

## **Dynamic impact of urbanization, economic growth, energy consumption, and trade openness on $CO_2$ emissions in Nigeria**

### **ABSTRACT**

The objective of this paper is to examine the dynamic impact of urbanization, economic growth, energy consumption, and trade openness on  $CO_2$  emissions in Nigeria based on autoregressive distributed lags (ARDL) approach for the period of 1971–2011. The result shows that variables were cointegrated as null hypothesis was rejected at 1 % level of significance. The coefficients of long-run result reveal that urbanization does not have any significant impact on  $CO_2$  emissions in Nigeria, economic growth, and energy consumption has a positive and significant impact on  $CO_2$  emissions. However, trade openness has negative and significant impact on  $CO_2$  emissions. Consumption of energy is among the main determinant of  $CO_2$  emissions which is directly linked to the level of income. Despite the high level of urbanization in the country, consumption of energy still remains low due to lower income of the majority populace and this might be among the reasons why urbanization does not influence emissions of  $CO_2$  in the country. Initiating more open economy policies will be welcoming in the Nigerian economy as the openness leads to the reduction of pollutants from the environment particularly  $CO_2$  emissions which is the major gases that deteriorate physical environment.

**Keyword:** Autoregressive distributed lags (ARDL);  $CO_2$  emissions; Economic growth; Energy consumption; Nigeria; Urbanization