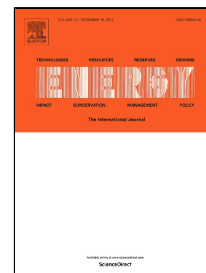


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Decomposing the south African CO₂ Emissions Within a BRICS Countries
Context: Signalling Potential Energy Rebound Effects

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***DECOMPOSING THE SOUTH AFRICAN CO₂ EMISSIONS WITHIN A BRICS COUNTRIES
CONTEXT: SIGNALLING POTENTIAL ENERGY REBOUND EFFECTS***

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Abstract

The main purpose of this study is to test the hypothesis of the rebound effect for the South African case in the years between 1990 to 2014 by firstly, decomposing the driving forces of the changes in CO₂ emissions of the country and secondly, comparing with the behaviors of other emerging economies such as BRICS. From a policy perspective, it is important not only to comprehend the factors that intensify the CO₂ emissions of the country but since energy efficiency is globally promoted as a significant tool to control emissions from a demand-side, to examine whether energy efficiency improvements have indeed reduced CO₂ emissions. The overall results of the decomposition exercise for the BRICS countries for the whole studies period suggest that the changes in CO₂ intensity and energy intensity had a negative impact to the changes in CO₂ emissions: in other words, as the energy intensity (energy consumption per unit of economic output) decreased for all the countries (possible technological developments), the emissions kept rising. For South Africa specifically, the energy intensity was a negative contributor to CO₂ emissions only for the last period examined (2008-2014).

Keywords: decomposition; South Africa; BRICS; emissions; rebound effect

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