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## **Innovative evolution determined by competition — an axiomatic approach**

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Competition is an elementary, universal and impersonal form of social interaction. In the everyday sense of the term, it conveys the idea of pluralism, rivalry of men, firms or nations. The phenomenon of competition, as an essential elements of the coordination mechanism required for economic change, is one of the central subjects of evolutionary economics, especially in the line of thought of Schumpeter's theory of innovative evolution. The role of competitive relationship among producers and its impact on innovative development have been discussed for many years. However, in a large part of mainstream formalizations of the theory of innovative evolution, this problem was not taken under consideration.

Hence the main aim of this paper is to show, that adequately targeted extension of conceptual apparatus of the modern Arrow-Debreu's general equilibrium theory enables us to include competitive behavior of producers in evolutionary economics. In particular, this paper gives new theoretical account of the competitive processes within innovative evolution of a production system. This research includes an axiomatic analysis of two kinds of innovative competition: the first is competition between production systems described in a static model situation and generalized to dynamic method, by the application of mathematical idea of a (quasi)-semidynamical systems. The second is a conception of competition as a process of rivalry between firms (producers) in their incessant struggle to increase their market share leading to a gradual displacement and subsequent absorption, or elimination of rival firms.

Keywords: competition, innovative evolution, Schumpeter.