



Effects of Board Size and Board Composition on Firms' Financial Performance in Saudi Arabia

Azzam Ibarhim Alhejji^{1*}, Arsalan Tauqir Khawaja²

¹ Department of Business Administration, Shaqra University, SAUDI ARABIA.

² Business School, The University of Wolverhampton, Wolverhampton, UK.

*Corresponding Author (Email: azzamusm@gmail.com)

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and earnings per share
(EPS).

Abstract

This paper investigates the impact of board structure on the firms' performance in Saudi Arabia. The variables which measure the corporate governance structure are the board composition, and board size using regression-based analysis. The sample of study covered all listed firms in Tadawul i.e., 159 firms listed in the Saudi Stock Exchange. This study's findings demonstrate that non-executive directors have a positive effect on all measurements of financial performance, indicating that the higher the percentage of non-executive directors, the more improved the process of independent decision-making is, which overflows into the firm's performance overall. This shows that higher numbers of non-executive board members resulted in improved and more effective decision making, thus impacting positively on the performance of the board and thus, overall company performance also. These findings are in line with agency theory. Moreover, these results complement agency theory. Lastly, the size of the board was identified to have a positive and significant impact on the performance of the company.

Disciplinary: Corporate Governance, Business Management.

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1 Introduction

Scandals such as Enron and WorldCom in the United States, Marconi in the U.K., and recently, Royal Ahold in the Netherlands, means that the subject of corporate governance has come to the forefront of academic research (Salim et al., 2016; Schnyder, 2012). Along with studies into the academic world, investors have also begun to monitor corporate governance practices. Naciti

(2019), defines corporate governance as the system by which the companies are directed and resources are controlled. The term can also be defined as the duties and responsibilities of the board of directors, and their interactions with the stakeholder groups (Osman & Nahar, 2015). The corporate governance model of Saudi Arabia has been given due importance for some time now. The economy itself is termed as a market model in the region; this is because there is good evidence of shareholders' utility maximization, as well as there is a good interaction among shareholders and directors, as observed by authors (Fallatah & Dickins, 2012). Therefore, this study aims to analyse the impact of corporate governance on the firms' financial performance for the companies operating in Saudi Arabia. There have been many arguments presented during the recent crisis regarding the destruction of shareholders' wealth by the board of directors, and since then, various scams have erupted and there have been failures of major corporations, such as Enron, WorldCom, and Global Crossing. Further, significant changes in terms of the governance structure in emerging economies have also occurred (Aguilera et al., 2012), particularly about the compositions of boards. However, there are limited studies in Saudi Arabia focussing on this perspective (Al-Matari et al., 2012). Hence, based on the relevant literature, this paper investigates the impact of board structure on the firms' performance in Saudi Arabia. There can be some important directions to this study, namely, the impact of corporate governance structure on the return on assets and earnings per share.

2 Literature Review

In 2004, corporate governance has been defined by The International Federation of Accountants (IFAC) as several responsibilities and practices used by the board of directors and managers to identify a strategic route that ensures achievement of objectives, risk control, and responsible use of resources (Pourali et al., 2019).

2.1 Corporate Governance Theories

2.1.1 Agency Theory

Agency theory is a cornerstone of corporate governance theory. There are two factors for the agency theory, one factor says that there are two parties involved, managers and the shareholders whose goals are quite clear, the second factor holds that the human beings are self-interested and conflicts can be found (Eisenhardt, 1989). Hence the firm can be considered as a legal fiction, where it is conflicts but there can be mitigation of such problems also via contracts. These contracts are with various parties like suppliers, consumers, creditors, etc. Mainly the agency roles of the boards mean the governance roles of the board of directors which are critical in mitigating the agency conflicts. Such roles have been examined in the literature by a whole body of papers (Eisenhardt, 1989). There have been specific papers that are based on the governance function of the boards (Goodstein & Boeker, 1991; Zahra & Pearce, 1989), there are many perspectives to this which ensures shareholder value maximisation.

