

$$\frac{1}{C_t} - \lambda_t = 0 \quad (1)$$

$$\frac{\zeta}{M_t} - \lambda_t + \frac{\beta \lambda_{t+1}}{\pi_{t+1}} = 0 \quad (2)$$

$$\beta \lambda_{t+1} R_t - \lambda_t = 0 \quad (3)$$

$$\frac{(-\xi)}{1 - H_t} + \lambda_t w_t = 0 \quad (4)$$

$$F_t = \text{normcdf}\left(\frac{\log(\bar{\omega}_t)}{\sigma} + \frac{\sigma}{2}, 0, 1\right) \quad (5)$$

$$G_t = \text{normcdf}\left(\frac{\log(\bar{\omega}_t)}{\sigma} - \frac{\sigma}{2}, 0, 1\right) \quad (6)$$

$$\Gamma_t = G_t + \bar{\omega}_t (1 - F_t) \quad (7)$$

$$S_t = \frac{Rk_{t+1}}{R_t} \quad (8)$$

$$L_t = \frac{Q_t K_t}{N_t} \quad (9)$$

$$\frac{\Gamma_{pt} - \mu G_{pt}}{\Gamma_{pt}} (1 - \Gamma_t) + \Gamma_t - G_t \mu = \frac{1}{S_{t-1}} \quad (10)$$

$$(\Gamma_t - G_t \mu) S_{t-1} = 1 - \frac{1}{L_{t-1}} \quad (11)$$

$$V_t = (1 - \Gamma_t) Rk_t Q_{t-1} K_{t-1} \quad (12)$$

$$C_t^e = V_t (1 - \gamma_e) \quad (13)$$

$$N_t = V_t \gamma_e + w_t^e \quad (14)$$

$$Y_t^e = A_t K_{t-1}^\alpha (H_t^\Omega)^{1-\alpha} \quad (15)$$

$$H_t w_t = Y_t^e \Omega (1 - \alpha) p_{mt} \quad (16)$$

$$w_t^e = Y_t^e p_{m_t} (1 - \Omega) (1 - \alpha) \quad (17)$$

$$Rk_t = \frac{Y_t^e \alpha p_{m_t}}{Q_{t-1}} + \frac{Q_t (1 - \delta)}{Q_{t-1}} \quad (18)$$

$$\pi_t^* = \frac{\frac{\epsilon}{\epsilon-1} x1_t}{x2_t} \quad (19)$$

$$x1_t = \lambda_t p_{m_t} Y_t + \beta \theta x1_{t+1} \pi_{t+1}^\epsilon \quad (20)$$

$$x2_t = \lambda_t Y_t + \beta \theta x2_{t+1} \pi_{t+1}^{\epsilon-1} \quad (21)$$

$$1 = \theta \pi_t^{\epsilon-1} + (1 - \theta) \pi_t^{*1-\epsilon} \quad (22)$$

$$K_t = K_{t-1} (1 - \delta) + I_t - K_{t-1} \frac{\chi}{2} \left( \frac{I_t}{K_{t-1}} - \delta \right)^2 \quad (23)$$

$$Q_t = \frac{1}{1 - \chi \left( \frac{I_t}{K_{t-1}} - \delta \right)} \quad (24)$$

$$Y_t^e = Y_t D_t \quad (25)$$

$$D_t = \theta \pi_t^\epsilon D_{t-1} + (1 - \theta) \pi_t^{*(-\epsilon)} \quad (26)$$

$$Y_t = K_{t-1} \frac{\chi}{2} \left( \frac{I_t}{K_{t-1}} - \delta \right)^2 + I_t + C_t + C_t^e + K_{t-1} Q_{t-1} G_t \mu Rk_t \quad (27)$$

$$R_t = \frac{i_t}{\pi_{t+1}} \quad (28)$$

$$\log \left( \frac{i_t}{in\_ss} \right) = \rho \log \left( \frac{i_{t-1}}{in\_ss} \right) + (1 - \rho) \phi_\pi \log \left( \frac{\pi_t}{pi\_ss} \right) + (1 - \rho) \phi_Y \log \left( \frac{Y_t}{Y\_ss} \right) + \epsilon_t^r \quad (29)$$

$$\log (A_t) = \rho^a \log (A_{t-1}) + \epsilon_t^a \quad (30)$$

$$H_t^e = 1 \quad (31)$$

$$\Gamma_{p_t} = 1 - F_t \quad (32)$$

$$G_{p_t} = \frac{\text{normpdf} \left( \frac{\log(\bar{w}_t)}{\sigma} + \frac{\sigma}{2}, 0, 1 \right)}{\sigma} \quad (33)$$