

# CAUSALITY AMONG ENERGY CONSUMPTION, CO<sub>2</sub> EMISSION, ECONOMIC GROWTH AND TRADE: A CASE OF INDIA

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## Abstract

This paper investigates the causal nexus between energy consumption, CO<sub>2</sub> emissions, economic growth and trade in India using the Perron (1989) unit root test, Gregory and Hansen (1996) cointegration test and Vector Error Correction Model. The study results exhibit a long-run relationship between energy consumption, CO<sub>2</sub> emissions, economic growth and trade in India. The empirical results confirm that energy consumption influences the economic activity in the short-run, implying that higher rate of economic growth is driven by consumption demand for energy in the economy. This is also well in consistent with the findings of Paul and Bhattacharya (2004) in the Indian context. Further, the study detects one way causation exist from energy use to CO<sub>2</sub> emission and trade, and CO<sub>2</sub> emissions to economic growth in the short-run.

**Keywords:** Energy Consumption, Economic Growth, CO<sub>2</sub> Emissions, Trade, Cointegration  
**JEL classification codes:** Q43, Q53, Q56.

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