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# A COMPARATIVE PROFITABILITY AND OPERATING EFFICIENCY ANALYSIS OF STATE AND PRIVATE BANKS IN TURKEY

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## Abstract

In this study, a comparative performance analysis between state-owned and privately-owned commercial banks of Turkey is carried out over the period between 1997 and 2006. On the contrary to expectations, statistical findings of the study produce surprising results. The results suggest that state-owned banks are as efficient as private banks, and even more efficient at some aspects. Thus, it rises the question of “whether to privatize banks or not?”

**Key words:** Bank performance, state banks, private banks, Turkish banks.

**JEL classification:** E44, G21, M41.

## 1. Introduction

Since financial system is vital for an economy and banks play a pivotal role in the financial system, it is important for economies to have a sound financial and banking system. In this concept, liberalization policies have been employed all over the world especially after the 1980s. Turkey has been in a change in economic sense from closed to more liberal structures. As a result, financial sectors and especially banking sector have been in a gradual evolution towards to liberal structure.

The current picture of Turkey’s banking industry gives us the chance of addressing the issue of government banks’ relative performance. This is important for both the rationale behind bank privatization and the policy implications. In addition, it provides valuable information for further researches to make meaningful comparisons before and after privatization performances of government banks when their privatizations are observed in the future.

According to market forces theory, private banks have an advantage over state banks with respect to financial and operating efficiency. However, our study suggests that government banks are as profitable as private banks. The study, firstly, updates the regarded findings with most current data on Turkish banking industry. Secondly, most studies of this kind apply economies of scale and technical productivity measures whereas our study uses operating efficiency and profitability as the measures.

This study is organized on three main parts. In the first part, theoretical and empirical researches related to the subject, are supplied. In the following part, a summary on the history and working of banking system in Turkey is given. The data set employed is described in the third part. Testable hypotheses, methodology and empirical findings are also supplied in this part. Finally, the paper completes with conclusion.

## 2. Literature Review

Despite the common belief that the purpose in state-ownership of bank is to provide financing for projects with low profile of profitability yet necessary for macroeconomic goods and development, empirical studies in literature suggest differently. Like many other researchers, La Porta et al. (2002), Caprio and Peria (2000) and Barth et al. (2001) report that state ownership of banks does not serve the purpose of promoting economic growth and development but even lead to worsening

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economic development. Moreover, they argue that banking crises are linked with bank ownership of governments since political goals may prevent government banks to operate in their original path to serve for economic development and growth.

Since governments continue to own banks in most economies, with the exception of the US, such studies regarding bank performance cannot ignore the role of government in the banking business. In this respect, the role of governments in the industry goes beyond the regulation. When a government controls financial resources and has the ability to direct those resources to politically-motivated projects through banks, there appears a possibility for corruption of public funds. This is especially the case for developing and underdeveloped countries that also lack a sound legal system. Despite the supporters of development view in the 1960s and 1970s, empirical findings of many researches like World Bank report (2001), Galindo and Micco (2004), Sapienza (2004), Dinc (2005), and Micco et al. (2007) are consistent with the political view.

It should be also noted that here arises an important discussion issue in government bank ownership and performance. That is, as argued by Yevati et al. (2004), state-owned banks should be evaluated by their function on stabilizing effect but not by their profitability. The researchers underline the importance of causality issue that exists between government bank ownership and such variables as economic development, growth, and corruption. Furthermore, they also introduce new findings which suggest that state bank ownership's negative effects on financial development and growth are not as robust as thought earlier. Their study provides evidence showing that state-owned banks may play a positive role in reducing credit pro-cyclicality as in the case of Latin American economies. Findings in favor of state-owned banks are also reported by Bonin et al. (2005), Yevati et al. (2004), and Micco and Panizza (2004). For example, Bonin et al. (2005) report that private ownership alone does not assure bank efficiency in transition countries. In addition, Micco and Panizza (2004) suggest that state-owned banks may play a positive role in credit-smoothing.

Nevertheless, efficiency studies on banks have been producing contradictory results. This is probably attributable to one or more of country, timing, measure and methodology specific reasons. For instance, Omran (2007) analyzes both private and government banks' relative performances and also evaluates bank privatization process in Egypt by comparing the pre- and post-privatization performances of privatized banks; and reports that private banks outperform government banks. On the other hand, carried out a study on a developed country other than the US, Altunbas et al. (2001) provide evidence that government banks in Germany are as efficient as their private counterparts.

