Abstract

This aim of this thesis is to develop a comprehensive methodology for assessing performance and setting targets in multi-unit organisations in the financial sector. These are structured as networks of decision making units (DMUs) that seek to operate efficiently, satisfy customer requirements effectively, and generate profit. The achievement of this objective relies on the use of the Data Envelopment Analysis (DEA) method, which is the main subject area of this thesis. It involved the development of new models and methods for performance measurement and improvement at the DMUs.

To ensure the relevance of the methodology developed, a commercial bank is used as a case study. The models and methods developed were motivated by the study of the bank branches from this institution and illustrated with empirical data. This helps to guarantee that the developments are driven from the needs of the organisations, which contributes to move the DEA method into the “real problem” zone. An effort is made to ensure that the models and methods developed in this thesis are generic and applicable to other types of “for-profit” organisations outside the financial services sector.

The thesis is structured as follows. An overview of frontier analysis methods, with particular emphasis on the DEA method is presented in Chapter 2. This chapter sets up the ground for the enhancements to the DEA method presented throughout the thesis. Chapter 3 reviews the literature on banking performance assessment. It summarises the main aims, methodologies and conclusions of previous research, with emphasis on the studies based on the DEA method. The information gathered is used to guide the choice of the themes and questions addressed in the context of the analysis of financial institutions’ performance. Chapter 4 introduces the commercial bank analysed and the financial sector where it operates. The description of the bank concerns the methods currently used to assess branches’ performance.

Chapter 5 develops a framework for performance appraisal, integrating efficiency and profitability dimensions. In the context of financial institutions’ assessment, it is proposed the assessment of efficiency from two different perspectives, corresponding to the operational activity and the outcomes of financial intermediation. In order to provide a comprehensive efficiency assessment, a new DEA model is used, which can identify inefficiencies in both input and output levels, considering an objective of cost minimisation. The resulting efficiency measure is decomposed in order to provide a comprehensive picture of the inefficiency sources and its managerial implications.

The following chapters explore different aspects of operational efficiency in greater detail, providing both enhanced models of efficiency measurement and target setting. Chapter 6 focuses on the analysis of the effect of scale size on efficiency. Performance improvement issues relating to the choice of appropriate benchmarks and practical aspects relating to the implementation of the DEA results are addressed. Chapter 7 focuses on the analysis of cost efficiency considering different price scenarios, including price uncertainty at the DMU level and situations where both input and price adjustments are possible.
Chapter 8 explores the differences in performance of groups of bank branches in different locations, associated with distinct environmental conditions. A new performance index is developed, which can disentangle within-group managerial inefficiencies from those attributable to the context within which the DMUs are required to operate.

Overall, this thesis contributes to illustrate the relative strengths of DEA with respect to a multitude of purposes of performance evaluation and improvement. It also provides a comprehensive assessment of a financial institution, which shows that the DEA method can be successfully used as a decision support tool for many issues faced by these organisations.