ECON 133 "Global Inequality and Growth" Lecture Review #4

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1. From income shares to average income of a group

The average income in the US in 2016 was \$80K. The Bottom 50% share was 12.5%, the top 10% share was 40% and the top 1% share was 20%. What is the average income of each group?

The answer is that for each income group:

$$\text{average income of group } i = \frac{\text{income share of group } i}{\text{population share of group } i} \times \text{average income of the country}$$

What is the reasoning behind this result? Let's start from the definition of an average:

$$\text{average US income} = \frac{\text{total US income}}{\text{total US population}}$$

and

$$\text{average income of bottom 50\%} = \frac{\text{total income of bottom 50\%}}{\text{\# people in bottom 50\% population}}$$

Now let's try to relate these two definitions using the bottom 50% as an example:

$$\begin{aligned}
\leftrightarrow \text{average income of bottom 50\%} &= \frac{\text{bottom 50\% income share} \times \text{total US income}}{50\% \times \text{total US population}} \\
&= \frac{\text{bottom 50\% income share}}{50\%} \times \frac{\text{total US income}}{\text{total US population}} \\
&= \frac{\text{bottom 50\% income share}}{50\%} \times \text{average US income} \\
&= \frac{12.5\%}{50\%} \times \$80\text{K} \\
&= 20\text{K}
\end{aligned}$$

Using the above formula for each group we get:

Average Income for the Top 1%	$20 \times 80\text{K} = 1.6\text{MM}$
Average Income for the Top 10%	$(40/10) \times 80\text{K} = 320\text{K}$
Average Income for the Bottom 50%	$(12.5/50) \times 80\text{K} = 20\text{K}$

*These notes borrow from past notes by Cristobal Otero and Nina Roussille, Juliana Londoño-Vélez, Marcelo Milanello, and John Schellenberg. All mistakes are my own.

2. From labor and capital income inequality to total income inequality

Assume you are given the top 1% labor and income shares, what additional information do you need to compute the top 1% total income share?

- the factor shares in total income (α, $1-\alpha$)
- the joint distribution of capital and labor income (copula)

Let's take the following simplified example:

- top 1% labor income share = 10%
- top 1% capital income share = 40%
- $\alpha = \frac{1}{3}$
- simplifying assumption[1]: ranks are preserved i.e. the individuals in the top 1% of labor income are the same as the ones in the top 1% capital income.

What is the top 1% total income share?

$$\text{top 1\% total income share} = 10\% \times \left(1 - \frac{1}{3}\right) + 40\% \times \frac{1}{3} = 20\%$$

3. Discussion inequality since 1980

- Two empirical facts:
  1. Income inequality has increased
  2. Growth has been mostly asymmetric (hockey stick, elephant curve)
- What forces drove or mitigated this development?
  - What happened to capital income? labor income?
  - What is the role of technology?
  - What are the most important governmental policies?
  - What role has globalization played here?
- Three different worlds of income inequality. How is each different? How might each be addressed differently via policy?
  1. Rentier society
  2. Robber baron society
  3. Supermanagers
- What have been the most important governmental policies for shaping inequality in this era? What was their distributional incidence?

4. Essay #1 review: See Essay #1 solutions.

[1] In reality, some individuals in the top 1% of capital income are in a different group of the labor income, for instance they could only be in the top 10-1% of labor income. In this case the computation is much more complicated.