Investigating the Effects of Board and Firm Characteristics on Firm Performance: An Agency Theory Perspective

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Abstract:

The study aims to investigate the effects of various board and firm features on firm performance. Based on an agency theory perspective the study used a sample of 384 observations from the Egyptian Stock Market (EGX) from 2016-2018, the paper uses statistical analyses to identify the characteristics which affect the firm performance by independent variables. The study includes testing the hypothetical conditional influence of seven variables on the firm performance.

The results of this study show that board size, CEO duality, firm size and financial leverage have a significant positive effect on firm performance. In contrast, the other variables; board independence, audit quality and firm industry, had an insignificant association with firm performance.

The results of the study support that large companies which have large boards of directors with low levels of leverage and CEO duality have better financial performance than other firms. However, the impact of economic and political characteristics on the firm performance is not investigated in this study therefore one must be careful when generalizing the results.

The current study contributes to the accounting literature by adding some evidence on the significant effects of some board and firm characteristics, namely role duality, board size, firm size, and leverage on the financial performance of the firm.

**Keywords:** Board Characteristics, Firm Performance, Firm Characteristics, Egyptian Stock Market (EGX).
1. Introduction

The topic of studying the characteristics affecting the company’s financial performance is of interest to many accounting researchers. The accounting literature has presented many studies that dealt with different characteristics, on top of which are governance characteristics. The financial scandals and crises everywhere in the world and the failure of some global companies (i.e. Enron and WorldCom) have led to the interest of many stakeholders, including shareholders, investors, creditors, and financial analysts in the financial markets, to determine the causes of this failure and to search for ways to avoid it in the future. Then, there is an interest in studying governance techniques, such as the board of directors’ characteristics as well as firm characteristics and their relationship with the firms’ financial performance. (Deakin and Konzelmann, 2004; Du and Dai, 2005; Omran, 2009).

Moreover, the agency theory dominates the theoretical basis to explain the role of the board within a company, as this perspective presents the idea of a conflict of interest between the principals (owners of the company) and the agents (company’s directors) as a result of the detachment of ownership from management in contemporary societies (Jensen and Meckling, 1976). The board of directors is considered a fundamental monitoring tool for managing the company and controlling the problems which may happen between the agents and the principals (Fama and Jensen, 1983; Shleifer and Vishny, 1986). The board of directors is determining the general strategy of the corporation in a way that guarantees the protection of shareholders’ interests (Keenan, 2004). Many authors indicated that the success or failure of companies is relying on making managerial decisions by the firm’s board of directors. Then, the final responsibility for these decisions and their effects on the firm’s financial performance rests with the board of directors (Fama and Jensen, 1983). The board of directors and the structure of the board are among the main themes in the governance literature, as it is reflected in one of the inner governance techniques (Donnelly and Kelly, 2005; Lefort and Urzú, 2008). Jensen (1993) identified that three of the board characteristics can influence the monitoring process, they are board size, board independence and role duality.
Several studies indicated the effects of several board characteristics on companies’ financial performance (Bonn et al. 2004; Dahya and McConnell 2005; Hongxia and W.L., 2010; Desoky and Mousa, 2012; Ujunwa, 2012; Wahba, 2015; Palaniappan, 2017; Alessandro and Rob, 2019). However, those studies have reported inconsistent results regarding the effects of the various board characteristics. The studies included characteristics such as board size, board gender, CEO duality and board composition, and others on the firms’ financial performance. Hence, the current study has the motivation to investigate the mixed effects of both board and firm characteristics on the corporate financial performance relying on a sample of listed companies on Egyptian Stock Exchange (EGX) covering the period from 2016-2018.

Egypt is selected as the focus of this study since the Egyptian stock market is one of the oldest stock markets in the Arab region and the Middle East. Egypt is considered an attractive country for investment, due to its enjoyment of many components, as it is close to global markets in both Europe and the Middle East.

The current study has many contributions. First: It provides the accounting literature with empirical evidence on the effects of both the board and firm characteristics on the firms’ financial performance, which contributes to the accounting literature associated with the emerging stock markets, this is essential in light of the scarcity of research on these markets. Second: The findings of this study would be valuable for investors, financial analysts, and regulators as it would allow them to make better-informed decisions. Third: This study may contribute to understanding other financial markets with similar characteristics to the Egyptian financial market, such as other countries in the Middle East and emerging markets.

The structure of this study is as follows. Section 2 presents the agency theory as the theoretical framework of the study and introduces the stewardship theory as an alternative perspective. A background of the Egyptian Stock Market is provided in section 3. Section 4 reviews previous related studies and explains the hypotheses of the study. The methodology of the study is presented in section 5. Section 6 reports the statistical analysis of the study. Finally, the conclusion of the study is summarised in section 7.
2. Theoretical Framework (Agency Theory):

The different influences of board and firm characteristics on corporate performance discussed throughout the literature from different perspectives. The most notable theoretical frameworks are agency theory, stewardship theory, pecking order theory, stakeholder theory, signalling theory and resource dependence theory (Gaur et al., 2015; Ibhagui and Olokoyo, 2018). However, the two prominent perspectives in this regard are the agency theory (Jensen and Meckling, 1976) and stewardship theory (Donaldson and Davis, 1991).

