

Public Affairs 854
**Macroeconomic Policy and
International Financial Regulation**

Lecture 18

3/24/2021

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Outline

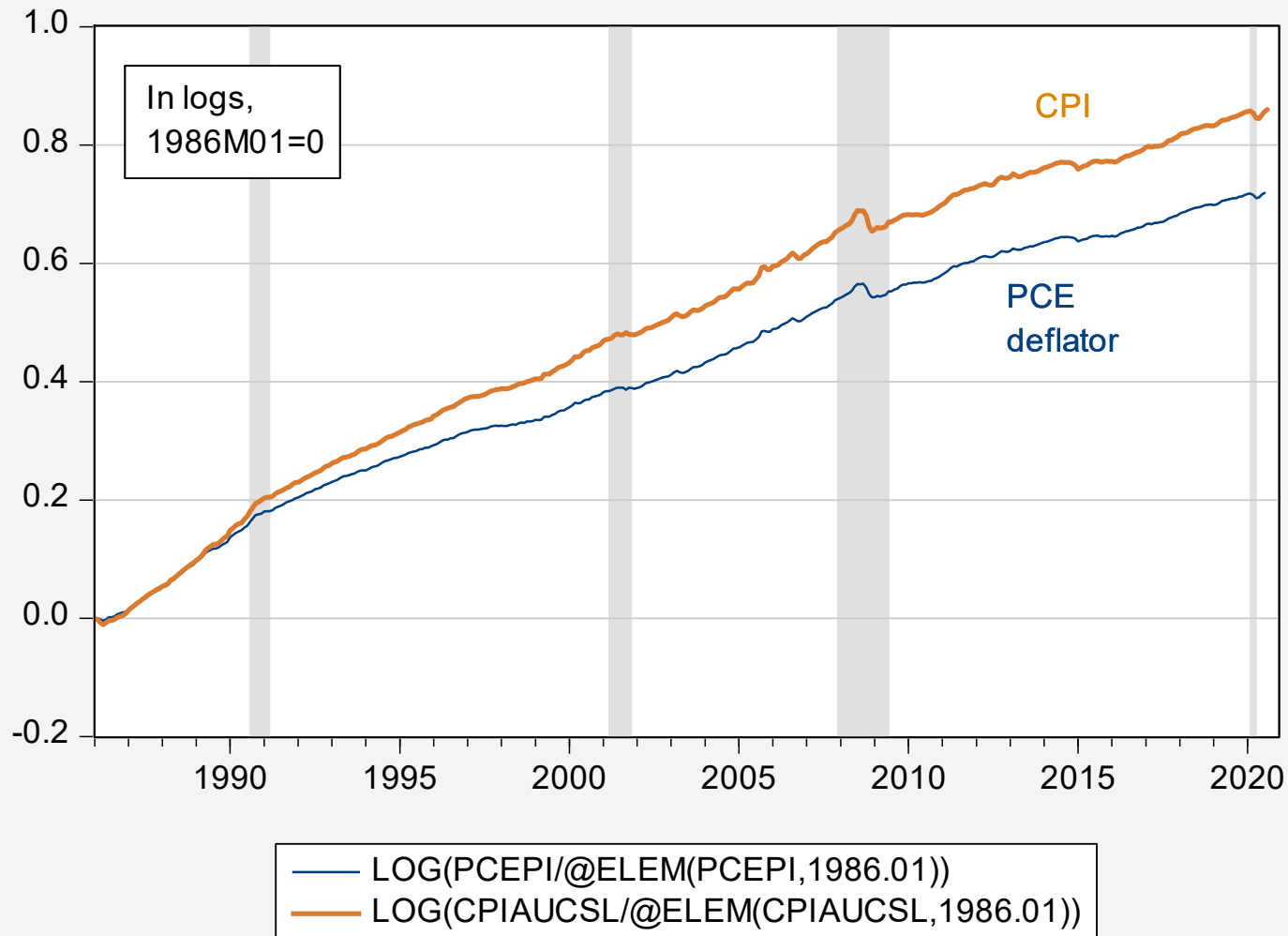
- Overview: AD/AS
- Aggregate Demand in an open economy
- Aggregate Supply in an open economy
- Inflation Expectations

