Economics 8185
Advanced Topics in Macroeconomics–Computation
Ellen McGrattan - erm@umn.edu
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Homework 4.

1. Use the finite element method to solve an individual's optimal policy function for next period assets, a_{t+1}:

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \left[c_t^{1-\mu} - 1\right] / (1-\mu)$$
$$\text{s.t. } c_t + a_{t+1} = w l_t + (1+r)\, a_t$$
$$c_t \geq 0, a_t \geq 0$$

   where l_t is assumed to be iid and well approximated by a Markov chain. Assume the individual takes prices w and r as given.

2. (Bonus) Solve for the general equilibrium prices assuming the aggregate production function is Cobb-Douglas in capital and labor. How do aggregate saving rates and equilibrium interest rates vary as you vary μ and the properties of the Markov chain on l_t? Interpret the results.