

Evaluating the Nexus between Energy Demand and Economic Growth Using the VECM Approach: Case Study of Nigeria, China, and the United States

Authors : Rita U. Onolemhemen, Saheed L. Bello, Akin P. Iwayemi

Abstract : The effectiveness of energy demand policy depends on identifying the key drivers of energy demand both in the short-run and the long-run. This paper examines the influence of regional differences on the link between energy demand and other explanatory variables for Nigeria, China and USA using the Vector Error Correction Model (VECM) approach. This study employed annual time series data on energy consumption (ED), real gross domestic product (GDP) per capita (RGDP), real energy prices (P) and urbanization (N) for a thirty-six-year sample period. The utilized time-series data are sourced from World Bank's World Development Indicators (WDI, 2016) and US Energy Information Administration (EIA). Results from the study, shows that all the independent variables (income, urbanization, and price) substantially affect the long-run energy consumption in Nigeria, USA and China, whereas, income has no significant effect on short-run energy demand in USA and Nigeria. In addition, the long-run effect of urbanization is relatively stronger in China. Urbanization is a key factor in energy demand, it therefore recommended that more attention should be given to the development of rural communities to reduce the inflow of migrants into urban communities which causes the increase in energy demand and energy excesses should be penalized while energy management should be incentivized.

Keywords : economic growth, energy demand, income, real GDP, urbanization, VECM

Conference Title : ICOREM 2017 : International Conference on Oil Reserves and Energy Management

Conference Location : New York, United States

Conference Dates : June 04-05, 2017