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

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

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

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

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

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

$$mc_t = (1 - \alpha)\,w_t + \alpha\,r^k_t - \varepsilon_{a_t} \tag{7}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\varepsilon_{g_t} = \rho_g \, \varepsilon_{g_{t-1}} + \eta_{g_t} + \rho_{ga} \, \eta_{a_t} \tag{35}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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