Overview: AD/AS

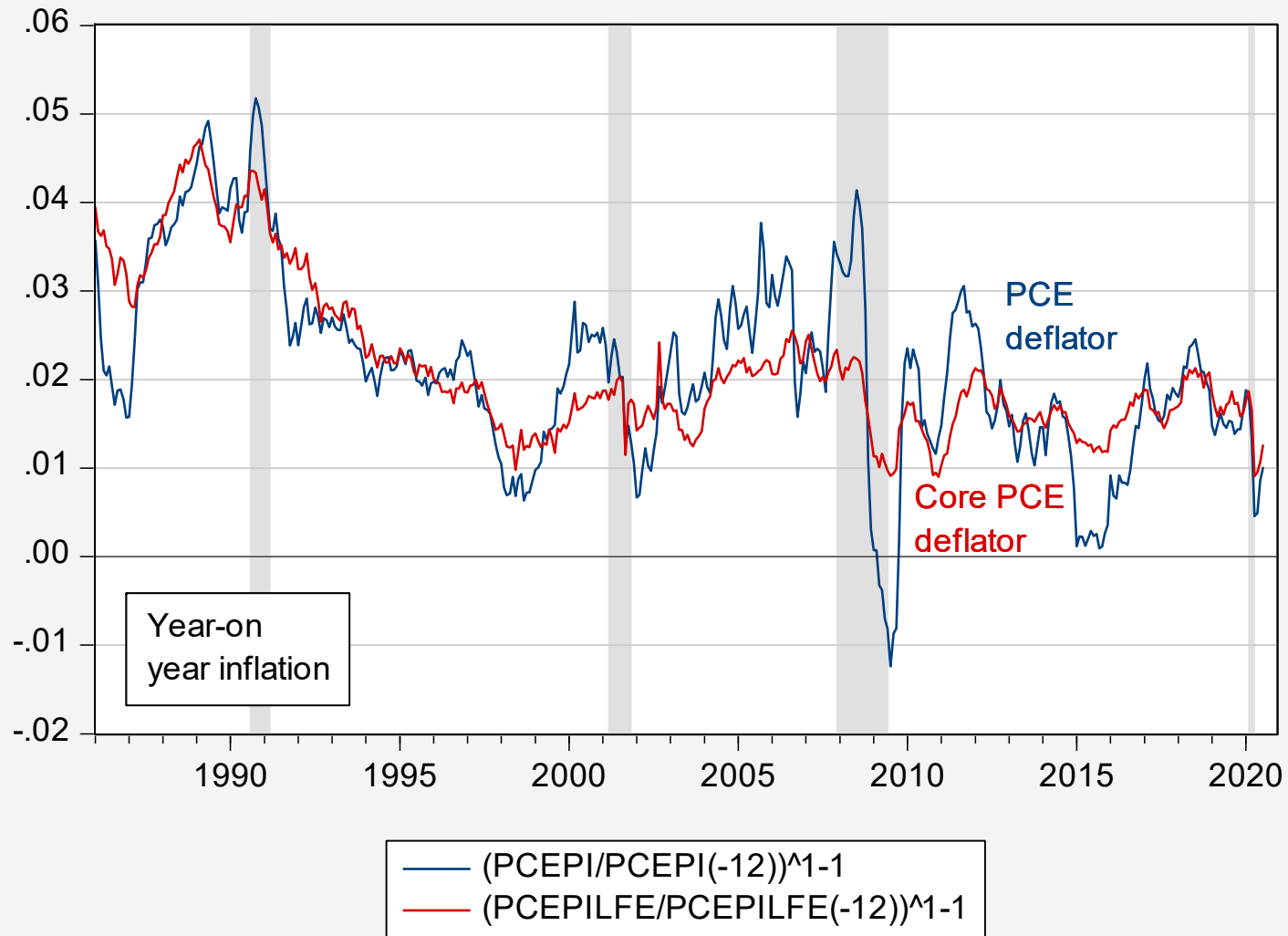
Limitations of IS-LM

- “Old fashioned” “Keynesian” in that price level is fixed
- Supply passively responds to demand
- Can dichotomize economy into real and financial sides
- We can fix first two...

Price Level *Does* Change



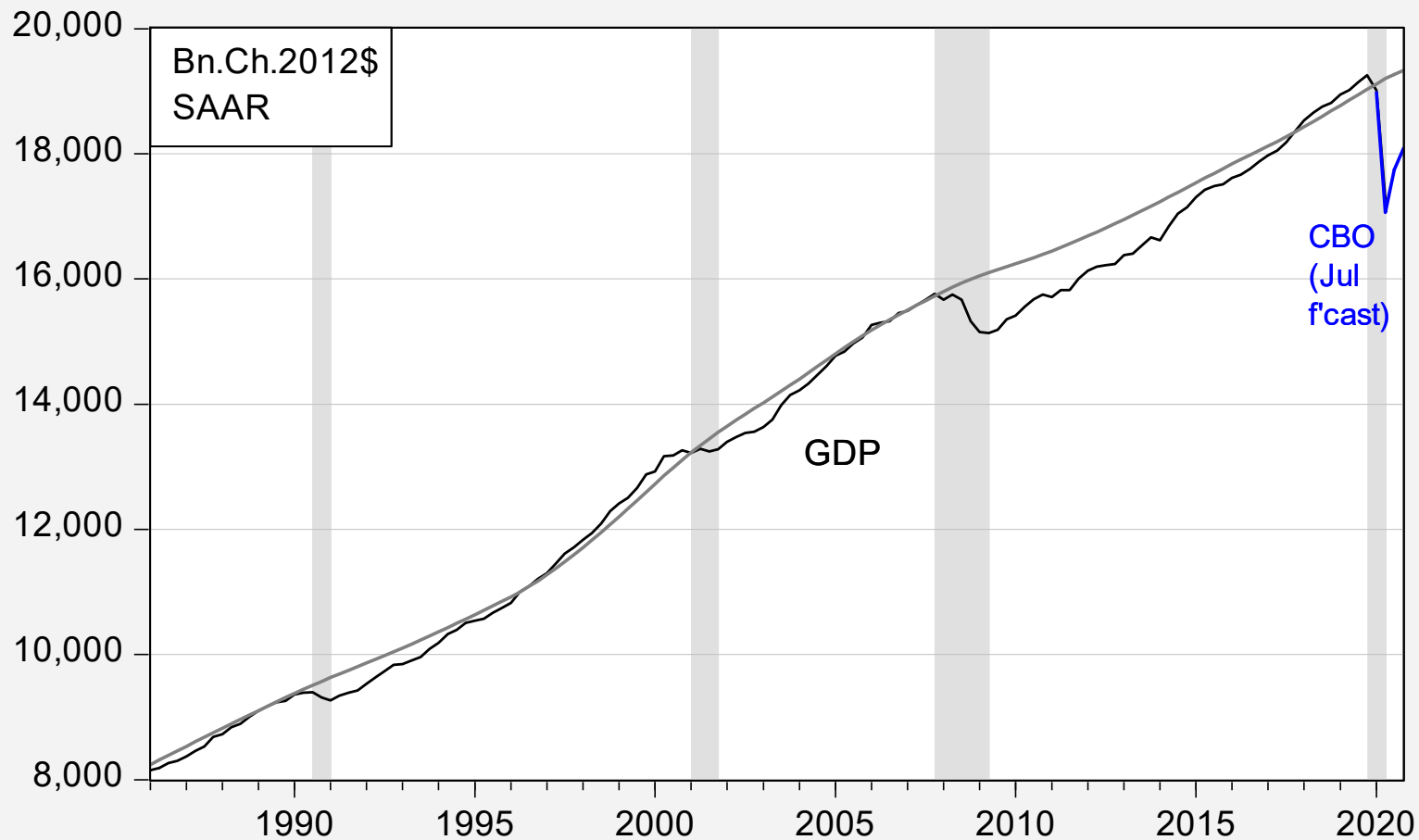
But Pretty Slowly Recently (Low Inflation)