2.1.2 Stewardship Theory

The stewardship theory's main concept is that the managers are like stewards whose main function is to maintain and maximise the shareholders' value since then only the utility functions them to be maximised. Unlike as in the agency theory the stewardship theory does not focus on the individual goals, the main aim here is to integrate the goals with that of the firms. Stewards are motivated when the organisational goals are met. However, the stewardship theory empowers the managers and under that structure, the managers are motivated to maximise the shareholders' goals, hence the theory is based on trust rather than the conflicts (Nicholson & Kiel, 2007). The managers however act autonomously so that the wealth can be maximised. Therefore, the agency costs are also minimised via such mechanisms as designed by these theories (Payne & Petrenko, 2019).

2.1.3 Stakeholder Theory

The stakeholder theories are better in explaining the firm corporate governance structure (Madhani, 2017). The main reason for this theory coming into prominence is that the researchers have recognised more and more that there are many externalities which the firms can create, hence there can be a bigger stakeholder universe. Many studies have suggested that all the stakeholders should work in collaboration for improving the firms' performance levels. There are other important issues for example the flow of information from the lower rank of the managers to the higher, then there are considerations for the working environment, etc. (Corduneanu & Milos, 2009). There were three classes of stakeholders designated: consubstantial, contractual, and contextual stakeholders (Dziurski, 2017). The first class of stakeholders is needed for the existence of the businesses (shareholders and investors, strategic partners, employees), the second types of the stakeholders have formal contracts with the businesses (financial institutions, suppliers, and sub-contractors, customers). The third class of the stakeholders is those who are important for the firms given the contexts, such actors should have greater credibility, etc.

2.2 Previous Related Studies

Many papers have studied the impact of corporate governance on firms' performances; the following sections provide a brief overview of a number of these studies. Generally, the overview focuses on the board size and non-executive directors.

2.2.1 Board's Size

There are some advantages for the large boards, for example, they can have access to greater collective information that the board subsequently possesses, and hence larger boards lead to higher performance (Belkhir, 2009). There however many disadvantages to the large size of the boards, for example, the transaction costs and the free riser problems. There are several communication and coordination problems too, for example, it is more difficult to arrange board meetings, reach consensus, leading to slower and less-efficient decision-making. Consensus

building is a very costly task in case of the large boards (Cheng, 2008). Again, the director's free-riding cost increases since the cost of not acting for any individual director is conferred on the board as a whole. Boone et al. (2007) have also observed the same, such inefficiencies also outweigh any benefits which is obtained from the large board's decision-making. Most of the empirical studies have shown a negative relationship between the board size and the firm performances, for example, Bawaneh (2020) concludes that this relationship is one of the prominent empirical regularities in the literature. There has been the use of the Tobin's Q or the market to book value ratio which shows that the relationship between the measure and the board size is significantly negative. Many studies have observed a similar relationship (Borlea et al., 2017; Coles et al., 2008). On the other hand, few studies found a positive effect of board size on performance (Adams & Mehran, 2005; Dalton et al., 1999). Eisenberg et al. (1998) have provided a weak negative relationship between the board size and firm level performance for small firms.

2.2.2 Non-Executive Directors

Many studies have discussed the impact of non-executive board members on the firm profitability. The main question is whether there is a causality between the non-executive board members' presence in the board and the firm profitability. The main theory is that the non-executive board members may do the monitoring of the insider managers better than the executive members. There has been a steady orientation of the systems towards such suggestions, for example, Holmstrom and Kaplan (2009) further extended such study to other economies for example the listed firms in NYSE and NASDAQ, where their study showed a significant positive impact on the non-executive directors on the firm performance. Morck et al. (1988) has argued that the outside directors can monitor better if they have greater economic incentives. There can be different effects here, for example, positive relationship at 5% which may be alignment effect, and negative effect at 5%, and 25% may indicate entrenchment effect. In the same vein, Shukeri et al. (2012) have found a negative impact of the independence of the directors on the profitability measures. A study by Johl et al. (2015) showed insignificant impact of the independence, whereas the size and experience in accounting of the directors are positively associated with the profitability levels.

