

Abstract:

At the beginning of my Master's thesis we define basic terms such as payoff, strategy, best reply and Nash equilibrium. Furthermore, we introduce the population perspective, in which during a random meeting of a pair of players, these players interact according to their strategies and they receive payoffs. We define the criterion of evolutionary stability, which shows a link between payoffs in the game and strategy spreading among population. The most common description of this evolution is based on the replicator equations. We analyze their basic properties and examine the relationship between the stationary points of this system and the concepts of Nash equilibrium and evolutionary stability. In the following practical part, we apply the introduced theory to model the Cournot duopoly. Its aim is to analyze the model characteristics in terms of evolutionary stability and to determine the duopolist's behavior in the long run.