

Revisiting Methods for Estimating Interregional Input-Output Accounts: It's Not Just About Trade Flows

Topic: Input-Output Accounts - II

Author: Michael L. LAHR

Co-Authors: Ana Lucia Marto Sargento, Joao Pedro FERREIRA, Fernando de la Torre Cuevas

Interregional input-output tables largely differ in the quantity and nature of the set of available information pertaining to interregional trade. With respect to ability to replicate interregional trade accurately, research to date suggests decreasing returns to scale persist with regard to both more theoretical expectations and added empirical data. A basic underlying assumption is that intermediate industry accounts of the economies in the interregional input-output tables exist and are accurate. In fact, if they exist at the subnational level, such accounts are, at best, roughly estimated and predicated on far less empirical information than is available for economies of nations. Moreover, intra-economy intermediate-industry flows are typically markedly larger than the set of a region's commodity in- and out-flows. So, if intermediate industry flows in a set of interregional input-output accounts are noticeably mis-estimated, it follows that interregional trade coincidentally derived using them must be even more conspicuously in error.

In this piece, we identify a few approaches typically used by researchers worldwide to develop subnational interregional input-output models: (1) a European approach that uses data available for NUTS 2 regions, (2) an American approach that uses data available for U.S. states, and (3) a very basic approach in which researchers have only employment data by region and reasonable travel time information among regions. We also examine variants of (1) and (2) in which we generate estimates of intermediate industry accounts via best-practice methods, i.e., those detailed in Lahr, Ferreira, and Tjøbben (2020). The original variants estimate the accounts strictly via RAS and a gravity model. We further test to see how well the approaches estimate interregional input-output accounts of member states in the European Union (EU). In essence, aggregate all economies of the 27 member states, while maintaining sectoral detail, to produce a "national account". We then apply the five approaches (1a), (1b), (2a), (2b), and (3) so that each produces a coherent set of interregional accounts. Finally, we compare each to actual interregional accounts of EU member states published by Eurostat and, in turn, examine the benefits and trade-offs inherent to them.