

# Home Assignment 3: Growth and Development Economics

Daniel Carvajal Zuniga\*

March 1, 2019

---

\*Email: [daniel.carvajal@cemfi.edu.es](mailto:daniel.carvajal@cemfi.edu.es)

# 1 Analysis

Notice that in this case full risk sharing is not achieved. This scenario would need that  $\beta_i$  is close to zero and  $\phi > 0$ . Nonetheless, in our case  $\beta_i > 0$  and  $\phi < 0$ . This indicates that individual income affects individual consumption, as opposed to full risk sharing where individual consumption is only affected by aggregate consumption. And in fact, aggregate consumption has a very low but negative effect in individual consumption. Thus, there is no redistribution mechanism that fully insures individuals from income shocks.

It is important to note that I am using aggregate consumption for the whole economy (country). It could be the case that for smaller divisions such as regions or villages, there could be risk sharing, as it is more likely in this case.

Now note that when we compare mean and median  $\beta$  by income group: the richer are individuals the higher is the coefficient. This means that the richer the individual, the more important is individual income to determine consumption. Hence, it is more likely to see risk sharing the poorer households.

On the other hand, analysing the results of the mean and median income by groups of  $\beta$ : for individuals with higher  $\beta$ , the income is also higher. So people that have less risk sharing, they have higher income, that matches the aforementioned results.

The coefficients of  $\beta$  and  $\phi$  obtained in 3 are somehow similar to the mean and median results of the coefficients obtained in 1. Nonetheless, the coefficient  $\beta$  is stronger. So there is no risk sharing.

Now we are interested in comparing urban versus rural areas. With respect to the  $\beta$  coefficients, they seem to be higher for rural than for urban areas. This would mean that there is less risk sharing, therefore income has stronger effects in consumption in rural areas. This result is kind of weird as we found that the higher the income, the less risk sharing. We can also see that urban areas has a higher income, so one would expect that the risk sharing would be higher in urban areas, but it is the opposite. But it could be the case that the composition or specific characteristics of the communities of urban areas allow the

individuals to be more risk sharing and for the existence of redistribution, so that income will not be so influential in consumption.

Now, coefficients  $\phi$  are close to zero or negative in both cases. Which still means that there is no risk sharing. As explained before, if the analysis is not done at a country level but at a more local level, it could be the case of the presence of the phenomena.

Now, when studying the mean and medians  $\beta_i$  by income group: as shown before the richer the individuals the higher the  $\beta$ . As mentioned before, this is a weird result comparing to the case that the  $\beta$  is higher for the rural areas. Moreover, when looking at the mean and median income by groups of  $\beta$ : For those individuals with higher coefficient (less risk sharing) the income is also higher.

Finally, tables 8 and 12 show similar results, but the effect of  $\beta$  is smaller in urban areas. As mentioned before, this result is inconsistent to the fact that the average income is higher in rural areas. So this might be explained by specific characteristics of the communities inside an specific area (urban/rural) that would allow for different risk sharing results.

## 2 Figures

	Mean	Median
$\beta_i$	0.046	0.042
$\phi_i$	$-1.024e^{-6}$	$-5.91e^{-8}$

Table 1: Mean and medians  $\beta_i$  and  $\phi_i$

Group	Mean	Median
1st	-0.017	0.223
2nd	0.037	0.388
3rd	0.800	0.453
4th	0.060	0.050
5th	-0.189	0.050

