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The Association between Board Size, Independence and Firm Performance: Evidence from Saudi Arabia

Mohammed Alshetwi

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I. Introduction

The main function of the board ofdirectors is to monitor management's activities to ensure they are in line with shareholders' interest (Jensen & Meckling, 1976). Through their monitoring function, independent board members can reduce agency cost and ensure that management does not use the firm's resources in their own interests (Hillman & Dalziel, 2003). The size of a board is another important factor in corporate governance (CG) that affects the monitoring system and can improve the decision-making process (Haniffa & Hudaib, 2006), and in this way can help enhance the long term performance of the firms.

A review of the literature confirmed that board size and independence were among the important factors affecting firm performance, but the findings are contradictory. Some prior studies have concluded that independence of the board is associated with improved performance (Hossain, Prevost & Rao, 2001; Reddy, Locke, Scrimgeour & Gunasekarage, 2008), while in other studies an independent board was found to have a negative impact on firm performance (Fauzi & Locke, 2012; Agrawal & Kneoeber, 1996).

Meanwhile, many of the studies investigating the relationship between board size and performance found that smaller boards are more effective in improving the level of firm performance (Cheng, Evans & Nagarajan, 2008; Eisenberg, Sundgren & Wells, 1998; Guest, 2009; Hossain et al., 2001; Reddy et al., 2008); although some studies found that firms with large boards reported better performance (Coles, Daniel, & Naveen, 2008; Dalton, Johnson, &Ellstrand, 1999; Fauzi & Locke, 2012; Larmou & Vafeas, 2010).

Regardless, board size and independence have become a focus of CG regulations around the world. For instance, the Cadbury Report, published in 1992, mandated that all UK listed firms should appoint a minimum number of three outside directors on their boards, the majority of whom should be independent of the firms (Cadbury, 1992). Meanwhile, in the US, the Sarbanes Oxley Act (SOX) required that boards should have five members to provide full-time independent services (SOX, 2002). In this regard, The New York Stock Exchange (NYSE) required that independent members of boards should constitute the majority on the boards of all listed firms (NYSE, 2009).

In the case of Saudi Arabia, the CG regulation, issued by the Capital Market Authority (CMA) in 2006, emphasized the importance of board size and independence in improving governance quality and firm performance. Specifically, the CG regulation required that all listed firms could determine the number members on the board of directors provided that the number was no less than three and no more than eleven, the majority of whom should be non-executive members (CMA, CG Regulation, 2006).

While Saudi Arabia is no different from advanced countries in this respect, it should be noted that each country has unique characteristics that affect its economy and modelling of its business sector. The argument that one CG code, therefore, could be applied universally to all business structures ignores the differences between countries and their economic features that shape their business environment. It can also be pointed out that there are differences within a single country and between each business unit inside that country, with each based on its own leadership model and capital structure.

With regard to the case of Saudi Arabia, it should be noted that there are specific environmental factors affecting the business sector. For example, Saudi society is dominated by a tribal system in which decision making is concentrated in one influential

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person, and ultimately this can lead to aspects of cronyism and nepotism (Haniffa & Hudaib, 2007). Such a system affects the decisions related to nominating members of the board, so that directorships are often selected on the basis of relationship with the CEO and not on formal rules or professional competence. Although such a pattern may increase the board size in terms of quantity, it may negatively affect the quality of the board. This is due to the gap between the qualification of members selected and the requirements of the position held. In such a situation, it is to be expected that the board of directors would be less effective and more costly in terms of higher total remuneration paid to the members. On the other hand, such a model of board composition may explain the personal nature of business in which agency conflict is likely to increase as a result of absence of consultation and consensus in the decision making process. Another problem of such a model is related to secrecy of information, where CEOs determine the type and quantity of information available to different individual board members based on their personal preferences. This limitation of information can adversely affect the ability of directors in carrying out their monitoring functions (Jensen, 1983).

To summarize, these factors, related to society and social structure in Saudi Arabia, affect business structures and processes in ways that are different from what is expected in advanced countries. Consequently, adopting CG regulations from advanced countries and applying them directly in less developed countries like Saudi Arabia might not be an ideal option.

Considering the environmental factors of the Saudi business sector, the important question the current study set out to answer is: to what extent are the CG regulations appropriate for Saudi firms in terms of the relationship between board independence and board size, and the performance of Saudi nonfinancial listed firms?

The sample frame of this study includes all 329 of Saudi nonfinancial listed firms over the period 2013 to 2015. Two main statistical tests are used to analyze data for within- and between-firms variation tests.

The findings reveal that neither board size nor board independence is linked to firm performance. However, there is some evidence from an additional test that reveals a negative relationship between board independence and firms' financial performance, indicating that board members are less effective in carrying out their functions and represent a higher cost for their firms. Overall, the results are consistent with the view that the Saudi business sector is influenced by factors present in its society that give more attention to personal relationships instead of skill or competency in selecting the members of board directors.

