Development

Problem Set 1
January 24, 2019

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Important note

NOTE: The dataset im using in the first part is not reasonable and for sure that there are several mistakes. But because of the time restriction i am going to use this first dataset. Then if i have time i will apply it with the new dataset later. Just in case i submit both final dataset i got.

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

1.1 Report CIW

	urban consumption	urban wealth	urban income
count	490.00	511.00	511.00
mean	3,111.98	4,619,071.07	468,835.10
std	3,044.69	26,137,913.67	1,500,052.30
min	106.11	0	-2,349,091.30
25%	1,442.85	0	0
50%	2,240.77	0	0
75%	3,670.85	0	361,380.67
max	38,365.77	506,520,000.00	18,796,201.70

Table 1: CIW statistics for urban areas.

	rural consumption	rural wealth	rural income
count	516.00	546.00	546.00
mean	1,517.12	2,877,199.09	149,588.75
std	2,122.56	10,375,879.60	884,516.79
min	155.02	0	-6,383.63
25%	713.25	0	0
50%	1,091.62	0	0
75%	1,846.76	418,750.00	43,549.37
max	42,285.33	104,300,000.00	14,783,543.84

Table 2: CIW statistics for urban areas.

Variable	Obs	Mean	Std. Dev.	Min	Max
hh_cons~2013	13,206	2578.58	2275.206	225.7673	55720.06
annual_con~3	13,206	377.8322	557.9681	36.96328	55720.06
hh_nond~2013	13,206	692.1892	1211.537	0	36599.22
hh_dura~2013	13,024	451.8926	848.6751	.2117893	16614.87
hh_ttin~2013	13,206	1190.366	4588.024	-25923.01	148167.8
annual_inc~3	13,206	183.1431	800.1134	-8641.002	29633.55
hh_labouri~3	13,206	352.1108	1041.517	0	21348.36
hh_nona~2013	13,206	1149.55	4491.19	-25923.01	148167.8

Figure 1: Rural

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. sum $list01 if urban==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
hh_cons~2013	4,190	5050.527	4346.2	183.0706	55458.07
annual_con~3	4,190	805.6955	772.9444	104.5745	13864.52
hh_nond~2013	4,190	1906.356	2333.613	0	34299.7
hh_dura~2013	4,161	1150.165	1654.8	.6353678	15913.84
hh_ttin~2013	4,190	5447.514	12803.67	-30802.63	169567
annual_inc~3	4,190	920.8801	3044.274	-9911.737	84783.48
hh_labouri~3	4,190	1393.81	2762.306	0	27498.72
hh_nona~2013	4,190	5049.876	12478.7	-30802.63	169567

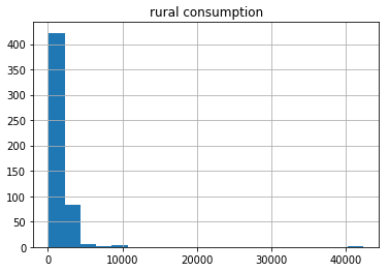
Figure 2: Urban

Table1 and Table2 show us that the average income is higher than the average consumption in Uganda. Moreover, the average CIW in urban double the rural CIW, urban levels are about 100% higher. However, standard deviations are also much higher in the cities. More level, but more volatility across households. Figure1 and 2 I report the result based on the new final dataset which shows us that the average urban Household income is higher than the rural average income and also the standard deviations are higher in urban. The similar result as before.

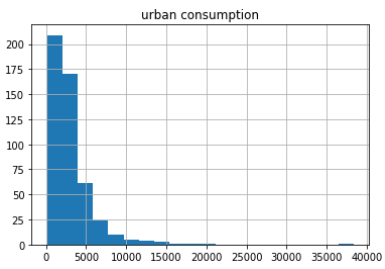
1.2 CIW Inequality

First Part based on the Old final dataset we computed which makes no sense for me because most of them are zeros after i merge the dataset. So i will show it in the second part based on the new dataset.

