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BANK EFFICIENCY IN TURKEY DURING THE RECENT GLOBAL CRISIS

In an increasingly competitive business environment, many business firms must operate efficiently to survive. This explains why in recent years many researchers have devoted considerable time and effort to delineate the conditions necessary for technical efficiency of productive units. Formally, technical efficiency is defined as the production of a desired level of output with the minimum amounts of inputs. Thus, a productive unit is technically efficient if it cannot increase any output or reduce any input without reducing other outputs or increasing other inputs. In economic jargon, a technically efficient firm is simply operating on its efficient frontier. Clearly, this is an absolute concept of efficiency, independent of how efficient other competitors are. For this reason, and in the absence of extensive laboratory-like experiments, it is difficult, if not impossible, to ascertain whether a typical firm is operating efficiently in an absolute sense. On matters of technical efficiency, thus, all we can determine is whether a productive unit is efficient relative to others, that is, whether a firm is efficient in a relative sense. More specifically, instead of considering technical efficiency as an absolute concept internal to a firm, it can be treated as a relative notion for a collection of firms. Thus, a typical business entity can be considered as technically efficient relative to its competitors, provided that it can produce more outputs with fewer inputs relative to the latter.

The data envelopment analysis (DEA) which is an optimization-based tool has enabled the researchers to also assess technical efficiency in a comparative sense, that is, in the context of a group of productive units. The DEA efficient frontier is thus not derived by empirically fitting some specific mathematical function to the data for individual firms, as this presupposes that all firms are efficient to begin with. Rather, the DEA efficient frontier is derived as the locus of all outputs that are produced by the most efficient firms, or the so-called decision-making units (DMUs). In addition, and borrowing from the concept of efficiency in engineering, the DEA assigns a score of one to most efficient DMUs for any level of output, indicating a score of less than one for less efficient units.

The DEA has proved itself a particularly powerful tool for assessing operational efficiency in service organizations. For service organizations, such as commercial banks, it is often a challenging task to improve their operational efficiency without sacrificing service quality. Unlike manufacturing concerns, these organizations face a number of subjective factors that can seriously impact their service quality and customer satisfaction. Among the most important of these factors are customer needs and attitudes towards the services provided, the judgments and skills by which the services are offered, and the changing mix of the services themselves. The best service providers are characterized by both the high quality of their services as well as the efficient application of their resources. In an increasingly competitive business environment, it is thus of vital interest for many

service providers to avail themselves of the existing analytical tools to assess their operational efficiency.

The traditional DEA approach, however, suffers from its reliance on some unrealistic assumptions. This paper develops an alternative and more flexible approach, and illustrates its application in the context of a sample of Turkish banks. We use a modified logarithmic version of the standard data envelopment analysis (DEA) for a sample of 26 major Turkish banks for 2007 and 2010. The Inputs for each bank are the number of employees, the number of branches, and the total deposits. The outputs are the total loans and total assets minus total loans. From results, we find, first, the prevalence of substantial inefficiencies among the Turkish banks, and, second, a deterioration in overall bank efficiency between 2007 and 2010 as a result of the recent financial crisis. In addition, using the standard DEA approach, we obtained essentially similar results with even show a more dramatic decline in recent bank efficiency in Turkey.

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