

The determination of firm performance in emerging nations: Do board size and firm size matter?

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Abstract

The purpose of this study is to examine the relationship between board size and firm size, and firms' financial performance using (ROA and ROE) as performance indicators in one of emerging nations, namely Jordan. The current study used quantitative methodology and the hypotheses of the study are examined through statistical software, SPSS 20, Eviews and PLS to analyze data. The findings from this study revealed that board size has an influence on Jordanian industrial firms' financial performance. The present study evidenced that there is a positive relationship between board size and ROA. On the other hand, the study revealed that firm size has no effect on ROA. Also, the study showed that both independent variables, board size and firm size, have an insignificant effect on ROE. The current study highlights the value of internal control mechanisms in accounting research, by providing a deeper insight into the managers regarding firm financial performance. The study emphasizes the significance of considering board size as a critical form of Return on assets (ROA). The study focuses on internal control mechanisms practices in Jordan as one of emerging market features that might mitigate the gap in the emerging market studies through survey evidence. Thus, generally, investors and regulators must be sensitive to the fact that the performance of industrial firms, represented by ROA, is affected by the size of board of directors.

Keywords: Board size; firm size; Industrial firms; performance; emerging nations

1. Introduction

Internal control mechanisms has witnessed a rapid development and become an important control system for both private and public sectors, and an instrument to strengthen confidence for the national economy and a guide of the existence of transparent and fair policies in order to protect investors and other stakeholders (Alabdullah, Yahya, Nor, & Majeed, 2016; Alabdullah 2014). Internal control mechanisms system plays an important role in enhancing firm performance and moreover in protecting the interests of stockholders. In that, good internal control mechanisms is important to direct the resource of the firms through attracting capital funds and new investors. Additionally, internal control mechanisms lead to achievement of better firm valuation and enhancement of its performance (Alabdullah, 2016; Alabdullah, Alfadhl, Yahya, & Rabi, 2014; Franck & Sundgren, 2012).

As for internal control mechanisms and its relationship with firm performance, there are several studies around the world that have been done (See Abor & Biekpe, 2007; Alabdullah, 2016, 2018; Alfadhl & Alabdullah, 2013; Andres & Vallelado, 2008; Balasubramanian, Black, & Khanna, 2009; Black, Love, & Rachinsky, 2006; Chen, Chen, & Wei, 2009; Chhibber & Majumdar, 1997; Durnev & Kim, 2005; Jaafar & El-Shawa, 2009; Kim, Cha, Cichy, Kim, & Tkach, 2011). Yet, studies on Jordanian industrial firms considering board size as one of the important internal control mechanisms in terms of the relationship with firm performance are lagging behind in such a sector. In addition, firm size is considered as a very important independent variable as mentioned in a few studies done in developed countries. For example, there is a study done in Italian industrial companies by Bonaccorsi (1992) who revealed that the basic assumption is that large firms are better than small ones regarding competition and performance. Nevertheless, there is a lack to use such a variable in developing countries including Jordan in particular. Concerning the firm financial performance indicator, this study used ROA and ROE as two financial performance indicators. Several studies have used them as the financial performance indicators (See Ehikioya, 2009; Erhardt, Werbel, & Shrader, 2003; Fauzi & Locke, 2012; Haniffa & Hudaib, 2006; Mashayekhi & Bazaz, 2008). Accordingly, this study considers the accounting based approach for measuring firm financial performance through relying on ROA and ROE. The accounting performance measurement is more directly related to its financial survivability than its share market value and allows the evaluation of performance of publicly traded companies (Sun & Tong, 2003).

The aim of this study is to examine the relationship between board size and firm size, and firms' financial performance using (ROA, ROE) as two performance indicators. This study aims at finding out if there is any relationship between these two independent variables and firms' financial performance in Jordan context. Hence, this study is expected to enrich the literature with the area of internal control mechanisms among industrial companies in Jordan as one of emerging nations. Particularly, the current study uses a sample of Jordanian industrial firms listed on Amman Stock Exchange (ASE). Therefore, the information revealed that it is reliable and useful to Jordanian businesses and investors at large.

2. Literature Review

Board of directors is one of the important components of both board dynamics and internal control mechanisms that oversees the firm's business and reduces agency cost (Hassan & Ahmed, 2012; Mkrtchyan, 2014; Shleifer & Vishny, 1997). There is a consensus in the literature admitting that the effectiveness of board of directors can be accomplished based on the level of knowledge (Mkrtchyan, 2013). Findings of the previous studies about effectiveness of the board of directors are inconsistent.

Some studies proposed that the small size of the board is more effective than the larger board. Moreover, it might lead to cut poor decisions made by number of studies (Adnan, Htay, Rashid, & Meera, 2011; Haniffa & Hudaib, 2006; Jensen, 1993; Yermack, 1996).

