$$c_t = c1\, c_{t+1} + (1 - c1)\; c_{t-1} - c2\; (r_t - \pi_{t+1} - \varepsilon_{b\,t}) \tag{1}$$

$$i_t = i1\, i_{t-1} + (1 - i1)\; i_{t+1} + i2\, q_t + \varepsilon_{q\,t} \tag{2}$$

$$q_t = q1\, {r^k}_{t+1} - (r_t - \pi_{t+1} - \varepsilon_{b\,t}) + (1 - q1)\; q_{t+1} \tag{3}$$

$$y_t = c_t\, \frac{\bar{c}}{y} + i_t\, \frac{\bar{i}}{y} + \frac{\bar{v}}{y}\, v_t + \varepsilon_{g\,t} \tag{4}$$

$$y_t = \psi_p\; (\alpha\, k_t + (1 - \alpha)\; n_t + \varepsilon_{a\,t}) \tag{5}$$

$$\pi_t - \gamma_p\, \pi_{t-1} = pi1\; (\pi_{t+1} - \pi_t\, \gamma_p) - pi2\; \left(100\, \varepsilon_{p\,t} - mc_t\right) \tag{6}$$

$$mc_t = (1 - \alpha)\; w_t + \alpha\, {r^k}_t - \varepsilon_{a\,t} \tag{7}$$

$$\pi_t + w_t - w_{t-1} = \pi_{t-1}\, \gamma_w + \beta\; (\pi_{t+1} + w_{t+1} - w_t - \pi_t\, \gamma_w) - w1\; (\omega\, u_t - 100\, \varepsilon_{w\,t}) \tag{8}$$

$$\omega\, u_t = w_t - (z_t + \varepsilon_{s\,t} + \omega\, e_t) \tag{9}$$

$$\omega\, {u^n}_t = 100\, \varepsilon_{w\,t} \tag{10}$$

$$l_t = u_t + e_t \tag{11}$$

$$z_t = (1 - v)\; z_{t-1} + \frac{v}{1 - \frac{h}{\tau}}\; \left(c_t - c_{t-1}\, \frac{h}{\tau}\right) \tag{12}$$

$$\bar{k}_t = k1\, \bar{k}_{t-1} + i_t\; (1 - k1) + \varepsilon_{q\,t}\, k2 \tag{13}$$

$$k_t = v_t + \bar{k}_{t-1} \tag{14}$$

$$v_t = {r^k}_t\, \frac{1 - \psi}{\psi} \tag{15}$$

$$k_t = n_t + w_t - {r^k}_t \tag{16}$$

$$r_t = \rho_i\, r_{t-1} + (1 - \rho_i)\; \left(\pi_t\, r_\pi + r_y\, {y^{gap}}_t + r_{\Delta y}\; \left({y^{gap}}_t - {y^{gap}}_{t-1}\right)\right) - \varepsilon_{r\,t} \tag{17}$$

$$e_t - e_{t-1} = \beta\; (e_{t+1} - e_t) + e1\; (n_t - e_t) \tag{18}$$

$${c^f}_t = c1\, {c^f}_{t+1} + (1 - c1)\; {c^f}_{t-1} - c2\; \left({r^f}_t - \varepsilon_{b\,t}\right) \tag{19}$$

$${i^f}_t = \varepsilon_{q\,t} + i1\, {i^f}_{t-1} + (1 - i1)\; {i^f}_{t+1} + i2\, {q^f}_t \tag{20}$$

$$q^f{}_t = q1\, r^{k,f}{}_{t+1} - \left(r^f{}_t - \varepsilon_{b\,t}\right) + (1-q1)\; q^f{}_{t+1} \tag{21}$$

$$y^f{}_t = \varepsilon_{g\,t} + \frac{\bar{c}}{y}\, c^f{}_t + \frac{\bar{i}}{y}\, i^f{}_t + \frac{\bar{v}}{y}\, v^f{}_t \tag{22}$$

$$y^f{}_t = \psi_p\, \left(\varepsilon_{a\,t} + \alpha\, k^f{}_t + (1-\alpha)\; n^f{}_t\right) \tag{23}$$

$$0 = (1-\alpha)\; w^f{}_t + \alpha\, r^{k,f}{}_t - \varepsilon_{a\,t} \tag{24}$$

