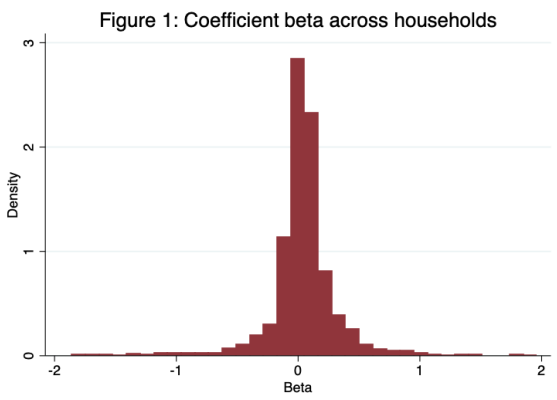
Marina Bosque Mercader
March 2019

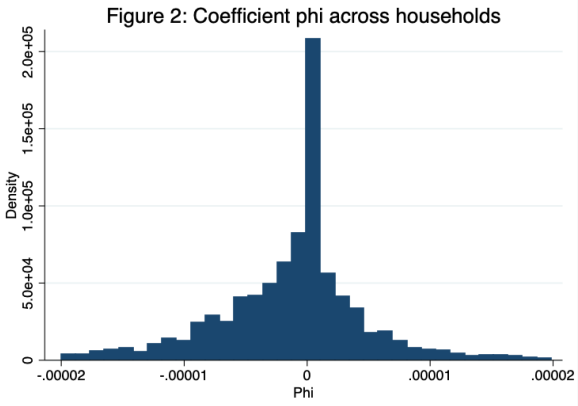
Development Economics – HA3

Question 1 - Consumption Insurance Tests

Part 1

Figure 1 and 2 show the distribution of beta and phi across households. Remember that beta and phi are the random coefficients after regressing the difference of individual log-consumption on the differences of individual log-income and log-aggregate consumption (of all the country) for each individual, respectively.





The following table reports the mean and the median of beta and phi across households of the estimates.

	Mean	Median
Beta	0.0486	0.0427
Phi	$-1.43e^{-06}$	$-1.10e^{-07}$

In the table and figures, it can be observed that the mean and median for the change in the individual income (beta) are different than 0. Thus, changes in the individual income matter in order to explain changes in the individual level of consumption. On the other hand, it can be observed that the mean and median for the change in the aggregate consumption (phi) are close to 0. Therefore, it can be concluded that there is no risk-sharing.

Notice that if we had considered the aggregate consumption of the region (or any other smaller geographical area) instead of the country, we might have observed bigger coefficients for phi and smaller coefficients for beta. In that case, we would have concluded that there was risk-sharing, i.e. that changes in the aggregate consumption of the region are meaningful to explain the change in the individual consumption, while changes in individual income are not. Having risk-sharing would imply that there exists some kind of redistribution mechanism that allows individuals to be insured when they suffer an individual income shock.

Note: To me it is meaningless that the phis are negative.

Part 2

The following table reports the mean and the median of beta after dividing the households in five groups according to income.

Income group	Mean	Median
1	0.044	0.021
2	0.039	0.032
3	0.054	0.050
4	0.130	0.054
5	0.166	0.052

Notice that the higher is the income quintile, the higher is the coefficient beta, i.e. the richer is an individual, the more relevant are the changes in individual income in determining changes in individual consumption. This fact would be in line with having more risk-sharing among the poorer individuals.

The following table reports the mean and the median of (log) income after dividing the households in five groups according to the betas.

Beta group	Mean	Median
1	7.142	7.461
2	7.247	7.563
3	7.140	7.449
4	7.358	7.621
5	7.311	7.698

Notice that the higher is the beta quintile, the higher is the individual income. It is likely that those individuals for which risk-sharing is less important usually rely more on individual income.

Part 3

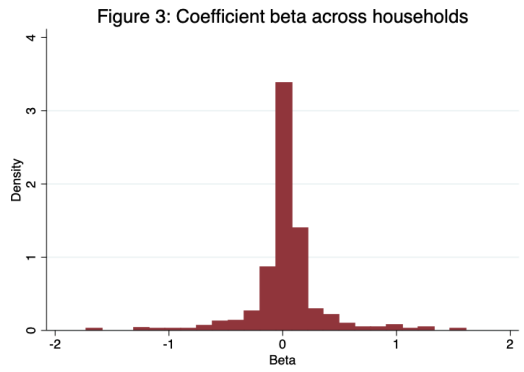
The following table reports the average estimated beta and phi (same across households). Remember that beta and phi are the average coefficients after regressing the difference of individual log-consumption on the differences of individual log-income and log-aggregate consumption, respectively.

Beta	0.0554
Phi	$-1.932e^{-06}$

In line with what was found in Part 1, beta is greater than 0 and phi is close to 0, meaning that there is no risk-sharing on average.

Part 4

Figure 3 and 4 show the distribution of beta and phi across households in urban areas.



