

BANK PERFORMANCE AND BOARD STRUCTURE: EVIDENCE FROM TURKEY

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ABSTRACT

This paper examines the impact of board structure on financial performances of the 14 publicly traded commercial banks operating in Turkey over the period 2007 to 2019. Board structure variables are board size, proportion of independent directors on the board, and the proportion of female directors on the board. I used dynamic panel data analysis and estimated the parameters of the regression equation using the two-step generalized method of moments (GMM). Results of the regression analyses show that while board size and proportion of independent directors on the board have significant and positive impacts on banks' financial performance, proportion of female directors on the board does not have a significant impact on banks' financial performance. As the policy implications, banks should increase the number of independent directors on the board; however, it is difficult to explain the significance of female participation on the board as the number of women on the boards is very low for the given sample of banks.

Keywords: Bank performance, independent directors, board size, women directors

JEL Classification: G21,M14

ÖZET

Bu çalışmada, yönetim kurulu yapısının Türkiye'de faaliyet gösteren 14 adet ticari bankanın 2007 ve 2019 yılları arası finansal performansları üzerindeki etkisi incelenmiştir. Yönetim kurulu yapısını incelemek için seçilen değişkenler yönetim kurulu üye sayısı, yönetim kurulundaki bağımsız üye sayısının toplam üye sayısına oranı ve yönetim kurulundaki kadın üye sayısının toplam üye sayısına oranıdır. Bu çalışmada dinamik panel veri analizi yapılmış ve regresyon katsayıları İki Aşamalı Sistem Genelleştirilmiş Momentler yöntemiyle tahmin edilmiştir. Regresyon analizi sonuçlarına göre yönetim kurulu üye sayısının ve bağımsız üye sayısının toplam üye sayısına oranının bankaların finansal performansları üzerinde anlamlı ve pozitif etkisi varken, yönetim kurulundaki kadın üye sayısının toplam üye sayısına oranının bankaların finansal performansları üzerinde anlamlı bir etkisinin çıkmadığı görülmüştür. Sonuçlara göre, bankaların, yönetim kurullarındaki bağımsız üye sayısını artırması tavsiye edilirken, yönetim kurullarındaki kadın üye sayısının azlığının yönetim kurullarındaki cinsiyet çeşitliliğinin getireceği faydayı ölçmede oluşturacağı zorluklardan dolayı kadın üyelerin sayısı hakkında bir sonuca varılamamıştır.

Anahtar Kelimeler: Banka performansı, bağımsız üye, yönetim kurulu büyüklüğü, kadın yönetim kurulu üyeleri

JEL Sınıflandırması: G21, M14

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1. INTRODUCTION

The global crisis in 2009 showed that better-governed banks performed better than the others (Francis, Hasan & Wu, 2012). Although the effects of the recent global crisis have not affected Turkish Banks insomuch as they have affected U.S. and European banks in the past, Turkey is not free from economic crises, as two major crises occurred in 1994 and 2001. Specifically, after the 2001 crisis, spearheaded by appointed minister Kemal Derviş, a stabilization program was announced followed by a set of structural reforms to strengthen the financial system, including those in the banking sector. In 2001, two state banks, Ziraat Bank and Halkbank, were assigned to a joint independent board of directors. In 2003, The Capital Market Board of Turkey published corporate governance principles in which one of the subtitles relates entirely to the board of directors. The aim of these principles was to integrate the Turkish capital market into the global markets and also to improve existing corporate governance standards.

