

## Abstract

Riker's "size principle" predicts that only minimal winning coalitions (MWCs) will form in  $n$ -person zero-sum games that satisfy certain conditions. After summarizing the logic of this principle, a model is proposed in which  $n$  players can be ordered from most to least weighty. No player has more than half the weight, so only coalitions of at least two players can be MWCs (with more than half the total weight). Two different kinds of MWCs are distinguished:

- those in which every member is "critical" (member-MWCs); and
- member-MWCs that have the smallest weight (weight-MWCs).

A member is *critical* when its defection causes an MWC to become losing.

A listing of the possible categories of member-MWCs and weight-MWCs indicates that their numbers rapidly increase with the number of players (2, 6, 20, and 103 for  $n = 3, 4, 5,$  and 6 players). Two quantitative measures of bargaining power in member-MWCs and weight-MWCs, and one of the "essentiality" of members in weight-MWCs, relate weight to bargaining power in the different cases, showing that less weighty players may, on occasion, be more powerful than more weighty players. In fact, the weightiest player is never the common—and hence the indispensable—member of all member-MWCs or of all weight MWCs unless its weight is equal to that of all the other players combined (i.e., half the total weight).

The latter finding, and the quantitative measures for weight-MWCs, suggest conditions under which large size may be more of a liability than an asset. Possible empirical manifestations of the inverse relationship between weight and power in parliamentary coalitions and international politics are discussed.