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# The performance of the Greek banking system in view of the EMU: results from a non-parametric approach

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## Abstract

This paper estimates economic efficiency, TFP change, and technical change of the Greek banking system over the period 1993–1998. The beginning of the examination period coincides with the acceleration of liberalization and deregulation of the Greek financial system, in view of the country joining the EMU. The study uses Data Envelopment Analysis to measure technical and allocative efficiency. Also, productivity change is computed using the Malmquist Total Factor Productivity approach and is composed of technical and efficiency changes. The results show that the majority of the Greek banks operate close to best market practices, while allocative inefficiency costs seem to be more important than technical inefficiency costs. Also, the positive but not substantial TFP change of the Greek banking system is associated to efficiency improvement for the medium-sized banks and to technical change improvement for larger institutions. © 2002 Elsevier Science B.V. All rights reserved.

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## 1. Introduction

By the mid-1980s, the need for a flexible and market-oriented financial system and the prospects for participating in the Single European Market initiated efforts towards the deregulation of the Greek banking system. Over the 1990s, banking activity in Greece was decisively affected by the harmonization of national regulations within the European Union and especially with the enactment of the Second Banking Directive. Also, consistent macroeconomic and structural policies were adopted in view of the country joining the Economic and Monetary Union, which gradually reduced inflation and interest rates.<sup>1</sup> Currently, the Greek banking system is faced with increased competition, internationalization and disintermediation. These factors, together with the fast development of information technology, have triggered major structural changes in the Greek banking system, which is making efforts at increasing efficiency, reducing bank service costs and diversifying in other business areas. Further changes are expected in the future.

In recent years only two published papers have focused attention on the rate of productivity growth, and cost efficiency on the Greek banking industry (Karafolas and Mantakas, 1996; Noulas, 1997). However, both studies limit their analysis to the pre-1993 period when the liberalization of the financial system was actually initiated. No information is so far available on productivity and the cost structure of the Greek banking sector over the deregulation period.

The purpose of this paper is to study productivity and cost characteristics of the banking system of Greece, a medium-sized country, during the liberalization and deregulation period. Up to the present the Greek banking system has not been studied adequately due to data deficiencies and its features have not been thoroughly analyzed.<sup>2</sup> We believe that the assessment and quantification of performance, such as cost efficiency and productivity growth of the Greek banking system over the liberalization period is necessary for an evaluation of its performance and future prospects within the EMU framework.<sup>3</sup> The conclusions drawn could prove useful for the analysis of the banking sectors in other medium-sized economies that are undergoing structural changes.

From a methodological point of view the estimation techniques adopted to obtain economic efficiency at firm level follow two basic approaches: the stochastic frontier approach and the non-parametric Data Envelopment Analysis (DEA) method. Within the stochastic frontier approach, a wide variety of alternatives have been proposed (see the review of Berger and Humphrey, 1997). The evaluation of the merits and the limits of the two approaches justify our choice of adopting the

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<sup>1</sup> Since 1993 the ‘Greek Convergence Programme’, an ambitious macroeconomic programme, was successfully implemented aiming at achieving the Maastricht criteria by the end of the 1990s. For a discussion on this issue, see Tsionas (2001).

<sup>2</sup> Since 1993 accounting and auditing standards for Greek banks were notably upgraded, where the most significant improvement was the introduction of consolidated financial statements.

<sup>3</sup> For a presentation of capacity, performance and efficiency measures, see ECB (December 2000) and Kapopoulos (2001).

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