

***TITLE: Recognition Rules In Weighted Majority Games And Their Implications***

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The main objective of this paper is to examine the implications of different random recognition rules used to select proposal-makers on the payoffs of players participating in a weighted majority game. In particular, incentives to strategically alter the set of players by strategic splits or mergers are investigated.

The paper proposes a model that is a general case of the infinite bargaining problem analysed by Rubinstein and is an extension to the model of Baron and Ferejohn, in which players randomly are selected to make a proposal in a one-dimensional distributive space. Such proposals have to be approved by a specified winning coalition of voters.

Such a model can be used to describe both a legislative game in parliamentary democracy, in which a candidate for a prime minister (a formateur) is selected according to some recognition rule and needs approval from majority of parliamentarians to install the proposed government, or a common-stock company in which the role of individual shareholders is analogous to the role of political parties in the parliamentary setting. Empirical evidence (see e.g. Diermeier and Merlo) indicates that random recognition rules are appropriate for modeling such situations, which is contrary to the intuitive assumption that the order of selection of proposal-makers is affected through a rule that follows the ordering of weights of players, i.e. biggest shareholder or political party is always selected first, with the rest following in a fixed order. Illustrative examples from politics and economy are used in the paper along the theoretical framework.

The paper studies different random recognition rules. Some normative and technical criteria used in the analysis are introduced. The rule that is most popular in the literature is a proportional rule in which selection probabilities are proportional to weights assigned to each of players. It is shown that it leads to non-zero expected payoffs for dummy players and hence possible surplus coalitions. As a general rule, this proportional rule provides the players with wide-spread incentives to strategically split or merge with other

players (under different variants of models for modeling the subgames related to splits or mergers that are discussed and justified in the paper). Other recognition rules studied in the paper are based on decisive structures, e.g. use power indexes such as Shapley values as recognition probabilities. While such rules eliminate the counter-intuitive property of surplus coalitions and dummy players with positive payoffs, they still fail to prevent the rise of abundance of incentives for strategic splits or mergers.

It is shown that there always exists a unique class of recognition rules that can prevent strategic splits or mergers. The formula and properties of such “stable rule” are established in the paper. This uniqueness, and hence also relative unlikely occurrence of such a split-and-merger-proof recognition rule, indicates that, while convenient for analytical reasons, the common assumption of fixing the set of players while modeling such games has important consequences and may be inconsistent with the incentive structure of the underlying bargaining problem.