Development PS 3 Chenxu Fu

1 Question 1

1.1 Plot the histogram of β_i and ψ_i . Also report the mean and median across households of your estimates (notice that there is one β_i and ψ_i per household). Is full-risk shairng achieved? Discuss your results

	beta	psi
mean	.0539511	.4788154
p10	-1.086912	0
p50	.0484197	0
p90	1.303243	0
count	1715	1715
N	1715	1715

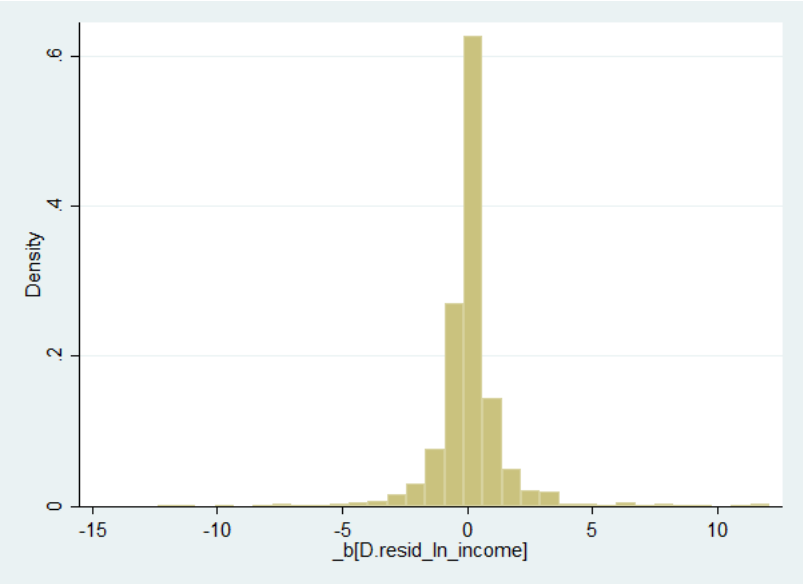

Figure 1: Histogram of beta

If the household is fully insured, then the beta should be zero as it means that any change in income would not be associated with any change in consumption. The mean of beta is around 0.054

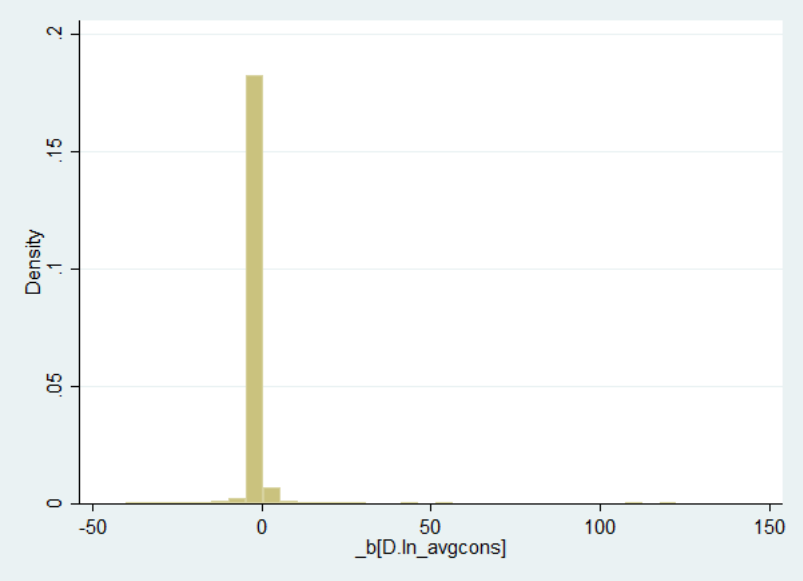

Figure 2: Histogram of psi

and the median is around 0.045. This suggests on average or the median household has achieved the insurance. Of course, on the 90th percentile, households are far away from achieving full risk sharing.

2 Qestion 2

2.1 For each household, compute the average household income across all waves Y_i.Rank individuals by income and define five groups of income from bottom 20% to richest 20%. Within each income group compute the mean and median β_i and discuss your results.

beta	income mean	income median
q1	1395.606	866.8132
q2	1419.052	914.234
q3	1394.362	819.9388
q5	1323.452	883.5974
q5	1441.623	884.8019

As beta increases, the mean and median income decrease, although with some discrepancy in between. This could be due to the limited sample size in the data as the panel is not balanced and with duplicates of households, information is lost. This shows that the less insured the household is, the less income he has.

