$$g = \phi + \phi\,\lambda\,\left(Z_D - 1\right) \tag{1}$$

$$g\,Z_D = \phi\,Z_D + V_D \tag{2}$$

$$V_D = Z_D\,\overline{\zeta}\,\zeta\,\left(\frac{g\,N_D}{K_D}\right)^{\eta} \tag{3}$$

$$J = (-M) + \phi\,\Lambda\,\left(\lambda\,H + J\,\left(1 - \lambda\right)\right) \tag{4}$$

$$H = \Pi + \phi\,\Lambda\,H \tag{5}$$

$$\Pi = \frac{1}{\vartheta}\,\frac{1}{\mathcal{M}}\,Y_D^W \tag{6}$$

$$Z_D\,\zeta\,\overline{\zeta}\,J\,\Lambda\,\frac{1}{\left(\frac{K_D}{g}\right)^{\eta}}\,\frac{1}{{N_D}^{1-\eta}} = 1 + log\left(\left|f\prime\left(\cdot\right)\right|\right)\,\frac{g\,N_D}{N_D} + log\left(\left|f\left(\cdot\right)\right|\right) - \Lambda\,log\left(\left|f\prime\left(\cdot\right)\right|\right)\,\left(\frac{g\,N_D}{N_D}\right)^2 \tag{7}$$

$$\Lambda\,\phi\,\rho_{\lambda}\,\bar{\lambda}\,\left(H - J\right) = M^{1-\rho_{\lambda}} \tag{8}$$

$$\lambda = \bar{\lambda}\,M^{\rho_{\lambda}} \tag{9}$$

$$Y_D = Y_D^W \tag{10}$$

$$Y_D^W = \left(\frac{K_D}{g}\right)^{\alpha}\,L^{1-\alpha} \tag{11}$$

$$Y_D = C_D + \left(1 + log\left(\left|g\left(\cdot\right)\right|\right)\right)\,I_D + N_D\,\left(1 + log\left(\left|f\left(\cdot\right)\right|\right)\right) + \left(Z_D - 1\right)\,M \tag{12}$$

$$\Lambda = \frac{\beta\,U_{CD}}{U_{CD}}\,g^{(-\rho)} \tag{13}$$

$$U_{CD} = \left(C_D - \Gamma_D\,\frac{\chi}{1+\epsilon}\,L^{1+\epsilon}\right)^{(-\rho)} + \left(-\mu_D\right)\,\gamma\,\left(\frac{\Gamma_D}{g\,C_D}\right)^{1-\gamma} \tag{14}$$

$$\mu_D = \beta\,\left(1-\gamma\right)\,g^{(-\rho)}\,\mu_D\,\left(\frac{g\,C_D}{\Gamma_D}\right)^{\gamma} + L^{1+\epsilon}\,\frac{\chi}{1+\epsilon}\,\left(C_D - \Gamma_D\,\frac{\chi}{1+\epsilon}\,L^{1+\epsilon}\right)^{(-\rho)} \tag{15}$$

$$\left(C_D - \Gamma_D\,\frac{\chi}{1+\epsilon}\,L^{1+\epsilon}\right)^{(-\rho)}\,\Gamma_D\,\chi\,L^{\epsilon}\,\frac{1}{U_{CD}} = \left(1-\alpha\right)\,\frac{1}{\mathcal{M}}\,\frac{\vartheta - 1}{\vartheta}\,\frac{Y_D}{L} \tag{16}$$

$$\Gamma_D = {C_D}^{\gamma}\,\left(\frac{\Gamma_D}{g}\right)^{1-\gamma} \tag{17}$$

$$K_D = I_D + \frac{K_D}{g}\ (1-\delta) \tag{18}$$

$$Q = 1 + log\left(\ g\left(\cdot\right)|\right) + \frac{g\, I_D}{I_D}\, log\left(\ g\prime\left(\cdot\right)|\right) - log\left(\ g\prime\left(\cdot\right)|\right)\ \Lambda\ \left(\frac{g\, I_D}{I_D}\right)^2 \tag{19}$$

$$Q = \Lambda\ \left(\frac{\alpha\, Y_D^W\ g\ \left(\vartheta - 1\right)}{\vartheta\, K_D\, \mathcal{M}} + \left(1-\delta\right)\ Q\right) \tag{20}$$

$$log\left(\zeta\right) = \sigma_\zeta\, \epsilon^\chi + log\left(\zeta\right)\ \rho_\zeta - \rho_{\zeta 2}\, log\left(AUX\_ENDO\_LAG\_20\_1\right) \tag{21}$$

$$\mathcal{S}_D = H + K_D\, Q + J\ \left(Z_D + V_D - 1\right) + X_D \tag{22}$$

$$X_D = g\, \Lambda\ \left(X_D + V_D\, J\right) \tag{23}$$

$$\mathcal{R}_D = N_D \tag{24}$$

$$f\left(\cdot\right)| = exp\left(\frac{\psi_N}{2}\ \left(\frac{g\, N_D}{N_D} - g^{BGP}\right)^2\right) \tag{25}$$

$$f\prime\left(\cdot\right)| = exp\left(\psi_N\ \left(\frac{g\, N_D}{N_D} - g^{BGP}\right)\right) \tag{26}$$

$$g\left(\cdot\right)| = exp\left(\frac{\psi_I}{2}\ \left(\frac{g\, I_D}{I_D} - g^{BGP}\right)^2\right) \tag{27}$$

$$g\prime\left(\cdot\right)| = exp\left(\psi_I\ \left(\frac{g\, I_D}{I_D} - g^{BGP}\right)\right) \tag{28}$$

$$\pi^{1-\omega} = \theta + \left(1-\theta\right)\ \pi^{*1-\omega} \tag{29}$$

$$\pi^* = \pi\, \frac{\omega}{\omega - 1}\, \frac{x_{1D}}{x_{2D}} \tag{30}$$

$$x_{1D} = Y_D\, \frac{1}{\mathcal{M}}\, U_{CD} + x_{1D}\, \beta\, \theta\, g^{1-\rho}\, \pi^\omega \tag{31}$$

$$x_{2D} = Y_D\, U_{CD} + x_{2D}\, \beta\, \theta\, g^{1-\rho}\, \pi^{\omega-1} \tag{32}$$

$$1 = \frac{\Lambda\, R}{\pi} \tag{33}$$

$$\frac{R}{R^{ss}} = \pi^{\gamma_\pi}\ \left(\frac{\frac{1}{\mathcal{M}}}{\frac{1}{\mathcal{M}^{ss}}}\right)^{\gamma_y} \tag{34}$$

$$AUX\_ENDO\_LAG\_20\_1 = \zeta \tag{35}$$