AN EMPIRICAL ANALYSIS OF THE IMPACT OF BOARD STRUCTURE ON THE PERFORMANCE OF LARGE SAUDI FIRMS

Abstract

In 2006 the Saudi Capital Market authority issued the Corporate Governance Code which proposed a variety of monitoring mechanisms that should improve corporate Governance. However, the impact of these mechanisms on firm performance is still ambiguous. This study aims to examine the effect of corporate governance mechanisms on the performance of Saudi listed companies. Specifically, the composition, size and leadership style of boards are tested. The analysis is extended to investigate the moderating effect of family ownership. The study uses a sample of 338 large Saudi listed companies. We find that both duality and independence of the board affect a firm's performance. However, we find that this is not the case in family controlled firms, which suggests that family ownership and corporate governance could be a monitoring substitute for each other.

Introduction

The effect of corporate governance on firms' performance has received extensive awareness in the accounting literature in recent years. This increased awareness has been motivated by the financial scandals that took place in the US economy in the early part of this decade such as WorldCom and Enron collapse. In spite of the proliferation of studies, there is still much debate regarding the relationship between firm performance and boards of directors (Shuker, et al., 2012). According to Saad (2010), the board of directors is considered to be one of the two major
components of corporate governance which provides an efficient regulatory and controlling mechanism to decrease agency problems. In addition, Ruigrok et al. (2006) point out that boards play an important role with respect to activities such as designing and implementing strategy and fostering links between a firm and its external environment.

At the end of 2006, Saudi Arabia issued its own corporate governance code which identified the principles and best practices of good governance and described optimal corporate governance structures and internal processes. This was revised in 2009 and included duties and responsibilities of boards of directors in order to influence firm performance, for example, reviewing and adopting a strategic plan, and adequacy and integrity of the company's internal control systems. Nevertheless, no study has been conducted to evaluate the impact of these regulations on firm performance.

The main aim of this study is to examine, in some detail, the impact of board structure on Saudi listed companies' financial performance. Specifically, the present paper studies the determining factors of firm performance and provides additional evidence on the influence of the characteristics of boards of directors, namely board size, board composition and role of duality on firm performance in the Saudi context where ownership structure is relatively unique.

In addition, this study predicts that the prevalence of family control in Saudi Arabia is likely to moderate the effectiveness of boards of directors.

The rest of the paper proceeds as follows. The following section provides a detailed discussion concerning the literature review and hypothesis development. Following is a discussion on the research methodology. Next, the results of the study are reported. The final section concludes the paper.

Theoretical Framework and Hypothesis Development

Agency Theory

"The hallmark of the organizational structure and form of modern corporations is the separation of ownership and control (Fama and Jensen, 1983; Jensen and Meckling, 1976). This kind of separation results in the so-called agency relationship which is defined, according to Jensen and Meckling (1976), as a contract under which two different parties (principal and agent) engage in a contractual relationship where the principal as-
Murya Habbash and Mohammed Bajaher

signs certain tasks and decision-making authority to the agent to be performed on their behalf. This form of separation and agency relationship give rise to basic agency problems. Agency problems occur whenever the agent and principal have different objectives and divergent interests, and the principal does not know whether the manager acts and reports in the interest of their goals or whether they have incentives to maximize their own self-interests at the expense of shareholders. In other words, the preferences of managers are not aligned with the interests of shareholders who are unable to monitor managers perfectly (Agrawal and Knoeber, 1996; Jensen and Meckling, 1976).

With this in mind, the system of corporate governance is designed for the effective and efficient operation of corporations on behalf of shareholders. Corporate governance is described as "the set of mechanisms that influence the decisions made by managers when there is a separation of ownership and control" (Larcker et al., 2007). One of those monitoring mechanisms is the board of directors. At the most basic level, the board of directors is responsible for ensuring that top management's actions are consistent with the interests of shareholders (Fama and Jensen, 1983). According to Mallette and Fowler (1992), boards are the agents of shareholders and exist to monitor management performance and protect shareholders' interests. Therefore, boards narrow the information gap between shareholders and management, and make important decisions such as mergers and acquisitions, capital allotments, and corporate strategies (Petra, 2005). Therefore, the monitoring functions of boards of directors were reviewed and research hypotheses were developed and are explained below.

