

Lecture 15: The Phillips Curve

From AS to the Phillips Curve

* The price level vs The inflation rate

$$P(t) = P^e(t) (1 + \mu) F(u(t), z)$$

Note that:

$$P(t)/P(t-1) = 1 + (P(t)-P(t-1))/P(t-1)$$

$$P^e(t)/P(t-1) = 1 + (P^e(t)-P(t-1))/P(t-1)$$

Let

$$\boldsymbol{\pi(t)} = (P(t)-P(t-1))/P(t-1)$$

- Then

$$(1+\pi(t)) = (1+\pi^e(t)) (1+\mu) F(u(t), z)$$

but

$$\ln(1+x) \approx x \quad \text{if } x \text{ is "small"}$$

Let also assume that

$$\ln(F(u(t), z)) = z - \alpha u(t)$$

The Phillips Curve

* The price level vs The inflation rate

$$P(t) = P^e(t) (1 + \mu) F(u(t), z)$$

$\approx \Rightarrow$

$$\pi(t) = \pi^e(t) + (\mu + z) - \alpha u(t)$$

* original Phillips curve; Figures: 8-1/8-2/8-3/8-4/8-5

The Phillips Curve and The Natural Rate of Unemployment

$$\pi^e(t) = \pi(t)$$

\Rightarrow

$$u_n = \frac{(\mu + z)}{\alpha}$$

$$\pi(t) = \pi^e(t) - \alpha (u(t) - u_n)$$