Using R for Spatial Shift-Share Analysis

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Abstract

During the second half of the 20^{th} century, the Shift-Share Analysis (SSA) have been largely applied in the economic growth studies. Starting from the formulation adopted by Dunn (1960), the literature proposed various decomposition procedures based on the identification of three or more components. The SSA has always been considered a spatial statistics tool but only with Nazara and Hewings (2004) the spatial dimension has been actually considered in the model specification. The authors, in fact, introduced the effect of interaction between territorial units by means of a spatial weights matrix. The proposed model is based on a generic row standardized weighting matrix. Consequently, the authors did not face the problem of weight construction. Zaccomer (2006) proposed a solution based on the variables deriving from the italian register of businesses. The information derived from this register can be used to define two important decomposition factors: the economic activity in NACE-ATECO classification and the firm legal status. In the cited article, instead of the well known spatial weighting systems based on contiguity or on generic distance functions, the author proposed an economic concept of neighborhood. In fact, the considered matrices are based on a given economic subdivision as, for example, the Local Labor Systems (LLS) or the Industrial Districts (ID). The neighborhood defined by the "economic contiguity" can be considered the best choice if the units' partition is based on supplementary information about the studied phenomenon. For example the ID are based on the observation of firms' productive network and can be used to study the labour growth rates.

In this work we aim to study the flexibility of spatial shift share model applied to analysis of labour growth rates obseved in the local system of Friuli Venezia Giulia and its LLS. All computational issues, plots and prints functions are developed using R (R Development Core Team, 2007).

Keywords: Shift-Share Decomposition, Growth Rates, Industrial Districts, Local Labor Systems, Statistical Register of Businesses.

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