CORPORATE GOVERNANCE AND PERFORMANCE OF TURKISH BANKS IN THE PRE- AND POST-CRISIS PERIODS

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Abstract

This paper aims to analyze the relationship between corporate governance and bank performance. Return on asset (ROA), return on equity (ROE) and net interest margin (NIM) is considered as the measures of bank performance. Corporate governance is determined through the measures of internal governance mechanism which is measured by CEO duality and external governance mechanisms which are proxied by discipline exerted by shareholders, creditors and educated personnel and bank ownership. The analysis covers the period 1990-2000 and 2002-2011 which are the pre and post periods of the severe 2001 banking crisis. The results show that different governance characteristics are important in the pre and post crisis periods.

Keywords: Corporate Governance, Turkey, Banks, Perfomance, Crisis

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1. Introduction

The Turkish government started a liberalization program in the beginning of 1980s to foster efficiency and competition in the financial system. Before that, the Turkish banks were safe from foreign competition and share of state banking were more than fifty percent (Zaim and Taskin, 1997; Denizer, 1997). With the liberalization program some regulations were either relaxed or abolished. The interest rate ceilings were demolished, directed credit programs were reduced and entry barriers to the foreign banks were released (Denizer, Dinc and Tarimcilar, 2000). With the start of the liberalization program both domestic and foreign banks entered to the banking system and in 1990 there were 23 foreign banks. Despite the increasing number of foreign banks the shares of foreign banks in the whole banking system still remained low ranging from 1% to 5% from 1990 to 1999.

The liberalization policies were applied but, the Turkish Banking System suffered from the absence of a prudent regulatory environment. The system was away from efficiency because the banks were not doing their traditional banking activities and were lending to the government and reaping the benefits of high interest rates (Akcay, 2003).

In the beginning of 1990s the fiscal deficit became unmanageable and in January 1994 a major financial crisis occurred. GDP declined by about 6%, inflation hit three digit levels, and the Turkish Lira was devalued by more than 100% against foreign currencies at the end of 1994.

Increasing public sector requirements, three digit inflation and volatile growth rates raised the need for a disinflation program. Despite the disinflation program that is launched in 1999, the system collapsed in February 2001. The GDP declined by 9.4% and the Turkish Lira value lost half of its value against US dollar. Since, half of the liabilities of commercial banks in the Turkish banking sector were in foreign currencies, many banks became insolvent and administrations of these banks were taken over by Saving Deposit Insurance Fund. The size of the sector decreased about 30% in dollar terms.

The crises in the Turkish economy revealed some facts about banking. Banking Regulation and Supervision Agency (BRSA) of Turkey was a good starting point for providing sustainability for the banking system, but the crises showed that the fragility of the system continued to exist (Akcay, 2003). The state banks stood as an important problem with their incredible amount of duty losses. All banks in the system were exposed to maturity mismatch, interest rate risks and credit risks. All of these facts showed that the financial system needed immediate restructuring and Bank Capital Strengthening Program was launched. The program called for a triple audit process in order to provide the soundness of the system, increasing the capital base of the

system and present better governance mechanisms in the system.

Despite the hard times in 2001, recently Turkish banking system recovered well and in 2011 Turkish banks have a capital adequacy ratio of 16.7%, which is much more higher than the average developed countries. Thus, the aim of this paper is to analyze whether the corporate governance mechanisms had a favorable effect on the profitability of the Turkish banking system by comparing the periods before and after the crisis.

The contribution of this paper is two-fold: First, the studies on bank performance, namely profitability and net interest margins (NIMs) in the literature mostly concentrated on the banking markets in developed countries. This study, however, focuses on an emerging market and investigates impact of financial crisis, which occurred several times in the emerging economies in the last two decades, on the determinants of profitability and NIMs[1]. Evidence from an emerging market is also valuable. Secondly, by adding the corporate governance characteristics as determinants of bank performance. Moreover, to the authors' best knowledge, no such study has examined the corporate governance mechanisms as a determinant of banking performance using data from the Turkish banking market.

2. Literature Review

There is a wealth of papers that analyze the impact of corporate governance on firm performance. On the other hand, papers focusing on the corporate governance and bank performance relationship is comparatively limited.

