$$\hat{y}_t = \ln\left(\frac{Y_t}{Y}\right)$$

$$\hat{c}_t = \ln\left(\frac{C_t}{C}\right)$$

$$\hat{m}_t^g = \ln\left(\frac{m_t^g}{m^g}\right)$$

$$\hat{\chi}_t = \ln\left(\frac{\chi_t}{\chi}\right)$$

$$\hat{m}_t^c = \ln\left(\frac{m_t^c}{m^c}\right)$$

$$\hat{\pi}_t = \ln\left(\frac{\pi_t}{\pi}\right)$$

$$\hat{r}_t = \ln\left(\frac{R_t}{R}\right)$$

$$\hat{a}_t = \ln\left(\frac{A_t}{A}\right)$$

$$\hat{e}_t^g = \ln\left(\frac{E_t^g}{E^g}\right)$$

$$\hat{e}_t^c = \ln\left(\frac{E_t^c}{E^c}\right)$$

$$\hat{\xi}_t = \ln\left(\frac{\xi_t}{\xi}\right)$$

$$\hat{\nu}_t = \ln\left(\frac{\nu_t}{\nu}\right)$$

$$\hat{z}_t = \ln\left(\frac{Z_t}{Z}\right)$$

$$\hat{\mu}_t^g = \ln\left(\frac{\mu_t^g}{\mu^g}\right)$$

$$\hat{y}_t = \hat{y}_{t+1} - \omega_1 \left(\hat{r}_t - \hat{\pi}_{t+1}\right) + \omega_2 \left[\left(\hat{m}_t^g - \hat{e}_t^g\right) - \left(\hat{m}_{t+1}^g - \hat{e}_{t+1}^g\right)\right] + \omega_3 \left[\left(\hat{\chi}_t + \hat{m}_t^c - \hat{e}_t^c\right) - \left(\hat{\chi}_{t+1} + \hat{m}_{t+1}^c - \hat{e}_{t+1}^c\right)\right] + \omega_1 \left(\hat{a}_t - \hat{a}_{t+1}\right) \quad (18)$$

$$\hat{m}_t^g = \gamma_1 \hat{y}_t - \gamma_2 \hat{r}_t + \gamma_3 \hat{e}_t^g - \gamma_4 \hat{\chi}_t - \gamma_4 \hat{m}_t^c + \gamma_4 \hat{e}_t^c \quad (19)$$

$$\hat{m}_t^c = \gamma_5 \hat{y}_t - \gamma_6 \hat{r}_t + \gamma_7 \hat{e}_t^c - \gamma_8 \hat{\chi}_t - \gamma_8 \hat{m}_t^g + \gamma_8 \hat{e}_t^g \quad (20)$$

$$\hat{\pi}_t = \left(\frac{\pi}{R}\right) \hat{\pi}_{t+1} + \psi \left[\begin{array}{c} \left(\frac{1}{\omega_1}\right) \hat{y}_t - \left(\frac{\omega_2}{\omega_1}\right) \left(\hat{m}_t^g - \hat{e}_t^g\right) \\ - \left(\frac{\omega_3}{\omega_1}\right) \left(\hat{\chi}_t + \hat{m}_t^c - \hat{e}_t^c\right) - \hat{z}_t \end{array}\right] \quad (21)$$

$$\hat{\chi}_t = -\varrho \hat{\phi}_t \quad (22)$$

$$\hat{\phi}_t = \left(\frac{\xi}{\phi}\right) \hat{\xi}_t + \left(1 - \frac{\xi}{\phi}\right) \hat{\nu}_t \quad (23)$$

$$\hat{r}_t = \rho^r \hat{r}_{t-1} + \left(1 - \rho^r\right) \rho^y \hat{y}_t + \left(1 - \rho^r\right) \rho^\pi \hat{\pi}_t + \left(1 - \rho^r\right) \rho^{\mu^g} \hat{\mu}_t^g + \varepsilon_t^r \quad (24)$$

$$\ln\left(A_t\right) = \rho^a \ln\left(A_{t-1}\right) + \varepsilon_t^a \quad (3)$$

$$\ln\left(E_t^g\right) = \rho^{eg} \ln\left(E_{t-1}^g\right) + \varepsilon_t^{eg} \quad (4)$$

$$\ln\left(E_t^c\right) = \rho^{ec} \ln\left(E_{t-1}^c\right) + \varepsilon_t^{ec} \quad (5)$$

$$\ln\left(\xi_t\right) = \rho^\xi \ln\left(\xi_{t-1}\right) + \varepsilon_t^\xi \quad (7)$$

$$\ln\left(\nu_t\right) = \rho^\nu \ln\left(\nu_{t-1}\right) + \varepsilon_t^\nu \quad (8)$$

$$\ln\left(Z_t\right) = \rho^z \ln\left(Z_{t-1}\right) + \varepsilon_t^z \quad (14)$$

$$\hat{y}_t = \hat{c}_t \quad (A21)$$

The cryptocurrency market is in equilibrium if the quantity of cryptocurrency supplied by entrepreneurs is equal to the demand of cryptocurrency by households. The goods market clearing condition implies that the output produced by production goods firms is equal to households' consumption. The model is closed by adding the log-linearized versions of the AR(1) processes for the preferences shock to consumption, the demand shocks for government currency and cryptocurrency, the common and specific supply shocks of cryptocurrency as well as the aggregate technology shock.