

The dominance of the US and China in CO2 emissions growth through international sourcing

Topic: 711Y Special session: Analysing Environmental and Economic Consequences of Globalisation Using MRIO-SDA

Author: Sangwon SUH

Co-Authors: Bernhard MICHEL, Rutger HOEKSTRA

The effect of changes in trade patterns, particularly increasing international sourcing, on global CO2-emissions growth has yet to be clearly understood. Due to better availability of multiregional input-output tables and environmental data it is now possible to analyse in greater detail the influence of various globalisation trends on the shifts in emissions.

Hoekstra et al (forthcoming) estimated the Emission Cost of Sourcing (ECS), which originates from replacing domestic products by imports from countries with more CO2-intensive technologies. Using a structural decomposition analysis, it was found that changes in sourcing patterns between 1995 and 2007 contributed (1) to reducing territorial emissions in high-wage countries (70% of their territorial emissions growth), and (2) to increasing territorial emissions in low-wage countries (30% of their territorial emissions increase). The net global effect, the ECS, amounts to 18% of total global CO2-emissions growth.

In this paper we will use the method developed in Hoekstra et al (forthcoming) to analyse the US-China relationship, which is crucial for our understanding of global developments in CO2 emissions growth. Indeed, when looking at individual countries, it turns out that most of global CO2 emissions growth through international sourcing is accounted for by the US and China. Our analysis quantifies the burden shift in the US-China relationship and looks at its implications for global CO2 emissions growth. The paper also discusses the results in the context of the Paris agreements.