2.2 Rank individuals by their estimated i and create five groups of individuals from the most insured bottom 20% to the least insured top 20% farthest way from zeror). Within each group of s compute average income across groups. Discuss your results.

income	beta mean	beta median
q1	.9206342	.3683035
q2	.7607164	.3757035
q3	.9481784	.4108189
q5	.8967081	.4166365
q5	.7833591	.3956877

As income increases, the mean and median beta decrease, although with some discrepancy in between. This could be due to the limited sample size in the data as the panel is not balanced and with duplicates of households, information is lost. This shows that the less income household has, the less consumption issued he would be.

3 Question 3

3.1 Modify the previous test in (1) assuming that the coefficients are the same across households, so that household variation helps pin down the estimates

	beta	psi
coefficient	0.0725048	0.4089458
sd	0.0066132	0.0943795

With the assumption that beta and psi are the same across households, it seems that people are more consumption insured as the beta obtained is close to zero but are still not fully insured. Also, psi is closer to one which is expected if households are fully insured.

4 Question 4

4.1 Redo rural

	beta	psi
mean	-.1803529	-1.541512
p10	-.720977	0
p50	.004664	0
p90	.9556929	0
count	252	252

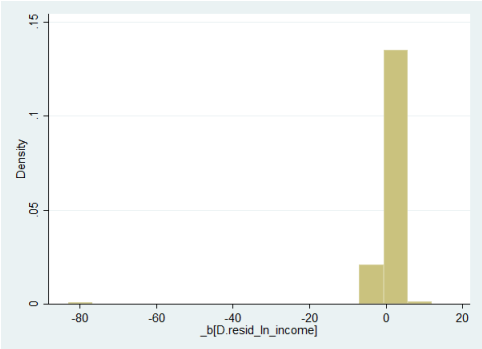

Figure 3: Histogram of beta (rural)

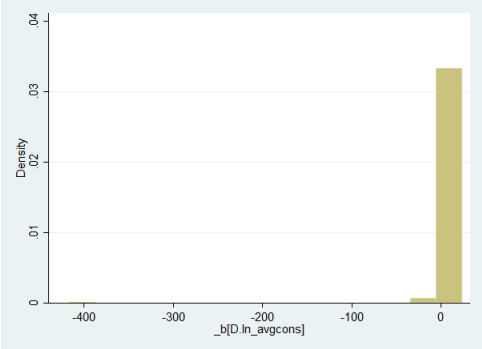

Figure 4: Histogram of psi (rural)

	beta	psi
coefficient	.0824296	.103472
sd	.0135959	.1419473

4.2 Redo urban

	beta	psi
mean	.1037984	.648119
p10	-.9643415	0
p50	.0163763	0
p90	1.108978	0
count	252	252

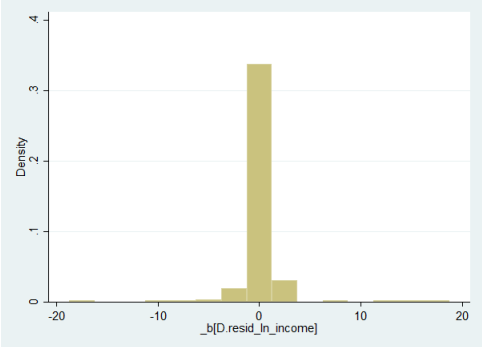

Figure 5: Histogram of beta (urban)

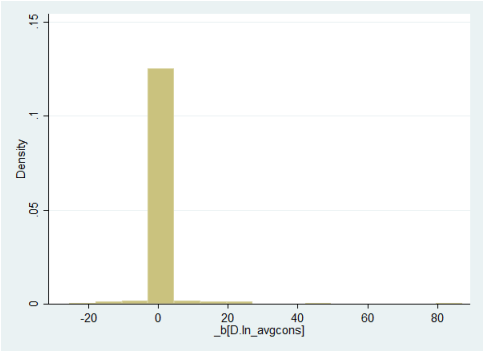

Figure 6: Histogram of psi (urban)

	beta	psi
coefficient	.0831193	.2191084
sd	.0135871	.2259338