

FAIR MIXING AND PARTICIPATORY DEMOCRACY

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Participatory budgeting is an increasingly popular tool to promote engagement by the citizens in the actual decision process of their community. In a stylised version of the budgeting problem, the municipal ballot proposes a list of costly public projects or activities, and voters must cast an "approve" or "disapprove" vote on each of them. How should we aggregate these votes into a fair compromise between the projects respecting the citizens' choices? The compromise takes the form of a convex mixture of the projects (e. g., representing shares of budget or of time). We propose and compare four aggregation rules, each with its own normative justification in terms of fairness and incentive compatibility (IC): the Random Priority, Conditional Utilitarian, Egalitarian and Nash Max Product rules. We suggest that the latter rule is the least objectionable of the four.

Based on "Fair mixing: the case of dichotomous preferences", H. Aziz, A. Bogomolnaia and H. Moulin, *ACM Trans. Econ. Comput.*, Vol 4, 2020.