The issue of reasons behind governments' motivation to own banks is also another popular side of the topic grabbing researchers' attention. In this respect, considering that government bank-ownership is still common in this global modern world<sup>1</sup>, several studies attempt to reveal reasons behind state bank-ownership. Among conclusions, first, government bank ownership is positively associated with countries' level of poverty and underdevelopment (e.g., Barth (2001), La Porta et al. (2002), and Beck and Levine (2002)).

Second, countries' legal structure appears to be a key determinant that affects government bank-ownership. Studies of La Porta et al. (1998 and 1999) reflect that in civil law countries, especially French civil law countries, government intervention into economic life is much broader than in common law countries. Here, it is worth noting that Turkish legal system takes its place in French civil law origin. Therefore, the government's role in the banking industry has been much deeper and effective in Turkey. With respect to Turkish banking industry, Isik and Hassan (2003) examine productivity growth, efficiency change, and technical progress in Turkish commercial banks by employing a DEA-type Malmquist Total Factor Productivity Change Index. Their study suggests that private banks began to close performance gap with government banks as of 1993.

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<sup>1</sup> La Porta et al. (2002) report that 59 percent of the equity of the 10 largest banks was owned by the government in an average country in 1970, and 42 percent was still state owned in 1995.

### 3. The Current View of the Turkish Banking Industry

#### 1. General Outlook

Banks in Turkey fall into two groups of scope; one is commercial banks and the other is investment and development banks, which do not accept deposits. As of 2006, there are 46 banks – down from 79 in year 2000 – in the business, of which 33 are commercial banks, and 13 are investment and development banks. Those 3 of commercial banks are state-owned, and 14 are privately owned. Due to investment flow from abroad, both the number of foreign-owned banks and the capital share of foreign investors in banking industry have increased recently. Foreign investors have acquired a total of 50% share, which remains in not publicly-traded portion of total capital, in two privately-owned commercial banks. There are 15 banks in commercial and 4 banks in investment and development banking groups where majority stakes (over 50% of total equity) are held by foreign banking organizations<sup>1</sup>. With respect to total assets, five largest banks constitute 63%, and ten largest banks constitute 86% of total assets in the market. The largest three's sum of total assets amounts to (54+51+41=) 146 billion dollars (The Banks Association of Turkey, 2007).

#### 2. Legal Environment and Regulatory Institutions

Banks operated in Turkey are subject to “Banking Law Nr. 5411” last amended in 2005. Established in 2000, the Banking Regulation and Supervision Agency (BRSA or BDDK in Turkish) is the legal authority regulating the industry (<http://www.bddk.org.tr>). Its main purpose is to maintain a healthy and well-functioning banking sector in order for enhancing the financial stability of Turkish economy. Since it is a newly established institution, BRSA's broad responsibilities range from assuring the efficiency and transparency of the sector to fostering the integration of Turkish banking industry with global financial markets.

The deposit insurance system in Turkey functions under the authority of the Savings Deposit Insurance Fund (SDIF or TMSF in Turkish), which is established in 1999 and started its operations in 2000 (<http://www.tmsf.org.tr>). Its autonomous structure allows it to protect depositors' rights under deposit insurance fund. Due to Turkey's financial crisis of 2001, there has also been an ongoing unconventional duty of the SDIF. That is, the fund has been either privatizing or liquidating the banks that became dysfunctional and risky for the system, after taking over their complete ownership and management, and taking necessary measures to restructure them. So far from the beginning of 2001 financial crisis, overall, both the BRSA and the SDIF have satisfactorily served the public interest.

### 4. Statistical Analyses

#### 1. Data and Methodology

The data used in the study are gathered from the annual balance sheets and income statements of commercial banks, published by the Banks Association of Turkey. The data cover a ten-year period between 12-31-1997 and 9-31-2006. Due to the differences in their unique scope, investment and development banks are not included in the study. Instead, we rather perform our analysis on the commercial banks.

In the application part of this study, the main goal is discovering whether there are any performance differences or not between government and private banking in Turkey. Profitability and operating efficiency are chosen to test the hypotheses of this study. Net Profit-Loss (NPL), Return on Assets (ROA) and Return on Equity (ROE) are the proxies used to measure profitability indicator. Net profit and net asset efficiencies relative to total employment and total number of branches are used to measure operating efficiency.

