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The Impact of the Board of Directors' Size on the Bank's Performance: Evidence from Turkey

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Abstract
The present study investigates the impact of board of directors' size on bank performance on a sample of 12 banks' data that were involved in the Istanbul Stock Exchange (ISE) over the period 2005-2010. We mostly used the methods of regression and correlation in conducting the analyses of the research. The findings of the conducted analyses show negative and statistically significant results between such accounting-based performance indicators as Return on Assets (ROA) along with Return on Equity (ROE) and the banks' board of directors' size. The research also reveals the evidence of negative and statistically non-significant results between Tobin's Q as a market-based performance indicator and boards' size. At the same time the research identifies positive relationship between ROA and ROE with banks' "Free Float Ratio", whereas on the contrary, the relationship between ROA and ROE with "Number of Employees per Branch and Risk" is negative.
Keywords: Boards of Directors' size, Bank's Performance, Corporate Governance, Turkey.

1. Introduction

Corporate governance is the system that provides for resolving of all conflicts of interest between people and institutions belonging or relating to the firm and its reconciliation without endangering the long continuity of the company (Dağlı et al., 2010). The businesses have faced an intense competition as result of globalization process as well as developments in economical life. However, the financial crisis and scandals that have taken place in recent years have shaken the confidence of businesses in markets, leaving business management in a difficult position (Şengür and Püskür, 2011). All these events and corporate scandals have increased the importance of structure of the board of directors of companies as well as the number of academic studies related to the number of members for banks' board of directors.

The Board of Directors uses its powers and responsibilities within the framework of legislation, main contract, regulations and policies, and represents the company in accordance with the authority given to it by the general meeting of shareholders. The board of directors is the organ that exercises strategic decision-making, representation functions of the company and its top-level executive body (Aygün et al., 2010). When making decisions the board of directors aims the market facilities value to be maximized by the companies. With this purpose, the Board of Directors performs its works in the form that it would ensure and provide a long-term and stable earnings to the company shareholders. And it takes care not to disrupt the necessary delicate balance between the shareholders and the need for growth of the company while doing so (www.spk.gov.tr).

An intense competition, which is seen in the banking sector, complicates the efficient use of banks' resources. Unlike the other sectors, the effective and efficient operation of the banking sector is quite vital for the country's economy in respect that it determines the allocation of resources and undertakes the service of a financial intermediary. This situation has put the banking sector in the central position of the country's economic development (Ertuğrul and Karakaşoğlu, 2009).

The boards of directors of the company were under the spotlight first time in Cadbury's report (1992), which was the first to reveal the financial dimension of the corporate governance. The academic studies in this area gained momentum along with the works by Hermal and Weisbach (1991) that belonged to the same period. But when it comes to the period since these two studies were conducted a great variety of studies concerning variables such as the structure of boards of directors, the number of the board's members, the distinction between the chairman of the board (president) and the chief executive officer and the number of independent members mostly for developed and developing markets

have been available. As for this very study, it analyses the impact of the boards of directors' size on the bank performance.

While considering analyses of the empirical studies that measure the impact of the board of director's size on the bank performance, mixed results have been revealed. Tanna et al. (2007) and Adams and Mehran (2005) examined the relationship between the board of directors' size and the bank performance. As a result of their research they found positive relationship between the bank's board of director's size and the bank performance. However, Pathan et al. (2011) and Staikouras et al. (2007) revealed the existence of a negative relationship between them. Adusei (2011), Aygün et al. (2010), Belkhir (2009) and, Andres and Vallelado (2008) have revealed that the relationships of a mixed character between the size of the board of directors and the bank performance. According to the researches of Bino and Tomar (2012), Adams and Mehran (2008), Zulkafli and Samad (2007), and Belkhir (2006) there is no effect of the size of the board of directors on the bank's performance has been identified. All these results of conducted researches on the problem how the size of the board of directors impact on the bank performance have caused hot discussions and lots of empirical studies have been conducted on this topic (Aygün et al., 2010).

