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# Efficiency and equity trade-off in multi-players ultimatum game: Impact of group incentives and outside-options

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## Abstract

We aim to investigate motives that afford efficiency and equity in a three players simple bargaining game with proposers coordination. We ran an ultimatum game (Guth & al. , 1982) with two proposers and one receiver. The decision of each proposer is individual, the receiver observes the two offers simultaneously. He may accept or reject the joint offer of both proposers. In case of rejection, proposers and receiver have an alternative outcome in the form of "an outside option". Depending on the amount of the individual offers, the receiver's decision may have positive or negative externalities on one of the proposers. We are interested in the trade-off between efficiency and equity in the receiver's decisions. We aim to investigate how receiver reciprocates to a combination of cooperative and non-cooperative offers. Do he prefer to sanction both cooperative and non-cooperative actions or to reward the cooperative proposer by "tolerating" the non-cooperative "free-riding"?

Since rejection costs are determinant of receiver's behavior, acceptance decisions in the standard ultimatum game could not exclusively be attributed to positive reciprocity or guilt aversion. By varying the level of outside options, we control for rejection costs.

We find that the individual outcome is more determinant of receiver decisions when amounts received are low. When the amounts received are higher, receivers' decisions reveal some reciprocal fairness expectations. Although the successful fair inter-proposers coordination, the decisions of the proposers depend more on the outside options, which suggests that this equity is more instrumental (Carpenter, 2003) than normative.

In the experiment, we also check risk preferences with a specific test and we isolate the impact of coordination uncertainty from receiver's uncertainty with a two proposers threshold dictator game. Risk attitudes seem to be less predictive of behaviors in this second game than in the ultimatum game.

**Keywords:** Ultimatum game, group incentives, outside options, efficiency, equity, risk

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