The fundamental notion of the agency theory is that separation between the stockholders (principal) and the directors (agents) will normally be associated with agency costs. These agency costs rise due to the opportunistic behaviour by CEOs and their likelihood for earning management's practices. These agency costs negatively affect the firm performance. Therefore, supporters of agency theory argued that enhancing the monitoring level over the CEOs practices will decrease the agency costs and improve firm performance (Wahba, 2015).

From agency theory’s perception, the board of directors should play a significant internal control role to identify the conflict of interest between principal and agents to aim at congruence of interest (Ujunwa, 2012). Apparently, the agency theory heavily relies on the board of directors' effectiveness and independence to solve conflict problems and enhance the corporate governance’s level that lead to better corporate performance (Gaur et al., 2015). Accordingly, the agency theory supports the board and firm characteristics that enhance the board independence. Consequently, agency theory assumes a positive association between corporate financial performance and large board size, board gender diversity, CEO non-duality, non-executive independent directors, board committees, audit quality, level of leverage, number of board meetings…etc. This study investigated some of those characteristics and a detailed discussion will be provided in the next section.
By contrast, the stewardship theory supports the congruence of interests between principal and agents which will not motivate managers to act against the interests of the shareholders. It assumes that directors are trustworthy and steward the shareholders' resources efficiently and effectively. From this viewpoint, managers are very keen to bring success to their companies and avoid business failure because they adopt a long-term business orientation. As a result, the managers are exerting their best efforts to maximize the financial performance, to increase the firm value and to bring higher returns to the shareholders (Mishra and Kapil, 2018; Vieira 2018).

The stewardship theory makes different assumptions to the agency theory about the association between board characteristics and corporate financial performance. The advocates of stewardship perspective argue that the full power and control should be in the hands of managers. This power will facilitate and prompt the responses to external events and leads to a smooth decision-making process. Accordingly, the managers earned a good reputation in the market and improved their personal market evaluation (Gaur et al., 2015; Wahba, 2015; Allam, 2018). In other words, the stewardship theory assumes a positive association between corporate performance and CEO duality, internal directors, small size board…etc.

The study in hand adopted the agency theory perspective and developed seven hypotheses to study the relationship between board and firm characteristics and firm performance. All details regarding the seven hypotheses in this study will be provided in section four.

3. Background on the Egyptian Stock Exchange (EGX):

The current study uses a sample from Egyptian Stock Exchange (EGX). EGX was founded in 1883 as the first stock market in the Middle East and North Africa (MENA). It is strongly associated with other security markets in the region and elsewhere (Billmeier and Massa, 2008; Diab et al., 2019). EGX has many
developments during such a long period, but it started the dramatic changes in the early 1990s. Concurrently, the Egyptian government started shifting to a free economy and started the privatization and deregulation that led the stock market to flourish. Therefore, the Egyptian government established a major economic reform and changed the regulatory framework with cooperation and support from international institutions such as the International Monetary Fund (IMF) and World Bank (WB). As a result, in 2010 EGX was classified among best six emerging stock markets and the World Federation Exchanges statistics reported 15% average gain achieved by EGX, ahead of many other emerging stock markets (Desoky and Mousa, 2013; Ali et al., 2020).

Currently, EGX30 is the main index for constituent companies. During 2009, EGX70 and EGX100 are two other indexes established, respectively. EGX100 is more comprehensive than the other two indexes because it is measuring the performance of companies included in both EGX30 and EGX70. Thus, the companies included in EGX100 are the companies that have been used as a sample for this study. The companies' financial reports were the principal source of secondary data analysed in this study which covered three years (2016-2018).

4. Literature Review and Hypotheses Development:

The hypotheses development will be presented in two main categories. The first category developed three hypotheses present in the association between board characteristics and corporate performance. Whereas the second category developed four hypotheses focused on the relationship between firm characteristics and performance.
4.1 Board Characteristics and Firm Performance:

4.1.1 Board Size:

The nature of relationship between board size and firm performance is not confirmed throughout the literature review. Many authors argued that there is a negative association between board size and firm performance. For instance, Yermack (1996) found that the small board size is associated with higher firm performance measured by Return on Assets (ROA) and Return on Sales (ROS). Sun and Zhang (2000) revealed the same negative relationship using Return on Equity (ROE), Tobin’s Q value and Return on Assets (ROA). In the same vein, Kota and Tomar (2010) concluded that a small size of board of directors is better in enhancing the corporate performance. Kumar and Singh (2013) indicated a similar negative association between firm performance and board size in Indian context. Conyon and Peck (1998) found a negative association between ROE and the size of board of directors within European companies.

The advocates attributed this negative association between board size and firm performance to various reasons. For example, they argued that new ideas or opinions are potentially not easily presented and discussed with an increasing number of directors (Jensen, 1993; Einsenberg et al., 1998; de Andres et al., 2005). Also, Ahmed et al., 2006 argued that larger board size is associated with loose control and monitoring which negatively affect the firm performance. Other problems linked with larger board size are addressed in several studies, such as suffering from more agency costs (Lipton and Lorsch, 1992; Cheng, 2008); increasing problems of coordination and communication (Bonn et al., 2004; Cheng, 2008); lag in information transfer and in decision-making process (Goodstein et al., 1994; Yermack, 1996; Jusoh et al., 2013;).
On the contrary, other authors claimed that greater board size normally promotes a different and wide range of opinions and views. In addition, large board size makes benefits from external connections, building productive networks and leads to a wide range of experiences and skills. Also, it secures and enlarges the resource base used by the organizations (Peng and Luo, 2000; Kim, 2007; Lehn et al., 2009; Rehman et al., 2012). Other supporters of a larger board size attributed this advantage to enhanced control and monitoring that led to more rational decision-making process (Alexander et al. 1993; Daily et al., 2003; Coles et al. 2008; Harford et al. 2008; Mishra and Kapil 2018).

