

Do APEC Economies Enjoy Energy-led Growth? Evidence from a Dynamic Panel Data Approach

Ravinthirakumaran Navaratnam¹ and Kalaichelvi Ravinthirakumaran²

Abstract

The energy-led growth hypothesis suggests that energy is one of the key determinants of economic growth. The theoretical and empirical studies have examined the causal relationship between energy consumption and economic growth and found that this relationship is one of interdependence rather than of unilateral causation. The objective of this study is to empirically examine the validity of energy-led growth hypothesis in the context of APEC economies. To infer the energy-led growth hypothesis, the study employed a dynamic panel cointegration, panel Granger causality and panel error-correction model. The study uses panel data on variables such as real GDP per capita, energy consumption, number of people employed, gross capital formation, human capital index and trade openness from 1990 to 2016. The empirical results confirm the validity of the energy-led growth hypothesis for APEC economies. Panel cointegration test outcomes support the long-term equilibrium link among the selected variables. Further, the empirical evidence of a dynamic panel error-correction model reveals a bi-directional causal relationship between energy consumption and economic growth in both the long and short run.

Key words: Energy, Economic growth, Panel data.

Biography

Dr. Kalaichelvi Ravinthirakumaran is a senior lecturer in the Department of Business Economics, University of Colombo, Sri Lanka. Currently, she is a visiting fellow in Griffith Asia Institute, Griffith University, Australia. Her research interests include development economics and macroeconomics. Her publications have appeared in journals such as Asia Pacific Sustainable Development, South Asia Economic Journal and Sri Lanka Economic Journal.

Dr. Ravinthirakumaran Navaratnam is a former senior lecturer in the Department of Economics, University of Colombo, Sri Lanka. Currently, he is a visiting academic in the Griffith University and University of Queensland, Australia. His research interests include political economy, economic development and poverty and ethnic studies. His publications have appeared in journals such as Empirical economics, Journal of the Asia Pacific Economy and Asia Pacific Sustainable Development.

¹ s.ravinthirakumaran@griffith.edu.au, Visiting Fellow, Griffith Asia Institute, Griffith University, Brisbane, Australia and Senior Lecturer in Business Economics, University of Colombo, Colombo, Sri Lanka.

² r.navaratnam@uq.edu.au, Sessional Lecturer, University of Queensland, Brisbane, Australia.