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Innovation and the competitiveness of industries: Comparing the mainstream and the evolutionary approaches[☆]

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Abstract

The study of the relationships between innovation and the competitiveness of industries is an important topic for both, academic research and economic policy. The huge economics literature flourished in the last couple of decades on the subject broadly falls into two distinct research traditions, namely the mainstream R&D spillovers approach and the evolutionary economics view. Both traditions agree on the important role played by innovation and the inter-sectoral diffusion of advanced knowledge for the competitive performance of industrial sectors. Behind this general agreement, however, the two approaches are radically different. This paper shows that, at a deeper level of analysis, the mainstream and evolutionary views do indeed differ with respect to their theoretical foundations, empirical research and policy implications. In a nutshell, while the mainstream R&D spillover approach is inspired by a traditional view of economic policy based on a market-oriented approach, the evolutionary view is on the contrary consistent with the idea that institutional arrangements and policy interventions do indeed play a fundamental role for shaping innovation patterns and their impacts on the competitiveness of industries.

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1. Introduction

International competitiveness has for a long time been a relevant issue for policy and an engaging topic of academic research. It may be thought of as the ability of an industry to compete with its foreign counterparts. Behind the apparent simplicity of this definition, the concept of international competitiveness is indeed a complex one, and it is closely related to a number of different aspects [1,2]. The ability of an industry to compete with foreign competitors does in fact refer to its trade performance and specialisation patterns, as well as to the dynamics of its productivity. These aspects are closely intertwined. Productivity growth is an important factor to improve the terms of trade of an industry, and its trade performance, in turn, is a relevant engine of growth of value added and productivity.

Academic research on the subject has achieved great progress in the last two decades. Since the second half of the 1980s, the focus of economic research has shifted from the analysis of price- and cost-related factors of competitiveness to the important role played by technological change. The greater attention to technology and non-price factors of competitiveness corresponds to a shift of focus from short-run patterns to long-run dynamics, which has been greatly inspired by the classical contribution of Schumpeter [3,4] on the role of innovation and technology diffusion in the process of growth and structural change.

Different strands of empirical research have recently flourished within the Schumpeterian tradition, providing new insights on the relationships between innovation and international competitiveness. Although the seminal contribution of Schumpeter constitutes a common source of inspiration for the recent applied work in this field, scholars belonging to different schools of thought have adopted and interpreted his theoretical view in a rather different way.

On the one hand, a body of research within the economics mainstream has inserted some of the Schumpeterian insights within a neoclassical equilibrium framework. So-called new growth models, in particular, have pointed to the existence of increasing returns and spillovers effects related to the R&D activities of private firms, and have thus provided the theoretical foundation for the flourishing of a huge applied literature on R&D and inter-sectoral spillovers [5–7].

On the other hand, a heterogenous set of empirical studies within the evolutionary economics tradition has followed a different route, and argued that the Schumpeterian view necessarily requires a disequilibrium approach to the study of innovation, structural change and growth. Evolutionary scholars have emphasised the sector-specific nature of innovation and extensively investigated its impact on the competitiveness of different systems of innovation [8–11].

These two Schumpeterian strands of research both indicate that, in a long-run perspective, the international competitiveness of industries is robustly related to two major factors, namely their own innovative activities and the inter-sectoral diffusion of advanced knowledge. The common focus on innovation and inter-industry diffusion has led to the widespread perception that these two schools of thought, both inspired by the Schumpeterian insights, are quite similar to each other and that, as time goes by, they are progressively becoming more and more similar and gradually converging to a common framework [12].

The present paper will critically discuss this argument and will show that, notwithstanding some important similarities, these two approaches to the study of innovation and industrial competitiveness are indeed very different from each other. In order to point out the striking differences between the mainstream R&D spillovers approach and the evolutionary economics view, the paper will, for each of them, focus on three major aspects: first, the recent strands of empirical research and the main results achieved by them; secondly, the theoretical concepts and foundations underlying this empirical research; thirdly, the policy implications that can be drawn from the academic research on the subject [13,14].

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