ABSTRACT WORKING PAPER 4.2

Technological catching up among European regions. Lessons from Data Envelopment Analysis

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Abstract

Europe's 2020 strategy and the initiative "Innovation Union" call for a particular attention to the territorial dimension of innovation and knowledge creation. To this end, this paper investigates the nature of knowledge production and diffusion among regions in 29 EU countries and tries to assess its effectiveness. Data Envelopment Analysis is thus applied to assess how efficiently European regions use internal and external inputs for the production of new knowledge and ideas. The analysis produces a ranking of the innovative performance of EU regions for two points in time: the beginning of the current century and the second part of this decade. This ranking is then evaluated through the Malmquist productivity index in order to assess the relative importance of its main components.

The Data Envelopment Analysis provides further evidence of a dualistic (centre vs. periphery) pattern in the regional innovation activities, with the most efficient territories located in the most central or economically strategic areas of the continent. The application of the Malmquist productivity index shows that both the magnitude and intrinsic features of the productivity dynamics are extremely differentiated across regions. Again, we observe important differences between the core and periphery of Europe and, more specifically, between the rich and industrialized countries which form the so called "Old Europe" and the relatively poorer ones which have entered the European Union quite recently.

This scenario provides some interesting lessons for European neighbouring countries and regions which are going to play the role of the New Europe in the foreseeable future.