

The Model

Monetary Policy

$$\Delta m_t = V \hat{g}_t \quad (1)$$

Money Demand

$$m_t - p_t = c_t - \eta i_t \quad (2)$$

$$l_t = c_t - \eta i_t \quad (3)$$

Government Shock

$$\hat{g}_t = \rho_g \hat{g}_{t-1} + \epsilon_t^g \quad (4)$$

Proportional deviations

$$\hat{n}_t = n_t - n^{ss} \quad (5)$$

$$\hat{y}_t = y_t - y^{ss} \quad (6)$$

$$\hat{c}_t = c_t - c^{ss} \quad (7)$$

$$\hat{g}_t = g_t - g^{ss} \quad (8)$$

$$(w - p)_t = (w - p)_t - (w - p)^{ss} \quad (9)$$

$$(m - p)_t = (m - p)_t - (m - p)^{ss} \quad (10)$$

Consumption

$$c_t = y_t - g_t \quad (11)$$

Output as a function of Technology

$$y_t = a_t + n_t \quad (12)$$

Flex employment

$$n_t^{ss} = \frac{-\mu + (1 - \sigma)a_t + \sigma g_t}{\sigma + \varphi} \quad (13)$$

Real Interest Rate

$$r_t = i_t - \pi_{t+1} \quad (14)$$

Real Wage, Consumption employment

$$w_t - p_t = \sigma c_t + \varphi n_t \quad (15)$$

Technology Shock

$$a_t = \rho_a a_{t-1} + \rho_{gi} g i_{t-(t_{gi})} + \epsilon_t^a \quad (16)$$

Real wage as a function of markup and technology

$$w_t - p_t = -\mu + a_t \quad (17)$$

Steady state output

$$y_t^{ss} = \frac{-\mu + (1 + \varphi)a_t + \sigma g_t}{\sigma + \varphi} \quad (18)$$

IS Curve Dynamics

$$\hat{y} = E_t \hat{y}_{t+1} - \frac{1}{\sigma} (i_t - \pi_{t+1} - r_t^{ss}) \quad (19)$$

New Keynesian Philips Curve

$$\pi_t = \frac{(1 - \theta)(1 - \beta\theta)(\sigma + \theta)}{\theta} \hat{y}_t + \beta E_t \pi_{t+1} \quad (20)$$

Real steady state Interest Rate

$$r_t^{ss} = \rho - \sigma(1 - \rho_a) \frac{1 + \varphi}{\sigma + \varphi} a_t + \sigma(1 - \rho_g) \frac{\varphi}{\sigma + \varphi} g_t \quad (21)$$