# Value Function Iteration with a Fixed Grid

Fix a grid of 250 points of capital, centered around kss with a coverage of30% of kss and equally spaced. Iterate on the Value function implied by the Social Planner’s Problem using linear interpolation until the change in the sup norm between to iterations is less than 106: Compute the Policy function. Describe the responses of the economy to a technology shock.

I did the value function iteration (VFI henthforth) in two steps. First I set the labor level to steady state and iterate till convergence. Then I use the value function got in the first step as the initial guess for the regular VFI where I make optimal decisions of both capital and labor. The result seems normal, but the running time is prohibitively slow – more than 11 hours on my computer, and more than 4 hours on the lab computer. Below are the results. Please note that the axis for shocks are integrated so that we can see how the value changes with one shock while holding the other shock constant.

# Value Function Iteration with an Endogenous Grid

# Comparison of Grids

# Accelerator

# Multigrid

# Stochastic Grid