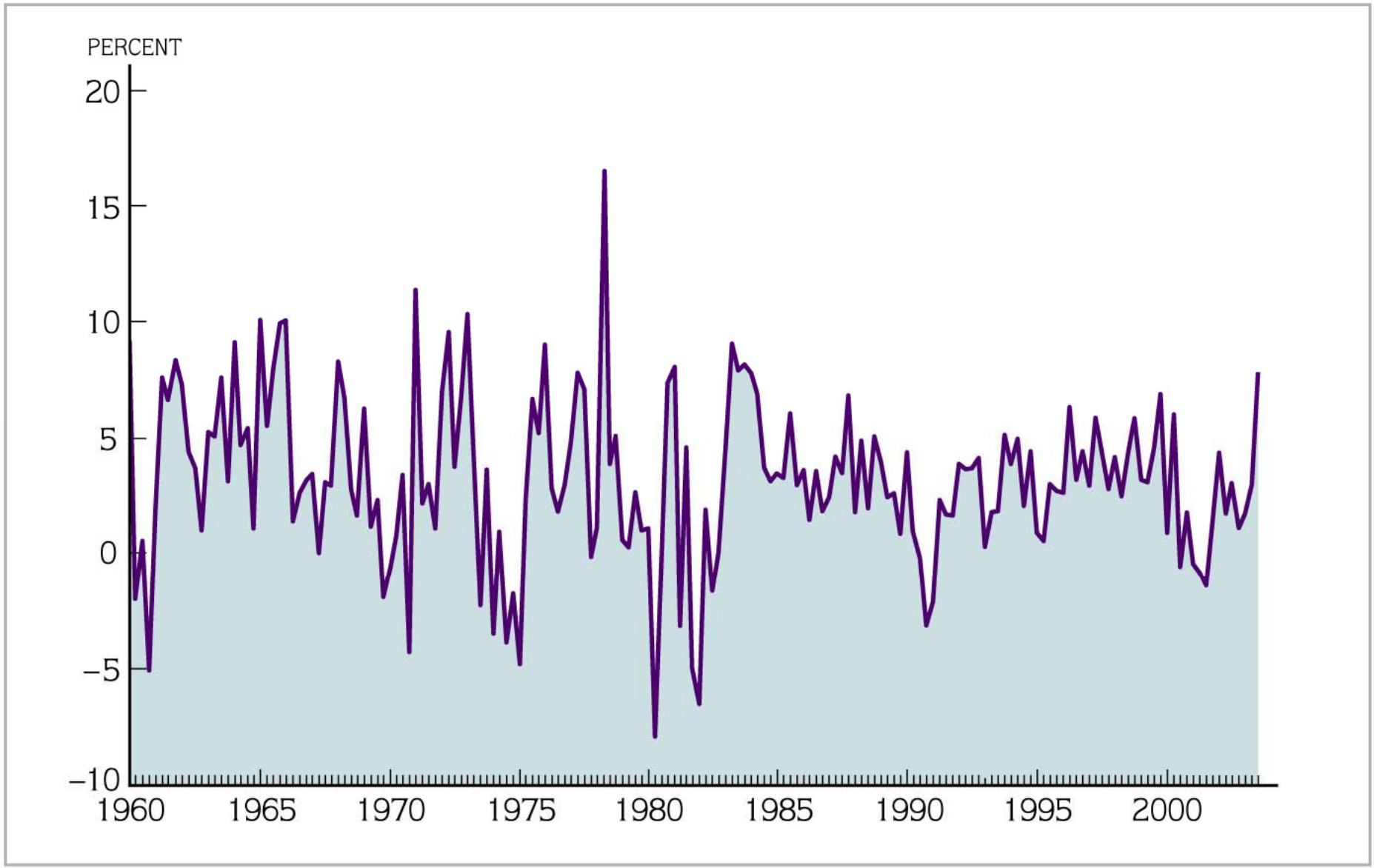


FIGURE 16.14 Quarterly Growth Rate of Real GDP