While doing a literature survey on the topic it is seen that only one empirical study on the Turkish banking sector has been conducted. And this fact made this work significant. This study aimed at measuring the impact of the number of board members on the bank performance. For this purpose, the data of banks that were involved in Istanbul Stock Exchange (ISE) over 2005-2010 were applied. As the indicators of the bank performance, three dependent variables have been used in the study: two accounting-based (Return on Assets-ROA, Return on Equity-ROE) and one market-based (Tobin's-Q) proxy. The main independent variable of this study is the size of the board of directors of the banks. As for the other eight independent variables, they are the control variables. With the aim to determine the relationship between the indicators of the number of members to the Board of Directors and of the bank performance, in this study we applied multiple regression and correlation analyses.

The study consists of five sections. In the second section that follows the introduction part, we summarize academic studies that measure the relationship between the size of the board of directors and the bank performance. The third section describes the methodology and the model of the study by introducing dependent and independent variables. The fourth chapter covers the results of multiple regression model. And in the last section we conducted an overall assessment of the research.

2. Review Of The Related Literature

There are a number of available studies that examine the relationship between corporate governance and firm performance. A significant part of these studies are designated to determine the impact of the size of the board of directors, which is considered to be the other dimension of corporate governance, on the firm performance. In their empirical studies on measuring the link between board size and firm performance, Lipton and Lorsch (1992) and Jensen (1993) advocate that "larger board size leads to slower and less-efficient decision-making processes in firms, thus it causes communication problems and hence negatively affects the firm performance". The majority of the studies which have been conducted later demonstrated that increase in number of the members of the board of directors has a negative impact on firm performance. However, the studies that measure the impact of a number of board members on the bank's performance have obtained results of a mixed character. Adams and Mehran (2005) utlizing the data from 35 banks operating in the U.S. banking industry during the period 1959-1999, examine the relationship between the structure of the board size and the bank performance. In their studies they used Tobin's Q and return on assets (ROA) as dependent variables And as a result of the analysis, they finds a positive relationship between the number of members of the board of directors and the market-based bank performance indicator Tobin's Q.

Belkhir (2006) has researched the relationship between corporate governance and bank performance using the data from 260 banks in the Asian market. As a conclusion of his study, he finds statistically non-significant results between the bank performance and the board size, ownership structure and when the CEO (general manager) also is chairman (member) of the board of directors. Similarly, Zulkafli and Samad (2007) have failed to obtain statistically significant results between the board's size and bank performance (ROA and Tobin's Q) in their studies, in which they utilize the data from 107 banks that comprised nine developing countries of the Asian markets (Malaysia, Thailand, Philippines, Indonesia, Korea, Singapore, Hong Kong, Taiwan, India).

Pathan et al. (2007) have measured *independent member of the board of directors and the board size's relationship with the bank performance* at local commercial banks *operating* in Thailand during the period 1999-2003. As a result of their studies, which comprise the data from 64 banks, they have found negative and statistically significant results

between ROA and ROE performance indicators and the board of directors' size of the banks of Thailand. Similarly, Staikouras et al. (2007) have investigated the relationship between *the number of members of the directors' board and the board structure, and bank performance* using the data from 58 European banks over the period 2002-2004. In their study, they have applied Tobin's Q, ROA, and ROE bank performance indicators. The analysis conducted shows negative and statistically significant results between the boards of directors' size and the banks' performance. Andres and Vallelado (2008) in their studies that comprises data from 69 banks operating in Canada, the United Kingdom, France, Italy, Spain and the United States over the period 1996-2005 have found results of a mixed character between boards' size and performance in banking.

Tanna et al. (2008) have examined the relationship between bank efficiency and boards' size using the data of 18 banks operating in the UK over the period 2001-2006. As a result of the research, they have found a positive relationship between board size and bank efficiency. Belkhir (2009) has surveyed the impact of board size on bank performance using the data from 174 banks during the period 1995-2002 and results of a mixed character have been obtained. However, the study also concludes that the banks with smaller boards of directors are more effective. In contrast, the evidence is in favor of a positive correlation between the board of directors' size, and return on assets (ROA) and Tobin's Q performance indicators.

