Cross-Border Bank Acquisitions and Banking Sector Performance: An Empirical Study of Turkish Banking Sector

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Abstract

Acquisitions and mergers are the growth and expansion strategies that are commonly used by the companies in all over the world because of several reasons such as increasing the profit, sales and market share, entering into new markets, operating with economics of scale, coping with managerial problems and so on. In recent years, especially in 2005 and 2006, there have been several acquisitions and mergers in the Turkish banking sector. Those mergers and acquisitions have been realized mostly by the foreign banks.

The performance of the banking sector in Turkey is analyzed to determine the effects of cross-border bank acquisitions on the Turkish banking sector by utilizing a non-parametric approach DEA (Data Envelopment Analysis).

Keywords: Cross-border acquisition; efficiency; Turkish banking sector; Data envelopment analysis.

1. Introduction

In today’s globalized business world, competition has become an unavoidable concept for all companies. There are many tools that companies can use to cope with this competitive environment, to
become successful, and to sustain continuity. One of those alternatives is growth. Companies can grow in two ways which are called internal and external. Internal growth is sustained by the companies’ own resources and by the gains from its own operations. External growth is sustained by cooperating with other companies in several forms. One of the ways of external growth is mergers and acquisitions which are being increasingly used as world over strategies due to globalization, technological developments, and competitive business environment. There are many advantages of mergers and acquisitions for companies such as, utilizing economies of scale, maximizing profit, being competitive, sustaining synergy, appealing qualified human resources, developing research and development operations, getting into new markets, increasing asset level, and obtaining tax advantages etc. The main reason of all of those activities is to increase the overall performance of the company. So, the effects of mergers and acquisitions on the performance of the acquirer and acquired companies have become an attractive research topic. The purpose of this study is to analyze the effects of the mergers and acquisitions on performance of companies. For this purpose acquisitions in the Turkish banking sector in 2005 and 2006 are analyzed.

Data envelopment analysis (DEA) has been employed to measure the performance effects of those mergers. Ten acquired and thirteen non-acquired banks that operate regularly between 2002 and 2009 are examined in this study.

The first part of this study presents a literature review of the studies on this research area. The determination of sample is given in the second part of the research. The research method and results of the analysis are discussed in the last part of this study.

2. Literature review

Mergers and acquisitions are the strategies that are used by the banks to maintain growth and expansion, to gain competitive advantage for entering new geographical areas, to minimize risk, to operate with economies of scale and so on. So, they became popular strategies in all over the world. How all those strategies will affect the performance of the banks has also become an important research question for researchers. There are several studies about that topic with different results. Healy et al. [1] studied on the fifty companies which are merged between 1979 and 1983 in USA. This study showed that cash flows of the merged companies increased and the stock prices of those companies had a positive correlation with their cash flows. Agrawal et al. [2] analyzed the performance of the companies after the mergers and acquisitions. The value of the shares of the company declined because of those mergers and acquisitions. Haynes and Thompson [3] explored the effects of completed acquisitions on the level of the output of the company. The results of the study showed merged banks got significant gains. Al-Sharkas et al. [4] investigated the efficiency effects of mergers and acquisitions on the banking sector. Empirical results showed that mergers have improved the cost and profit efficiencies of the banks. Rhoades [5] prepared a summary of thirty-nine studies on merger performance in the banking sector between the years 1980 and 1993. According to operating performance results most of the studies that find no gain in efficiency also find no improvement in profitability, but the six studies showed at least some indication of a performance improvement did not obtain consistent efficiency and profitability results, or they were unique in some respect, or both. Piloff and Santomero [6] analyzed the effects of the mergers on the value of the banks. They analyzed the literature on this topic, and they reviewed if the mergers and acquisitions reached the expected goals. According to literature the aims of mergers and acquisitions are to decrease expenses, to increase market power, to minimize the variation of revenues, to sustain economies of scale. The studies on this area showed that mergers and acquisitions did not increase the value of the firms as expected. Akhavein et al. [7] analyzed the bank mergers’ effect on profit efficiency, and their findings suggested megamergers in the 1980s improved profit efficiency on average. Liu and Tripe [8] analyzed the effects of the mergers on the performance of banks which merged between 1989 and 1998 in New Zealand. They used financial ratios and DEA for this analysis. This study showed that the performance of the four of six banks which merged have increased following two years after mergers and acquisitions.
Sufian [9] investigated the effects of merger on the efficiency of Malaysian banks. According to the results, during the merger Malaysian banks’ overall efficiency level deteriorated compared to the pre-merger period, but during the post-merger period Malaysian banks’ overall efficiency recovered and became higher than pre-merger period. Lin [10] analyzed the efficiency of the forty-six banks that merged between 1997 and 1999 in Taiwan. This study revealed that mergers did not sustain a significant change in the cost efficiency of the banks. Sufian and Majid [11] improved two models with different inputs and outputs to investigate the effects of mergers and acquisitions on the Singaporean banking groups’ efficiency. According to the first model, the efficiency levels of the companies deteriorated during the merger period but increased in the post-merger period, and achieve a higher level than pre-merger period. According to the second model, Singaporean banking groups’ overall efficiency improved during the merger period but increased during the post-merger period. Fricke [12] performed an analysis that contains the bank mergers which occurred in 2002 in several countries, Germany, Austria, Sweden, and England. According to this study, the mergers in all of the countries except Germany affected the performance of the banks positively. Rezitis [13] investigated the effects of acquisition activity on the efficiency and on the factor productivity of Greek banks. Results of the analysis showed that merger and acquisitions affect the efficiency and the factor productivity of Greek banks negatively. Cummins et al. [14] analyzed the relation between the effectiveness of the companies in the insurance sector which merged between 1988 and 1995 with Data Envelopment Analysis (DEA). According to their study, those mergers affected the performance of the companies positively. Amel et al. [15] reviewed the studies about the core sectors of the financial industry. They found that mergers and acquisitions did not improve the cost and profit efficiency significantly. Rhoades [16] reviewed large nine bank mergers in the early 1990s and determined that merger activities enabled significant cost-cuttings.

As a result, the international literature on the effects of mergers and acquisitions on the performance of the companies showed that mergers and acquisitions generally increase the performance of the companies, sustain significant cost-cuttings, and enable economies of scale.

3. Research design

3.1. Measurement of variables

The necessary data set is obtained from the annual issues of the Bank Association of Turkey. Because of negative numbers cannot be used in Data Envelopment Analysis (DEA), all the negative numbers are equalized to one. Thus, all the negative values in the analysis are eliminated.

There is not a definite consensus on the determination of bank inputs and outputs in the literature. There are two main approaches to determine the inputs and outputs that can be used for efficiency measurement; production approach and intermediation approach [17, 18, 19]. According to production approach, banks are regarded as using labor and capital to generate deposits and loans, and according to intermediation approach deposits are regarded as being converted into loans [19]. Avkiran [19] summarized two approaches, and showed inputs and outputs for two approaches. Under production approach, number of employees, occupancy, furniture and equipment, other non-interest expenses are determined as input, number of demand deposits, time deposits, real estate loans, instalments loans and commercial loans are determined as output. Under intermediation approach, deposits, debentures, other liabilities, shareholder equity, number of employees, physical capital, and non-interest expenses are regarded as inputs, loans, securities, deposits with other banks, except central bank, non-interest income are regarded as outputs. According to production approach number of accounts is used as output, whereas under intermediation approach monetary value of those accounts is used as output. Under production approach only the operating expenses are taken into consideration when determining the inputs. İnan [20] reviewed the studies that measures the performance of the banks by DEA and summarized the inputs and outputs that are used in those studies. Table 1 indicates the summary of this study [20].
Table 1: Performance studies on Turkish banking sector

