SUNY at Binghamton

Econ 634 Advanced Macroeconomics

Homework 3: Hugget Model

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1 Question 1

The maximization problem is:

$$\max_{c_t, a_{t+1}} E_0(\sum_{t=0}^{\infty} \beta^t U(c_t)) \tag{1}$$
$$\text{s.t:} \quad c_t + q_t a_{t+1} = y(s_t) + a_t \forall t, s_t$$

The value function is:

$$V(a_t, s_t) = \max_{a_{t+1} \in \gamma(a_t, s_t)} U(y(s_t) + a_t - q_t a_{t+1}) + \beta E[V(a_{t+1}, s_{t+1})] \tag{2}$$

The state variables are a_t, s_t
The control variables are a_{t+1}, c_t

2 Question 2

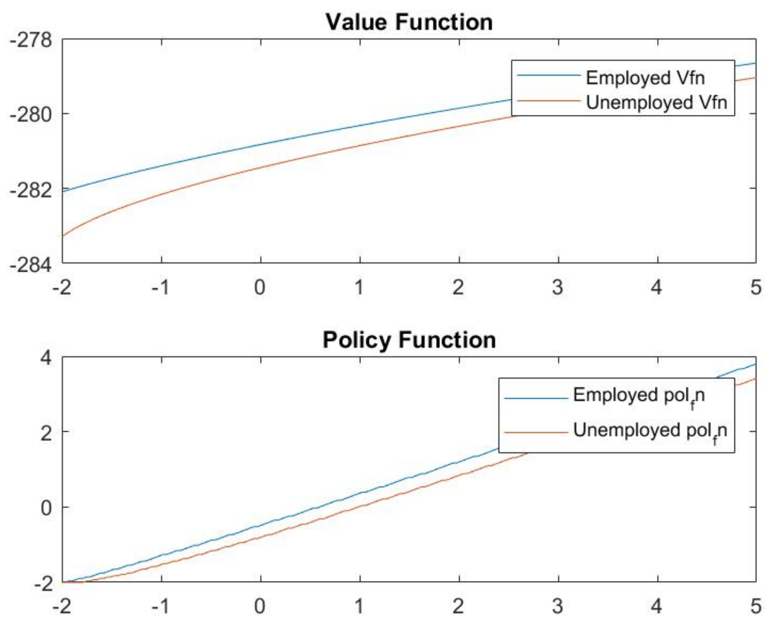

Figure 1: Value Function and Policy Function

3 Question 3

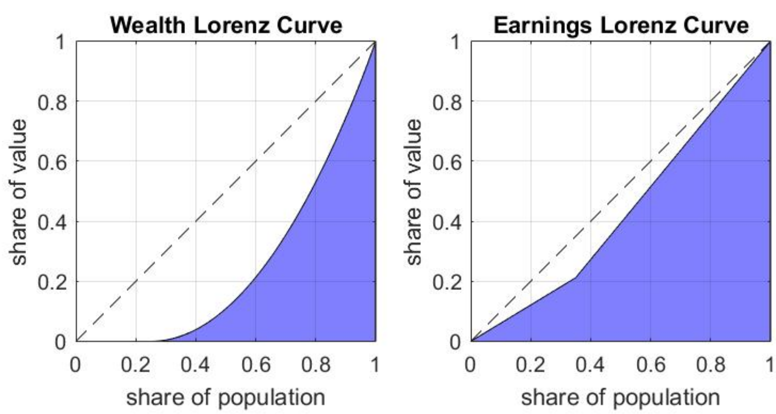

Figure 2: Gini Index and Lorenz Curve