The above discussion suggested that the association between the board size and firm performance remains inconclusive and there is no full agreement regarding the optimal size of board of directors (Hongxia and W.L., 2010; Desoky and Mousa, 2012; Ujunwa, 2012; Wahba, 2015; Palaniappan, 2017; Alessandro and Rob, 2019). However, this study adopted the agency theory perspective which supports a positive association between board size and corporate performance due to a decreasing of agency costs. In light of the above discussion and the theoretical framework, the first hypothesis is formulated as follow:

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

### 4.1.2 Non-executive Independent Directors:

Board independence is considered by many authors as a crucial factor to protect the shareholders' interest and resolving agency problems (Fama and Jensen, 1983; Hongxia and W.L., 2010; Mousa and Desoky, 2012). The percentage of the non-executive (external/independent) members is regularly used as a proxy of board independence. Several studies tested the relationship between the board independence and corporate performance, however, they revealed mixed results regarding such association.
Many empirical studies found a positive relationship between board independence and corporate performance. Lefort and Urzúa (2008) conducted their investigation on a sample of Chilean firms and reported that the increasing number of independent directors positively affected the company value. Correspondingly, Omran (2009) provided similar findings that link the improvement of corporate value with the higher number of non-executive members directors within a Egyptian context. Similar results found by many other researchers. For example, Choi et al., (2007); Peng (2004) within Korean and Chinese contexts respectively; Booth et al. (2002) using market value and net income; Black et al., (2006) in Korean's context; Osma (2008) who attributed the improvement in firm performance to the effective monitoring by non-executive members to the opportunistic spending on Research and Development. Also, Dehaene et al., (2001) demonstrated a significant positive association between board's independence and performance in Belgium; the same positive association is shown in Australia by Davidson et al., (2005) due to less likelihood to exercise earnings management.

Conversely, the negative relationship between board independence and corporate performance is revealed by lots of other studies. For example, Sylvie et al., (2012) applied their research in Canada and the results indicated a negative association between board independence and corporate performance. Consistent with previous findings, Davidson et al., (2005); Klein, (2002); Beasley, (1996), concluded a significant negative association between board independence and corporate performance. In the same vein, Sheikh et al. (2013) provided evidence of the adverse association between the percentage of independent directors and return on assets as well as earnings per share. The above results were agreed with the recent research conducted by Waheed and Malik (2019) within Pakistani's context.
Finally, some empirical research claimed that there is no significant relationship between board independence and firm performance (Dalton et al. 1998; Peng et al., 2003; Bonn et al. 2004; Dahya and McConnell 2005). Many studies conducted using different measures to evaluate corporate performance such as Tobin’s Q value, ROA, or ROE, similarly they did not find any significant association between board independence and corporate performance (Sun and Zhang 2000; Gao and Ma 2002; Bai et al. 2004; Adams and Mehran, 2012). Based on the above argument and the theoretical framework the second hypothesis is formulated as follow:

H2: There is a positive relationship between the percentage of non-executive directors and firm performance.

4.1.3 CEO Role Duality:

CEO role duality means that a single person takes responsibility for both positions; board's chairman and CEO (Krause et al., 2014). Many authors claimed that the percentage of external members of board of directors along with the non-role duality express the board independence (Dalton et al. 1999; Dalton and Dalton 2010). The agency theory argued that CEO role duality gives the CEO more ability to dominate the board of directors and allow him/her to exercise more pressure during the decision-making process. In addition, CEO duality will restrict the monitoring and control function by the board over CEO and the executive management (Donaldson and Davis 1991; Jensen, 1993; Allam, 2018). Moreover, CEO duality encourages the manipulation of financial statements and enhances the chances for earnings management's practices (Efendi et al., 2007; Masulis et al., 2007). On the contrary, the separation between the chairman and the CEO (i.e. CEO non-duality) is critical to sustain the board independence and constrains the CEO’s power and authority leading to more effective monitoring and control (Dalton and Dalton, 2010; Van Essen et al. 2013). Therefore, most of the agency theory advocates argued that the CEO role duality is linked with lower firm performance due to maximizing the CEO's interest on the harm of the shareholders' interests (Jensen, 1993; Judge et al. 2003; Ehikioya, 2009).
On the contrary, the stewardship theory’s supporters argued that CEO role duality is an advantage for the organizations. They claimed that a single leader should be more knowledgeable of the operating environment and organization's strategy which helps in creating a unified and a strong control system in the organizations. They assumed that there is no conflict of interest associated with CEO duality when the organization has a solid strategic plan. CEO duality offers faster and more flexible responses to the accelerated external and internal events. This enables the CEO to utilize a strong leadership style that improves the decision-making process. Furthermore, stewardship theory is against increasing the number of outside directors as they do not have sufficient knowledge about the organization which leads to weaken the board of directors and generate less rational decisions (Davis 1991; Brickley and Zimmerman 2010; Donaldson and Elsayed, 2010; Rashid, 2016).

