UNIVERSITI TEKNOLOGI MARA

CARBON DIOXIDE EMISSIONS, AGRICULTURE, AND ECONOMIC GROWTH NEXUS: THE ENVIRONMENTAL KUZNETS CURVE HYPOTHESIS EVIDENCE FROM MALAYSIA

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out per the regulations of Universiti Teknologi MARA. It is original and is the results of my own work unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Since decades ago, climate change or global warming has garnered the attention from countries worldwide due to the numerous unfavourable impacts that it yields. More upsetting, the rigorous global economic growth seems to worsen the environmental issue due to the escalation of carbon dioxide emissions accompanying economic development activities. For that reason, scholars are continuously researching the relationship between economic growth and CO_2 emissions based on the EKC hypothesis's theory to obtain a more in-depth understanding of such an important relationship for policymaking purposes. As the results of past studies have been inconsistent, scholars have started to modify the economic growth-CO_2 emissions study by including other possible CO_2 emissions contributors into the EKC base model. Also, the recent emergence of agriculture as the second-largest greenhouse gas emitter has picked scholars' interest to include agriculture into the study of the EKC hypothesis for the mitigation potential found in agriculture provided that the sector is cleaner and sustainable. As a developing country with agriculture as its essential economic growth generator, the study of agriculture and EKC is crucial for Malaysia's sustainable development planning. However, there have been minimal studies on the relationship between CO_2 emissions, agriculture, and Malaysia's economic growth, which the current study is trying to fulfil. Moreover, as Malaysia's agriculture sector is made up of several subsectors, it is relevant to study the impact of individual agricultural subsectors on CO_2 emissions as different subsectors may have a different impact on the environment. The current study investigates the relationship between CO_2 emissions and the major agricultural subsectors for Malaysia, namely livestock, crop, and fisheries, together with renewable energy and urbanisation, which act as the control variables. For the accomplishment of the study's objectives, the Autoregressive Distributed Lag model is utilised to analyse the Malaysian data ranging from 1978 to 2016. The empirical analysis shows that economic growth, urbanisation, and livestock significantly increase CO_2 emissions. At the same time, renewable energy, crop, and fisheries significantly contribute to reducing CO_2 emissions for Malaysia in the long run, indicating that achieving sustainable agriculture can help mitigate the emissions level in the country. More importantly, the EKC analysis results reveal that the EKC hypothesis holds for Malaysia, meaning that upon achieving a specific level of income, CO_2 emissions will be eventually corrected. Altogether, the study results suggest that economic growth, renewable energy, and sustainable agriculture can be the remedy for environmental pollution in Malaysia. Therefore, it is recommended that the policymakers devise more comprehensive and useful policies directed at these areas to pave the way for Malaysia to achieve balanced and sustainable growth both in the economy and the environment.

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