Development Economics, Homework 1 - CEMFI

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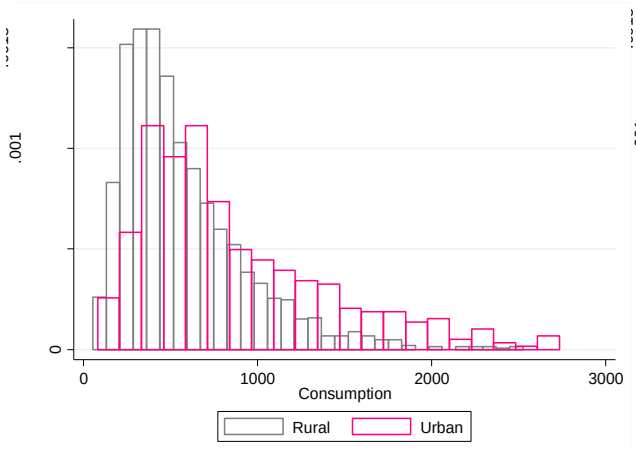
Question 1: Inequality in consumption, income and wealth (CIW).

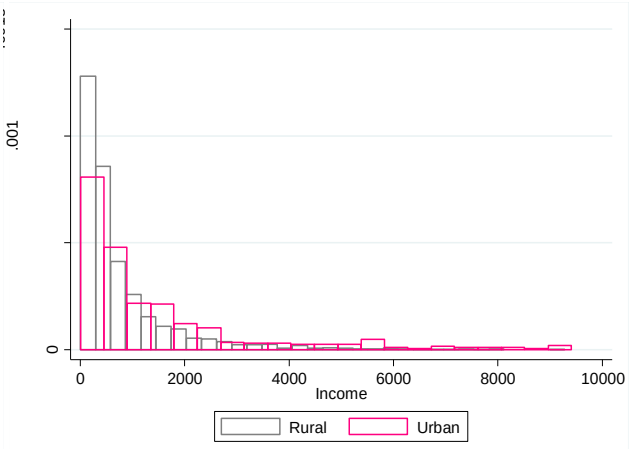
1. Report average CIW per household separately for rural and urban areas.

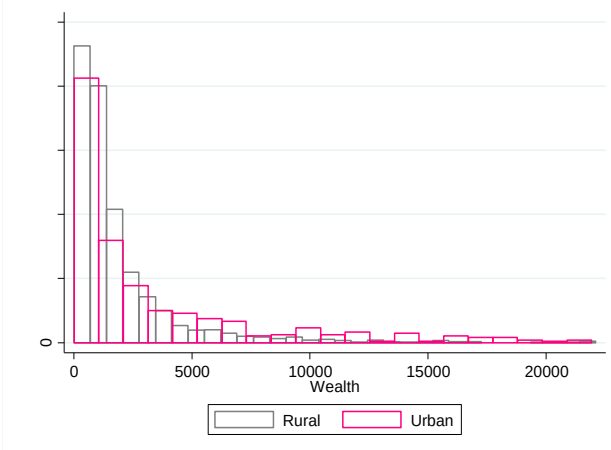
As the variables are in Uganda Currency to make it easier to interpret and compere, using the exchange rate of 2013 I convert it to US-Dollars. From the table it is easy to see that the three variables are higher in the Urban than Rural area. Moreover, the differences between Urban and Rural are more pronounced in wealth and income than in consumption. These results are in line with the ones presented by Malawi.

	Consumption	Income	Wealth
Urban	1.109,47	5.817,55	7.198,33
Rural	634,43	1.409,78	2.568,94

2. CIW inequality: (1) Show histogram for CIW separately for rural and urban areas; (2) Report the variance of logs for CIW separately for rural and urban areas.







From the histogram, it seems that consumption, income and wealth are higher in urban areas than in rural areas. In the rural areas, a higher proportion of the density is accumulated at the bottom of the distribution compared to the urban area.

Looking at the table below, which present the variance of the logs for Consumption, Income and Wealth, we can see that the dispersion in Consumption is lower than in Income and Wealth. Moreover, comparing with the results presented in class, we can see that Income inequality is higher than in the United States and in Malawi. However, wealth inequality seems to be smaller in Uganda relative to United State and Malawi.

