

## Fiscally stable income distributions under majority voting, Lorenz curves and bargaining sets

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**Abstract.** We explore two variants of the Bargaining Set in a simple majority game on income distributions in order to understand the apparent stability of tax schedules in democratic societies, despite the fact that the core of such games is empty (no majority Condorcet winner). Those variants are sharper than in the literature (Mas-Colell (1989), Shitovitz (1989), Zhou (1994)), by requiring that counterobjections try to guarantee their initial income levels to all members of the minority who stand to lose in an objection. A first variant defines as usual an income distribution to be stable if there is no objection against it that is "justified", i.e. for which there is no counterobjection satisfying the above requirement. A second variant allows objecting majorities to look one more step ahead. An objection is "weakly justified" if, whenever there is a counterobjection, the objecting majority can beat it while guaranteeing their income levels to all of its members. An income distribution is strongly stable if there is no weakly justified objection against it.

These two variants generate sharper solution sets than when applied to large market games as in Mas-Colell (1989), Shitovitz (1989). Stable income distributions can indeed be characterized by their degrees of inequality. An income distribution is stable if and only if its Lorenz curve has no point in common with the graph  $C$  of  $f: [1/2, 1] \rightarrow [0, 1]$ , with  $f(b) = 1 - 1/(2b)$ , for  $b > 1/2$ . It is strongly stable if and only if it is the egalitarian one.

**Key words:** inequality, income distribution, Lorenz curve, stable tax schedules, majority voting, cooperative games, core, bargaining set