The empirical results regarding the association between CEO duality and firm performance are inconclusive. Some researchers found that CEO role duality enhance corporate performance (i.e. Donaldson and Davis 1991; Dehaene et al. 2001; Sanda et al. 2005). Many other studies showed that CEO non-duality positively influences corporate performance (Rhoades et al., 2001). In Russian, Judge et al. (2003) and in Nigeria Ehikioya (2009) revealed negative effects of CEO role duality on corporate performance. Likewise, Chen et al. (2005) reported negative association between CEO duality and firm value. These results agreed with the results reported by Mousa and Desoky (2012) within Bahraini context.

Finally, researchers such as Chaganti et al. (1985) as well as Rechner and Dalton (1989) reported no association between CEO role duality and financial performance. Similarly, the results revealed by Dalton et al. (1998) did not support the claim that there is a significant association between CEO duality and corporate performance. In Egyptian context, Omran (2009) reported no association between CEO non-duality and corporate value. In the same line, many other studies found insignificant effects of CEO non-duality on corporate performance (i.e. Baliga et al. 1996; Brickley et al. 1997). Based on the previous argument and the theoretical framework the next hypothesis for this study is formulated as follow:

H3: There is a significant relationship between role duality and firm performance.
4.2 Firm Characteristics and Firm Performance:

4.2.1 Firm Size:

The literature examined the association between firm size and corporate performance. Firm size is assumed to be the most appropriate variable to investigate the effect of size on corporate performance (Banz, 1981). The type of relationship between firm size and corporate performance is not confirmed throughout the literature. For instance, Mishra and Kapil (2018) reported a negative association between firm size and corporate performance. They justified these results indicating that newer firms using more advanced technology, up to a specific optimal size, improves corporate performance. Likewise, Allam (2018) claimed the same negative relationship due to increasing agency costs that constrain the ability to generate profits. In the same vein, Himmelberg et al., (1999) highlighted that large size companies benefit from market power and economics of scale, albeit they suffer from huge agency costs and massive monitoring that negatively affect the financial performance.

Conversely, Lee (2009) claimed that firm size has a significant role in justifying profitability. For instance, Vijayakumar and Tamizhvelvan (2010) revealed a significant positive association between corporate performance and firm size in India. Also, Vieira (2018) concluded a strong influence of firm size on corporate performance especially in Portuguese’s family organizations. This positive relationship demonstrated within various contexts such as, Jonsson (2007) in Iceland, Ozgulbas et al. (2006) in Turkey among other studies. It is worth to be mentioned that other researchers found no significant association between firm performance and firm size. (Kalkan et al., 2011) measured firm size in terms of employment and did not prove significant relationship between size of corporation and corporate performance. In the same vein, Niresh and Velnampy (2014) using a sample of 15 manufacturing firms in Sri Lanka between 2008-2012, they did not prove indicative association between corporate performance and firm size.
In conclusion, the association between corporate performance and firm size indicated mixed and inconclusive results. Even the contradictory results regarding the nature of this association reported in the same study. For instance, Velnampy and Nimalathasan (2010) applied their study on two principle banks in Sri Lanka and they found positive correlation for one bank and no correlation with the other one. Lastly, in Vietnam, Banchuenvijit (2012) found a negative relationship between corporate performance and firm size using total assets as a measurement of firm size, on the contrary he found a significant positive association between corporate performance and firm size when using total sales as measurement. In the light of the previous discussion the fourth hypothesis for this study is formulated as follow:

H4: There is a significant relationship between firm size and firm performance.

4.2.2 Audit Quality:

Audit quality one of the characteristics has been studied throughout accounting literature to investigate its effect on corporate performance. In Malaysia, Sayyar et al. (2015) used two proxies for audit quality, namely, audit fees and audit firm rotation to investigate the relationship with firm performance. They reported positive relationships between audit quality proxies and ROA, while the audit fee was correlated positively with Tobin’s Q, but no correlation was found between audit firm rotation and Tobin's Q. Likewise, Sulong et al. (2013) reported the same positive association between audit fees (i.e. audit quality) and corporate performance.

Moreover, in the Omani context, Al-Matari et al. (2017) tested the effect of audit quality on the correlation between firm performance and ownership structure. The study did not demonstrate such a relationship and it implemented the Big Four audit firms as an indicator to evaluate audit quality. Jusoh and Che-Ahmad (2014) investigated the influence of audit quality on firm performance using Big Four audit firms to assess the audit quality. They reported a positive correlation between audit quality and both the corporate performance and market value. They emphasized that the high audit quality offered by the Big Four audit firms enhanced the credibility of financial disclosure as well as decreasing agency costs which positively affect the company's overall performance. Similarly, Rahman et al. (2019) demonstrated a
significant positive association between audit quality (based on the Big Four) and firm performance in their study that was conducted in Bangladesh.