Variance of logs for CIW			
	Consumption	Income	Wealth
Urban	0,57	2,34	2,30
Rural	0,39	1,55	1,20

3. Describe the joint cross-sectional behavior of CIW

Both Rural and Urban areas:

	consum~n	income	wealth
consumption	1.0000		
income	0.4949	1.0000	
wealth	0.5717	0.3362	1.0000

Rural areas:

	consum~n	income	wealth
consumption	1.0000		
income	0.4163	1.0000	
wealth	0.4865	0.2710	1.0000

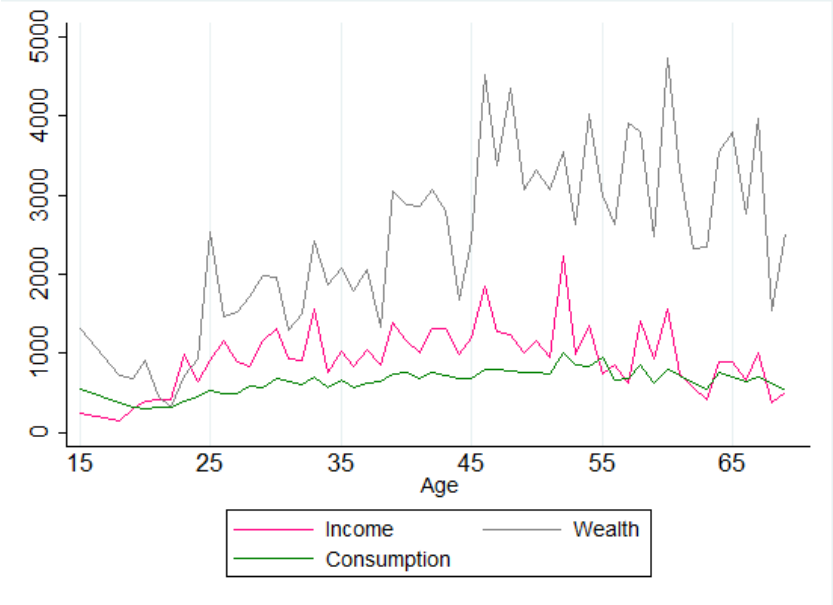
Urban areas:

	consum~n	income	wealth
consumption	1.0000		
income	0.5288	1.0000	
wealth	0.6097	0.3484	1.0000

In the total area, the correlation between consumption and income is smaller than in U.S. (0.68), but very similar to Malawi. Moreover, the correlation between income and wealth is also smaller than in the U.S (0.57). As discussed in class, one possible explanation why the income is not transmitted into wealth could be due to lack of markets. Other possible reason is that there is high level of redistribution between people.

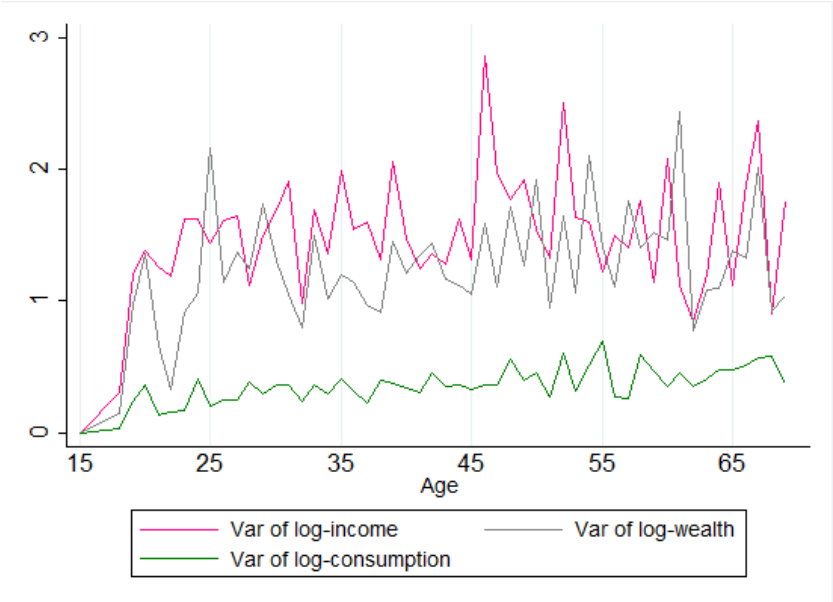
4. Describe the CIW level, inequality, and covariances over the lifecycle.

(1) CIW level over the lifecycle:



In level terms, consumption over the lifecycle seems to be relatively constant, while wealth presents an increasing trend, which represent an accumulation of wealth over time. Notice, however, that this trend is much lower than the one presented by United States.

(2) CIW inequality over the lifecycle:



Income and Wealth inequality seem to jump after the age of 20. This makes sense as in the early life there is not much difference in terms of earnings and once an individual starts to develop their career difference in income and wealth between individuals is more pronounced.