These results may alert the policy maker (i.e. the CMA) to the differences between Saudi Arabia and advanced countries in terms of relevant business sector needs. Specifically, in its efforts to renew CG regulations, the CMA should adopt appropriate regulations that consider the specific needs of Saudi business sector instead of blindly borrowing regulations from abroad.

The remainder of this paper is organized as follows: Section 2 reviews the literature and develops the research assumption. The research methodology is described in Section 3. Section 4 reports and discusses the results of the study. The final section provides the conclusion, and discusses limitations of the study and possible areas for future research.

II. Theory and Hypothesis Development

Due to a separation between ownership and management, management might misuse the firm's resources to maximize their own interest. This would cause a conflict between owners of firms and management. Agency theory suggests that the board of directors can reduce such conflicts by acting as a monitoring control system and ensuring that management acts are consistent with the behavior of owners (Jensen & Meckling, 1976). However, as the board is responsible for authorizing access to a firm's resources (Hendry & Kiel, 2004), developing the strategic direction of the firm and providing guidance for setting roles and objectives aligned with owners' interests (Jensen, 1993, Zahra & Pearce, 1989), it is most important to ensure that performance complies with established goals. In addition, as part of their responsibilities to ensure that firms achieve the goals established, the boards have the authority to remove a CEOs if he or she fails to perform as expected (Zahra & Pearce, 1989), thereby indicating the direct influence board members can exert on corporate performance.

In general, board size, among other board characteristics, is considered to be an important factor that affects the monitoring of management and limits the extent of domination of the CEO on the board of directors (Fauzi & Locke, 2012; Zahra & Pearce, 1989), and can improve the decision process (Haniffa & Hudaib, 2006) leading to enhanced corporate performance.

Similarly, independent boards can also add value to firms in terms of monitoring management activities and the financial performance of the organization (Hillman & Dalziel, 2003). They also influence a firm's performance in such matters as monitoring the operational processes (Fuzi, Adliana, & Julizaerma, 2016) encouraging managers to focus on long term performance rather than routine activities (Alves, 2014) and authorizing the decisions of management based on whether they benefit shareholders (Fama & Jensen, 1983). In this regard,

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Haniffa and Hudaib (2006) indicated that an effective independent board helps reduce agency cost resulting from misallocation of resources. Indeed, an independent board with a majority of non-executive directors can better provide firms with experience, skill, and contacts (Haniffa & Hudaib, 2006; Hermalin & Weisbach, 1988) and thereby helping firms to identify the opportunities for better performance.

Zahra and Pearce (1989) argued that the presence of a majority of independent directors is important for developing strategies through their involvement in debates and discussions related to established strategies and long term objectives. In this respect, independent boards provide assurance that the firm's strategies are established consistent with the shareholders' objectives.

Previous studies have documented that firms with independent boards tend to report better performance. For example, Reddy et al. (2008) used the data from small firms to investigate the effect of independent boards, among other CG characteristics, on the performance of New Zealand listed firms and found that independent boards improved firm performance, as did Hossain et al. (2001). Likewise, Fauzi and Locke (2012) found a positive relationship between the proportion of non-executive directors on the board and firm performance as measured by Return On Asset (ROA).

Using a sample consisting of firms listed on the New Zealand Stock Exchange, Coles et al. (2008) found that firms with a more complex structure with more outside directors on the board performed better in maximizing the value of firms. Similarly, Luan and Tang (2007) documented a positive relationship between outside directors and firm performance, implying that the more outside directors there were on the board, the more independent the board would be of the management and the better the firm would perform.

A study undertaken by Bhagat and Black (2002) revealed that low-profitability firms tend to increase the independence of their boards with the expectation of better future performance. This implies that firms recognize that having more independent directors is a viable strategy for improving their performance.

In a similar vein, Hermalin, and Weisbach (1988) had earlier reported that in low- profitability firms, internal directors are replaced by outside directors, and they suggested that ineffective management by internal directors could cause poor performance, thus leading to the need for more outside directors. This indicates that more independent boards, measured by the proportion of outside directors on the board, are better able to monitor management and hence improve a firm's performance.

Dahya and McConnell (2007) found that British firms that added outside directors in response to the adoption of the Cadbury Report were able to increase their operating performance, indicating that independence of the boards measured by the number of outside directors does indeed have a beneficial impact on the performance of firms.

Nevertheless, despite the studies that have shown the positive impact of board independence on firm's performance, some research studies provide evidence that independence of the board is negatively associated with the performance of firms (Agrawal & Kneoeber, 1996; Fauzi& Locke, 2012); while other studies found board independence had no significant impact on the firm's performance (Fuzi et al., 2016; Haniffa & Hudaib, 2006; Wang & Oliver, 2009). One explanation for the negative results might that the non-executive directors have had limited time or irrelevant experience to perform their functions effectively. Wang and Oliver (2009) mentioned other possible reasons for this situation, including the appointment of non-executive directors who share similar demographic characteristics as other board members, or where results were reported from passive boards rather than more active boards. This implies that non-executive directors may be selected intentionally to play a passive role in the boardroom. In other cases, non-executive directors may lack real independence as they are controlled by the CEOs (Bhagat & Black, 2002), and therefore they will be less effective in monitoring management; their appointment is merely to comply with the CG regulation. This would lead to adding more non-executive directors with a higher cost to the firm (Fauzi& Locke, 2012) and less contribution to the firm's performance.

