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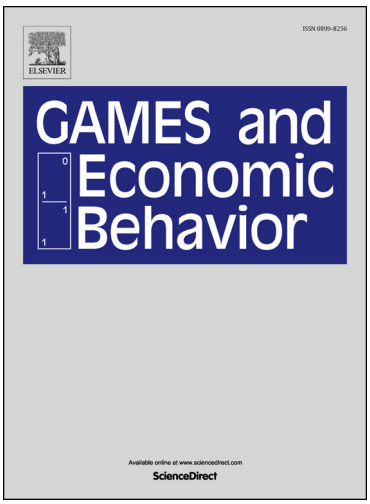

The balanced contributions property for equal contributors

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# The balanced contributions property for equal contributors

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Abstract

We introduce a new axiom, which we term the balanced contributions property for equal contributors. This axiom is defined by restricting the requirement of the balanced contributions property (Myerson (1980)) to two players whose contributions to the grand coalition are the same. We prove that this axiom, together with efficiency and weak covariance, characterizes a new class of solutions, termed the **r**-egalitarian Shapley values. This class subsumes many variants of the Shapley value, e.g., the egalitarian Shapley values and the discounted Shapley values. Our characterization provides a new axiomatic foundation for analyzing variants of the Shapley value in a unified manner.

Keywords: TU games, Balanced contributions property, Shapley value, Axiomatization
JEL classification: C71

1. Introduction

Since the pioneering work of Shapley (1953), the analysis of solutions in cooperative game theory has made considerable progress. Shapley proved that his new solution, the Shapley value, is the unique solution that satisfies the following four axioms: efficiency, symmetry, the null player property and additivity. Subsequently, researchers pointed out the limitations of some of his axioms and replaced them with alternative axioms. This approach has developed new variants of the Shapley value,

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