Table 2: Mean and medians  $\beta_i$  by income group

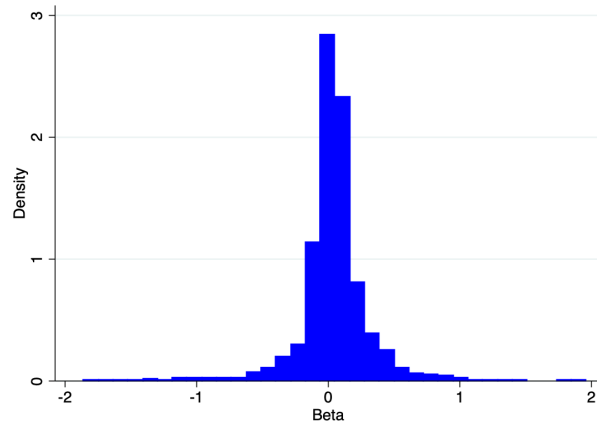


Figure 1: Histogram of  $\beta$  across households

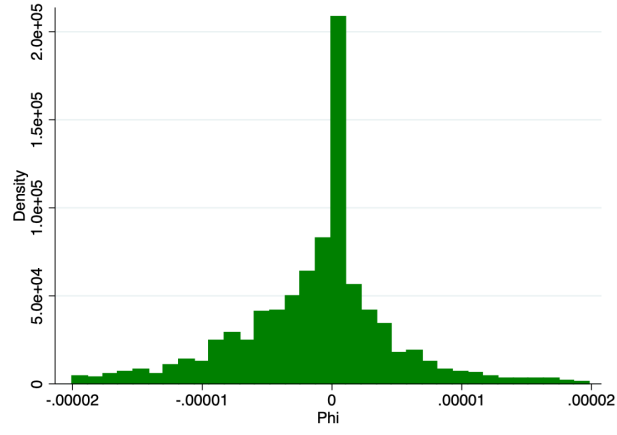


Figure 2: Histogram of  $\phi$  across households

Group	Mean	Median
1st	7.362	7.608
2nd	7.056	7.404
3rd	7.201	7.515
4th	7.446	7.619
5th	7.132	7.628

Table 3: Mean and medians income by  $\beta$  group

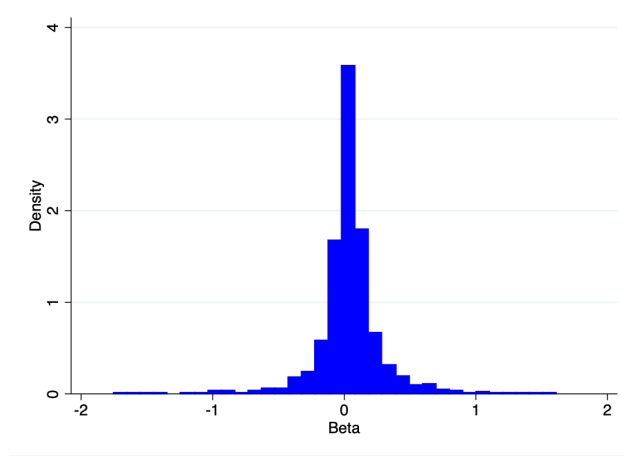


Figure 3: Rural: Histogram of  $\beta$  across households

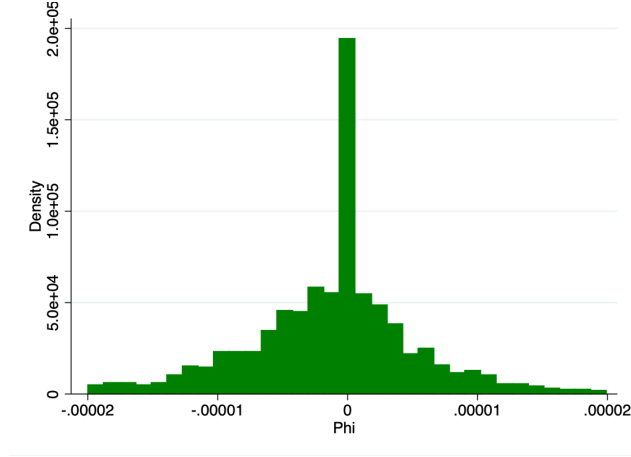


Figure 4: Rural: Histogram of  $\phi$  across households

Statistic	$\Delta \log c_{i,t}$
$\beta$	0.055***
$se(\beta)$	0.002
$\phi$	$-1.93e^{-6}$ ***
$se(\phi)$	$2.09e^{-7}$
$R^2$	0.064
Obs	14475