Board Size and Financial Performance

"Based on the Saudi Corporate Governance Code, all listed firms must have no less than three directors and no more than eleven. This suggests, in line with the assumption of agency theory, that a firm should maintain a board size of less than eleven members in order to achieve better performance. The problems associated with large boards are argued to be related to communication and coordination leading to dysfunctional norms of behavior in board members (Cheng, 2008; John and Sabnet, 1998), and to longer time being taken to make decisions and reach consensus on important decisions (Goodstein et al., 1994). In addition, there is a higher incidence of agency problems associated with larger boards than smaller ones. On the other hand, the argument
of resource dependence theory assumes that better performance associated with larger boards enhances decision making due to the wider range of expertise and skills (Coleman and Biekpe, 2007).

Empirical studies have demonstrated the association between board size and company performance. For instance, Coles et al. (2008) find a positive association between larger board size and financial performance. De Andres et al. (2005) report a negative association between firm performance and board size. Similarly, Shukeri et al. (2012) find a negative association between company performance and board size. Finally, Dulewicz and Herbert (2004) find no association between board size and performance proxies. The above discussion shows that there have been mixed results with respect to the association between board size and company performance. However, this study examines this relationship from the agency theory perspective stating the following hypothesis:

\[ H_1: \text{There is a significant positive relationship between a firm's financial performance and board size.} \]

**Board Composition and Financial Performance**

"The Saudi Corporate Governance Code suggests that not less than one third of the members of a board must be independent members. Moreover, it suggests that the majority of the directors should be non-executive members. In addition, agency theory assumes that the greater the mix of inside and outside directors sitting on the board, the more effective the board will be and the better the performance will be. This is due to the experience, expertise, competitiveness, and reputation that can be brought to the board by outside directors (Baysinger and Hoskinsson, 1990 and Fama, 1980).

Prior studies that have examined this issue obtained mixed results. LeFort and Urzua (2008), Coleman and Biekpe (2007) and Krivogorsky (2006) find that outside directors are important mechanisms in the control of agency problems and in affecting firm performance positively. In contrast, others find a negative relationship between outside directors and firm performance (Shukeri et al., 2012; Bhagat and Bolton, 2008; Abdullah, 2006 and Klein et al., 2005). Other researchers (Haniffa and Hudaib, 2006; Kula, 2005; Peng et al., 2003; Bhagat and Black, 2002; Weir et al., 2002; Hermalin and Weisbach, 1991) show no evidence of a significant relationship with performance. Due to the inconclusive results documented in prior research, the hypothesis is stated below in the form of a positive
relationship as the agency theory suggests that the presence of non-executive directors and independent directors on the board leads to better monitoring of management and hence improving the performance."

**H2:** There is a positive association between board independence and a firm’s performance.

**Role Duality and Financial Performance**

"Agency theory assumes that role duality has a negative relationship with firm performance. This is because role duality reduces the ability of directors to monitor the CEO which increases the agency problems that affect the performance negatively (Haniffa and Cooke, 2002). The implication of this theory is that the separation between Chairman and CEO increases board independence which affects performance positively. Furthermore, the Saudi Corporate Governance Code states that the positions of Chairman of the Board of Directors and the Chief Executive Officer (CEO) should be separate. Nevertheless, the empirical studies provide mixed results regarding the impact of role duality on firm performance. For example, Belkhir (2009) finds a positive relationship between performance and role duality, while Ehikioya (2009) reports a negative relationship between role duality and performance. Along with the Saudi Code, this study tests this relationship based on the following hypothesis:

**H3:** There is a significant negative relationship between a firm’s financial performance and role duality.

**Family Control, Firm Performance and Board Effectiveness**

"An additional test to be conducted in an environment controlled by family ownership, such as Saudi Arabia, is to evaluate the impact of family control on the association between firm performance and board effectiveness. For this purpose, we divided the sample into two groups: one family controlled and the other non-family controlled.

In addition, this study predicts that the prevalence of family control in Saudi Arabia is likely to moderate the effectiveness of boards of directors. There are three arguments to support this. First, when managerial ownership is high, the monitoring role of corporate boards decreases (Jensen and Meckling, 1976). Second, family-controlled firms are less likely to select independent external directors in order to keep the family business within the family, thus weakening the monitoring effectiveness of the board of directors. Third, director indepen-
dence is likely to be compromised when a family member sits on the board of a company because the family member will have control over the appointment, contract extension, compensation and recommendation of the independent directors, thus independent directors are less likely to contradict the family member’s interests."

**H4:** *Family ownership moderates the relationship between a firm’s financial performance and board of directors’ effectiveness.*

**Research Methodology**

**Sample Selection and Data Collection Procedures**

"This study covers four years of reporting periods from December 2006 to December 2009. The reason for this choice is that this study uses the Saudi Corporate Governance regulations (2007) as a guide for corporate governance variables and this law draft was introduced in December 2006.