On the other hand, other waves in the prior studies show that the larger the board leads to have effectiveness, knowledge, and expertise; thus this will lead to better performance (Buniamin, Alrazi, Johari, & Rahman, 2008; Jaafar & El-Shawa, 2009). Similarly, Abor and Biekpe (2007) and more specifically in Jordan context a study done by Alabdullah, Yahya, and Ramayah (2014) argued that one of the most important internal control mechanisms tools is the large size of the board of directors, and this tool leads to better performance. On top of that, this study utilized firm size as a second independent variable to be examined in its relationship with firm financial performance. It is worth mentioning that in developed countries, firm size has an important and positive role on competition and performance (e.g., Bonaccorsi, 1992; Hall, 1986; Moen, 1999). For example, there is a study done in Italian industrial companies by Bonaccorsi (1992) who revealed that the basic assumption is that large firms are better than small ones regarding the competition and performance. Nevertheless, there is a lack of using such a variable in developing countries including Jordan in particular. Such a variable has not been given attention by previous studies in developing countries. In that, a few studies in developing countries have investigated firm size as a control variable (Alabdullah, 2016, 2016; Alabdullah et al., 2014) and no previous studies in such a context utilized it as an independent variable in its relationship with firm financial performance. Therefore, I predict that increasing board size will increase company performance. In addition, firm size has a positive impact on firm financial performance.

H1. There is a positive relationship between board size and firm financial performance.

H2. There is a positive relationship between firm size and firm financial performance.

3. Methodology

3.1 Data Collection and Measurement

The current study considers a sample that consists of industrial companies for listed Jordanian firms through collecting the primary data from the annual reports for the year 2013. Accounting and internal control mechanisms data have been collected from the website of Amman Stock Exchange (ASE) for 65 industrial firms that served the current study to achieve its aim. This cross sectional study tested the hypotheses of the study using SPSS 20, Eviews and PLS to analyze data.

This study measured the predicted variables (dependent variables) of financial performance via the ROA and ROE. The predictor variables (independent variables) have been identified as the board size (BOD) and a firm size (Fsize). Table 1 on the following page presents a summary of the measurement of variables.

Table 1: Summary of Variables Measurement

Number	Variables	Acronym	Measurement
Dependent Variable			
1	Return on Assets (as a percentage)	ROA	Return on assets is measured as the percentage of net income to total assets.
2	Return on Equity (as a	ROE	Return on equity is measured as a

	percentage)		percentage of net income to common equity.
	Independent Variables		
4	Board Size (number)	BOD	The number of directors on the board of directors.
6	Company's Size (number)	Fsize	Natural logarithmic of the company's total assets.

The models of this study included particular variables, with the board size and firm size that have possible impact on firm financial performance; in other words, they influence their ROA and ROE. To examine the relationship between board size and firm size, and firm performance in one of the emerging countries, namely Jordan, a cross sectional research was adopted through real data collected from the annual reports for the fiscal year 2013. The analysis of linear regression was utilized to test the effect between the predictor and predicted variables. The models of the current research are defined by the following equations:

(1)

$$ROA = \alpha + \beta_1 BOD + B_2 Fsize + \varepsilon$$

(2)

$$ROE = \alpha + \beta_1 BOD + B_2 Fsize + \varepsilon$$

4. Results and Discussion

4.1 Descriptive Analysis

The descriptive analysis of dependent and independent variables of the current study is provided for 65 industrial firms listed at Amman Stock Exchange by using descriptive analysis like mean, standard deviation, minimum, maximum. The distribution of the variables is explained in Table 2.

In Table 2, the results also showed that the values for the kurtosis and skewness demonstrate that the research sample is normally distributed due to being within the accepted range of normality for both skewness and kurtosis. As explained by (Alabdullah et al., 2014), the normality of data could be achieved when standard kurtosis is within ± 3 and standard skewness ± 1.96 .

Table 2: Descriptive Analysis

Variables	Mean	Std. Dev	Minimum	Maximum	Skewness	Kurtosis
ROA	3.096	1.390	-1.100	6.980	0.097	0.914
ROE	4.805	4.184	0.000	12.100	0.348	-1.277
BOD	10.970	2.114	7	15	0.287	-0.882
Fsize	7.119	0.936	4.080	8.960	-0.835	1.021

4.2 Correlation Analysis

Table 3 shows the correlation between dependent and independent variables. It demonstrates that independent variable (board size) has a positive relationship with return on assets (ROA) with value (BOD.452). The Table shows that board size (BOD) has a positive relationship with (ROE) with value .171. The Table also shows that BOD has a highly positive relationship with ROA with a value of 0.452.