Most of the papers concentrate on the effects of ownership status on bank performance. It is mostly believed that state-owned institutions sometimes channel funds into sectors with low financial returns, but some of the research note conflicting results (see for example, Bonin, Hasan and Wachtel, 2005; Iannotta , Nocera, Sironi, 2007). Berger, Hasan, and Klapper (2004) analyze 28 developing countries and show that foreign-owned banks have the superior profit efficiency over private banks and state-owned banks. The similar findings were reported for Bhattacharya, Lovell and Sahay (1997) for India, Isık and Hassan (2002) for Turkey, Patti and Hardy (2005) for Pakistan. The superior efficiency of foreign banks is explained with their superior managerial skills and high quality human capital (Berger et al., 2000). Acquisitions of foreign banks in domestic banks also have an increasing effect on performance by bringing advanced technology, modern banking activities and managerial skills

(Bonin, Hasan, and Wachtel 2005b; Berger, Hasan, and Zhou 2009).

There are also some papers with conflicting results. For example, Yildirim and Philippatos (2007) analyze transition countries and conclude that foreign banks in these countries have lower profit efficiency than state-owned and domestic banks. Similarly, Nikiel and Opiela (2002) also find that foreign banks are less profit efficient than their counterparts .

Berger et al. (2005) analyzed all bank governance reforms on the bank data of Argentina and found that foreign and private banks are equally efficient, but both are more efficient relative to state-owned banks. Privatization of state-owned banks caused an improvement in performance, but mergers and acquisitions did not result in performance increases. Following Berger et al. (2005), Lin and Zhang (2009) and Taskin (2010) conducted a joint analysis of the static, selection and dynamic effects of domestic foreign and state ownership in China and Turkey, respectively. Lin and Zhang (2009) found that foreign acquisitions showed better performance, but no short-run or long-run performance changes in these banks. On the other hand, Taskin (2010) concluded that state-owned banks have strong long-term performance, whereas the foreign banks have poor long-term performance. The selected banks for domestic M&As and for foreign acquisitions tend to perform better. The dynamic indicators show that the merged banks show inferior performance than their counterparts.

3. Methodology

The data in the paper has both cross sectional bank units and the different time periods for these bank units. Thus a panel data regression is employed. The basic panel model can be written as

$$Y_{it} = \alpha_i + \beta X_{it} + u_{it} \qquad (1)$$

where the variables Y and X have both i and t subscripts for i=1,2,….N sections and t=1,2,…T time periods.

The simple linear panel regressions can be estimated using a common constant, allowing for fixed effects and allowing for random effects. In order to make a choice between fixed and random effect models Hausman test is used. Hausman tests have been applied for the three regression models in this paper and the results reveal that all the models fit the fixed effects panel regression model.

In the fixed effect model the constant is treated as group specific. Thus the model allows for different constants for each group. The fixed effects model has several advantages. First, by including banking firm fixed effects, unobserved heterogeneity can be controlled (This is important because OLS regression is biased if a variable is omitted that is related to the dependent variable). All bank-specific, non time-

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[1] Saunders and Schumacher (2000) discuss that in emerging economies, relatively high margins is necessary, since it may bring a degree of stability for a banking system and banks may expand their profitability and their capital bases and therefore they are segregated from macro shocks.

varying determinants of NIMs not explicitly addressed in the regression specification are captured by the fixed effects. Second, panel estimation allows us to obtain more reliable estimates by observing the behavior of banks over time and testing for changes in the coefficients.

The empirical model used takes the profitability measures as dependent and governance indicators as independent.

$$
\begin{aligned}
Performance_{it} = {} & Size_{it} + Loans_{it} + Deposit_{it} + Equity_{it} + Liquidity_{it} + D\_CEO\_Duality_{it} + \\
& Edct\_Pers_{it} + Experience_{it} + D\_Public_{it} + D\_PRivate_{it} + \\
& D\_Frgn\_branch_{it} + D\_Frgn\_bank_{it} + \varepsilon_{it}
\end{aligned}
\tag{2}
$$

4. Data and Empirical Results

Data

The data for this paper is obtained from the Banking Association of Turkey's annual publication, *Banks in Turkey*, which includes the financial statements of the banks operating in the Turkish banking industry.

The sample covers the period between 1990-2000 and 2002-2011. The pre-crisis sample covers 78 commercial banks and 561 observations. The post-crisis period sample consists of 43 commercial banks and 312 observations.

Governance mechanisms can be divided as internal and external mechanisms. Internal governance mechanisms involve characteristics that are connected to the decision making process and external governance mechanisms are related to market oversight that seek to influence and control decisions.

