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"Gheorghe Asachi" Technical University of Iasi, Romania

HAS FINANCIAL DEVELOPMENT IMPROVED CARBON EMISSION EFFICIENCY? AN ANALYSIS BASED ON SUPER EFFICIENCY UNDESIRABLE - SBM MODEL AND MULTINATIONAL PANEL DATA

Xiaowei Jia[1], Bo Liu[2], Yanjuan Cui[2*], Lili Peng[2]

[1]School of Business, Belt and Road Regional Economic Research Institute, Dalian University of Foreign Languages, Dalian, 116044, China
[2]School of Finance, Dongbei University of Finance and Economics, Dalian 116025, China

Abstract

Based on transnational panel data of 30 countries with different development levels in the world from 1990 to 2016, this paper tests different degrees varying from the prospective of financial development possible impact that could have been shown on the scale and efficiency of carbon emissions, using the structure, scale, and efficiency, such pivotal aspects of both financial institutions and financial markets as different indexes to estimate financial development. As suggested from the results, in the high-income nations, the effect of financial institutions on carbon emission efficiency is larger than that of others. This is because the high-income nations have better financial development, which can support environmental protection investment and improve carbon emission efficiency. For middle high-income nations, both financial institutions and financial markets can improve carbon emission efficiency. For middle low-income countries, financial and economic development can increase the efficiency of carbon emission. Later, by robustness test, it is found that the financial development stage has different effects on the scale and efficiency of carbon emission, with a U-shaped curve is clearly shown on the carbon emission scale, while on the carbon emission efficiency, an inverted U-shaped curve. This shows that financial development can reduce the scale of carbon emissions and it can improve carbon emissions efficiency to a certain extent at the same time.

Key words: carbon emission efficiency, financial development, super-efficiency undesirable-SBM model

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* Author to whom all correspondence should be addressed: e-mail: cuiyanjuan_dl@163.com