| Researcher          | Input                                      | Output                                      | Approach          |
|---------------------|--------------------------------------------|---------------------------------------------|-------------------|
| Ozkan&Gunay         | Labor, Capital, Deposit                    | Short-Run Credits, other Credits            | Intermediation    |
| Ozkan&Gunay         | Labor, Capital, Deposit                    | Short-Run Credits, other Credits            | Intermediation    |
| Cilli               | Labor, Deposit, Loans extended Abroad      | Credits, Securities                         | Intermediation    |
| Mercan&Yolalan      | Personnel Expenses/Total Assets, Total Expenses/Total Revenue | Portfolio/Total Assets, Capital and profit/Total Assets | Intermediation    |
| Yolalan             |                                            |                                             | Hybrid            |
| Cingi ve Tarim      |                                            |                                             |                   |
| Zaim                | Number of personnel, Interest Expenses, Depreciation Expenses | Deposit, Credits | Hybrid            |
| Yildirim            | Deposit, Interest Expenses, Non-Interest Expenses | Credits, Interest Revenue, Non-Interest Revenue |                   |
| Altunbas-Molyneux   |                                            |                                             |                   |
| Karamustafa         | Labor, Capital, Deposit, Other Funds       | Credits                                     | Intermediation    |

Sufian and Majid [11] employed DEA method to investigate the effects of merger and acquisitions on Singaporean domestic banking groups’ efficiency. They estimate two alternative models and they used total deposits as input, total loans and non-interest income as output in the first model, non-interest and interest income as output and interest and non-interest expense as input in the second model. Atan and Catalbas [21] studied on the performance of the banking sector. They used several financial ratios as inputs and outputs in DEA. Mercan et al. [22] also used some several financial ratios in the DEA analysis which is performed for determining the performance of the banks. Atan [23] measured the performance of the banks. He used one output (total credits) and seven inputs (deposit, non-deposit resources, owner’s capital, interest expenses, non-interest expenses, number of branches, number of personnel) for this analysis. Aysan and Ceyhan [24] determined the inputs as labor, capital and loanable funds, outputs as short- and long-term credits, off-balance sheet items, and other earning assets. Jackson et al. [25] used number of employees and the sum of non-labor operating expense, the direct expenditure on buildings and amortization expenses as inputs, loans, demand deposits and time deposits as output under value-added approach. Wheelock and Wilson [26] investigated the technical progress, inefficiency and productivity change between 1984 and 1993. They employed three inputs: labor, physical capital, purchased funds, five outputs: real estate loans, commercial and industrial loans, consumer loans, all other loans and demand deposits. Bergendahl [31] applied DEA to Nordic Banks by using loan volumes, deposit volumes, and gross revenues as output, costs of personnel, cost of material and the volume of credit losses as input. Havrylchyk [32] investigated the efficiency of the Polish Banking industry between 1997 and 2001, and under intermediation approach
they determined the inputs as capital, labor and deposits, and outputs as loans, government bonds, and off-balance sheet items. Chen et al. [33] analyzed the operating efficiency of 34 commercial banks in Taiwan banking sector. They determined outputs as provision of loan services, portfolio investment, and non-interest income, and inputs as bank staff, assets and bank deposits for that analysis under intermediation approach. İşik and Hassan [34] employed the number of personnel, equity capital, deposit and non-deposit funds as input, credits, off-balance-sheet items, and other earnings assets as output. Lin [10] used slack-based efficiency measures to measure the efficiency of 24 banks in Taiwan; he employed deposits, interest and non-interest expenses as input, loans, interest and non-interest income as output in that study.

By taking into consideration the literature inputs are determined as number of employees, non-interest expenses and total funds, and outputs are determined as total loans, non-interest income by adopting intermediation approach. All variables are measured in thousands of Turkish Liras, except number of employees. Table 2 shows the research model of this study.