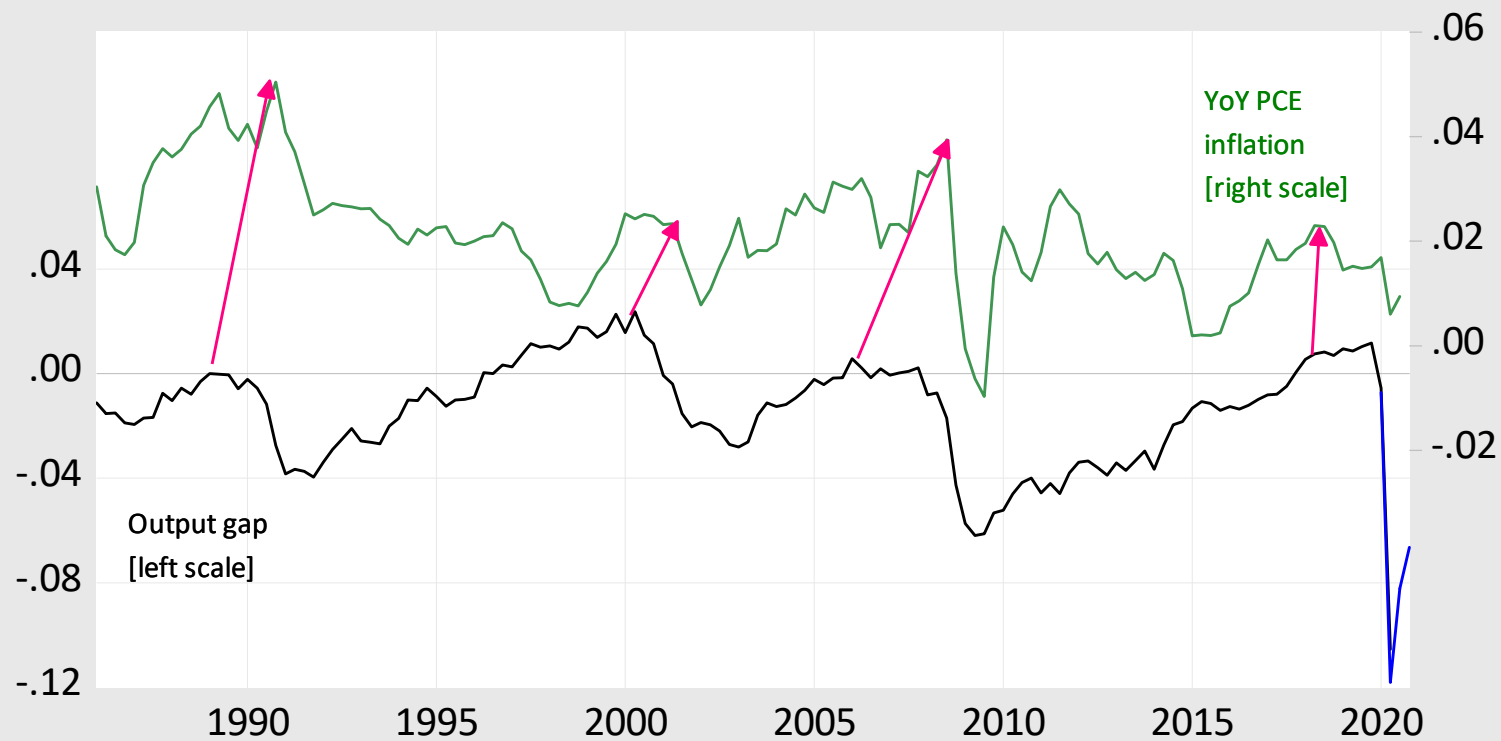
Notable Features

- Inflation declines when economy is some way into a recession
- Suggests when economic activity is low relative to what the economy can produce, downward price pressure
- Average (over business cycle) inflation has been declining (true since late 1970s), so no-price-level change (IS-LM) has become more and more appropriate
- No guarantee this continues