Although most of the researchers who investigated the association between audit quality and firm performance reported positive association, some other studies found no association or negative relationship. For instance, in Egypt, Elewa and El-Haddad (2019) adopted two variables for audit quality; audit experience and auditor independence, the first measured by Big Four and the latter measured by auditor rotation. The authors did not prove significant relationships between auditor experience or auditor independence with firm performance. Consequently, they concluded that there is no effect of audit quality on corporate performance. The authors argued that the Big Four audit firms and auditors’ rotation might not be the best proxies to assess audit quality. Similarly, the overall findings reported by Singer and Zhang (2018) suggested an insignificant effect of audit quality on financial performance. These results raised questions regarding the assumed superior audit quality of the Big Four Auditing companies. Based on the previous debate and the theoretical framework the fifth for this study hypothesis is formulated as follow:

H5: There is a significant relationship between audit quality and firm performance.

4.2.3 Financial Leverage:

Many authors argued that higher debt might improve a firm’s financial performance. They claimed that the high level of monitoring exercised by debts' holders over managers’ activities will reduce agency costs (i.e. Jensen and Meckling, 1976; Claessens et al., 2000; Sanda et al., 2005; Sulong et al., 2013). Thus, they expected a significant positive association between financial leverage and corporate performance. Several studies have examined the association between financial leverage and firm performance. In Nigeria, Sanda et al. (2005) indicated the positive relationship between a higher level of debt (debt/equity) and overall firm performance. Sulong et al. (2013) used total liabilities over total assets to present the level of financial leverage. The findings suggested a significant positive association between leverage and corporate performance.
On the contrary, some studies did not confirm such a significant positive association between leverage and corporate performance. For instance, Fooladi and Shukor (2012) and Ali et al. (2020) indicated a negative association between leverage and corporate performance. Ibhagui and Olokoyo (2018) pointed out how the firm size affects the association between leverage and firm performance. They argued that there is a strong negative association between leverage and corporate performance in small size firms. However, this negative relationship diminishes as a firm grows. On the contrary, Ruland and Zhou (2005) found that the leverage improves firm performance particularly in small size corporations with increasing agency costs. Also, Ghosh (2008) reported a negative association between leverage and corporate performance for a sample of Indian companies. He claimed that the negative impact is higher in companies with an increasing level of foreign debts. Based on the previous argument and the theoretical framework the sixth hypothesis is formulated as follow:

H6: There is a significant relationship between financial leverage and firm performance.

4.2.4 Type of Industry:

The corporate performance is varying according to the industry type. The determinants of corporate performance in manufacturing companies have been investigated by many researchers. For instance, Palaniappan (2017) conducted his research based on a sample of 275 manufacturing firms in India. Rahman et al. (2019) used a sample form industrial companies that listed in Dhaka Stock Exchange (Bangladesh). Niresh and Velnampy (2014) used a sample of 15 manufacturing firms in Colombo Stock Exchange (Sri Lanka) for 5 years 2008-2012. Koumanakos (2008) implemented his research on a sample of 1358 Greek manufacturing firms across different industries over the 2000-2002 period.
On the other hand, the service companies were the focus of many other studies. Capar and Kotabe (2003) implemented a sample consisting of 81 major German service firms. Ho et al. (2020) conducted a recent research based on a sample of e-ticketing service companies in Taiwan from 2013-2018. Also, several studies adopted a comparative study between industrial and service companies, for example, Raymond et al. (2014) used a mixed sample of 347 companies, 93 French and 254 Canadian, 286 of which were in the industrial sector and 61 belonged to the service sector. Similarly, Ghosh (2011) compared the performance of 44 service firms (banks) with their counterpart 50 manufacturing firms (pharmaceutical) in India. Based on the previous discussion the seventh hypothesis for this study is formulated as follow:

H7: There is a significant relationship between the type of industry and firm performance.

5. Research Methodology:

5.1 The Sample and Data Collection:

The initial sample of this research consisted of the companies listed on Egyptian Stock Market (EGX) using EGX100. The final sample of this research is 384 firm-year observations after excluding banks and financial services firms. The sample covered the period from 2016-2018. It consists of four types of industries (industrial, service & others, real estates, and investment firms). Distribution for these industries is shown in Table 1.

<table>
<thead>
<tr>
<th>Type of industry</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>189</td>
<td>49.2</td>
</tr>
<tr>
<td>Service &amp; others</td>
<td>87</td>
<td>22.7</td>
</tr>
<tr>
<td>Real Estates</td>
<td>57</td>
<td>14.8</td>
</tr>
<tr>
<td>Investment</td>
<td>51</td>
<td>13.3</td>
</tr>
<tr>
<td>Total</td>
<td>384</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(*) The period of the study from 2016-2018.
5.2 Measurement of Study Variables:

5.2.1 Dependent Variable (Firm Performance):

The dependent variable of the current study is firm performance. Literature shows that many financial and market measurements used to evaluate corporate performance. The most notable measures used throughout accounting literature are, Return on Assets (ROA), Return on Investment (ROI), Return on Equity (ROE), profit margin, Return on Sales (ROS), Earnings Per Share (EPS), and Tobin’s Q (Yermack, 1996; Sun and Zhang, 2000; Gao and Ma, 2002; Choi et al., 2007; Adams and Mehran, 2012; Mousa and Desoky, 2012; Rahman et al., 2019; Ali et al., 2020). ROA is considered the most dominant measure used in accounting literature among the above financial measurements. Accordingly, this research adopted Return on Assets (ROA) as a proxy to evaluate the corporate performance. ROA is the ratio of income divided by total assets. The higher ROA ratio indicates better and more efficient firm performance.

