BOARD CHARACTERISTICS AND FIRM PERFORMANCE: EMPIRICAL EVIDENCE FROM TURKEY

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ABSTRACT

The objective of this study is to examines the relationship between board characteristics and firm performance. The study used data of 146 public listed firms in Istanbul stock exchange for the period of 2011-2015. The study utilised cross sectional time-series feasible generalized least squire regression, which count for autocorrelation and heteroscedasticity to examine the influence of board characteristics in firm performance in Turkey. This study results reflect that board attributes proxies by interlocking directorship, education level and board size improve firm performance. This study finds insignificant relationship between independent directors and firm performance. The finding of this study has policy and practical implication on corporate governance. For example, future regulation reforms might consider board attributes instead of the concentrate on more independent directors to work in the board of directors.

KEYWORDS: Board Characteristics, Firm Performance and Turkey

1. INTRODUCTION

Corporate governance play vital role to provide a protected environment for investors, and it has number of practical importance (Shleifer & Vishny, 1997). Corporate governance attract considerable attention as a result of corporate collapse and financial scandals for instance, Enron and Worldcom. Corporate governance guideline issued by Organization for Economic Corporation and Development (OECD) have been used as an international standard for regulator, policy makers, corporations and other stockholders worldwide. Furthermore, The Commonwealth Association for Corporate Governance (CACG) principles also play significant role in this field. In October 2010, Basel Committee on banking supervision revised the principle of improving corporate governance and this motivated banks to adopt the sound corporate governance practise.

More specifically, Sarbanes Oxley Act of 2002 has been introduced in the US and it addressed unique standards of accountability for corporate board members, management and audit firms. Simply put, corporate governance principles is about transparent, effective and accountable governance of the affairs of corporation by it is

management including the conduct of the board. In addition, corporate governance that has been adopted internationally and locally, has addressed the significant role of board of directors in shaping corporate governance practise in corporations (Baron & Kenny, 1986). In this regards, agency theory addressed the significant role of board of directors in control and monitor management behaviours, and it is role to assure that managers work in order to make a decisions that maximise shareholders' interests. Many studies in the developed countries have been examined the influence of board characteristics in firm performance (Bhagat & Bolton, 2008; Dharmadasa, Gamage, & Herath, 2014). Nevertheless, the finding of those studies may not generalised in developing countries as a result of different economic environment, regulation, cultural differences and the effectiveness of corporate governance (Yoshikawa & Rasheed, 2009). Furthermore, in Turkey and in early 2012, the Capital Market Board of Turkey (CMBT) has made essential amendment in Turkey corporate governance code in order to improve Turkey capital market and integrate it with that of Europe (Karaibrahimoglu, 2013). This is because Turkey looking to get membership in Europe Union.

In this manner, this paper sough to examines the influence of new regulation on the board behaviour and it is impact on firm performance. The rest of this paper is going to address following sections, section two discuss literature review and hypothesis development, followed by section three to address research methodology. Next, section four discuss the conclusion of the study.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Many theories have been used in order to illustrate the impact of corporate board in firm performance. The study integrate agency theory and resource dependency theory to understand the relationship between board characteristic and firm performance. Board of directors have two essential roles to governed firms: monitoring and advisory role (Daily, Dalton, & Cannella, 2003). Agency theory emphasizes the significant of monitoring role of board of directors and resource dependency theory addressed the advisory role of board of directors (Zahra & Pearce, 1989). Both theories suggest that certain attributes of board of directors might enhance board monitoring and advisory role and this might impact on firm performance (Bianco, Ciavarella, & Signoretti, 2013). Many studies reported that board of directors have an effective role to enhance firm performance. Board attributes improves board effectiveness and efficiency for instance, interlocking directorship and directors level of education (Hillman & Dalziel, 2003). On the other hand, many studies reported that board characteristics measured by board size and independence have an important role to improve board of directors effectiveness and consequently this improve firm performance. The following section reviews previous studies to develop this study hypotheses.

2.1 Interlocking Directorship

Interlocking directorships refers to the board of directors who work in more than one sits whether inside business group or in two different firms. According to resource dependency theory, interlocking directorship represent as an assets for the firm because of their advisory role (Hillman & Dalziel, 2003). Interlocking directors are qualified directors have an ability to make effective decisions based on their experience in work in more than one sits and firms (Harris & Shimizu, 2004). The expertise, knowledge, skills of interlocking directors assist firms to enhance the quality of financial report and monitor management behaviours (Hashim & Rahman, 2011). Empirical studies report that interlocking directorship enhance the quality of earning and little is known about corporate performance. Interlocking directors provide many important resource to the firms, Then based on this argument, it is conclude that interlocking directorship enhance the financial performance.