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<sup>1</sup> The Savings Deposit Insurance Fund currently controls the other remaining commercial bank known as The Fund Bank that was emerged from the consolidation of those risky commercial banks whose ownerships were previously claimed by the SDIF.

A non-parametric approach is used to see whether private banks perform better than public ones. In order to analyze performance differences, mean values and all other statistics are calculated by using E-Views 5.1. Following the calculations, t tests are used for mean equality hypotheses. The simple format used in the hypotheses is as follows:

$$H_0: \mu_i^{pr} = \mu_i^{pub}$$

$$H_1: \mu_i^{pr} \neq \mu_i^{pub}$$

- Notes: 1) Superscript *pr* means private  
 2) Superscript *pub* means public  
 3) Subscript *i* means the proxy to measure profitability or operating efficiency.

Pre-test expectations about the performances of public and private banking are as follows: Turkish economy has a more liberal structure compared to the 1980s since market forces are expected to work in all sectors. In this respect, it is expected that privately owned firms perform better. Therefore the primary hypothesis of this study is: "Performance efficiency will be better for private banks than for state banks". All testable hypotheses are given below in Table 1.

Most of the performance criteria researches on banking sector are specifically about the consequences of privatization (e.g., Omran (2007), Bonin et al. (2005), Clarke et al. (2005)). These studies basically compare financial and operating performances of firms before and after privatization. Most of these studies find that (e.g., Omran (2007), Nakane and Weintraub (2005), Clarke et al. (2005)) firms show better performances after privatization. The very first idea of this study emerges at this point. There is no serious example for privatization of Turkish state banks to get data to use in this context until the mid of 2007. Then we decided that the performance comparison of current state and private banks should have been analyzed in Turkey. This analysis firstly aims to compare the financial and operating efficiency in the banking sector. Secondly, it is targeted to get beneficial results on the performances of government and private banking before privatization initiates in the sector.

## 2. Empirical Findings

We could not reach strong evidence that the mean levels of profitability and operating efficiency of state and private banks are statistically different than each other. In fact, other than net assets/total employment and net assets/total number of branches, all 5 proxies to measure profitability and operating efficiency could be accepted as the same for private and state banks according to our statistical test results.

When the profitability performances of state and private banks are compared, it is found that statistically, there are no meaningful differences in means. Three proxies are used to test whether profitability performances are different or not. When net profit/loss levels are controlled, it could be easily observed from Table 2 that state banks' net profits are much higher than those of private banks. However, this difference is losing its meaning when standard deviations are taken into account. t value is 0.8 at most and the test gave the result of no difference. Similar results are seen when ROA and ROE figures of state and private banks are employed. It could not be claimed that government banking or private banking would give better results in terms of these ratios. However, when mean values are taken into account, there is a difference relative to net profit figures. This time, private banks have stronger means than state banks. Still, t test reports no difference in means in terms of ROA and ROE statistically. When the results are gathered to see general view in terms of profitability, it is found that there is no performance difference between state and private banks in Turkey for the period between 1997 and 2006.

Table 1

## Summary of Testable Hypotheses

Characteristics	Proxies	Hypotheses
Profitability	Net Profit-Loss (NPL) Return on Assets (ROA) Return on Equity/ROE)	NPL <sub>pub</sub> = NPL <sub>pr</sub> ROA <sub>pub</sub> = ROA <sub>pr</sub> ROE <sub>pub</sub> = ROE <sub>pr</sub>
Operating Efficiency	Net profit efficiency (NPE1)=Net profit/Total employment (NPE2) = Net profit/ Total number of branches Net Assets efficiency (NAE1)= Net assets/Total employment (NAE2) = Net assets/Total number of branches	NPE <sub>pub</sub> = NPE <sub>pr</sub>  NAE <sub>pub</sub> = NAE <sub>pr</sub>