Table 1 indicates that the initial sample for this study is all Saudi listed companies, which are required to comply with corporate governance mechanisms recommended by Capital Market Authority CMA. This study focuses on the non-financial listed companies on the Saudi Arabia stock exchange. Firms in the financial sector were excluded from the sample since the finance industry is a highly-regulated industry and the accounting standards in use in this sector are different from those of other sectors. All corporate governance data were obtained from the company’s annual report.

The dependent variable of this study is firm financial performance. To measure this variable, the study uses Return On Assets (ROA). According to Klapper and Love (2004), ROA is one of the best performance measures used to address the relationship with corporate governance. Therefore, the study uses ROA to determine the relationship of this mea-

<table>
<thead>
<tr>
<th>Description</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial sample (all Saudi listed firms)</td>
<td>88</td>
<td>111</td>
<td>129</td>
<td>146</td>
<td>474</td>
</tr>
<tr>
<td>Excluded:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banks and insurance companies</td>
<td>(11)</td>
<td>(28)</td>
<td>(32)</td>
<td>(36)</td>
<td>(107)</td>
</tr>
<tr>
<td>Missing corporate governance data</td>
<td>(12)</td>
<td>(8)</td>
<td>(5)</td>
<td>(4)</td>
<td>(68)</td>
</tr>
<tr>
<td>Final sample</td>
<td>65</td>
<td>75</td>
<td>92</td>
<td>106</td>
<td>338</td>
</tr>
</tbody>
</table>

Table 1: Sample Size and Selection Procedures for the Study Period
sure with independent variables. Likewise, the study by Ehikioya (2009) measures ROA as a percentage of profit before interest and tax divided by total assets. The effect of three internal corporate governance variables, namely board independence (BODIND), role duality (DUAL), board size (BSIZE) and four control variables, firm size (SIZE), leverage (LEV), audit quality (BIG4) and family ownership (FAMOWN) will be examined."

**Explanatory Variables**

Table 2 summarises explanatory variables, providing brief definitions and indicating predicted association.

**Control Variables**

Previous studies have indicated that certain other factors can influence a firm's performance. Therefore, the following control variables include firm characteristics: (1) firm size, (2) leverage, (3) audit quality and (4) family ownership. Table 3 provides an overview of the control variables.

### Table 2
**Summary of variables and their measurement**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Variable</th>
<th>Predicted sign</th>
<th>Operationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>Firm Performance</td>
<td>-</td>
<td>A percentage of profit before interest and tax divided by total assets.</td>
</tr>
<tr>
<td>BRDIND</td>
<td>Board Independence</td>
<td>-</td>
<td>The percentage of independent non-executive directors to total board members.</td>
</tr>
<tr>
<td>BRDSIZE</td>
<td>Board Size</td>
<td>-</td>
<td>The number of directors on the board.</td>
</tr>
<tr>
<td>DUAL</td>
<td>Chairman Indepen-</td>
<td>-</td>
<td>A dummy variable that takes the value of one if the chairman is the CEO, and zero otherwise.</td>
</tr>
<tr>
<td></td>
<td>dence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3
**Summary of control variables and their measurement**

<table>
<thead>
<tr>
<th>Firm Characteristics</th>
<th>Symbol</th>
<th>Variable</th>
<th>Operationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
<td>SIZE</td>
<td>Firm Size</td>
<td>Natural logarithm of firm size (measured by total assets)</td>
</tr>
<tr>
<td>LEV</td>
<td>LEV</td>
<td>Firm Leverage</td>
<td>Leverage (measured by long-term debt to lagged total assets)</td>
</tr>
<tr>
<td>BIG4</td>
<td>BIG4</td>
<td>Audit Quality</td>
<td>A dummy variable that takes the value of one if a firm is audited by one of the Big4 audit firms, and zero otherwise</td>
</tr>
<tr>
<td>FAMOWN</td>
<td>FAMOWN</td>
<td>Family Ownership</td>
<td>The percentage of shares owned by family owners divided by the total number of shares.</td>
</tr>
</tbody>
</table>
including definitions and examples using these variables.

