Efficiency Measurement in Greek Dairy Farms: Stochastic Frontier vs. Data Envelopment Analysis

Abstract

Parametric Stochastic Frontier Analysis (SFA) and non-parametric Data Envelopment Analysis (DEA) have become very popular in the analysis of productive efficiency. This paper undertakes a comparison of the SFA and the constant returns to scale (CRS) and variable returns to scale (VRS) output-oriented DEA models, based on a sample of 165 dairy farms in Greece. However, the aim of this paper is not only to compare estimates of technical efficiency obtained from two approaches, but also to produce efficiency data about the farms studied, which have implications for agricultural policy to improve dairy production. The results indicate that there is a potential for increasing production in the dairy farms through improved efficiency.

Keywords: Data Envelopment Analysis, Stochastic Frontier Analysis, Dairy Farms

JEL classification: Q18, D24, Q12