Adams and Mehran (2008) in another study of theirs, in which they updated the data of their previous survey they had conducted in 2005, have investigated the impact of the banks' board of directors' size on banks' performance in a sample of U.S. banks operated during the period 1959-1999. In conclusion, they report that there is no negative impact of boards' size on the banks' performance. Similarly, Praptiningsih (2009) has comparatively examined the relationship between corporate governance and bank performance in the following countries of the Asian market: Indonesia, Thailand, the Philippines and Malaysia. As a result of his study, in which he applied the data from 52 banks and return on asset (ROA) as the dependent variable, he has concluded that board of directors' size does not affect bank performance. Agoraki et al. (2010) have examined the relationship between Boards of Directors' structure and their combination with banks' performance in a sample of the 57 commercial banks operating in Europe during the period 2002-2006. As a result of the study, they have found a negative relationship between board of directors' size with cost and profit efficiency.

Aygün et al. (2010) have investigated the impact of board of directors' size on banks' performance, using the data of 12 banks operating in the Istanbul Stock Exchange during the period 2006-2008. As a conclusion of the study, they report of negative and statistically significant results in the relationships between banks' profitability and boards of directors' size. However, the evidence is in favor of positive and significant results between Tobin's Q and board of directors' size. Similarly, Adusei (2011) has examined the relationship between board structure and bank's performance. The findings of the study, that comprised the data from 26 banks operated in Ghana during the period 2005-2009, have shown that the relationship between board of directors' size and banks' performance create mixed results. Thus we find that, whereas the correlation between banks' performance and board of directors' size is negative as measured by return on equity (ROE), which is used as performance indicator; in contrast, the evidence is in favor of positive relationship between banks' performance and the cost/income ratio.

Bino and Tomar (2012) have investigated the impact of corporate governance (partnership structure, management combination and the board size) on bank's performance in a sample of 14 banks registered in Amman Stock Exchange during the period 1997-2006. Statistically non-significant results have been found between accounting-based performance indicators as measured by the return on assets (ROA) and return on equity (ROE) with board's size. Academic studies that measure the impact of board size on performance in banking are provided in Table 1.

Table 1: Board of Directors' Size and the Bank's Performance

Author and Year	Method	Dependent Variables	Results
Adams and Mehran (2005)	Regression, Correlation	Tobin's Q, ROA	Positive
Belkhir (2006)	OLS Regression	Tobin's Q	Not applicable
Zulkafli and Samad (2007)	Regression	Tobin's Q, ROA	Not applicable
Pathan et al. (2007)	Regression, Correlation	ROA, ROE, Sharpe Ratio	Negative
Staikouras et al. (2007)	Regression	Tobin's Q, ROA, ROE	Negative
Andres and Vallelado (2008)	OLS Regression	Tobin's Q, ROA, Partners' Earnings	Mixed
Tanna et al. (2008)	Tobit Regression Model	Technical, Cost, Allocation Efficiency	Positive
Adams and Mehran (2008)	OLS, Regression, Correlation	Tobin's Q, ROA	Not applicable
Belkhir (2009)	OLS Regression	Tobin's Q, ROA	Mixed
Praptiningsih (2009)	Regression, Hausman test	ROA, EBITD (earnings before interest taxes depreciation)	Not applicable
Agoraki et al. (2010)	Regression	Cost and Profit Efficiency	Negative
Aygün et al. (2010)	Regression, Correlation	Tobin's Q, ROA	Mixed
Adusei (2011)	Regression, Correlation	ROE, Cost/Income Ratio	Mixed
Bino and Tomar (2012)	Regression, Correlation	ROA, ROE	Not applicable

3.Methodology

This study investigates the impact of the number of board members on the bank performance on a sample of the data from banks that operated in Istanbul Stock Exchange over the period 2005-2010. Although the total number of the banks traded in Istanbul Stock Exchange is 17, five of them have not been included in the analysis due to their structural differences from others. In this empirical study, we use the analyses of multiple regression and correlation. And in order to test whether there is auto-correlation of first degree between the error terms of the sample, we use the Durbin-Watson d statistics. The data used in this empirical analysis have been obtained from Istanbul Stock Exchange's[1] official website and from the Banks Association of Turkey's[2] website.

