Problem Set 6: The Heterogeneous Agent Model

Problem 1. Huggett Model. On the campus cluster, you will find code to solve the Aiyagari model with a labor-leisure choice. Please start from that code (email me if you cannot access the cluster). Please note that this code is highly sensitive to initial guesses!

The Huggett (1993) Model is given by

$$V(a, \epsilon; \psi) = u(c) + \beta E[V(a', \epsilon'; \psi')] \tag{1}$$

subject to

$$c + a' \leq (1 + r(\psi))a + \epsilon \tag{2}$$
$$\epsilon \sim Markov, \Pi(\epsilon'|\epsilon) \tag{3}$$
$$\psi' = \Psi(\psi) \tag{4}$$

Assume the following calibration:

Parameter	Value
$u(c)$	$\frac{c^{1-\sigma}}{1-\sigma}$
β	0.993
σ	1.5
a'	$\geq$ -2
a grid	[-2, 12]
a nodes	100

$$\pi_t = \begin{bmatrix} 0.925 & 0.075 \\ 0.5 & 0.5 \end{bmatrix} \tag{5}$$

$$\epsilon = \begin{bmatrix} 1.0 \\ 0.1 \end{bmatrix} \tag{6}$$

Note that market clearing is given by

$$\int_{a \times \epsilon} a' d\psi = 0 \tag{7}$$

1. Solve the model. Plot the decision rules for savings across the a grid for an agent in employment state 1 and employment state 2.

2. Plot the stationary distribution of wealth.