

EconWorld2014@Prague

The Relationships Between Carbon Dioxide, Energy Density and Economic Growth: A Case Study Of Selected Transition Countries

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ABSTRACT

It is clear that industrialization and economic growth have been generating some environmental problems. One of the environmental problems might well occur high industrialization results of carbon dioxide emission (CO₂). This issue has been discussed in economic literature with the hypothesis of Environmental Kuznets Curve (EKC). According to EKC, in the first phases of economic growth can cause environmental and air pollution; in the upper phases, pollution will lose its high effect. Carbon dioxide emission and cost of production may well be reduced by using new technology and production methods. Another important concept in the paper is energy density which is a scale of the consumption of energy to produce one dollar cost of a product. In this study, the relationships between energy density, carbon dioxide emission and economic growth of the selected countries were examined by panel data analysis. As cross section sample the Transition Countries, European Union members were determined. The data for analysis were obtained from World Bank annually between the 1993 and 2011. First and second generation unit roots tests, co-integration tests and error correction models were also run to show relationships between variables. Thus, the findings of the study were discussed by comparing the literature review.

KEYWORDS CO₂ Emission; Energy Density; Economic Growth and Panel Data Analysis

JEL Q53, Q43, O40