

ABSTRACT

The manufacturing industry is the sector that contributes the most to Indonesia's GDP. Manufacturing industry have great potential for the Indonesian economy. Apart from these potentials, the problem that occurs in the manufacturing industry is suboptimal performance. The contribution of the manufacturing industry has decreased during 2014 – 2019. The purpose of this study is to measure the level of technical efficiency and to identify and analyze the variables that are suspected of causing inefficiency in the medium and large manufacturing industry sectors in Indonesia based on the two-digit KBLI (Indonesian Standard Classification of Business Fields)

This study analyzes 23 sectors of the medium and large manufacturing industry in Indonesia based on the two-digit KBLI in 2014-2020. The type of data used is secondary data in the form of panel data obtained from the publication reports of the Central Statistics Agency (BPS) in the form of statistical publications of the Indonesian manufacturing industry. The method used in this study is Stochastic Frontier Analysis (SFA) with a transcendental logarithmic (translog) production function model using Frontier 4.1 software. The determinant variable of inefficiency used in this study is energy intensity. This study also includes two control variables, namely the ratio of capital to labor (K/L) and the number of companies with foreign direct investment (FDI).

The results of the study showed that the performance of the medium and large manufacturing industry sectors in Indonesia based on the two-digit KBLI is not optimal, as seen from the low value of its technical efficiency. The technical efficiency value obtained was 0.832. The results of the SFA model estimation showed that energy intensity has a positive effect on technical inefficiency in the manufacturing sector. Specifically, The higher the level of energy intensity used, the lower the technical efficiency value obtained. The capital-labor ratio also has a positive effect on technical inefficiency. The higher the ratio of capital expenditures to labor, the more difficult it is to achieve technical efficiency, this means that the technical efficiency value is lower. The variable representing the number of companies with foreign direct investment (FDI) in each sector has a negative effect on technical inefficiency. Sectors with more companies with foreign direct investment have higher levels of technical efficiency.

Keyword : Technical efficiency, Energy intensity, medium and large manufacturing industry, Stochastic Frontier Analysis (SFA)