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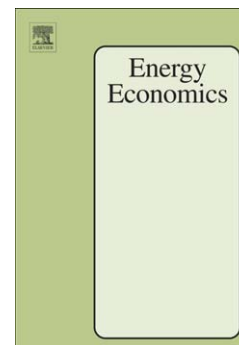
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On the Convergence in China's Provincial Per Capita Energy Consumption: New Evidence from a Spatial Econometric Analysis

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Abstract: The rapid increase in per capita energy consumption is likely to be an important factor affecting the sustainable development of China's economy. In this study, the convergence of per capita energy consumption, which is an important inherent characteristic of China's energy consumption, is investigated using panel data for the period 1994 - 2014 for 30 Chinese provinces. To control for the potential spatial dependence in energy consumption per capita and introduce dynamics, appropriate spatial dynamic econometric models are employed. The empirical results indicate that there are both absolute and conditional β -convergences in per capita energy consumption across provinces. In addition, there is also evidence for an inverted U-shaped relationship between per capita energy consumption and per capita GDP. Therefore, per capita energy consumption would increase when economic development is relatively low. However, per capita energy consumption may decrease after a threshold level of economic development is reached. Among the factors that potential influence provincial energy consumption, the ratio of secondary industry value-added to GDP and the spatial correlation of energy consumptions in neighboring provinces are positively related to energy consumption per capita, while population density and per capita foreign direct investment do not affect energy consumption per capita significantly.

Keywords: Energy consumption; Convergence; Panel data; Spatial econometric model; China

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