About Upper and Lower Bounds of Interregional Aggregation Effects.

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Abstract

The upper and lower limits of interregional feedbacks in I-O models have played a role in theoretical and practical dis-cussions of these multiplier effects. A parallel can be drawn to the analysis of biases which result if the aggregation level of interregional I-O systems is changed.

What can be said about the over or underestimation of intra and interregional trade multipliers, comparing results of a given macro model M* with those on a deeper level M with a more extended spatial differentiation. The question has a practical background if, for example, interregional I-O investigations have to work, typically because of empirical re-strictions, with spatial aggregates like the rest of the economy.

The paper presents an approach to determine the positive or negative direction of possible distortions but also verifies their upper and lower limits, thus giving hints on the reliability of the original results in case of unknown relations on a deeper level. The estimation procedure uses as less information as possible, serving eventually as a first step into further more cost intensive research.

The method is based on the comparison of input or output coefficients and final demand or primary input proportions using power series. All effects and limits can be observed for single indudtries or industry groups in each region, the partition of spatial aggregates into sub-regions is flexible. It can be shown under which conditions the aggregation effects reach a maximum or a minimum, if they matter or can be neglected and in which cases they disappear con-firming the original results.

From a methodological viewpoint, the concept makes clear in which way spatial but also sectoral aggregation effects depend on the distribution, especially the concentration of supplies and deliveries together with final demand relations within the aggregates. This extends the usual assumption that the biases are caused by the heterogeneity of units.