Inequality: the Gini Index

Goal

This exercise introduces the Gini index, which is one of the most commonly used income inequality indicators.

Activity

Calculate the Gini index on total disposable income for Finland and the US in 2000, after bottom-coding disposable income at 1 percent of its equivalised mean and top-coding at 10 times the unequivalised median.

Guidelines

➢ Prepare the data as you did in the previous exercise (drop observations with missing or zero *dpi*).

➢ In the previous exercise you have seen two different methods of dealing with extreme values, trimming and winsorising (or bottom-/top-coding). The LIS key figures are calculated using a particular type of bottom-/top-coding, which we will replicate in this exercise. The bottom-coding is carried out after the equivalisation of income (on the equivalised income distribution), while the top-coding is carried out before (on the unequivalised distribution) in the following way:

- at the bottom of the distribution, equivalised income is bottom-coded at 1 percent of its equivalised mean, i.e., all observations for which equivalised income is lower than 1% of the average equivalised income are set to that value.

```
qui sum ey [w=hweight*d4]
replace ey=0.01*r(mean) if ey<0.01*r(mean)
```

- at the top of the distribution, income is top-coded at 10 times the unequivalised median, i.e., all observations for which unequivalised income (or dpi) is higher than 10 times the median unequivalised income are set to that value.

```
qui sum dpi [w=hweight*d4], de
replace ey=(10*r(p50)/(d4^0.5)) if dpi>10*r(p50)
```

➢ Stata provides ado files that will calculate the Gini coefficient as well as several other inequality indices. One such command is:

```
ineqdeco [varname] [w=<weight>]
```

Program

```
di "** INCOME DISTRIBUTION II – Exercise 13 **"


program define bottop
  qui sum ey [w=hweight*d4]
  replace ey = .01*r(mean) if ey<.01*r(mean)
  qui sum dpi [w=hweight*d4], de
  replace ey = (10*r(p50)/(d4^.5)) if dpi>10*r(p50)
end


foreach file in $us00h $fi00h {
  display "`file'"
  use hweight d4 dpi if (!mi(dpi) & !(dpi==0)) using "`file'", clear
  gen ey=dpi/(d4^0.5)
  bottop
  ineqdeco ey [w=hweight*d4]
}
```

Results

	Gini
US 2000	*0.36823*
Finland 2000	*0.24621*

Comments

➢ The Gini index ranges between 0 and 1, with inequality increasing with an increasing index. A value of 0 means there is a completely equal distribution of income; a 1 refers to the extreme situation of one household holding the total population income, and all the rest having no income at all.

➢ As expected, inequality is much larger in the US than in Finland.

➢ To see the Ginis for all LIS datasets online, go to http://www.lisproject.org/key-figures/key-figures.htm.