Problem Set #3

MACS 30100, Dr. Evans

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Part 1(a).

Incomes of MACSS Graduates

Part 1(b).

Incomes of MACSS Graduates with PDF

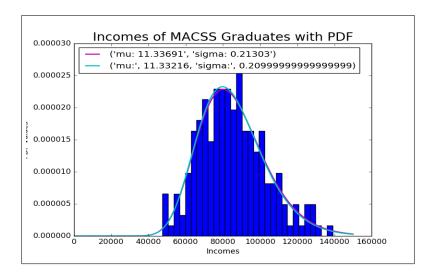The value of the criterion function is 4.65480957377e-12

Estimates:

mu = 11.336912596

sigma = 0.213026554864

Mean of Incomes = 85276.8236063 , Standard Deviation of Incomes = 17992.542128

Mean of Model = 85277.0011879925 , Standard Deviation of Model = 17992.5319761
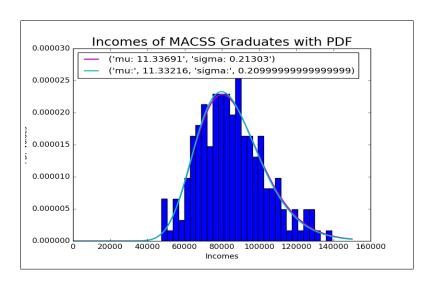
Part 1(c).

The value of the criterion function is 0.000279116053834
Estimates:
mu = 11.3321588475 sigma = 0.209999416761
Mean of Incomes = 85276.8236063 , Standard Deviation of Incomes = 17992.542128
Mean of Model = 85277.0011879925 , Standard Deviation of Model = 17702.4063719

Part 1(d).

Estimates:
mu = 11.3356813279 sig = 0.210598453666
The value of GMM criterion function at estimated parameter values = 2.22823903063e-11

Data moments:
Proportion of incomes less than USD 75000 = 0.3
Proportion of incomes between USD 75000 and USD 100000 = 0.5
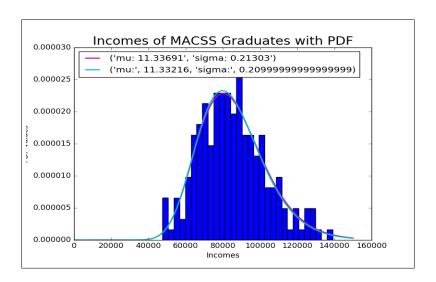Proportion of incomes between USD 100000 and USD 150000 = 0.2

Model moments:
Proportion of incomes less than USD 75000 = 0.3000000028100537
Proportion of incomes between USD 75000 and USD 100000 = 0.5000000061140177
Proportion of incomes between USD 100000 and USD 150000 = 0.19999999107592834

Part 1(e).

Estimates:
mu = 11.3361801071 sig = 0.213168732268 The value of GMM criterion function at
estimated parameter values = 1.37659610016e-10
Data moments:
Proportion of incomes less than USD 75000 = 0.3
Proportion of incomes between USD 75000 and USD 100000 = 0.5
Proportion of incomes between USD 100000 and USD 150000 = 0.2

Model moments:
Proportion of incomes less than USD 75000 = 0.3013863471297974
Proportion of incomes between USD 75000 and USD 100000 = 0.49509924575150316
Proportion of incomes between USD 100000 and USD 150000 = 0.20351440711869923

Part 1(f). My estimations in parts (b) to (e) all fit the data very similarly. Based
on the fact that the value of the GMM criterion is lowest in part (b), this appears to
be a marginally better fit than the others.

Part 2.
The value of GMM criterion function at the estimated parameter values $= 0.0148568243783$

$Beta0 = 0.252200169614$
$Beta1 = 0.0130222994646$
$Beta2 = 0.399781749664$
$Beta3 = -0.0100594927566$