In summary, research on the relation between independence of the board and firm performance has produced mixed results; some studies have reported positive results supporting the view that independent boards help enhance a firm's performance as they are better able to monitor management and ensure that management activities are in compliance with the interest of owners. Hence, they help limit misuse of firm's assets and improve earnings outcomes. In contrast, some studies documented that with the domination of CEOs on the board of directors as noted in less developed countries, non-executive directors as indicators of independence of the board become more costly, in that they outweigh the benefit obtained from them. This cost is a function of many factors, such as lack real independence, limitations of time, irrelevant experience, and higher remuneration.

CMA in Saudi Arabia has adopted a positive view when developing CG regulations. It requires that non-executive directors shall constitute the majority of the board, and the one-third of the board shall be composed of independent directors.

The current study extends prior studies by investigating the effect of these requirements on the performance of Saudi nonfinancial listed firms. Since

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this study uses data from an environment with unique characteristics (i.e. more adherence to social norms and the influence of a tribal system), it is anticipated that the relation between independence of the board and firm performance could well be negative rather than positive.

This implies that when the proportion of non-executive directors increases, as an indicator of independent boards, the level of firm performance decreases, correspondingly. In other words, an increase in the proportion of non-executive directors is associated with a reduction in the level of firm's performance. Hence, the first hypothesis of this study is stated in the alternative form as follows:

H1: There is a negative relationship between the proportion of non-executive directors on the board and the performance of Saudi nonfinancial listed firms.

Board size is another important factor affecting the performance of firms. The literature reports that the size of the board can affect performance through its role in monitoring management and the board's involvement in the making decision process of the firms (Haniffa & Hudaib, 2006).

In fact, two competing views are used to explain the association between board size and the performance of firms. In the first view, researchers argue that small boards are more effective in improving performance because they can be more easily monitored by shareholders (Haniffa & Hudaib, 2006), and thus they become very helpful in ensuring good outcomes.

In addition, Guest (2009) indicated that coordination and communication problems would be less when boards are small, indicating that decisions could be made quickly with small boards. Reddy et al. (2008) argued that small boards are likely to reach consensus more easily on issues being discussed simply because they consist of fewer members. Coles et al. (2008) also argued that small boards are more effective and more productive and cohesive. This suggests that small boards deal better with financial performance issues in a timely and productive manner, thereby being more active compared to large boards and more likely to attain better performance.

Prior studies provide evidence consistent with this view. For example, Guest (2009) investigated the impact of board size on firm performance using a large sample of UK listed firms. His results support the hypothesis that larger board size has a negative impact on the performance of firms, implying that smaller boards are more effective in getting better performance.

In the American corporate context, Cheng, Evans, and Nagarajan (2008) examined the association between board size and firm performance. Their findings revealed that smaller board has a positive influence on the firm performance. Specifically, this relationship existed at higher takeover intensity. Similarly, Yermack (1996) investigated board size for a large sample of 452 US firms over the period 1984-1991 and provided evidence that smaller boards were more effective in enhancing the firm's value and hence maximizing earnings outcomes. In a study of New Zealand firms, Hossain et al. (2001) found that firms with fewer directors were better able to achieve a higher level of performance.

Eisenberg, Sundgren, and Wells (1998) reported a negative relation between board size and financial performance of firms in small and mid-sized Finnish firms. Likewise, Reddy et al. (2008) also found evidence of the negative effect of board size on firm performance, implying that as board size increases, the level of performance decreases. Problems of large boards that affect their effectiveness have been documented in the literature, such as higher co-ordination costs (Jensen, 1993), slow decision making processes (Zahra & Pearce (1989), and higher free riding cost (Cheng et al., 2008).

However, the alternative view that larger boards are more effective in improving the performance of firms also has some support. It is argued that larger boards provide a wider diversity of experiences and skills that are needed to secure firms' resources (Haniffa & Hudaib, 2006); they can give good advice and counsel to management and hence improve firm performance (Dalton et al., 1999). In this context, Zahra and Pearce (1989) argued that because larger boards have more experts and qualified members, they would be better able to monitor the CEOs and retain the power required to resist attempts at domination or exploitation by management. Hence, they would help enhance the quality of managerial activities and improve earnings outcomes.

It is also suggested that, because of wider networks of contacts, firms with larger boards are likely to have easier access to outside resources such as external funding and suppliers (Dalton et al., 1999); that, in turn, affects the implementation of strategies and facilitates transactions and contracts with external resources, all of which contribute to improved firm performance.