5. Rank your households by income. Discuss the behavior of the top and bottom of the consumption and wealth distributions conditional on income.

(a) Consumption conditional on income

	Percentiles	Smallest		
1%	9306.559	317.7108		
5%	45838.29	470.2568		
10%	95996.97	650.1443	Obs	2,488
25%	252665.1	808.9479	Sum of Wgt.	2,488
50%	601194.6		Mean	681836.3
		Largest	Std. Dev.	487276.2
75%	1058541	1816668		
90%	1407864	1817390	Variance	2.37e+11
95%	1580547	1819493	Skewness	.4777863
99%	1767081	1820820	Kurtosis	2.150762

(b) Wealth conditional on income

	Percentiles	Smallest		
1%	57978.54	724.5397		
5%	175631	927.7012		
10%	344065.5	1433.774	Obs	2,488
25%	1020849	1595.23	Sum of Wgt.	2,488
50%	2389410		Mean	2931434
		Largest	Std. Dev.	2308218
75%	4659623	9414461		
90%	6294183	9416598	Variance	5.33e+12
95%	7680454	9421698	Skewness	.7545687
99%	8968676	9427529	Kurtosis	2.706886

From table (a) and (b), we can see that the difference between the top and bottom of the distributions conditional on income is much higher for consumption than for wealth. This is in line with the previous results.

Question 2. Inequality in Labor Supply

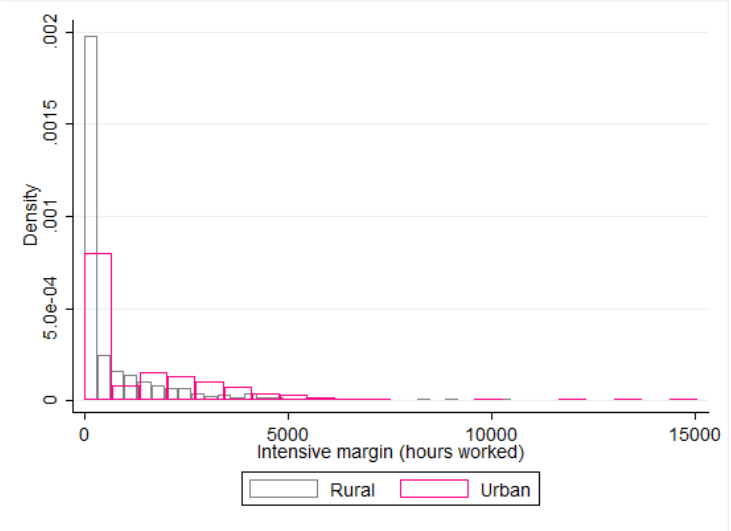
1. Redo Question 1 for intensive and extensive margins of labor supply.

(Part 1) Average labor supply (hours worked in 2013) for rural and urban areas:

Urban and Rural areas: 784.38 - Urban area: 1338.86 - Rural area: 629.77

The average labor supply in the Urban areas is twice the size that the one of Rural areas.

(Part 2) **Histogram: intensive margins of labor supply**

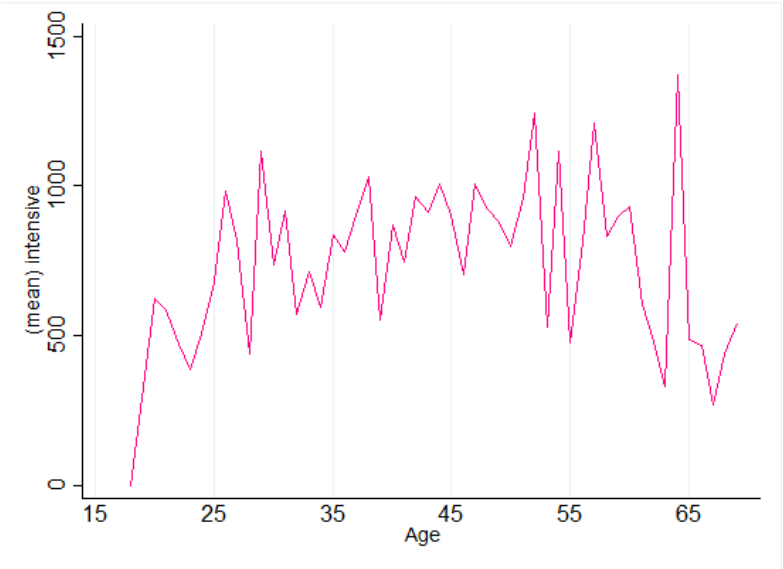


(Part 3) Variance of logs for labor supply for rural and urban areas:

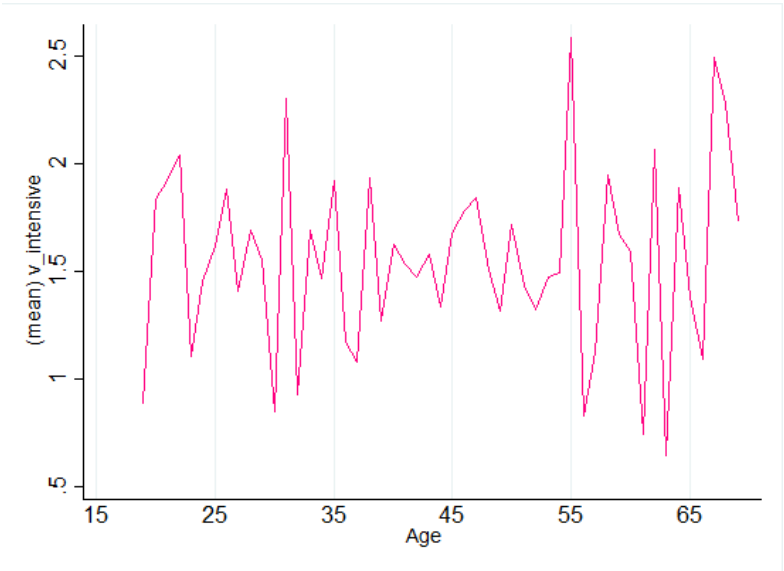
Urban and Rural areas: 1.52 - Urban area: 1.81 - Rural area: 1.41

Even though there are not big difference across Urban and Rural areas, the dispersion is higher in the Urban area.

(Part 4) **Labor supple level over the lifecycle**



Labor supply Inequality over the lifecycle



The labor supple level over the lifecycle graph, seem to present an inverse U-form, which suggest that at the beginning and end of the lifecycle the hours worked are lower than in the middle.

2. Redo separately for women and men, and by education groups (less than primary school completed, primary school completed, and secondary school completed or higher).

(Part 1)

Statistics for Men:

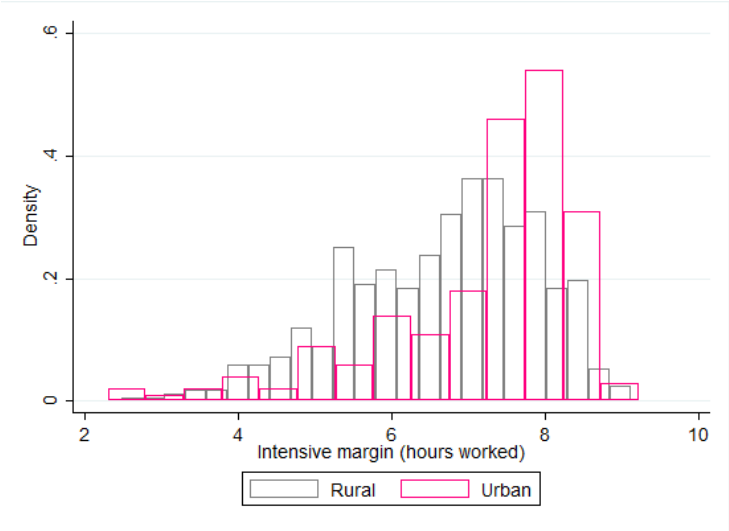
Urban and Rural areas: 799.07 - Urban area: 1220.46 - Rural area: 683.22

Statistics for Women:

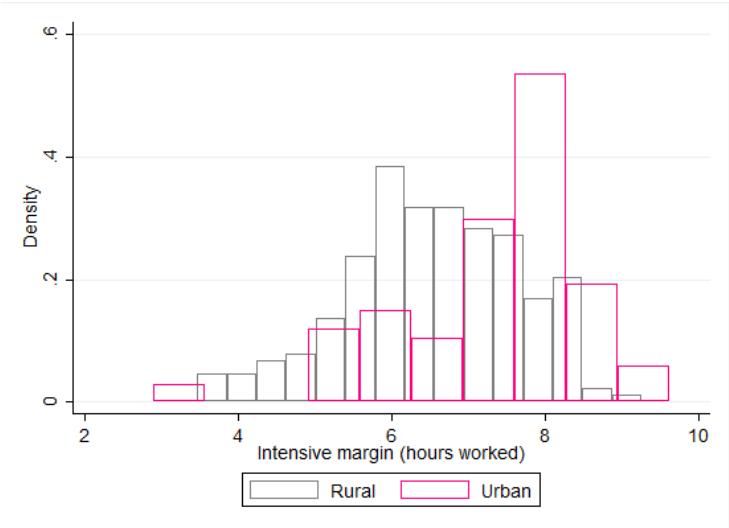
Urban and Rural areas: 749.95 - Urban area: 1606.30 - Rural area: 503.29

In Rural areas the hours worked are higher for Men, while in the Urban areas it is higher for women. This could be due to the different type of works available. However, these results are a bit weird.

