

Board Characteristics and Firm Performance: Evidence from Egypt

Mrwan Amer *, Aiman A. Ragab** and Mohamed A. Ragheb ***

The focus of this study is in the area of corporate governance. The overall aim of this research is to interpret the relationship between the board characteristics and the firm performance represented by the ROA, ROE and Tobin's Q. Such a study is important because the critical role a board plays in the success of a firm merits an in-depth research on different factors that link a board to a firm performance. The research approach adopted in this research includes GLS random effect regression over the nine year test period which test for the existence of the proposed relationship between board characteristics and firm performance. This study will reflect the impact of the recent developments in the corporate governance in Egypt on corporate performance from 2004 which is considered the year of issuance of the Egyptian code of corporate governance till 2012. The sample used in the study is based on the 50 most active Egyptian companies listed in the Egyptian stock market; these companies are considered the best reflection for the Egyptian market. The findings from this research provide evidence that there is a positive relationship between the proportion of independent directors on the board and firm financial performance as measured by ROE, board meetings results showed a positive significant relationship with ROE, CEO duality showed a significant positive relationship with ROE, and the director ownership is positively associated with firm performance as measured by ROE, but the relation is not significant. The relationship between these factors and the other performance measures; ROA and Tobin's Q are also investigated.

Key words: Corporate Governance, Board of Director Characteristics, Financial Performance

1. Introduction

In the past decades very little attention was grabbed towards corporate governance and boards of directors; they were only handled by some management teaching, research and popular writing. The term Corporate Governance was not even used until well in to the 1980s. However, beginning in the 1980s and continuing and growing within the 1990s, corporate governance received increasing attention among practitioners, academics and other groups.

Early at this century, some major corporate meltdowns received extensive media attention; like Enron, WorldCom and Adelphia began to receive more attention than before. Yet, corporate governance was being noticed even before those meltdowns. Further, the major corporate scandals that happened raised much corporate issues such as the role of[†] board of directors in monitoring management performance.

* Mr. Mrwan Amer, Lecturer in Accounting and Finance, College of Management & Tech., Arab Academy for Sciences & Tech., Egypt, PhD student at Cardiff Metropolitan University, Email: mrwan.amer@gmail.com

**Prof. Dr. Aiman Ahmed Ragab, Dean of College of Management & Tech., Arab Academy for Sciences & Tech., Egypt, E mail: aaragab@aast.edu

***Dr. Mohamed A. Ragheb , Associate Prof. in Operations Research, College of Management & Tech., Arab Academy for Sciences & Tech., Egypt, E mail: raghebmm67@gmail.com

A strong board can play a very crucial economic role in firm performance. They can aid in linking the firm to its environment, provide secure critical resources (Williamson, 1996; Hillman et al., 2000), and contribute actively in a firm's strategic decision making (Fama & Jensen, 1983, Davies, 1999; Kemp, 2006). Another important role of boards is to act as a mechanism of internal governance and monitoring of management (Barnhart, Marr & Rosenstein, 1994; Shleifer & Vishny, 1997). A board performing these roles effectively is likely to facilitate superior firm performance (Hawkins, 1997; Gompers, Ishii, & Metrick, 2003). The critical role a board plays in the success of a firm merits an in-depth research on different factors that link a board to a firm performance.

2. Description of the Existing Egyptian Governance

Boards in the Egyptian companies seemed to be a one-tier structure; meaning that one single board comprising executive and non-executive directors. Such type of board structure is predominant in countries such as the UK, the USA and the majority of EU Member States (Mallin, 2007). However, in Egypt, boards lack the rules that govern their structure from executive or non-executive directors. The concept of 'non-executive director' was firstly introduced in the 2002 listing rules. As stated in the Egyptian code of corporate governance *"The BOD should include a majority of non-executive members with an appropriate mix of skills, technical, or analytical experience that is of benefit to the board or corporation."*

Egyptian companies often practice CEO duality; where only one person plays both roles: the chairman and the CEO. The board member responsible for the executive management is sometimes called the managing director or the chief executive officer. This means that the CEO is responsible for the running of the board as well as the running of the company's business. As stated in the Egyptian code of corporate governance *"The BOD undertakes the designation of the chairperson and managing director; it is preferred that the two posts not be held by the same person."*

As for the board size, the board of directors is usually composed of an odd number of members, at least three. The annual general assembly is responsible for electing directors on the board for a period of three renewable years, setting their remuneration, and removing them if necessary. Directors must submit their resume, including a list of companies with which they have been related during the previous three years. For an employee to be recruited as a director, he/she must have been serving the company for at least two years. In case the company experiences losses, board members cannot be re-appointed.

