

A structural decomposition analysis of the pollution terms of trade using the WIOD tables

Topic: Special WIOD-session 1: Environmental Aspects of International Trade 1

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Antweiler's (1996) Pollution Terms of Trade (PTT) index uses the ratio of the export pollution intensity to the import pollution intensity to indicate the relative cleanness of a country's exports versus its imports. If the PTT is greater than one, a country's exports are, on average, dirtier than its imports. The PTT is determined by three factors: the production technology, the final demands and the emission intensities. These factors change over time, so that also the PTT changes. In this study, we decompose the change of PTT into the three factors using an MRIO model with annual WIOD data in current and constant prices. The dataset covers the period from 1995 to 2006. The structural decomposition analyses attempts to answer the following questions. The change in which factor (i.e. production technology, final demands or emission intensities) contributes the most to the changes in each of the countries' emissions trade balance (imbalance) in general and to the changes in the PTT? Do changes in demand (or technology) at home have the same effect on the PTT as changes abroad? Answering these questions is relevant for environmental policies.

Keywords: Pollution Terms of Trade, World Input-Output Database, multi-country input-output model