

Exploring carbon emissions and international convergence in a globalized world: a multiregional perspective

Topic: Global databases

Author: LucÃ-a BOLEA

Co-Authors: Julio SÃ¡nchez ChÃ¡liz, Rosa DUARTE

The phenomenon of economic convergence has been analyzed from several perspectives, taking into account the effect of the population, and obtaining diverse results. The common objective in the literature is to study whether economies walk towards a common growth path or tend to diverge over time and the consequences of this path on economic cohesion. However, the analysis of global convergence on CO₂ emissions and the implications in terms of pollution and income-dependence has received barely attention in the literature of convergence. In this paper, we use the multisectoral and multiregional perspective provided by a MRIO model and the associated databases to study the evolution of convergence in CO₂ emissions from three main perspectives: country-sector, country and sector levels. These three points of view allow us to check whether the phenomenon of convergence or divergence is due to a specific region, a country or a particular productive structure. Given the relevance that economic structure, international trade and intersectorial links have in the generation of income but also emissions in countries and sectors, we analyze the contribution of these factors to the convergence measures. Additionally, our paper attempts to shed light on the discussion about the effects of population and per capita income growth on global emissions convergence. Specifically, and taking into account the approval of Kyoto Protocol in December 1997 and the Paris Agreement, this work explore the effect that population vs. economic growth have played in the real evolution of CO₂ emission trends.

To do this, the information provided by the most recent edition of the World Input-Output Database (WIOD), as well as other information on sectoral CO₂ emissions are used.

In our view, the results contribute new dimensions to the issue of international inequality in terms of environmental pressures and open new debates on the relocation of environmental damage, comparative advantage and environmental footprint.