Source Decomposition of Inequality Indices

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Abstract :
This paper revisits the longstanding question of how to decompose inequality indices into contributions of factor components, such as labor income, capital income, and taxes and transfers. We start from the axiomatic framework of Shorrocks (1982) and discuss why one of his core axioms, two factor symmetry, imposes an undesirable restriction. We propose an alternative axiom, conditional transfer neutrality, to replace two factor symmetry, and we show that our axiomatic framework uniquely determines the source decomposition for any inequality index. This decomposition coincides with the natural decomposition for many inequality indices, including the Gini coefficient, the coefficient of variation, and top income shares. For other inequality indices, such as the Theil index and the mean log deviation, our axiomatic framework implies novel source decompositions that we argue behave better than the traditional formulas. Furthermore, we show how the source decomposition of the Gini coefficient can be interpreted geometrically.