Several studies provided evidence supporting this view. For example, Coles et al. (2008) found that board size is positively associated with Tobin's Q implying that larger boards help enhance value maximizing outcomes for firms. Larmou and Vafeas (2010) also found that having a larger board positively influences the performance of smaller firms that have already suffered from poor operating performance. The results of a study undertaken by Fauzi and Locke (2012) suggested that large boards are more effective in monitoring of management and achieving long-term objectives. Likewise, Dalton et al.'s (1999) meta-analytic study investigated whether number of directors had an influence on the performance of financial firms. They

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found a positive relation existed between board size and firm performance.

In sum, the literature on the relation between board size and firm performance is divided. On one hand, some researchers have argued that smaller boards are more effective in improving firms' performance as they involve less coordination and fewer communication problems. Because they are more cohesive and cooperative, they are more likely to reach consensus easily, which is important in order to deal with financial performance issues in a timely and productive manner.

On the other hand, other researchers argue that large boards are more effective as they include directors who have broad, diversified knowledge and the skills needed to secure firm's asset, provide good advice and counsel, and reduce the domination and exploitation of management. Because external directors often serve on multiple boards they have strong contacts with outside firms, which facilitates transactions and contracts with external resources.

In the case of Saudi Arabia, CMA required that the number of board members of each listed firms shall not be less than three and not exceed eleven. This implies that CMA stands in the middle between the two competing views.

Considering the CMA regulations and also the inconsistent results regarding this issue published in the literature, the current study does not predict the direction of a relationship between board size and firm performance. Hence, in order to examine whether board size is associated with the performance of Saudi nonfinancial listed firms, the second hypothesis of this study is stated, in alternative form, as follows:

H2: There is relationship between the number of board members and firm performance in Saudi nonfinancial listed firms.

III. Methodology

a) Data

The current study uses data obtained from the financial reports of Saudi nonfinancial listed firms over the period 2013 to 2015. Data were collected from TADAWL, the official site of the Saudi Stock Exchange. The reason for selecting this period is to examine the relationship between board size, independence and firm performance after the adoption of the CG regulation. Following Larmou and Vafeas (2010), it is considered that a period of three years is sufficient to reflect the effect of both board size and independence on the firms' performance. However, banks and insurance firms are excluded from the sample due to their specific regulatory requirements (Dahya & McConnell, 2007; Guest, 2009; Haniffa & Hudaib, 2006; Hermalin & Weisbach, 1988) that lead to differences in CG practices.

The initial sample consisted of 355 firms after excluding banks and insurance firms. Eight firms were found to be outliers, and a further eighteen firms were excluded due to incomplete data. This yields the final sample of 329 firms over the period 2013-2015. Table 1 reports the number of firms per year for the final sample used in the analysis.

Table 1: Sample description

Year	Firms	Sample/Total
2013	105	94%
2014	110	95%
2015	114	89%
Total	329	

b) Variables

The first independent variable is board independence. This variable is defined in line with the CMA definition and studies by Haniffa and Hudaib (2006) and Reddy et al. (2008). It is defined as the proportion of nonexecutive directors to total number of directors on the board. Nonexecutive directors are all members of the board who do not have a full- time management position at the firms, or who do not receive monthly or yearly salary (CMA, 2006).

The second independent variable is board size. It is measured as the total number of executive and nonexecutive members of the board, as used in previous studies (Fauzi& Locke, 2012; Reddy et al., 2008).

The dependent variable of this study is firm performance, defined as overall earning power or profitability. Consistent with prior studies (Fallatah & Dickins, 2012; Guest, 2009; Huybrechts et al., 2016), this study uses an accounting-based measurement of performance, namely Return On Asset (ROA). This indicator of performance is widely used in the literature to capture outcomes of management activities. Hence, it is appropriate for studies that examine board-performance relationships. ROA is calculated as dividing operating profit before depreciation and provision by total asset.

Deriving from earlier studies, several control variables are included in the regression model. Leverage (LEV) is a ratio of total liabilities to total assets. Prior studies have documented that leverage is

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negatively associated with firm performance (Fallatah & Dickins, 2012; Guest, 2009; Reddy et al., 2008). Firm size (SIZE) is the natural log of total assets.The relationship between size and firm performance is expected to be positive (Fallatah & Dickins, 2012; Guest, 2009; Haniffa & Hudaib, 2006). Board meeting activity (BMEET) is included in the model to capture the effect of board activities. Zahra and Pearce (1989) argued that effective board meetings are an important tool to ensure that the board is active in monitoring firms' performance. Larmou and Vafeas (2010) used a composite index of factors including board and committee meetings to measure board activity; they found that board activity is positively correlated with firm performance. It is measured by the number of board meetings held during a year. Age (AGE) is the number of years from the first listing in TADAWL. In line with Guest (2009), who found that age has a negative impact on ROA, the current study expects a negative relationship between firm age and performance. Business segment (SEGMENT) is measured by the number of business segments that are included as main activities of firm. In line with the findings of previous studies (Cheng et al., 2008; Hossain et al., 2001), the current study expects that the number of business segments is negatively associated with performance. Table 2 summarizes the measurements of the variables used in the regression model.