Aggregate Demand Is Sometimes Less Than What Can Be Produced



Systematic Movement in Price Level

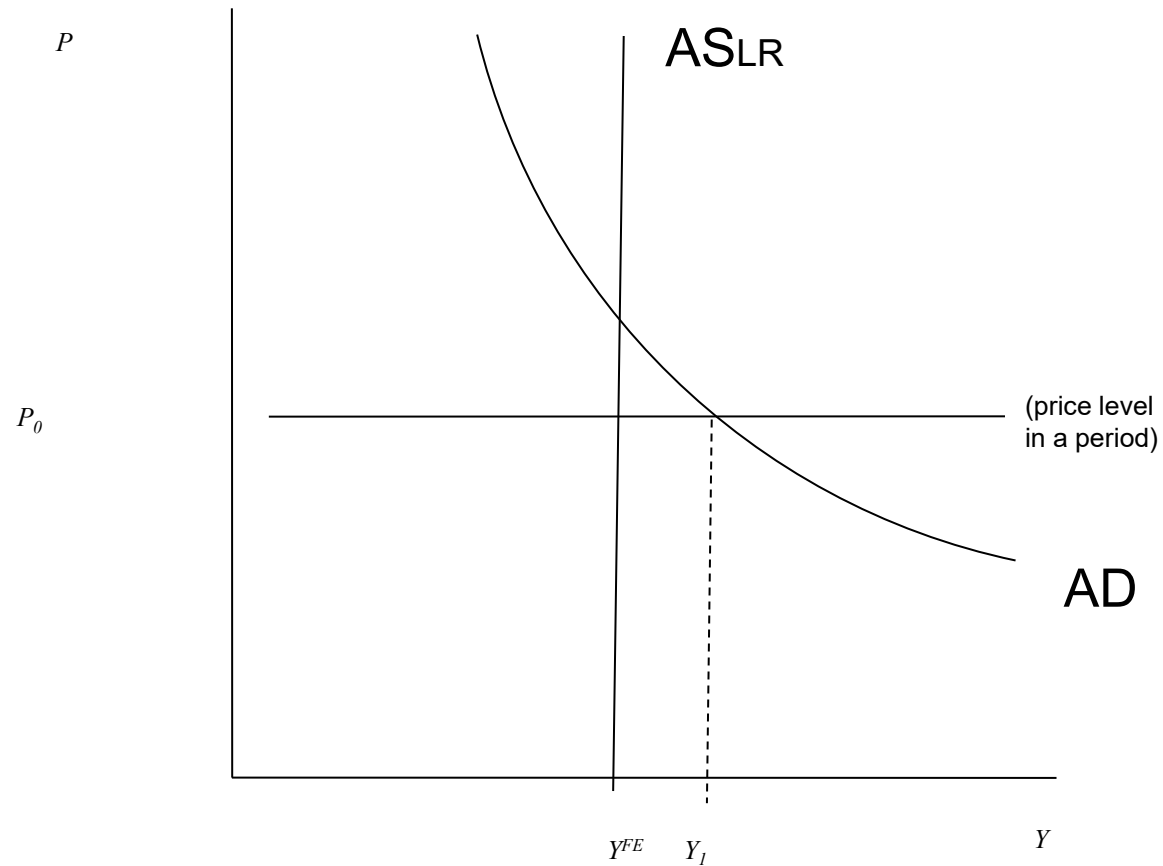


— LOG(GDP12/GDP12_POT_CBOJUL20)
— LOG(GDP12_CBOJUL20/GDP12_POT_CBOJUL20)
— (PCEPI/PCEPI(-4))^1-1

What We Need

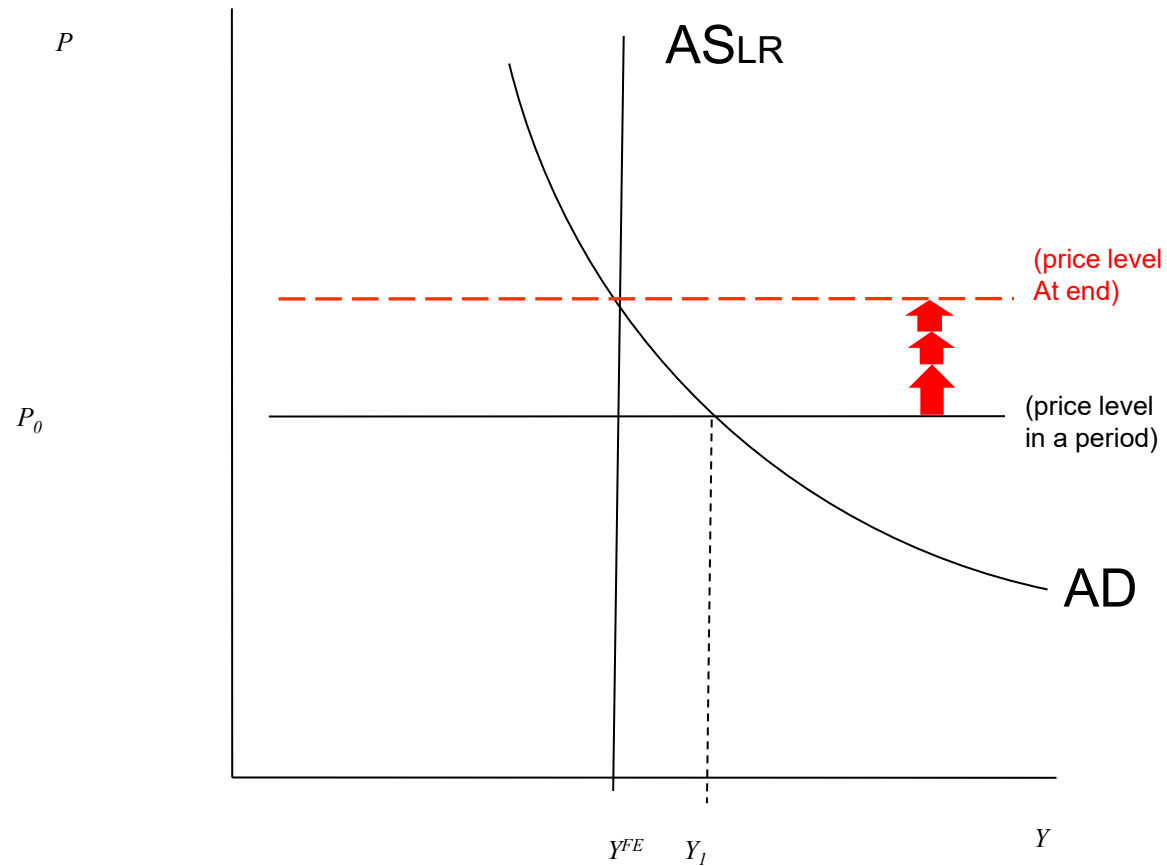
- A model that incorporates demand side
- But has price level rise faster when output exceeds what level the economy could produce utilizing factors of production at normal (“natural”) rates
- This level is called the natural rate of output (Y_n) or potential GDP, and the corresponding unemployment rate, the natural rate of unemployment (u_n).
- This is the AD-AS model