**Model Specifications**

This study uses the following panel data fixed-effects ordinary least square (OLS) regression analysis to test the association between the dependent variable of firm performance and the independent variables of corporate governance, as given in Equation 1.

\[
ROA_{jt} = \gamma_0 + \gamma_1 BRDIND_{jt} + \gamma_2 BRDSIZE_{jt} + \gamma_3 DUAL_{jt} + \gamma_4 FAMOWN_{jt} + \gamma_5 SIZE_{jt} + \gamma_6 LEV_{jt} + \gamma_7 BIG4_{jt}
\]

**Results**

**Descriptive Statistics and Correlation Analysis**

The descriptive statistics of all variables are presented in Table 4. The minimum value of the dependent variable (financial performance) was from -13.7% to a maximum of 29.9% with a mean of 7%, which implies that each Saudi riyal invested in the assets of the sampled firm generates 7 halalat of return.

The board size ranges from a minimum of four and to a maximum of twelve with a mean of 8.2. This is in line with the findings of Lipton and Lorsch (1992) who find that efficient and effective boards have an average of between eight and ten members. Moreover, the results are consistent with the Saudi Corporate Governance Code (2006), which states that listed firms must have no less than three directors and no more than eleven.

With respect to board composition, the results indicate that more than half (65%) of Saudi listed firms' board members are independent directors. This is also in line with the guidelines of the Saudi Corporate Governance Code (2006), which pro-

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Pooled Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Mean</td>
</tr>
<tr>
<td>ROA</td>
<td>0.069</td>
</tr>
<tr>
<td>BRDSIZE</td>
<td>8.213</td>
</tr>
<tr>
<td>BRDIND</td>
<td>0.669</td>
</tr>
<tr>
<td>DUAL</td>
<td>0.766</td>
</tr>
<tr>
<td>FAMOWN</td>
<td>0.132</td>
</tr>
<tr>
<td>BIG4</td>
<td>0.608</td>
</tr>
<tr>
<td>LEVG</td>
<td>0.087</td>
</tr>
<tr>
<td>SIZE</td>
<td>9.239</td>
</tr>
</tbody>
</table>
poses that independent board directors must make up no less than one-third of the members. This is also consistent with the findings of Rashidah and Al-Janadi (2006), who find that the boards of Saudi firms are dominated by independent members.

Regarding role duality, the Table shows that the average is 76.6%, which indicates that the majority of sampled firms have separated the roles of chairman and CEO. However, the recommendation of Saudi Corporate Governance Code 2006 is to have this separation for all listed companies. About 25% of listed firms do not comply with this recommendation, yet.

To investigate multicollinearity among independent variables, Table 5 presents the results of Pearson correlation matrix among all the independent variables. A critical value that represents the high correlation between two variables is between -0.70 and 0.70. If it is less than that, the multicollinearity between variables does not exist (Gujarati, 2003)). The results show that the highest level of correlation is 0.51, which is between LEVRG variable and SIZE variables. It is followed by the significant correlation between SIZE variable and BIG4 variable with a value of 0.38. However, all these correlations are still below 0.7, which implies that there would be no serious problems among regressed variables, and hence it would not affect the validity of the results.

**Multivariate Analysis Results and Discussions**

Table 6 reports the OLS regression results of the dependent variable and
all the independent variables of board structure and the control variables which suggest 17% of the variation in the dependent variable of sampled firms is explained by the quality of the independent variables of board structure. The adjusted R-squared is comparable to other studies of the same nature such as Krivogorsky (2006) and Ehikioya (2009).

In terms of the first hypothesis, this study finds that board size (BRDSIZE) is insignificantly associated with firm performance. The results indicate that larger boards are ineffective in enhancing financial performance. The lack of association between large boards and financial performance is similar to the findings of Dulewicz and Herbert (2004), who point out that boards of directors’ size do not affect a firm’s financial performance.

Consistent with the second hypothesis, the results indicate that there is a positive and significant relationship (coefficient = 0.024 and p < .05) between board independence (BRDIND) and the indicator of firm performance, suggesting that the more independent the board is, the better a firm’s performance. This finding is in line with agency theory which suggests that the presence of non-executive directors and independent directors on the board leads to better monitoring of management and hence improving performance. In addition, Krivogorsky (2006) finds a strong relationship between the proportion of independent directors on the board and performance.

In the Saudi context, this finding contradicts the conjecture that Saudi firms may apply corporate governance mechanisms in order to adhere to CMA regulations rather than for governance purposes; time may have played a part in amending this conjecture. This shows the importance of board independence in enhancing the performance of Saudi listed firms, especially after the newly-enacted Corporate Governance Regulations, thus supporting supporting CMA efforts to regulate the Saudi capital market in order to protect shareholders’ rights through corporate governance regulations.