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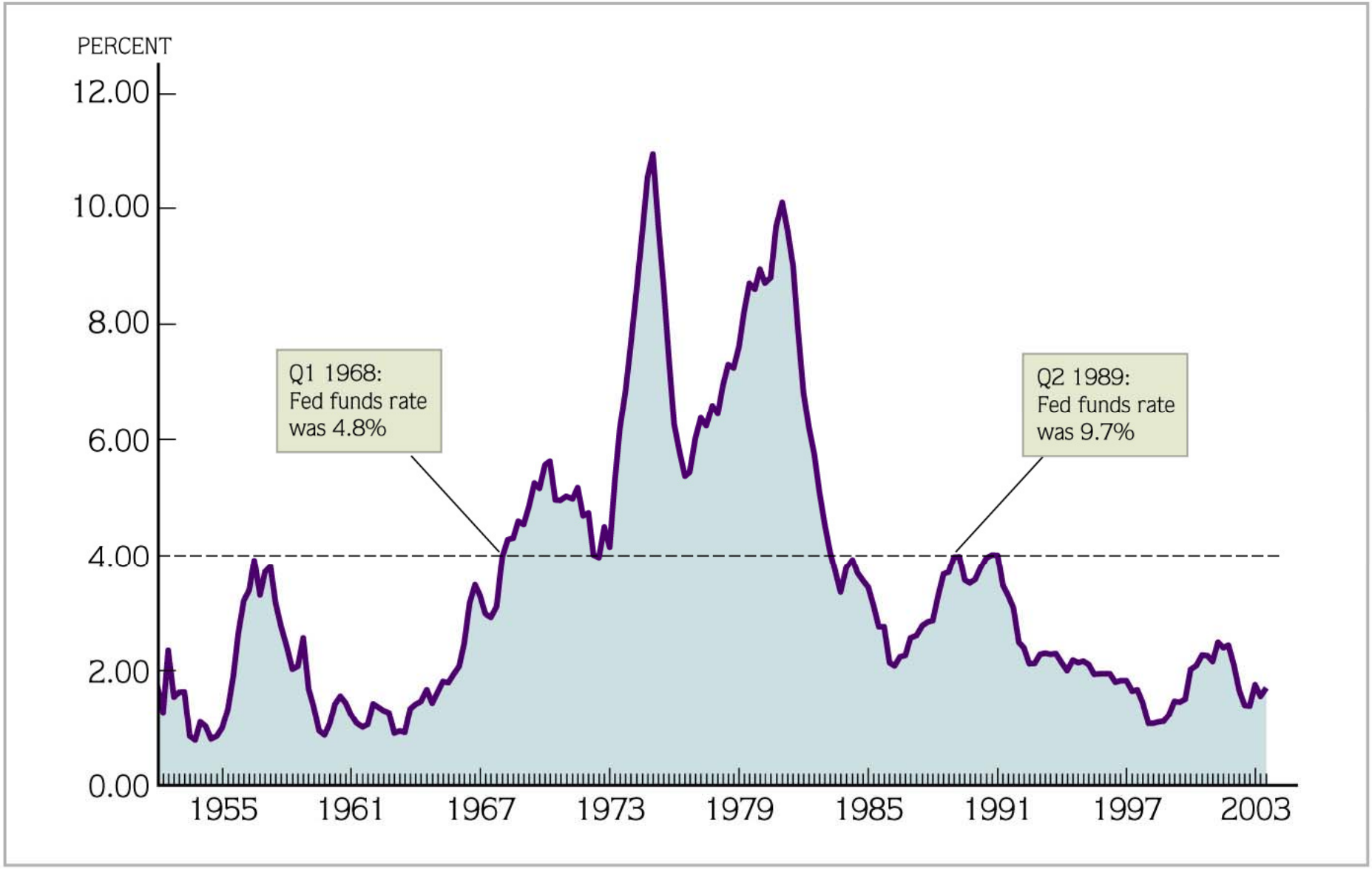

FIGURE 16.15 Inflation