Using Inter-Country Input-Output Tables to Address Concrete Policy Questions

Topic: Extending the Inter-Country Input-Output Framework: Updated OECD Datasets, Methods, and Policy Applications
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Statistics Netherlands has a long-standing tradition of conducting research on globalisation, often commissioned by ministries to address specific policy questions. This paper discusses three such projects that applied inter-country input-output (ICIO) tables while indicating the use of additional other data. The projects remain highly relevant in the context of potential realignments of trade blocs and shifting geopolitical dynamics.

First, to what extent does the Netherlands function as a gateway to Europe, and how has this role evolved over time? Second, firms from which countries own production activities along the supply chains of selected Dutch industries? Third, while Dutch imports may face direct tariffs, they may also be affected by indirect tariffs further downstream in global value chains. How can these indirect tariff exposures be estimated?

The gateway to Europe project (Jaarsma and Wong, 2018) explored the role of the EU14 Member States, the countries that joined the EU before 2004. Exports to these countries account for a decreasing share in total value added embodied in Dutch exports, although their share in Dutch exports remains high. How are these two seemingly contradictory facts aligned? The inter-country input-output tables of the OECD were used for 1995-2014. With standard input-output analysis, one can derive how much value added there is in the Netherlands because of final use in a country that is fulfilled by producers in the same country or in another country. The relative role of the EU14 as a consumer had declined, but it acted increasingly as a gateway connecting Dutch manufacturing production with the rest of the world. In 1995, 10 percent of total value added in the Netherlands due to exports to the EU14 was embodied in EU14 exports to countries outside the EU14. By 2014 this had already increased to 20 percent.

Production in the supply chain is fulfilled by enterprises, which might ultimately be owned by an enterprise in the country of production or somewhere else. That is policy relevant; the country of final ownership might put pressure on the owning enterprise to influence production at the firm that actually produces. Given five key industries in the Netherlands, enterprises from which countries are owning that production, in which industries, and in which countries? Using the input-output part of the AAMNE data from the OECD, Lemmers et al. (2023) first derived the global value chain producing for each key industry. The AAMNE data also provides estimates of the share of a country of ownership in the production of an industry in the country of production. Connecting the two data sources led to the requested results.

Notten et al. (2024) focus on tariff costs in the Dutch supply chain: how large are direct and indirect tariffs, respectively? In addition to direct tariff costs on products that are imported into the Netherlands, there are also tariff costs in the upstream supply chain before these products reach the Netherlands: indirect tariff costs. In 2020, total tariff costs amounted to more than â,¬2.2bn, of which 48.5% (â,¬1.1bn) were levied directly at the Dutch border and 51.5% (â,¬1.2bn) were levied indirectly in the supply chain. This reveals that total tariff costs are substantially higher than suggested by previous research on direct tariffs. This information is derived in the following way. First, using detailed trade data and input-output tables for the Netherlands, it is derived which products are imported from where. The inter-country input-output tables from the OECD and the supply-use tables from Eurostat/JRC are used to map the complete supply chain, with countries, industries and products at a coarse product level. Then the product detail is refined to products at the HS 6-digit level, using the Dutch production structure and the BACI dataset from CEPII. Tariffs are obtained from the Market Access Map of the United Nations. These are applied to all products in the global value chains of the Netherlands, and summed into direct tariffs (Dutch imports) and indirect tariffs (more upstream from the Dutch border).

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