Strongly Rational Sets for Normal-Form Games_

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Abstract

Curb sets [Basu and Weibull, Econ. Letters 36 (1991), 141-146] are product sets of pure strategies containing all individual best-responses against beliefs restricted to the recommendations to the remaining players. Prep sets [Voorneveld, Games Econ. Behav. 48 (2004), 403-414] only require that the product sets contain at least one best response to such beliefs. While the concepts of curb and prep sets are set-theoretic coarsenings of the notion of Nash equilibrium, we introduce the concepts of strong curb sets and strong prep sets which are set-theoretic coarsenings of the notion of strong Nash equilibrium. We require the set to be immune not only against individual deviations, but also against group deviations. We show that every game has at least one minimal strong curb (prep) set. Minimal strong curb (prep) sets are compared with strong Nash equilibria, coalition-proof Nash equilibria and the set of coalitionally rationalizable strategies. Finally, we provide a dynamic learning process leading the players to playing strategies from a minimal strong curb set.

JEL Classi.cation: C72.

Keywords: Set-valued solution concept, Coalitional deviations, Strong curb set, Strong prep set, Learning.

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