In this study we use accounting-based and market-based financial performance indicators as dependent variables. There are two different performance indicators that are used as dependent variables in the academic studies to measure the impact of banks' board of directors' size on financial performance. The firsts of them (eg. Pathan et al., 2007; Adusei, 2011; Bino and Tomar 2012) are ROE and ROA, accounting-based financial performance indicators. And the second one (eg. Belkhir 2006; Adams and Mehran, 2008; Praptiningsih 2009) is the Tobin's Q performance measure, one of the market-based indicators. In this study, we use ROA and ROE as the accounting-based performance indicators. Return on assets (ROA) is defined as bank's net income divided by the book value of total assets; and return on equity (ROE) is defined as bank's net income divided by the book of value of equity capital.

In this study we use the Tobin's Q, the other dependent variable as a market-based performance indicator. Tobin's Q ratio, which is considered to be a generally accepted measure (proxy) for firm performance in many studies, was calculated by James Tobin in 1969 for the first time. This ratio is defined as market value of firm's financial rights divided by the firm's current reproduction (estimation) cost of the book value of total assets (Canbaş, 2004). Chung and Pruitt (1994) have calculated the Tobin's q calculation method simply as an "approximate Q value" form as it is given below:

Approximate q = (MVE+PS+DEBT)/TA

MVE: is calculated by multiplying the market price of shares by the number of shares.

1 www.imkb.gov.tr
2 www.tbb.org.tr

PS: is obtained by multiplying preferred price of shares by the number of shares.
DEBT: Shows total liabilities/obligations of a firm,
TA: Shows total assets of a firm.
In short, Tobin's q is defined as the ratio between the firm's market value and book value.
"Board of Directors' Size" (*DBORD*) is the main independent variable widely used in empirical analyses. *DBORD: This variable indicates the number of banks' board members.*
Particularly, bank inherent factors were included in the model as control variables of the study. These independent variables are; Banks' Total Deposits, Bank's Size, Risk Indicators and Personnel Costs. The bank inherent control variables used in the study are;
DEPOSITS: Indicates the amount of deposits collected by bank within one year. It is measured by calculating the natural logarithm of bank deposits. Adusei (2011) has investigated the relationship between banks' board structure and the bank performance. And as a result, he has found a negative correlation between the rate of return on equity (ROE) and banks' total deposits. And Ponce (2011) has examined the factors that determine the banks' profitability on a sample of banks operating in Spain over the period 1999-2009. In conclusion, he reports that the increase of banks' deposits has caused the increase of profitability.
AGE: The difference in time period between the year banks were founded and 2010. Beck et al. (2005) have investigated the impact of privatization on the Nigerian banks, using research data obtained from 9 banks during the period 1990-2001. As a result of the conducted research, they report that there is a positive relationship between the banks' age and their performances (ROA and ROE).
(FFRATE): Banks' Free Float Rate. Aygün et al. (2010) examined the impact of banks' board of directors' size on bank performance, and they have found a positive relationship between the banks' free float rate which was used as a control variable, and the profitability. Similarly, Bostancı and Kılıç (2010) have measured the impact of the free float rate of stocks traded at Istanbul Stock Exchange on their market performance. The study covered 199 shares traded in the Istanbul Stock Exchange in 2007. In conclusion of the study, they report that there is a positive correlation between firms' free float rate and the average closing prices of the shares and the amounts of transactions.
FBANK = if the bank is of a foreign capital, it is denoted as 1, in other cases denoted as 0. Adusei (2011) has measured the banks' performance in Ghana. And as a result of the study he emphasized that the performance of the banks which operate in an international scale, is higher than that of local ones.
CREDITS = is calculated as Credits Impairment (devaluation) Equivalent / Total Assets
TRISK = is defined as Existing Loans / Total Assets. Ramrall (2009) has examined the factors that identify the profitability of banks operating in Taiwan during 2002-2007. As a result of the study he reports that the increase of banks' (existing) non-performing loans negatively affect their profitability.
PCOST = Personnel Costs + Severance Pay Expense / Total Assets Whereas Molyneux and Thorton (1992) report about the existence of a positive relationship between banks' profitability and personnel costs, Huveneers and Steiner (1994) identify on the contrary that the increase in banks' operational costs has negatively affected the profitability of the banks.
ENUM: Identifies the number of banks' employees. It is calculated at the end of the year by calculating the natural logarithm of the number of banks' employees. The number of personnel is directly proportioned to the banks' sizes. Bino and Tomar (2012) have measured the bank's performance and bank's board size, using the bank's size as a control variable. As a result of the study, they could not find any relationship between bank size and its performance. In contrast, negative and statistically highly significant results have been found between the bank riskiness and bank's size.
BEMPLOY: Denotes the number of employees per branch in a bank. In other words, it is obtained by proportioning the total number of employees to the number of branch. Whereas Ho and Ishii (2011), Calcagnini et al. (1999) report about the evidence of a positive relationship between the number of employees per branch and the profitability in their studies; Hannan and Hanweck (2008) identify the negative relationship between *BEMPLOY* (the number of employees per branch) and the profitability.
The influence of the case when the CEO is also the member of the board of directors (duality) is also analyzed and included as an independent variable in the academic studies that investigate the relationship between the number of members of the banks' board of directors and banks' performance. However, the independent variable of whether there is duality in the structure of banks' boards of directors is not included in the analysis since CEO also holds the title of member of the board of directors in all the banks involved in the Turkish Capital Market during the period 2005-2010.

