APPLICATION OF QUANTITATIVE METHODS FOR OLIGOPOLY MARKET ANALYSIS

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Abstract

Oligopoly market is characterized by the production of homogenous commodities with very similar attributes. The market can be segmented into groups of producers – oligopolists by means of cluster analysis. Regression analysis makes possible to derive cost functions for production of this commodity at every oligopoly firm and a uniform price function for all oligopolists. These functions enable to express the profit of every oligopolist in relationship not only on his output, but also on outputs of the other oligopolists. Determination of an optimal output for every oligopolist is equivalent with finding its equilibrium strategy in the game with the payoff function that represents its profit and with the strategy space that is limited by minimal and maximal output of the oligopolist. Under the assumption, that the price function and cost functions are linear, equilibrium strategies of all oligopolists can be established by quadratic programming methods. The mentioned possibilities for an application of quantitative methods in the analysis of the oligopolistic market structure are illustrated in this paper by a simple example.

Key words: market segmentation; oligopoly; optimal output; cluster analysis; regression analysis; game theory

Literature


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