Structural change and greenhouse gas emissions: a case study for Argentina during the period 2000-2016

Topic: Structural Decomposition Analysis (Chair: Jose M. Rueda-Cantuche, European Commission)
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The various aspects of structural change are related to climate change in different ways. The sectoral composition of the economy has a direct impact on the environment, through the different contributions that each sector makes in terms of greenhouse gas emissions. Technical change, for its part, plays a central role, since the introduction of green technologies contributes to energy efficiency of production processes, to an increase in the dematerialization of the value added of final products and replacing fossil fuels by renewable energy sources. However, radical innovations may require major changes in the structure of the economy, infrastructure and consumer behavior and therefore can have negative effects on the environment. The change in income distribution, in turn, alters the levels of final consumption, the distribution of consumption between different sectors, and the aversion to pollution on the part of consumers. In conclusion, each of the different aspects related to structural change can have different impacts on the environment, so the net effects of structural change on greenhouse gas emissions is, ex ante, indeterminate.

In this order of ideas, this paper aims to answer the following research question:

What is the effect of structural change on the level of greenhouse gas emissions in Argentina?

The main goal of this article is to determine the contribution of the technological change and the sectoral composition, along with changes in final demand and the energy intensity associated with the production processes, on the levels of greenhouse gas emissions in Argentina, during the period 2000-2016.

The method used to achieve this goal consists on a structural decomposition analysis of environmentally extended input-output matrices (which incorporate satellite accounts of greenhouse gas emissions and energy consumption), provided by EORA (https://worldmrio.com). This type of study has not been carried out so far for Argentina.