First part



(a) Rural



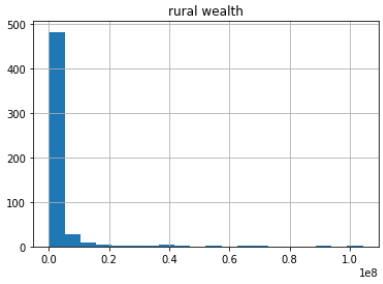
(b) Urban

Figure 3: Rural & Urban consumption

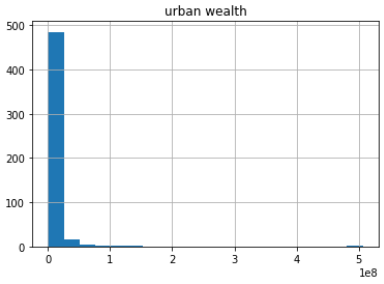
	Consumption	Wealth	Income
Rural	0.5026	46.97	29.33
Urban	0.5502	39.35	41.61

Table 3: CIW variances rural/urban

A common feature rural-urban is that the distribution is very unequal: just a tiny minority with high consumption, wealth and income.

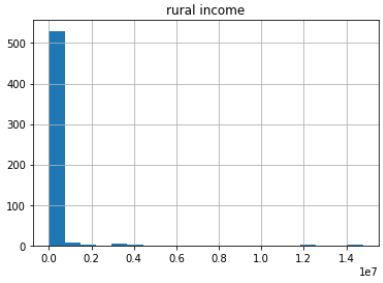


(a) Rural

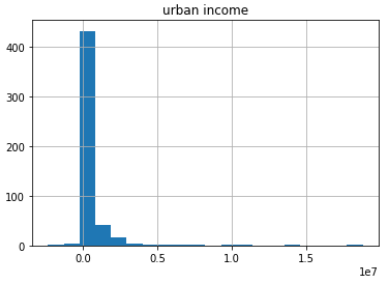


(b) Urban

Figure 4: Rural & Urban wealth



(a) Rural

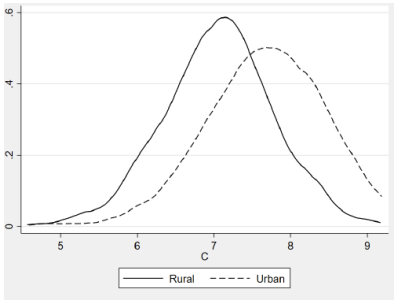


(b) Urban

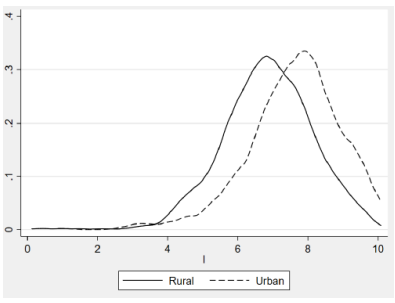
Figure 5: Rural & Urban income

Second part

We will show it based on the new dataset.

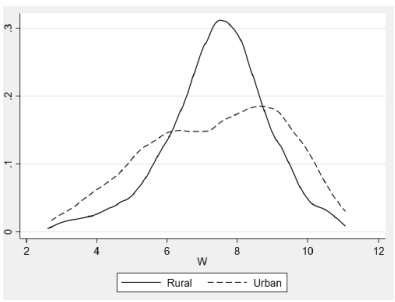


(a) Consumption



(b) Income

Figure 6: CIW Inequality



The result is more reasonable for me now and we can see that in urban the average level of consumption and income are higher than the rural. Moreover, the variance of CIW are all higher in urban, especially the dispersion of wealth is very high in city.

Joint Cross-sectional behavior of CIW

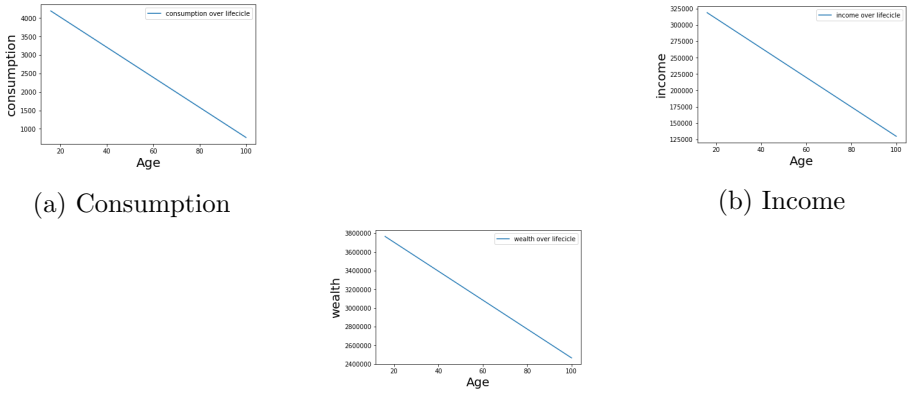
The joint cross-sectional behavior shows the similar result we pointed out before: there is a huge inequality. The correlation between income and wealth is significant high but the correlation between consumption and wealth less correlated.(Don't have time to check the new dataset)

(a) Rural (b) Urban

Figure 7: Rural & Urban CIW cross-section.

