

## **ABSTRACT**

### **THE EFFECT OF ECONOMIC ACTIVITY ON CHANGES IN CARBON DIOXIDE EMISSIONS IN ASEAN-6 FROM 1997 TO 2023: A PANEL VECTOR ERROR CORRECTION MODEL**

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*This study aims to analyze the effect of economic activities, including gross domestic product, urbanization, trade openness, and foreign direct investment, on changes in carbon dioxide emissions in ASEAN 6 countries during the period 1997–2023. The data used is secondary data obtained from the World Bank. This study uses a quantitative approach with panel data and applies the Panel Vector Error Correction Model (Panel VECM) method to capture the dynamics of short-term and long-term relationships between variables. The results show that in the long term, gross domestic product and trade openness have a negative and significant effect on carbon dioxide emissions, while urbanization and foreign direct investment have a positive and significant effect on carbon dioxide emissions. In the short term, gross domestic product, urbanization, and trade openness show a positive but insignificant effect, while foreign direct investment continues to have a positive and significant effect on carbon dioxide emissions.*

*Keywords : gross domestic product, urbanization, trade openness, and foreign direct investment.*

## **ABSTRAK**

### **PENGARUH AKTIVITAS EKONOMI TERHADAP PERUBAHAN EMISI KARBON DIOKSIDA DI ASEAN-6 TAHUN 1997-2023: PENDEKATAN PANEL VECTOR ERROR CORRECTION MODEL**

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Penelitian ini bertujuan untuk menganalisis pengaruh aktivitas ekonomi yang meliputi gross domestic product, urbanisasi, keterbukaan perdagangan, dan investasi asing langsung terhadap perubahan emisi karbon dioksida di negara-negara ASEAN 6 selama periode 1997–2023. Data yang digunakan merupakan data sekunder yang diperoleh dari World Bank. Penelitian ini menggunakan pendekatan kuantitatif dengan data panel serta menerapkan metode Panel Vector Error Correction Model (Panel VECM) untuk menangkap dinamika hubungan jangka pendek dan jangka panjang antar variabel. Hasil penelitian menunjukkan bahwa dalam jangka panjang gross domestic product dan keterbukaan perdagangan berpengaruh negatif dan signifikan terhadap emisi karbon dioksida, sementara urbanisasi dan investasi asing langsung berpengaruh positif dan signifikan terhadap emisi karbon dioksida. Dalam jangka pendek gross domestic product, urbanisasi, dan keterbukaan perdagangan menunjukkan pengaruh positif namun tidak signifikan, sedangkan investasi asing langsung tetap berpengaruh positif dan signifikan terhadap emisi karbon dioksida.

**Kata Kunci :** gross domestic product, urbanisasi, keterbukaan perdagangan, investasi asing langsung