Problem Set #[4]

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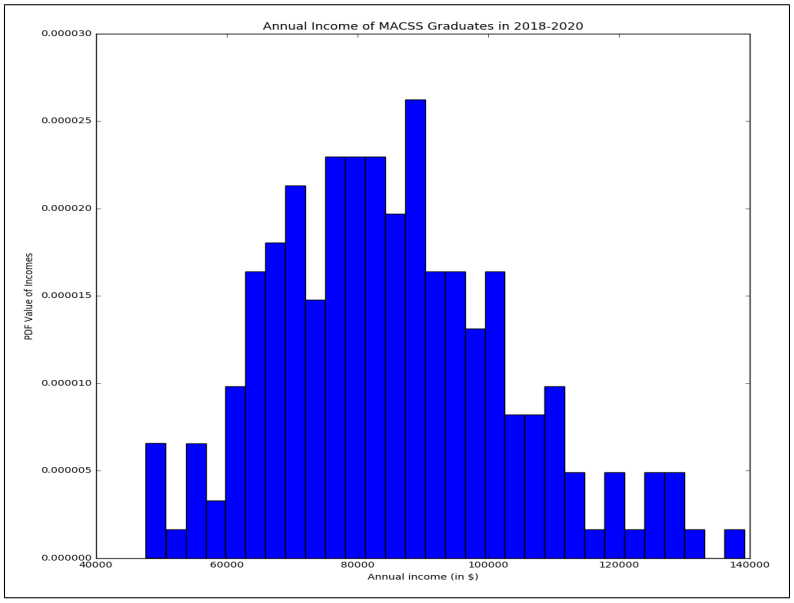
Problem 1

Part (a).

Histogram of MACSS cohort incomes

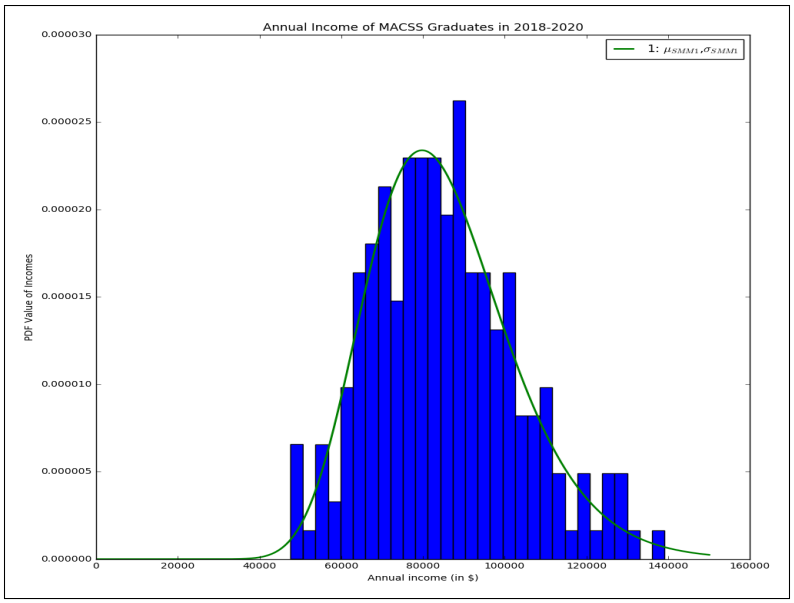


Part (b).

The test matrix is: $\begin{bmatrix} 0.0019079 & 0.00123533 \\ 0.00217547 & 0.0019646 \end{bmatrix}$

Part (c).

$\mu_{SMM1} = 11.330637236, \sigma_{SMM1} = 0.209229370701.$
Data mean of incomes = 85276.8236063
Data standard deviation of incomes = 17992.542128
Model mean 1 = 85276.8280721
Model standard deviation 1 = 17992.543083
The value of criterion function at the estimated parameter values is $5.55965986744e-15$.
The one step estimator works pretty well as the data and model moments are very close to each other.



Part (d).

$\mu_{SMM2} = 11.3306372141, \sigma_{SMM2} = 0.209229359136.$
Data mean of incomes = 85276.8236063
Data standard deviation of incomes = 17992.542128
Model mean 2 = 85276.8259939
Model standard deviation 2 = 17992.5416292
The value of criterion function at the estimated parameter values is 0.000176850368141.
The one step estimator gave close to perfect values and the two step estimator does not provide any significant improvisation. Its criterion value is also higher than the one step estimate.