Assignment 1

Econ 8060: Macroeconomics III

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Choose a dataset and a task below. Conduct data analysis as specified in a task.

1. Convert all nominal variables to real using 2020 as a base year

2. Provide details (in table) of your sample – overall same size and by category, number of individuals and individual-year observations, number of years you pool together

3. When constructing your profiles make sure to control for year effects (if more than one wave is used). For a guide of how to construct profiles by age use French, 2005, "The Effects of Health, Wealth, and Wages on Labor Supply and Retirement Behavior", Review of Economic Studies

4. Prepare presentation of your findings. Provide interpretation of your graphs/tables using economic theory and information on institutional framework.

PSID

Analysis of hand-to-mouth

Use the data from 1999 to 2015. Define hand-to-mouth households in two ways. First, households whose net worth (liquid + illiquid assets net of mortgages and other debt) is less than the two months of earnings (wage and salary income). Second, households whose liquid wealth is almost zero but who are not hand-to-mouth based on first definition. Thus, you will have three groups of households: i) non hand-to-mouth (N), ii) hand-to-mouth based on the first definition (HtM1), iii) hand to mouth based on the second definition (HtM2). Construct a set of graphs/tables for these groups of households.

1) Fraction of N, HtM1 and HtM2 households by age

2) Characteristics of each group: fraction with college/high-school degree, average age, average health, average net worth, fraction married, fraction entrepreneurs/business owners

3) Labor force participation by age

    for the entire sample

    for N, HtM1 and HtM2 households (in one graph)

4) Hours worked by age, same categories as above

5) Average earnings for workers by age, same categories as above

6) Total net worth by age (median), same categories as above

7) Homeownership rate by age, same categories as above

PSID

Analysis of labor market outcomes

Use the data from 1999 to 2017. Use a sample of males ages 25 to 60.

1. Construct the following life-cycle profiles for the entire sample.

    Labor force participation

    Annual earnings for workers

    Hourly wages

    Hours worked

    Variance of log earnings

    Variance of log hours

2. Repeat 1) for three education groups: high-school drop-outs, high-school graduates, college and above. As above, you should have 6 graphs, each containing three lines.

3. Repeat 1) for two occupational groups: white collar and blue collar. You should have 6 graphs, each contains 2 lines.

4. Divide people based on wealth tercile they belong to, where wealth is total net worth. Repeat 1) for each wealth terciles, so you have 6 graphs, each contains 3 lines.

PSID

Consumption and income

Use the data from 1999 to 2017.

1. Construct graphs of mean consumption and variance of log consumption over the life-cycle.

2. Reproduce graphs in 1 and income. Income should include all sources of income such as earnings, transfers, financial income and income from business. You should have two graphs: one has consumption and income, another – variance of log consumption and log income.

3. Construct consumption to income ratio and variance of log consumption to variance of log income ratio. Plot the corresponding life-cycle profiles (two separate graphs).

4. Redo 3) for three educational groups: high-school dropouts, high school graduates and college and above (two separate graphs, 3 lines each).

5. Redo 3) for people whose wealth is above and below the median of households in the same age group. Wealth should be defined as total net worth (two separate graphs, 2 lines each).

6. Redo 3) for two categories of households: those with liquid wealth close to zero and others (two separate graphs, 2 lines each).

HRS/SHARE

1. Go to website g2aging.org

2. Choose a country from the list. The options are: Mexico, England, Ireland, 20+ European countries (SHARE), Korea, Japan, China, India. Note, some countries have only one wave of data and some have restricted data access.

3. Download data for your country of choice.

4. Construct a set of graphs for your country of choice.

1) Labor force participation by age (50-70)

for the entire sample

for males/females (in one graph)

for healthy/unhealthy (in one graph)

for different educational groups (high-school dropouts, high-school graduates, college graduates) (in one graph)

for childless/those with children (in one graph)

2) Hours worked by age (50-70), same categories as above

3) Total net worth by age (median, ages 50-95), same categories as above

4) Homeownership rate by age (50-95), same categories as above

5) Medical spending by age, median and p90 (50-95)

HRS

Lifestyle choices

Use 1998-2020 waves of the HRS. Use the following lifestyle variables: smoking, heavy drinking (having more than two drinks every day), cancer test (for men – prostate check, for women - mammogram), cholesterol check, flu shot, exercises (report moderate or heavy exercise). Define 3 educational groups: high-school dropouts, people with high-school degree and some years of college but no college degree, college and above.

1) For each activity above, compute the fraction of respondents reporting doing it. Consider people between ages 50 and 80. Report results in a table by gender and education. Compute correlation between different health-related activities.

2) Create aggregated health behavior variables, which is equal to

1 – people who do not smoke, do not drink heavily, do exercise, do at least two out of three: cancer test, cholesterol test, flu shot

3 – people who smoke, drink, do not do exercise, and do none of the of three: cancer test, cholesterol test, flu shot

2 – people in between, i.e., those who do not fit into two categories above

Do two sets of graphs for 3)-5): one set for men and one for women

3) Fraction of health behavior=1 by age and education

4) Fraction of health behavior=2 by age and education

5) Fraction of health behavior=3 by age and education

From now on, focus on men. Do three sets of graphs for 6)-11): one for each educational group

6) Percentage of people in good self -reported health by age and health behavior variable

7) Percentage employed full time (only ages 50-60) by age and health behavior variable

8) Net worth by age and health behavior variable

9) Net worth among people with good self-reported health by age and health behavior variable

10) Net worth among people with bad self-reported health by age and health behavior variable

11) Pension income (only ages 65-80) by age and health behavior variable

American Time Use Survey

What non-workers do with their time?

