
Editorial

Xiao Luo*

Department of Economics,
National University of Singapore,
117570, Singapore
Email: ecslx@nus.edu.sg
*Corresponding author

Chenghu Ma

Department of Finance,
Fudan University,
200433, China
Email: machenghu@fudan.edu.cn

Biographical notes: Xiao Luo is an Associate Professor at the National University of Singapore. His research focuses on game theory, economic theory and information economics. He published papers in international journals, including *Journal of Economic Theory*, *Games and Economic Behaviour*, *Economic Theory*, *Journal of Mathematical Economics*, *International Journal of Game Theory*, *Journal of Economic Dynamics and Control*, and *Theory and Decision*.

Chenghu Ma is a Professor at the Fudan University. His research focuses on financial economics, game theory and mathematical economics. He published papers in international journals, including *Economic Theory*, *Journal of Mathematical Economics*, *Mathematical Finance*, *Journal of Economic Dynamics and Control*, *Social Choice and Welfare*, *Theory and Decision*, and *European Journal of Operational Research*.

Game theory plays a significant role in much of contemporary research in economics and related disciplines. Applications of game theory have arisen in many fields of economics and management, such as industrial organisation, international economics, finance, and political science. As Kreps (1990) pointed out, “Nowadays one cannot find a field of economics (or of disciplines related to economics, such as finance, accounting, marketing, political science) in which understanding the concept of a Nash equilibrium is not nearly essential to the consumption of the recent literature ... the basic notions of non-cooperative game theory have become a staple in the diet of students of economics”.

The importance of the subject arises from the pervasiveness of the assumption of rational behaviour in all the human sciences. This assumption lies at the foundation of almost all the work in these sciences, including behavioural science, economics, management, social sciences, political science, and so on. The goal of game theory is to help to understand and hopefully resolve human conflicts; see Aumann’s (2005) Nobel lecture on ‘War and Peace’.

This special issue on: ‘Game theory and its applications in economics and management’ includes four articles. The paper by Riad M. Sultan entitled, ‘The political economy of deforestation when distributional interests matter – a dynamic approach’, analyses a two-sector political economy model by a bargaining process. Sultan shows that deforestation and land conversions are adjustment processes based on distributional interests, lobbying and the decision maker’s self interest motive, mainly to enhance the welfare of user groups. The results of this paper are practically relevant and interesting.

The paper by Wonseok Kang entitled, ‘R&D investment game strategies under uncertain patent acquisition and non-infringing imitation’, discusses R&D competitions. Kang shows that it is strategically favourable for the superior firm to make R&D investments in an R&D investment game. This paper contributes to a better understanding of R&D investment strategies in different scenarios.

The paper by Shravan Luckraz entitled, ‘A proof of the existence of ϕ -stable sets in N-player games via Glicksberg’s fixed point theorem’, shows that if we represent the widely studied class of finite games (with mixed extensions) by some general abstract system suggested by Luo (2001), then the existence of a non-empty ϕ -stable set can be derived from Glicksberg’s fixed point theorem, under the usual topological structure imposed on the game. The existence result for a ϕ -stable set obtained here by Luckraz is a nice extension of Luo (2001).

The paper by Naoki Shiba entitled, ‘Game algebra: algebraic system of strategic-form games’, offers a new ‘game algebra’ approach for a class of n-person games. Shiba shows that the games possess the characteristics of a commutative group and a commutative monoid. This paper helps to deepen our understanding of strategic games.

We hope that this special issue will give the reader a good idea of some current trends in game theory and its applications in economics and management, as well as stimulate new research on the topic. As the guest editors, we thank the Editor-in-Chief, Professor Chunhui Xu, for inviting and trusting me to organise this special issue. We would also like to thank anonymous referees for their helpful and useful comments and suggestions.

References

- Aumann, R.J. (2005) ‘Nobel lecture on ‘War and Peace’’ [online] <http://www.nobelprize.org/mediaplayer/index.php?id=624> (accessed 21 January 2017).
- Kreps, D.M. (1990) *Game Theory and Economic Modelling*, Clarendon Press, Oxford.
- Luo, X. (2001) ‘General systems and ϕ -stable sets – a formal analysis of socioeconomic environments’, *Journal of Mathematical Economics*, Vol. 36, No. 2, pp.95–109.