Table 2 provides descriptive statistical results dealing with dependent and independent variables used in the empirical analysis. As it can be seen from Table 1, it has been found that 9.33 is an average number of members in the board of directors (DBORD) of the surveyed banks involved in the ISE. Andres and Vallelado (2008) identified an average board size of 15.78 directors, using the data from 69 banks of Canada, the United Kingdom, France, Italy, Spain and the U.S. over the period 1996-2005. Belkhir (2009) has found 13.18 directors as an average number of members of the board in his study using the data from the banks in the Asian markets during the period 1995-2002. Tanna et al. (2008) have found 12.11 as an average number of members of the board of directors in 18 banks operating in the UK. We can state that the number of members in the board of directors in the banks of the Turkish Capital Market is less than it is for the banks operating in five major countries of Europe, and also in the Asian market.

As for the second independent variable used in the study, it is the banks' free float rate (FFRATE). As it can be seen from Table 2, the banks' free float rate (FFRATE) average is at 26.8%. The free float rate of banks is as 93.9% at average for the year 2001 in the United States; 86.4% is the average for developed countries, and 77.5% is the average for developing countries. (Gao, 2002). While the banks' free float rate average is seen as 36.93% in Europe, this figure is as 14% in France (Ginglinger and Hamon, 2007).

The third independent variable of the study is the age of the banks. As it can be seen from Table 2, the average age of the banks (AGE) is 57. The banks operating in Turkey are considered to be well-established and highly experienced. Beck et al. (2005) have found the average age of Nigerian banks as 15.13. The personnel number per bank branch (BEMPLOY) for the banks which have been included in the analysis is seen as 19.78. According to the report[3] of the European Banking Federation, by the end of 2009 the average number of employees per branch in the banks operating in 16 countries of Europe was found as 21.06.

In this study, the average of return on assets (ROA) and the return on equity (ROE) as accounting-based performance indicators have been found as 1% and 13% respectively. The average for the market-based performance indicator Tobin's Q is found as 2,17. Praptiningsih (2009) has found the average return on assets of the banks operating in Asian markets as 0,98% and Belkhir (2009) has identified ROE and Tobin's Q as 1,07% and 1,09 respectively.

Table 2: Descriptive Statistics

VARIABLE	NUMBER OF OBSERVATIONS	MINIMUM	MAXIMUM	AVERAGE	ST. ERROR
ROA	72	-0,0126	0,0340	0,0168	1,8137
ROE	72	-0,178	0,344	0,139	2,3782
Q	72	0,43	4,40	2,177	0,9417
DBORD	72	7	12	9,333	1,1291
FFRATE	72	0,00	100	26,83	2,6236
AGE	72	13	86	57,00	2,0784
DEPOSIT	72	13,48	18,30	16,539	1,1552
FBANK	72	0	1	0,250	0,4360
CREDIT	72	0,003	0,038	0,0132	0,7710
PCOSTS	72	0,008	0,039	0,013	0,6528
TRISK	72	0,005	0,069	0,026	0,0128
ENUM	72	0,69	10,08	7,832	2,6836
BEMPLOY	72	12,20	31,40	19,7847	3,1537

