# Embodied CO2 emissions of German imports - How do technology assumptions affect the results?

Topic: Embodied CO2 emissions in trade
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When determining the energy and CO2 content of goods requires taking account of the production and emission conditions in the manufacture of those goods. This means not only considering the production conditions in the domestic manufacture of goods but also including the production conditions at the countries of origin of the imports. Often the multiregional I/O-analysis is looked at the best way to incorporate the technology of the countries of origin and to take account of the upstream linkages between the countries. However the multiregional approach requires a high degree of effort in terms of data collection and processing. Furthermore, not all countries of origin (regions) have sufficiently detailed and up-to-date input-output tables. Inadequate disaggregation of sectors can lead to substantial deficiencies in the mapping of flows responsible for the generation of CO2 emissions. Establishing the I/O analysis on monetary flows only also involves a risk to ignore the consequences of price heterogeneity of certain energy flows.
At the calculations of the CO2 content of German imports another model has been pursued. Based on the I/O table for Germany, detailed data on the production and energy consumption of the energy intensive branches for the most significant countries of origin are taken into account. A calculation was implemented for fourteen countries, for which detailed import data were evaluated. The calculations take place on the basis of a hybrid computational approach, which facilitates the use of data for quantity energy input from the international energy balance sheets and from details taken from process chain analysis.
On basis of those calculations the factors influencing the results (technology assumption, level of disaggregation, hybrid or monetary approach, emission coefficients) for embodied CO2 of imports are analysed.