Fig. 2. Research model

3.2. Measurement of efficiency

Performance measurement has become a very important tool to be successful in such a competitive business world. The companies which can use its resources effectively and can adapt new changing environment will become very successful. So, the concepts of performance, effectiveness, efficiency should be analyzed very carefully. The aims of performance measurement are to control the company by analyzing if the necessary outputs are obtained by using necessary inputs, to support the development of performance, to determine new production strategies, to enable useful information to management for decision making [35].

The efficiency measurement is generally performed in three ways. Those tools are ratio analysis, parametric and non-parametric methods. In the ratio analysis, efficiency is measured by the calculation of several ratios of financial units. The financial unit with the highest output over input or lowest input over output is determined as efficient. But for the calculation of efficiency of financial units which operate multi-input and multi-output ratio analysis is not suitable. Another criticism about the ratio analysis is that some ratios denote that the firm has a successful level of performance but other may show the opposite. Contrary to this, ratio analysis is the most commonly used method for performance measurement in all over the world. The regression analysis does not suffer from those disadvantages, but it assumes a priori form of functional relationship between inputs and outputs, in addition regression analysis can only handle one output at a time [27]. In the most of industries, especially in the banking sector, corporations operate with many inputs and many outputs. Therefore there exists a requirement for efficiency measurement method besides ratio and regression analysis. There are another two techniques called as parametric and non-parametric that enable efficiency measurement with many input many output. One of
the nonparametric techniques which is widely used to measure efficiency is Data Envelopment Analysis (DEA).

3.3. The data envelopment analysis (DEA)

Data envelopment analysis (DEA) is a linear based programming model which was first proposed by Charnes et al. in 1978 twenty years after Farrell’s seminal work for evaluating activities of not-for-profit entities participating in public programs. Recent years a variety of DEA applications have been seen for evaluating the performances of different kinds of entities engaged in many different activities in many different contexts in many different countries [36]. DEA assess the comparative efficiency of homogeneous organizational units, such as bank branches, schools, tax offices, and hospitals [17]. DEA responds to the need for satisfactory procedures to assess the relative efficiencies of multi-input multi-output production units [37]. The efficiency score is usually denoted as either a number between zero and one or 0 and 100 percent. The efficiency score of one or 100 percent of a decision making unit shows that decision making unit is efficient relative to other units in the research sample. In addition to providing meaningful scalar efficiency values, DEA is designed to determine the sources and estimate the amounts of inefficiencies that might present in the various output and input vectors [38]. The most important advantage of DEA over other traditional econometric frontier method is that it does not require prior assumption (such as standard forms of statistical regression analysis) about the analytical form of the production function [39, 40, 36]. In addition, DEA can calculate the efficiency of decision making units that operates multi-input and multi-output. DEA is a valuable benchmarking tool, because it identifies inefficiencies in decision making units by comparing them with similar decision making units regarded as efficient [19]. Unlike other benchmarking tools that rely on the managers’ observation, comparison, DEA enables to identify best practices that are too complex to be identified [41]. On the other hand, the main problem about DEA model is that, it is a non-parametric method, so it is sensitive to the measurement problems [4].

The relative performance measurement of DEA is a two-staged process [22]:

- Determining the best performing decision making units that produces greatest output with the least input. Assigning a DEA performance-index value of unity to such decision making units and placing them on the efficient frontier.
- Determining the DEA performance-index values for all other decision making units in the set. Such values are represented by the distance of the less efficient units from the above defined efficient frontier. The decision making units in this subset use more inputs given an output level or produce less output for a specific level of inputs.

DEA determines, the most productive decision making unit, the amount of excess resources used by inefficient decision making units, the amount of excess capacity or ability to increase service outputs in less-productive units, the set of best-practice service units most similar to the less-productive units, referred to as the best-practice reference set [41].