Corporate governance is important to banks because agency problems exist in the banking sector like in other sectors. Limited liability creates an incentive for bank shareholders to increase risk-taking. Since debt holders are protected by deposit insurance, their incentive for monitoring is weak (Demsetz, Saidenberg, Saidenberg & Strahan, 1997). Conflicts of interest between managers and equity holders cause a need for corporate governance mechanisms (Shleifer & Vishny, 1997; Holm & Scholer, 2010). Board of directors supply this mechanism to the banks. Some of the roles of the board of directors are to query top management of the bank and be able to obtain sufficient explanation from the management, to design managerial compensation contracts that link the performance of managers to the achievement of specific results and to compensate the CEO. Results of the studies in the literature show a relationship between the board size and the bank performance (Adams & Mehran, 2012; Andres & Gonzales, 2008; Belkhir, 2009; Agoraki, Delis & Staikouras, 2010.; Pathan, Skully & Wickramanayake, 2007; Staikouras, Staikouras & Agoraki, 2007; Isik & Ince, 2016). Studies also show that female participation on the board plays a role in firm performance (Morinova, Plantenga & Remery, 2016; Carter, Simkins & Simson, 2003; Carter, Simkins, D'Sauza & Simson, 2008; Dezsó & Ross, 2008; Rose, 2007; Smith, Smith & Verner, 2006; Kilic, 2015; Yağlı, 2019). The aim of this study is to examine the

relationship between board structure and bank performance in Turkey. In particular, I measured the impacts of board size, the number of independent directors on the board, and the gender composition of the board of directors on bank performance. Although this is not one of the first studies that examines the impact of board structure on performances of banks operating in Turkey, this research contributes to the literature by reinvestigating this impact with dynamic panel data analysis.

The paper is organized as follows. Section 2 builds hypotheses and summarizes the literature. Section 3 provides information on the related regulations with regard to the board structure of Turkish banks. Section 4 describes the data and research method. Section 5 presents the empirical evidence and, finally, Section 6 concludes the paper.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Board Size and Performance

The impact of board size on firms' performance is ambiguous, as the previous studies found mixed results on this subject. Jensen (1993) argues that, as the board size increases, companies will be less effective because coordination and process problems will compensate for more members on the board who are good decision-makers. Jensen claims that CEOs can control large boards more easily if the board size increases due to the difficulty for each individual to monitor the CEOs. He also states that the boards consisting of more than seven or eight people are less likely to perform well. In the literature, there is an inverted U-shape definition related to the board size: bank performance increases up to a level then, decreases as the size increases. The ideal board size for banking firms is between 10 and 12 in Adam and Mehran (2012). Yermack (1996) analyzed boards of 452 large U.S. public corporations from 1984 to 1991 using OLS and fixed effects models. He found that, as the board size decreases, firm value increases because firms with small boards can improve the quality of monitoring.

Booth, Cornett & Tehranian (2002) compared the board structures of the 100 largest banks with those of the 100 largest industrial firms and with those of the 100 largest firms in utilities sector in the year 1999. They reported that banks have larger boards with more outsiders on the boards. Staikouras et al. (2007) examined the effects of board size and board composition on the performance of 58 European banks over the period 2002 to 2004. They used return on assets (ROA), return on equity (ROE) and

Tobin's Q to measure bank performance. They used ordinary least squares (OLS) to estimate the parameters of the regression equation. They found a negative relationship between all performance variables and the board size at 1% significance level. Dogan & Yildiz (2013) examined the relationship between the board size and bank performance for Turkish banking industry over the period 2005 to 2010. They used ROA and ROE to measure accounting based financial performance and Tobin's Q to measure market based financial performance of banks. Control variables were banks' total deposits, size, risk indicators and personnel costs. They used multiple regression and correlation analyses to analyze the data. They found that while profitability of banks decreases with larger board size, market performance does not change.

On the other hand, board size has a positive impact on the firm's performance as more people review management actions when the board size increases (Nicholson & Kiel, 2003). Adams & Mehran (2012) investigated the relationship between bank performance and board size. As the sample, they used 35 publicly traded bank holding companies (BHC) in U.S. over the period 1986 to 1996. They used panel data analysis and estimated the regression equation parameters with the fixed effects model. They found that although board size is positively related to performance, having a large board with increasing complexity does not add more value. Isik & Ince (2016) investigated the impact of board size on the performances of 30 commercial banks operating in Turkey over the period 2008 to 2012. They used panel data analysis and estimated regression equation parameters with the fixed effects model. They found that board size has a positive and significant impact on bank performance.

