IS RETURNS TO SCALE WITH VARIABLE NETWORK SIZE ADEQUATE FOR TRANSPORT INDUSTRY STRUCTURE ANALYSIS?

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Abstract

It is customary to analyze transport industry structure using two indices: economies of density and *economies of scale with variable network size* (*RTS*). The latter has been defined to analyze the behavior of costs when output and network size expand simultaneously. After reviewing in detail what is intended with the calculation of *RTS* under this definition, we show analytically that, when the spatial aspects underlying transport production are taken into account, the seemingly reasonable conditions imposed on the aggregate output descriptions and the network variable in fact conceal implicit output expansions that are not uniquely defined: they happen to depend on the specification of variables and on the evaluation point. Furthermore, most of the multiple output expansions analyzed correspond to cases that are hardly instructive. We conclude that this index is inherently ambiguous, hardly contributes to an adequate analysis of transport industry structure and should be replaced by the calculation of economies of spatial scope. (*JEL* L91, L11, D40).