

Replicating Stylized Facts of Economic Growth

For this exercise we will use the Penn World Tables v. 9.0, which are available in Stata format in the zip folder `StylizedFactsGrowth` in the website.

1. Calculate real GDP per capita (use the variable called `rgdpe` but notice that the correlation between it and `rgdpo` is very high) and its logarithm. Do the same for real consumption per capita using the variable `ccon`. Two of the key stylized facts identified by Nicholas Kaldor in the 1960s is that labour compensation's share in GDP and the capital to output ratio are constant. Plot the variable `labsh` and the capital-output ratio ($K/Y = cn/rgdpe$) over time for the US, China and other countries. Are the 'great ratios' broadly constant over time?
2. Using data for 2017 (the last year available), calculate:
 - a. Average real GDP per capita across world regions
 - b. GDP per capita of each country relative to the United States. Plot a histogram of this variable. What fraction of countries have a GDP per capita 10% or less than that of the US?
 - c. How rich (relative to the US) is the median country in the world?
3. Keep data for the years 1960, 1980, 2000 and 2017:
 - a. Use the command `kdensity` (kernel density) to plot the distribution of GDP per capita for each year. What is happening to the distribution of GDP per capita over time?
 - b. Now re-estimate the kernel density weighting the data by each country's population. What differences do you notice relative to the unweighted distributions?
4. Keep data for the years 1960 and 2017:
 - a. Calculate the average growth rate of GDP per capita between those two years. Plot the distribution of this variable. How does it look? Is there a lot of variability in it?
 - b. Run a regression in which the dependent variable is the log of GDP per capita in 1960 and the independent variable is the average growth rate. Is the coefficient significant or not?
 - c. Now re-estimate the regression but only for the group of high-income countries. Are the results different? Why?