$$\exp\left(y_t\right) = \exp\left(c_{Mt}\right) + \exp\left(x_t\right) \tag{1}$$

$$\left(1-a\right) b \left(1-\eta\right) \exp\left(\left(-C_t\right) e + e \, c_{Ht} - h_{Ht}\right) = \left(1-b\right) \exp\left(\left(-l_t\right)\right) \tag{2}$$

$$a \, b \left(1-\tau_h\right) \left(1-\theta\right) \exp\left(y_t + \left(-C_t\right) e + c_{Mt}\left(e-1\right) - h_{Mt}\right) = \left(1-b\right) \exp\left(\left(-l_t\right)\right) \tag{3}$$

$$\beta \exp\left(e\left(-C_{t+1}\right)\right) \left(a \left(1-\delta_H\right) \exp\left(\left(e-1\right) c_{Mt+1}\right) + \left(1-a\right) \eta \exp\left(e \, c_{Ht+1} - k_{Ht}\right)\right) = a \, \lambda \exp\left(\left(-C_t\right) e + c_{Mt}\left(e-1\right)\right) \tag{4}$$

$$\beta \exp\left(e\left(-C_{t+1}\right) + \left(e-1\right) c_{Mt+1}\right) \left(1 + \exp\left(r_{t+1}\right) \left(1-\tau_k\right) + \tau_k \, \delta_M - \delta_M\right) = \lambda \exp\left(\left(-C_t\right) e + c_{Mt}\left(e-1\right)\right) \tag{5}$$

$$\theta \exp\left(y_t - k_{Mt-1}\right) = \exp\left(r_t\right) \tag{6}$$

$$\left(1-\theta\right) \exp\left(y_t - h_{Mt}\right) = \exp\left(w_t\right) \tag{7}$$

$$\exp\left(y_t\right) = \exp\left(\theta \, k_{Mt-1} + \left(1-\theta\right) \left(h_{Mt} + z_{Mt}\right)\right) \tag{8}$$

$$\exp\left(C_t\right) = \exp\left(c_{Mt} \, a + \left(1-a\right) c_{Ht}\right) \tag{9}$$

$$\exp\left(l_t\right) = 1 - \exp\left(h_{Ht}\right) - \exp\left(h_{Mt}\right) \tag{10}$$

$$\exp\left(c_{Ht}\right) = \exp\left(\eta \, k_{Ht-1} + \left(1-\eta\right) \left(h_{Ht} + z_{Ht}\right)\right) \tag{11}$$

$$\exp\left(x_{Mt}\right) = \lambda \exp\left(k_{Mt}\right) - \left(1-\delta_M\right) \exp\left(k_{Mt-1}\right) \tag{12}$$

$$\exp\left(x_{Ht}\right) = \lambda \exp\left(k_{Ht}\right) - \left(1-\delta_H\right) \exp\left(k_{Ht-1}\right) \tag{13}$$

$$\exp\left(x_t\right) = \exp\left(x_{Mt}\right) + \exp\left(x_{Ht}\right) \tag{14}$$

$$\exp\left(k_t\right) = \exp\left(k_{Mt}\right) + \exp\left(k_{Ht}\right) \tag{15}$$

$$\exp\left(T_t\right) = \tau_h \exp\left(h_{Mt} + w_t\right) + \tau_k \exp\left(k_{Mt-1} + r_t\right) - \tau_k \, \delta_M \exp\left(k_{Mt-1}\right) \tag{16}$$

$$z_{Mt} = \rho_M \, z_{Mt-1} + \epsilon_{Mt} \tag{17}$$

$$z_{Ht} = \rho_H \, z_{Ht-1} + \epsilon_{Ht} \tag{18}$$