[3] http://www.ebf-fbe.eu/

Table 3: The Table of Correlation

	ROA	ROE	Q	DBORD	FFRATE	AGE	DEPOSIT	CREDIT	PCOSTS	TRISK	ENUM	BEMPLOY
ROA	1											
ROE	0,983**	1										
Q	0,109	0,109	1									
DBORD	-0,362*	-0,325*	-0,154	1								
FFRATE	0,231*	0,224*	-0,224	0,243*	1							
AGE	-0,062	-0,052	-0,197	0,040	0,356**	1						
DEPOSIT	0,157	0,078	0,016	0,251*	0,092	0,313**	1					
CREDIT	0,054	0,056	-0,176	0,432**	0,412**	-0,181	-0,249*	1				
PCOSTS	-0,217*	-0,211*	-0,230*	-0,113	0,236*	-0,235*	-0,718**	0,415**	1			
TRİSK	-0,244*	0,240*	-0,255*	0,084	0,223	-0,179	-0,270*	0,518**	0,484**	1		
ENUM	0,290*	0,273*	-0267*	0,285*	0,001	0,060	0,421**	0,046	-0,229	-0,093	1	
BEMPLOY	-0,201*	-0,149*	0,351**	-0,376**	-0,306*	-0,003	-0,149	-0,327**	-0,161	-0,255*	-0,326**	1

** and * indicates the significance at the 1%, and 5% level respectively.
FBANK independent variable is not included in the table of correlation due to the fact that it is a categorical variable.

Table 3 presents the results of correlation analysis. The relationship between accounting-based performance indicators ROA and ROE and the size of the board of directors' are observed to be negative and statistically significant at the level of 5%. Negative, but not statistically significant relationships are seen between the market-based performance indicator Tobin's Q and the board of directors' size. The correlation between ROA and ROE, and free float rate is observed to be positive, whereas the relationships between ROA and ROE and the number of employees per branch (BEMPLOY) are found as negative and statistically significant at the level of 5%. A positive and statistically significant relationship at the level of 1% is observed between the market-based performance indicator Q and the number of personnel per branch (BEMPLOY). Both the accounting-based performance indicators (ROA and ROE) and the market-based performance indicator (Q) have a negative and In other words, as the personnel costs of the banks increase, their performance decreases. Whereas a positive correlation is revealed between the banks' personnel number (ENUM) and ROA and ROE, while ENUM's correlation with Q is found as negative and statistically significant at the level of 5%.

4.Findings

The purpose of this study is to examine the impact of the board size on the bank's performance. In order to achieve this goal, the following regression models have been developed, based on the studies listed in the section of literature (Yermack, 1996; Staikouras et al., 2007; Cheng, 2008; Shakir, 2010; Adusei, 2011; Bino and Tomar 2012).

Model I: $PERFORMANCE\ (ROA)_{it} = \beta_{it} + \beta 2\ DBORD_{it} + \beta 3\ FFRATE_{it} + \beta 4\ AGE_{it} + \beta 5\ DEPOSIT_{it} + \beta 6\ FBANK_{it} + \beta 7\ CREDIT_{it} + \beta 8\ PCOSTS_{it} + \beta 9\ TRISK_{it} + \beta 10\ ENUM_{it} + \beta 11\ BEMPLOY_{it} + e_{it}$

Model II: $PERFORMANCE\ (ROE)_{it} = \beta_{it} + \beta 2\ DBORD_{it} + \beta 3\ FFRATE_{it} + \beta 4\ AGE_{it} + \beta 5\ DEPOSIT_{it} + \beta 6\ FBANK_{it} + \beta 7\ CREDIT_{it} + \beta 8\ PCOSTS_{it} + \beta 9\ TRISK_{it} + \beta 10\ ENUM_{it} + \beta 11\ BEMPLOY_{it} + e_{it}$

Model III: $PERFORMANCE_{it}\ (Q)_{it} = \beta_{it} + \beta 2\ DBORD_{it} + \beta 3\ FFRATE_{it} + \beta 4\ AGE_{it} + \beta 5\ DEPOSIT_{it} + \beta 6\ FBANK_{it} + \beta 7\ CREDIT_{it} + \beta 8\ PCOSTS_{it} + \beta 9\ TRISK_{it} + \beta 10\ ENUM_{it} + \beta 11\ BEMPLOY_{it} + e_{it}$

The results of regression analysis that demonstrate the relationship between the number of board members of the banks as main independent variable and bank's performance indicators, relating to the models developed above, are shown in Table 4.

