DIFFERENT POTENTIAL IMPROVEMENTS OF TECHNICAL EFFICIENCY OF AGRICULTURAL FARMS IN ORDER TO INCREASE THEIR PRODUCTIVE OPPORTUNITIES

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Abstract

One of the main problems that need to be in the spotlight of each production unit during the development of economic activity should be the measurement of the economic efficiency, because in short terms, the efficiency directly affects the growth of their productive opportunities. The main priority should be finding out opportunities to improve efficiency, in case of the production unit results economically inefficient. In these conditions, the analysis and the measurement of economic efficiency and the technical efficiency as a part of it, becomes a necessity. The production unit can measure its technical efficiency. The most important thing is to measure its relative technical efficiency, which should be estimated in relation to a group of production units similar to it. In contemporary literature have been developed various of parametric and non-parametric methods to measure the relative technical efficiency of the production units. For this purpose, in this study is used the non-parametric DEA method (Data Envelopment Analysis), from which is extracted the basic CCR model, which is treated in both orientations, input-orientation and output-orientation. The aim of this study is to give a full analysis of relative technical efficiency in a group of the same production units (agricultural farms) that produce the same products. The CCR DEA model, in both orientations, enables sharing this group of agricultural farms into two subgroups, technically efficient farms and technically inefficient farms. The technically efficient farms are in efficient frontier defined by the model, while inefficient farms are below this frontier. For technically inefficient farms, the model has enabled the decomposition of their technical inefficiency into two components. In order to improve this level of efficiency, the model has shown the different eliminating ways of these present inefficiencies too. Through this model, have been found also various efficient farm groups respectively for each inefficient farm, in which the inefficient farms must be compared, in order to increase their level of relative technical efficiency.

Keywords: relative technical efficiency, CCR DEA model, input-orientation, output-orientation