Labor Economics Homework 4

Due:

1. Occpational Choice Model

Suppose a worker i chooses an occupation $j \in \{0, 1, \ldots, J\}$ to maximize the utility function

$$u_i(j) = \alpha_j + \epsilon_{ij},$$

where $\epsilon_{ij} \overset{iid}{\sim} T1EV$ across workers and occupations that is observed only by the individual but not us. α_j is the parameter that we want to estimate. We normalize $\alpha_0 = 0$.

1. What is the probability of observing a worker in occupation j?
2. Use the parameters $(\alpha_1, \alpha_2, \alpha_3) = (0.2, 0.3, -0.1)$ to simulate the data for 1000 workers and $J = 3$ occupations.
3. Estimate the parameters α_j. Can you recover the true parameters?
4. Use the estimated parameters to simulate 1000 samples. Drop the occupation $j = 3$ and resimulate 1000 samples. Compare the $\Pr(j = 1) / \Pr(j = 2)$ in the two scnarios.

2. Bus Engine Replacement Model