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Speed of economic convergence and EU public policy

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Abstract The aim of this paper is to estimate the potential effects of EU-15 public policies on economic convergence. In particular, an empirical proposal is presented to compare, in terms of convergence speed, the results reached in the EU with the policies implemented with those obtained under alternative policies during the 1980–2010 period. On the basis of this approach, two types of scenarios were derived, depending on whether the changes in the policy instruments are considered in all the EU-15 countries or in each of them separately. Results show that it would have been possible to obtain better results for the EU convergence with higher rates of infrastructure and education investment, which provide support for the coordination of these policies between the member countries.

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Veelocidad de convergencia y políticas públicas en la UE

Resumen El objetivo de este trabajo es estimar los efectos potenciales de las políticas públicas sobre la convergencia económica. En particular, presentamos una propuesta empírica para comparar, en términos de velocidad de convergencia, los resultados obtenidos en la UE con las políticas implementadas con los resultados que se podrían haber alcanzado con políticas públicas alternativas durante el periodo 1980-2010. Sobre la base de este esquema, deriva mos dos tipos de escenario dependiendo si los cambios en los instrumentos de política pública se producen en todos los países europeos o sólo en alguno de ellos de forma separada.

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1. Introduction

Literature on economic growth has devoted considerable effort to analyze the speed of convergence towards the stationary state. An extensive and influential number of research papers demonstrate the existence of conditional convergence; that is, the tendency of the most backward economies to systematically grow at a faster rate than more developed economies, once the conditioning factors of this process are controlled for (Mankiw et al., 1992; Barro and Sala-i-Martin, 1995). This is determined by its own structural characteristics, among which technology, public policies and population growth rate are included. One of the reasons for the importance of this analysis is its capacity to evaluate the role played by these conditioning factors – primarily public policy instruments – with the objective of establishing whether part of the observed convergence (if any) can be attributed to these instruments.

In the context of the European Union, development and cohesion policies have received greater attention since the beginning of the 1980s and, according to the European Commission, they have positively contributed to income convergence in the EU. However, structural policies in Europe have often been questioned arguing that they mainly serve redistributitional purposes, but they have little effect on fostering economic growth and convergence at the EU level. Thus, despite the large body of empirical literature, the debate concerning the capacity of the European policies to influence convergence remains open. Why have public policies so far had such a limited impact on economic convergence? Could it have been possible to accelerate the process of European convergence implementing alternative public policies? There are multiple factors that might explain why, despite the increase of funds available since the eighties, there is little or no evidence of greater economic convergence across countries in the EU. Among the possible explanations, some highlight that, despite the increase in the volume of development funds, the funds available are still too scarce to have any significant impact on growth rates (Rodriguez-Pose and Fratesi, 2004; Varga and Veld, 2011; Reggi and Scicchitano, 2014). This paper seeks to make a contribution to this debate offering a useful proposal to value how the convergence process might have resulted under alternative public policies which differ in the rate of public investment. Specifically, in this study we pay attention to the effect on the speed of convergence of an increase in the rate of investment in infrastructure and in human capital endowments since development and cohesion policies in the EU support investments in both areas.

Building on a standard neoclassical growth framework, the study uses a programming routine with Matlab for estimating convergence applying fixed effects models to develop a proposal in which the convergence regressions are repeated with different public policies. This paper differs from much of the mainstream convergence literature focused on the comparison of results obtained using different estimation techniques, groups of countries or periods. The primary focus here will be on the comparison of the speed of convergence observed with a wide range of simulated results, which will make it possible to establish if a more favourable outcome would have been possible. The programming routine is applied in this study to a panel dataset of the EU-15 member states during the 1980–2010 period. Two types of scenarios are derived: the first scenario makes it possible to estimate the speed of convergence in the EU-15 arising from increases in the rate of investment in all the countries at the same time; and a second scenario where we estimate the speed of convergence in the EU-15 resulting from increases in the rate of investment in each one at different times. In this way, an attempt will be made to measure not only the capacity of alternative public policies to influence the European convergence, but also the role they may play in each country towards achieving convergence in the EU-15.

This paper is organized as follows. Section 2 outlines the derivation of the growth model employed and describes the estimation technique and the empirical framework. Section 3 presents the data and results. The last section provides the main conclusions of this study and future lines of research.

2. Methodology

2.1. Derivation of the growth model

We rely in our analysis on the most common measure of convergence in the literature, i.e., the regression of GDP growth over a long period of time against initial GDP levels and a set of explanatory variables in a cross section of countries (Barro and Sala-i-Martin, 1995). Our specification follows the approach of Mankiw et al. (1992), who derived the convergence equation when public capital and human capital were included. The point of departure is a Cobb-Douglas production function with constant returns performance. The production function is:

\[ Y_t = K_t^\alpha (A_tL_t)^{1-\beta}, \]

where \( Y_t \) represents aggregate production; \( K_t \), physical capital; \( L_t \), employment and \( A_t \), the level of exogenous technology and labour effectiveness. So, \( A_tL_t \) can be interpreted as effective units of labour. It should be pointed out that the production function shows decreasing scale performance in the cumulative factors, \( 0 < \beta < 1 \), allowing us to analyze the behaviour of this economy in the steady state, as well as to
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