ABSTRACT

Economic activity is capable of producing consequences, one of which is negative externalities to the environment. Negative externalities to the environment will have an impact on environmental degradation that is harmful to life in the future. This study analyzes the short-term long-term relationship between per capita income, energy consumption, population growth, and technology on carbon dioxide emissions as well as the causal relationship between research variabels in Indonesia from 1981 to 2019. This study also wants to prove the existence of the Environmental Kuznet hypothesis. Curve (EKC) in Indonesia.

The research method used in this study is VECM Granger causality, as well as multiple regression to prove the existence of EKC. The observations made in this study are the country of Indonesia with the year of observation 1981-2019.

Through VECM analysis and Granger Causality, the results show that there is a long-term positive relationship between the variabels of per capita income, energy consumption, population growth, and technology on carbon dioxide emissions. The results of the causality relationship show that there is a one-way relationship from per capita GDP to per capita carbon dioxide emissions, per capita energy consumption to per capita carbon dioxide emissions, and energy intensity to per capita carbon dioxide emissions. Furthermore, this study concludes that the EKC hypothesis phenomenon did not occur in Indonesia in the research year because Indonesia had not yet reached the turning point, namely at an income of $6300 per capita.

Keywords: Gross Domestic Product, Energy Consumption, Energy Intensity, Population Growth, CO2 Emissions, Negative Externalities