Where We're Headed



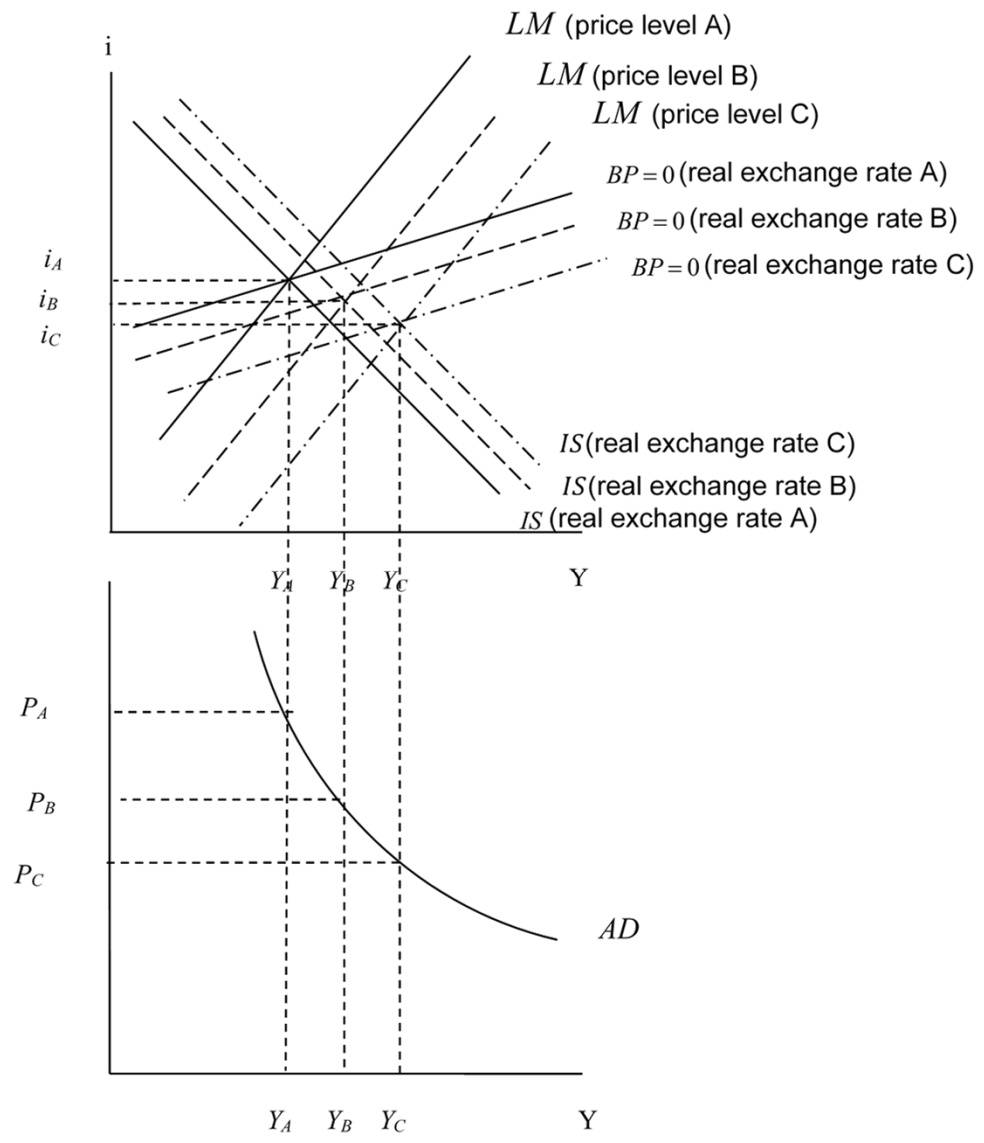
In a given period,
 $Y=AD$ for
given P ; over
time P adjusts
to set $Y=Y^{FE}$

