

# Non-linear effect of financial development and urbanization on carbon Emissions

Hooi Hooi Lean, Kizito Uyi Ehigiamusoe and Sikiru Jimoh Babalola  
*Universiti Sains Malaysia, Malaysia, E-mail: [hooilean@usm.my](mailto:hooilean@usm.my)*  
*Taylor's University, Malaysia*  
*Modibbo Adama University of Technology, Malaysia*

## Abstract

Several countries seek various measures to reduce carbon emissions because of the detrimental effects of carbon emissions on global warming, climate change and ecosystem. Therefore, an insight into the causes of carbon emissions is fundamental for policy formulation. This paper examines the non-linear effects of financial development and urbanization on carbon emissions in 31 African countries for the 1990-2016 period. This study employs various techniques to examine the integration and cointegration properties as well as estimates the parameters of the variables. First, it reveals that an inverted U-shaped relationship exists between real GDP and carbon emissions in African countries, thereby supporting the EKC hypothesis. The implication of this finding is that African countries can reduce carbon emissions through the acceleration of real GDP. African countries may actually grow-out of environmental pollution. The results also show an inverted U-shaped relationship between financial development and carbon emissions, albeit the non-linear relationship between urbanization and carbon emissions is tenuous.

## Biography

Dr. Hooi Hooi Lean is a professor at the School of Social Sciences (Economics Program), Universiti Sains Malaysia. She has published more than 160 articles in many reputed international journals. Her H-index is 41 and there are more than 7000 citations to her works on Google Scholar. Prof. Lean is the Top Research Scientists Malaysia by Academy of Sciences Malaysia in 2018. She received Malaysia's Research Star Award in 2017 and National Academic Award in 2015 from the Ministry of Higher Education Malaysia. Prof. Lean is a Fellow of East Asian Economic Association. She serves as an associate editor for the Singapore Economic Review, Frontiers in Energy Research and the International Journal of Economics and Management.