

# Scale and scope economies in the European banking systems

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Received 15 July 2000; accepted 25 February 2001

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## Abstract

The increasing competition induced by the European integration is leading to an intense process of consolidation among European banks, very similar to that, which occurred in the US banking industry in the 1980s. In this paper, we test if cost improvements in output efficiency are likely to emerge from the ongoing process and to derive some implications for the future market structure. Our results support the view that recent regulatory changes and progresses in technology have contributed to raising the optimal scale. We show that mergers should be oriented to increase bank scale for small banks and to expand into new product lines for large banks. © 2001 Published by Elsevier Science B.V.

*JEL classification:* G21

*Keywords:* Stochastic cost frontier; Cost efficiency; Economies of scale and scope; Banking sector

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## 1. Introduction

The aim of this paper is to analyze output efficiency of European banks in view of the ongoing process of integration and concentration. In order to test if cost improvements in the efficiency are likely to emerge from this process, we check for the presence of economies of scale and scope, as well as, the X-inefficiency of banks in six European countries. In the last few years, many factors have contributed to increase the competition among European financial institutions. The first important

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factor is deregulation, promoted by the Second European Directive on Banking and Financial Services, which leads banks to compete not only in the domestic markets but potentially all over the world. Moreover, technological advances and deregulation have promoted a process of despecialization, allowing banks to lend at any maturity, and reducing the differences among sectors.

Banks reacted to the increased European competition with an intense process of restructuring and growth. This has led the banking industry to experience an unprecedented level of consolidation through merger and acquisitions operations among large financial institutions, very similar to that, which occurred in the US banking industry in the 1980s. The consolidation process is based on the possibility of reaping profitability, reducing cost inefficiency, increasing market power, and exploiting scale and scope economies. However, doubts arise as to whether consolidation leads in fact to these performance gains, given that, so far, the empirical literature based on the US experience does not support this common belief.

The main conclusions of the empirical literature concerned with the US experience (Gilbert, 1984; Mester, 1987; Clark, 1996, 1988; Evanoff and Israilevich, 1991; Berger et al., 1993; Humphrey, 1995) are that overall the average cost curve is relatively flat with some evidence of scale efficiency gains for small banks. On the contrary constant or slight diseconomies of scale prevail in the case of large banks.

The results on scope economies are even more controversial since the literature provides little consensus on the existence and the extent of product mix efficiency (Berger and Humphrey, 1994). The inconsistency of those results are partially explained by theoretical and econometric limitations associated with measurement of scope economies (Berger et al., 1993; Pulley and Humphrey, 1993; Clark and Speaker, 1994).

The lesson from the US case for Europe would be that the only way to lower cost in banking is to improve the X-efficiency rather than focus on cross-border mergers and acquisitions.

However, in contrast to the US empirical literature, the much smaller number of cost studies for Europe show that the average cost curve tends to be U-shaped and, to a less extent, also scope economies exist.

Drake and Howcroft (1994) use the data of the UK clearing bank's branches and find that most of them were inefficient, showing slight increase returns to scale. Athanassopoulos (1995) and Glass and McKillop (1992) find diseconomies of scale and scope for one of the largest Irish banks, the Bank of Ireland. Among the studies based on data from a sample of national banks Levy-Garboua and Renard (1977) and Dietsch (1993) find scale economies in French banking. Studies for Italy (Cossutta et al., 1988; Conigliani et al., 1991) show the existence of scale economies. Rodriguez et al. (1993) reveal both scale and scope economies for medium sized banks and diseconomies of scale and scope for larger institutions. By using data for a set of German banks, Altunbas et al. (1994) show that banks who offered a wider range of mixed products are more efficient than other banks. Zardkoohi and Kolaris (1994) find scale economies for medium-sized Finnish banks. Berg et al. (1993) show that larger Norwegian banks are more inefficient than smaller institutions. Altunbas and Molyneux (1996) using 1988 data, show that for four

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