Efficiency as a Firm Market Exit Determinant: Methodological Issues

Petra Došenovič Bonča
University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia;

Maks Tajnikar
University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia

Barbara Mőrec
University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia

Extended abstract

**Key words:** Efficiency, firm market exit, DEA, SFA

In empirical literature there is an extensive and on-going debate on the most appropriate method to be used for measuring firm efficiency (e.g. Fried et al., 2008). Most commonly used benchmarking methods include ratio analysis, least squares estimation of production technologies, total factor productivity indices, frontier production/cost functions (DEA and SFA) and data envelopment analysis (DEA) (Coelli et al., 2005; Ozcan, 2008). Survey of efficiency assessments used for bankruptcy prediction indicates that DEA and SFA are most often used (e.g. Barr, Seiford & Siems, 1993; Wheelock & Wilson, 2000; Becchetti & Sierra, 2003; Premachandra, Chen & Watson, 2011; Liu, Lu, Lu & Lin, 2013).

As shown by Weill (2004) empirical studies fail to resolve some important issues. The first issue involves consistency of results and comparability of efficiency levels estimated by different techniques. The second refers to the robustness of obtained efficiency rankings. The final one is linked to public policy conclusions based on different approaches. This is particularly relevant when the use of different methods leads to inconsistent or even conflicting results. In such circumstances the question of the best or most appropriate method becomes very important. A key motivation of this paper is to assess the appropriateness of SFA and DEA methods and to select the more suitable approach based on a clear criterion that is determined based on the studied economic phenomenon. Namely, the authors presume that if a particular economic phenomenon depends on efficiency and if efficiency can be measured by different methods, the method, which provides the efficiency measurement that best explains a particular economic phenomenon, is the most appropriate method for efficiency measurement.

In the proposed paper the observed economic phenomenon that depends also on efficiency is firm exit. The authors hypothesize that survival of a firm depends on its efficiency level and an array of other internal, external, demographic, and environmental determinants. The analysis is based on the prediction models of firm market exit that incorporate different indicators of firm efficiency, assessed or measured by either SFA or DEA. By comparing models of firm market exit that differ only in
indicators of firm efficiency, the authors can use the explanatory power of such different models to identify which approach to measuring efficiency best explains firm market exit.

A sample of Slovenian firms in 1994-2014 period is used to assess the appropriateness of different efficiency predictors. The top-five industries usually addressed in efficiency assessment are banking, healthcare, agriculture and farm, transportation, and education. In this paper, all non-financial companies from a wider array of industries are investigated. To achieve the set objective, i.e. identify which approach to measuring efficiency outperforms others based on its ability to explain firm market exit, the authors first determine which internal, external, demographic, and environmental determinants should be considered so that firm market exit can be adequately estimated. For the purpose of this paper, an important internal determinant of firm market exit refers to the impact of the firm’s managers and their decisions that may in many instances even be the decisive cause of the firm’s market exit. Research in this paper is based on the premise that the consequences of decisions of the firm’s management are reflected directly in the firm’s technical and cost efficiency levels (Došenović Bonča, Ponikvar, Pušnik & Tajnikar, 2015). It is precisely the responsibility of managers to make decisions about the quantity of employed production inputs and such input combinations that minimise the long-run costs of production. The authors hypothesise that wrong decisions of managers regarding input-output combinations always result in inferior technical and/or cost efficiency and that both technical efficiency and cost efficiency are important firm market exit determinants. The authors adopt that either SFA or DEA efficiency measures can be used as a proxy for the quality of the firm’s management. Considering that the goal of the paper is to judge different methodological approaches to measuring efficiency, the second important stage of the authors’ empirical work includes the analysis of both consistency of obtained results and comparability of efficiency levels estimated by different techniques. However, the paper goes further and adds to the body of literature by providing a qualitative assessment of the best performing efficiency indicator by looking at its power to predict firm market exit.

References: