

## **THE RELATIONSHIPS BETWEEN ENERGY CONSUMPTION AND ECONOMIC GROWTH: A REVIEW OF THE LITERATURE**

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### **Key words**

Energy Consumption; Economic Growth; Panel Models; Time-Series Models.

**ABSTRACT:** This paper reviews studies that observed the relationships between energy consumption and economic growth in different countries using panel and time-series models. The results showed that energy consumption significantly influenced economic growth, and shared causal relationship.

### **LITERATURE REVIEW**

Achampong (2018) examined the dynamic causal relationship between economic growth and energy consumption for 116 countries over the period 1990 – 2014 using panel vector auto regression and generalized method of moment. The results showed evidence of causal and significant relationship between energy consumption and economic growth.

Baz *et al.* (2019) investigated the relationship between energy consumption and economic growth in Pakistan using non-linear autoregressive distributed lag approach and annual time – series data for the 1971 – 2014 period. The results showed evidence of positive causality between energy consumption and economic growth.

Chen *et al.* (2020) examined the casual links between energy consumption and economic growth by employing a threshold model using a 103 countries sample over

the 1995–2015 period. The results demonstrated that the impact of energy consumption on economic growth is positive and significant.

Gozgor *et al.* (2018) examined the impact of renewable and non-renewable energy consumption on economic growth in the panel data of 29 OECD countries over the period 1990–2013. The results showed that renewable and non-renewable energy consumption are positively associated with a higher rate of economic growth.

Khan *et al.* (2019) employed a seemingly unrelated regression over the period 1990–2017. The results suggested that energy consumption increased the levels of economic growth. Lin and Benjamin (2018) examined the interactions between energy consumption and economic growth using a panel dynamic ordinary least squares models for Mexico, Indonesia, Nigeria, and Turkey over the period 1990–2014. The results showed evidence of bidirectional causal relationships between energy consumption and economic growth.

Munir *et al.* (2020) re-examined the relationship between energy consumption and economic growth for the ASEAN-5 countries over the 1980–2016 period. The results showed a unidirectional Granger causality running from economic growth to energy consumption for Malaysia, the Philippines, Singapore, Thailand, and Indonesia.

Raza *et al.* (2019) examined the impact of energy consumption on economic growth in the USA using the wavelet technique over the 1973–2015 period. The result indicated that in the short, medium and long run, energy consumption had a positive influence over economic growth. Furthermore, the result of causality test showed that unidirectional causality running from energy consumption to economic growth was found.

Tao *et al.* (2020) investigated the relationship between energy consumption and economic growth in China. The results showed that energy consumption increased the levels of economic growth in China.

Wasti and Zaidi (2020) investigated the link between energy consumption and economic growth in Kuwait using annual time series data and ARDL approach for the period 1971–2017. The results showed a unidirectional causality running from energy consumption to economic growth. Wei *et al.* (2020) investigated the relationship between energy consumption and economic growth in China using multiregional input-output model over the period 2002–2012. The results showed that energy consumption strengthened economic growth in China.

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