The regression model is specified as follows:

$$ROA = \beta 0 + \beta 1BIND + \beta 2BSIZE + \beta 3LEV + \beta 4SIZE + \beta 5BMEET + \beta 6AGE + \beta 7SEGMENT + e$$

Where ROA is an accounting-based measurement of firm performance and other variables are as defined in table 2.

Table 2: Variables Definition

BIND	=	the proportion of nonexecutive directors to total number of directors on the board
BSIZE	=	the total number of executive and nonexecutive members of the board
LEV	=	The ratio of total liabilities to total assets
SIZE	=	the natural log of total assets
BMEET	=	the number of board meetings held during a year
AGE	=	the number of years from the first listing in TADAWL
SEGMENT		the number of business segments that are included as main activities of firm

c) Model

In general, the model is used to examine whether board size and independence have an influence on firm performance. Following the studies by Guest (2009) and Larmou and Vafeas (2010), two analytic methods are used to explain the variation in the level of firm performance resulting from the independent variables (i.e. the independence and size of board). The within-firms variation model is estimated first, for each firm in time. The aim of this test is to capture the effect of other factors that are not included in the model; in this way this fixed effect model reduces any endogeneity problem that exists in the board - firm performance relationship (Guest, 2009). To do this, data for each firm is entered three times in a panel covering the period of 2013-2015. This yields an unbalanced sample of 329 firms.

The second model is estimated to explain the between-firms variation by using the mean value for each firm (i.e. one observation per firm). The aim of this test is to capture the differences in firm performance across firms. Notably, the regression model is also re-estimated for each year separately by using the real value for each variable instead of the mean value. The purpose of re-estimation analysis is to enhance the validity of the between-firms variation test. In addition, this technique provides additional control for bias in standards errors (Guest, 2009).

IV. Results

a) The main results

The descriptive statistics of the sample are presented in table 3. It shows that the mean value of ROA is .06 with a minimum value of -.18 and a maximum value of .33. This statistic value indicates that Saudi nonfinancial listed firms reported generally low performance over the period 2013-2015. On average, the proportion of non-executive members of board is about 38 %, suggesting that the proportion of non-executive members of board in Saudi nonfinancial listed firms is relatively low, a little over one-third of board directors. In terms of board size, the number of board members range from 4 to 12 members, with the mean value of 8. It appears that Saudi nonfinancial listed firms tend to adhere to the CG regulation that requires the number of board members to be between 3 and 11. It is

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suggested that the board size is not so large as to adversely affect the firm's performance, nor is it so small to the extent that the firm suffers from problems related to smaller boards. The mean value of leverage is .37, a ratio of total liabilities to total assets that can be considered low for the Saudi nonfinancial listed firms included in the sample. On average, Saudi nonfinancial listed firms are mid-sized firms in terms of total assets. With regard to board activity, the mean value of the number of board meetings is five per year, which can be considered sufficient in terms of frequency. On average, the Saudi nonfinancial listed firms are not recently established; the mean number of years from the first listing in TADAWL is 17.2 years, with a range from 1 year to 46 years. Finally, the mean number of sectors in which the Saudi nonfinancial listed firms are engaged is about 3, with a range from 1 to 10.

Table 3: Descriptive Statistics

Variable	Minimum	Maximum	Mean	Median	Standard deviation
ROA	-.18	.33	.06	.05	.08
BIND	.00	.89	.38	.43	.19
BSIZE	4	12	8	9	1.5
LEV	.01	.84	.37	.36	.21
SIZE	4.3	8.5	6.4	6.35	.69
BMEET	2	16	5	5	2.2
AGE	1	46	17.2	13	13.4
SEGMENT	1	10	2.96	3	1.80

Table 4 presents the correlation between the variables included in the model. None of independent variables are strongly related to each other, indicating the absence of any multicollinearity problem in the regression model.

Table 4: Pearson Correlation Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ROA (1)	1	.02	.11*	-.31*	.09	-.02	.11*	-.17*
BIND (2)		1	.23*	.24*	.41*	.08	-.07	.02
BSIZE(3)			1	.10*	.45*	-.05	-.001	-.006
LEV(4)				1	.43*	-.04	-.31*	-.07
SIZE(5)					1	.07	-.05	-.06
BMEET(6)						1	.19*	.04
AGE (7)							1	-.06
SEGMENT (8)								1

Note: Correlation is significant at the .05 level; variables are as defined in model specification in section III

Table 5 presents the regression results for within- and between-firms variation models. Both models are significant at the .01 level with F values of 11.41 and 2.91, respectively.

