

Characterization of the Shapley-Shubik and Banzhaf Power Indices  
with Transfer and Fairness Axioms.

CHENG-JIH CHEN

Department of Mathematics  
Columbia University, New York, NY 10027

DAVID HOUSMAN

Department of Mathematics and Computer Science  
Drew University, Madison, NJ 07940  
dhousman@drew.bitnet

This research was partially funded by the National Science  
Foundation through a Research Experience for Undergraduates  
program (Grant No. DMS-9000874)

## Characterization of Power Indices

All correspondence should be directed to:

DAVID HOUSMAN

Department of Mathematics and Computer Science

Drew University, Madison, NJ 07940

dhousman@drew.bitnet

The Shapley-Shubik and Banzhaf power indices can be characterized on simple monotonic games with Efficiency and two classes of axioms. The first class, the Transfer axioms, partially dictates the structure of the indices and includes the familiar axioms used by Dubey in his characterization (1975). The second class, the Fairness axioms, pertains to the notion of 'fair play.' It includes notions such as Symmetry. We also show that both power indices can be characterized on superadditive simple games by axioms weaker than those previously examined.

CLASSIFICATION NUMBER: C-71