$$w^f{}_t = \varepsilon_{s\,t} + z^f{}_t + \omega\, n^f{}_t \tag{25}$$

$$z^f{}_t = (1-v)\; z^f{}_{t-1} + \frac{v}{1-\frac{h}{\tau}}\, \left(c^f{}_t - \frac{h}{\tau}\, c^f{}_{t-1}\right) \tag{26}$$

$$\bar{k}^f_t = \varepsilon_{q\,t}\, k2 + k1\, \bar{k}^f_{t-1} + (1-k1)\; i^f{}_t \tag{27}$$

$$k^f{}_t = v^f{}_t + \bar{k}^f_{t-1} \tag{28}$$

$$v^f{}_t = \frac{1-\psi}{\psi}\, r^{k,f}{}_t \tag{29}$$

$$k^f{}_t = n^f{}_t + w^f{}_t - r^{k,f}{}_t \tag{30}$$

$$e^f{}_t - e^f{}_{t-1} = \beta\, \left(e^f{}_{t+1} - e^f{}_t\right) + e1\, \left(n^f{}_t - e^f{}_t\right) \tag{31}$$

$$y^{gap}{}_t = y_t - y^f{}_t \tag{32}$$

$$\varepsilon_{b\,t} = \rho_b\, \varepsilon_{b\,t-1} + \eta_{b\,t} \tag{33}$$

$$\varepsilon_{q\,t} = \rho_q\, \varepsilon_{q\,t-1} + \eta_{q\,t} \tag{34}$$

$$\varepsilon_{g\,t} = \rho_g\, \varepsilon_{g\,t-1} + \eta_{g\,t} + \rho_{ga}\, \eta_{a\,t} \tag{35}$$

$$\varepsilon_{a\,t} = \eta_{a\,t} + \rho_a\, \varepsilon_{a\,t-1} \tag{36}$$

$$\varepsilon_{p\,t} = \rho_p\, \varepsilon_{p\,t-1} + \eta_{p\,t} - \mu_p\, AUX\_EXO\_LAG\_54\_0_{t-1} \tag{37}$$

$$\varepsilon_{r\,t} = \rho_r\, \varepsilon_{r\,t-1} + \eta_{r\,t} \tag{38}$$

$$\varepsilon_{s\,t} = \rho_s\, \varepsilon_{s\,t-1} + \eta_{s\,t} \tag{39}$$

$$\varepsilon_{w\,t} = \rho_w\,\varepsilon_{w\,t-1} + \eta_{w\,t} - \mu_w\,AUX\_EXO\_LAG\_56\_0_{t-1} \tag{40}$$

$$dy^{obs}{}_t = y_t + \bar{\tau} + \bar{e} - y_{t-1} \tag{41}$$

$$dc^{obs}{}_t = c_t + \bar{\tau} + \bar{e} - c_{t-1} \tag{42}$$

$$di^{obs}{}_t = i_t + \bar{\tau} + \bar{e} - i_{t-1} \tag{43}$$

$$\pi^{obs}{}_t = \pi_t + \bar{\pi} \tag{44}$$

$$dw^{obs}{}_t - \pi^{obs}{}_t = w_t + \bar{\tau} - w_{t-1} - (\pi_t - \pi_{t-1}) \tag{45}$$

$$de^{obs}{}_t = e_t + \bar{e} - e_{t-1} \tag{46}$$

$$u^{obs}{}_t = u_t + \bar{u} \tag{47}$$

$$r^{obs}{}_t = 4\,\bar{r} + r_t\,4 \tag{48}$$

$$r^{ann}{}_t = r_t\,4 \tag{49}$$

$$\pi^{ann}{}_t = \pi_t + \pi_{t-1} + AUX\_ENDO\_LAG\_2\_1_{t-1} + AUX\_ENDO\_LAG\_2\_2_{t-1} \tag{50}$$

$$AUX\_ENDO\_LAG\_2\_1_t = \pi_{t-1} \tag{51}$$

$$AUX\_ENDO\_LAG\_2\_2_t = AUX\_ENDO\_LAG\_2\_1_{t-1} \tag{52}$$

$$AUX\_EXO\_LAG\_54\_0_t = \eta_{p\,t} \tag{53}$$

$$AUX\_EXO\_LAG\_56\_0_t = \eta_{w\,t} \tag{54}$$