ECON 3123: Macroeconomic Theory I

Tutorial Note 6: Labour Market and Phillips Curve

Teaching Assistant: Harlly Zhou

A Simple Model of the Labour Market

Price Determination Consider a production function

$$Y = AN.$$

The **marginal product of labour** (MPL) is $\frac{\partial Y}{\partial N} = A$. Suppose that the cost of hiring an extra worker is W. Then the marginal cost of production is $\frac{W}{A}$. Let m be the markup (due to monopolistic power). Then the price level will be

$$P = (1+m)\frac{W}{A}.$$

Wage Determination Assume that the nominal wage is

$$W = AP^e F(u, z),$$

where A is the MPL, P^e is the expected price level, and F is a function decreasing in unemployment rate u, and increasing in z, a variable capturing all other factors.

Natural Rate of Unemployment From the price determination equation, we have

$$\frac{W}{P} = \frac{A}{1+m}.$$

From the wage determination equation, we have

$$\frac{W}{P} = AF(u, z).$$

In a $\left(u, \frac{W}{P}\right)$ diagram, the pricing curve is a horizontal line, and the wage curve is a downward-sloping curve, as is shown in Figure 1.

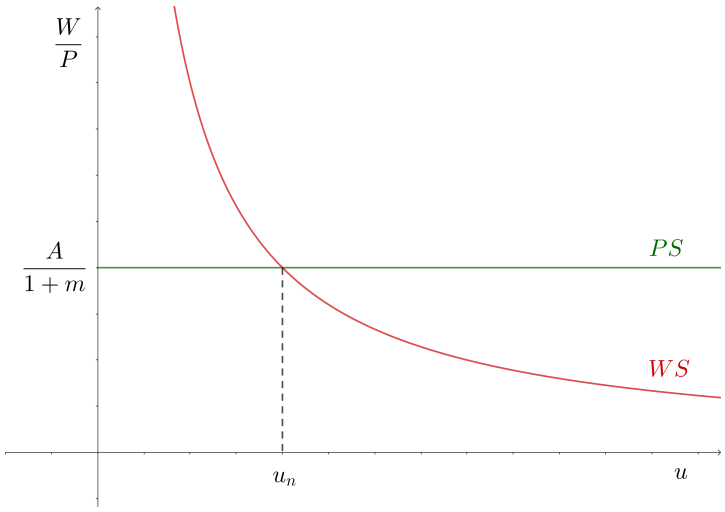

Figure 1: Natural Rate of Unemployment