Model 2: Equations:

① savers
⑧–⑮ borrowers

25 endogenous variables,
25 equations

① $L^s_t = \left[\omega_e^{1/\varepsilon_t} \left(L^s_{ct}\right)^{\frac{1+\varepsilon_t}{\varepsilon_t}} + (1-\omega_e)^{1/\varepsilon_t} \left(L^s_{h,t}\right)^{\frac{1+\varepsilon_t}{\varepsilon_t}}\right]^{\frac{\varepsilon_t}{1+\varepsilon_t}}$

② $\frac{C^s_{At}}{C^s_{Bt}} = \left(\frac{\gamma}{1-\gamma}\right) P_{Bt}$

③ $\frac{j}{H^s_t} = \frac{q^h_t}{C^s_{At}/\gamma} - \beta^s E_t \frac{q^h_{t+1}(1-\delta)}{C^s_{At+1}/\gamma}$

④ $\frac{1}{C^s_{At}} = \beta^s E_t \frac{1}{C^s_{At+1}} \frac{R_{At}}{\Pi_{A,t+1}}$

⑤ $\frac{w_{ct}}{C^s_{At}/\gamma} = \left(L^s_t\right)^{\eta} \omega_e^{1/\varepsilon_t} \left(\frac{L^s_{ct}}{L^s_t}\right)^{1/\varepsilon_t}$

⑥ $\frac{w_{ht}}{C^s_{At}/\gamma} = \left(L^s_t\right)^{\eta} (1-\omega_e)^{1/\varepsilon_t} \left(\frac{L^s_{h,t}}{L^s_t}\right)^{1/\varepsilon_t}$

⑦ $R_{At} = R_t e^{\psi(-d_t)/Y_t}$

⑧ $L^b_t = \left[\omega_e^{1/\varepsilon_t} \left(L^b_{ct}\right)^{\frac{1+\varepsilon_t}{\varepsilon_t}} + (1-\omega_e)^{1/\varepsilon_t} \left(L^b_{h,t}\right)^{\frac{1+\varepsilon_t}{\varepsilon_t}}\right]^{\frac{\varepsilon_t}{1+\varepsilon_t}}$

⑨ $C^b_{At} + P_{Bt} C^b_{Bt} + q^h_t \left(H^b_t - (1-\delta) H^b_{t-1}\right) + \frac{R_{At-1} b_{t-1}}{\Pi_{At}} = w_{ct} L^b_{ct} + w_{ht} L^b_{ht} + b_t$

⑩ $b_t R_t \le m E_t \Pi_{A,t+1} q^h_{t+1} H^b_t$

⑪ $\frac{C^b_{At}}{C^b_{Bt}} = \frac{\gamma}{1-\gamma} P_{Bt}$

⑫ $\frac{\gamma}{C^b_{At}} = \beta^b E_t \frac{\gamma}{C^b_{At+1}} \frac{R_{At}}{\Pi_{At+1}} + \lambda_t$

⑬ $\frac{j}{H^b_t} = \frac{q^h_t}{C^b_{At}/\gamma} - \beta^b E_t \frac{q^h_{t+1}(1-\delta)}{C^b_{At+1}/\gamma} - \lambda_t m E_t q^h_{t+1} \frac{\Pi_{At+1}}{R_{At}}$

⑭ $\frac{w_{ct}}{C^b_{At}/\gamma} = \left(L^b_t\right)^{\eta} \left(\frac{\omega_e L^b_{ct}}{L^b_t}\right)^{1/\varepsilon_t}$

⑮ $\frac{w_{ht}}{C^b_{At}/\gamma} = \left(L^b_t\right)^{\eta} \left(\frac{(1-\omega_e) L^b_{ht}}{L^b_t}\right)^{1/\varepsilon_t}$

⑯ $IH_t = L^s_{h,t} + L^b_{h,t}$

⑰ $w_{h,t} = q^h_t$

⑱ $Y_t = L^s_{c,t} + L^b_{c,t}$

⑲ $w_{c,t} = P^I_t$

⑳ $\hat{\pi}_{At} = \beta^s \hat{\pi}_{A,t+1} + \frac{(1-\theta)(1-\theta\beta^s)}{\theta} \left[\hat{p}^I_t - \log(p^I_{ss})\right]$

㉑ $\hat{r}_{At} = \rho \hat{r}_{A,t-1} + (1-\rho)\left[(1+\phi_\pi)\hat{\pi}_{At}\right] + e_t$

㉒ $IH_t = H^s_t - (1-\delta) H^s_{t-1} + H^b_t - (1-\delta) H^b_{t-1}$

㉓ $Y_t = C^s_{At} + C^b_{At} + ~~\chi^* C^*_t~~$

㉔ $d_t = \frac{R_{t-1} e^{\psi(-d_{t-1})/Y_{t-1}}}{\Pi_{At}} d_{t-1} + Y_t - C^s_{At} - C^b_{At} - P_{Bt}\left(C^s_{Bt} + C^b_{Bt}\right)$

㉕ $P_{Bt} = \frac{~~\Pi_{Bt}~~}{\Pi_{At}} P_{B,t-1}$ ㉖ ~~$\Pi_{Bt} = (\Pi_{B,t-1})^{\rho_\Pi} \exp(e_{\Pi,t})$~~ ㉗ ~~$C^*_t = (C^*_{t-1})^{\rho_{C^*}} \exp(e_{C^*,t})$~~

$L^s_t, L^b_t, L^s_{c,t}, L^b_{c,t}, L^s_{h,t}, L^b_{h,t}$
$C^s_{A,t}, C^b_{A,t}, C^s_{B,t}, C^b_{B,t}, H^s_t, H^b_t$
$w_{h,t}, w_{c,t}, b_t, d_t, Y_t, IH_t$
$P^I_t, P_{Bt}, \lambda_t, q^h_t, R_{At}, R_t$
$\Pi_{At}, ~~\Pi_{Bt}~~, ~~C^*_t~~$