Efficiency and Ratio Analysis in Assessing Firms' Corporate Performance. A Closer Look to the Case of Romania

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Abstract

The conceptual framework of this dissertation is defined by the use of Data Envelopment Analysis (DEA) tools for assessing corporate performance of firms and industrial sectors from countries acting long ago under the laws of the market mechanism, and from transition economies. DEA relates to the economic notion of a production function and an efficiency frontier in a non-parametric setting. The analysis performed here focuses on the treatment of issues related to: the performance of the firm analysing the main contributing factors in the output growth rate; an assessment of the effects of economies of scale; benchmarking of a firm's profit performance; and an assessment of the capacity utilisation degree, only to mention some of the applications to be found in this dissertation.

From a methodological point of view, as we go over the chapters, we switch from a less restrictive framework of analysis, i.e. technical frontiers, to gradually more restrictive settings that is, cost and profit frontiers. We work in turn with distance functions and directional distance functions, VRS and CRS, and with both input, and/or output orientations.

Chapter 1 is dedicated to the database which consists of 1379 firms grouped in six industrial sectors from the manufacturing industry: textile weaving; other textiles; pulp, paper and paperboard; basic chemicals; rubber products, and plastic products. We work with seven European countries, five of them belonging to the advanced market economies - Belgium, France, Italy, Netherlands, and Spain - and two from transition economies, Bulgaria and Romania respectively. The database consists of accounting information, end-year observations, and covers a time period of four years, from 1995 to 1998.

In Chapter 2, the objective is to quantify the main contributing factors in explaining the growth in output, and hence firms' performance in productivity. The traditional literature on this topic gives as main explanatory factors for the observed changes in productivity: the technical efficiency change, technical change, and the increase in inputs' usage. The novelty about the non-parametric methodology (DEA) we use in Chapter 2 comes first, from the fact that it allows us to measure technical change, using three different settings: (a) work with final year data; (b) with initial year, and (c) averaging the results previously obtained in (a) and (b). Second, we capture the scale effect (usually isolated from the technical efficiency) from the decomposition of input usage factor.

In Chapter 3, we take up the issue of assessing firms' performance from the perspective of cost efficiency analysis, maintaining the non-parametric framework. The objective of the chapter is to present a method for estimating the inefficiency due to the existence of fixed input factors in the production process. The difficulty to adjust them in the short-run could generate variations in the degree of utilisation of the productive capacity.

In Chapter 4, our profit efficiency measure is constructed based on directional distance

function concept rather than the usual distance function, commonly used in most applications. We define our profit efficiency measure as the normalised deviation between maximal and observed profits and we call it the Nerlovian Profit Efficiency (NPE). The normalisation is given by the value of the direction of input and output variables. We maximise profits also considering the impact of additional constraints on debts, interests paid and fixed assets, and link with the literature on soft/hard budget constraints.

Overall, our findings show that the transition economies perform well behind the advanced market economies, in all countries firms exhibit cost inefficiency due to adjustment problems, and the budget constraints are binding especially for the transition countries.