Mathematical formulation of DEA model can be stated as:

\[
\begin{align*}
\text{Max} & \quad Z_o = \sum_{r=1}^{m} u_{ro} y_{vo} \\
& \quad = \sum_{i=1}^{n} v_{io} x_{io} \\
\end{align*}
\]
Subject to the constraints:

\[
\sum_{j=1}^{m} u_{ij} y_{ij} \leq 1 \quad \text{for } j = 1, 2, k
\]

\[
\sum_{i=1}^{n} v_{ij} x_{ij}
\]

\[
U_{ro} V_{io} \geq 0 \quad \text{for } r = 1, m; \text{ and } i = 1, n
\]

Where:

\(Z_o\) : Efficiency score of o\(^{th}\) decision making unit.

\(X_{ij}\) : Observed value of input \(i\) for the decision making unit \(j\).

\(Y_{ij}\) : Observed value of output \(r\) for the decision making unit \(j\).

\(U_{ij}, V_{ij}\) : Weights of input \(r\) and output \(i\) of decision making unit \(j\) respectively.

\(k\) : Number of decision making units.

\(m\) : Number of outputs.

\(n\) : Number of inputs.

3.4. Sample

The research sample of this study includes all the banks that operated constantly in years between 2002 and 2009, excluding investment and development, participation banks, in Turkey. This data set should be as homogeneous as possible to be meaningful for relative efficiency measurement for DEA application. So there are four groups of banks in the research, state-owned deposit banks, privately-owned deposit banks, foreign banks founded in Turkey, and foreign banks having branches in Turkey. Total twenty-three banks which have more than ten branches from those groups are determined and analyzed.

Table 2. The banks in the analysis

|   |   |
|---|---|
| B1 | Akbank T.A.S. | B13 | Sekerbank T.A.S. |
| B2 | Alternatif Bank A.S. | B14 | Tekstil Bank A.S. |
| B3 | AnadoluBank A.S. | B15 | Turkish Bank A.S. |
| B4 | Citibank A.S. | B16 | Turkland Bank A.S. |
| B5 | Denizbank A.S. | B17 | Türk Ekonomi Bank A.S. |
| B6 | Eurobank Tekfen A.S. | B18 | T.C. Ziraat Bank A.S. |
| B7 | Finans Bank A.S. | B19 | Türkiye Garanti Bank A.S. |
| B8 | Fortis Bank A.S. | B20 | Türkiye Halk Bank A.S. |
| B9 | HSBC Bank A.S. | B21 | Türkiye İş Banka A.S. |
| B10 | Millennium Bank A.S. | B22 | Türkiye Vakıflar Bank T.A.O. |
| B11 | ING Bank A.S. | B23 | Yapı ve Kredi Bank A.S. |
| B12 | Societe Generale (SA) |   |   |
4. Data analysis

The performance of Turkish Banking Sector has been analyzed between 2002 and 2009 by classifying this period as pre-acquisition, during acquisition and after acquisition. The years between 2002 and 2004 have been accepted as pre-acquisition period, 2005 and 2006 as during acquisition period, and 2007 and 2009 as after acquisition period. Table 3 shows the banks which are acquired between 2005 and 2006.

Table 3. The bank acquisitions in Turkey between 2005 and 2006

| Acquired bank        | Acquirer bank              | Year | Continuing bank     |
|----------------------|---------------------------|------|---------------------|
| Türk Dış Ticaret Bank| Fortis Bank               | 2005 | Fortis Bank         |
| TEB                  | BNP Paribas               | 2005 | TEB                 |
| YapıKredi            | Uni Credito               | 2005 | YapıKredi           |
| Garanti Bank         | General Electric Group    | 2005 | Garanti Bank        |
| MNG Bank             | Arap Bank and Bank Med    | 2006 | Turkland Bank       |
| ŞekerBank            | Bank Turan Alem           | 2006 | ŞekerBank           |
| Akbank               | Citigroup                 | 2006 | Akbank              |
| Finansbank           | National Bank of Greece   | 2006 | Finansbank          |
| DenizBank            | Dexia                     | 2006 | DenizBank           |
| Tekfenbank           | EuroBank EFG              | 2006 | Eurobank Tekfen     |