5.2.2 Independent Variables:

The current study used two groups of independent variables, namely, board characteristics with three variables (board size, non-executive directors and CEO duality), and firm characteristics with four variables (firm size, audit quality, financial leverage and type of industry). The definitions of independent variables are shown in Table 2.
Table 2: Variables of the Study

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Symbol</th>
<th>Measurement</th>
</tr>
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<tbody>
<tr>
<td>Panel A: Board Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1- Board size</td>
<td>BSIZE</td>
<td>Number of the Board of Directors.</td>
</tr>
<tr>
<td>2- Non-executive directors</td>
<td>BINDEP</td>
<td>% of Non-executive directors to total board members.</td>
</tr>
<tr>
<td>3- CEO duality</td>
<td>RDUAL</td>
<td>A dummy variable: (0) if the CEO is the same as the board chair; and (1) otherwise.</td>
</tr>
<tr>
<td>Panel B: Firm Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1- Firm size</td>
<td>FSIZE</td>
<td>Firm market capitalization.</td>
</tr>
<tr>
<td>2- Audit quality</td>
<td>QAUDIT</td>
<td>A dummy variable takes (1) if the firm is audited by the Big-4 and (0) otherwise.</td>
</tr>
<tr>
<td>3- Financial leverage</td>
<td>FLEVER</td>
<td>Total liabilities/total assets</td>
</tr>
<tr>
<td>4- Firm industry</td>
<td>FINDUS</td>
<td>A dummy variable: (1) if the firm is industrial; 2 if the firm is service; 3 if the firm is real estates and 4 if the firm is investment.</td>
</tr>
</tbody>
</table>

5.3 Data Analysis:

Descriptive statistics, Pearson correlation, and regression analysis were carried out. Ordinary Least Square – (OLS) model was used for seven independent variables (BSIZE, BINDEP, RDUAL, QAUDIT, FLEVER, FINDUS and FSIZE). The regression equations used as follows:

\[ Y (\text{FROA}) = \beta_0 + \beta_1 \text{BSIZE} + \beta_2 \text{BINDEP} + \beta_3 \text{RDUAL} + \beta_4 \text{FSIZE} + \beta_5 \text{QAUDIT} + \beta_6 \text{FLEVER} + \beta_7 \text{FINDUS} + \varepsilon \]

Where \( \beta_0 \) is constant and \( \varepsilon \) is the error term.
6. Findings of the Study:
6.1 Descriptive Statistics:

Table 3 shows the descriptive statistics for variables of the current study. FROA, as an accounting measure for firm performance, the mean percentage is 0.0277057 % with STD 0.13019467. FROA has maximum value 0.51 while, -0.855 is the minimum value. Regarding board characteristics variables, as first group of independent variables, the mean of BSIZE is 8 members. The smallest size of the board is 2 members, and 19 directors represent the largest size of the board in the study sample. The mean of BINDEP is nearly 52% this reflects a lack of board independence in some firms (minimum 0%) in other words, all directors are executive members in contrast, in other firms, all board members are non-executives (maximum 100%). Concerning RDUAL variable, 65.9% of firms in the study sample has one person works as CEO as well as the chairman of the board while, 34.1% of firms have a separation between the two positions. Concerning, firm characteristics variables, the mean of FSIZE is 3654951539 while, 15435000 and 118780361524 are the minimum and maximum of the market value of the companies in the sample, respectively. FLEVER has a mean of 0.4918930. Concerning QAUDIT variable, there are 294 firms have been appointed non-big audit firms representing (76.6%) and 90 firms appointed one of the big 4 audit firms (23.4%).

Table 3: Descriptive Statistics of the Study

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>STD</th>
</tr>
</thead>
<tbody>
<tr>
<td>FROA</td>
<td>384</td>
<td>-0.85500</td>
<td>0.51000</td>
<td>0.0277057</td>
<td>0.13019467</td>
</tr>
<tr>
<td>BSIZE</td>
<td>384</td>
<td>2</td>
<td>19</td>
<td>8.00</td>
<td>2.871</td>
</tr>
<tr>
<td>BINDEP</td>
<td>384</td>
<td>0.00</td>
<td>100.00</td>
<td>51.9880</td>
<td>30.36968</td>
</tr>
<tr>
<td>FSIZE</td>
<td>384</td>
<td>15435000</td>
<td>118780361524</td>
<td>3654951539</td>
<td>9719338064</td>
</tr>
<tr>
<td>FSIZE (EGP' 000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLEVER</td>
<td>384</td>
<td>0.00100</td>
<td>4.68700</td>
<td>0.4918930</td>
<td>0.37416061</td>
</tr>
<tr>
<td>Dummy variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RDUAL</td>
<td>384</td>
<td>253 (65.9)</td>
<td></td>
<td>131 (34.1)</td>
<td></td>
</tr>
<tr>
<td>QAUDIT</td>
<td>384</td>
<td>294 (76.6%)</td>
<td></td>
<td>90 (23.4%)</td>
<td></td>
</tr>
</tbody>
</table>

