

Isolating economies. Is trade a large CO2 driver?

Topic: Environmental IO models 5

Author: Sergio Alvarez

Co-Authors: Agustín Rubio, Anne Owen, John Barrett

Measuring GHG emissions on a consumption-based approach allow us capturing the whole life-cycle impact of products and services across international supply chains. Historically, international trade has played a significant role in economic development. However, without fully and uniformly capturing the cost of externalities, production may occur in regions with poor environmental performance or weak environmental legislation. In this work we calculate the GHG emissions under the isolated economies principle, and compare the change respect to former calculations. Results from a fully coupled Multi Regional Input-Output model are presented, using 2004 global economic data disaggregated into 113 regions and 57 sectors. Two scenarios have been developed (reference and isolated) in order to calculated the change in GHG emissions embodied in final demand imports. Globally, there is a slight decrease of 18 Mt. Nevertheless, this slight difference hides important pollution interchanges. Results are broken down by national economic level, GHG emissions assignable to Annex 1 countries would decrease by 434 Mt and increase by 416 Mt in non-Annex 1. From an environmental point of view there are countries were production must be allocated domestically rather than abroad. A green border-tax would help countries like the United States and Japan to cut-off GHG emissions by over 110 Mt each. Through the analysis of sectors, a reduction of 209 Mt can be achieved by isolating electricity in each Annex 1 country. The lack of political interest in consumption-based emissions seems to have prevented from taking adequate and responsible decisions. This study further reinforces the need for consumption-based inventories to widen the scope of policies.