The internal governance is mostly related with the separation of ownership and management. A dummy variable for the separation of ownership, ceo duality, is used as a proxy for board leadership structure, in order to measure the effect of board dependence on corporate governance. CEO-duality refers to the position where the manager also serves as the chairman of the board. In order to control for the separation of ownership, a dummy variable is put in the model which takes the value of one when the chairman of the board is not the same as the CEO, or zero otherwise. The age of the bank is a proxy for the experience of the bank.

The external governance variables depict different sources of discipline exerted by shareholders, debt holders and personnel (Macey and O'Hara, 2003). Especially, large shareholders are expected to exercise pressure on the management to operate prudently (Shleifer and Vishny, 1997). The pressure applied by the shareholders can be measured by using capital adequacy ratio, which is the ratio of total equity to total assets. Depositors are also a party to exert pressure on the management. Deposits to total assets ratio is used to measure this pressure. Also, liquidation costs apply a pressure on the risk taking of management (Bauer and Ryser, 2004), which also will affect the profitability of banks in the negative direction. Cash over total assets ratio is used to measure the effect of liquidity on the profitability of banks. Loans are also an important determinant of bank performance as long as they are expected to increase the bank profitability. The ratio of loans to total assets is also used in the model. The education profile of the personnel also may change the way the banks do their businesses, so it is assumed that as the educated personnel ratio increase the banks are thought to be more effective and efficient. The educated personnel variable is the ratio of personnel with graduation from university or over degrees to total number of personnel.

Table 1 provides the descriptive statistics and variables used in the paper.

When we look at Table 1, it is clear that deposits are more than doubled. This is mostly due the increased confidence of the investors. Total equity share declined, this is most probably due to the bankruptcy of many banks during the crisis period. The ROA and ROE declined, which is due to the lack of opportunity for the banks to lend to the government at high interest rates in the post crisis periods. Lowering of net interest margin is also a sign of the increased competition after the crisis. The share of educated personnel improved in the post crisis period, which may be due to the lessons of the crisis.

Table 1. Descriptive Statistics of Bank Level Variables

	Pre-Crisis		Post-Crisis		Description of Variables
	Mean	**Std. Dev**	**Mean**	**Std. Dev**	
Liquidity	0,025	0,040	0,056	0,029	Cash/ Total Assets
Loans	0,334	0,211	0,395	0,156	Total Loans/ Total Assets
Deposit	0,241	0,211	0,553	0,248	Total Deposits/Total Assets
Equity	0,379	0,139	0,174	0,293	Capital Adequacy= Shareholders' Equity/ Total Assets
ROA	0,033	0,050	0,013	0,089	Return on Assets: Net Income/ Total Assets
ROE	0,270	0,171	0,103	0,074	Return on Equity: Net Income/ Total Assets
NIM	0,108	0,046	0,054	0,495	Net Interest Margin: (Interest Income-Interest Expense)/ Total Assets
Public	0,100	0,300	0,099	0,300	Dummy, equals 1 if the bank is public, 0 otherwise.
Private	0,561	0,493	0,413	0,497	Dummy, equals 1 if the bank is private, 0 otherwise.
Frgn_branch	0,214	0,437	0,256	0,410	Dummy, equals 1 if the bank has a branch in Turkey, 0 otherwise.
Frgn_ Bank	0,125	0,422	0,231	0,331	Dummy, equals 1 if the bank is a foreign bank founded in Turkey, 0 otherwise.
Edct_Pers	0,496	0,131	0,710	0,188	Share of university, master or doctorate graduates over total employees
CEO Duality	0,708	0,418	0,776	0,455	Dummy, equals 1 when the chairman of the board is not the same as the CEO, 0 otherwise.
Experience	35,674	31,589	37,663	34,40087	Institutional memory, age of the bank
Number of Observations	561		312		

Empirical Results

The paper analyzes the effect of corporate governance and various bank variables on the performance of Turkish banking in the pre and post-crisis periods. Bank performance is defined in terms of the return on assets (ROA), return on equity (ROE) and net interest margin (NIM).

Table 2 provides the panel regression results for the determinants of ROA.

Table 2. Determinants of ROA

Dependent Var: ROA	Pre Crisis		Post Crisis	
Variable	Coefficient	Std. Error	Coefficient	Std. Error
Size	-0,004***	0,001	0,005***	0,001
Deposit	0,082***	0,023	-0,030*	0,018
Equity	-0,063***	0,022	-0,064	*0,075*
Liquidity	-0,016	0,118	-0,173***	0,056
Loans	0,000	0,023	0,016	0,016
Ceo_duality	0,001	0,009	-0,009	0,010
Edct_pers	0,085***	0,025	0,071	0,045
Experience	0,000	0,000	0,000	0,000
Frgn_bank	0,008	0,012	0,002	0,005
Frgn_branch	0,015	0,014	0,023***	0,006
Public	0,001	0,015	0,015	0,010
C	0,025	0,029	-0,048***	0,019

*, ** and *** represents significance at 10%, 5% and 1%, respectively.

