Assignment 9

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In this homework, we are trying to generalize a three-period question with exogenous labor supply to a S-period question with endogenous labor supply. Two important changes are made: the first is to enable all variables to be saved a list whose length is decided by S, and the other one is to include a labor variable as a decision variable (control variable). Previously, we only have one control variable (savings), s, which is decided in each period, to maximize the agent's utility. I followed the formulas from Chapter 4 and our in-class script to start coding.

Although the codes work without any error, the results cannot be interpreted. Thus, I am not able to plot some graphs (I also include some codes on plotting in the script). Theoretically, these graphs would be similar to Figure 4.3 and 4.4 in Chapter 4. As the age increases, the labor supply decreases over the lifetime as the utility of not working (leisure time) exceeds that of working. Moreover, an agent will increase the savings till the wages go down. In the same time, the consumption is gradually increasing because this agent has no utility after S periods.