Hypothesis 1: Interlocking directorships will increase firm performance.

2.2 Education Level

A professional board of directors with higher education background provide a valuable human capital to the firm. Board of directors with higher education background for instance, Master and PhD degree will improve the value of human capital (Plian, 1995) or having strong cognitive capability, higher ability for decision processing, and propensity to innovation which equip them with an effective solution for decision making function (Bantel & Jackson, 1989). Therefore, educated directors are less likely to experience turnover as their turnover portray a loss to the firms (Ou-Yan & Shuang-shii, 2007) as educated directors serves some functional background for instance problem definition, strategic choices and information procession (Datta & Rajagopalan, 1998). Thus, this study hypothesize that:

Hypothesis 2: Education level of board of directors will increase firm performance.

2.3 Board Size

Previous studies addressed the influence of board size (number of directors occupy corporate board) on the effectiveness of corporate governance in firms (Beiner, Drobetz, Schmid, & Zimmermann, 2004). Nonetheless, In regards to board size, Jensen (1993) and Mustafa, Che-Ahmad, Chandren, & Sitraselvi (2017) reported that small board might be more effective than large board of directors as a result of free riding and coordination problems. They suggested that the appropriate size of corporate board should be not greater than 8 to 9 directors. On the other side, some scholars argued that smaller board lack of necessary management capabilities. Based on resource dependency propositions, scholars have suggested that large board of directors have

greater collective information consequently this will influence positively to improve firm performance. Furthermore, previous studies reported that larger board possess more specialists from different areas and might provide better advice and counsel to the chief executive officer (Dalton, Daily, Johnson, & Ellstrand, 1999). However, the coordination problem between board member might overweigh the advantages behind having larger corporate boards (Dalton et al., 1999; Guest, 2009). This indicates that there is inconsistency in the results of previous studies regarding the relationship between board size and firm performance, therefore requires further investigation. Based on this, this study concludes that small board of directors enhance the financial performance of firms.

Hypothesis 3: Small boards will increase firm performance.

2.4 Board Independence

Board independence represents as one of the important characteristics that improve the effectiveness of board of directors. Agency theory assume that non-executive directors are more likely to enhance board monitoring role (Jensen & Meckling, 1979; Shleifer & Vishny, 1997). Organizational studies reported that independent directors acts to improve and protect their legitimacy, particularly in the investor community (Filatotchev, Lien, & Piesse, 2005). This align with the propositions that non-executive directors play significant role to improve management monitoring function (Chancharat, Krishnamurti, &

Tian, 2012). In addition, they provide balance in decision making particularly, stakeholders protections (Nugroho & Eko, 2012). Furthermore, studies suggested to occupy more independent directors to protect shareholders from opportunistic activities of executive directors (Jensen & Meckling, 1979). Therefore, non-executive directors are essential characteristics to improve board effectives and efficiency (Haniffa & Hudaib, 2006). Fama and Jensen (1983) reported that independent directors possess valuable expertise and they provide wide connection to the firm, that influence positively to improve firm performance. Based on this, this study conclude that board independence improve firm financial performance.

Hypothesis 4: Higher representation of independent directors on the board will increase firm performance.

3. RESEARCH METHOD
3.1 Population and sampling

The sample include all non-financial firms listed in Bursa Istanbul (BIST), this is because financial institution subject to different corporate governance and regulations (Maury, 2006). The study uses secondary data where data was available for the period 2011-2015. This period has been selected in order to cover corporate governance amendments by the CMBT on 2012. Based on BIST, firms listed on BIST in the end of 2015 was 411 and table 1 illustrates the procedures of sample selection:

Table (1): *Procedures of sample selection*

Firms listed in Borsa Istanbul Webpage in 2015	411
Less: financial institution and holding	142
Less: firms with missing corporate governance information	15
Less: firms with missing directors profiles	70
Less: firms with missing interlocking directors information	38
Firms included in the study sample	146

3.2 Research model and measurement

To meet this study objectives, the model of the study examines the relationship between board characteristics (Interlocking directorship, Education level, board size and board independence) and firm performance. This study hypothesis are tested utilising the following model:

$$PERF_{it} = \beta_0 + \beta_1 INTD_{it} + \beta_2 EDUC_{it} + \beta_3 BOAS_{it} + \beta_4 BOAI_{it} + \beta_5 FSIZE_{it} + \beta_6 LEVE_{it} + \beta_7 FAGE_{it} + \varepsilon_{it.}$$

Where:
For each firm (i) and each year (t)
PERF $_{it}$ =   Firm performance
INTD   =   Interlocking directorship
UDUC   =   Education level

BOAS   =   Board size
BOAI   =   Board Independency
FSIZE   =   Firm size
LEVE   =   Leverage
FAGE   =   Firm age
ε_{it} =   Error term supposed to be normally scattered with constant differences

3.3 Measurement Of Variables And Descriptive Statistics

Table 2 displays the number of observation, mean, standard deviation, min and max for PERF, INTD, EDUC, BSIZE and BINDE and control variables (FSIZE, LEVE and FAGE). Following Roudaki, Bhuiyan, and Uddin (2015) the firm performance is measured using two indicators Return on Equity (ROE) and Return on Assets (ROA).

