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# Growth and Convergence in the EU-15:

# More Evidence from the Cohesion Countries

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**Abstract**

This paper analyzes income convergence within EU-15 over the period 1995 to 2013. By means of panel data techniques, we examine conditional β-convergence controlling for the impact of some economic factors such as investment in physical and human capital, inflation, government consumption and openness. In addition, the role of two institutional variables, corruption and bureaucracy is examined. We found that corruption, affects negatively the growth, in the full sample. On the contrary bureaucracy, hasn't any significant effect on the growth performance of the wealthier EU members, while affects rather differently the economic performance of the four cohesion countries, namely Portugal, Ireland, Greece, and Spain, hampering growth.

*Keywords:* Convergence, growth determinants, corruption, bureaucracy, GMM

## 1. Introduction

Despite the considerable research that has been conducted in the field, convergence keeps on being a hot issue.

Unlike most previous studies analyze growth determinants over long periods of time relying on cross-section data, a new round of empirical papers used pooled data at relatively short frequencies, along with either panel techniques or differenced specifications, to control for unobserved country heterogeneity. However, as the theoretical channels through which growth determinants affect growth are different, determinants are often found to be insignificant or have the "wrong" sign in growth regressions producing contradictive conclusions. Furthermore, the effects of corruption and bureaucracy on growth have been also a topic of debate at a theoretical as well as at an empirical level.

The rise of cross-country income disparities over time in the EU-15 and, more specifically the differences in growth experience of the cohesion countries are possibly originated from differences in socioeconomic, demographic or structural characteristics. Greece and Ireland together with Portugal and Spain form the group of "cohesion" countries within the EU. That definition was established after the enlargement of the European Economic Community (EEC) to Southern Europe, in 1981 and 1986. It was born out of the consideration that the integration into the Communities of the peripheral countries would imply measures to take into account differentials in development levels. In terms of GDP per head, all four are below 75% of the EEC average and they are classified, for purposes of Structural Fund aid, as lagging behind the rest of the Community in terms of development and as such qualify for higher rates of aid. Finally, all four are situated on the periphery of the Community, while two of them, Ireland and Greece, are geographically remote from the rest of the Community.

In this context, it would be interesting to investigate whether the fifteen older members of the EU share common growth paths, examining particularly the role of corruption and bureaucracy in the convergence process. Another motive has been the relative limited empirical evidence on this topic in the context of panel analysis, accounting for institutional variables. Additionally, the expansion of the time span including the current global crisis has been one of the basic motives of the present research effort. The aims of the paper briefly are: to analyze the convergence issue within EU-15 from 1995 to 2013; to find out the main factors of the convergence process in the EU-15 using panel data analysis; and finally, to examine if the impact of both corruption and bureaucracy on growth performance of the cohesion countries differs relative to the wealthier EU members.

The rest of the paper is organized as follows: section 2 briefly analyzes the theoretical basis of the growth determinants and their impact on growth. Section 3 describes the dataset and the model specifications. Section 4 discusses the results of the empirical analysis. Finally, the last section summarizes the findings and concludes.

## 2. Literature review

Following Sala-i-Martin (1996), there are two distinct types of convergence, absolute and conditional. Absolute convergence implies that countries approach a common steady state in terms of income, with the poor countries to grow faster than the richer ones. In this case, the growth rate of per capita GDP of an economy $i$, is given by Eq. (1),

$$g_{i,t} = \alpha + \beta \log y_{i,0} + \epsilon_{i,t} \tag{1}$$

where $\alpha$ stands for the constant term, $\beta$ is the estimated rate of convergence and $\epsilon_{i,t}$ stands for the error term. The explanatory variable $y_{i,0}$ is the initial GDP per capita of the country under consideration.

The concept of conditional $\beta$-convergence implies that a country is converging to its own steady state level, based on cross section differences in physical and human capital, technology, population growth, etc. In this case the growth rate is given by Eq. (2),

$$g_{i,t} = \alpha + \beta \log y_{i,0} + \gamma X_{i,t} + \epsilon_{i,t} \tag{2}$$

where vector $X_{i,t}$, includes several explanatory variables to account for conditional convergence. These variables, according to the theory, are the investment in physical and human capital, FDI, government consumption, inflation, trade openness, etc. However, a number of recent studies has been more skeptical about the robustness of the impact of these growth determinants and suggest that the statistical significance of their effect on growth depends on the specification of the empirical model, the period under consideration and the proxy variables for these factors.