Strategy-Proof Rule in Probabilistic Allocation Problem of an Indivisible Good and Money

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Abstract

We consider the problem of probabilistically allocating a single indivisible good among agents when monetary transfers are allowed. We construct a new strategy-proof rule, called the second price trading rule, and show that it is second best efficient. Furthermore, we give the second price trading rule three characterizations with (1) strategy-proofness, "budget-balance", equal treatment of equals, weak decision-efficiency, and simple generatability, (2) strategy-proofness, "equal rights lower bound", equal treatment of equals, weak decision-efficiency, and simple generatability, (3) strategy-proofness, "envy-freeness, no-trade-no-transfer", equal treatment of equals, weak decision-efficiency, and simple generatability.

Keywords: Strategy-proofness, Probabilistic allocation problem, Second price trading rule, Budget-balance, Second best efficiency
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