

$$\pi_{t+1} = \frac{\kappa\sigma}{\lambda_1 - \lambda_2} \left[i_t + \sum_{j=1}^{\infty} \lambda_1^{-j} i_{t-j} + \sum_{j=1}^{\infty} \lambda_2^j E_{t+1} i_{t+j} \right] + \sum_{j=0}^{\infty} \lambda_1^{-j} \delta_{t+1-j} \quad (3)$$

$$\begin{aligned} \kappa x_{t+1} = & \frac{\kappa\sigma}{\lambda_1 - \lambda_2} \left[(1 - \beta\lambda_1^{-1}) \sum_{j=0}^{\infty} \lambda_1^{-j} i_{t-j} + (1 - \beta\lambda_2^{-1}) \sum_{j=1}^{\infty} \lambda_2^j E_{t+1} i_{t+j} \right] \\ & + (1 - \beta\lambda_1^{-1}) \sum_{j=0}^{\infty} \lambda_1^{-j} \delta_{t+1-j}, \end{aligned} \quad (4)$$