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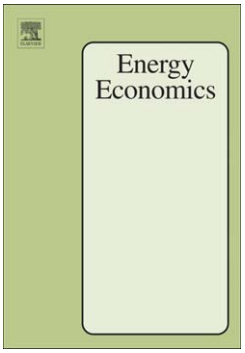

Electricity Consumption and Economic Development: Are Countries Converging to a Common Trend?

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Electricity Consumption and Economic Development: Are Countries Converging to a Common Trend?*

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February 18, 2015

Abstract

This paper studies the dynamic behavior of electricity consumption with special emphasis on their convergence patterns. Individual electricity indicators are modeled by allowing for apparent heterogeneous transitions. Log t convergence test results indicate that all 109 countries converge to a common stochastic trend for electricity intensity whilst per capita electricity consumption is better explained by a multiple-component model. In case of 24 advanced economies, there is a strong tendency towards a common component for both indicators. The application of clustering algorithm confirms the presence of club convergence for per capita electricity consumption. In terms of clustering pattern, per capita electricity consumption appears to be remarkably similar to per capita income, widely used measure of economic development.

JEL Classification: C23; C38; O13; O15; Q43; Q48; Q56
Keywords: Relative convergence, Clustering analysis, Electricity intensity, Electricity consumption, Economic development, Income convergence

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