Table 4: Mean and medians income by  $\beta$  group

	Mean	Median
$\beta_i$	0.043	0.041
$\phi_i$	$-1.09e^{-6}$	$-1.56e^{-19}$

Table 5: Rural: Mean and medians  $\beta_i$  and  $\phi_i$

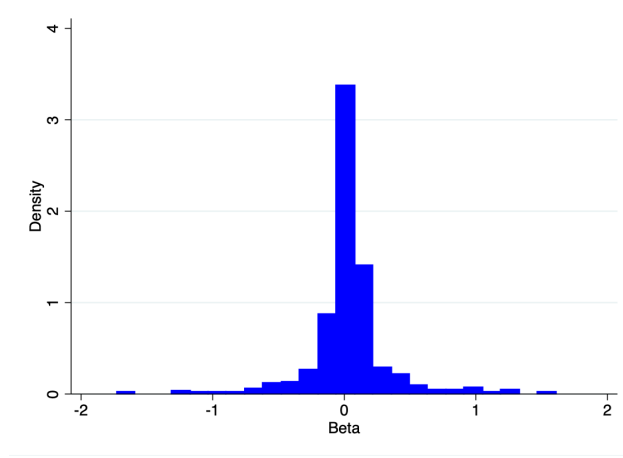


Figure 5: Urban: Histogram of  $\beta$  across households

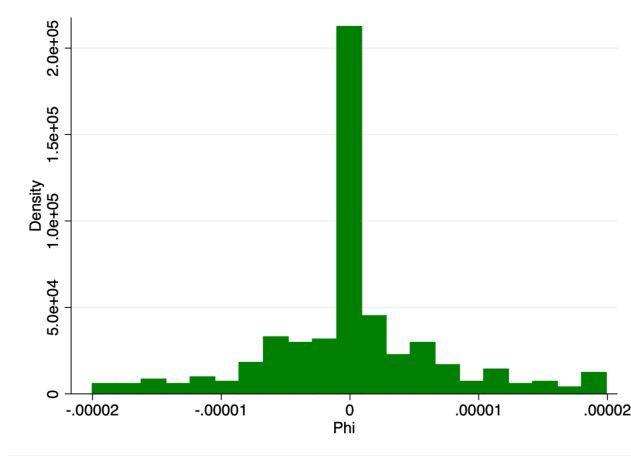


Figure 6: Urban: Histogram of  $\phi$  across households

Group	Mean	Median
1st	0.057	0.021
2nd	0.039	0.028
3rd	0.034	0.040
4th	0.070	0.056
5th	-0.060	0.050

Table 6: Rural: Mean and medians  $\beta_i$  by income group

Group	Mean	Median
1st	7.286	7.598
2nd	7.000	7.306
3rd	7.171	7.521
4th	7.362	7.608
5th	7.097	7.604

Table 7: Rural: Mean and medians income by  $\beta$  group

Statistic	$\Delta \log c_{i,t}$
$\beta$	0.047***
$se(\beta)$	0.002
$\phi$	$-2.24e^{-6}$ ***
$se(\phi)$	$2.82e^{-7}$
$R^2$	0.056
Obs	11195

Table 8: Rural: Mean and medians income by  $\beta$  group

	Mean	Median
$\beta_i$	0.035	0.025
$\phi_i$	$1.56e^{-7}$	0

Table 9: Urban: Mean and medians  $\beta_i$  and  $\phi_i$

Group	Mean	Median
1st	-0.059	0.027
2nd	0.007	0.025
3rd	0.069	0.033
4th	0.058	0.019
5th	-0.013	0.020

Table 10: Urban: Mean and medians  $\beta_i$  by income group

Group	Mean	Median
1st	7.784	7.911
2nd	7.275	7.534
3rd	7.006	7.391
4th	7.514	7.616
5th	7.388	7.750

Table 11: Urban: Mean and medians income by  $\beta$  group

Statistic	$\Delta \log c_{i,t}$
$\beta$	0.030***
$se(\beta)$	0.003
$\phi$	$-8.06e^{-6}$
$se(\phi)$	$1.82e^{-6}$
$R^2$	0.029
Obs	3075

Table 12: Urban: Mean and medians income by  $\beta$  group