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An Empirical Analysis of Economic Growth and Energy Production in China and India

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Abstract

This study estimates the effect of non-renewable and renewable energy production on the economic growth of China and India using the Auto-Regressive Distributed Lag Bounds Cointegration test model. The dependent variable is the gross domestic product (GDP) which is taken as a proxy for economic growth while the independent variables are the gross fixed capital formation, labour force, renewable energy production and non-renewable energy production. Non-renewable energy production dominates renewable energy production (in both short-run and long-run) in contributing to the increase in the GDP. China and India had relied heavily on the usage of imported non-renewable energy sources for their economic growth. This was due to the fact that it was readily available and cheap, compared to the renewable sources. However, there is considerable scope to progressively increase the share of renewable energy sources.

JEL Code : Q43, Q42, Q47, Q30, Q20
Keywords : Renewable Energy; Production; Non-renewable; Energy; ECM; ARDL; Error Correction Model; Cointegration; China; India

I. Introduction

THE ECONOMIC DEVELOPMENT of all the countries in the world is positively influenced by the sustainable energy sources. Every country can make use of locally available sun light, wind energy, biodegradable materials etc., to produce renewable energy without depending on other countries for the import of fossil fuels. This scenario ensures political stability and peace in the world by minimizing price fluctuations. Moreover the degrading effects of climatic changes, ozone layer depletion and the emission of greenhouse gases can be minimized with the usage of renewable energy, considered to be the source of clean energy.

Non-renewable energy sources have played an important role in the emergence of industrial revolution and its continuation in the present times.

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