The average performance level of the Turkish Banking Sector has increased after the mergers and acquisitions. Figure 2 shows the average performance of the Turkish Banking Sector between 2002 and 2009. The Turkish Banking sector has performed at lowest level in 2002 because of the financial crisis of 2001. After the financial crisis of 2001 the Turkish Banking sector was regulated with strict rules and a restructuring program was applied for this purpose. Bankrupt banks were closed, taken over or merged with other banks. Risk management systems were improved and public supervision became more effective in this period. Banking Regulation and Supervision Agency fulfilled its regulation and supervision responsibilities very well in 2000s. So, the years of 2002 and 2003 were a recovery period for the Turkish Banking sector. After those years the performance and credibility of the Turkish banks increased dramatically. As it can be seen from the Figure 2 the average performance of the banks is 0.85 in 2004, 0.84 in 2005, 0.88 in 2006, 0.87 in 2007, 0.88 in 2008, and 0.89 in 2009.
The average performance of the acquired banks is 0.86 and the average performance of the non-acquired banks is 0.79 between 2002 and 2009. Figure 3 shows the average performances of the acquired and non-acquired banks.

Before acquisition there was a huge difference between the performance of acquired and non-acquired banks, but after the acquisition period the performance of two groups are nearly the same. This shows that there are some other reasons that affect the performance of the banks rather than the acquisitions.

Table 4 shows the percentage changes of performance of the acquired banks. Four of the ten banks performed well after the acquisition period. The percentage changes of six of ten banks are negative. Because the negative performance changes are neutralized with the positive ones, the average percentage changes of the performance of the acquired banks have become 2.79. Denizbank, Sekerbank, Eurobank Tekfen, and Garanti Bank performed well after the acquisition period. Akbank, Finansbank, Turkland Bank, YapiKredi, TEB and Fortis Bank had negative performance changes.
Input oriented CCR model measures total efficiency of a decision making unit whereas input oriented BCC model measures the technical efficiency. By dividing the scores of the input oriented CCR model with scores of input oriented BCC model, scale efficiency scores of the decision making units can be obtained.

**Total Efficiency = Technical Efficiency * Scale Efficiency**

Technical efficiency measures only the input and output relationship, and determines the performance without taking the scale into consideration. The bank that use its resources efficiently and produce the most output with the least input will have the highest performance score. Scale efficiency shows if a bank operates with right scale.

Figure 4 indicates the average of technical efficiency of the banks during 2002 and 2009 by employing input oriented BCC model.

![Technical Efficiency](image.png)

**Fig. 4. Technical efficiency of the Turkish banking sector (input oriented BCC model)**

Table 4. Percentage changes of performance of acquired banks (input oriented CCR)

| Bank          | Pre Acquisition | During Acquisition | After Acquisition | Change (%) |
|---------------|-----------------|--------------------|-------------------|------------|
| Akbank        | 1,00            | 1,00               | 0,97              | -3,34      |
| DenizBank     | 0,79            | 0,81               | 0,98              | 23,98      |
| Finans Bank   | 1,00            | 1,00               | 0,88              | -12,23     |
| ŞekerBank     | 0,59            | 0,98               | 0,69              | 16,99      |
| Turkland Bank | 0,97            | 0,92               | 0,84              | -13,24     |
| Eurobank Tekfen | 0,60        | 0,72               | 0,74              | 23,22      |
| Garanti Bank  | 0,98            | 0,93               | 1,00              | 1,56       |
| YapıKredi     | 0,95            | 0,73               | 0,93              | -2,74      |
| TEB           | 0,89            | 0,85               | 0,84              | -5,73      |
| Fortis Bank   | 0,89            | 0,81               | 0,88              | -0,55      |
| Average       |                 |                    |                   | 2,79       |
Technical efficiency scores of the banks are higher than the total efficiency scores (Figure 2). Similarly the lowest score of technical efficiency has occurred in 2002. The scores of technical efficiency have increased continuously between 2003 and 2009. The number of the banks that performed efficiently also increased.