Based on the empirical evidence from the above studies, the impact of board size on firm performance is still negotiable, which creates a reason for further investigation. Therefore, I formulated the first hypothesis as follows:

H1: "There exists a positive relationship between the board size and bank performance."

2.2 Independency of Board and Performance

Jensen & Meckling (1976, p. 308) define an agency relationship as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making

authority to the agent”. In a company, in addition to the managers, the board of directors acts as agents, since they are given most of the powers to act on behalf of the company. However, as Caprio & Levine (2002, p.4) state, board of directors often does not represent the interests of minority shareholders. In this case, boards should include independent directors which guarantee to protect each shareholder’s right equally.

Yermack (1996) argues that the quality of monitoring and the decisions of the board of directors have an impact on firm value. He categorizes the board members into three: inside directors, gray directors, and outside directors. He defines inside directors as the board members who are current or former officers of the companies. Gray directors are non-employee directors such as lawyers and bankers. They may also be relatives of the corporate officers. Their business density is high with the company. The rest of the directors are classified as outsiders. As the number of outside directors increases, there is also an increase in the effective monitoring of managers, which will increase firm performance as a result. Although outside and independent directors may be used interchangeably, Pathan et al. (2007, p.2) distinguished between outside directors and independent directors: while independent directors have no "material" relationship with the firm except to be a member of the board, outside directors are non-executive directors on theboard. Independent directors are expected to be trustworthy and they emphasize maintaining reputation in the market for outside directorships, which leads them to protect shareholders’ interests (Fama & Jensen, 1983). Based on these arguments, I formulated the second hypothesis as follows:

H2: “There exists a positive relationship between the proportion of independent directors on the board and bank performance.”

2.2 Female Participation and Performance

Results in the literature show that board selection is not gender neutral (Farrell & Hersch, 2005; Adams & Ferreira, 2009; Pathan & Faff, 2013). Farrell & Hersch’s (2005) study shows that the seats on the board occupied by women increased from 5.6% in 1990 to 12.26% in 1999. They found that although board size decreased during this period, there was an increase in the number of women boarddirectors.

Women are perceived to be meticulous, risk averse, skilled in accounting and finance, and good decision-makers (Azmi & Barrett, 2013). Women directors create

value by bringing different attitudes to the decision-making process (Dezsö & Ross, 2012). Abdullah, İsmail & Nahum (2013) investigated whether women's participation on the boards leads to better accounting performance and whether the women's participation on boards decreases market performance for the 841 publicly-listed Malaysian companies. They found a significantly positive relation between the presence of female directors and accounting performance and a negative relation between the presence of female directors and market performance. This suggests that female directors create economic value; however, this is discounted by the market. The possible reason for this is given as the role of women in Malaysia. Pathan & Faff (2013) investigated large US bank holding companies over the period 1997 to 2011 using two-step system GMM estimation technique. They found that while female participation increases board performance in the pre-SOX period, its positive effect decreases in the post-SOX period. This means that although female participation increase performance, beyond a desirable limit, it reduces more the involvement of more capable male directors.

Virtanen (2012) investigated a sample of the boards of Finnish companies for the year 2009. Sample contains 128 firms listed in Finnish Stock Exchange. Virtanen found that female directors consider themselves more flexible. Therefore, they can cope with changing business conditions better than males.

Based on the findings of previous studies, I formulated the third hypothesis as follows:

H3: "There exists a positive relationship between female participation on the board and bank performance."

3. LEGAL FRAMEWORK IN TURKEY

The laws regarding bank board structure are developed by the Capital Markets Board of Turkey, the Banks Association of Turkey, and the Turkish Commercial Code. There are regulations on the size of the board and on the number of independent directors. According to the Banking Act No. 5411, Article 23, the board of directors of the bank cannot be less than five. Besides, the Corporate Governance Principles issued by the Capital Markets Board of Turkey in December 2011 established that the board should have at least two independent directors and that at least one third of the board

should consist of independent directors. Later, in 2013, the number of independent directors for publicly traded banks were determined as three regardless of the total number of members on the board. Moreover, in publicly traded banks, board directors who are appointed as members of the audit committee would be considered an independent board member.