Board meetings are held upon the request of either the chairman or two-thirds of the members. A board meeting is considered valid only if the number of attendees is not less than half of its members plus one, where the number of attendees must be at least three. Despite this, there is no disclosure of board meeting attendance. The board is fully responsible to the shareholders. In this essence, the board of directors' main responsibility falls in supervising the implementation of the company's objectives as decided by its general assembly. In light of such responsibility, the board of directors perform many functions; including inviting the shareholders to meet, investing the company's funds, requesting loans, appointing executive managers and submitting financial statements and board reports to the general assembly meeting.

As stated in the Egyptian code of corporate governance *“The board should convene no less than once every three months. The number of conventions and the names of the members who failed to attend the meetings of the board or its sub-committees will be revealed in the corporation’s annual report.”*

3. Literature review and hypotheses development

Basically the board should be the main mechanism of internal governance and monitoring of management (Barnhart et al. 1994; Shleifer and Vishny 1997). An effective and strong board could aid firm performance economically. As it can link a firm to its environment, secure critical resources (Williamson 1996; Hillman et al. 2000), and significantly affects the firm’s strategic decision making (Fama and Jensen 1983; Davies 1999 and Kemp 2006). Hence, such a board would likely help the firm to improve performance (Hawkins 1997; Gompers et al. 2003).

3.1 Board Independence

Up till the 1960s boards in the United States were mostly composed of internal directors. But since then and up to the current situation, firms have had more predictable wisdom that turned board composition to be mostly composed of external directors. (Bhagat & Black, 2002). Hermalin and Weisbach (1988) and Bhagat and Black (2002) found that firms experiencing poor performance were more likely to increase the proportion of outside directors than better performing firms, signifying a contraction of monitoring in order to lessen agency problems. However, neither author found that improved performance stemmed from these changes. Hill and Snell (1988) found that the proportion of outside directors on the board and profitability were positively associated. Similarly, Brown and Caylor (2004) found that a board whose the majority of its members are independent directors helps the firm to achieve higher returns on equity, higher profit margins, larger dividend yields, and larger stock repurchases. Nonetheless, Hermalin and Weisbach (1991) concluded from their study that there isn’t any significant impact of the insider/outsider ratio of boards on Tobin’s Q. Accordingly; they argued that insiders and outsiders were more-or-less equivalent in affecting firm performance. Also, Agrawal and Knoeber (1996) found that the existence of more outsiders on the board was linked to higher levels of debt financing and lower levels of firm performance. John and Senbet (1998) argued that a board having more non-executive directors (NEDs) is considered to be more independent. Yet, relating this to firm performance yielded mixed or inconsistent results in different empirical studies. In one breath, it is asserted that executive (inside) directors are more familiar with a firm’s activities and thus are more capable of monitoring top management. On the other hand, it is contended that NEDs are treated as “professional referees” to ensure that competition among insiders stimulates actions consistent with shareholder value maximization (Fama, 1980). Weisbach (1988) and Cotter et al. (1997) supported this view emphasizing that outside directors play a critical role in protecting shareholders’ interest through effective decision control. Still, some authors didn’t identify any significant relationship between proportion of NEDs and firm performance (Hermalin and Weisbach, 1991; Bhagat and Black, 2002). It has been rather shown that the effectiveness of a board depends on the optimal mix of inside and outside directors (Fama and Jensen, 1983; Baysinger and Butler, 1985; Baysinger and Hoskinsson, 1990; Baums, 1994). However, available theory is inadequate on the determinants of optimal board composition (Weisbach, 2002). We measure the independence of the board by finding the ratio of NEDs to board size and we expect this to have a positive relationship with firm performance. Subsequently we test the following hypothesis:

H1: Greater independence of the board of directors is associated with higher firm performance.

3.2 Board Size

It has been a debate, from many perspectives, whether the board is preferred to be of a large size or small size (Jensen 1993; Yermack, 1996; Dalton et al., 1999; Hemalin & Weisbach, 2003). While some favored smaller boards to improve firm performance (e.g., Lipton & Lorsch, 1992; Jensen 1993; Yermack, 1996) others have recommended that larger boards are better for enhancing firm performance (Pfeffer, 1972; Klein, 1998; Adam & Mehran, 2003; Anderson et al., 2004; Coles et al., 2008). For example; Lipton & Lorsch, 1992 went for smaller boards claiming that they would help the firm to avoid social loafing and free-riding. Jensen, 1993 added that smaller boards usually ease co-ordination, cohesiveness and communication. This matches O'Reilly et al., 1989 view which declared that with the increase in board size, the effectiveness of interpersonal communication decreases, and coordination problems seem to be obvious, which would most probably develop factions and conflicts. Also, earlier studies; Yermack (1996) and Eisenberg et al. (1998) have practically proven that smaller boards are linked to higher firm value.

