HOMEWORK 1

DANQING LAN

Problem I.

PSID is the longest running longitudinal household survey can observe individuals' lifecycle. It contains both family level and individual level data, which makes it ideally suited for studying intergenerational issues.

Mazumder (2016) uses the PSID data to review the intergenerational income elasticity, which is a measurement of the degree of intergenerational income persistence. He estimates the IGE using longtime averages of parent income in addition to deal with lifecycle bias. He uses up to 15-year average of father's income and center the time averages of income in each generation at age 40 and obtains an IGE which is higher than 0.6. I am thinking about to extending the concept of intergenerational income elasticity into the field of gender inequality. Since the gender income gap has been narrowed but still around 0.8, I want to see whether the income gap within a household, typically between husband and wife, will also persistent intergenerationally and what can explain those persistent? Therefore, my research question will be "Is there intergenerational transfer to the income gap between couples. "

Also, there is a relative paper on the intergenerational gender gap. However, they used a different data set in Norway. Haaland et al (2018), use rich longitudinal registry data between 1970-2009 which covering the entire Norway to investigate the extent to which the gap in employment rates between genders is shaped by the intergenerational transfer of gender norm. They found that the municipality characteristics and a parsimonious set of family measured in children can explain a substantial part of the gender gap, especially on female employment. What I am looking to investigate is, on the other hand, the intergenerational income gap between women and men.

Problem II.

Table 20 in Kuhn (2015) shows the persistence of earning, income and wealth between 2007 and 2009. From the table we can see that there is a highly symmetric mobility patterns across all the distribution.

Recently, I am reading about the term called "economic freedom", which is the ability of people of a society to take economic actions without intervention from the government or economic authority. I would like to see how the mobility pattern is related to economic freedom. That is, moving from a low economic freedom area to a high economic freedom area, controlling other factors, will increase or decrease the mobility of earning, income or wealth from a lower quintile to higher quintile at individual level.

Shumway(2018) studied the relationship between economic freedom and migration as well as income change among U.S. metropolitan areas by using EFIMA created by Dean Stansel and the administrative IRS data. They found that metropolitan areas with higher levels of economic freedom tend to have a net in-migration and positive changes in aggregate and per capita income. Comparing to Shumway's work, I think alternative data set needs to be used since I am looking into the individual level instead of an aggregate level.

Problem III.

The data I use in this homework is the extract data set of summary variables that are used in the Federal Reserve Bulletin article. According to the description on federal reserve website, all the dollar variables in this data set are inflation-adjusted to 2016 dollars. Thus, to replicate Gimenez et al's work, all data need to be readjusted back to 2007 dollars using the "current methods" of the consumer price index for all urban consumers or CPI-U-RS. The yearly average data of official CPI-U-RS is provided by the Bureau of Labor Statistics. The replication results are shown in Table 1 and Table 2 and the origin table are shown in Figure 1 and Figure 2. Note that the results I got are slightly different to the original quarter report because of I did not use the original data set. However, my reuslt should be more accurate because minor data errors has been corrected as well as the survey weights has been revised in the data set I used.

Lorenz Curve of earning, income and wealth of 2007 are shown in Figure 3. Earning and income in 2007 seems to have a very similar pattern, which indicates the inequalities of earning and income are close to each other. At mean time, income is slightly more equal than earning in 2007. While there are obvious inequality in wealth. From the Lorenz Curve of wealth we can see that lowest 40% of the population have almost zero percent of total wealth and top 5% of the population have around 60% of total wealth in 2007. This result consists with the high number of top 1% / lowest 40% I obtained in Table 2.

FIGURE 0.1. Table 1 in QR report

Quantiles of the 2007 Earnings, Income, and Wealth Distributions (x 10³ 2007 USD)

Quantiles	0	1	5	10	20	40	60	80	90	95	99	100
Earnings	−1,547	0.0	0.0	0.0	0.0	25.7	50.4	87.5	126.1	180.2	497.0	161,523
Income	−506.0	4.2	8.9	12.3	20.1	36.3	58.8	98.7	142.0	207.2	680.7	187,202
Wealth	−474.0	−31.3	−4.6	0.0	7.3	64.7	197.7	496.9	908.4	1,890	8,327	1,411,730

FIGURE 0.2. Table 2 in QR report

Concentration and Skewness of the Distributions

	Earnings	Income	Wealth
Coefficient of variation	3.60	4.32	6.02
Variance of the logs	1.29	0.99	4.53
Gini index	0.64	0.58	0.82
Top 1% / lowest 40%	183	88	1,526
Location of mean (%)	69	74	80
Mean / median	1.72	1.77	4.61

TABLE 1. Replication of Table 1

Quantile	min	p1	p5	p10	p20	p40	p60	p80	p90	p95	p99	max
earning	-1,543.6	0.0	0.0	0.0	0.0	25.7	50.3	87.3	126	179.8	496.0	161,217.3
income	-504.8	4.2	8.9	12.3	20.0	36.2	58.7	98.5	141.7	206.8	679.4	186,847.9
wealth	-472.8	-31.2	-4.6	0.0	7.3	64.8	197.5	460.0	908.6	1,896.6	8,358.8	1,409,071

TABLE 2. Replication of Table 2

	Earnings	Income	Wealth
Coefficient of Variation	3.60	4.32	6.01
Variance of the logs	1.29	0.99	4.53
Gini index	0.64	0.57	0.82
Top 1/lowest 40	183	87	1,525
Location of mean	69	75	82
Mean / media	1.73	1.75	4.60

FIGURE 0.3. Table 2 in QR report