An ICIO split according to domestic and foreign ownership: the OECD TiVA-MNE project

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The development of Inter-Country Input-Output tables has been a big step forward to understand global value chains. The global Leontief inverse has allowed researchers and policymakers to measure trade in value-added terms and to identify the contribution of each country and industry to the value of final products. However, the picture is still incomplete. Global value chains are not only composed of independent companies exporting and importing intermediate and final products. Many of the firms involved in global value chains are multinational enterprises (MNEs) who have a network of foreign affiliates resulting from their foreign investment. As it is now, the main ICIOs, such as TiVA, WIOD or EORA, do not provide any information on the role played by foreign affiliates in GVCs. When â€˜domestic valueâ€™ is added to exports, it can be the value added by domestic-owned firms but it can also be some value added by foreign-owned firms established in the country. The fact that foreign ownership is involved is not without implications. For example, in terms of income, it is likely that the activities of the foreign affiliates benefit the parent economy, either through direct transfers (e.g. repatriation of profit) or through spillover effects.

In this paper, we present ongoing work at the OECD aiming at adding an ownership dimension in the OECD ICIO and in the new WIOTs from the WIOD project (Timmer et al., 2016). The work first consists in the estimation of a full matrix of the output of foreign affiliates in 49 countries plus the â€˜rest of the worldâ€™. The starting point is the OECD AMNE database complemented with additional national sources when available. The data are made consistent with output as measured in the ICIOs and the missing information is estimated by various statistical ways. In addition to this matrix describing world output by country, industry and country of ownership, a trade matrix is created for the exports of domestic-owned and foreign-owned firms. Very limited information is available on such trade but what can be found in the AMNE database, the Trade by Enterprise Characteristics (TEC) database and some national sources is used, while a simple split based on the share of ownership applied to exports gives starting values to populate the whole matrix. Finally, as output needs to be split between intermediate consumption and value-added in the ICIO, a matrix of value-added ratios is also created for the domestic-owned and foreign-owned firms, using in some cases firm-level data.

Based on these three matrices (output, exports and value-added ratios by country, industry and ownership), both the TiVA and WIOD ICIOs have been split according to domestic and foreign ownership within each country and industry. In order to create transactions among domestic- and foreign-owned firms, we use a methodology derived from the regional IO literature, CHARM (Kronenberg, 2009; TÃ¶bben and Kronenberg, 2015). The results are preliminary and we are still working on improving the data and the methodology.

Adding an ownership dimension to ICIOs allows us to revisit TiVA statistics to show the contribution of foreign-owned firms to exports. In addition, we have developed a methodology to trace value-added and remove double counting in the sales of foreign affiliates (Miroudot and Ye, 2017), thus giving us the opportunity to compare the value-added in exports with the value-added in domestic sales for both foreign-owned and domestic-owned firms.