Taxation, observability and cooperation in a social dilemma with heterogeneous populations

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Abstract

In the presence of a social dilemma, cooperation can be generally more difficult to achieve when populations are heterogeneous because of potential normative conflicts. We examine cooperation in the context of a non-linear common pool resource game, in which individuals have unequal extraction capacities and have to decide on their extraction of resources from the common pool. We introduce two types of policy instruments in this environment. One instrument is based on two variants of a mechanism that taxes extraction and redistributes the tax revenue to group members. The other instrument varies the social observability of individual decisions. We find that both tax mechanisms reduce extraction, increase efficiency and reduce inequality within groups. The scarcity pricing mechanism, which is a per-unit tax equal to the marginal extraction externality is more effective at reducing extraction than an increasing block tax that only taxes units above the social optimum. In contrast, observability impacts only the Baseline condition by facilitating free-riding instead of creating a moral pressure on group members.

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