

The self-organisation of an industrial cluster: *strategic flexibility* as an evolutionarily stable strategy in contests between heterogeneous competing firms

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Abstract

The aim of this paper is to analyse contest behaviour between heterogeneous competing firms in an industrial cluster. We argue that an industrial cluster can be identified by the result of a spontaneous aggregation process of self-regulation based on both the adaptive nature of firms involved and the implementation of evolutionarily stable strategies. The idea behind this study is that evolutionary game theory can provide useful tools for detecting and interpreting the equilibria that may arise in a population of firms. We use the model of evolutionary game between *Hawks* and *Doves* in an extended form, in which the strategy of *Bourgeois* is the only one that is evolutionarily stable. By the use of replicator dynamics, the study proves that what we call *strategic flexibility* is a winning behavioural strategy within a cluster of competing firms, since it reveals the best reproductive success. This winning strategy is based on the combination of biological rules and human behavior, and therefore represents an attempt to build a bridge between evolutionary biology and economics. Methodological implications and policy suggestions are proposed.

JEL classification: C73; D21; L29.

Key words: *industrial cluster; biological rules; economic behaviour; heterogeneous competing firms; evolutionarily stable strategy.*