3 Methodology

The methodology starts by exploring the causal relations among specific variables in line with a theoretical explanation, then the formulation of a set of hypotheses. Then, the data is gathered and examined. The significance of the findings of the data analysis is then utilized to substantiate or reject the proposed hypotheses, leading to the testing and formulation of the selected theory. Hence, utilizing a quantitative research approach is suitable for analyzing the hypotheses and theories of the research. Furthermore, employing a quantitative research approach ensures that the researcher stays independent from their data to satisfy the positivist epistemological position.

3.1 Regression Analysis and the Model of Study

Regression Analysis is used since this is an empirical study that examined the impact of corporate governance structure on profitability. The following sections explain the dependent and independent variables used in the analysis, where the models of study are:

- $ROA = \text{Board Size} + \text{Non-Executive Directors} + \text{Firm Size}$
- $EPS = \text{Board Size} + \text{Non-Executive Directors} + \text{Firm Size}$

3.2 Dependent Variables: Firm Performance

The most widely used measures for firm level profitability are the return on assets (ROA) and earnings per share (EPS). The return on assets measure has been used in the corporate governance literature (Al-Matari et al., 2012; Belkhir, 2009; Fallatah & Dickins, 2012; Guest, 2009). ROA is the measure of efficiency of asset usages and shows investors the amount of return that can be generated from the capital investments. Return on assets, at times, is viewed as a short-term measure of the efficiency of assets (Rehman et al., 2021). One alternative measure for profitability is earnings per share, which measures the profit generated for the shareholders by each share. It is important to remember that the main objective of the managers is to maximise the shareholder's wealth, hence measures such as this show the profitability of the firms from the perspective of the shareholders (Epps & Cereola, 2008; Mirza & Malik, 2019).

3.3 Independent Variables: Corporate Governance

In the standard literature, this variable is used by measuring the number of board of directors (Belkhir, 2009; Bennedsen et al., 2007; Cheng, 2008; Guest, 2009). Another widely used variable is the proportion of non-executive directors to the total directors (Holmstrom & Kaplan, 2009; Shukeri et al., 2012). In previous studies, the board composition was defined as the number of non-executive directors on the board by the total number of directors.

3.4 Statistical Analysis

SPSS software was employed for the statistical analysis. In addition, various t-tests, correlations, and regression results were used to analyse the impact of corporate governance on firms' performance. First, a thorough descriptive statistical analysis is provided, which is common practice for corporate governance (Erkens et al., 2012). The commonly used methods for central tendencies are mean, mode and median. Standard t-tests were also employed to estimate the differences in mean values between two sets of variables. Correlation analysis was utilized for estimating the strength of associations among the variables. Regression estimations were done to test the impact of the independent variables on the dependent variables.

3.5 Study Population and Sample Size

Financial data relating to the corporate governance mechanism was collected to perform the regression analysis. The data for the year 2015 of 159 firms were collected from the annual reports for each firm, which are available from the Saudi Stock Exchange (Tadawul) Website.

4 Data Analysis and Results

In this paper, Saudi Arabia's economy is being investigated, which is a tax-free regime. This regulation influences firms' corporate finance and thus also, the structures of corporate governance in place. The following section gives an in-depth descriptive analysis, after which correlation and regression-based models are also discussed.

4.1 Descriptive Statistics

Table 1 displays the descriptive measures relating to the variables for profitability and corporate governance. The measures of profitability are return on assets (ROA) and earnings per share (EPS), and the variables for corporate governance are the board size, and board composition. The findings demonstrate that eight directors are the average board size, with between five and twelve directors. In this study, five companies have five directors as a board size. On the other hand, there are two companies with 12 directors as board size. However, the four was the average of non-executive directors, with a very big range between 0 and 11 directors, clearly showing that corporate governance is applied very differently for various firms. The average non-executive directors illustrated a large standard deviation, indicating a high degree of variation between the firms. This variation definitely has a huge role to play as it influences whether the board can take independent decisions that might have a big impact on the board's performance. The financial performance measurements (ROA and EPS) have a large variation, demonstrating that some firms in the sample faced a large loss (e.g., Mohammad Al Mojil Group has -69% ROA and -7.534 EPS), while other firms achieved a very good financial performance (e.g., Saudi Arabia Fertilizers Co. has 37.8% ROA). Overall, the economy of Saudi Arabia is reasonably conservative in terms of its regulatory practices, which might directly influence the methods by which it regulates the corporate governance system.