Table 2

## Results of the Tests for Equality of Means

Series (profitability)	t value	probability
NPL <sub>pub</sub> and NPL <sub>pr</sub>	0.793695	0.4406
ROA <sub>pub</sub> and ROA <sub>pr</sub>	1.022220	0.3240
ROE <sub>pub</sub> and ROE <sub>pr</sub>	0.900845	0.3829
Series ( op. efficiency)		
NPE1 <sub>pub</sub> and NPE1 <sub>pr</sub>	1.141059	0.2730
NPE2 <sub>pub</sub> and NPE2 <sub>pr</sub>	1.126098	0.2791
NAE1 <sub>pub</sub> and NAE1 <sub>pr</sub>	2.486524*	0.0261*
NAE2 <sub>pub</sub> and NAE2 <sub>pr</sub>	2.751269*	0.0156*

- Notes: 1) Mean equality tests are employed by using E-Views 5.1.  
2)  $\alpha = 0.05$  has been chosen.  
3) \* means that null hypothesis would be rejected.

Table 3

## Means and Std. Deviations

Variables	Means	Std. Dev.	Variables	Means	Std. Dev.
NPL <sub>pub</sub>	187163.3	442519.0	NPE <sub>1pub</sub>	5.121037	10.51161
NPL <sub>pr</sub>	58739.49	116720.6	NPE <sub>1pr</sub>	0.815993	1.838802
ROA <sub>pub</sub>	0.007932	0.021503	NPE <sub>2pub</sub>	96.96191	199.1822
ROA <sub>pr</sub>	0.118511	0.305211	NPE <sub>2pr</sub>	16.45138	34.91234
ROE <sub>pub</sub>	0.144830	0.437541	NAE <sub>1pub</sub>	367.5774	335.2287
ROE <sub>pr</sub>	0.351741	0.480206	NAE <sub>1pr</sub>	68.79432	55.95432
NAE <sub>2pr</sub>	1337.510	1116.895	NAE <sub>2pub</sub>	7350.252	6079.625

Note: Except for ratios, all figures are in thousand New Turkish Liras.

In order to see whether there is any difference between government and private banking in terms of operating efficiency, net profit-loss and net assets are presented in terms of total employment and total number of branches. After the tests, there is no clear conclusion to say that private banks show better results than state-owned ones in operating efficiency performances. The contradiction is coming from the proxies' definition. When net profit-loss is used, whether in terms of employment or branches, *t* values are so small that we could not reject the null hypothesis stating that operating efficiency in terms of net profit-loss is the same for private and state banks. On the other hand, when net assets are used in description of operating efficiency, the test results became the opposite of those acquired when net profit-loss is used. This time, *t* test concludes that means of net assets/total employment and net assets/total number of branches are statistically different between state and private banks. In operating efficiency sense, two proxies gave two opposite results, and it is found that in terms of operating performances, there is inconclusive result on whether government or private banking shows better performance.

As a result of our analyses, it could be claimed that there is no clear difference between government and private banking in terms of profitability and operating efficiency performances in Turkey between 1997 and 2006. State banks have much higher mean values of net profit, net profit efficiency and net asset efficiency relative to private banks. In terms of ROA and ROE private banks seem to perform better results. However, when statistical tests are run, the whole picture gets new meanings. These mean differences in related indicators are losing their values in terms of statistical meanings.

## **5. Conclusion**

Although bank privatizations have accelerated all over the world since the beginning of the 1990s, the case of Turkey reflects unique consequences. Turkish banking industry has not gone into privatization process, at least in conventional ways. Even more interestingly, a number of troubled private banks have been nationalized after the financial crisis of 2001. Despite the fact that they were either liquidated or sold to private capital again after restructuring, this cannot be treated as privatization. Therefore, we currently had the chance to identify relative performances of government and private banks, and to reach insights whether our results are in line with findings on other countries' experiences.

First, it should be noted that even though the number of government banks are considerably less than that of private banks, government banks' financial figures are massive in amount. That is attributable to their much larger sizes as a result of over branching.

The study's statistical test results clearly show that performance of state-owned banks does not differ from that of private banks with respect to the proxies employed. Moreover, government banks even outperform their private counterparts. The results are important for both the rationale behind bank privatization and the policy implications. Moreover, the study provides valuable information for further researches to make meaningful comparisons before and after privatization performances of state banks when their privatization occurs in the future. Majority of privatization studies in the literature stand in favor of privatization regarding both non-banking and banking firms. However, there are a number of studies presenting inconclusive results. As opposed to the majority, our study finds its place in the latter. Its findings make bank privatization questionable, at least for the Turkish case. Therefore, it is worth rethinking about bank privatization.

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