

Exam Labor Market Model Equations

Price Setting Equation:

$$(1) P = [1 + m(u)] \cdot \frac{W \cdot N}{Y} = [1 + m(u)] \cdot \frac{W}{A}$$

Price Setting Line:

$$\frac{W}{P} = \frac{A}{[1 + m(u)]}$$

Wage Setting Equation:

$$(2) W = P^e \cdot A^e \cdot F[u, z]$$

The Wage Setting Line:

$$\frac{W}{P} = \frac{P^e}{P} \cdot A^e \cdot F[u, z]$$

More specifically:

$$\frac{1}{1 + m(u)} = 1 - m_0 + u$$

and

$$F[u, z] = 1 - \alpha u + z$$

Reduced Form Equations:

$$(3) u = \frac{\frac{P^e}{P} \frac{A^e}{A} (1+z) + m_0 - 1}{1 + \alpha \frac{P^e}{P} \frac{A^e}{A}}$$

$$(4) \frac{W}{P} = \frac{[\alpha \cdot (1 - m_0) + (1+z)] \frac{P^e}{P} A^e}{1 + \alpha \cdot \frac{P^e}{P} \frac{A^e}{A}}$$

The natural rate of unemployment is:

$$u_n = \frac{\frac{A^e}{A}(1+z) + m_0 - 1}{1 + \alpha \frac{A^e}{A}}$$

Exam AS-AD Model Equations

AD Equation:

$$(1) Y = d_0 Z_0 + d_1 (M^S - P)$$

AD Line:

$$P = (d_0/d_1)Z_0 + M^S - (1/d_1)Y$$

AS Equation and Line:

$$(2) P = P^e + s_1 \cdot (Y - Y_n)$$

!!Reduced Form Equations!!

$$(3) Y = \frac{d_0 Z_0 + d_1 (M - P^e) + d_1 s_1 Y_n}{1 + d_1 s_1}$$

$$(4) P = \frac{P^e + s_1 (d_0 Z_0 + d_1 M - Y_n)}{1 + d_1 s_1}$$

Adaptive Price Expectations:

$$P_t^e = P_{t-1}$$

which when placed into (3) and (4) imply:

$$(3a) Y_t = \frac{d_0 Z_0 + d_1 (M - P_{t-1}) + d_1 s_1 Y_n}{1 + d_1 s_1}$$

$$(4a) P_t = \frac{P_{t-1} + s_1 (d_0 Z_0 + d_1 M - Y_n)}{1 + d_1 s_1}$$