(Part 2) **Histogram for Man:**



Histogram for Women:



(Part 3) Variance of logs for labor supply for rural and urban areas and gender.

Statistics for Men:

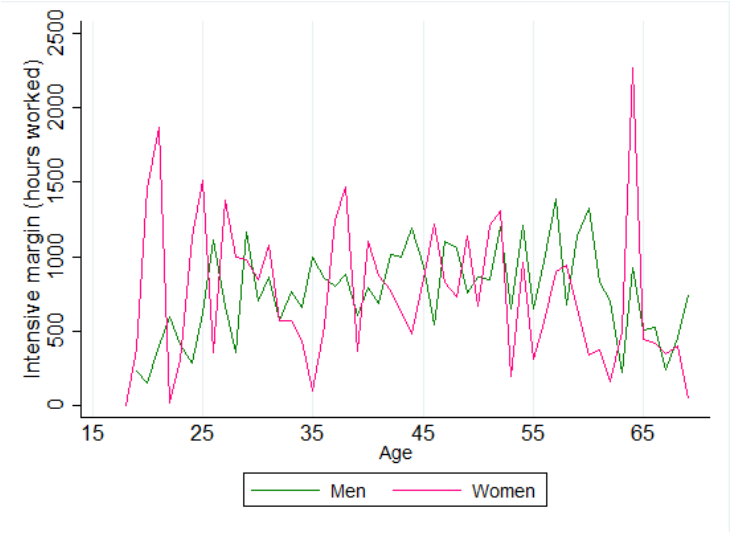
Urban and Rural areas: 1.56 - Urban area: 1.83 - Rural area: 1.47

Statistics for Women:

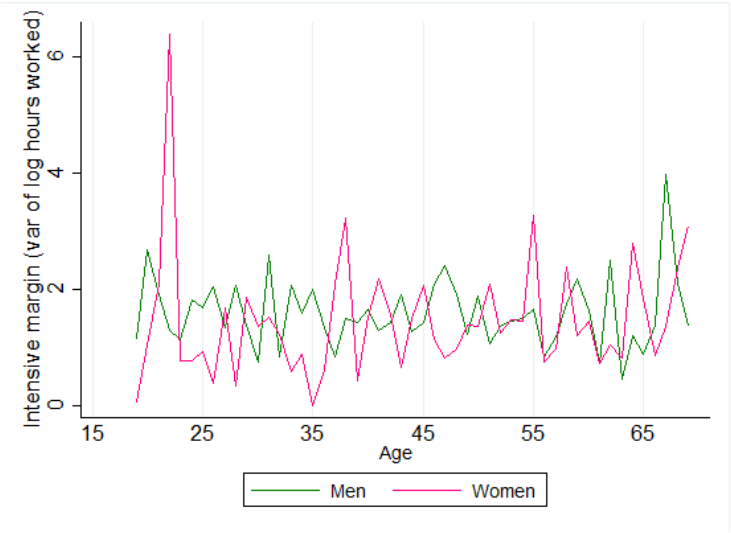
Urban and Rural areas: 1.41 - Urban area: 1.79 - Rural area: 1.25

(Part 4)

Labor supply Level over the lifecycle by gender



Labor supply Inequality over the lifecycle by gender



Now I present the results by education level

Note that education level:

1= less than primary school
2= less than high school
3= high school or more

(Part 1)

Statistics for less than primary school:

Urban and Rural areas: 592.62 - Urban area: 987.77 - Rural area: 531.51

Statistics for less than high school:

Urban and Rural areas: 705.07 - Urban area: 1143.58 - Rural area: 570.24

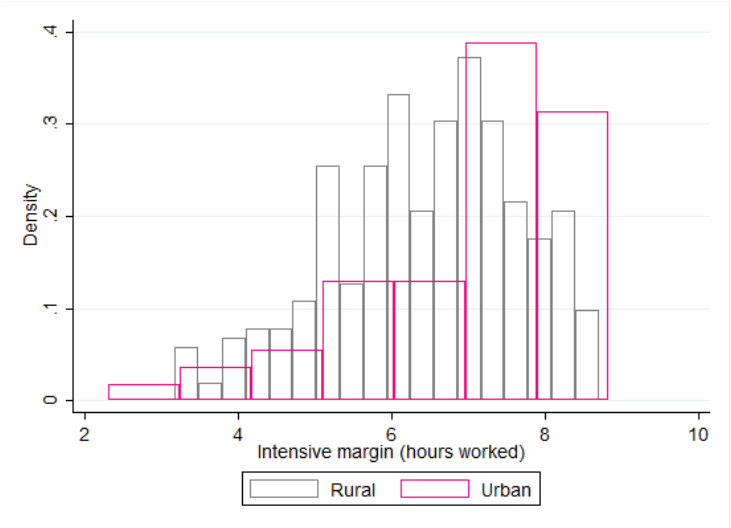
Statistics for high school or more:

Urban and Rural areas: 1143.58 - Urban area: 1199.29 - Rural area: 1477.23

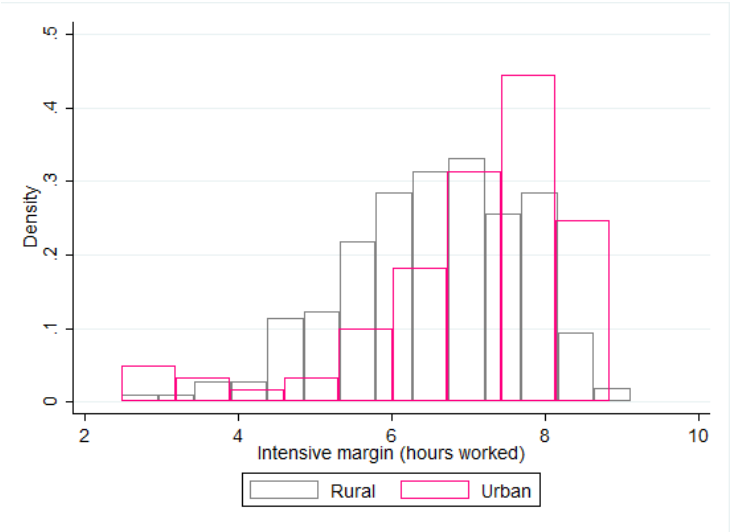
For higher level of education, the average working hours is higher. Moreover, for low and middle level of education, the hours worked are higher in the Urban areas than in the Rural areas. The opposite patter seems to appear in the high education level, for which the Rural areas present higher hours worked respect to the Urban areas.

(Part 2)

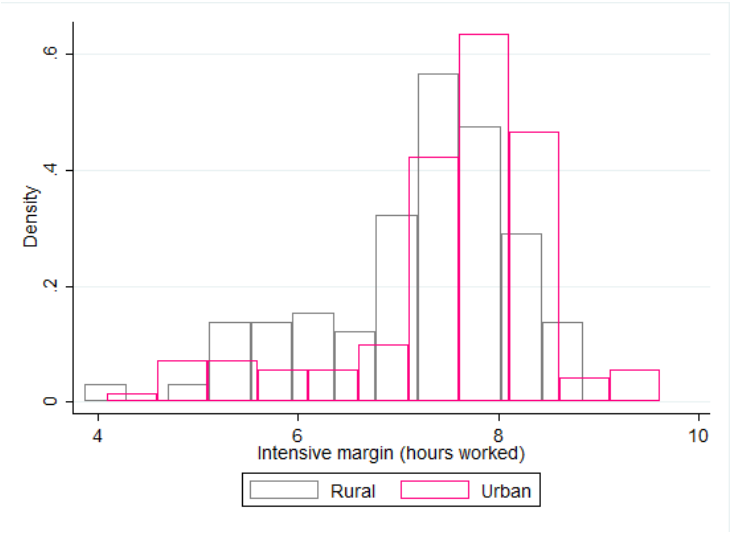
Histogram for Low education level:



Histogram for Middle education level:



Histogram for High education level:



The three histograms show a similar pattern, where the Urban areas seem to accumulate more density at the top distribution relative to the Rural areas.