On the other hand, larger boards were seen beneficial on the ground that they enable advice to CEO and superior monitoring of management (Pfeffer, 1972; Klein, 1998; Adam & Mehran, 2003; Anderson et al., 2004; Coles et al., 2008). Klein (1998) argued that the more the organization becomes complex, the more the CEO will need advice. Klein further added that advisory needs of CEO also increase as long as the firm's dependence on environmental resources increases. In this essence, increasing board size helps businesses to manage the environment (Pfeffer, 1972; Pearce & Zahra, 1992). Furthermore, the agency theory supports larger boards for their monitoring effectiveness that is developed by limiting the domination of the CEO within the board and protecting shareholders interests (Singh & Harianto, 1989).

Hermalin and Weishbach (1998) argued that board independence; which mainly depends on the negotiations between the board and the CEO, promotes board effectiveness. Accordingly, in larger boards, the bargaining position of the board becomes stronger against the CEO and thus, enabling the board to monitor management more effectively. Further, a larger board will also ease the creation of committees to delegate specialized responsibilities. From the resource dependency theory perspective, boards are chosen to maximize the provision of important resources to the firm (Pfeffer, 1972; Pfeffer & Salancik, 1978; Klein, 1998; Hillman & Dalziel, 2003). Recalling the demonstration shown previously by Klein (1998) concerning the advisory needs of the CEO in case of increased dependence on environmental resources, increasing board size links the organization to its external environment and secures critical resources. In response to resource dependencies and regulatory pressures, organizations create large boards to encompass directors from different backgrounds (Pfeffer, 1972; Pearce & Zahra, 1992).

Finally, to sum up, while the smaller boards provide a greater room for CEO domination of board resulting in agency costs, larger boards benefit firms by providing effective oversight of management, enabling the firm to opt the available necessary resources and allowing for representation of different stakeholders in the firm. This makes larger boards more beneficial in improving firm performance. Consequently, this research proposes the following hypothesis:

H2: There is positive relationship between board size and firm performance.

3.3. CEO Duality

Leighton and Thain (1993), and Lechem, (2002) highlighted that the board Chair plays a significant role in the decision making as well as the effectiveness in monitoring the management while the later being headed by the Chief executive. However, in many cases, these two positions are merged making only one person in charge to build a unified leadership. Actually, stewardship theorists supported this view referring to it as CEO duality, arguing that it enhances the effectiveness of leadership in organizations (Finkelstein & D'Aveni, 1994). On the other hand, agency theorists went for the separation of the two positions to ensure the effective monitoring of management. Determining which of separation or CEO duality would be better for a firm is being investigated by different studies producing mixed results. For example, Lipton and Lorsch (1993), Worrell, Nemec and Davidson (1997), and Carlsson (2001) opposed CEO duality claiming that it compromises the monitoring role of the board due to conflict of interest. They asserted that in case of a strong CEO, CEO duality would make the board insufficient and powerless. Lorsch and MacIver (1989) have raised the question of whether directors are pawns or potentates in front of the CEO. Moreover, Rechner and Dalton (1991) concluded that firms where CEOs have a dual role usually have less performance than those without CEO duality.

In contrast, other studies like Anderson & Anthony, 1986; Donaldson & Davis, 1991, and Charan, 1998 supported CEO duality. They argued that separating the chairman and CEO positions would prevent the firm from having the unified focus of its energies which are vital in realizing the organizational goals. They declared that a CEO serving the chairman position as well will have full authority over the firm that would aid improving firm performance. Boyd (1995) found that duality actually led to better performance among the US firms. Nevertheless, another set of scholars (Daily & Dalton, 1997; Dalton et al., 1998; Weir & Laing, 1999, Abdullah, 2004) have not detected any effective difference between the firms with CEO duality and those without. In a recent meta-analysis, Rhoades et al. (2001) provided support for the emergencies view that the framework of the study moderates the relationship between CEO duality and firm performance. For instance, CEO duality and firm performance are positively related in the anti-takeover studies and negatively related in the compensation studies. Focusing on the importance of context on the study of CEO duality, Rhoades et al. (2001) stated *“our findings highlight the value of studying the situations when two heads are better than one, rather than exploring whether two heads are better than one. Obviously further research is required to increase our understanding on this matter”*. In US firms, CEO duality is as high as 80 – 84 per cent (Lorsch & MacIver, 1989; Core et al., 1999; Vafeas, 1999). According to Rechner, 1989, when all the power is concentrated in the hands of CEO, the board turns to be *‘a rubber’*. The CEO duality most probably would raise agency problems, limiting the effectiveness of board in management monitoring (Jensen, 1993; Strickland, Wiles & Zenner, 1996). It is also considered an obstacle to board's flexibility in performing one of its main duties of replacing a poorly performing CEO (Goyal & Park, 2002) and is allied with too much compensation (Core et al., 1999).

