

Does the rest of the world matter? A sensitivity analysis with the WIOD tables

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The intercountry input-output (IO) tables in the WIOD database include 40 countries. Although these countries represent approximately 85% of world GDP, a substantial number of countries in the world are not included. This implies that there is still a considerable rest of the world (RoW) for which we have only very limited information. The central question in this study is: what is the role of the RoW? That is, does it matter very much that we only have limited information for the RoW? In a sensitivity analysis, we mimic the actual situation by assuming that the world consists of just the 40 WIOD countries. We omit one country (or a group of countries) from this world IO table, which then plays the role of RoW. Four types of cases are discussed: a full neglect of the RoW; using information on the imports from the RoW; adding a very crude estimate of the RoW's production structure; and adding the RoW's true production structure. In all cases, we calculate the consumer responsibility for global CO₂ emissions of the remaining countries and compare it with the true outcome as obtained from the world IO table. We find that serious biases may occur when the true emission coefficients are estimated by average emission coefficients, and when the true technical coefficients matrix of the omitted country (i.e. the one that mimics the RoW) is estimated by the average matrix. In general, omitting a "large" country from the world may affect the estimation of the consumer responsibility in its "small" neighbors or trading partners.

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