4. DATA AND METHODOLOGY

4.1 Data and Sample

The sample in this study contains the annual financial statements data of the 14 publicly traded commercial banks that operate in Turkey over the period 2007 to 2019. Table 1 lists the banks in the sample ranked by asset size as of 2019. The dataset is a balanced panel with 182 observations. I obtained the data on the financial statements and the board structure from the annual reports of the banks published on their websites.

Table 1. Banks used in the Sample

Bank Name	Asset Size (Thousand YTL)
Ziraat Bankası	649,756,191
Türkiye İş Bankası	565,051,838
Türkiye Halk Bankası	457,045,401
Garanti BBVA	428,554,148
Türkiye Vakıflar Bankası	419,425,553
Yapı ve Kredi Bankası	387,495,827
Akbank	360,501,112
Finansbank	187,526,186
Denizbank	156,478,028
Türk Ekonomi Bankası	107,350,168
ING Bank	57,144,721
Şekerbank	32,045,027
Alternatif Bank	30,088,187
ICBC Turkey Bank (Former Tekstil Bank)	18,191,150

Source: Annual reports of banks

The bank financial performance measures are ROA and ROE and the board

structure measures are the size of the board, the ratio of independent directors to total directors, and the ratio of women directors to total directors. To determine the number of independent directors on the board, I included not only the announced number of independent directors, but also the board members who had not previously worked as an employer in the banks sampled. Control variables are bank size, market return, minority shareholders and ownership identity. I used BIST-100 Return Index as a proxy for market return. I obtained this data set from the Central Bank of Turkey's database. Shareholder information and ownership identities also exist in the banks' annual reports. Table 2 shows the descriptions of the variables.

Table 2. Description of Variables

Variable	Notation	Measure
Dependent Variables		
Return on assets	ROA	Net income over total assets
Return on equity	ROE	Net income over shareholder's equity
Board structure variables		
Board size	BS	The number of total directors on the board
Independent directors	ID	The ratio of independent directors to total directors on the board
Female directors	FD	The ratio of women directors to total directors on the board
Control variables		
Bank size	S	Logarithm of total assets at the end of the year
Market return	MR	Logarithm of BIST-100 Index annual stock returns
Minority shareholders	MS	The percentage of shares held by minority shareholders in total shares
Ownership identity	OS	Whether the bank is state-owned or privately-owned

4.2 Methodology

4.2.1 Econometric Model and Estimation Technique

In order to examine the impact of board structure on bank performance, I used the following dynamic panel data regression model.

$$PERFOR_{i,t} = \alpha_i + \gamma PERFOR_{i,t-1} + \sum_{k=1}^3 BOARD_{i,t} \beta_k + \sum_{k=1}^4 CONTROL_{i,t} \delta_k + u_{i,t}(1)$$

where

$$i = 1, \dots, 14, t = 1, \dots, 13 \text{ and } u_{i,t} = \alpha_i + \varepsilon_{i,t}$$

In this equation, subscript i denotes individual banks and subscript t denotes the time period. $PERFOR_{i,t}$ is the vector of bank financial performance variables and captures two dimensions, ROA and ROE. $PERFOR_{i,t-1}$ is the vector of lagged bank performance variables. $BOARD$ is the vector of explanatory variables and captures three dimensions, board size, independent directors and women directors. $CONTROL$ is the vector of control variables and captures four dimensions, size, market return, minority shareholders and ownership identity. Ownership identity variable has a value of 1 for state-owned banks and 0 for privately-owned banks. $u_{i,t}$ is the error term where the subcomponents, α_i and ε_{it} are not correlated with each other and they are independently and identically distributed. α_i is the unobserved fixed effect for bank i and $\varepsilon_{i,t}$ is the remaining disturbance term.

