Structural decomposition of CO2 emissions in the Slovak economy

Topic: Environmental IO models 2
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The paper examines changes and their causes in CO2 emissions in Slovak economy. We use the symmetrical commodity-to-commodity input-output tables to identify the most polluting commodities in the sense of both direct and indirect effects. Afterwards we decompose these changes into the contribution of (1) technological progress in the sense of reducing direct emissions per unit of output, (2) changes in the structure of production described by Leontief inverse and (3) changes in final demand (in commodity mix, final demand distribution and final demand level). For our analysis we make use on the availability of symmetric input-output tables for Slovak economy for the years 2000 and 2005 in constant prices of 2000. Our results show increasing emissions in Slovakia by 3,6 %, with significant structural changes. Final demand growth was the main force that increased the emissions, while structural changes helped to erase vast majority of that increase. Interestingly, direct emissions per unit of output did not fall down but even slightly grew up what is in contradiction with similar studies in other countries (e.g. Norway or Austria).