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The Impact of Wind Energy Investment on Sustainable Economic Growth in Iraq Country

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Abstract

Background and Objective: In recent years, with increasing energy costs, global warming, and the need for greater attention to the environment, attention to investment in renewable energies such as wind energy has increased sharply. Wind energy is a significant opportunity for economic growth. Investment in wind energy infrastructure can improve employment, attract investment, and stimulate economic activities in areas where wind resources are abundant. Consequently, studying the impact of wind energy on economic growth is essential to unlock the full potential of renewable energy resources, drive sustainable development, and foster a greener and more resilient economy for future generations. Given the importance and position of renewable energies such as wind energy in recent years and their major advantages over fossil fuels, and the current gap in studies of this kind in Iraq, the aim of this study is to investigate the effects of investment in wind energy on economic growth in Iraq.

Methodology: In this research, Autoregressive Distributed Lag model (ARDL) was used to examine the effect of investment in wind energy on the sustainability of economic growth in Iraq from 1995 to 2022. These methods provide the ability to examine the long-term and short-term effects of variables and allow for the analysis of the effect of investment in wind energy and other variables under study on economic growth.

Findings and Conclusion: The findings of this study showed that investment in wind energy had a positive and significant effect on economic growth in Iraq at a 90% confidence level. Also, other variables under study, including the human development index, foreign trade, and fixed capital formation, have a positive and significant effect on the sustainability of economic growth in Iraq. The error correction coefficient was -0.465 and was statistically significant, indicating that if a shock is introduced to the economic growth rate during each period, 0.465 percent of the imbalance in the economic growth rate will be adjusted and it will approach its long-term trend. Based on the results, it can be concluded that the priority of energy policies should be to increase investment in renewable energies, including wind energy.

Keywords: Wind energy, renewable energies, economic growth.

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Extended Abstract

Introduction

In recent years, with increasing energy costs, global warming, and the need for greater attention to the environment, attention to investment in renewable energies such as wind energy has increased sharply. Wind energy is a significant opportunity for economic growth. Investment in wind energy infrastructure can improve employment, attract investment, and stimulate economic activities in areas where wind resources are abundant. Consequently, studying the impact of wind energy on economic growth is essential to unlock the full potential of renewable energy resources, drive sustainable development, and foster a greener and more resilient economy for future generations. Given the importance and position of renewable energies such as wind energy in recent years and their major advantages over fossil fuels, and the current gap in studies of this kind in Iraq, the aim of this study is to investigate the effects of investment in wind energy on economic growth in Iraq.

Methodology

This research is designed in a descriptive-analytical manner and uses quantitative approaches to examine and analyze the relationships between different variables. In this research, Autoregressive Distributed Lag model (ARDL) was used to examine the effect of investment in wind energy on the sustainability of economic growth in Iraq from 1995 to 2022. These methods provide the ability to examine the long-term and short-term effects of variables and allow for the analysis of the effect of investment in wind energy and other variables under study on economic growth.

Findings and Conclusions

The findings of this study showed that investment in wind energy had a positive and significant effect on economic growth in Iraq at a 90% confidence level. Also, other variables under study, including the human development index, foreign trade, and fixed capital formation, have a positive and significant effect on the sustainability of Iraq's economic growth. The error correction term coefficient in this model is -0.465 and is statistically significant, indicating that if a shock occurs to the economic growth rate in Iraq, 0.465 percent of the imbalance in the economic growth rate will be adjusted during each period and will move closer to its long-term trend. In other words, if a shock or fluctuation occurs to economic growth, it will take about 2.15 years for that shock to be absorbed and the economic growth rate index to return to its long-term trend.Therefore, energy-related policies in Iraq should be prioritized in order to increase investment in renewable energies, including wind energy.

Declarations

- **Funding**: There is no funding support for this study.
- **Authors' Contributions**: All authors contributed equally to the conceptualization and writing of the article. The authors approved the manuscript's content and agreed on all aspects of the work.
- **Conflict of Interest**: The authors declare no conflict of interest.
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