Table 4: Results of Regression Analysis

VARIABLES AND PARAMETERS	MODEL I: DEPENDENT VARIABLE (ROA)	MODEL II : DEPENDENT VARIABLE (ROE)	MODEL III: DEPENDENT VARIABLE (Q)
CONSTANT	-- (3,385)***	-- (3,137)***	-- (0,600)
DBORD	-,398 (-3,047)***	-,377 (-2,818)***	-,053 (-,383)
FFRATE	,430 (2,226)**	,370 (1,843)*	-,040 (-,196)
AGE	,351 (1,321)	,353 (1,280)	-,345 (-1,220)
DEPOSIT	-,483 (-2,050)**	-,522 (-2,133)**	,112 (,445)
FBANK	,732 (2,164)**	,662 (1,883)*	-,106 (-,295)
CREDIT	,380 (2,442)**	,377 (2,333)**	,076 (,456)
PCOSTS	-,934 (-3,068)***	-,839 (-2,653)***	-,151 (-,465)
TRISK	-,233 (-1,678)*	-,248 (1,725)*	-,208 (-1,465)*
ENUM	,247 (2,052)**	,279 (2,239)**	-,275 (-2,143)**
BEMPLOY	-,350 (-2,757)***	-,290 (-2,203)**	,201 (1,481)
F-STATISTICS	3,662***	2,954***	2,499**
ADJUSTED R2	0,273	0,216	0,174
NUMBER of OBSERVATIONS	72	72	72
DURBIN-WATSON D	1,846	1,794	1,720

***, ** and * indicates the significance at the level of 1%, 5% and 10% respectively.

As it can be seen, Table 4 presents the results of regression analysis which demonstrate the relationship of the accounting-based performance indicators ROA and ROE with independent and control variables indicated in Model I and Model II. According to Model I and Model II, the relationship of the number of board members (DBORD) with the rate of return on assets (ROA) and with the return on equity ratio (ROE) is negative and statistically significant at the level of 1%. In other words, while banks' number of members of the board increases, the banks' profitability decreases. As for another finding, which is seen here, there is a positive and statistically significant relationship at level of 5% and 10% respectively between free float ratio (FFRATE) and ROA and ROE. This result can be interpreted as follows: whereas the banks' float ratio increases, their profitability increases as well. Also, there is another important finding that has been revealed during the study. According to it, the relationship of ROA and ROE with the number of personnel of the banks (ENUM) is positive, whereas on the contrary, their (ROA, ROE) relationship with banks' number of personnel per branch (BEMPLOY) is negative and statistically significant at the levels of 5% and 1% respectively. In other words, as the number of personnel increases, the performance of banks increases as well. However, the increase of the number of employees per branch reduces the profitability of the bank. A negative relationship has been found between ROA and ROE with non-performing loans risk indicator (TRISK), whereas still positive and statistically significant relationships at the levels of 5% and 1% respectively are noticed between ROA and ROE with loan impairment (CREDIT). Negative and statistically highly significant results have been found between banks' total deposits (DEPOSIT) and the personnel costs (PCOSTS), and their performance. The relationships of ROA and ROE with a bank's foreign capital (FBANK), is in favor of positive and statistically significant correlation. In other words, it can be said that being a bank with a foreign-ownership increases its profitability.

As it is seen on Table 4, the Model III represents the results of regression analysis, which identifies the relationship of the market-based performance indicator Tobin's q (Q) with independent and control variables. While analyzing in Table 4, it has been revealed that there are no significant relationships between the board size and the market-based performance indicator (Q). Although the relationship between the board size and (β = -0.053) bank performance is found as not significant, the fact of its being negative can be assessed as an important outcome. There is a negative and statistically significant relationship at the level of 10% between non-performing loans as the risk indicator (TRISK) and Q. This result shows that there is a negative relationship of bank's risk indicator both with the accounting-based performance indicators (ROA and ROE) and with market-based performance indicator (Q). A negative and statistically significant relationship at the level of 5% is found between the number of bank's personnel

