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Convergence of Electricity Consumption in Turkey:

A Spatial Dynamic Panel Analysis

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Abstract

The issue of convergence has been discussed by many theoretical and empirical studies beginning by the major contributions of Solow (1956), Baumol (1986), and Barro and Sala-i-Martin (1991). In the literature, there are two different convergence concepts, as beta-convergence and sigma-convergence. However, in this study, our focus is on the beta-convergence. As per capita electricity consumption has been considered as an indication of economic growth and development, this study aims to test the presence of "conditional beta-convergence" of per capita electricity consumption among the provinces of Turkey for the period between 1987 and 2013. We employ a spatial dynamic panel data model with fixed effects in order to account for spatial spillover, spatial clusters and cross-sectional heterogeneity. Also, we consider two types of spatial models as Spatial Autoregressive Model and Spatial Error Model. We find that our results are robust to the different specifications of model and weight matrices, however, weight matrix based on the nearest three neighbours perform better than others. Findings show the evidence of conditional beta-convergence of per capita electricity consumption among the provinces of Turkey as well as the existence of spatial clusters and spillovers. Therefore, we can conclude that the regional policies are successful to reduce the regional disparities related to the electricity consumption.