By the way, Hence, CEO duality is likely to unfavorably affect firm performance. Given that, this research proposes the following hypothesis:

H3: CEO duality is negatively associated with firm performance.

3.4 Board Meetings

Conger et al. (1998) has referred to board meetings as a critical resource for improving the board effectiveness. Likely, Vafeas, 1999 viewed the strength of board activity as a significant value-relevant board attribute. Actually, the frequency by which board members meet; to discuss the different issues raised against the firm, strongly influences the effectiveness of the board. (Vafeas, 1999; Carcello, et al., 2002). Conscientious boards are able to improve the level of supervision, resulting in better firm performance. For a board to be diligent, however, board meeting is not the only important aspect; other aspects are rather important; such as preparation before meetings, attentiveness, and participation during meetings and post-meeting follow-up (Carcello et al., 2002). Though, board meeting is the only noticeable and publicly documented aspect. *A priori*, the nature of the relationship between board activity intensity and firm performance is not clear. Yet, many studies asserted that board meetings are beneficial to shareholders, and emphasized the importance frequency of these board meetings. For instance, Zahra and Pearce (1989) speculated that effective meetings are crucial for successful board performance. Similarly, Vafeas (1999) argued that increased board meetings map the intensity of board activity and concluded a significant relationship between board meetings and firm performance.

Lipton & Lorsch, 1992 and Byrne, 1996 recommended that the more frequent a board meets, the higher the likelihood of performing its duties diligently to protect shareholders interests. In this study it was stated that *“the most widely shared problem directors face is lack of time to carry out their duties”*. Also, Beasley et al. (2000) observed that fraud records increase at firms that have less number of audit committee meetings. And, Lawler et al. (2002) found that board practices are positively related to firm performance. On the contract, Uzun et al. (2004) did not detect any significant difference in board meetings, whether or not the firm is involved in fraud records. Also, from the agency perspective, the board is primarily responsible for monitoring management to be able to diminish agency costs and appropriation by the managers. And, the Effectiveness of boards can be enhanced by meeting recurrently (Latendre, 2004) and signifying greater diligence (Carcello, et al., 2002). On the other side, Vafeas (1999) recommended that for monitoring an agency to maintain good governance, increasing frequency of board meetings would be easier than changing any of the other board characteristics, like, director ownership or gender diversity. Lawler et al. (2002) demonstrated the positive relationship between effective board practices and firm performance.

As concluded empirically, board meetings are considered a resource that would lead to board diligence. Also, increased board meetings is beneficial for the board as it provides more time for directors to discuss, set strategy, and monitor management effectively. Increasing meetings frequency is relatively less expensive than changing other board characteristics to not only protect shareholder value but also to improve firm performance. In regard of this conclusion, the following hypothesis has been developed:

H4: Board meetings are positively associated with firm performance

3.5 Director Ownership

Berle and Means (1932) outpointed a relationship between ownership and firm performance, recommending that firms going public should separate ownership from control. Fama & Jensen, 1983 supported this view stating that ownership separation improves professionalism through management proficiency and firm-specific knowledge. This view is however opposed by the agency theory which reveals that separating ownership from control generates conflict of interests (Berle & Means, 1932), which in turn leads to expropriation by managers (Fama, 1980; Shleifer & Vishny, 1997). While stockholders are concerned with maximizing the value of the firms, managers might be only considering how to develop their personal wealth and prestige. These diverse interests between shareholders and managers incur agency costs that require the provision of monitoring mechanisms by the boards of directors (Fama & Jensen, 1983). The agency theory suggested that aligning the interests of the managers more closely with those of shareholders/owners; by increasing managers' stock ownership, would help minimize the potential conflict (Jensen & Meckling, 1976). Joining the ownership and control through meaningful director stock ownership would probably lead to better management monitoring (Elson, 1996). Such alignment of interests would lessen the need for monitoring and mitigating agency costs.

On the other hand, McGregor (1967) argued that that conflict might be eliminated if an individual identifies with an organization and then intentionally directs his efforts towards the organizational goals. Davis et al. (1997) supported this view pointing out that there isn't inherited conflict between managers and shareholders. The author rather posited a fact, that managers at professional levels are highly committed to the organization and its goals, whereas shareholders might only be concerned with short term returns. Moreover, Fama (1980) and Shleifer and Vishny (1997) declared that there is a positive link between reputation and compensation of directors. The importance of reputation for directors lies in helping them in career growth and compensation. As stated by (Elson, 1996), in many cases, effective performance of directors is further compensated or rewarded by means of granting stocks.

