

Regional impact of changes in disposable income on Spanish electricity demand: A spatial econometric analysis

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Abstract

This paper presents an empirical analysis of residential electricity demand considering the existence of spatial effects. This analysis has been performed using aggregate panel data at the province level for 46 Spanish provinces for the period from 2001 to 2010. For this purpose, we estimated a log–log demand equation using a spatial autoregressive model with autoregressive disturbances (SARAR). The purpose of this empirical analysis is to determine the influence of price, income, and spatial spillovers on residential electricity demand in Spain. We are particularly interested in analyzing the impact of household disposable income variation across provinces observed during the economic crisis period 2009–2010. The estimation results show relatively low income elasticity and an inelastic demand to prices. Furthermore, the results show the presence of spatial effects in Spanish residential electricity consumption.