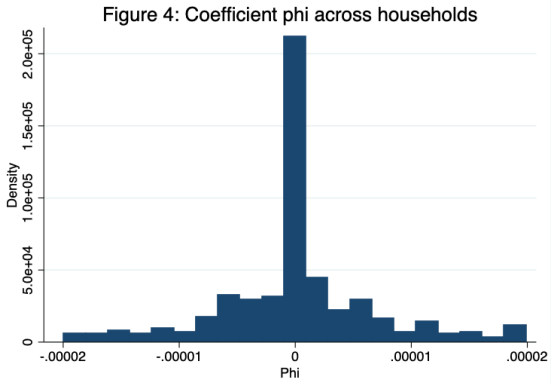
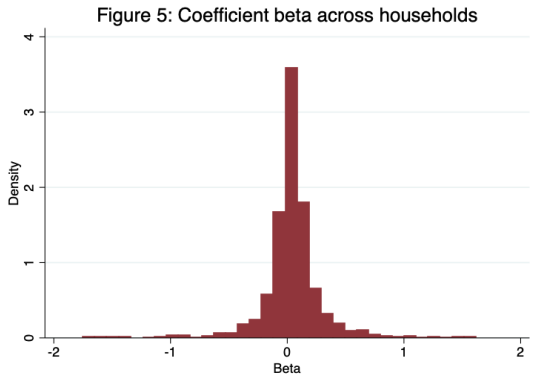
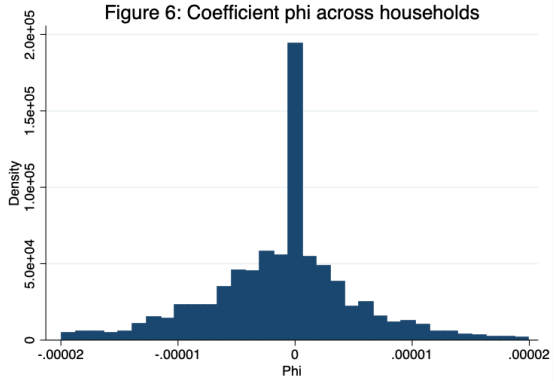


Figure 5 and 6 show the distribution of beta and phi across households in rural areas.





The following table reports the mean and the median of beta and phi across households of the estimates both for urban and rural areas.

	Urban		Rural	
	Mean	**Median**	**Mean**	**Median**
Beta	0.038	0.025	0.044	0.041
Phi	$-7.76e^{-07}$	0	$-1.46e^{-06}$	$-2.20e^{-08}$

From the table and figures, the conclusion is the same as in Part 1, there is no risk-sharing (betas are different than 0, while phis are close to 0). Notice that if one compares the beta coefficients of urban and rural areas, it seems that the variation in individual income is more meaningful in explaining individual consumption in rural than urban areas. On the other hand, it is not that clear in which of the two areas the coefficient of phi is closer to zero. Again, if we had considered the aggregate consumption of the region instead of the country, it might have been the case that the results obtained were more conclusive.

However, it would make sense to find that in rural areas the risk-sharing is more pronounced than in urban areas, i.e. the coefficient for phi should be bigger in the regressions for rural areas.

The following table reports the average estimated beta and phi both for urban and rural areas (same across households).

	Urban	Rural
Beta	0.030	0.047
Phi	$-8.058e^{-06}$	$-2.241e^{-06}$

Notice that the average results for beta and phi in urban and rural areas are in line with the numbers found when computing random coefficients and the conclusions reached in Part 3.

The following table reports the mean and the median of beta after dividing the households in five groups according to income both for urban and rural areas.

	Urban		Rural	
Income group	**Mean**	**Median**	**Mean**	**Median**
1	0.041	0.024	0.053	0.019
2	0.012	0.025	0.029	0.027
3	0.148	0.032	0.105	0.044
4	0.050	0.024	0.159	0.053
5	0.019	0.025	0.062	0.053

Except for the last of the income groups, notice that the higher is the income quintile, the higher is the coefficient beta, i.e. the richer is an individual, the more relevant are the changes in individual income in determining changes in individual consumption. This fact would be in line with having more risk-sharing among the poorer individuals. Additionally, it seems that risk-sharing is more pronounced in urban than rural areas for any income level, since the value of the mentioned effects are higher in rural areas.

The following table reports the mean and the median of (log) income after dividing the households in five groups according to the betas both for urban and rural areas.

	Urban		Rural	
Beta group	**Mean**	**Median**	**Mean**	**Median**
1	7.738	7.837	7.134	7.511
2	7.212	7.581	7.042	7.370
3	6.937	7.281	7.156	7.477
4	7.559	7.624	7.322	7.595
5	7.520	7.822	7.262	7.683

Notice that the patterns are not totally clear when we look at the mean and median values, particularly for urban areas. In general (specially for rural areas and with the exception of the first beta group), notice that the higher is the beta quintile, the higher is the individual income. It is likely that those individuals for which risk-sharing is less important usually rely more on individual income. This relationship seems to be stronger in urban than in rural areas, since the (log) income is higher in the former.

Again, contrary to the results obtained, I was expecting more risk-sharing in rural than in urban areas.