

## **Spatial Autocorrelation Analysis of Regional Direct Input Coefficients in China**

Topic: Micro data

Author: Xinteng Liu

Co-Authors: Haoyang Zhao, Xu Jian

Direct input coefficients are the core parameter of the input-output model, but few scholars use the method of spatial econometrics to study direct input coefficients. This paper introduces the theory and method of spatial autocorrelation into the input-output analysis innovatively, and study the spatial correlation of direct input coefficients of different sectors in various provincial administrative regions in China. We also attempt to analyze the spatial effects of direct input coefficients and changes of them in detail, and give economic explanations for spatial correlation. Based on the theory and method of spatial autocorrelation, this paper tests the spatial direct correlation carried out on 67 important direct input coefficients of input-output tables which are from 30 provincial administrative regions in China among 2002, 2007, 2012, and selects Moran's I to test the spatial correlation of direct input coefficients. This paper also makes a detailed analysis of manufacturing sectors characteristics and data characteristics for these direct input coefficients which present spatial autocorrelation feature. Moreover, this paper selects representative direct input coefficients of different spatial effects to analyze and summarize the feature of spatial correlation model. It is found that the relative geographical position is one of the influencing factors of direct input coefficients under the existing market environment and industrial structure in China. Further results show that the spatial correlation of the direct input coefficient is related to the manufacturing sector and the size of the coefficient itself.

Key words: Direct input coefficients; Spatial Correlation; Moran's I