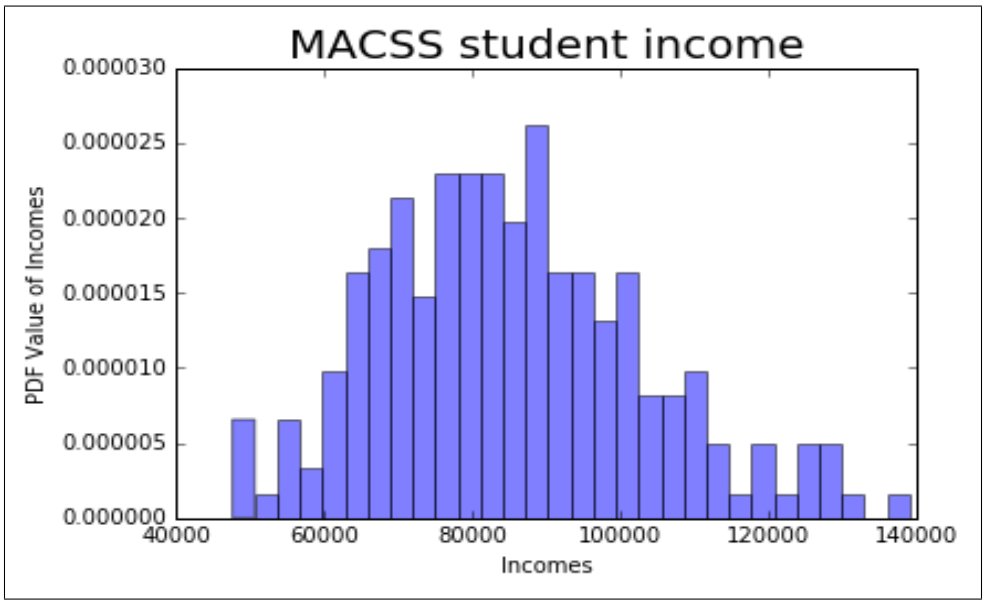
Problem Set #4

MACS 30100, Dr. Evans
Weijia Li

Problem 1.
Part (a).

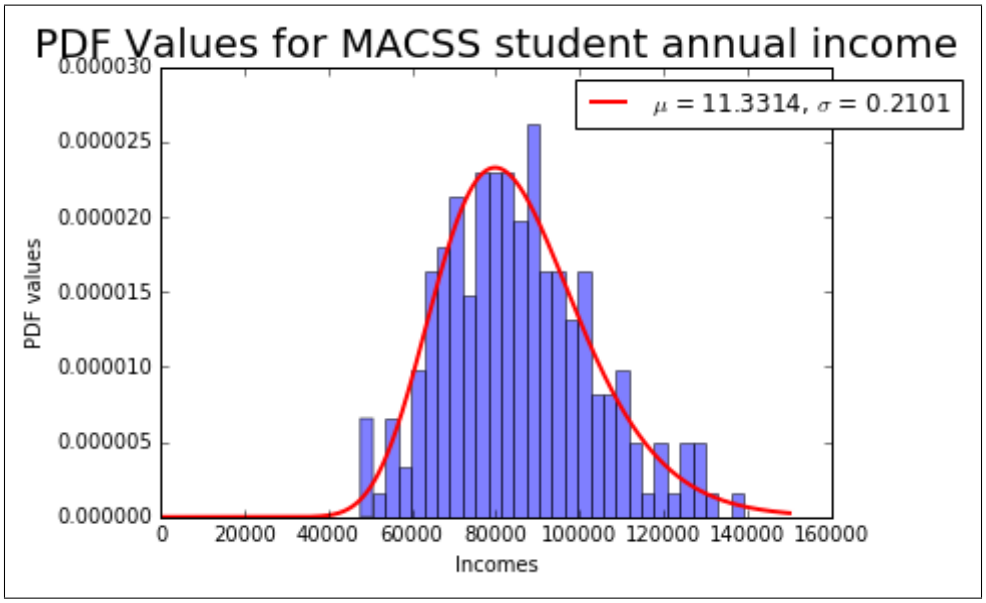


Part (b).

The return is shown below. It has the same size as the xvals, so the LNpdf() function is constructed successfully.

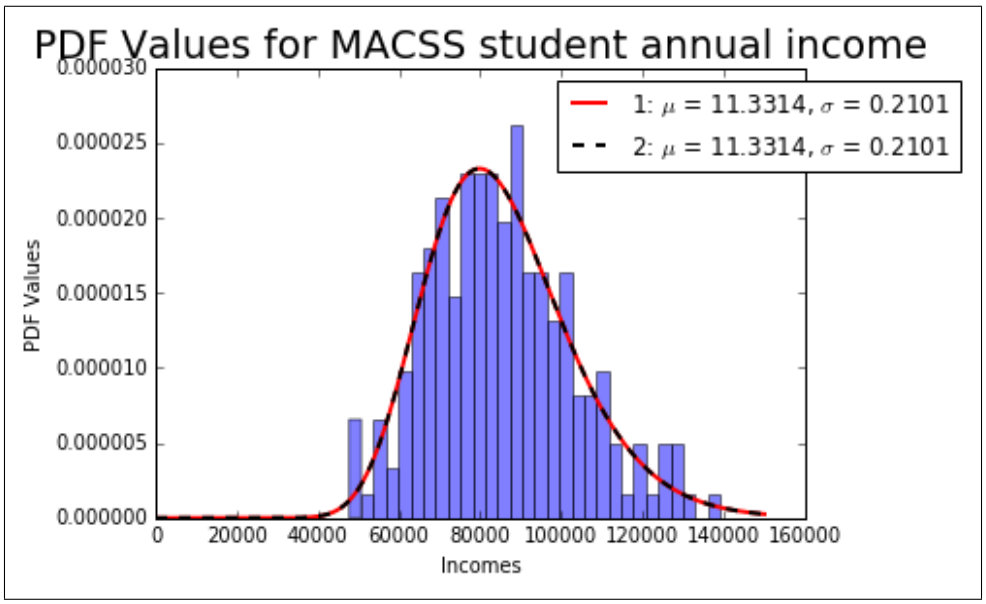
$$\begin{bmatrix} 0.0019079 & 0.00123533 \\ 0.00217547 & 0.0019646 \end{bmatrix}$$

Part (c).



The value of SMM criterion function at the estimated parameter values is:
$9.826876151479842e-14$.
The data moments are:
$\mu = 85276.8236$, $\sigma = 17992.5421$.
Model moments at the estimated parameter values are:
$\mu = 85276.8173$, $\sigma = 17992.5366$.

Part (d).



The value of GMM criterion function at the estimated parameter values is: 0.14810723658013403.
Model moments at the estimated parameter values are:
$\mu = 85276.8362$, $\sigma = 17992.5413$.
These model moments are also very close to data moments, which means 2-step SMM estimation performs well.