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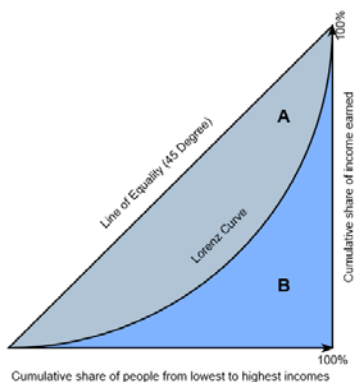
Gini Coefficient

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Over the past couple of years, since the Thomas Piketty book, *Capital in the 21st Century*, was released in 2014, the Gini coefficient has been referenced a lot. It was suggested that I include information about the topic in the current (10th) survey of emerging risks. I was not familiar with it so did a minimal amount of internet research and am sharing my findings here as the fit was not good with my research report. As usual, the metric is simple to calculate and interesting to interpret. A downside is that it is useful only within a country, not across countries.

Corrado Gini, an Italian, published a paper in 1912 titled *Variability and Mutability*. In it he defined a measure of statistical dispersion that purports to represent the inequality of income or wealth distribution for a group, generally a nation. When the ratio is zero everyone has the same income, and when the ratio is one all the income is earned by one individual. Countries seeking to reduce inequality strive for a lower number.

To generate the Gini coefficient, order everyone in a nation by income (can be before or after tax) and graph as a cumulative distribution function (cdf) known as the Lorenz Curve. Compare each point on this curve to the cdf if everyone had the same income, so a straight line at 45 degrees as seen in the following figure¹. The Gini coefficient is a ratio of areas, $A/(A+B)$. The Gini coefficient can be impacted by changing demographics, especially in economically developing countries, as it measures relative rather than absolute income. This metric should not be used in isolation but can be a useful part of a global economic analysis. While the global ratio has been going down, reflecting improved conditions for the world's poor, income inequality as measured by this and other metrics has been increasing in the United States.



¹ https://upload.wikimedia.org/wikipedia/commons/5/59/Economics_Gini_coefficient2.svg



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