The result of within-firms variation model reveals that board independence is not associated with firm performance (p= .75). This result implies that an independent board has no significant impact in explaining variance in the level of firm performance for any one firm over time. In the between-firms variation model, board independence is also not significantly associated with firm performance (p=.89) implying that board independence is not able to explain the variance in firm performance across firms included in the sample. The result of the regression models for each year, as reported in table 6, reveals that board independence has no significant impact(p= .63; p=.83; p=.83). Therefore, the first hypothesis of this study is not supported. This result suggests weak performance on the part of non-executive directors. Overall, the findings of this study are not consistent with the view that an independent board has an important role in reducing any agency conflict that might arise from a separation between owners and management.

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Table 5: Regression Result

ROA= β0+ β1BIND+ β2BSIZE+ β3LEV + β4SIZE+ β5BMEET+ β6AGE+ β7SEGMENT+e		
Variables	Within- firm variation	Between- firm variation
Intercept	.35	.24
	-(.93)	-(1.18)
BIND	.75	.89
	(.32)	-(.14)
BSIZE	.50	.64
	(.67)	(.47)
LEV	.000*	.001*
	-(7.42)	-(3.54)
SIZE	.000*	.04*
	(3.75)	(2.07)
BMEET	.38	.99
	-(.88)	(.01)
AGE	.74	.19
	-(.34)	(1.33)
SEGMENT	.000*	.06
	-(3.72)	-(1.87)
Firm effect	Yes	
Time effect	Yes	
Adjusted R^2=	.18	.11
F-ratio =	11.41	2.91
n =	329	106

*Note. *p-values represent one-tailed tests when direction of coefficient is consistent with expectations; variables are as defined in model specification in section III.*

One possible explanation for this result is the fact that the Saudi population consists of many tribes, and respect for the wishes of a tribal leader may outweigh official rules. This leads to the proposition that the business environment in Saudi Arabia is shaped by the tribal system (Haniffa & Hudaib, 2007). In this regard, Haniffa and Hudaib (2006) indicated that non-executive directors, in less developed countries, are frequently selected based on considerations such as political affiliation or contacts and not because their qualifications or experience.

Another problem linked to such a system is related to board culture, where most patterns of behavior exhibited by the board of directors are derived from those applied in a tribal system (in this case, for example, the rules of nominating non-executive members on the board). Based on this view, most non-executive members of boards are selected from among those individuals who have a strong tribal relationship with the CEOs. Consequently, politeness and deference rather than truth and frankness would be common during discussions at board meetings and, in turn, this would adversely affect the performance of firms (Jensen, 1983). This situation also results in selecting directors with irrelevant experience or poor knowledge about the performance of firms and hence they will be not able to review CEO actions or disclose the faults of management. Another problem when the power is concentrated in one or a few individuals is that information is closely controlled; in this issue, the CEOs determine the type and quantity of information available to members of board (Jensen, 1983). In some cases, they prevent non-executive directors from access to information that might disclose weaknesses in firm performance.

However, the result is consistent with the findings of Bhagat and Black (2002), Haniffa and Hudaib (2006), and Fuzi et al. (2016) who found that board independence was not significantly associated with firm performance.

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With regard to board size, the results of within-firms variation model reveal that board size is not statistically associated with firm performance (p= .50). In other words, the number of board members has no significant impact on the variance in the level of firm performance for any single firm over time. In the between-firms variation model, board size is also not significantly associated with firm performance (p=.64); thus it is unable to explain the variance in firm performance across firms. The result of the regression models for each year, as reported in table 6, reveals that board size does not have any significant impact (p= .79; p=.78; p=.44). Therefore, the second hypothesis of this study is not supported. This finding can be attributed simply to the effectiveness of the members of boards. Although the number of board members seem to be sufficient (eight on average), they are ineffective in performing their functions and therefore serve merely to fill empty seats. This finding stresses the importance of having executive members to perform complementary roles in improving the performance. As executive directors work in firms on a daily basis, they would be more familiar with the operating systems and the processes that need to improve (Haniffa & Hudaib, 2006). Thus, familiarity with the inner workings of the firm would help identify the opportunities for its success.

Table 6: Multiple Regression of ROA on Board size and independence (model 1-3)

Variables	Model 1	Model 2	Model 3
Intercept	.31	.57	.87
BIND	.63	.83	.83
BSIZE	.79	.78	.44
LEV	.00*	.00*	.00*
SIZE	.02*	.02*	.13
BMEET	.64	.17	.68
AGE	.98	.70	.44
SEGMENT	.06**	.03*	.03*

*Note. *, ** Represent statistical significant at P<.05, P<.10, respectively. One-tailed test for a directional predicted sign, and two-tailed otherwise.*

Considering the very small percentage of executive directors of Saudi nonfinancial listed firms (only .11 of board members), it is suggested that firms should find a mix of both non-executive and executive directors so that both can contribute effectively to firm's performance. Since the recent regulations in Saudi Arabia have not specified the number of executive board directors, there is a need to open discussion on this issue due to the importance of having executive directors along with the non- executives on the board of directors.

