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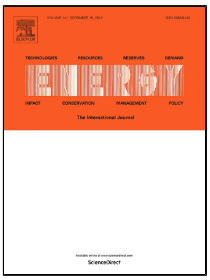

Decomposing the south African CO_2 Emissions Within a BRICS Countries Context: Signalling Potential Energy Rebound Effects

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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 CO_2 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 CO_2 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 CO_2 emissions. The overall results of the decomposition exercise for the BRICS countries for the whole studies period suggest that the changes in CO_2 intensity and energy intensity had a negative impact to the changes in CO_2 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 CO_2 emissions only for the last period examined (2008-2014).

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