Empirically, many studies indicate that managerial ownership improves firm performance (e.g., Jensen & Murphy, 1990; Chung & Pruitt, 1996; Palia & Lichtenberg, 1999). Brickley et al. (1988) argued that managers and board members owning stocks are more motivated and keen to run the firm efficiently and to control managers carefully. However, other studies were not so obvious about the relationship between managerial ownership and firm performance. De Angelo and De Angelo (1985) followed the agency theory perspective mentioning that high level of managerial ownership will entrench management and create agency problems. Morck et al. (1988) and Shleifer and Vishny (1997) anticipate the potential of exploitation of firm results by management to favor themselves. Becht et al. (2005) argue that stock options might allow CEOs to enrich themselves and expropriate shareholders. Some other scholars find that managerial ownership is endogenously determined (Demsetz & Lehn, 1985; Loderer & Martin, 1997; Cho, 1998).

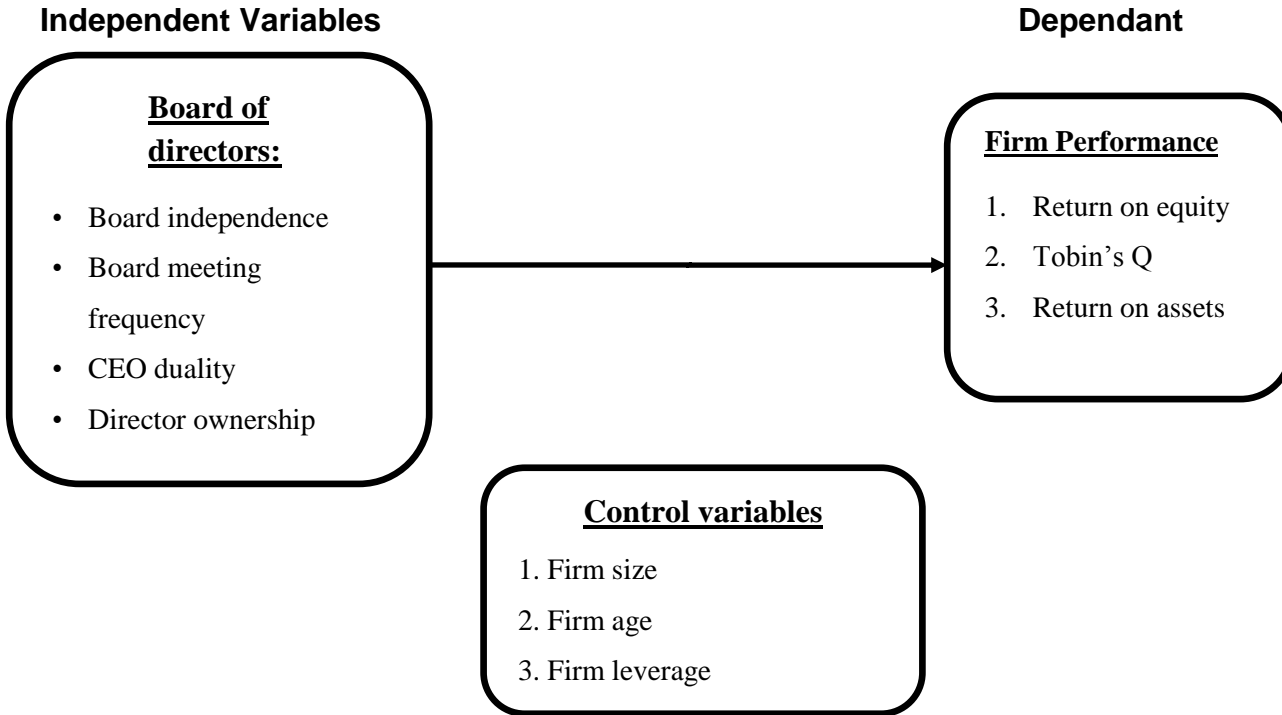
In spite of some questionable results, there is an extensive number of studies supporting the notion that director ownership helps in aligning the owners' and the management interests, and provides a way of monitoring risk taking behavior of managers (Fama, 1980; Jensen and Meckling, 1976; Bebchuk, et al., 2002; Chung and Pruitt, 1996; Core, Holthausen & Larcker, 1999; Becht et al., 2005). Also, as argued by Shleifer & Vishny, 1996, aligning interests could alleviate free-ride problem of monitoring to boost board effectiveness. Nonetheless, the stewardship theory denies the existence of conflict of interests between directors or managers and shareholders. It rather argued that both of them unite their interests with organizational goals (Donaldson & Davis, 1994; Davis et al., 1997).

