

## **Bioenergy consumption and economic growth in the EU-28 region: evidence from a panel cointegration model**

### **ABSTRACT**

The purpose of this research is to examine the correlation between the bioenergy industry and economic outgrowth. This study investigates the growth hypothesis within the setting of conventional Cobb–Douglas production theory from 1990 to 2013 in the EU-28 region. The authors use unit root test approach, panel co integration analysis, cointegration assessment methods, and heterogeneous panel causality estimation analysis. The study found that bioenergy sector factors (human capital, physical capital and consumption) have a positive and significant impact on economic growth. Also, that there is a long-term stable relation among the bioenergy consumption and economic outgrowth. Heterogeneous panel causality estimations outcomes are consistent with the growth hypothesis in developed countries, feedback hypothesis in European Union area, and neutrality hypothesis in underdeveloped countries. Reference to the panel data set, the three models' results boost the hypothesis. Given the findings, the study derived that there is a significant influence from the bioenergy industry on economic growth in EU-28 region.

**Keyword:** Bioenergy industry; Bioenergy consumption; Economic growth; Capital input; EU-28 region