

$$\Omega = \frac{1 - \alpha}{1 - \alpha + \alpha \epsilon}$$

$$\psi_{n.ya} = \frac{1 + \varphi}{\alpha + \varphi + (1 - \alpha) \sigma}$$

$$\lambda = \frac{1 - \alpha}{1 - \alpha + \alpha \epsilon} \frac{(1 - \theta) (1 - \theta \beta)}{\theta}$$

$$\kappa = \left(\sigma + \frac{\alpha + \varphi}{1 - \alpha} \right) \frac{1 - \alpha}{1 - \alpha + \alpha \epsilon} \frac{(1 - \theta) (1 - \theta \beta)}{\theta}$$

$$\pi_t = \beta \pi_{t+1} + \tilde{y}_t \left(\sigma + \frac{\alpha + \varphi}{1 - \alpha} \right) \frac{1 - \alpha}{1 - \alpha + \alpha \epsilon} \frac{(1 - \theta) (1 - \theta \beta)}{\theta} \quad (1)$$

$$\tilde{y}_t = \frac{(-1)}{\sigma} (i_t - \pi_{t+1} - r^{nat}_t) + \tilde{y}_{t+1} \quad (2)$$

$$i_t = \pi_t \phi_\pi + \phi_y \hat{y}_t + \nu_t \quad (3)$$

$$r^{nat}_t = (1 - \rho_z) z_t + a_t (1 - \rho_a) \frac{1 + \varphi}{\alpha + \varphi + (1 - \alpha) \sigma} (-\sigma) \quad (4)$$

$$r^r_t = i_t - \pi_{t+1} \quad (5)$$

$$y^{nat}_t = \frac{1 + \varphi}{\alpha + \varphi + (1 - \alpha) \sigma} a_t \quad (6)$$

$$\tilde{y}_t = y_t - y^{nat}_t \quad (7)$$

$$\nu_t = \rho_\nu \nu_{t-1} + \varepsilon_{\nu t} \quad (8)$$

$$a_t = \rho_a a_{t-1} + \varepsilon_{a t} \quad (9)$$

$$y_t = a_t + (1 - \alpha) n_t \quad (10)$$

$$z_t = \rho_z z_{t-1} - \varepsilon_{z t} \quad (11)$$

$$\Delta m_t = 4 (\pi_t + y_t - y_{t-1} - \eta (i_t - i_{t-1})) \quad (12)$$

$$m - p_t = y_t - i_t \eta \quad (13)$$

$$i^{ann}_t = i_t \Delta \quad (14)$$

$$r^{r,ann}_t = r^r_t \Delta \quad (15)$$

$$r^{nat,ann}_t = r^{nat}_t \Delta \quad (16)$$

$$\pi^{ann}_t = \pi_t \Delta \quad (17)$$

$$\hat{y}_t = y_t - (\bar{y}) \quad (18)$$

$$\pi_t = p_t - p_{t-1} \quad (19)$$

$$y_t = c_t \quad (20)$$

$$w_t - p_t = \sigma c_t + \varphi n_t \quad (21)$$

$$\frac{w}{p}_t = w_t - p_t \quad (22)$$

$$m_t = m - p_t + p_t \quad (23)$$

$$\mu_t = y_t \left(- \left(\sigma + \frac{\alpha + \varphi}{1 - \alpha} \right) \right) + a_t \frac{1 + \varphi}{1 - \alpha} \quad (24)$$

$$\hat{\mu}_t = \tilde{y}_t \left(- \left(\sigma + \frac{\alpha + \varphi}{1 - \alpha} \right) \right) \quad (25)$$

Table 1: Parameter Values

Parameter	Value	Description
α	0.250	capital share
β	0.990	discount factor
ρ_a	0.900	autocorrelation technology shock
ρ_ν	0.500	autocorrelation monetary policy shock
ρ_z	0.500	autocorrelation preference shock
σ	1.000	inverse EIS
φ	5.000	inverse Frisch elasticity
ϕ_π	1.500	inflation feedback Taylor Rule
ϕ_y	0.125	output feedback Taylor Rule
η	3.770	semi-elasticity of money demand
ϵ	9.000	demand elasticity
θ	0.750	Calvo parameter