Therefore, it could be depicted that firm performance would be improved if directors and shareholders' interests are aligned through director ownership. Accordingly, the first hypothesis for this study states that:

H5: Director Ownership is positively associated with firm performance.

4. Conceptual framework

This section will explore various board characteristics that are expected to have an effect on firm financial performance based on the literature review that was illustrated earlier. Figure 1.1 presents the conceptual framework of this study. On the left hand-side, there are the listed board characteristics namely, board independence, board meetings, CEO duality, director ownership, and board size. These variables are related to the firm performance, shown on the right hand side, which is measured by return on equity, return on assets and Tobin's q. The relationship between board characteristics and the firm performance is controlled by firm size, firm age and firm leverage.



5. Research methodology

This research applies the GLS random effect regression over the nine years test period. This model will test the proposed relationship between board characteristics and firm performance. Statistical analysis of the data is then performed using the computer software, STATA. This package provides a platform where both univariate and multivariate testing methods can be applied to the research design utilised by this study.

Descriptive statistics are used to organize, summarize and describe the sample and also to confirm that no predictions or inferences are made regarding the population parameters. The study used the Pearson correlation coefficient as a measure of association to test the association between independent and dependent variables.

The proposed regression model is defined by the following equation.

$$PERF_{it} = \beta_{0it} + \beta_1 BSIZE_{it} + \beta_2 BINDEP_{it} + \beta_4 BMEET_{it} + \beta_3 CEODUAL_{it} + \beta_5 DOWN_{it} + \beta_6 FSIZE_{it} + \beta_7 FAGE_{it} + \beta_8 FLEV_{it} + E_{it}$$

Where $PERF_{it}$ is a measure of performance taken as *ROA, ROE and Tobin's Q* for firm *i* at time *t* and E_{it} is the error term.

Where:

$BFSIZE_{it}$ is Board size for firm *i* for time *t*

$BINDEP_{it}$ is Board independence for firm *i* for time *t*

$BMEET_{it}$ is Board meeting frequency for firm *i* for time *t*

$CEODUAL_{it}$ is CEO duality for firm *i* for time *t*

$DOWN_{it}$ is Director ownership firm i for time t

$FSIZE_{it}$ is Firm size for firm i for time t

$FAGE_{it}$ is Firm age for firm i for time t

$FLEV_{it}$ is Firm leverage for firm i for time t

Table 1 explains and summarizes the variables used in this study, definition of each variable and the measurement of each one.

Table 1: Variables definition and measurement

Dependant Variables	Variable Name	Measurement
ROE	Return on equity	Measured as percentage of net income to common equity
Tobin's Q	Tobin's Q	Measured as the market value of equity capital and the book value of firm's debt divided by the book value of total assets
ROA	Return on assets	Measured as percentage of net income to total assets
Independent Variables		
BSize	Board size	Number of directors on the board
BINDEP	Board independence	Proportion of independent directors over the total number of directors
BMEET	Board meeting frequency	Number of meetings held
CEODUAL	CEO duality	1 if CEO is also the chairman, 0 otherwise
DOWN	Director ownership	Proportion of shares owned by directors among total firm shares outstanding
Control variables		
FSIZE	Firm size	The total assets owned by the firm, measured as the natural logarithm of total assets
FAGE	Firm age	Measured as the number of years since its incorporation in its logarithm
FLEV	Firm leverage	Measured as percentage of total debt to total assets

5.1 Sample selection

This study covers a time period of nine years from 2004 to 2012, this time period were selected because this study uses the Egyptian code of corporate governance (2004) as a guide for corporate governance variables and this code has been effective since 2004, thus this study will reflect the impact of the recent developments in the corporate governance in Egypt on corporate performance from 2004 which is considered the year of issuance of the Egyptian code of corporate governance till 2012.

The sample used in the study is based on the 50 most active Egyptian companies listed in the Egyptian stock market; these companies are considered the best reflection for the Egyptian market. The study is restricted to listed firms because of the assumption that listed firms adhere to the rules and standards set by regulatory bodies in the course of their business activities, plus listed firms are expected to

prepare and publish their financial information in compliance with the accounting practice. Furthermore, targeting the most active 50 companies ensures both statistical power in the tests and maximum data availability. These companies cover about 15 industries, banks, and financial institutions are omitted as this sector has particular governance issues which make it different from all other sectors (Faccio and Lasfer, 2000). Firms' samples covered industries like Building material and construction, chemicals, Communication, industrial goods and services and automobiles, Entertainment and tourism, food and beverage, housing and real estate, and information technology. Through doing this, a sample of 56 Egyptian firms was obtained for a period of nine years.

