Stabilization of Social Optimum in Economies with Positive and Negative Externalities

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Abstract

This study considers a societal game with positive and negative externalities and examines the effectiveness of tax/subsidy policies for achieving social optimum. It is shown that under the Pigouvian policy, not only an optimal equilibrium but also non-optimal equilibria can arise, and the optimal equilibrium can be unstable. This implies that the planner will not be able to guarantee the attainment of an optimum with the Pigouvian policy. We clarify conditions under which the Pigouvian policy does and does not work. In order to stabilize the optimal equilibrium, we propose a period-by-period tax/subsidy policy in which the planner imposes the values of externalities evaluated at the current state.

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