

Using gross and base measures of output to explore the relationship between export expansion and import substitution.

Topic: Input-Output Analysis for Policy Making

Author: David Duane Kay

Co-Authors: Greg Alward, Philip Watson, Stephen Cooke

Two broad strategies of local economic development include export expansion and import substitution. We assume that the former causes the latter until there is an optimal level of both. The product of a Leontief inverse closed to include households and a diagonalized vector of final demand generates both measures of export base output by sector down the columns and gross output along the rows. We assume that gross output reflect a measure, in part, of the extent of import substitution while export base output reflects the extent of export expansion. Applying a Shannon entropy index to base and gross output as measures of diversity, we determine the effect that export base diversity has on the difference between gross and base diversity. The sample includes all counties in the State of North Carolina, USA (n=100). We test for spatial dependency using a Moran's I test. Using a spatial error model, we then demonstrate a negative and non-linear relationship between these two measures of diversity. Our interpretation of these measures suggests that the optimal range of export expansion and import substitution lies between company towns (those with high import substitution diversity and low export base diversity) and self-sufficiency towns (those with high export base diversity and low import substitution diversity). An understanding of this relationship suggests that import substitution becomes a viable development strategy when tied to the price signal provided by export expansion and knowledge of the interrelationship between the two. We believe this approach may also suggest a more general relationship between export expansion and import substitution.