The sample selected represent firms which are considered top enterprises in Egypt, they are likely to have greater potential to attract and employ competent and skilled individuals on the board and in the same way to gain a pay-off from such well-constructed board besides it is expected that these firms have good access to capital and other resources that are necessary not only for survival but also for enhancing their performance.

5.2 Data collection

The data for this study comes from multiple sources of secondary data. The base data comes from the annual disclosure book issued by the Egyptian stock exchange (EGX). This book identifies the most active listed companies in Egypt & contains data on board characteristics, ownership structure, corporate performance & other related variables. This book contains the annual reports of the 50 most active companies listed in Egypt's stock exchange of that year. The annual reports were used in calculating the variables of board characteristics and firm performance. For this research, the disclosure books for years 2004–12 were used. The use of the financial statements of the most active companies is due to data availability & reliability because these are required by law & are issued by the Egyptian capital market authority.

6. Results and discussion

6.1 Descriptive statistics

The descriptive statistics for all variables are presented in Table 2. This study sample shows a high percentage of independence in the board of directors – at around 65%. This percentage shows a relatively high compliance rate with the Egyptian corporate governance recommendations on board independence of maintaining a majority of non-executive directors on the board. The average board meetings is about 4 times (mean = 4.44), which is the minimum number of meetings as recommended by the ECCG. Also, the study shows that 71.42% of our sample has the same person as the chairman of the board and the CEO, which is against the Egyptian corporate governance recommendations where it is recommended that the positions be split into two roles or, in other words, that the two roles should be held by two different persons. In most of the firms in the sample, top management appears not to have significant ownership, with a mean of 8.5%. This is considered a relatively small percentage. The average board size is about 9 members (mean = 9.33). The board size in Egypt appears to be smaller than the board size in the US (eg mean size of 11.45 in Bhagat & Black, 2002) but larger than the size of boards in Australia (eg mean size of 6.6 in Kiel & Nicholson, 2003). The board size in Egypt is larger than in the UK as stated by Peasnell et al. (2005), who reports a mean board size of around 8 members.

Table 2: Descriptive statistics

Variables*	Mean	Std. Dev.	Minimum	Maximum	Skewness	Kurtosis
Board Independence	.6506151	.1980607	.2	1.14	-.1958878	2.419032
Board Meetings	4.440476	.7673951	4	9	2.47262	10.96475
CEO Duality	.7142857	.4522028	0	1	-.9486833	1.9
Director Ownership	.0852976	.1714617	0	.67	2.201824	6.814069
Board Size	9.335317	2.751588	5	17	.4186822	2.717025
Firm Size	5.949226	.8511122	4.01	10.23	.7520977	5.406337
Firm Age	.9864421	.2763562	0	1.82	-1.079605	5.916103
Firm Leverage	.421369	.2308449	0	.91	.2139791	1.965962
ROE	.1480357	.192065	-.68	.95	.5246904	6.591458
ROA	.0709325	.1044712	-.55	.41	4.530069	31.64034
Tobin's Q	1.991052	1.813077	.39	17.71	-.9914036	11.48032

6.2 Correlation analysis

The Pearson correlation is used to measure the correlations amongst the variables of the board of directors and firm performance. The correlation coefficients are checked for the presence of high collinearity amongst regressors. Table 3 presents the Pearson correlations with the ROA; table 4 presents both the Pearson correlations with the ROE; and Tobin's Q will be presented in table 5.

From the correlation coefficients shown in table 3, 4 and 5, no high correlation is found amongst the variables. As a result, collinearity does not appear to create a threat to the interpretation of regression coefficients of the independent variables in this model. However, from the Pearson correlation, the highest coefficient is 0.217 between the firm leverage and firm size.

Another correlation is between firm size and board size. This is found in many similar prior studies, suggesting that larger firms have larger boards. Firm size is positively and significantly correlated with board size and return on equity. Firm leverage is also positively and significantly correlated with return on equity with coefficients of .221.

Table 3: Pearson correlation coefficients for ROA

Variables	ROA	Board independence	Board meetings	CEO duality	Director ownership	Board size	Firm size	Firm age	Firm leverage
ROA	1	0.217**	0.025	-0.028	0.038	0.136**	0.192**	- 0.165**	-0.097*
Board independence		1	-0.018	0.126**	-0.161**	0.074*	0.067	-0.123	0.026
Board meetings			1	-0.152**	-0.008	-0.019	0.191**	0.073	0.126**
CEO duality				1	-0.258**	0.029	- 0.184**	-0.046	0.084*
Director ownership					1	-0.071	0.210**	-0.045	0.162**
Board size						1	0.075*	-0.080*	-0.141**
Firm size							1	- 0.128**	0.227**
Firm age								1	0.004
Firm leverage									1

