

Monetary Economics

Workshop V

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1. Assume that money demand is given by the following equation

$$\frac{M}{P} = \alpha e^{-\beta\pi}$$

where an inflation rate of 10% is represented as $\pi = 0.1$.

- (a) Find an expression for the seigniorage revenue-maximising level of inflation, π^* .
 - (b) If $\alpha = 100$ and $\beta = 0.9$, what is the π^* ?
2. Download the file IFB1.mod onto a folder where you keep your Dynare files. The file contains the variables, parameters and their values, shocks and their standard errors plus a calculation of the loss function, where we assume that the loss is given by

$$Loss = var(\pi) + var(x)$$

- (a) You have to fill the model part, which consists of three equations:

$$\pi_t = \beta\gamma E_t\pi_{t+1} + (1 - \gamma)\pi_{t-1} + \kappa x_t + u_t$$

$$x_t = E_t x_{t+1} - \frac{1}{\sigma} (R_t - \pi_{t+1}) + g_t$$

$$R_t = \phi_\pi \pi_t$$

This is a version of the NK model (we shall cover it soon) but where inflation exhibits endogenous persistence, measured by $1 - \gamma$. If $\gamma = 1$ then the New Keynesian Phillips curve (NKPC) emerges. The variables are as defined in the mod file so all you have to do is to insert the above in the model block and then run the file.

3. We want to see how the policy maker's losses change as inflation becomes more persistent. To this end, solve the model for $\gamma = 1, 0.5, 0.1$ and see the losses reported in the command window. What is the result?