In the pre-crisis periods the increase in the size has a deteriorating effect on the return on asset of banks. This shows that banks getting away from economies of scale (Pallage, 1991). On the other hand, in the post-crisis period, the banks reach to higher economies of scale and reach to higher ROA numbers as they increase their size. In the traditional banking systems, increases in deposits are expected to increase the profitability of banks. This is simply the case in the pre-crisis period. In the post-crisis period the deposits to total assets ratio significantly decreases the ROA of banks. This may be due to the inefficient allocation of the deposits by the bank management. The capital adequacy, total equity to total assets ratio, is important in the way that it shows the ability of a bank to overcome the shocks that appear in the system. The higher this ratio, the less likely the bank will need additional financing. In the

pre-crisis period, however, it is seen that the banks are not able to turn the capital into returns. As the equity increase, the profitability of banks decreased significantly. From the governance variables only the ratio of educated personnel has a significant effect in the pre-crisis period. It is seen that in the post-crisis period it does not have a significant effect. In the pre-crisis period education were not considered as too important compared to the post-crisis period. Thus, the education has a statistically significant positive effect in the pre-crisis period on the profitability of banks. In the post-crisis period, it is clear that the branches of a foreign banks are significantly increases their ROA. So in general foreign bank branched are better at translating their resources into profits. Other governance mechanisms are found as insignificant in explaining the ROA of banks.

Table 3. Determinants of ROE

Dependent Var: ROE	Pre Crisis		Post Crisis	
Variable	Coefficient	Std. Error	Coefficient	Std. Error
Size	0,023***	0,007	0,033***	0,004
Deposit	-0,366***	0,138	0,017	0,075
Equity	-0,691***	0,131	-0,008	0,167
Liquidity	0,014	0,715	-0,376	0,245
Loans	-0,288**	0,139	0,021	0,060
Ceo_duality	-0,132**	0,057	-0,049*	0,028
Edct_pers	0,206	0,152	0,040	0,105
Experience	0,000	0,001	0,000	0,000
Frgn_bank	0,085	0,075	-0,022	0,017
Frgn_branch	0,077	0,085	0,029	0,026
Public	-0,241***	0,093	0,072**	0,031
C	0,482***	0,178	-0,136*	0,078

*, ** and *** represents significance at 10%, 5% and 1%, respectively.

Table 3 explains the determinants of return on equity (ROE). Increase in the size of the bank has a positive and significant effect on the ROE of banks both in the pre-crisis and post-crisis periods. In the pre-crisis period deposits to total assets ratio has a decreasing effect on the ROE. This is again due to the inefficient allocation of deposits by the banks. The ROE is negatively affected from the equity increases due to the nature of the regression model, but this effect is significant in the pre-crisis period, which points to the fact that the net income cannot be increases as much as the increase in equity. This shows that the banks are unsuccessful in converting the equity into profits in the pre-crisis period. The increase in the loan ratio has a negative significant effect on the ROE. This significant effect is caused

from the high-risk of the loans in that period. The default risk of the loans, cause the profitability to decline. From the governance indicators, CEO-duality has a significant negative effect on the ROE. This result implies that heavily centralized leadership structures compromised better performance in the pre-crisis period, a finding that is contrary to Shleifer and Vishny (1997). Public banks are also found as worse creating return on equity in the pre-crisis period, since they have higher capital bases and are not efficient in return generation compared to their peers. On the other hand, public banks are found as significant in generating ROE. In the post-crisis period CEO-duality has again a negative effect on ROE of banks.

Table 4. Determinants of NIM

Dependent Var: NIM	Pre Crisis		Post Crisis	
Variable	Coefficient	Std. Error	Coefficient	Std. Error
Size	-0,003***	0,001	0,000	0,002
Deposit	0,033	0,024	0,021**	0,011
Equity	-0,074***	0,023	0,181***	0,028
Liquidity	-0,177	0,124	0,134**	0,058
Loans	-0,062**	0,025	-0,007	0,011
Ceo_duality	0,030***	0,010	-0,012*	0,007
Edct_pers	0,069**	0,031	-0,046	0,029
Experience	0,000	0,000	-2.41E-05	9.36E-05
Frgn_bank	0,006	0,016	0,010***	0,003
Frgn_branch	0,041**	0,018	-0,006*	0,003
Public	-0,016	0,020	0,000	0,005
C	0,131***	0,033	0,045	0,028

*, ** and *** represents significance at 10%, 5% and 1%, respectively.