Table 1: Results of descriptive analysis.

	N	Minimum	Maximum	Sum	Mean	SD.
Board Size	159	5	12	1324	8.33	1.561
Non-Executive Directors	159	0	11	693	4.36	2.509
ROA	159	-0.694	0.378	6.644	0.042	.1100
EPS	159	-7.534	8.282	268.787	1.690	2.511
Size (Assets)	159	7.647	11.638	1497.987	9.421	.8217
Valid N (listwise)	159					

4.2 Correlations Statistics

Table 2 offers a good representation of whether a regression analysis needs to be conducted as a further investigation. In the findings, the first thing to notice is that ROA was highly and positively correlated with EPS, which is anticipated as these are measures of profitability. The correlation among ROA, EPS, and firms size is positive and significant, indicating that larger firms have higher profitability. The variables of corporate governance, such as the size of the board, and

board composition are also correlated significantly with some of the firm-specific variables. For instance, board composition is correlated negatively with the size of the firm. Hence, larger firms have a proportionately lower number of non-executive board members than comparatively smaller firms. However, board size is significantly and positively correlated with the size of the firm, which might be interpreted as that larger firms are likely to have a larger board size. Signs about if the corporate governance variables can be utilised to improve the performance levels of the firm are less apparent. Casual relationships cannot be captured by correlation analysis and instead, simply illustrates if the variables are going in a similar direction or not. Additional regression analysis may result in better insight being gained from the findings.

The board size concerns the number of board directors. Adams and Mehran (2005) observe a positive and strong relationship between the size of the board and performance, while Guest (2009) found the opposite. Therefore, there are suggestions that the relationship might have a nonlinear nature. Coles et al. (2008) suggested that these relation types are rooted in organisational complexities. Similarly, the correlation analysis results demonstrated a significant and positive relationship among board size, ROA, and EPS, indicating that a larger board will improve a firm's performance. The board members' composition is crucial for optimum corporate governance. Composition is explained as the percentage of non-executive directors to total board members. This variable's effect on the financial performance of the company has been identified to be significant by many studies. The findings demonstrated a positive correlation between the proportion of non-executive directors and the financial performance of a firm. Yet, the findings are only significant for ROA (significant at 5%), suggesting that non-executive directors' presence enhances the financial performance of the firm.

Table 2: Results of correlations statistics.

		ROA	EPS	Board Size	Non-Ex.%
ROA	Pearson Correlation	1	0.830**	0.157*	0.194*
	Sig. (2-tailed)		0.000	0.048	0.014
EPS	Pearson Correlation	0.830**	1	0.218**	0.128
	Sig. (2-tailed)	0.000		0.006	0.107
Board Size	Pearson Correlation	0.157*	0.218**	1	-0.164*
	Sig. (2-tailed)	0.048	0.006		0.039
Non-Ex.%	Pearson Correlation	0.194*	0.128	-0.164*	1
	Sig. (2-tailed)	0.014	0.107	0.039	

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

4.3 Regression Statistics

Table 3 shows a summary of the regression analysis results. Two regressions with dependent variables were utilised: ROA and EPS. The size of the firm is a lifecycle variable that might convey the firm's maturity level. It might also signal the opacity level as smaller firms are increasingly opaque. Here, the primary aim is to examine the effect of this corporate governance variable on the measures of profitability. Many studies have identified these variables as having a significant and positive impact.

Table 3: Results of regression statistics.

