

Editorial

Game Theory and Applications in Economics

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Received 22 April 2014; Accepted 22 April 2014; Published 19 May 2014

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Game theory, as a branch of the applied mathematics, contributes insight into economics, sociology, and many other disciplines. Game theory has outstanding effects on the theory of economics, and the literature on applying game theoretical and related approaches to economics is growing rapidly, and yet many theoretical and empirical challenges remain in this field.

The focus of this special issue is the application of game theory to problems in economics, including economic theory, microeconomics, industrial economics, and other application fields. The publication of this special issue can efficiently extend the applications of game theory and attracts the attention of economists to game theory.

This special issue received high-quality manuscripts from 23 countries all over the world. After a strict review process, 25 high-quality papers are published. These 25 papers cover the game theory and applications in all fields of economics, including microeconomics, industrial economics, and macroeconomics.

Ten papers in this issue focus on the significant topics of game theory. Cooperative games are still challenging topics and four papers develop the theory about cooperative games. D. Hou and T. Driessen explored the cooperative game theory and applied it to data cost games. J. Pang and X. Chen developed the cooperative game theory under fuzzy environment. R. P. Arribillaga et al. compared the cooperative and competitive solution for generalized assignment game. J. Pang et al. further developed the Shapley values of fuzzy coalition game theory.

P. Zhang calculated the fixation probability of evolutionary graphs, in which a graph is combined with evolutionary game. D.-F. Li and J. Yang investigated the bimatrix fuzzy games and proposed an algorithm to attack them. P. L. Leoni developed the theory learning games. F. Xu et al. and Z. Zhou et al. all analyzed DEA games. A. Bialecki et al. developed the existence theory of games with a special function.

In the applications of microeconomics, five papers are published. S. Shindo and N. Matsubayashi investigated the brand strategies under horizontal difference. M. Kwak et al. addressed the price equilibrium with multiperiods. L. Carvalho considered the multiplayer bargaining problem and gave the perfect equilibrium. G. Xie et al. remarked the quality promotion policies under Stackelberg games. J. Durieu and P. Solal investigated the best response strategy.

There are 9 papers that captured the industrial economic problems. P. Sun compared the subsidy strategies for renewable energy industry. A. Tao et al. compared the social welfare under the mixed duopoly. Y. Xu analyzed the hospital industry with game theory and considered corporate social responsibility (CSR). S. S. Askar captured the effects of cost uncertainty on Cournot competition. Y.-H. Chen and X.-W. Wen investigated the cooperative advertising. J. Xu investigated instant messenger with the two-sided market theory. Y. Yang compared the innovation subsidy and product subsidy and concluded that the optimal choice depends on the governmental preference. A. Zhou analyzed the entry deterrence problem. Z. Tan employed the game theory approaches to solve the advertisement competition

and argued that transportation costs affect the advertisement investment.

There is another interesting paper considering social network analysis based on network motifs. X. Hong-lin et al. proposed a new evaluation function for effectiveness assessment.

Acknowledgment

We sincerely thank all the authors and reviewers for their valuable contributions to this special issue.

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