

ESTIMATING CARBON EMISSIONS EMBODIED IN FINAL DEMAND AND INTERNATIONAL GROSS TRADE USING THE OECD ICIO 2018

Topic: IO modeling: Consumption-based accounting

Author: Norihiko YAMANO

Co-Authors: Joaquim J.M. GUILHOTO

Earlier OECD studies on carbon footprint analyses taking into account for global production networks have contributed to increase awareness of divergences in territorial or production-based and consumption-based carbon emissions. The differences in these measures are essential for formulating responses to international climate change negotiations. This paper provides the latest estimates of demand-based carbon emissions of selected 65 economies for the period between 2005 and 2015 with a revised methodology of territorial and economic output-based emissions. Using the latest main data sources (2018 edition of the OECD Inter-Country Input-Output (ICIO) tables, the OECD Air Emissions Account under the System of Environmental-Economic Accounting (AEA-SEEA) and the IEA CO₂ emissions from fuel combustion data), new estimates of emissions embodied in final demand and in international trade were generated using a more refined methodology than previous versions. Namely, following extensions are included: 1) explicit distinctions between territorial, economic output, final demand-based emissions as well as emissions embodied in gross imports and exports, 2) estimates by major fuel combustion sources, 3) fuel purchases by non-resident industries (road transportation; international aviation and marine bunkers) and household (motor vehicles fuels consumption abroad)