Table (2): Descriptive Statistics

Variable	Observations	Mean	Standard deviation	Minim	Maxim
ROE	724	0.059	0.328	-0.341	0.503
ROA	724	0.030	0.455	-0.641	0.387
INTD	724	3.875	2.673	0	12
EDUC	724	2.303	1.849	0	8
BOAS	724	6.783	2.128	2	15
BINDE	724	1.812	0.909	0	5
FSIZE	724	1.904	1.781	1.433	2.608
LEVE	724	0.481	0.279	0	1.707
FAGE	724	33.825	15.856	1	80

This study used ROE and ROA to measure financial performance (Danoshana & Ravivathani, 2013). The mean percentage of ROE is about 0.059 (0.328 percentage the standard deviation) with a minimum of -0.341 and a maximum of 0.503. The mean ratio of ROA of the firms in the sample is 0.030 with a standard deviation of 0.455 and a minimum value of -0.641 and a maximum value of 0.387. INTD is measured as the proportion of INTD to total number of directors occupy board of directors. The mean number of INTD is 3.875 (2.673 percentage of standard deviation) with a minimum of 0 and maximum of 12 directors involve in interlocking directorship. EDUC is measured by the proportion of directors with educational qualification (PhD and Master degree) to total number of directors work in board of directors. The average number of EDUC is about 2.303 and a range from of 0 to 8 with a standard deviation of 1.849. The mean size of

board of directors is about 6.783. This means that the average size of board of directors is 7 with a range from of 2 to 15. BSIZE of Turkish firm is small compare with that of United State (US) and United Kingdom (UK) which is about 12.48 and 8.01 respectively (Peasnell, Pope, & Young, 2005). The average number of independent directors is about 1.812 with a range from of 0 to 5 and standard deviation of 0.909.

Table 3 illustrates the correlation between variables of interest. The values of the correlation is less than 0.80 (the threshold value). This indicates that there is no multicollinearity problems between the variables and this supports by the value of Variance influence Factor (VIF) and tolerance factor (1/VIF). The VIF findings of all explained variables and control variables are less than 5 as suggested by (Hair, Black, Babin, & Anderson, 2010).

Table(3): Pearson correlation (N= 724)

	ROE	ROA	INTD	EDUC	BSIZE	BINDE	FSIZE	LEVE	FAGE	VIF
ROE	1.0000									-
ROA	0.0376	1.0000								-
INTD	0.0635	**0.2076**	1.0000							1.24
EDUC	0.0751	**0.1181**	**0.1097**	1.0000						1.04
BSIZE	-0.0392	**0.1375**	**0.3856**	0.0027	1.0000					1.39
BINDE	0.0252	0.0654	0.0914	-0.0203	**0.3304**	1.0000				1.15
FSIZE	**0.1377**	**0.3404**	**0.2773**	0.0126	**0.2969**	**0.2099**	1.0000			1.24
LEVE	**0.1804**	-0.0020	0.0122	-0.0333	0.0351	0.0425	**0.2450**	1.0000		1.08
FAGE	-0.0550	**0.2735**	0.0649	**-0.1440**	**0.2147**	**0.1295**	**0.1016**	-0.0662	1.0000	1.09

Notes: Two-tailed, bold= correlation are significant at P < 0.05. *FSIZE is natural log of total assets. **FAGE is natural log of firm age.

The correlation result indicates that there are positive correlation between INTD, EDUC, BSIZE, FAGE and FSIZE except BINDE and LEVE do not have any correlation with ROA. In regards to ROE, only FSIZE and LEVE have correlation with ROE, while other variables are not correlated with ROE.

3.4 Tests for Random and Fixed effects Regression

This study depends on Hausman test in order to select between fixed and random effects. This is because Huasman test examine whether there is any correlation between (Ui) and the regressors (Greene, 2003). If pro > chi2 is < 0.05 (i.e., significant) the fixed effect model is used (Greene, 1997). The finding of Husman test displays probability more than 0.05, thus the null hypothesis has been rejected and random effects is more appropriate for estimation purpose for the study. Consequence, the individual error component is not correlated with regression variables, then OLS estimator is consistent. As a result of the existence Autocorrelation and heteroscedasticity as characterised in panel data, this study uses Feasible Generalized Least Square (FGLS) to correct for this problem as (Wooldridge. J. M., 2002) proposed.