(*) Details on FINDUS variable sees Table 1. Standard Deviation (STD). Egyptian pound (EGP).
6.2 Univariate Analysis:

Pearson correlation was conducted to reflect the associations or correlations among continuous variables of the study, rather than dummy variables, as well as the direction of these associations. Table 4 presents the results of Pearson matrix. FROA, the dependent variable of the study, has a number of significant correlations with independent variables, namely BSIZE, FLEVER and FSIZE at the significant level 1%. FROA has a positive association with both BSIZE and FSIZE in contrast, it has a negative correlation with FLEVER. In addition, FROA has non-significant correlation with BINDEP and FINDUS. Moreover, BSIZE has a significant positive correlation at the level of 1% with BINDEP while it has a significant positive correlation at the level of 5% with FSIZE. Finally, BINDEP has a significant positive association at the level of 5% with FLEVER and FSIZE.

Table 4: The Correlation Analysis of the Study

<table>
<thead>
<tr>
<th></th>
<th>FROA</th>
<th>BSIZE</th>
<th>BINDEP</th>
<th>FSIZE</th>
<th>FLEVER</th>
<th>FINDUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FROA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSIZE</td>
<td>0.169**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BINDEP</td>
<td>-0.026</td>
<td>0.185**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSIZE</td>
<td>0.150**</td>
<td>0.122*</td>
<td>0.103*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLEVER</td>
<td>-0.480**</td>
<td>-0.083</td>
<td>0.125*</td>
<td>0.053</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>FINDUS</td>
<td>0.054</td>
<td>0.050</td>
<td>-0.050</td>
<td>-0.059</td>
<td>-0.059</td>
<td>1</td>
</tr>
</tbody>
</table>

1- ** Correlation is significant at the 0.01 level & * Correlation is significant at the 0.05 level.

2- Pearson correlation was performed for all non-dummy variables.

3- All coefficients are based on 384 observations (from 2016 to 2018).
6.3 The Multivariate Analysis:

Ordinary Least Square (OLS) regression has been conducted in the current study to test the hypotheses of the study. Table 5 provides the results of regression analysis of the study.

**Table 5: The Regression Analysis of the Study**

<table>
<thead>
<tr>
<th>Coefficients (Beta)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.046</td>
<td>2.011</td>
</tr>
<tr>
<td>BSIZE</td>
<td>0.107</td>
<td>2.361</td>
</tr>
<tr>
<td>BINDEP</td>
<td>0.002</td>
<td>0.034</td>
</tr>
<tr>
<td>RDUAL</td>
<td>0.094</td>
<td>2.130</td>
</tr>
<tr>
<td>FSIZE</td>
<td>0.168</td>
<td>3.733</td>
</tr>
<tr>
<td>QAUDIT</td>
<td>0.007</td>
<td>0.152</td>
</tr>
<tr>
<td>FLEVER</td>
<td>-0.474</td>
<td>-10.538</td>
</tr>
<tr>
<td>FINDUS</td>
<td>0.027</td>
<td>0.606</td>
</tr>
<tr>
<td>R²</td>
<td>0.282</td>
<td></td>
</tr>
<tr>
<td>adjusted R²</td>
<td>0.269</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>21.063</td>
<td></td>
</tr>
<tr>
<td>(p-value)</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Model (FROA) is statistically significant with p-value (0.000) to explain the dependent variable of the study, measured by ROA, with F-value of 21.063 and R² of 0.282 in addition, an adjusted R² of 0.269 that can explain 27% of the variance in corporate performance. Statistically significant results regarding the BSIZE, RDUAL, FSIZE and FLEVER variables were found. As shown in Table 5, BSIZE has a significant positive effect on FROA (with the coefficient of 0.107 which is statistically significant at 5%). This result is agreeing with the idea that the larger the size of the company’s board, the more it will have a positive impact on the firm's financial performance. As the increase in the members of the board gives the opportunity to contain the board of directors on a greater diversity of experiences and skills within the Board. Such result is consistent with the results of prior studies (Alexander et al. 1993; Daily et al., 2003; Coles et al. 2008; Harford et al. 2008; Mishra and Kapil 2018).
which found a positive relationship between BSIZE and FROA. Further, our results support the agency theory’s perspective. Consequently, H1 in the current study is accepted.

Furthermore, RDUAL has a significant positive association with FROA (with the coefficient of 0.094 which is statistically significant at 5%). This result supports stewardship theory which supports the idea that the individual leader of the company helps to standardize leadership style and create an effective management system. On the contrary, the positive effect of RDUAL on a company's financial performance contradicts the agency theory. The result of RDUAL is consistent with Donaldson and Davis, 1991; Brickley and Zimmerman, 2010; Elsayed, 2010 and Rashid, 2016. However, it is contradictory to Jensen, 1993; Judge et al. 2003; Ehikioya, 2009; Dalton and Dalton, 2010 and Van Essen et al. 2013. In the light of the above argument, H3 is accepted.

