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RESEARCH ARTICLE

Examining the nexus between export diversification and environmental pollution: evidence from BRICS nations

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Abstract

In recent years, industrial growth has enabled the BRICS nations to increase their export earnings from both traditional and new products. However, in terms of modernization of industries, these nations can be considered as laggards, because the present production processes appear to be carbon-intensive and energy-inefficient. In this backdrop, the present study, by using the second-generation econometric procedures, is intended to examine the impact of industrialization, export diversification, technological innovation, income inequality, and resource rents on the carbon dioxide emissions in the BRICS nations from 1990 to 2018. The long-run coefficients revealed that the industrial expansion, reduction in export diversification, low concentration on traditional exports, and high concentration on new exports exacerbated the air quality in the BRICS nations. On the other hand, technological advancement contributed to restoring environmental quality during the study period. Furthermore, it is observed that the present research endeavors in the BRICS nations are insufficient in circumventing industrial pollution, as the value of the joint coefficient of technological advancement and industrialization is found insignificant but negative. Hence, based on the computed results, a multipronged policy framework is proposed, so that these nations can achieve the targeted sustainable development goals (SDGs) in the coming years.

Keywords Industrialization · Export diversification · Extensive and intensive export margin · Technological innovation · BRICS nations

JEL classification L0 · O2 · C5 · F1

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Introduction

The developing nations like Brazil, Russia, India, China, and South Africa (hereafter BRICS) have embraced globalization and industrialization endeavors as catalysts for removing their socio-economic despondencies, especially after the 1990s. In order to widen domestic production and subsequently employment opportunities, governments in BRICS nations initiated liberal industrial and trade policies (Santiago 2020). Furthermore, by adopting the digital mechanism for banking and stock market services, governments aimed to create a favorable environment for potential investors (Di Maio 2015; Lee 2019). Consequently, these nations witnessed an upward trend in the number of registered companies (World Bank 2021). At the same time, the existing companies enlarged their capacities and diversified their product portfolios (Santiago 2020). The industrial expansion supported by the liberal trade policies and financial deepening encouraged firms to produce at a large scale for domestic and international