$$w_t = \frac{(-u_{N\,t})}{u_{C\,t}} \tag{1}$$

$$u_{C\,t} = \frac{\beta\, u_{C\,t+1}\ (1+g_{t+1})^{(-1)}\ R_{t+1}}{\Pi_{t+1}} \tag{2}$$

$$x1_t = Y_t\, mc_t + \frac{u_{C\,t+1}\,\beta\,\kappa}{u_{C\,t}}\,\Pi_{t+1}^{1+\epsilon}\,\Pi_t^{\epsilon\,(-\eta)}\,x1_{t+1} \tag{3}$$

$$x2_t = Y_t + \Pi_t^{\epsilon\,(-\eta)}\ \frac{u_{C\,t+1}\,\beta\,\kappa}{u_{C\,t}}\,\Pi_{t+1}^{\epsilon}\,x2_{t+1} \tag{4}$$

$$\tilde{p}_t = \frac{x1_t\ ^{\frac{\epsilon}{\epsilon-1}}}{x2_t} \tag{5}$$

$$1 = \kappa\,\Pi_t^{\epsilon-1}\,\Pi_{t-1}^{\eta\,(1-\epsilon)} + (1-\kappa)\ \tilde{p}_t^{1-\epsilon} \tag{6}$$

$$s_t = (1-\kappa)\ \tilde{p}_t^{(-\epsilon)} + \kappa\,\left(\frac{\Pi_t}{\Pi_{t-1}^{\eta}}\right)^{\epsilon}\ s_{t-1} \tag{7}$$

$$\beta\, R_t = (\beta\, R_{t-1})^{\rho_r}\ \left(\Pi_{t+1}^{\rho_\pi}\ \left(\frac{Y_t}{Y_{t-1}}\ (1+g_t)\right)^{\rho_y}\right)^{1-\rho_r} \tag{8}$$

$$Y_t = \frac{exp\,(A_t)\ \left(\frac{K_{t-1}}{1+g_t}\right)^{\alpha}\ N_t^{1-\alpha}}{s_t} \tag{9}$$

$$A_t = (1-\rho_A)\ A_{ss} + \rho_A\, A_{t-1} + 0.01\ (eA_t + AUX\_ENDO\_LAG\_22\_3_{t-1}) \tag{10}$$

$$nu\_inter\_A_t = \nu_{A\,t} \tag{11}$$

$$g_t = (1-\rho_g)\ g_{ss} + \rho_g\, g_{t-1} + 0.01\ (eg_t + AUX\_ENDO\_LAG\_21\_3_{t-1}) \tag{12}$$

$$nu\_inter\_g_t = \nu_{g\,t} \tag{13}$$

$$w_t = \frac{Y_t\, mc_t\ (1-\alpha)}{N_t} \tag{14}$$

$$rk_t = (1+g_t)\ \frac{Y_t\, mc_t\,\alpha}{K_{t-1}} \tag{15}$$

$$\Phi_t = 1 - \delta + \sigma_\phi \, log\left((1 + g_t) \, \frac{I_t}{K_{t-1}} + \bar{a} \right) + \bar{b} \tag{16}$$

$$D\Phi_t = \frac{\sigma_\phi}{(1 + g_t) \, \frac{I_t}{K_{t-1}} + \bar{a}} \tag{17}$$

$$K_t = \frac{K_{t-1} \, \Phi_t}{1 + g_t} \tag{18}$$

$$q_t = \frac{1}{D\Phi_t} \tag{19}$$

$$q_t = (1 + g_{t+1})^{(-1)} \, \frac{\beta \, u_{C\,t+1}}{u_{C\,t}} \left(rk_{t+1} + q_{t+1} \left(\Phi_{t+1} - (1 + g_{t+1}) \, \frac{D\Phi_{t+1} \, I_{t+1}}{K_t} \right) \right) \tag{20}$$

$$u_{C\,t} = \frac{1}{C_t} \tag{21}$$

$$u_{N\,t} = (-\gamma) \, N_t^{\sigma_N} \tag{22}$$

$$I_t + C_t = Y_t \tag{23}$$

$$AUX\_ENDO\_LAG\_22\_1_t = nu\_inter\_A_{t-1} \tag{24}$$

$$AUX\_ENDO\_LAG\_22\_2_t = AUX\_ENDO\_LAG\_22\_1_{t-1} \tag{25}$$

$$AUX\_ENDO\_LAG\_22\_3_t = AUX\_ENDO\_LAG\_22\_2_{t-1} \tag{26}$$

$$AUX\_ENDO\_LAG\_21\_1_t = nu\_inter\_g_{t-1} \tag{27}$$

$$AUX\_ENDO\_LAG\_21\_2_t = AUX\_ENDO\_LAG\_21\_1_{t-1} \tag{28}$$

$$AUX\_ENDO\_LAG\_21\_3_t = AUX\_ENDO\_LAG\_21\_2_{t-1} \tag{29}$$