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Sustainable Development in Indonesia: A Study of Energy Consumption, CO₂ Emissions, FDI, and Gross Capital Formation

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Abstract

The purpose of this study is to examine how the consumption of renewable and nonrenewable energy, CO₂ emissions, FDI, and gross capital formation affect the GDP per capita in the case of Indonesia. This study employs cointegration and ARDL to estimate the short and long-run coefficient which is preceded by ADF and PP unit root test using the annual time series data from 1960 to 2021. The result of the estimation shows that in the long run non-renewable energy consumption, CO₂ emission, and FDI impact the economic growth of Indonesia directly. Meanwhile, in the short run, the estimation result reveals that non-renewable energy and FDI are positive and statistically significantly affected the economic growth of Indonesia. Renewable energy hasn't yet been found to have a substantial impact on Indonesia's economic growth. This research offers novel perspectives on how nonrenewable and renewable energy consumption, CO₂ emissions, and FDI impact the economic growth. The findings provide valuable implications for Indonesia to develop long-term policies that can enhance the positive effects of energy consumption and CO₂ emissions on economic growth in the future. The involvement of FDI in the model also become the novelty of this study to examine the impact of FDI to economic growth. © 2024, Econjournals. All rights reserved.

Author Keywords

CO₂ Emission; Economic Growth; Energy Consumption; Foreign Direct Investment; Gross Capital Formation

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