Technical efficiency of both acquired and non-acquired banks increased after the acquisition period. Figure 5 shows the technical efficiency scores of the acquired and the non-acquired banks. Technical efficiency scores of the non-acquired bank have increased more than the acquired banks.

![Fig. 5. Technical efficiency scores of acquired and non-acquired banks (input oriented BCC)](image)

Table 5 reveals the percentage changes of technical efficiency scores of acquired banks. There are negative changes in the technical efficiency of five of ten acquired banks. Three of ten banks have positive changes. Average of the percentage of technical efficiency change of the acquired banks is 4.28.

| Bank           | Pre Acquisition | During Acquisition | After Acquisition | Change (%) |
|----------------|----------------|--------------------|-------------------|------------|
| Akbank         | 1.00           | 1.00               | 0.97              | -3.29      |
| DenizBank      | 0.83           | 0.90               | 1.00              | 19.87      |
| Finans Bank    | 1.00           | 1.00               | 0.94              | -5.91      |
| ŞekerBank      | 0.66           | 0.99               | 0.73              | 9.90       |
| Turkland Bank  | 1.00           | 1.00               | 0.95              | -4.71      |
| Eurobank Tekfen| 0.65           | 0.94               | 0.87              | 33.62      |
| Garanti Bank   | 1.00           | 1.00               | 1.00              | 0.00       |
| YapiKredi      | 1.00           | 0.92               | 1.00              | 0.00       |
| TEB            | 0.89           | 0.92               | 0.85              | -4.97      |
| Fortis Bank    | 0.94           | 0.83               | 0.93              | -1.71      |
| Average        |                |                    |                   | 4.28       |

The changes in technical efficiency, total efficiency, and scale efficiency are tested with SPPS 17.0 to determine if there is a significant change after the acquisition period in the banking sector. For this
analysis, Mann-Whitney, which is a non-parametric test, is used. According to the test results, there is not any significant change after the acquisition period in the Turkish Banking sector (p<0.05).

5. Conclusion

The companies in all over the world use mergers and acquisitions for growth purposes in recent years. Although in Turkey, the number and volume of the mergers and acquisitions are less in comparison with developed countries, those tools are still on the companies’ agenda. Before the global financial crisis, there was a huge increase in the number of mergers and acquisitions in Turkey. Ten banks are acquired by foreign banks in 2005 and 2006. There is a general expectation that mergers and acquisition will increase the performance of the companies, and so the sector in which those mergers and acquisitions are performed. In this study, the performance of the banks is analyzed to determine how the acquisitions affected the performance of the Turkish banking sector.

In Turkey, the financial sector is yet at the stage of growth. The financial sector of Turkey is small and shallow when compared with the financial sectors of developed countries. Therefore, the volume of the mergers and acquisitions are also small. After the 2001 financial crisis, a very strict restructuring program was applied in the banking sector. Within the scope of this restructuring program some banks were closed, some of them were merged, and some of them were taken over mandatorily. The acquisitions in 2005 and 2006 were performed voluntarily in parallel with increasing credibility and stability of the banking sector.

In this study, total efficiency, technical efficiency and scale efficiency of the banking sector are analyzed pre-, during, and after the acquisition period. Despite the expectations the acquisitions did not affect the performance of the banking performance significantly. The performance of the banking sector increased in those years because of some other reasons beside the acquisitions. The banking sector in Turkey has problem of scale efficiency and this problem affects the total efficiency of the banking sector unfavourably.

During global financial crisis Turkish banking sector grew faster than the general economy. The results of this study support this fact. The certain measures which were adopted by the Banking Regulation and Supervision (BRSA) preserved the banking sector against the global financial crisis. So, not only the performance level of the acquired banks have increased, but also the performance level of the non-acquired banks have increased.

This study can be enhanced by analyzing the mergers and acquisitions in other industries. Also the results of Turkish banking sector can be compared with the other developing countries in future studies.
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