Table 3: Correlation test

	BOD	Fsize	ROA	ROE
BOD	1			
Fsize	-0.295*	1		
ROA	0.452**	-0.224	1	
ROE	0.171*	-0.236	0.316*	1

Level of significance *p < 0.05, **p < 0.01

4.3 Multiple Regression Analysis

The current study adopted the regression analysis to examine the direction of the relationship between the independent and dependent variables, a common statistical method which was used in several science disciplines (Alabdullah, 2016).

Regression Results of Model 1

Based on a firm performance measured by ROA, the equation of Model 1 is defined by the following:

$$ROA = \alpha + \beta_1 BOD + \beta_2 Fsize + \varepsilon$$

Table 4 below reveals the results of regression showing that the R square value is 0.241 for ROA. This indicates that the value of R square explains 24 percent of the independent variables (BOD and Fsize) on the dependent one of ROA.

Table 4: Regression Results for ROA

Model	ROA
R Square	0.241
Sig F Change	0.001

In Table 5, the analysis of regression was run between all the variables of the current study represented by the independent variables and the dependent variable of ROA. The results reveal that board size (BOD) has a positive relationship with ROA (BOD β =.423). However, the firm size (Fsize) has an insignificant relationship with the ROA (Fsize; β = -.100).

Table 5: Regression analysis for ROA

ROA			
Variables	Beta	t- value	Sig.
BOD	0.423	3.589	0.001
Fsize	-0.100	0.844	0.402

Note: (1) Level of significance **p < 0.05, ***p < 0.01

(2) the results of the coefficients are Standardized

For this research, the examining of the hypotheses for Model 1 regarding the relationship between the two independent variables and the dependent ones is shown in Table 5.

The study hypothesized that there is a positive and significant relationship between the board size and the ROA. The current study found a positive and significant relationship that exists at $\beta = .423$, T-value= 3.589, $P < 0.01$. This shows that the financial performance represented by (ROA) is influenced by large board size in industrial firms listed at ASE. This result is in line with what has been proposed in the present research. Such result is in line with a study done in Jordanian context by (Alabdullah, 2016). Therefore, hypothesis H1 (There is a positive relationship between board size and firm financial performance) is supported. Conversely, there is an insignificant negative effect in the relationship between the firm size (Fsize) and the ROA ($\beta = -0.100$, T-value= 0.844, $P > 0.1$). This indicates that a firm's financial performance is not influenced by the firm size of the industrial listed firms in Jordan. This result is incompatible with what the present research proposes. On the other hand, the research hypothesized that a significant and positive relationship exists between firm size and ROA as mentioned by prior work (e.g., Bonaccorsi, 1992; Hall, 1986; Moen, 1999). Nevertheless, this result is in line with a study that was carried out by (Samiee & Walters, 1990). They mentioned that there is no relationship between the activity of firm size and profitability. Thus, hypothesis H2 (There is a positive relationship between firm size and firm financial performance) is not supported.

4.3.2 Regression Results of Model 2

Based on a firm performance measured by the ROE for the present research, Model 2 can be identified by the following equation:

$$ROE = \alpha + \beta_1 BOD + \beta_2 Fsize + \varepsilon$$

Nonetheless, the present research will not show details regarding this model because of the results of ANOVA test. The model is insignificant with significance value of 0.117.

4.4 Diagnostics

To examine the robustness of the results, this study employed several diagnostics under Eviews 7 environment. As in the following table, the model is free from heteroskedasticity in accordance with the White Test. Homoskedasticity is a necessary requirement for a multiple regression model; hence, the results of this model support the argument that this model is robustness as its homoskedastic.

Table 6: Heteroskedasticity Test: White

F-statistic	1.891454	Prob. F(2,62)	0.1595
Obs*R-squared	3.737887	Prob. Chi-Square(2)	0.1543
Scaled explained SS	4.856701	Prob. Chi-Square(2)	0.0882

Further, the study utilized Partial Least Square (PLS) method to examine the stability of the results. After analysis, the study found that the results of the PLS is similar to the results of the Regression Analysis implying that the parameters of the model of this study are stable. The PLS model is provided in the appendix.

5. Conclusion

Recently, the business world has faced several failures at the level of all sectors such as Marconi and Enron and Arthur Andersen. Such failures and others have led to a shock for both developing and developed countries, giving consequently great attention to stakeholders that dealt with corporations which have poor level of internal control mechanisms, which is a confused matter.

A number of studies have dealt with the relationship between internal control mechanisms and firm financial performance. Yet, there have been a small number of empirical researches that take into account the investigation of such relationship through choosing ROE and ROA as a measurement of firm financial performance and firm size with board size as a dependent variable in dealing with industrial Jordanian listed firms.

The results suggest that there is a positive relationship between larger board size and firm performance with its measurement: ROA. However, there was no relationship between board size and firm size, and firm performance with its measurement: ROE. The present research recommended the future studies to investigate the size of board of directors and firm size with service firms listed at ASE as it also belongs to non-financial sector.

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Appendix