The model includes a lagged dependent variable which creates a correlation between itself and the error term; therefore, fixed effects estimator becomes inconsistent for a small T . This bias does not disappear even though the number of the “individuals” increases (Nickel 1981). The random effects estimator is also biased in a dynamic panel data model because of the assumed correlation between the quasi-differenced values of the lagged dependent variable and the quasi-differenced error term (Baltagi, 2008, p. 148). The two-step system GMM, a dynamic version of the panel data analysis proposed by Blundell and Bond (1999), is appropriate for estimating the parameters of the regression equation due to the presence of the lagged dependent variable. The system GMM estimator also controls for serial correlation besides endogeneity problem. I estimated the regression equation parameters with two-step GMM and used Hansen’s (1982) over-identification test to evaluate whether instrumental variables are exogenous.

5. EMPIRICAL RESULTS

5.1 Descriptive Statistics

Table 3 presents the results of descriptive statistics for the variables over the period 2007 to 2019. The average ROA and ROE are 0.014 and 0.137, respectively. The average board size is 10.280 and of 14 banks, 30.40 % of the board consists of independent directors. The percentage of female directors on the board ranges from 0 to

50 for the given sample of banks. The average of shares held by minority shareholders is 45.7 % and approximately 20 % of banks are state-owned.

Table 3. Descriptive Statistics

Variable	Mean	SD	Min.	Max.	Obs.
ROA	0.014	0.007	-0.024	0.034	182
ROE	0.137	0.116	-0.399	1	182
BS	10.280	2.012	5	14	182
ID	0.300	0.152	0	0.75	182
FD	0.106	0.096	0	0.5	182
S	17.946	1.357	5	14	182
MR	11.507	0.447	14.544	20.292	182
MS	45.798	42.502	0	100	182
OS	0.214	0.411	0	1	182

5.2 Correlation Matrix

Table 4 gives the correlations between the variables. While the board size is positively correlated with both performance variables, the ratio of female directors to total directors is negatively correlated with both performance variables. The results of the correlation analysis also show that the ratio of independent directors to total directors on the board is positively correlated with ROA and is negatively correlated with ROE.

Table 4. Correlation Matrix

Variables	ROA	ROE	BS	ID	FD	S	MR	MS	OS
ROA	1								
ROE	0.533 [*]	1							
BS	0.099	0.033	1						
ID	0.237 [*]	-0.032	0.069	1					
FD	-0.267 [*]	-0.282 [*]	-0.283 [*]	-0.231 [*]	1				
S	0.276 [*]	0.078	0.408 [*]	0.422 [*]	-0.227 [*]	1			
MR	-0.298 [*]	-0.316 [*]	0.146 [*]	0.074	0.224 [*]	0.414 [*]	1		
MS	0.157 [*]	-0.056	0.165 [*]	0.262 [*]	-0.090	0.291 [*]	-0.002	1	
OS	0.193 [*]	0.163 [*]	0.094	0.405 [*]	-0.552 [*]	0.359 [*]	0.000	0.004	1

Note. ^{*} denotes correlation between two variables at 5 % significance level.

5.3 Regression Results

Table 5 reports the two-step GMM estimation results. Column 2 shows the regression results when the ROA is the dependent variable, and column 3 shows the regression results when the ROE is the dependent variable. According to the Hansen's

(1982) test results, the selected instrumental variables are exogenous for both equations. In addition, the AR (1) and AR (2) test results indicate that the residuals in equation (1) are not serially correlated because I cannot reject AR (2) at 5 % significance level for both equations. Hansen's test results together with autocorrelation test results indicate that the econometric model passes the specification tests.