Use 2003-2014 waves of ATUS. Divide time of every individual into three major categories "Market Work", Non-Market Work" and "Leisure". (Use Table A1 and A2 in Fang, Hannusch, and Silos, 2020, Bundling Time and Goods: Implications for Hours Dispersion). Use people in the age group 25-60 and exclude students. Divide individuals into three categories: non-workers NW (market work less than 20 hours per week), part-time workers PT (work around 20 hours per week), full-time workers FT (work 40 hours or more). Construct a set of graphs/tables for these groups of households.

1) Fraction of NW, PT and FT households by age; fraction NW, PT and FT among women by age and among men by age. Organize your graphs as follows: 3 graphs, one for NW (all, male, female), same for PT and FT.

2) Characteristics of each group: fraction with college/high-school degree, average age, fraction married

Do two sets of graphs for 3)-6): one set for men and one for women

3) Fraction of total time spent on leisure activities by age

for the entire sample

for NW, PT, FT (in one graph)

4) Fraction of total time spent on one particular leisure activity (pick one) by age

for the entire sample

for NW, PT, FT (in one graph)

5) Fraction of total time spent on child care by age

for the entire sample

for NW, PT, FT (in one graph)

6) Fraction of total time spent on core home production by age

for the entire sample

for NW, PT, FT (in one graph)

MEPS

Income, health and medical spending

Use waves 2000-2012. Unite individuals into HIEU (health insurance eligibility unit). Keep only the heads of HIEUs. Divide heads into four income groups based on which quartile of labor income they are in. Note that the cutoff (bottom 25^{th}, 50^{th}, 75^{th} percentiles) differ by age. Define health status of a household based on self-reported health as follows: excellent, very good and good means health is good, fair and poor means health is bad. Construct a set of graphs/tables for these groups of households.

1) Fraction of unhealthy individuals by age in each income group.

2) Fraction of individuals with positive medical spending by age in each income group.

3) Fraction of people without health insurance by age in each income group (one graph) and fraction of people with private (employer-sponsored and individual) insurance by age in each income group (another graph),

4) Categories of medical spending by age in each income group. For each case, construct one graph for $ values of medical spending and one graph for fraction of people with positive spending in this category.

- Total
- Outpatient care
- Inpatient care
- Office-based visits
- Emergency room visits
- Dental care

5) Categories of *out-of-pocket* medical spending by age in each income group. For each case, construct one graph for $ values of medical spending and one graph for fraction of people with positive out-of-pocket spending in this category.

- Total
- Outpatient care
- Inpatient care
- Office-based visits
- Emergency room visits
- Dental care

6) Repeat 4) and 5) using median as opposed to means.

CEX

For sample selection and profile construction, follow steps described in Section III of Aguiar and Hurst "Deconstructing Life Cycle Expenditure", Journal of Political Economy, 2013. Divide consumption expenditure into the following categories: i) food at home, ii) food away from home, iii) nondurable entertainment, iv) non-durable transportation, v) clothing/personal care. Plot the life-cycle profile of differences of these expenditures from their level at age 25 (as in Figure 2B in the paper) for the following groups of people.

1) For the entire sample

2) For three levels of education: high-school dropouts, high-school graduates, college and above. Organize your graphs as follows: one graph for each type of expenditure that include three educational groups, i.e., you should have five graphs.

3) For people with labor income above and below the median. As above, one graph for each type of expenditure.

4) Redo graphs 1)-3) for the share of each type of expenditure in total consumption expenditure. Do not normalize by consumption at age 25 in this case.

5) Redo graphs 1)-3) for the variance of consumption expenditures.

SCF

Determinants of wealth accumulation

Pool together waves 2010, 2013, 2016, and 2019. Consider a sample where household heads are between ages of 25 and 65, and who are either employed or self-employed, and report having strictly positive income. Define income as the sum of pre-tax wage and salary income, business income, and government and private transfers. (Note, capital income is not included). Define wealth as net worth, i.e., the value of all financial and real assets minus the sum of all debt. Consider the following wealth categories.

Core wealth: the sum of the following three categories:

Business wealth – sum of businesses in which a household has an active interest.

Home equity – includes the primary residence and other residential real estate minus housing debs, such as mortgages, home equity, and home equity lines of credit.

Retirement accounts – include pension plans accumulated in individual retirement and thrift accounts, net of any loans taken against pensions.

Non-core wealth categories

Stocks, bonds, and mutual funds

Liquid assets – include all types of transaction accounts (checking, savings, money market accounts, etc.) plus certificates of deposit net of credit lines, credit balances, etc.

Other assets - include remaining financial and real assets such as cash value of life insurance, vehicles, etc., net of any corresponding debts.

1) On the graph, plot the wealth-to-income ratio by income decile (so that each point on your graph is the average wealth-to-income ratio in that decile). For this analysis, exclude the top 1%. On another graph, report wealth-to-income ratio by income decile for each of the three components of core wealth (business, home equity, retirement).

2) Separate households into three income groups: below 50%, 50-90%, above 90%. Construct the following table. The rows are: business wealth, home equity, retirement accounts, total core wealth, stocks/bonds/mutual funds, liquid assets, other assets, total wealth. In each column, report the share of assets held by each of the three income groups for each asset category. In the last column, report the results for all households. Thus, the last column shows the total portfolio composition in the population, not conditional on household income.

3) On the graph, plot the percentage of people owing each category of core assets by income decile. On another graph, plot the wealth-to-income ratio for each core asset category conditional on owing the corresponding asset.

4) Plot the percentage of people owing each category of core assets by age and educational group. Plot the median asset-holding by age and educational group conditional on owning an asset.