(ENUM) and Q. In other words, the increase of banks' number of personnel also increases the accounting-based performances causing at the same time the reduction of their market-based performance. One more important finding in this study is that no relationship has been detected between the banks' age with both ROA and ROE and with Q as well. In other words, the bank's age, which is measured as a control variable, has no impact on its performance.
By using Durbin-Watson d statistic in multiple regression model analysis, it has been examined whether auto-correlation at the first degree takes place or not. Durbin-Watson d generally of about 1.5 to 2.5 indicates that the auto-correlation doesn't occur (see Kalayci, 2009:267). Durbin-Watson d statistics is calculated, respectively as 1.846, 1.794, and 1.720 and this fact indicates that there is no auto-correlation in the model.

5.Conclusion And General Overview

In this study the impact of the board size on the bank performance has been investigated. In order to achieve this purpose, the data of 12 banks that traded on Istanbul Stock Exchange ISE in the period 2005-2010 have been used. Three dependent variables have been applied in the study: two accounting-based bank performance indicators (Return on Assets-ROA, Return on Equity-ROE) and one market-based (Tobin's q-Q) indicator. The main independent variable of the study is the banks' board of directors' size. As for the other independent variables, they are bank-specific factors.
As a result of the conducted analysis it has been revealed that the results of the accounting-based performance indicators, rate of return on assets (ROA) and return on equity ratio (ROE) with the board size of the banks are negative and statistically highly significant. However, on the contrary, the results between Tobin's q (Q), which is used as a market-based indicator and the board size are revealed as negative and statistically not significant. The increase of the number of members in the Board of Directors has a negative impact on the bank performance. While examining the studies that measure the impact of the banks' board size on their performance, on the one hand, the results of the same direction have been obtained by Pathan et al. (2011), Staikouras et al. (2007), Adusei (2011), Agoraki et al. (2010) and Aygün (2010); whereas on the other hand, the results of the opposite direction have been obtained by Tanna et al. (2007) and Adams and Mehran (2005). Although Adusei (2011) and Aygün (2010) have found the results of mixed direction in the result of their researches, statistically significant and negative relationships have been identified respectively with ROE and ROA. By reporting in their studies that no impact has been identified from the part of the number of board members on the bank's performance, Belkhir (2006), Zulkafli and Samad (2007), Adams and Mehran (2008), Praptiningsih (2009), and Bino and Tomar (2012) at the same time suggested quite different results from this study. However Andres and Vallelado (2008) and Belkhir (2009) have found a positive relationship between the board size and the bank performance by using the rate of return on assets (ROA) as a dependent variable, again obtaining different results from this study.
Another important finding of this study is negative and statistically significant results concerning the relationship of banks' risk indicators and personnel costs with banks' performances. In other words, the increases that take place in banks' risk indicators and costs negatively affect their performances. The results of the same direction have been revealed while analyzing the studies that measure the relationship between the riskiness and bank's performance, as by Bino and Tomar (2012), and Aygün et al. (2010). The increase in the number of personnel, which is the major size indicator, causes the increase of banks' accounting-based performance while on the other hand, decreasing their market-based performances. Negative and statistically significant relationships at the levels of 5% and 1% respectively have been obtained between ROA and ROE and the number of personnel per branch (BEMPLOY) along with Hannan and Hanweck (2008), whereas Ho and Ishii (2011), Calcagnini et al. (1999), on the other hand, identify these results to be of the opposite direction. Whereas negative and highly significant results are found between banks' total deposits and their performances in this study, Adusei (2011) identifies them in the same direction; in contrast, Ponce (2011) reports about the results of the opposite direction. Positive and statistically significant relationships of the banks' free float rate (FFRATE) with ROA and ROE have been determined in this study, as by Aygün et al. (2010) and Bostancı and Kılıç (2010). Thus, the results of the same direction are obtained in this study.
Another important finding of the study is the lack of any relationship between the banks' performance and its age. In other words, the age of the bank has no impact on its performance. Whereas Beck et al. (2005) have found a positive correlation between the bank's age and its performance; Aygün et al. (2010) identify it as negative, consequently obtaining results of opposite directions. However, Adusei (2011) has found that the age of the bank does not affect its performance, identifying results of the same direction with this study.

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