Steady-State

Fixed-point in the absence of shocks

Steady-State Recipe

1. $\bar{A} = 1$

2. $\bar{MC} = 1$

3. $\bar{R} = \frac{1}{\beta} + \delta - 1$

4. $\frac{\bar{K}}{\bar{L}} = \left(\bar{MC} \frac{\alpha \bar{A}}{\bar{R}} \right)^{\frac{1}{1-\alpha}}$

5. $\bar{W} = \bar{MC}(1-\alpha)\bar{A} \left(\frac{\bar{K}}{\bar{L}} \right)^{\alpha}$

6. $\frac{\bar{I}}{\bar{L}} = \delta \frac{\bar{K}}{\bar{L}}$

7. $\frac{\bar{Y}}{\bar{L}} = \bar{A} \left(\frac{\bar{K}}{\bar{L}} \right)^{\alpha}$

8. $\frac{\bar{C}}{\bar{L}} = \frac{\bar{Y}}{\bar{L}} - \frac{\bar{I}}{\bar{L}}$

Steady-State Recipe

8. Log-utility (determine $\bar{L}$ analytically): $\bar{L} = \dfrac{\frac{\gamma}{\psi}\left(\frac{\bar{C}}{\bar{L}}\right)^{-1}\bar{W}}{1+\frac{\gamma}{\psi}\left(\frac{\bar{C}}{\bar{L}}\right)^{-1}\bar{W}}$

8. CES-utility (determine $\bar{L}$ numerically): $\bar{W}\left(\dfrac{\bar{C}}{\bar{L}}\right)^{-\eta_C} = \dfrac{\psi}{\gamma}(1-\bar{L})^{-\eta_L}\bar{L}^{\eta_C}$

9. Remaining variables: $\bar{C} = \dfrac{\bar{C}}{\bar{L}}\bar{L}, \quad \bar{I} = \dfrac{\bar{I}}{\bar{L}}\bar{L}, \quad \bar{K} = \dfrac{\bar{K}}{\bar{L}}\bar{L}, \quad \bar{Y} = \dfrac{\bar{Y}}{\bar{L}}\bar{L}$