Normal Form Games with Self-Control Preferences*

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Abstract

A majority of self-control models have been considered in the context of single-person decision making. One's propensity to resist temptation, however, may well depend on others' decision, as observed in smoking, overeating, and overspending behaviors. This study introduces a new class of normal form games in which players have self-control preferences (Gul and Pesendorfer, 2001). This class of games can incorporate internal conflicts of players, and admit both commitment and self-control strategies. We propose an equilibrium concept and establish the existence. We demonstrate how strategic interaction matters in our self-control model by an example in which players purchase a commitment device to cope with temptation under the bandwagon effect. We obtain all the equilibria in both pure strategies and symmetric mixed strategies, the types of which depend upon the price of a commitment device. We observe that in some price range of commitment device, both a symmetric equilibrium and an asymmetric equilibrium coexist, and the latter Pareto dominates the former, which can be explained in terms of asymmetric coordination in which one player chooses a commitment strategy and the other player chooses a self-control strategy.

Keywords: temptation, commitment, self-control, peer effect, bandwagon effect, normal form game.
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