Where We're Headed



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Aggregate Demand



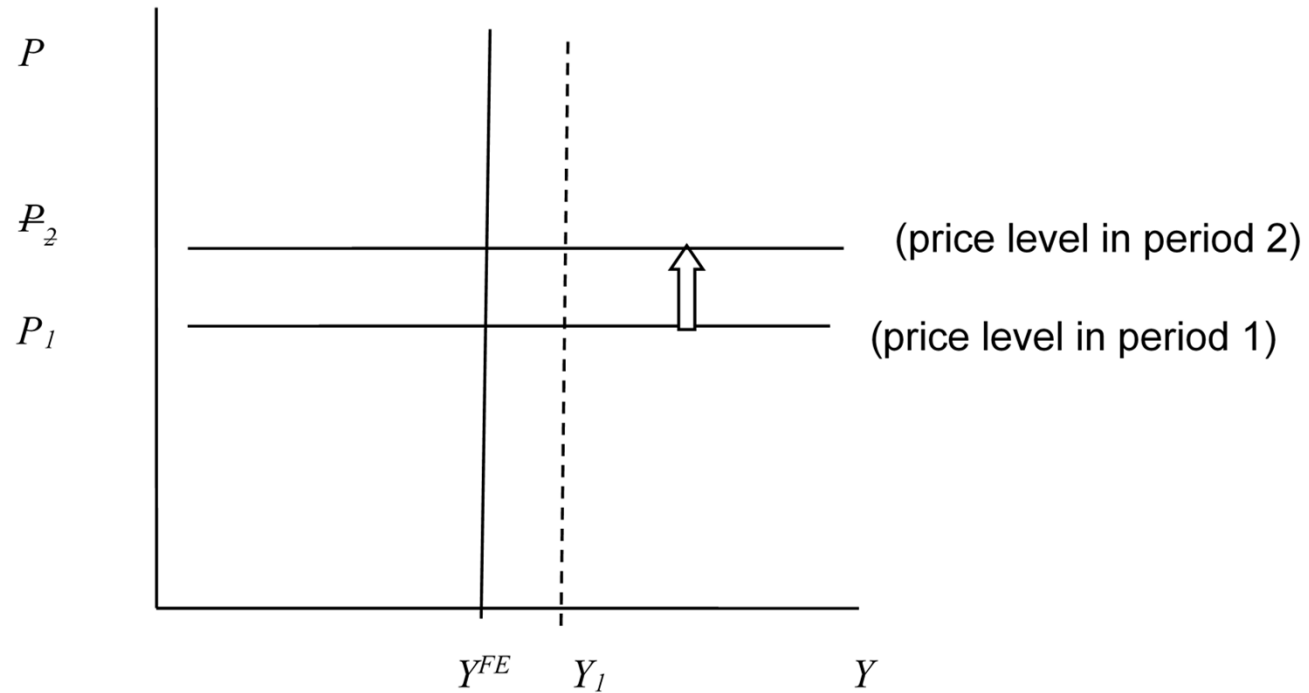
Aggregate Supply

Derivation

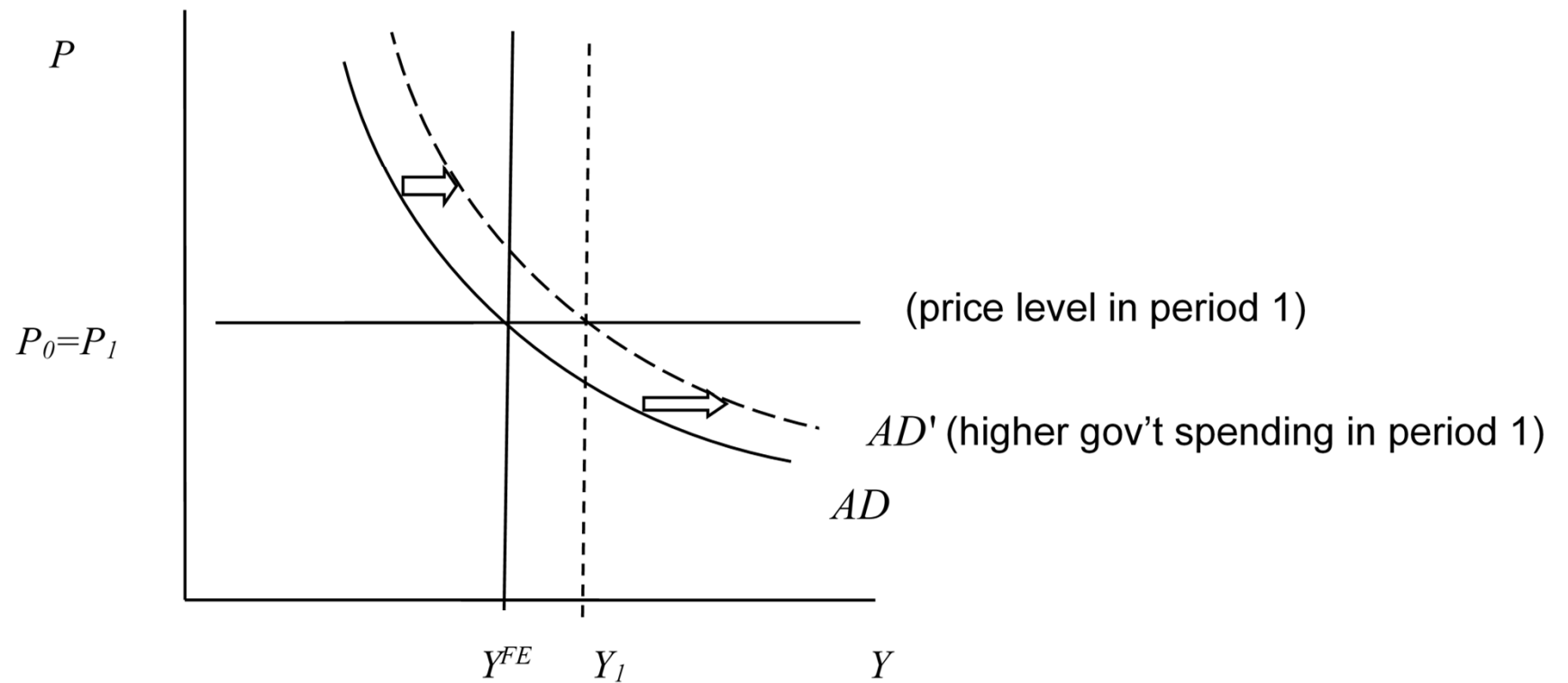
$$(16.1) \quad \frac{P_t - P_{t-1}}{P_{t-1}} \equiv \pi_t = f\left(\frac{Y_{t-1} - Y^{FE}}{Y^{FE}}\right)$$

$$(16.2) \quad P_t = P_{t-1} + P_{t-1} \times f\left(\frac{Y_{t-1} - Y^{FE}}{Y^{FE}}\right)$$

