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The effect of scale and mode of ownership on the financial performance of the Turkish banking sector: results of a DEA-based analysis

Muhammet Mercan[a,*], Arnold Reisman[b,c], Reha Yolalan[d], Ahmet Burak Emel[d]

[a] Yapi Kredi Invest, Levent, 80620, Istanbul, Turkey
[b] The Graduate School of Management, Sabanci University, Istanbul, Turkey
[c] Reisman and Associates, Shaker Heights OH, USA
[d] Yapi Kredi Bank, Levent, 80620, Istanbul, Turkey

Abstract

Turkey and the International Monetary Fund (IMF) agreed to a stand-by arrangement at the outset of 2000. Consequently, Turkey implemented an exchange-rate based stabilization program to combat its high inflation. However, two financial crises followed: one in November, 2000 and the other in February, 2001. As the result some banks became problematic. This necessitated restructuring of the banking sector to increase its financial efficiency.

This paper presents a financial performance index for commercial banks. The index allows one to observe the effects of scale and of the mode of ownership (public/domestic, private/domestic/foreign) on bank behavior and, therefore, on bank performance in a developing economy. It documents the effects of financial liberalization, cross-country movements, and the impact of financial crises originating in neighboring countries e.g. Russia. The study applies Data Envelopment Analysis (DEA) to selected fundamental financial ratios using 1989–99 data from commercial banks in Turkey. Year-by-year results explain the effects on this sector of major shifts in both national macro-economic policy and various international developments. The banks that were taken over by the regulatory government agency most recently in the analyzed period were observed to perform poorly with respect to their DEA performance index values.

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*Corresponding author.

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1. Introduction

Financial institutions bridge the needs of lenders (savers) and those of borrowers. They provide the flow of resources from one party to the other. Among financial institutions, commercial banks play the major role. They have the largest share of intermediation and are at the very core of a financial system

The basic function of a bank is to collect deposits from savers and to extend loans to investors (or consumers). Yet, the scope of banking activities differs from country to country. For example, while banking activities are, by law, limited in some countries, a wider scope of operations is allowed in others (as in the universal banking system in Europe). In terms of portfolio diversification, expanding the scope of activities may result in risk reduction. However, trends toward "universal banking" have created new risk sources.

The scope and nature of banking activities have evolved over time. In the late 1960s and early 1970s, volatility in the rapidly developing financial markets, due mainly to fluctuating interest rates, forced banks to take measures against uncertainty. Market volatility increased in the ensuing years, as the result of the economic crises in the 1970s. In this period, the definition of bank liquidity shifted from holding liquid assets toward an ability to raise funds as needed. This coincided with high levels of and fluctuations in interest rates, thus increasing interest rate risk. Combined with longer maturities of loans vis-á-vis sources of funds, the situation led to losses on banks' income statements. As a countermeasure, banks introduced floating rates on loans. This transferred the interest rate risk to loan customers, and increased the credit risk. At the same time, international banking gained pace. Banks both collected funds from international markets, and invested in foreign markets. This gave rise to the foreign exchange (FX) risk.

Bridging lenders and borrowers puts banks at the very core of any economic activity as well as any policy decision concerning the economy. It is not a coincidence that in many countries structural changes (aimed at enhancing economic growth, increasing efficiency in allocation of resources, and integration with the global economy) resulted from the liberalization of financial markets and, specifically, the liberalization of the banking sector.

The "fragile" nature of banks and the fact that they are popularly perceived to be institutions of "confidence", threatens not just banking institutions but the entire economy. This is due in part to the strong backward and forward linkages between institutions in this sector and the rest of the economy. Recent experiences in developing countries show how destructive problems in the banking sector can be for the entire economy [1].

Financial markets experienced a "wind of change" in the 1980s. International capital movements shifted from "state-to-state" character to an environment where private capital movements became dominant.

> "Until recently capital flows to developing countries were more limited and dominated by public and publicly guaranteed flows. Financial intermediation did not play as important a role. Today, private flows to developing countries are huge and are increasingly channeled by domestic banks throughout the economy. This augments the potential of the financial system, but it also magnifies any inefficiencies or problems." (Stiglitz [2])

Many developing economies (emerging markets), requiring foreign capital for economic growth, initiated liberalization of their capital accounts. Consequently, cross-nation capital flows

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