University of Minnesota
ECON 8581
Homework 6
Angelo Mendes

Prof. Kyle Herkenhoff
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Estimation of Block Recursive Models

The MATLAB codes used to solve/simulate the model can be found here. We start restating the simulation results from the last problem set. [1]

Table 1: Simulation Results ($T = 200$)

Moment	Value
Avg. Unemployment rate	0.055
σ_u/σ_z	6.73

It is important to highlight that the results are very sensitive to the number of periods in the simulation.

Table 2: Simulation Results ($T = 1000$)

Moment	Value
Avg. Unemployment rate	0.064
σ_u/σ_z	3.49

We proceed using the instructions in the enunciate and run the simulation for $T = 200$ targeting an average unemployment rate of 6.5%.

$$b^* = \arg\min \frac{1}{T} \sum_{t=1}^{T} (u_t - 0.065)^2$$

Then we follow the instructions to compute the numerical derivative of the objective function with respect to the parameter b.

[1] After correcting typos and rerunning the simulations I got more reasonable results for the average unemployment rate.

Table 3: Model Parameters

Parameter	Value		
β	0.996		
σ	0		
κ	1.89		
α	1		
χ	2		
a	1/3		
γ	0.6		
δ	0.012		
σ_ϵ	0.01		
ρ	0.98		
Calibrated parameters	Value	Model	Data
$\hat{b}$	0.83	0.0653	0.065
$\hat{\sigma}_\epsilon$	(0.0006)		

References

G. Menzio and S. Shi. Efficient search on the job and the business cycle. *Journal of Political Economy*, 119(3):468–510, 2011.