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Title: **It takes two to tango. Dichotomous principles in regional economic models**

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Abstract

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Macroeconomic models are filled with the dichotomous principles. It takes at least two factors to grasp the complexity of the ongoing processes in economy. Different types of macroeconomic models are built on two main principles, such as, quantity and price model, or static and dynamic model, or economic and demographic model. Regional economic models further integrate the spatial dimension, where the principles are also dichotomous, such as, origin and destination, or intra- and interregional. This paper attempts to explain regional impacts of export jobs by revisiting regional economic and Miyazawa's extended demographic model developed for the Danish municipalities.

The paper commences with the Leontief and Miyazawa formulations of the Interrelational Income Multiplier Model, which is decomposed into sub-components using the general interregional economic quantity model based upon the so-called two-by-two-by-two principle. This principle incorporates a number of conceptual and theoretical changes, which have become necessary as economies become more diverse and differentiated. There is a need to integrate essentially sub-regional and local/urban activities covering such areas as commuting, shopping, tourism and trade into a general interregional modeling framework. The theoretical changes examined include a set of new geographical concepts and in the context of an interregional SAM the development of the two-by-two-by-two approach involve two sets of actors (production units and institutions / households), two types of markets (commodities and factors) and two locations (origin and destination). The equations of the general interregional quantity model are presented together with the solution of the model as well as a comparison with the Miyazawa extended demographic model.

Finally, LINE, which is based upon the two-by-two-by-two principle, is used to examine regional impacts of export jobs for Danish municipalities. In the empirical analysis the direct export production and jobs by municipality is measured using SAM-K, which is a national account for Danish municipalities. On the basis of the direct export production and jobs the total effects of export, including both the indirect and the induced effects are analyzed using quantity model of LINE (Local Interregional Economic Model).

The analysis concludes that there are substantial differences in direct as well as total effects of export production and jobs:

Firstly, the higher the consumption rates (intermediate consumption, private consumption, governmental consumption) the higher the multiplier becomes. Also higher employment content and higher average income will other things being equal increase the multiplier.

Secondly, the smaller the leakages are the higher the local multiplier: Leakages can within the two-by-two-by-two framework of the local economy come from import via trade, out-commuting, outward shopping and tourism and will lead to lower the multiplier the higher leakages turns out to be.