Homework 1: SCF

Research & Policy Seminar: Economics of Distribution

Use the 2022 SCF summary file *rscfp2022s* and the replicate weights file *p22_rw1.dta*, as used in class:

1. Weights, Implicates, and Replicate weights:

   (a) Step by Step calculation of mean household wealth (*networth*) and standard errors by hand (i.e. without survey package in R):

      i. Unweighted with classic standard error
      ii. Weighted with classic standard error
      iii. Now account for implicates and calculate the overall mean using Rubin´s rule, and report the corresponding standard error derived via within implicate variance and between variance (see slide 23) but using the sampling weights (not yet replicate weights!)
      iv. Now account for replicate weights only within first implicate (slide 20)
      v. Bring all together: accounting for implicates and replicate weights (slide 22-24)

   (b) Why do we use weights, why implicates, why replicate weights? How do the means and standard errors change between the steps and why?

   (c) Now use the survey and mitools package to calculate the correct mean and standard error.

2. Application to population groups (can use packages!):

   (a) Calculate mean household wealth and standard error by gender of household head (*hhsex*) and by race (*racecl5*) (separately) and the weighted number of observations by group. Shortly explain what you find.

   (b) Choose another characteristic of households (which has not yet been used in class and makes sense in this context) and show mean household wealth and 95% confidence intervals in a bar chart by this characteristic and shortly explain what you find.

   (c) Now choose another variable (should be inequality-related) that you want to compare by the characteristic in 2b. Again create a similar barchart.