Multinationals' technological transfer on right-sourcing strategies: an environmental assessment for the European Union

Topic: Input-Output Analysis: Trade and Global Value Chains Policies - VII
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The current global context, reshaped by the climate emergency and recently abruptly by geopolitical and post-pandemic aspects, presents an opportunity to reconfigure the global production chains bidirectionally. Multinational corporations' influence along production chains will be key in addressing the new economic, technological, and environmental challenges derived from this reconfiguration. This paper presents an environmental assessment of multinationals' strategies for reshaping their supply chains to integrate nearby low-carbon suppliers (right-sourcing). The analysis will focus on multinationals operating in the European Union and explore right-sourcing strategies through own-technological transfers within the European Union borders or to strategic partners.

The processes of global production fragmentation have shown the weakness and low levels of resilience of regions such as the European Union in terms of international dependency in some key industries and sectors. In response to this situation, the EU has proposed a trade policy review to seek for own-security and reduce dependencies in critical areas, all within the framework of the so-called Open Strategic Autonomy (Cagnin et al., 2021). The strategy presents economic, political, technological, social, and environmental opportunities to encompass a wide range of policies aimed at strengthening the EU's autonomy, resilience, and active role along global value chains. In this sense, this paper will be focused on evaluating the technology-environment nexus and identifying synergies between multinational right-sourcing strategies and the EU's objectives of increasing autonomy and reducing the carbon footprint of its supply chains.

This window of opportunity for the EU industries is aligned with the UNFCCC Technology Mechanism for the 2023-2027 Programme (UNFCCC, 2022). The UNFCCC has identified the necessity of promoting technology development and transfers to support countries to accelerate climate action achieving the Paris Agreement goals through transformative technologies. Right-sourcing strategies by multinationals could lead to this greener spread of EU technologies within and beyond the EU borders.

The environmentally extended MRIO model proposed in this paper will use the ICIO-AMNE database developed by the OECD. This database presents a depiction of the activities of multinational enterprises combined with the ICIO tables (Cadestin et al., 2018). The methodology proposed in this paper will first identify the multinational greener industry performances within the EU and, second, the emission hotspots along EU global production chains. Based on our findings, we will propose potential right-sourcing strategies in terms of multinational technology transfers. The method will follow Wiebe (2018) proposal to identify industries and countries where technology transfers would lead to significant upstream emissions reductions. We will also use the Jiang et al. (2022) proposal to evaluate the technology gaps between parent companies and foreign affiliates in identifying multinationals performances from industries and regions with higher potential to transfer low-carbon technologies.

Once emissions hotspots and best technologies performances are identified, we will propose some source-shifting scenarios following the approach suggested by (Gilles et al., 2021), to simulate the technology transfers. The results will allow us to evaluate the potential role that multinationals located in the EU can play in leading greener transitions within the EU borders, looking for more internal environmental resilience, and positioning EU industries as global spreaders of

environmental-friendly technologies.

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