Life-cycle profiles

We have a problem with the old dataset.



(a) Consumption (b) Income

(c) Wealth

Figure 8: Life-cycle profiles

As we know that in developed economies, the life-cycle profile of Wealth should have positive decreasing slope because the young have less wealth than the old. However, I get the opposite pattern for the aggregates using the old dataset (notice that the linearity comes from a polynomial interpolation). Consumption should be relatively flat compared to wealth and income but i get negative, so this results makes no sense for me. It would make sense to have almost flat profiles, but not negative profiles at least for consumption and income. I have to solve this latter.

Heterogeneous behavior

(a) Consumption

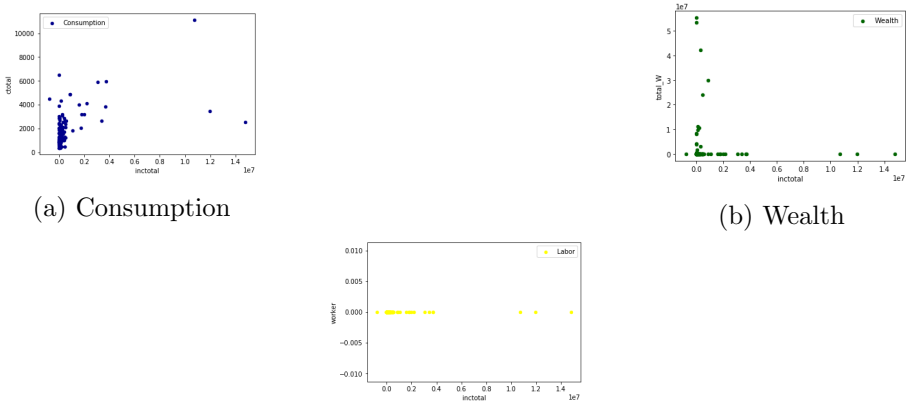
(b) Wealth

Figure 9: Heterogeneous behavior

The interpretation of these results is not clear (because of the problem with the data). The consumption is independent of income in the result!!!(No sense for me). Because We know that there is partial insurance and even the poorest agents can consume more than their relative income would set out.

A Inequality across region

A.1 Level of CIW against household income

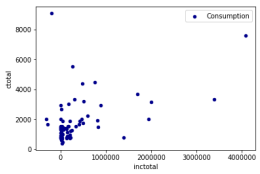


(a) Consumption

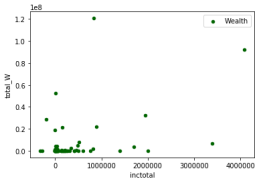
(b) Wealth

(c) Labor

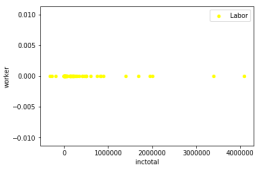
Figure 10: Region 2



(a) Consumption

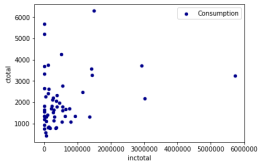


(b) Wealth

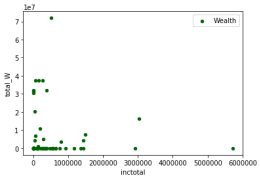


(c) Labor

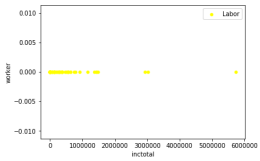
Figure 11: Region 3



(a) Consumption



(b) Wealth

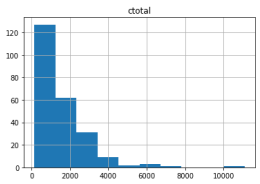


(c) Labor

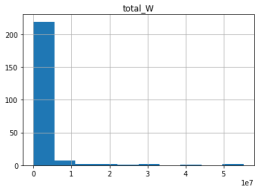
Figure 12: Region 4

The result show that consumption is increasing with income. The wealth is positive related with income in all of three areas.We can see that in region 4 shows a more clearly positive relation between consumption and income. However, we have a problem with the labor supply data, so the relation between labor supply and income is flat and i expect a positive relation between them.

