

Shared responsibility of CO2 emissions from trade and international freight transport

Topic: Environmental IO models 6

Author: Maria A. Tobarra-Gomez

Co-Authors: Luis A. Lopez, Maria Angeles Cadarso, Nuria Gomez

The objective of our paper is to analyse the impact of international trade of CO2 emissions for which a country like Spain can be regarded as responsible, using a criterion of shared responsibility among trade partners. This implies first, calculating emissions embodied in imported and exported final and intermediate products and then allocating these emissions either to Spain or the rest of the world (following the methodology in Cadarso et al., 2011, in revision), that is a point between the producer and consumer responsibility criteria. In this way, a country (and sector) is responsible for all the emissions associated with the production of goods consumed domestically, plus part of those incorporated into exports, plus part of those incorporated into imports (intermediate and final). Secondly, we also need to calculate and allocate emissions from international transport of those products. As countries become more interlinked in international global supply chains, final products and more importantly intermediate inputs travel more, due to an increasing number of stages of production in different locations, and longer distances. To do so we extend a methodology already presented in Cadarso et al. (Ecol Econ, 2010) that combines data from input-output tables, trade data (imports and exports by country of origin/destination and means of transport) and CO2 emission data. We take into account the requirements of imported inputs, the distance they travel and the means of transport used. We apply this methodology to Spanish data, comparing results for 2005 and 2010, and offer a detailed analysis by (importing / exporting / net) industry and by country (of origin / destination / net), using the DTA assumption.