

Title: The measurement of CO2 Embodiments in International Trade:
Evidence from the OECD Input-Output Tables for the mid 1990s - early
2000s

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The reduction of the global CO2 emissions has gained a global consensus to mitigate global warming. As of today, the Kyoto protocol has been ratified by more than 160 countries and the ratified countries have tried to reduce the CO2 emissions by various policies. The UNFCCC agreement nevertheless has been criticized for the possibilities of the carbon leakages through the international trade and the coverage of target countries of CO2 reductions. This paper deals with this issue in detail empirically by using recently developed global input-output data within the OECD Secretariat and draw some policy implications of for example the importance of global transfer of energy conservation technologies from advanced countries. If we include indirect CO2 emission embodied in the net import, OECD total of CO2 emissions associated with domestic consumption in 2000 would be 14% higher than the conventional measurement of domestic CO2 emissions – those differences exceed 30% in seven OECD countries. Growth of trade-adjusted consumption-based CO2 emissions was not decelerated as much as domestic CO2 emission in OECD countries, partly reflecting global relocation of emissions-intensive production towards non-OECD [or non-Annex1] countries. While less than half of global CO2 emission increases in 1995-2000 resided in OECD economies, two thirds of those are still attributable to the OECD consumption. Considering the magnitude of indirect CO2 emissions embodied in trade, future framework of global CO2 emission control should encompass broader set of countries based upon fair burden sharing between producing and consuming countries.

Keywords: multicountry input-output, international trade, CO2
embodiments in trade