Directional Tests and Confidence Bounds on Economic Inequality

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Abstract

For standard inequality measures, distribution-free inference methods are valid under conventional assumptions that fail to hold in applications. Resulting Bahadur-Savage type failures are documented, and correction methods are provided. Proposed solutions leverage on the positive support prior that can be defended with economic data such as income, in which case directional non-parametric tests can be salvaged. Simulation analysis with generalized entropy measures allowing for heavy tails and contamination reveals that proposed lower confidence bounds provide concrete size and power improvements, particularly through bootstraps. Empirical analysis on within-country wage inequality and on world income inequality illustrates the usefulness of the proposed lower bound, as opposed to the erratic behavior of traditional upper bounds.

Keywords: Inequality measure, generalized entropy measure, confidence bound, directional test, Bahadur-Savage impossibility, bootstrap.

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