In terms of control variables, the results show that leverage (LEV) is negatively associated with firm performance (p< .01), confirming that firms with a high level of leverage achieve a lower level of performance. Size (SIZE) is positively associated with firm performance (p< .05) implying that larger firms out-perform smaller firms. Finally, the number of segments in which a firm operates (SEGMENT) is negatively associated with firm performance (p< .01). The remaining variables (BMEET and AGE) were found to be not significant. The result of the AGE variable also shows that the number of years of listing does not have any influence on firms' performance.

b) Results of additional tests

Several tests were carried out in order to enhance the validity of the key results.

Alternative measurements of the variables: To test the stability of the initial analysis, alternative measurements are used for board size, independence, and ROA. First, following Larmou and Vafeas (2010) the between-firms variation analysis were repeated using industry-adjusted ROAs. Each value of ROA is adjusted by the corresponding median ROA of firms in the same industry. The TADAWL classification was adopted to classify the industries into 13 industries excluding banks and insurance firms. The aim of this technique is to reduce the fluctuation in ROA across industries, and enhance the accuracy of comparisons made between firms in similar industries included in the sample (Larmou & Vafeas, 2010). However, there was no change in outcome: the result shows that variation in the median industry-adjusted ROA is not influenced by either board size or independence (p= .83; p= .32 respectively).

In line with a study carried out by Fallatah and Dickins (2012), board independence was measured by a dummy variable taking 1 when the board consists of a majority of independent directors. Notably, this definition uses independent directors instead of non-executives to

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measure board independence. The un-tabulated result shows that association between board independence and the firm performance does not change across firms, while the coefficient of board independence remains insignificant (p= .10). In within- firms variation model, board independence is not significant in explaining within-firms variation in ROA values (p= .11).

With regard to board size, it is measured by the natural log of board size (Cheng et al., 2008), proposing that the relationship between the board size and performance is non-linear. The two models (i.e. with- and between- firms variation) were re-estimated to test the relation between board size and performance. The results show that the relation between board size and performance for both models are not significant (p=.32, p= .47 respectively).

The interaction effect: this study controlled for the effect of interaction between variables on the level of performance as measured by ROA. The study of Wang and Oliver (2009) reported that large firms are more likely to have independent boards and, in turn, this might affect the performance of these firms. To test the effect of interaction between board independence and firm size on performance, the variable of BIND*SIZE is included in the model. The finding (not reported) shows that the interactive variable (BIND*SIZE) is not significant (p= .38); thus, the result remains unchanged. In particular, the result indicates that non-executive board members in large firms in Saudi Arabia appeared to play no significant role in improving the performance across firms.

Prior studies (Eisenberg et al., 1998; Fauzi and Locke, 2012; Guest, 2009) have documented that board size is associated with firm size proposing that larger firms are more likely to have larger boards of directors to meet with their increased needs. To test the effect of interaction between board size and firm size on performance, the variable of BSIZE*SIZE is included. The result shows that the coefficient of the interactive variable (BSIZE*SIZE) is not significant (p=.16) implying that the number of board members in larger firms do not have a significant role in improving the firms' performance. In order to test whether board size is associated with performance of firms in small and mid-size firms, the sample was split into two subgroups based on the median value of firm size. The values below the median of firm size (6.35) represent the small and mid-size firms. The result shows that board size does not have a significant impact on the performance of small and mid-sized firms (p=.78). Taken together, the results suggest that size of firms does not modify the relationship between board size and firm performance.

Sensitivity to change in the level of independent variables: The regression model was also re-estimated to test whether the relation differs based on the variation in the level of independent variables.

In first test, it is proposed that the relation between board independence and firm performance is not constant across the entire range of board independence (Bhagat and Black, 2002). In order to test this hypothesis, the range of proportion of non-executive directors on the board is divided into three levels based on quartile values. Each level could be a breakpoint at which the relationship between board independence and firm performance might be significant. The three levels of board independence are: low level of board independence (BINDL): taking 1 if BIND< .24 (the scores less than the first quartile); mid-level of board independence (BINDM): taking 1 if .24<BIND<.54 (the scores representing the interquartile range between .25 and .75 of values); high level of board independence (BINDH): taking 1 if BIND>.54(the scores greater than the top quartile). To run the regression, BIND is replaced by one of the three variables and entered one by one to the initial model. This yields three regression models. The results of the three models reveal that neither of the first two coefficients of board independence (BINDL and BINDM) is significant across firms (p=.91; p=.14 respectively). However, the variable of high board independence is negatively significant at the 10 percent level of significance (p=.058). This provides some evidence that firms with a high percentage of non-executive directors perform more poorly than other firms. Collectively, the results suggest that non-executive directors are neutralized by the power of the CEOs. In most cases, their presence in the firms has no effect on performance, while in some other cases they might have an adverse impact due to their higher cost in terms of board remuneration paid to them and lower benefit obtained from them.