Price Level Adjustment

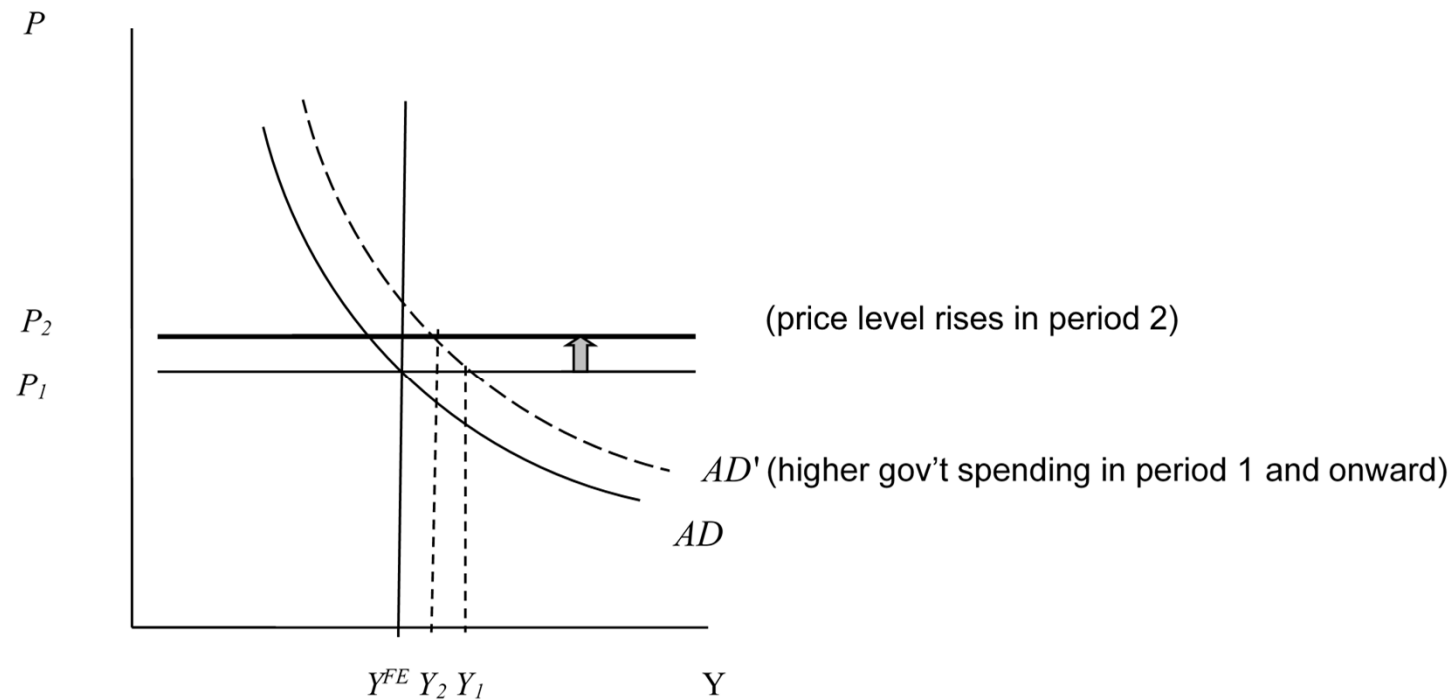


Demand Shock

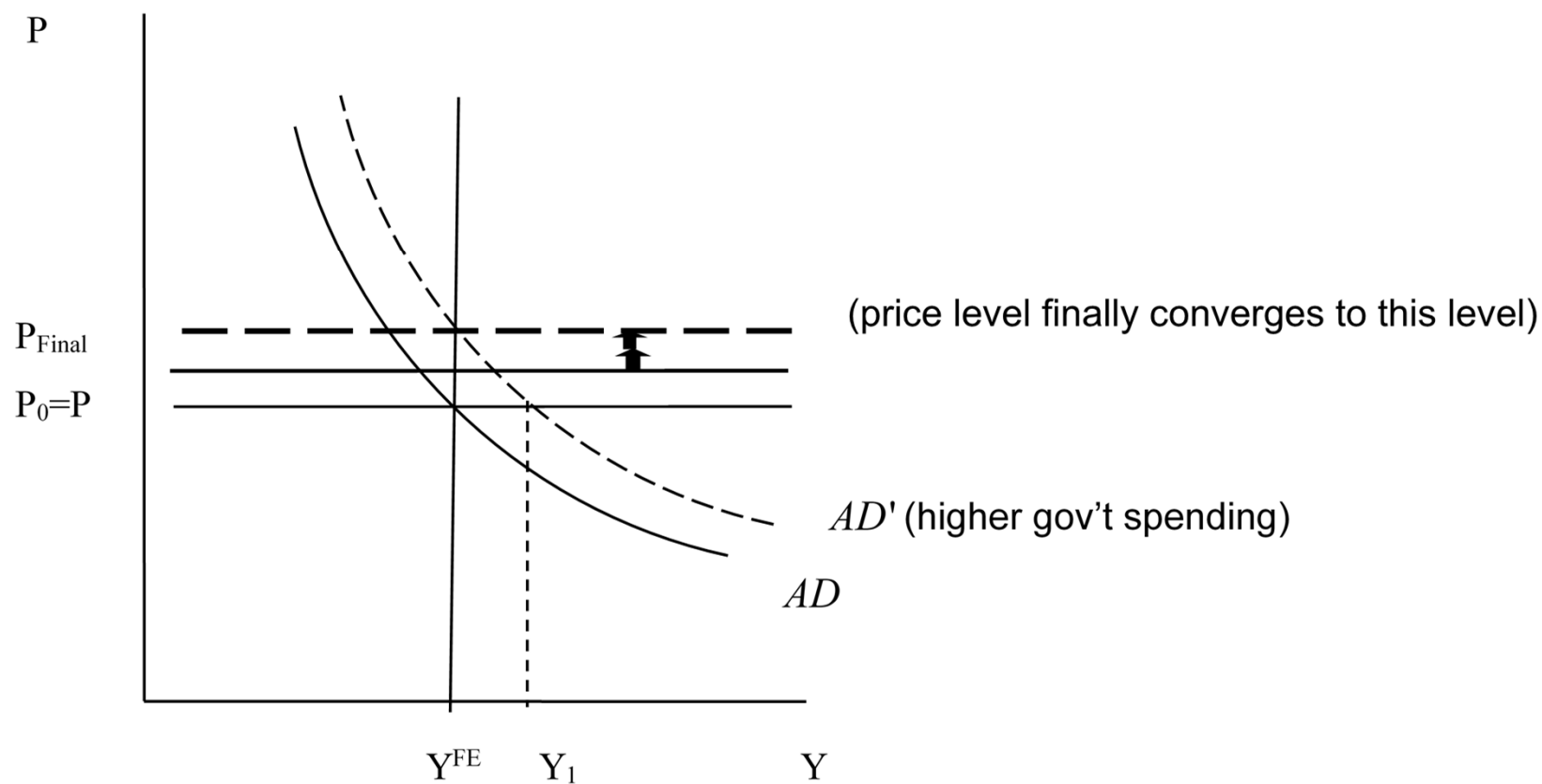


Adjustment

$$(16.3) \quad P_2 = P_1 + P_1 \times f\left(\frac{Y_1 - Y^{FE}}{Y^{FE}}\right)$$



