Problem Set #[4]
MACS 30100, Dr. Evans
Wenxi Xiao

1 Problem 1

1.1 part (a)

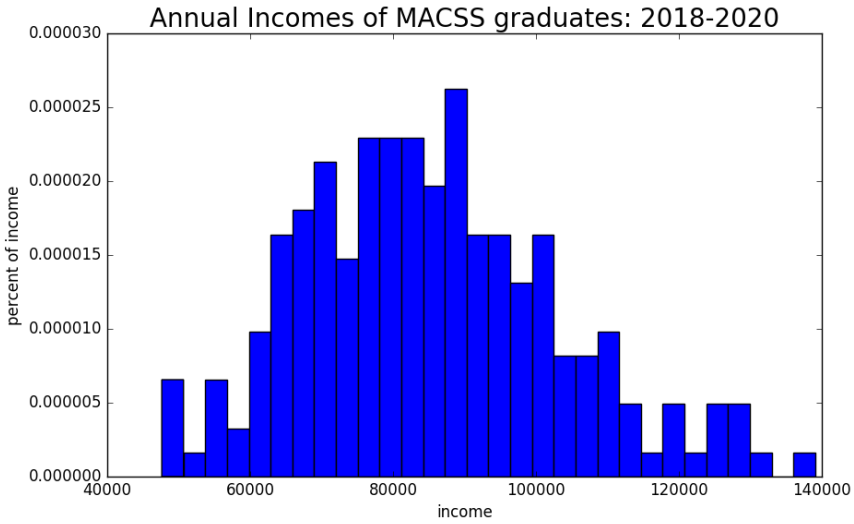

Figure 1: Figure 1a

1.2 part (b)

My LN_{pdf} function returns the following matrix with the given inputs:

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

1.3 part (c)

Minimisation method used: L-BFGS-B, succeeded

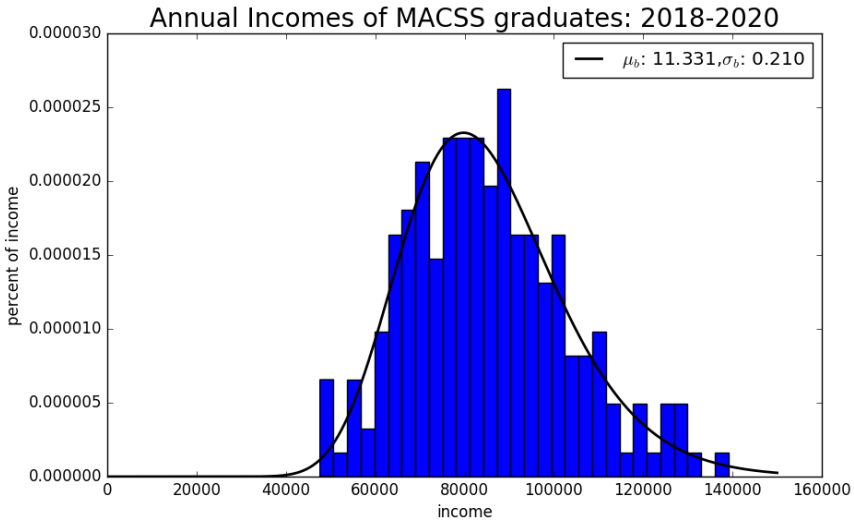

Figure 2: Figure 1c

The value of the GMM criterion function at the estimated parameter values is $9.82687287192 \cdot 10^{-14}$. Mean of data is 85276.8236063. Standard deviation of data is 17992.542128. Mean of model is 85276.8173418. Standard deviation of model is 17992.5366448. My two model moments are very close to my two data moments at the estimated parameter values.

1.4 part (d)

Minimisation method used: Nelder-Mead, succeeded

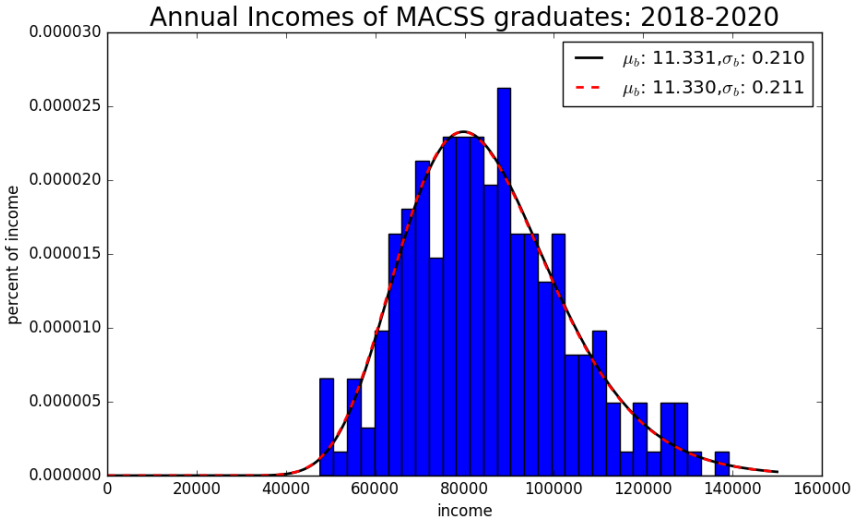

Figure 3: Figure 1d

Estimated parameter values: $\mu_{GMM2_3} = 11.329648972$, $\sigma_{GMM2_3} = 0.210525787365$. The value of the GMM criterion function at the estimated parameter values is $5.35537406421 \cdot 10^{-6}$. Mean of data is 85276.8236063. Standard deviation of data is 17992.542128. Mean of model is 85136.5237891. Standard deviation of model is 17999.6777459. My two model moments are close to my two data moments at the estimated parameter values, although not as close as that in part (c).