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ABSTRACT

Title: Trade Elasticities in the EU Internal Market: A Spatial Econometrics Approach

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Abstract: The current literature estimating trade elasticities at a regional level has neglected the existence of spatial dependence among trade flows, which cast doubts about the reliability of the results from an econometric perspective. We introduce a spatial autoregressive SAR gravity equation that accounts for the spatial spillovers that originate from trade between neighboring regions. Resorting to this specification we estimate two levels of trade elasticities between locally produced goods and substitutes sourced from regions located in third countries (foreign elasticities), and goods produced in regions within the same country (national elasticities). We show that these elasticities correspond to the partial derivatives of the trade flows with respect to a very precise measure of iceberg transportation costs, including the spatial effects captured by the corresponding weight matrices.

We make use of the latest available year of the EU interregional trade flows database, corresponding to 2013, to perform the estimation of the trade elasticities. The set of data required for the estimation includes the following three groups: 1) Trade flows (quantity and values); 2) generalized transport costs and associated iceberg values; and 3) ancillary variables capturing the direct and neighbor effects associated to the direct

preference parameter. As aforementioned, bilateral effects are proxied through physical distance and adjacency variables, while neighboring spatial dependence is introduced in the specification through the three contiguity matrices reflecting the origin, destination, and origin-destination spatial effects

Our results confirm that national elasticities are consistently higher than their foreign counterparts, therefore corroborating this long-established hypothesis in the literature. We also find that spatial effects are relevant in magnitude and statistically significant, with a net positive effect that foster both international and national trade flows. However, this is qualified by the existence of competition effects coming from neighboring regions. Our calculated trade elasticities controlling for spatial dependence can be adopted in a wide array of spatial economic frameworks such as Regional Computable General Equilibrium, improving the predictions of policy simulations.

Keywords: Gravity equation, trade elasticities, spatial econometrics, generalized transport costs.
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