

EU Growth, Convergence and the Knowledge Economy: An Empirical Investigation

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Abstract. This paper examines whether the ‘knowledge’ economy could contribute to reversing the existing ‘centre-periphery’ pattern in the EU, through its impact on growth. Using a neoclassical growth framework, we test for β -convergence in 205 EU regions on a cross-sectional basis. The impact of knowledge variables on growth is assessed. The empirical results reveal a limited degree of convergence and a positive impact of most knowledge variables on growth. The convergence pattern does not change when a ‘group convergence’ approach is attempted. The findings are finally interpreted from a ‘new economic geography’ perspective in an attempt to draw policy implications.

JEL Classification: C21, R11, R12, R14.

Keywords: New growth models, β -convergence, Knowledge economy, New economic geography, EU regional disparities, EU regional policy.

1. Introduction: Convergence or Divergence in the EU? Statistical Evidence and Theoretical Interpretations

Evidence from official EU statistics and a number of empirical studies (Martin, 1999; Dall’Erba, 2003) show that, in the course of economic integration of the past forty years or so, real convergence has been achieved on the country level, but not on the regional scale.

Thus, per capita income disparities between member states have diminished, following the improvement in the lagging peripheral countries’ relative income position, initially between 1960 and 1973 and, in a second step, between 1986 and 1996 (Tondl, 2001). This means that the lagging countries achieved higher growth rates than rich countries and a catching-up process set in. In particular, the average per capita income of the three cohesion (and poorer) member states, i.e., Greece, Spain and Portugal, increased from approximately 68% of the EU average in 1988 to about 79% in 2000, on the average (Commission of the EC, 2002). Among the

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cohesion countries, Greece has experienced modest growth rates, and so its convergence pattern has been relatively weaker, revealing this country's increased degree of peripherality within the integrated European economy (Martin, 1999; Dall' Erba, 2003).

On the other hand, while per capita income differences have, overall, narrowed between countries during the 1980s and 1990s, they have generally widened between regions within countries (Dall' Erba, 2003; Martin, 1999, 2004; Barrios and Strobl, 2005). This has resulted in a slower overall reduction in regional income disparities in the EU as a whole. Some writers have, in particular, found that half of the income inequality existing between EU regions is attributed to regional inequalities within individual countries (Martin, 1999; Puga, 2002). This finding, in turn, suggests that any gains from economic integration have mainly benefited the richest regions of the poorer EU countries, so that a trade-off between growth (in terms of per capita GDP) and equity (measured by the degree of regional income inequalities) has been taking place (Quah, 1996, 1997; Canova, 2001; Gianetti, 2002; Dall' Erba, 2003; Petrakos et al., 2003; Martin, 1999, 2004; Barrios and Strobl, 2005). In other words, countries with a per capita GDP level above the EU average also experience above average regional disparities and vice versa. For example, the three poorest (EU-15) countries, Greece, Spain and Portugal, have the lowest level of regional disparities, but these disparities increased substantially in Spain and Portugal, which achieved a relatively higher growth rate and converged with the rest of the EU (Martin, 1999; Dall' Erba, 2003; Petrakos et al., 2003).

On the theoretical level, the slowly converging or diverging income levels among EU regions, which have not been in line with the traditional neoclassical growth model, have led to the emergence of two new strands of thought in regional economics, both reflecting a revival of earlier regional growth and development theories: (1) the *new growth models* in the mid-1980s and (2) the *new economic geography*, in the early 1990s.² The latter — also known as *new location theory* — initiated by the works of Krugman (1991a, b) and Krugman and Venables (1995), emphasizes the centre-periphery pattern, which the above regional inequalities reveal. This pattern implies concentration of economic activity in some regions (called 'central' regions or the 'centre'), which generates cumulative growth processes leading to further growth and diverging growth rates and income levels between central and 'peripheral' regions. Central regions also contain a high proportion of 'new' or 'knowledge economy' activities. Thus, an implicit assumption of this theoretical framework is that human capital — the driving force of the new economy — is an important determinant of cumulative growth processes in a

² In particular, while the origins of the endogenous growth theory trace back to the demand-oriented regional growth theories of the 1970s (mainly Kaldor's model), both theoretical approaches drew on earlier development theories, in particular, Myrdal's model of cumulative causation (1957), Perroux's model on growth poles (1955) and Hirschman's model on backward and forward linkages (1958).

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