(Part 3) Variance of logs for labor supply for rural and urban areas and education level

Statistics for Low education level:

Urban and Rural areas: 1.55 - Urban area: 2.24 - Rural area: 1.44

Statistics for Middle education level:

Urban and Rural areas: 1.52 - Urban area: 1.98 - Rural area: 1.35

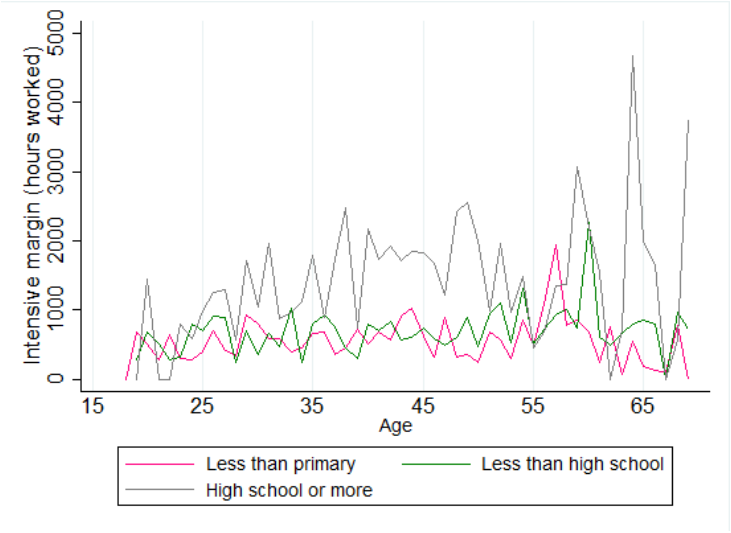
Statistics for High education level:

Urban and Rural areas: 0.96 - Urban area: 1.03 - Rural area: 0.91

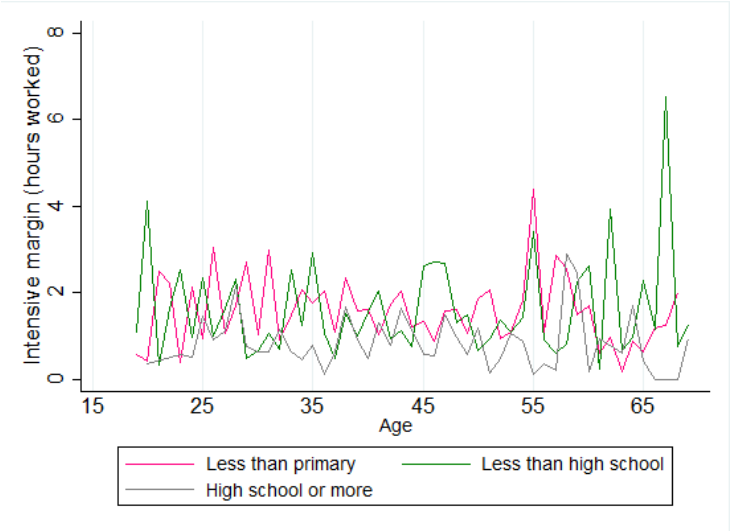
The lower the education level, the higher is the dispersion in hours worked.

(Part 4)

Labor supply Level over the lifecycle by education level

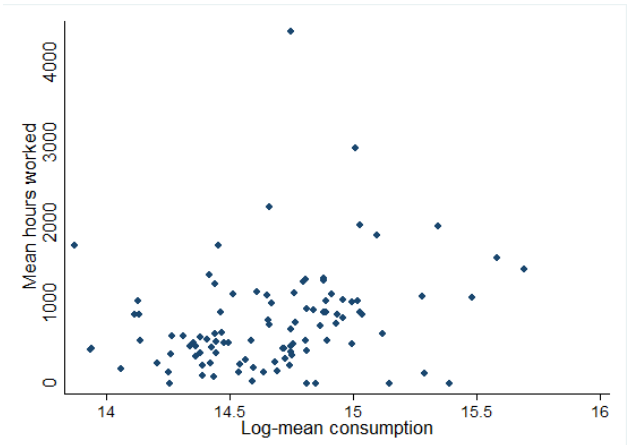


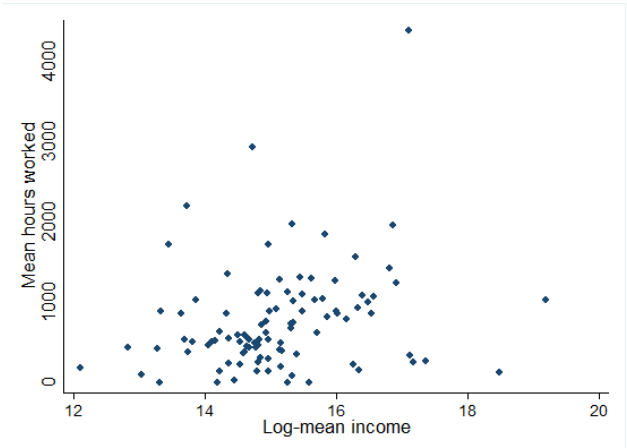
Labor supply inequality over the lifecycle by education level

