DYNARE SUMMER SCHOOL 2018

Application on optimal policy

Exercise 1

`cgg_osr_1.mod`

1. Redo the computations seen this morning with and without taking into account dr_t in the objective function.
2. Experiment with changing weights in the objective. What are you looking to assert the consequences of these changes?
3. Experiment with changing some parameter values in the model.
4. Consider the following interest rate rule:

$$r_t = \gamma_0 r_{t-1} + (1-\gamma_0)(\gamma_1 \pi_t + \gamma_2 y_t)$$

5. add loops to compute the value of the objective function on a grid of 3 values for each of the 3 parameters.
6. use the low discrepency sequence to explore the shape of the objective function
7. start *osr* from the best point suggested by either of the two above procedures.
8. go back to the very first example of optimal simple rule discussed this morning, the one with only the variance of inflation and output in the objective function. Explore this objective function with a low discrepency sequence. What do you observe?

Exercise 2

Ramsey policy in CGG model

1. Compute Ramsey policy in the CGG simple model, when the objective function is

$$\min \lim_{\beta \to 1} \sum_{t=0}^{\infty} (1-\beta)\beta^t \left(\pi_t^2 + y_t^2\right)$$

2. Compare the results with OSR for the same model and objective function.

Exercise 3

Ramsey policy in `nk_ramsey_1.mod`

1. Look at the effect of changing the planner's discount factor keeping both with and without changing β in the same manner
2. Look at the effect of changing the price adjustment cost parameter
3. Set ρ, the autocorrelation coefficient of the productivity process, to zero. Interpret the solution.