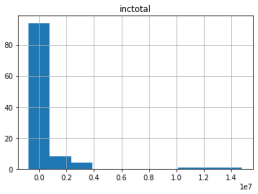
A.2 Inequality per region



(a) Consumption

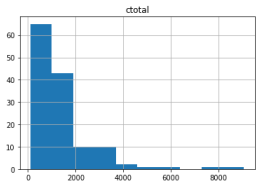


(b) Wealth

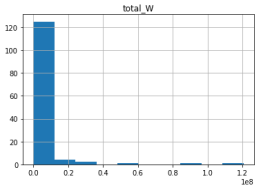


(c) Income

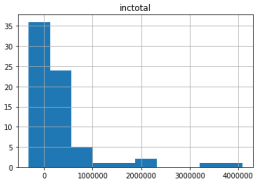
Figure 13: Region 2



(a) Consumption



(b) Wealth



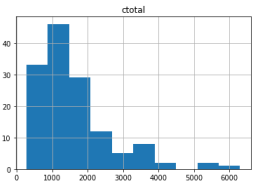
(c) Income

Figure 14: Region 3

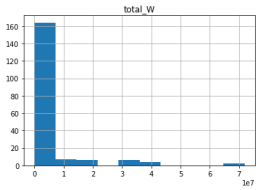
There are some relevant differences across regions. First, consumption is less unequally distributed in region 4. The income distribution is more egalitarian in region 3. The wealth distribution is the most unequal one, showing almost the same degree of inequality across regions.

A.3 Covariances by regions

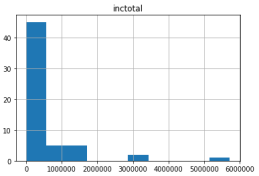
The covariance between wealth and income is negative(No sense for me the problem should be the way we build the aggregate data). Across regions, the covariance consumption-income is much higher in region 2 than in 3 and 4 but the opposite happens with the consumption-wealth covariance. It seems that in region 3 and 4 wealth is used as precautionary buffer to insure against income contingencies.



(a) Consumption



(b) Wealth



(c) Income

Figure 15: Region 4

	ctotal	inctotal	total_W	worker
ctotal	1,752,318.99	1,586,186,300.97	857,819,758.08	0.00
inctotal	1,586,186,300.97	4,605,449,080,916.98	-1,182,311,415,380.06	0.00
total_W	857,819,758.08	-1,182,311,415,380.06	48,090,787,366,390.06	0.00
worker	0.00	0.00	0.00	0.00

Table 4: Cov reg 2

A.4 Individual deviations from the mean

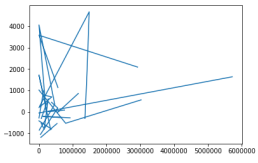
We compute the deviations of individual CIW from the average CIW per region. Figure 13 pictures shows some of these deviations against the level of income. No matter the region, there is no deviation when you are richer from poor.

	ctotal	inctotal	total_W	worker
ctotal	1,698,338.44	514,118,015.80	6,241,003,199.65	0.00
inctotal	514,118,015.80	536,571,322,330.06	6,367,916,185,300.74	0.00
total_W	6,241,003,199.65	6,367,916,185,300.74	209,594,809,536,317.44	0.00
worker	0.00	0.00	0.00	0.00

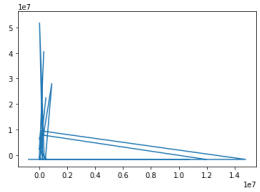
Table 5: Cov region 3

	ctotal	inctotal	total_W	worker
ctotal	1,154,702.58	316,605,417.23	2,411,113,031.13	0.00
inctotal	316,605,417.23	868,930,539,462.54	-1,157,025,170,381.52	0.00
total_W	2,411,113,031.13	-1,157,025,170,381.52	116,308,779,476,537.34	0.00
worker	0.00	0.00	0.00	0.00

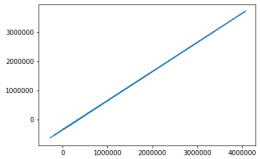
Table 6: Cov region 4



(a) Consumption



(b) Wealth



(c) Income

Figure 16: Income