

Determinants of cost efficiency of bioenergy industry: evidence from EU28 countries

ABSTRACT

Most previous bioenergy industry studies have focused on how to achieve a specific level of production. However, very few studies concentrate on the cost and the allocative and technical efficiency methods to achieve rational resource utilization. In light of the increase in the bioenergy industry's economic competitiveness within the energy market through proper allocation and utilization of available resources, this article analyzed the impact of country-specific and macroeconomic determinants of cost efficiency rate in the bioenergy industry in the EU28 zone. The fixed effects and random effect models have been used through the unbalanced data panel analysis method to examine the effect of EU28 region countries' development status and external economic determinants on the level of cost efficiency in the bioenergy industry in EU28. The findings show that the cost efficiency rate of the bioenergy industry among developing members are equal to those of developed members. The empirical results appear to suggest that cost efficiency has a different influence on the technical and allocative efficiency levels. It was found that capital cost, labor cost, GDP, inflation and interest rate affect the cost efficiency of the bioenergy industry in EU28 developing and developed members during the period of this study.

Keyword: Bioenergy industry; Cost efficiency; EU28 region