

BALANCING ENERGY SECURITY AND RENEWABLE ENERGY DEVELOPMENT: THE ROLE OF FINANCIAL SYSTEMS

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Overview

Using a dataset of 51 countries from 2001 to 2021, this study explores the relationship between energy security, financial development, and renewable energy growth through the theoretical lenses of opportunity cost and path dependence. The research highlights how energy security and financial systems differentially affect renewable energy development in countries with high and low renewable energy proportions.

Methods

The study employs panel data analysis with fixed-effects regression models to evaluate the impact of energy security and financial development, including financial institutions' efficiency and market functionality, on renewable energy development. Interaction terms were included to assess the combined effects of energy security and financial systems across two subgroups of countries.

Results

The findings indicate that energy security significantly negatively impacts renewable energy development, supporting the opportunity cost and path dependence theories. In countries with high renewable energy proportions, energy security promotes renewable energy growth, while inefficiencies in financial institutions hinder progress. Conversely, in low-proportion countries, energy security negatively affects renewable energy development, but efficient financial markets contribute positively to its growth.

Conclusions

The study suggests balancing short-term energy security with long-term renewable energy goals is critical. Policies should focus on enhancing financial institutions' efficiency and leveraging financial markets to accelerate renewable energy transitions, particularly in countries with varying levels of renewable energy reliance.