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

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

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

$$y_t = c_t\, ccy + i_t\, ciy + cvy\, v_t + \varepsilon_{g\,t} \tag{4}$$

$$y_t = cpsip\ (calpha\, k_t + (1 - calpha)\ n_t + \varepsilon_{a\,t}) \tag{5}$$

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

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

$$\pi_t + w_t - w_{t-1} = \pi_{t-1}\, cgammaw + cbeta\ (\pi_{t+1} + w_{t+1} - w_t - \pi_t\, cgammaw) - w1\ (comega\, u_t - 100\, \varepsilon_{w\,t}) \tag{8}$$

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

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

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

$$z_t = (1 - cv)\ z_{t-1} + \frac{cv}{1 - \frac{ch}{ctau}}\ \left(c_t - c_{t-1}\ \frac{ch}{ctau}\right) \tag{12}$$

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

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

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

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

$$r_t = crhointr\, r_{t-1} + (1 - crhointr)\ \left(\pi_t\, crpi + cry\, {y^{gap}}_t + crdy\ \left({y^{gap}}_t - {y^{gap}}_{t-1}\right)\right) - \varepsilon_{r\,t} \tag{17}$$

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

$$cf_t = c1\, cf_{t+1} + (1 - c1)\ cf_{t-1} - c2\ (rf_t - \varepsilon_{b\,t}) \tag{19}$$

$$invf_t = \varepsilon_{q\,t} + i1\, invf_{t-1} + (1 - i1)\ invf_{t+1} + i2\, qf_t \tag{20}$$

$$qf_t = q1\, rkf_{t+1} - (rf_t - \varepsilon_{b\,t}) + (1 - q1)\ qf_{t+1} \tag{21}$$

$$yf_t = \varepsilon_{g_t} + ccy\, cf_t + ciy\, invf_t + cvy\, vf_t \tag{22}$$

$$yf_t = cpsip\ (\varepsilon_{a\,t} + calpha\, kf_t + (1 - calpha)\ nf_t) \tag{23}$$

$$0 = (1 - calpha)\ wf_t + calpha\, rkf_t - \varepsilon_{a\,t} \tag{24}$$

$$wf_t = \varepsilon_{s\,t} + zf_t + comega\, nf_t \tag{25}$$

$$zf_t = (1 - cv)\ zf_{t-1} + \frac{cv}{1 - \frac{ch}{ctau}} \left(cf_t - \frac{ch}{ctau}\, cf_{t-1} \right) \tag{26}$$

$$kbarf_t = \varepsilon_{q_t}\, k2 + k1\, kbarf_{t-1} + (1 - k1)\ invf_t \tag{27}$$

$$kf_t = vf_t + kbarf_{t-1} \tag{28}$$

$$vf_t = \frac{1 - cpsi}{cpsi}\, rkf_t \tag{29}$$

$$kf_t = nf_t + wf_t - rkf_t \tag{30}$$

$$ef_t - ef_{t-1} = cbeta\ \left(ef_{t+1} - ef_t \right) + e1\ (nf_t - ef_t) \tag{31}$$

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

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

$$\varepsilon_{q_t} = crhoq\, \varepsilon_{q_{t-1}} + \eta_{q_t} \tag{34}$$

$$\varepsilon_{g_t} = crhog\, \varepsilon_{g_{t-1}} + \eta_{g_t} + crhoga\, \eta_{a\,t} \tag{35}$$

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

$$\varepsilon_{p_t} = crhop\, \varepsilon_{p_{t-1}} + \eta_{p_t} - cmup\, AUX\_EXO\_LAG\_54\_0_{t-1} \tag{37}$$

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

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

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

$$dyobs_t = y_t + ctaubar + cebar - y_{t-1} \tag{41}$$

$$dcobs_t = c_t + ctaubar + cebar - c_{t-1} \tag{42}$$

$$diobs_t = i_t + ctaubar + cebar - i_{t-1} \tag{43}$$

$$piobs_t = \pi_t + cpibar \tag{44}$$

$$dwobs_t - piobs_t = w_t + ctaubar - w_{t-1} - (\pi_t - \pi_{t-1}) \tag{45}$$

$$deobs_t = e_t + cebar - e_{t-1} \tag{46}$$

$$uobs_t = u_t + cubar \tag{47}$$

$$robs_t = 4\, crbar + r_t\, 4 \tag{48}$$

$$ryear_t = r_t\, 4 \tag{49}$$

$$piyear_t = \pi_t + \pi_{t-1} + AUX\_ENDO\_LAG\_2\_1_{t-1} + AUX\_ENDO\_LAG\_2\_2_{t-1} \tag{50}$$

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

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

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

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