Long Run Equilibrium



Inflation Expectations

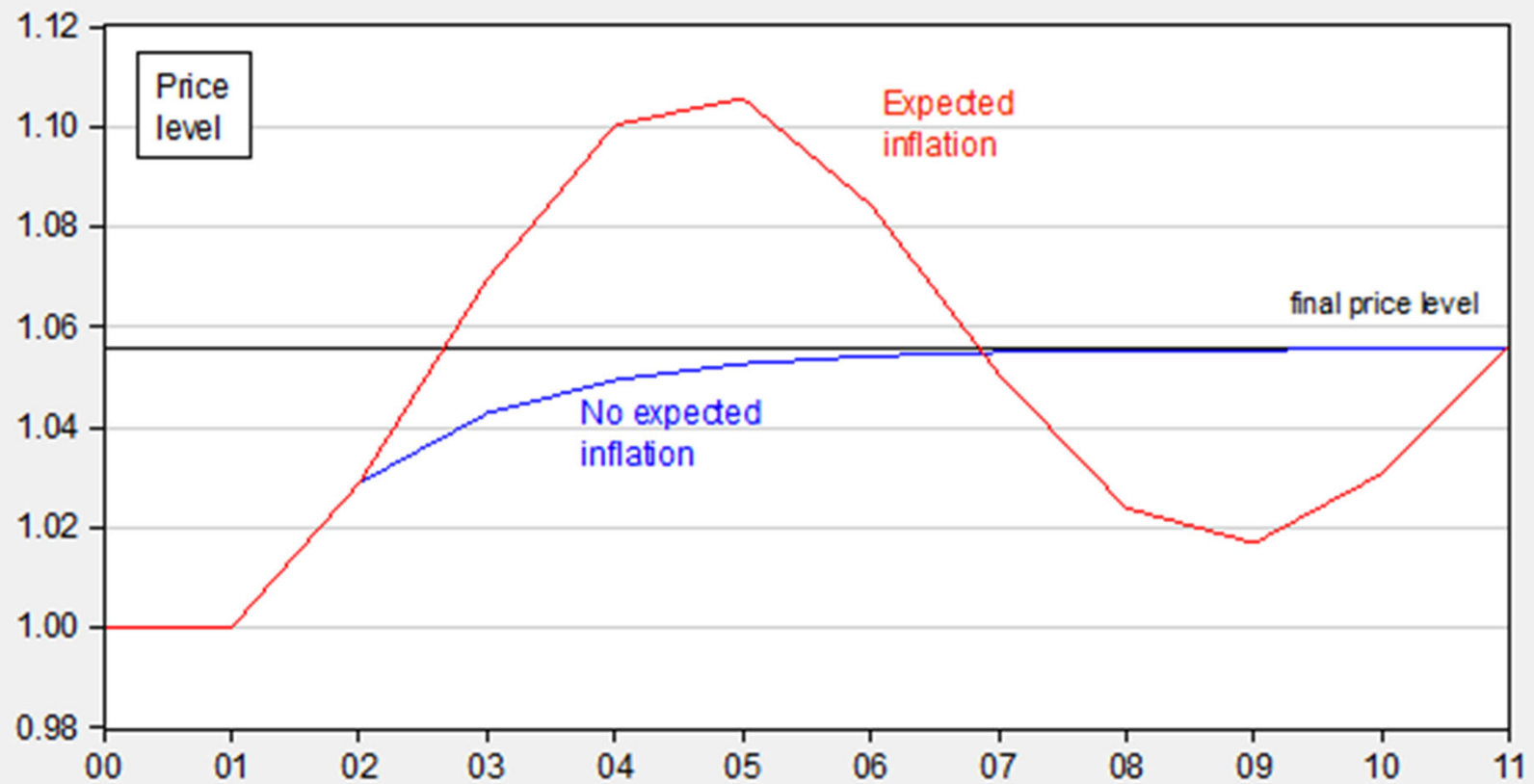
Expectations Adjusted AS

$$(16.4) \quad \pi_t = \pi_t^e + f \left(\frac{Y_{t-1} - Y^{FE}}{Y^{FE}} \right)$$

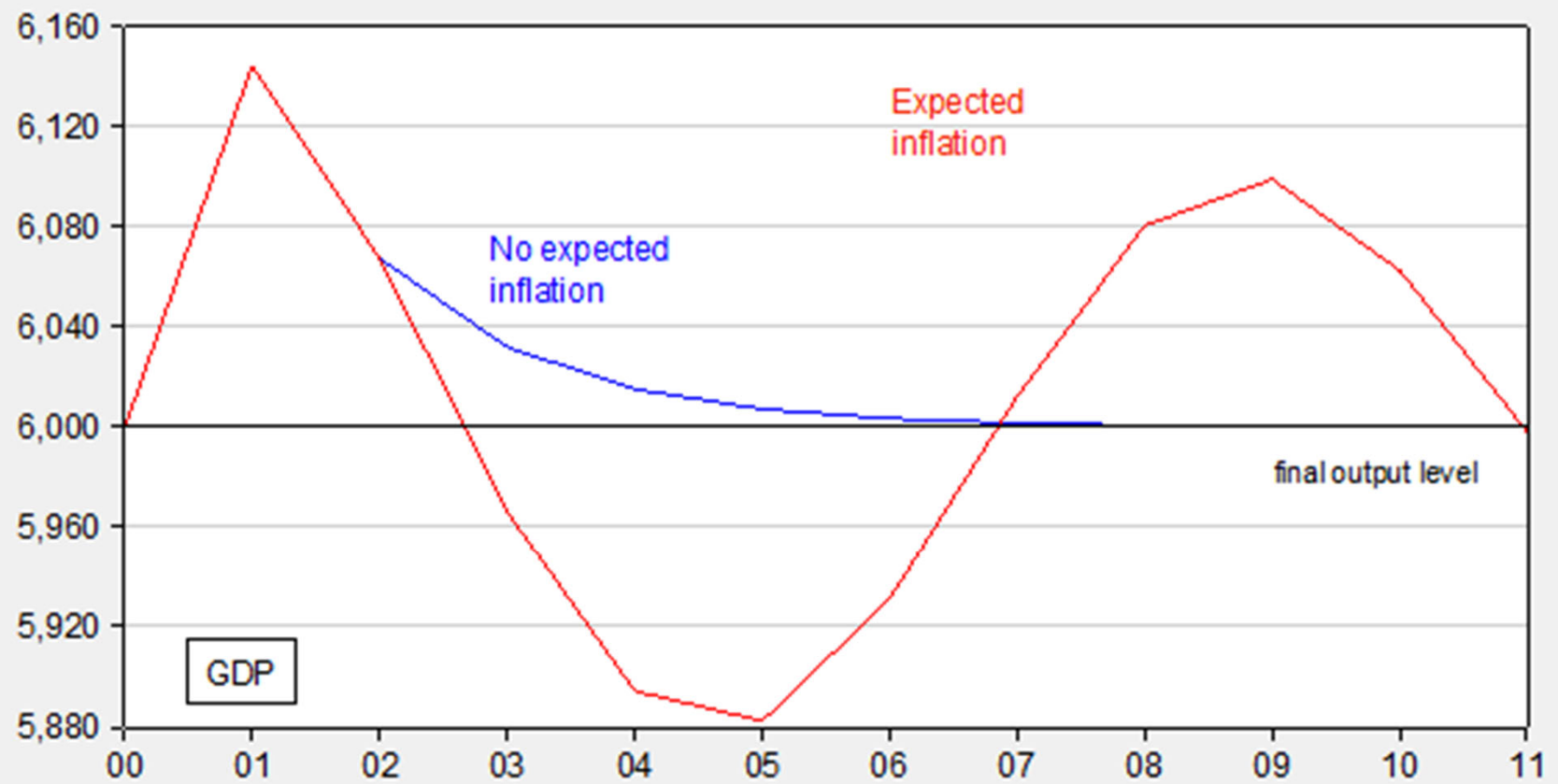
$$(16.5) \quad \pi_t = \pi_{t-1} + f \left(\frac{Y_{t-1} - Y^{FE}}{Y^{FE}} \right)$$

$$(16.6) \quad P_t = P_{t-1} \times \left[1 + \pi_{t-1} + f \left(\frac{Y_{t-1} - Y^{FE}}{Y^{FE}} \right) \right]$$

Dynamics



Dynamics



Next Lecture

- Recap
- Supply Shocks
- Interpretation