Title: Addressing the trade-off between natural resource dependence and environmental sustainability in MENA countries: the role of energy productivity improvement

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Abstract:. The Middle East and North Africa (MENA) region is regarded as a natural re source-rich territory that collectively accounts for more than half of global oil and natural gas reserves. However, such high dependence on unclean natural resources, in particular, is often deemed to hamper their objective of establishing environ mental sustainability. On that note, this study primarily explores whether gaining energy productivity can help MENA countries to tackle this trade-off between natu ral resource dependency and environmental sustainability, especially by reducing their emission intensity levels. In this regard, by selecting 14 MENA countries and using their data from 2001 to 2023, several panel data analyses are carried out. In a nutshell, it is found that (a) higher energy productivity growth rates account for lower carbon emission intensities of economic outputs, and (b) energy productiv ity growth interacts with natural resource dependency to further reduce emission intensity levels. Hence, the above findings endorse the effective role of enhancing energy productivity in eliminating the natural resource dependence-environmental sustainability trade-off. Among other results, good regulatory quality is deemed essential for carbon emission intensity reduction, while international trade participa tion is found to enhance carbon emission intensity levels. Moreover, although slight regional variations in carbon intensity-influencing factors are observed when analy ses are done separately for cohorts of Middle Eastern and North African countries, the results remain robust across alternative panel regression methods. Therefore, the above findings are essential for designing future carbon intensity-reduction policies that would enable the natural resource-rich MENA countries to achieve long-term environmental sustainability.

Keywords: Energy productivity Sustainable environment Carbon intensity Natural resource dependency Carbon dioxide emission

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