LSE Macroeconomics Summer Program
Part II: Heterogeneous Agents
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Additional Assignment
1. Simulate with a continuum of agents

1 Simulation

Consider a unit mass of agents that all behave according to the neo-classical growth model (as in the Dynare file `modelcloglinear.mod`). They differ, however, in terms of their initial capital stock. In particular, suppose that the initial capital stock is uniformly distributed from 40% below to 40% above the steady state capital stock. The program `simulaterepagent.m` contains the program to do the simulation. It does the following.

1. It uses Dynare to obtain the individual policy rules.
2. It draws a long sequence of shocks and constructs a time series for z_t
3. It constructs a fine grid to approximate the initial distribution with a histogram
4. You have to complete the remaining part of `simulaterepagent.m`. That is, each period you have to fill in the histogram. Note that you can do exactly what we did in class except that the policy function changes with the value of z_t. Also note that the cross-sectional heterogeneity will eventually disappear in this example because there are no idiosyncratic shocks.
5. Now set the value of α equal to 0.8. Show that the heterogeneity now disappears much more slowly. Explain why.