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Title:

"Inequality of Incomes and of Alcohol Consumption in the U.S.

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In recent years many politicians, academics, and policy analysts have paid increasing attention to income and wealth inequality. The most common way that economists measure such differences is by first constructing a Lorenz Curve and then computing the value of a Gini Coefficient. For example, thinking about the distribution of incomes, we could conceptually order everyone in society from lowest income to highest income. Then, focusing on an arbitrary percentage of the individuals with lowest incomes, we could determine the percentage of total societal income earned by these people. According to U.S. Census Bureau data, in 2015 the 20% of households with lowest incomes in the U.S. collectively earned 3.1% of all income earned by all U.S. households. This observation gives us one point on the U.S. Income Lorenz Curve. Repeating this exercise for all segments of the population (from the 1% of households with lowest incomes to the 99% of households with lowest incomes) traces out the entire Lorenz Curve, as illustrated in the accompanying figure which was constructed based upon U.S. Census Bureau data.

With fraction of total population on the horizontal axis and fraction of total income on the vertical axis, the Lorenz Curve must satisfy several mathematical properties. It must pass through the points (0,0) and (1,1); it must be upward sloping; it must get steeper as we move up the curve; and (so long as there are any differences in incomes) it must lie below the "45 degree line." This final observation can be understood by recognizing that the Lorenz Curve would exactly coincide with the "45 degree line" or "Line of Perfect Equality" only everyone had the same exact income. At the other extreme, if only one person had any income (and everyone else in society had zero income), then the Lorenz Curve would be a "reverse L" passing through the points (0,0), (1,0), and (1,1).

This visual summary of the distribution of income can be reduced to a single summary measure called the Gini Coefficient. As can be seen from the figure, there is a lens-shaped area between the Lorenz Curve and "Line of Perfect Equality." The Gini Coefficient is defined as twice the value of this lens-shaped area. Numerically the Gini Coefficient can range from a low of zero (if there are no differences in incomes, so that the Lorenz Curve coincides with the "Line of Perfect Equality" and the lens-shaped area vanishes) to a high of one (if one person earns all the income, so that the Lorenz Curve is a "reverse L" and the lens-shaped area encompasses the entire triangle below the "Line of Perfect Equality"). A higher-valued Gini Coefficient reveals greater inequality.

The World Bank estimated the value of the Gini Coefficient for incomes in the U.S. to be .42 in 2016. This is higher than the values of .41 realized in 2004, .38 realized in 1991, and .35 realized in 1979, consistent with a narrative of increasing inequality in recent decades. The U.S.'s value is higher than most other OECD countries in recent years, such as Canada (.34 in 2013), France (.33 in 2015), the United Kingdom (.33 in 2015), Japan (.32 in 2008), Germany (.32 in 2015), Sweden (.29 in 2015), and L90>2p( )]TJ.34,6.1 (eW)-3 (()-4 (.8-2 (32 i)8 (n)-3 (2015)]TJ88 Tw 0.3

value of the Gini Coefficient in the U.S. has increased in recent decades and (ii) that the value of the Gini Coefficient in the U.S. is

incorrectly perceiving inequality of a magnitude that is not at all in line with what we should truly aim to gauge. This is not to say that observations on income inequality are never useful or