

Building a Consistent OECD Global Dataset for CGE Trade Modeling: Data Integration, Balancing and Calibration

Topic: SAM and CGE Modelling for Food System Transformation and Policy Evaluation (I)

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We create a consistent data set for building a global CGE trade model using the data from the OECD that contains 64 countries 34 commodities. We propose a general methodology for consistency of financial flows. Since the OECD data is split across data that deals only with IO flows, and separate information on value added by sectors and countries, we combine data sources from multiple sources to ensure consistent flows to ensure calibration for a CGE model. The challenges we face is the computation of the indirect and direct tax rates as the information is sparse. The procedures are implemented in GAMS along with the structure of the model and calibration steps.

Each commodity/sector uses a KLEM production function with Energy [E] and Material [M] following a CES function of input commodities. Each of the E and M inputs follows the Armington assumption between the Domestic [D] and an aggregated Import [M] commodity. Each aggregate Import commodity is a CES between the imports from various countries as reflected in the data set.

The trade deficit between countries is assigned to capital transfer/investment in the base case between countries.

We have a representative household for each country and use a Cobb-Douglas demand system to begin with. Each commodity is an armington function between D & M and each M is a CES between the various sources of imports.