



NORTH-HOLLAND

Journal of Policy Modeling
24 (2002) 813–829

Journal of
Policy
Modeling

Efficiency of the Greek banking system in view of the EMU: a heteroscedastic stochastic frontier approach

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Received 1 August 2000; received in revised form 17 July 2001; accepted 28 March 2002

Abstract

The paper estimates empirically cost efficiency of the Greek banking system for 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 a multi-input, multi-output technology and adopts a heteroscedastic frontier model instead of a commonly used homoscedastic one to measure cost efficiency in the banking system. The empirical results show that larger banks are less efficient than smaller ones. Also, it is found that economic performance, bank loans and investments are positive related to the cost efficiency of the Greek commercial banking sector.

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JEL classification: C53; D24; G21

Keywords: Banking; Efficiency; Liberalization; Heteroscedastic frontier model

1. Introduction

Until the mid-1980s the Greek banking system operated in an environment characterized by selective controls and regulations which gradually led to inefficiency

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and to serious distortions in the functioning of the country's financial system. The need for a modern, flexible and market-oriented financial system and the prospects for participating in the Single European Market and the EMU initiated efforts towards the deregulation of the financial system. In recent years 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 (1992). In addition, consistent macroeconomic policies have been adopted in view of the country's prospects of joining the EMU, which gradually reduced inflation and the interest rates.¹ Currently, the Greek banking system is faced with increased competition and internationalization, while banking disintermediation has been in evidence. These factors, together with the fast development of information technology, trigger major structural changes in the Greek banking system, which is making efforts at increasing efficiency, reducing costs of bank services and diversifying in other business areas. More changes are expected in the years to come.

In recent years, only one empirical work has focused attention on inefficiencies of Greek banking system. In particular Noulas (1997) used a data envelope analysis (DEA) methodology to evaluate the relative performance of state against private banks for 1992 to conclude that (i) technical efficiency decreased for both private and state banks, and (ii) state banks experienced technical progress while private banks did not. However, his study limited the analysis to the pre-1993 period when the liberalization of the financial system was actually initiated.

The purpose of this paper is to extend earlier work on cost efficiency of the banking system to a medium-sized country like Greece and study whether it has been affected by the initiated liberalization process and deregulation measures that have been taken. 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.² We believe that the assessment and quantification of cost efficiency of the Greek banking system over the liberalization period is necessary for the evaluation of its performance and future prospects within the EMU framework. The conclusions drawn could prove useful for the analysis of the cost structure of the banking sectors in other medium-sized economies that are undergoing structural changes.

The empirical evidence on Greece is arrived at using multi-input, multi-output flexible cost function to represent the cost structure of the banking system. Technical efficiency is estimated using stochastic frontier models. However, when estimating stochastic frontiers in the banking sector it is quite probable that heteroscedasticity is present in the data since banks of different "size" are pooled

¹ Since 1993 an ambitious macroeconomic program (the "Greek Convergence Programme") was successfully implemented aiming at achieving the Maastricht criteria by the end of the 1990s. For a discussion on this issue, see Tsionas (2000).

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

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