Model Summary						
Model		R	R Square		Adjusted R Square	Std. Error of the Estimate
1		.302a	.091		.068	.106
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.175	4	.044	3.864	.005b
	Residual	1.740	154	.011		
	Total	1.915	158			
Model		Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.166	.099		-1.676	.096
	Board Size	.012	.006	.165	1.903	.059
	Non-Ex.%	.217	.082	.209	2.643	.009
	Size Assets	.010	.012	.076	.887	.377
a. Dependent Variable: ROA						
Model Summary						
Model		R	R Square		Adjusted R Square	Std. Error of the Estimate
1		.376a	.141		.119	2.35699222
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	140.881	4	35.220	6.340	.000b
	Residual	855.534	154	5.555		
	Total	996.414	158			
Model		Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8.354	2.200		-3.798	.000
	Board Size	.199	.136	.124	1.469	.144
	Non-Ex.%	3.921	1.818	.166	2.157	.033
	Size Assets	.856	.255	.280	3.355	.001
a. Dependent Variable: EPS						

Thus, the variable of corporate governance exhibits inconsistent impacts on the variables of profitability. The size of the board has a positive significant impact in terms of ROA, meaning that boards of a larger size might lead to more democratic decision-making, thus enhancing the decision-making process and the overall Company performance. In contrast, the board size has an insignificant positive impact in terms of ROA. As was discussed earlier, two varying arguments can be observed with regards to the association between the size of the board and corporate performance. The initial argument claims that a smaller board leads to improved corporate performance. The other argument suggests the opposite (Coles et al., 2008). Larger boards may incorporate an increased skillset and enhanced advice for management, which is effective when thinking about the environment's complexity and today's market's intense competitiveness. Therefore, this second argument claims that a bigger number of board members have a positive impact in terms of corporate performance (Dalton et al., 1999). Board composition here, however, was shown to have a positive effect on all of the measurements of financial performance, meaning that the higher the percentage of non-executive directors, the better the process of independent decision-making, which has positive repercussions for the firm's performance overall. These findings are consistent with some empirical studies as mentioned earlier. The size of the firm has a significantly positive impact on EPS and an insignificantly positive influence on ROA,

demonstrating that bigger firms have improved financial performance over firms that are smaller. Therefore, overall, the regression results illustrate that the variables for lifecycle and corporate governance significantly impact the measures of return. There is no necessity for additional investigation, yet, using further panel data methods that are more robust to confirm these conclusions may be required.

5 Conclusion

This paper aimed to analyse the impact of board composition and size on the financial performance of all listed firms in Saudi Arabia in 2015 considering two indicators: return on assets (ROA) earnings per share (EPS). Concerning corporate governance, the tested variables were board size and the percentage of non-executive directors. The agency theory and the resource-based perspectives both offer strong recommendations for independent directors' presence on the board to enhance the performance of the firm. However, there are a few variations among the theories. For instance, following the resource-based standpoint, executive directors can better supervise management than non-executive directors because of their heightened knowledge about the operations of firms. In contrast to other theories, stewardship theory claims that non-executive directors negatively affect firms' profitability. Non-executive directors can make many contributions, for example, boosting the size and diversity of the board, thus enhancing the quality of communication and board decision-making. The findings of this paper demonstrated that non-executive directors have a positive effect on all measurements of financial performance, indicating that the higher the percentage of non-executive directors, the more improved the process of independent decision-making is, which overflows into the firm's performance overall. This will result in improved and more effective decision-making, thus impacting positively on the performance of the board and thus, overall company performance. It is recommended to do a more comprehensive study in the future regarding stewardship for these firms, which could be built upon detailed case studies. Moreover, subsequent research in this context could concentrate on the corporate governance's impact on social responsibility or the cost of capital.

6 Availability of Data and Material

Data can be made available by contacting the corresponding author.

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Azzam Ibarhim Alhejji is an Accounting lecturer at Shaqra University, Saudi Arabia. He got a Master degree in Finance and Accounting from Wolverhampton University, UK. His research interstes are Computer Application and Modern Computer Technology such as Serverless Front-End Technology. Accounting, Corporate Governance and Financial Management.



Dr Arsalan Tauqir Khawaja is a Senior Lecturer in Finance at The University of Wolverhampton Business School. He has over seven years of experience consulting on economic reforms, private sector development, corporate finance, and Project/Programme management of SME development programmes. He served as the Team Leader of "Business Edge Quality Assurance"- a joint collaborative programme between SME Business Support Fund, Ministry of Finance, Government of Pakistan and International Finance Corporation- World Bank (Pakistan).