FSIZE has a positive coefficient of 0.168, which is statistically significant at 1%, reflecting a significant positive effect on FROA. This supports the acceptance of H4. Our result is conflicting with Mishra and Kapil (2018) and Allam (2018) who reported a negative association between FSIZE and financial performance of the firm. Conversely, our result is consistent with Ozgulbas et al., 2006; Jonsson, 2007; Vijayakumar and TamizhSelvan, 2010 and Vieira, 2018 who concluded a significant positive correlation between corporate performance and FSIZE. The results for the FLEVER variable suggest a significant negative effect on FROA which supports the acceptance of H6. Our finding related to FLEVER is in line with the findings of previous research such as Fooladi and Shukor, 2012; Ibhogui and Olokoyo, 2018 and Ali et al., 2020 who also found negative correlation between FLEVER and firm performance. In addition, this result is agreed with the agency view. Conversely, such results are not consistent with Sanda et al., 2005 and Sulong et al., 2013 who reported a positive correlation between FLEVER and firm performance.
Furthermore, other variables in the Model have non-significant associations with FROA. For example, BINDEP has non-significant positive association with FROA thus, H2 is rejected. Such result is inconsistent with prior research such as Klein, (2002), Davidson et al., (2005), Sylvie et al., (2012), Sheikh et al. (2013) and Waheed and Malik (2019) who found a negative correlation between BINDEP and FROA. This result is conflicting with the agency view which expects a significant positive effect of BINDEP on financial performance of the firm. QAUDIT has non-significant positive association with FROA thus, H5 is rejected. This finding is in line with the results of Singer and Zhang (2018) and Elewa and El-Haddad (2019) who also found non-significant association with FROA. FINDUS has non-significant positive association with FROA thus, H7 is rejected. This finding indicates that there is no influence of FINDUS on FROA which is not consistent with previous studies which reported different results among different industries such as Niresh and Velnampy (2014), Koumanakos (2008), Palaniappan (2017) and Rahman et al. (2019).

7. Conclusions:

The current study examined the effect of both board and firm characteristics using a sample of 384 firm-year observations from the Egyptian Stock Market (EGX), an emerging market covering the period from 2016-2018. The findings of the study revealed that board size, CEO duality and firm size have a significant positive effect on corporate performance measured by Return on Assets (ROA). On the contrary, financial leverage has a significant negative correlation with corporate performance. These results support H1, H3, H4 and H6 thus, these hypotheses are accepted. In contrast, board independence, audit quality and firm industry seem to have an insignificant association with firm performance therefore, H2, H5 and H7 were rejected. The current research contributes to the literature by adding empirical evidence on the effect of some board and firm characteristics namely role duality, board size, firm size, and leverage on the financial performance of the firm. From a theoretical perspective, the positive effect of role duality on corporate performance supports the stewardship view, while the positive effect of board size supports the agency theory view.
The current research has some limitations, e.g. the sample, and the study period, as the study relied on EGX100 index companies on the Egyptian Stock Exchange (EGX) for a period of three years only. Therefore, one must be cautious of this when considering the results of the study. In addition, there are some characteristics that are not included in the study, such as the impact of economic and political characteristics on the company’s financial performance.

The descriptive analysis of this research highlights a discrepancy between some board characteristics (i.e. board size and CEO duality) and the Egyptian capital market law. From a practical perspective, Egyptian policy makers should review the companies’ compliance with capital market law and the market code of conduct. From a research point of view, the above discrepancy shows a gap that needs to be investigated in future Egyptian security market research which is out of the scope of the current research. Also, Future studies might investigate the effect of other features of the board of directors on the firm performance, such as the diversity of gender in the board and the effect of the experience and scientific qualification of the board members on the company's performance.
Reference:


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26(1), 67–85.


بحث تأثير خصائص مجلس الإدارة وخصائص الشركة على أداء الشركات
(منظور نظرية الوكالة)

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تهدف الدراسة إلى بحث تأثير كل من الخصائص المختلفة لمجلس الإدارة وخصائص الشركة على أداء الشركات المالي. باستخدام منظور نظرية الوكالة، استخدمت الدراسة عينة من 384 مشاهدة من البورصة المصرية من عام 2016-2017. تم استخدام التحليلات الإحصائية لتحديد أثر المتغيرات المستقلة السبعة (الخصائص المختلفة) التي تؤثر على أداء الشركات من خلال اختبار التأثير الشرطي للشروط.

تظهر نتائج الدراسة أن كلًا من حجم مجلس الإدارة وازدواجية دور الرئيس التنفيذي وحجم الشركة ودرجة الرفع المالي لها تأثير إيجابي قوي على أداء الشركة وفي المقابل، المتغيرات الأخرى؛ استقلالية مجلس الإدارة وجودة عملية المراجعة ونوع الصناعة، لم يكن لها ارتباط قوي مع أداء الشركات.

تدعم نتائج الدراسة أن الشركات الكبيرة ذات مجالس الإدارة الكبيرة مع مستويات منخفضة من الرفع المالي وازدواجية الرئيس التنفيذي تتمتع بأداء مالي أفضل من الشركات الأخرى. ومع ذلك حيث إنه لم يتم بحث تأثير الخصائص الاقتصادية والسياسية على أداء الشركات، لذلك يجب توخي الحذر عند تعميم النتائج.

تضيف هذه الدراسة لأدبيات الفكر المحاسبي بعض الأدلة على الأثر الهام لهذه بعض خصائص مجلس الإدارة والشركات وهي ازدواجية دور الرئيس التنفيذي وحجم مجلس الإدارة وحجم الشركة ودرجة الرفع المالي على الأداء المالي للشركات.