

Integrating Material Flow and Input-Output Data: All Is Not Said and Done

Topic: Material flow/stock analysis in input-output modelling II

Author: Anke Schaffartzik

Co-Authors: Dominik Wiedenhofer, Nina Eisenmenger

Using environmentally extended input-output models, a number of recently published studies have attempted to open the 'black box' as which material flow accounting conventionally treats production and consumption structures. With results known as "raw material equivalents" or "material footprints", such applications have an immense potential to enhance our understanding of global material flows and the underlying drivers of resource use. However, a number of these studies have pointed to persisting caveats of the calculations on which they are based: the violation of homogeneity assumptions for prices and products and the impact of investment allocation and depreciation on the results. As a consequence, it remains difficult to pinpoint to what degree results for material footprints are shaped by production and consumption patterns or by methodological assumptions made in their calculation, respectively. We will present and discuss these methodological issues, delving both into the background calculations and using examples from published studies. In order for material footprint accounts to become relevant for policy making, the interpretation of their results must leave less room for ambiguity. However, even once methodological issues have been resolved, a debate will still be required on what this new indicator means politically. Making use of important insights gained from applications of environmentally extended input-output analysis to greenhouse gas emissions embodied in trade, we argue that in the course of this debate, the issue of accountability for resource use will have to be revisited.

This abstract is submitted for inclusion in the special session "Material flow/stock analysis and Input-Output modeling" proposed by Keisuke Nansai and Tommy Wiedmann.