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Technical, scale and allocative efficiencies of Turkish banking industry

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Abstract

This paper investigates input and output efficiency in the Turkish banking industry to understand the impact of size, international variables, ownership, control and governance on profit, cost, allocative, technical, pure technical and scale efficiency measures. Employing a non-parametric approach along with a parametric approach, we estimate the efficiency of Turkish banks over the 1988–1996 period. This period allows us to account for the changes in the macro economy and regulatory treatment of the Turkish banking industry over time. Our results suggest that the heterogeneous characteristics of banks have significant impact on their efficiency. Moreover, cost and profit efficiencies of the Turkish banks have exacerbated over time. Results also indicate that the dominant source of inefficiency in Turkish banking is due to technical inefficiency rather than allocative inefficiency, which is mainly attributed to *diseconomies* in scale. To the extent that they chose an inefficient level of production, bank management is responsible for scale inefficient operations. However, increasing demand for banking services in the nineties, fueled by the state's increasing demand for funds to finance chronic budget deficits and high growth policies, and the oligopolistic nature of the Turkish banking market do not justify scale adjustments. Our policy suggestions are that the government implement financial reform packages that foster competition in the banking market, and

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that the industry devise incentive schemes to improve managerial efficiency.

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1. Introduction

In a rapidly changing financial market worldwide, bank regulators, managers, and investors are concerned about how efficiently banks transform their expensive inputs into various financial products and services. According to Berger et al. (1993), although rapid changes in the financial services industry have been taking place all around the globe, the efficiency research has not kept pace with these changes, in terms of both *maturity* and *breadth*. In their recent excellent international survey paper, Berger and Humphrey (1997) also underscored the imbalance of the focus in the literature after reviewing 130 frontier (X-) efficiency studies from 21 countries and various types of financial institutions. They reported that the vast majority of the studies on banking efficiency focus on the banks of developed countries in general (about 95%) and of the US in particular (about 70%). While giving possible directions for future research, both survey studies suggest that more research is needed in measuring and comparing the efficiency of banks and other financial institutions from different countries. The economic and political environments surrounding financial institutions differ substantially across countries. For research and policy purposes, results from banking markets that are more national in scope with much higher levels of concentrations may shed some light on the efficiency impact of various regulatory policies.

During the last two decades, there were continuous legal, structural and institutional changes in the Turkish financial sector. A series of economic reforms were introduced in the 1980s to establish a free market economy and promote financial market development. With these reforms, interest and foreign exchange rates were freed, and new financial products and institutions were permitted. The Interbank Money Market and Istanbul Stock Exchange (ISE) were established in 1986 to provide liquidity in the financial system. As a reflection of internationalization policies, foreign banks, joint ventures and partnerships between domestic and foreign banks were also welcomed to the system. Also, Turkish banks took an interest in doing business abroad and began operating in international markets. Turkey's determination for a permanent membership in the European Union motivated its banking authorities to ensure that their regulations are in harmony with those in the Union. Turkey has already accepted EU practices on capital adequacy and ad-