3.5 Results of the Models

The reported Wald Chi 2 using FGLS for ROA and ROE is 45.27 and 192.50 respectively (Table 3.4). This reflects that explanatory variables illustrate about 45% and 192% of the variation in the explained variable. This propose that, around 45% and 192% of the variance in the firm performance is illustrated by INTD, EDUC and BSIZE. The results are consistent with that of agency theory and resource dependency theory propositions, that board of director and it is attributes have an effective role to enhance firm performance. More specifically, Interlocking directorship has positive relationship with firm performance. The result for this variable is significant at 5% level of significance with P-value of (0.113, 0.003) for both of ROE and ROA respectively. Besides, the degree of influence on ROE and ROA are 29% and 0.51%. This displays that an increase in interlocking directorship might leads to an increase in ROE and ROA of 29% and 0.51%. This study argument is consistent with that of (Yeo, Pochet, & Alcouffe, 2003). From the result on Table 3.4 the relationship between educated directors and ROE and ROA displays a direct relationship indicating that for every one additional directors with postgraduate qualification, ROE and ROA will increase by 15% and 0.32%.

Table(3.4): *Regression Models (FGLS)*

Item	Model 1				Model 2			
	Coefficient	Standard Errors	t-value	p-value	Coefficient	Standard Errors	t-value	p-value
INTD	0.298	0.188	1.58	0.113*	0.051	0.173	2.94	0.003**
EDUC	0.159	.085	1.86	0.063*	0.032	0.007	4.10	0.000***
BSIZE	-0.489	0.197	-2.47	0.013**	-0.020	0.0182	-1.14	0.255
BINDE	-0.452	0.172	-2.66	0.437	-0.006	0.009	-0.70	0.486
FSIZE	0.142	0.052	2.72	0.007**	0.041	0..4	8.54	0.000***
LEVE	1.297	0.312	4.15	0.000**	-0.046	0.028	-1.62	0.106*
FAGE	-0.004	0.005	-0.83	0.404	0.003	0.000	7.65	0.000***
Wald chi^2	45.27				192.50			
Prob > chi^2	0.000				0.000			

*Notes: * = significant at 10%, ** = significant at 5% and *** = significant at 1%.*

The influence of postgraduate directors on ROE and ROA as compared to another analytical findings on Table 3.4 displays that directors with postgraduate qualification have greater impact on firm performance. This relationship is significant at 5% and 10% level of significance with P-value of 0.063 and 0.000 for both of ROE and ROA respectively. This study argument is consistent with that of (Ishak, Amran, & Manaf, 2015).

Board size and firm performance is another relationship analysed on Table 3.4. There is insignificant relationship between BSIZE and ROA. Whereas, results from the analysis shows that an inverse relationship exists between BSIZE and ROE. This indicates that an increase in board size could lead to corresponding decrease in ROE at rate of -0.489 with P-value of (0.013) at 5% level of significance, this relationship shows that the more members in a firm's board of directors, the lower will be the firm performance in terms ROE. This result has been found to be supported by the works of (Guest, 2009). The influence of BINDE is not significant (Table 3.4). Its impact about 45% and 0.06% for both of ROE and ROA respectively. The implication of this results that for every increase in board member independence by one unite, ROE and ROA would rise by 45% and 0.06%. The result of this study align with that of (Bhagat & Bolton, 2008). The results of control variables (Table 3.4) shows that FSIZE, LEVE and FAGE have significant relationship with firm performance.

4. CONCLUSION

This study investigates the relationship between INTD, EDUC, BSIZE and BINE and firm performance of public listed companies in the Istanbul stock exchange. In order to meet this study objectivise, this study employ cross-sectional time-series FGLS regression to controls of the issues of Autocorrelation and heteroscedasticity in a sample of 146 listed Turkish firms. This study shows that there is a relationship between board characteristics and firm performance. The results seem to propose that greater concentration need to be taken by firms to have more interlocking directorship, Education level and small board size which is argued and found in this study to have significant implication on firm performance. Nevertheless, the result finds that board of directors independence does not influence on firm performance. The research thus, recommends that policy makers encourage listed firms to make their boards with various attributes. The study also recommends further investigations and include more data, inclusion of other characteristics of directors both before and after the regulatory changes of 2012 for comparison of clients demand before and the amendments.

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