Recent trends in international trade and their consequences on carbon footprints

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Author: Ã•ngela GarcÃ-a-Alaminos
Co-Authors: Maria Angeles Cadarso, Luis A. LOPEZ, Maria A. Tobarra-Gomez

By the end of 2019, international trade entered a phase of slowbalisation or deglobalisation after more than 30 years of continuous growth, with an increasing importance of reshoring trends. These trade-restructuring phenomena have been accelerated by geopolitical tensions and sudden shocks, which have highlighted the vulnerability of global value chains (GVC) and triggered significant economic, social, and environmental impacts related to their disruption. The response has led to prioritising the search for greater resilience in GVC, involving new reshoring, backshoring, nearshoring, and multisourcing schemes. All these strategies need to consider sustainability and carbon emissions to be effectively resilient, but also, at the same time, they are drivers of changes in global carbon emissions.

In this context, this paper aims to measure the magnitude of those relocation patterns in GVC and their impact on global, country, and sector carbon emissions, with a particular focus on the European Union (EU). For this purpose, we use an environmentally extended multiregional input-output model (MRIO) and the Intercountry Input-output Tables (ICIO) from 1995 to 2018 (OCDE, 2019) to calculate global emissions and carbon footprints under current trends of GVC and international trade. Additionally, we divide relocation trends into several components, isolating the effects of the geographical relocation of suppliers from 2008 onwards. Using the elements in the decomposition related to geographical shifts of suppliers, we can trace different trade-restructuration schemes such as backshoring, reoffshoring or offshoring.

Preliminary results indicate the relevance of the development degree of countries and the different patterns followed by domestic and imported emissions: domestic emissions slightly declined in the EU and USMCA, while increasing in China, BRIIAT, East Asian countries, and the rest of the world, with a more evident growth trend of imported emissions of these regions except for the EU. The reduction in the EUâ€™s carbon footprint in the period 200/-2018 is a result of changes in emission intensities, intermediate inputs, and the mix composing the final demand. Shifts in the geographical distribution of providers increased the EUâ€™s carbon footprint, but by a relatively small amount, particularly in 2008-2018. This indicates that relocation (reshoring, reoffshoring) is not decreasing emissions, at least up to 2018. Therefore, the environmental dimension is needed to achieve synergies between GVC reconfiguration, resilience and climate change goals.