

## COOPERATIVE AGREEMENTS AND CONFLICTS OF INTEREST

Claude d'ASPREMONT, Alexis JACQUEMIN  
and Jean Jaskold GABSZEWICZ

*Catholic University of Louvain, 1348 Louvain-la-Neuve, Belgium*

A traditional classification in game theory is based on a distinction between cooperative and non-cooperative situations. The theory has made clear that this classification does not rely so much on whether or not communication is possible but on the distinction between the agreements based on some outside enforcement mechanism and the agreements that are self-enforcing. It seems fair to say that the use of the non-cooperative concepts, mainly the Nash equilibrium and its multiple variants including Selten's 'perfection' concepts, has been predominant in the application of game theory to industrial organization.

Over the last years however, an increasing number of cooperative solution concepts have been applied to market analyses. Furthermore there has been an effort to implement cooperative solutions via some kind of non-cooperative (i.e., self-enforcing) agreement, reflecting the fact that, in some economic situations, the cooperative or non-cooperative nature of observed arrangements is, at the very least, debatable.

This special issue of the *European Economic Review* on 'Market Competition, Conflict and Collusion' offers a set of articles illustrating this expanding research on the characteristics and conditions of oligopolistic cooperation in imperfect markets.

The first paper by M. Kurz develops a theory of coordination mechanisms specifying the additional properties that an agreement, implemented as a Nash equilibrium of some non-cooperative game, should have. Then the problem of oligopoly cooperation is viewed as analogous to a public good allocation problem since, for each firm, the outputs of the others may be viewed as a public bad. The main result is to show that the set of cooperative oligopoly equilibria (or Lindahl equilibria of the oligopoly model) is equivalent to the set of implementable agreements.

In the second paper, B. MacLeod uses the notion of conscious parallelism to analyse how oligopolists might tacitly collude. Using the methodology of bargaining theory, he axiomatically selects a rule of thumb corresponding to conscious parallelism, namely the matching of price changes, and in-

corporates it into a dynamic oligopoly model. He then demonstrates that a unique equilibrium can be obtained, lying in the intermediate range between the static Nash equilibrium and the full maximization of joint profits.

In the context of a Cournot oligopoly, J. Fraysse and M. Moreaux analyse the case of finitely repeated games. Introducing fixed costs in their model, they generate multiple equilibria by permuting active and inactive firms. The choice of the active firms can be used for credible threat strategies and, under some conditions, this is sufficient for sustaining perfect equilibria which are not Pareto-dominated.

In the following paper, C. d'Aspremont and A. Jacquemin work out an ex-ante measure of the power to monopolize. They show how the Shapley value can be used in terms of a power index for individual firms within an industry, and construct axiomatically the corresponding aggregate power index for industries.

The last two papers are more survey papers. The first one by A. Roth, presents a synthesis of recent results about two-sided matching markets, organised around a primary model, the one of the hospital-intern market, in which graduating medical students seek entry-level positions in American hospitals. An appropriate stability concept for this kind of market, which is closely related to the core of the market, is defined and analysed. The author emphasizes the implications of this stability concept for the structure of common and conflicting interests of the agents and for the incentive properties of procedures designed to produce stable outcomes.

Finally, M. Shubik presents a critical survey of the different approaches adopted to study imperfect competition. Among the questions raised are the reconciliation of cooperative oligopoly theory and general equilibrium, the role of exogenous uncertainty, subjective probability and non-symmetric information, the adoption of appropriate, explicit assumptions concerning the legal and socio-political environment.