Table 5. Two-Step GMM Estimation Results

Independent Variables	Dependent Variables	
	ROA	ROE
Lagged ROA	0.609*** (0.102)	
Lagged ROE		0.117* (0.068)
BS	0.002*** (0.001)	0.015* (0.008)
ID	0.029*** (0.009)	0.186** (0.092)
FD	-0.002 (0.010)	-0.012 (0.107)
S	-0.013*** (0.003)	-0.079** (0.037)
MR	0.012*** (0.003)	0.033 (0.043)
MS	0.000 (0.000)	0.000 (0.000)
OS	0.008** (0.003)	0.093* (0.050)
Constant	0.075*** (0.017)	0.907*** (0.242)
Wald chi2	151.55***	103.21***
Number of Instruments	18	12
AR(1)	-2.49**	-5.04***
AR(2)	1.84*	0.90
Hansen Test	6.49	1.99
Number of Observations	168	168

Notes. The numbers in parentheses are the standard errors.

*, ** and *** denote significance levels at 10 %, 5 % and 1 % respectively.

Results indicate that the performance of the last year has a significant impact on the performance of current year for both variables. While the coefficient of one-year lagged ROA is significant at 1 %, the coefficient of one-year lagged ROE is significant at 10 %. The coefficients of board size are positive and significant for both regression

equations, indicating that, as the board size increases, the performance of the banks increases as well. The coefficients of the ratio of independent directors to total directors for equations with ROA and ROE are positive and statistically significant at 1 % and 5 % significance levels, respectively, which shows that, as the number of independent directors on the board increases, performance of the banks also increases. This result is in line with expectations as independent directors protect each shareholder's right equally and improve the quality of monitoring, thus increasing performance in return. Results also show that the ratio of women directors to total directors on the board does not have a significant impact on bank performance, which supports the findings of Ozatac (2011). As Ozatac points out, the number of women on the boards is very low, which makes it impossible to explain the significance of gender diversity and to conclude that more gender diverse boards create better financial performance.

The coefficient of size turned out to be significant and negative for each regression equation, which supports the findings of Aladwan (2015); however, this is also not much in line with the findings in the literature that show a significant positive impact of size on profitability (Isik, Unal & Unal, 2017; Dogan, 2013; Kawshala & Panditharathna, 2017). However, the impact of size on profitability may be expected to be non-linear due to the possibility for either positive or negative impact (Athanasoglou, Brissimis & Delis, 2008). On the one hand, an increase in size leads to an increase in profitability by enabling banks to achieve economies of scale (Medley, 2016). On the other hand, for large banks, the impact of size may be negative due to bureaucratic and other reasons (Athanasoglou et al., 2008).

The coefficient of market return shows that the results change when I use different performance measures. While the impact of market return on ROA is positive and significant, the impact of market return on ROE is insignificant. The percentage of minority shareholders in total shareholders does not have a significant impact on bank performance, which suggests that ownership concentration does not influence bank performance for the given sample of banks. The regression results also reveal that there is a significant and positive relationship between ownership identity and bank performance, i.e. state-owned banks are more profitable than privately-owned banks.

6. CONCLUSION

In this paper, I empirically investigated the impact of board structure on the financial performance of 14 publicly traded commercial banks that operate in Turkey over the period 2007 to 2019. I used dynamic panel data analysis and estimated the regression equation parameters with the two-step GMM estimator. As the control variables, I used size, market return, ownership concentration, and ownership identity. The results show that the impacts of board size and the ratio of independent directors to total directors have significant and positive impacts on the financial performance of banks as in line with the expectations of the agency theory. As size increases, more directors can monitor the CEO. The number of independent directors also increases the quality of monitoring. On the other hand, the proportion of female directors on the board does not have a significant impact on bank performance. The relatively low number of women on the traditionally male dominated boards may not have effects substantial enough to be registered in the economic models and change the dominant atmosphere independent of the apparent change of the percentage in female participation, and be ultimately lost due to white noise. An increasing percentage of women on the boards for a longer period of time may reveal substantially different results in future and more detailed studies. As future research, the findings of this study can be enriched with a more comprehensive dataset.

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