The role of data quantity for constructing a time series of MRIO tables and calculating CO2 emissions embodied in international trade

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Researchers have investigated the role of data quality for constructing (MR)IO (multi-region input-output) tables, as well as the effect of constant vs. current price valuation, and physical vs. monetary units. The effects of data aggregation, both sectoral and spatial, have also been studied. In this article, we carry out comparisons of different approaches for constructing (MR)IO tables with a focus on the influence of data quantity on MRIO table construction and its applications. We construct two Eora MRIO table versions using constrained optimization. One optimization version uses only the UN SNA Main Aggregates (MA) database and balancing constraints, whilst the other uses UN SNA Official Country (OC), UN Comtrade, Service Trade, and national IO/SUT constraints in addition to MA and balancing. We calculate CO2 emissions embodied in international trade for 187 countries using the two Eora MRIO versions. For this work we have updated the Eora MRIO database to 2012, using UN SNA MA and OC, and UN Comtrade databases, and over 40 countries' national IO/ SUT time series.