In terms of board size, Guest (2009) indicated that the relation between board size and firm performance might be determined by the optimal board size in which firms achieve a highly valued mix of non-executive and executive board members. To test whether the relation between board size and performance might be influenced by a change in the number of board members, the range of board size is divided into three levels based on the percentile values: low, mid, and high size. This yields three independent variables representing the different levels of board size (i.e. BSIZEL, BSIZEM, and BSIZEH). The first variable (BSIZEL) is measured by a dummy variable taking 1 if board size <7 members; the second variable (BSIZEM) is measured by a dummy variable taking 1 if 7<board size <9 members; the third variable (BSIZEH) is measured by a dummy variable taking 1 if board size >9 members. Each of the three variables is used separately in the regression model instead of board size. The results of the three models show that none of the coefficients of the three variables representing different levels of board size (i.e. BSIZEL, BSIZEM, and

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BSIZEH) is significant (p=.25; p=.11, p=.43, respectively). This implies that the relation between the board size and performance is not influenced by a change in the number of board members and remains constant across board size.

V. Conclusion

This paper has examined the association between board size, independence and firm performance as measured by ROA. In terms of board independence, the results of this study suggest that board independence is not associated with firm performance. This implies that the CMA recommendation regarding the independence of the board (i.e. that non-executive directors shall make up the majority of members of the board of directors) seems to be ineffective and it is posited that this is because of the specific nature of business structure in Saudi Arabia. In general, Saudi business structure is influenced by societal norms that are heavily influenced by the tribal system and tribal values. In such a system, decision making is based on the views of one or a few individuals who are in positions of high esteem and not based on the official requirements. For example, decisions regarding the selection of individuals for certain positions in the company are most likely to be based on their relationship to the influential person, regardless of their skill or qualification. This situation often results in the selection of unqualified directors with irrelevant experience or inadequate knowledge about the performance of the firm. Hence they will be not able to review the CEO's actions or disclose the faults of management. Another problem is the close control over information by the CEOs, who can determine the type and quantity of information available to other members of the board. In particular, the CEOs prevent non-executive directors from gaining access to the information that they need to be able to monitor the management, thus affecting their ability to contribute effectively to the firm's performance.

The result of the additional tests provide some indication that board independence can, in fact, have an adverse impact on the firm's performance. In particular, the results of the additional tests show that firms with a higher percentage of non-executive directors perform worse than firms with a smaller proportion of non-executive directors. This is because, in the Saudi business context, non-executive members lack real independence from management and represent an additional cost burden that outweighs any benefits obtained from them.

In terms of board size, the results reveal that, similarly, the number of board members is not associated with firms' performance. This unexpected result, which contradicts the findings of a number of other studies, occurs simply because members of boards in Saudi nonfinancial listed firms are not effective in performing their functions. In other words, there is a discrepancy between the requirements of the position and the official qualification of the appointees. This results in the presence of directors on boards who are unable to contribute meaningfully to firms' performance.

In view of a new movement in Saudi Arabia toward reviewing the CG regulation, the results of this study may be useful for policy makers (i.e. CMA) who are concerned about the relation between board size, independence and firm performance. In terms of board independence, it is recommended that CMA require firms to have a nomination and remuneration (N&R) committee whose members shall be non-executive members. However, Since the R&N committee is responsible for selecting members of boards, it is expected that CEOs are influenced by societal factors (i.e. relation or contact with directors) when selecting members of boards. To alleviate this problem, it is suggested that the CEOs could be not be included as members of the R&N committee. On the other hand, to ensure that non-executive directors are both qualified and independent from management, it is recommended that CMA encourages firms to have more directors who serve on multiple boards. In terms of board size, CMA should consider the importance of the role of executive directors in improving firm performance, instead of continuing the current model of board composition that focuses only on non-executive directors.

A limitation of the current study concerns the use of an accounting-based measurement of firm performance (i.e. ROA). This was used because information on market-based measurements of performance was not available. As noted by Dalton, Daily, Ellstrand, & Johnson (1998), accounting-based measurement of performance might lack precision since it involves estimations that are more subject to management control.

Nevertheless, the current study has addressed several issues that might be researched further in future studies. First, the current study was carried out to examine the issues of board size and independence in one country of the Gulf Cooperation Council (GCC); that is, Saudi Arabia. It is recommended that future studies could obtain evidence from other GCC countries that have similar business structures. Second, it is recommended that future studies examine the role of board committees on firm performance. One suggested area is to examine whether audit committees play a role in improving corporate performance. A third possible area for future research is the effect of CEOs on board independence and firm performance when they chair the R&N committee. Fourth, the current study has used the quantitative method to examine the role of board size and independence on firm performance. It is suggested that future studies should incorporate

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qualitative methods to study such issue in more detail. Finally, future studies might investigate the effect of other factors on the relation between board size, independence and firm performance. For instance, culture is an important factor that could modify the relationship between board size, independence and firm performance, especially in less developed countries, and it is a viable issue for future research to investigate.

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