Table 4 conveys the regression results for the determinants of net interest margin (NIM). Knowing the behavior of NIM is of importance since it is considered to be the price of the intermediation services provided by the banking firms. Moreover, as stated in Demirguc-Kunt and Huizinga (1999), commercial bank NIMs convey significant information for the efficiency of the banking system. In the post-crisis period, the size is negatively and significantly related to the NIMs, suggesting that increased volume of loans may result in a reduction of unit, which achieves scale efficiencies. The deposits increase the NIM significantly in the post-crisis period, which is due to the increases in the savings of individuals and decreasing deposit appetite of banks cause an increase in the margins required by the banks. High liquidity ratio, whether self-imposed or the result of regulations, inflicts a cost on banks as they have to give up the opportunity of investing these funds in alternate high yielding assets, like loans. In the post-crisis period the liquidity has an expanding effect on the NIM significantly. Foreign banks in the post-crisis period require higher margins significantly. Foreign bank branches, on the other hand, require lower margins significantly in the post-crisis period, mostly due to the competitive pressures. In the post-crisis period CEO-duality and educated personnel significantly affect the NIM with a positive sign. When the chairman is not the same person as the general manager for a bank, they required higher margins, which may be because of the conflict of the interests. The banks with more educated personnel also required higher margins, maybe because they offer more sophisticated products and/or apply better risk management techniques than their competitors.

5. Conclusion

This paper has examined the determinants of banking performance in the Turkish industry for the period 1990-2011 using the corporate governance characteristics. The sample period was divided into two sub-periods: pre-crisis period (1990-2000) and post-crisis period (2002-2011). We specified bank performance, namely return on assets, return on equity and net interest margin as a function of bank specific determinants, namely liquidity, size, deposits and equity and corporate governance characteristics, bank ownership, educated personnel ratio, experience of the bank, CEO-duality.

In the pre-crisis period size of the banks in general has a deteriorating effect on the return on equity and enlarging effect on the net interest margins and return on assets. Increase in deposits increase the return on assets. From other determinants of performance, loans and equity is also found as significant in explaining the bank performance. In the pre-crisis period bank ownership status found as significant. Public banks are worse performers in converting return on equity significantly. This may be caused from the inefficient nature of the public banks in the pre-crisis period, because they were like funding the government instead of their traditional banking activities. Foreign bank branches were significantly required larger interest margins, maybe because they found the loans risky. Since the education was not considered as important as it is, the banks with more educated personnel were found as more profitable with a 1% statistical significance. In the pre-crisis period also heavily centralized management structures significantly performed better and were more efficient.

In the post-crisis period, one striking feature is banks with larger asset sizes are significantly more profitable than their peers. The deposits are not turned into profitability and also increasing deposits create larger interest margins, due to the decreasing deposit appetite of banks. Liquidity is also another significant determinant that decreases profitability and increase margins. Banks with foreign branches are found as requiring narrower interest margins, but still they are significantly generating profits in the post-crisis period. The banks with foreign branches seem to be more competitive and also more

profitable. CEO-duality plays a different role in the post-crisis period. Banks with more decentralized structures have lower profitability levels and ask for lower net interest margins. Thus, we can conclude that the CEO-duality creates more efficient banking system and is good for the public. Foreign banks founded in Turkey, tend to require higher margins. The reason may be the trust of the customers to the foreign banks.

Overall, there are differences in the determinants of the performance between pre-crisis and post-crisis periods. The differences between two time periods could be explained by the differences in the legal, financial and macroeconomic environment. Competition seems to be more intense in the post-crisis period. The new regulatory and macroeconomic environment is thought to enhance the level of bank competition. Particularly, competitive pressure from foreign banks will lead to domestic banks to enhance the quality and range of financial products offered. Policy makers should promote governance mechanisms in order to increase the performance and transparency in the sector. Exploitation of the scale economies seems to be important in decreasing interest rate spread in the Turkish banking sector. The recent global financial turbulence shows that building strong financial institutions is crucial. Hence, large and efficient scale in this new era could secure the survival of banks in the market in the long run. And also banking supervision, corporate governance and auditing procedures are the most important issues that policy makers should focus on in order to develop a sound financial system.

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