With respect to the third hypothesis which states that there is a significant negative relationship between a firm’s financial performance and role duality, the findings reveal negative and significant association between the two variables measured by ROA. This is in line with Ehikioya (2009), who reports a negative relationship between role duality and performance, and could support the notion that corporate governance may contribute to the monitoring role of the board but, on the other hand,
Table 6
Results

<table>
<thead>
<tr>
<th>First Model Main Regression (OLS)</th>
<th>Exp Sign</th>
<th>Coefficient</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>+</td>
<td>0.000</td>
<td>0.060</td>
</tr>
<tr>
<td>BRDSIZE</td>
<td>+</td>
<td>0.024</td>
<td>2.190**</td>
</tr>
<tr>
<td>BRDIND</td>
<td>+</td>
<td>-0.025</td>
<td>-2.070**</td>
</tr>
<tr>
<td>DUAL</td>
<td>+</td>
<td>0.041</td>
<td>1.730*</td>
</tr>
<tr>
<td>FAMOWN</td>
<td>+</td>
<td>0.011</td>
<td>1.010</td>
</tr>
<tr>
<td>BIG4</td>
<td>-</td>
<td>-0.121</td>
<td>-3.050***</td>
</tr>
<tr>
<td>LEVG</td>
<td>?</td>
<td>0.005</td>
<td>0.580</td>
</tr>
<tr>
<td>SIZE</td>
<td>?</td>
<td>0.023</td>
<td>0.320</td>
</tr>
<tr>
<td>_cons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj R-2</td>
<td></td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>F(8,329)</td>
<td></td>
<td>3.19 ***</td>
<td></td>
</tr>
</tbody>
</table>

Notes: *p < .10, **p < .05, ***p < .01.

reduces the board strategic role by separating the positions of Chairman and CEO.

Family Control, Firm Performance and Board Effectiveness

In order to evaluate the impact of family control on the association between firm performance and board effectiveness, we have divided the sample into two groups: the first family controlled and the second non-family controlled.

Table 7 shows that boards of directors are less effective in firms with family control. On the other hand, the results show that the board independence coefficient is significantly positive, and duality is negatively associated with firm performance for regression tests in the non-family controlled firms only.

These results indicate that family control in Saudi firms moderates the association between corporate governance (boards of directors) and firm performance. Therefore, this finding may suggest that family controlled firms provide a closer monitored environment which may function as a monitoring substitute for corporate governance. Moreover, this questions the validity of applying the corporate governance model which was initially designed for widespread ownership firms rather than family-controlled firms.
Board size has no effect in both groups. This suggests that an increase in the number of independent directors is unlikely to have an impact on firm performance regardless of firm ownership structure.

Conclusion

"This paper has examined the relationship between boards of directors' effectiveness and firm performance in Saudi listed firms. Additionally, it has examined whether family control influences the relationship between boards of directors' effectiveness and firm performance. Overall, the findings provide evidence that independent board members and the separation of the positions of CEO and Chairman are positively associated with firm performance. However, the effectiveness of the board of directors is weaker in family controlled firms.

Like most research of this nature, this paper is subject to a number of limitations. Most importantly, although we used a well-known proxy for family control, the validity of the findings is still subject to accurate estimation of family control of the firm. Endogeneity is also a common limitation of this type of research.

Despite their inherent limitations, the findings provide valuable insights to regulators such as the CMA for developing appropriate regulations on the corporate governance system of Saudi listed firms, especially the
appointment and the authority of independent non-executive directors on family controlled firms' boards. Countries with an institutional environment similar to that of Saudi Arabia, such as Gulf Council countries, may benefit from these findings. Investors' awareness may be raised by knowing the actual impact of independent directors on firm performance. Last, the consideration of family ownership control adds to the corporate governance literature on the role of family ownership in various corporate governance mechanisms."

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**Murya S. Habbash** is Assistant Professor of Accounting, Financial and Administrative Sciences School, King Khalid University, Saudi Arabia. His current research interests include corporate governance, audit quality, corporate social responsibility and earnings quality. He has published articles in international academic journals such as the Journal of Applied Accounting Research, International Journal of Disclosure and Governance and Managerial Auditing Journal. (murya@hotmail.com).

**Mohammed S. Bajaher** is Assistant Professor of Accounting, Financial and Administrative Sciences School, King Khalid University, Saudi Arabia & Aden University, Yemen. His current research interests include corporate governance, disclosure, capital structure and performance measurement. (msawwd@kku.edu.sa).
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