

The Causal Dynamics Between Energy Consumption and GDP: An Overview of 16 OECD Countries Using Panel and Time Series Data

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ABSTRACT

This study examines the causal dynamics between energy consumption and economic growth in 16 OECD countries. Using a multivariate framework, the Toda-Yamamoto approach is implemented to test the causal dynamics between aggregate energy consumption and GDP as well as the causal dynamics between specific energy inputs and GDP over the period 1965-2011. Results from both the panel and time series causality tests indicate no significant causal relationship with GDP running in either direction for aggregate energy consumption, fossil fuel energy consumption, and renewable energy consumption. In the case of nuclear energy consumption, a significant and positive causal relationship was found running from nuclear energy consumption to GDP.