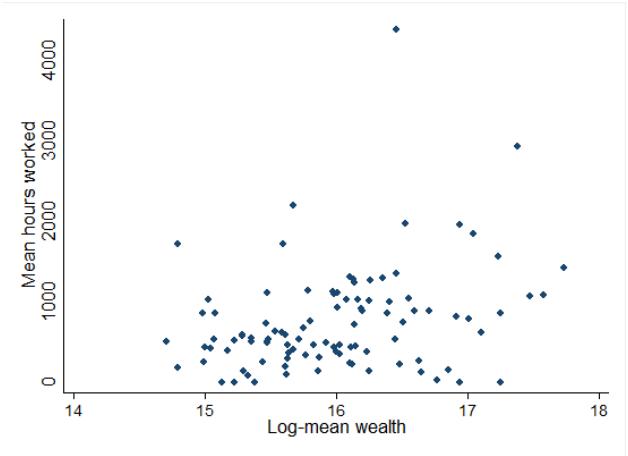


Question 3. Inequality Across Space

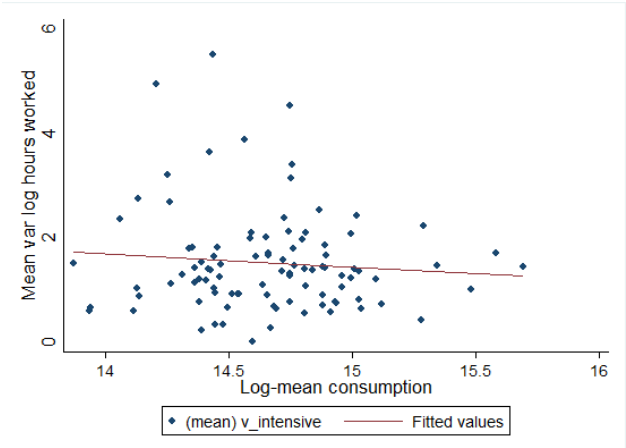
1. Plot the level of CIW and labor supply by zone (or district) against the level of household income by zone.

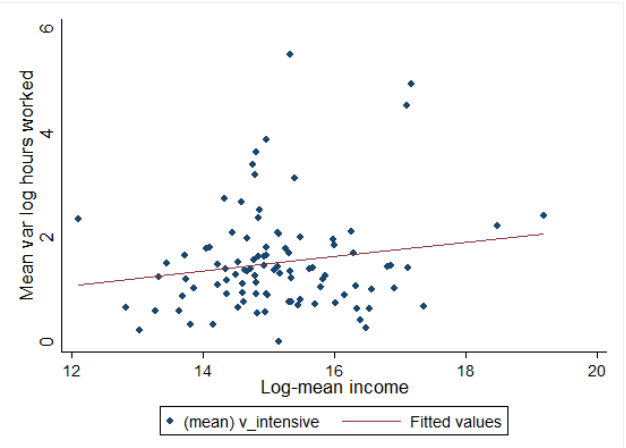


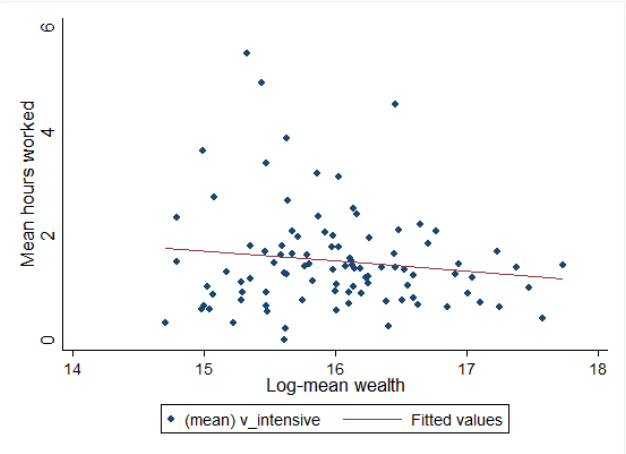




2. Plot the inequality of CIW and labor supply by zone (or district) against the level of household income by zone.







3. Plot the covariances of CIW and labor supply by zone (or district) against the level of household income by zone.