* Significant at 0.05 level of significance

** Significant at 0.01 level of significant

Table 4: Pearson correlation coefficients for ROE

Variables	ROE	Board independence	Board meetings	CEO duality	Director ownership	Board size	Firm size	Firm age	Firm leverage
ROE	1	0.160**	0.171**	-0.009	0.081*	0.098*	0.227**	-0.181**	0.221**
Board independence		1	-0.018	0.126**	0.161**	0.074*	0.067	-0.123**	0.026
Board meetings			1	0.152**	-0.008	-0.019	0.191**	0.073	0.126**
CEO duality				1	-0.258**	-0.029	-0.184**	-0.046	0.084*
Director ownership					1	-0.071	0.210**	-0.045	0.162**
Board size						1	0.075*	-0.080*	-0.141**
Firm size							1	-0.128**	0.227**
Firm age								1	0.004
Firm leverage									1

* Significant at 0.05 level of significance

** Significant at 0.01 level of significant

Table 5: Pearson correlation coefficients for Tobins'q

Variables	Tobins'q	Board independence	Board meetings	CEO duality	Director ownership	Board size	Firm size	Firm age	Firm leverage
Tobins'q	1	0.035	0.021	0.118**	-0.044	0.031	- 0.105**	-0.002	0.067
Board independence		1	-0.018	0.126**	-0.161**	0.074*	0.067	- 0.123**	0.026
Board meetings			1	- 0.152**	-0.008	-0.019	0.191**	0.073	0.126**
CEO duality				1	-0.258**	0.029	- 0.184**	-0.046	0.084*
Director ownership					1	-0.071	0.210**	-0.045	0.162**
Board size						1	0.075*	-0.080*	-0.141**
Firm size							1	- 0.128**	0.227**
Firm age								1	0.004
Firm leverage									1

* Significant at 0.05 level of significance

** Significant at 0.01 level of significant

6.3 Testing the hypotheses

ROE as a dependent variable

Board characteristics (independent variables) have been regressed against the ROE (dependent variable). The adjusted R square for this model is equal to 8.24% which implies that only 8.24% of the variations of ROE are explained by the board characteristics namely, Board independence, Board meetings, CEO duality, Director ownership and Board size; while the remaining 91.76% of variations is attributed to other variables. The Probability of χ^2 showed that the overall model is significant.

Inconsistent with the first hypothesis that states there is a positive relationship between the proportion of independent directors on the board and firm financial performance as measured by ROE, the results showed that there is a positive but not significant relationship with ROE; this implies that the outside independent directors cannot influence firms' financial performance which supports findings of Rashid *et.al* (2010), This finding is in line with the previous findings of Bhagat and Black, 2000, Klein, 1998, Fosberg, (1989) Yermack, (1996) Hermalin and Weisbach, (1991), Bhagat and Black, (2002), Alfarooque *et.al*, (2007), that showed no significant relationship between a high proportion of independent directors and firm performance. Based on this result H1-1 will be rejected. This study finds that board size is positively and significantly associated with ROE, which is consistent with this study's argument, and accepts hypothesis 2-1.

The significant positive association between board size and firm performance is similar to the findings of Sanda, *et.al.*, (2005), where in the study conducted in Nigeria they found that board size showed significant positive relationship with ROE.

Hypothesis 3-1 predicts that CEO duality is negatively associated with the firm financial performance. The positively signed coefficient and the significant relationship showed in the results reject this study's argument and hypothesis. CEO duality results is also supported by the study conducted by (Sanda, *et. al.*, 2005); where CEO duality showed a significant positive relationship with ROE consistent with this study's expectation, board meetings results showed a positive significant relationship with ROE which is supported by Carcello *et al.* (2002), Vafeas, (1999), Zahra and Pearce (1989), Vafeas (1999), Lawler *et al.* (2002) and Lipton and Lorsch, (1992), Karamanou and Vafeas (2005) and Mangena and Tauringana (2008) that reflects that as board meetings frequency increase, the firm financial performance will increase, which is acceptable and consistent with the formulated study hypothesis H4-1.

The fifth hypothesis predicts that the relationship between the director ownership and the company financial performance is positive. The study results showed that there is a positive but not significant relationship between ROE and the directors' ownership. Therefore this hypothesis is rejected.

The firm size as a control variable, has a positive significant relationship with ROE, This finding is in line with the previous findings of Berk (1997). This result supports claims in prior studies that higher firm performance is associated with larger sized firms. While, Firm age showed an insignificant negative relationship, and firm leveraged showed a positive but not significant relationship with ROE, both of which are supported by the findings of Fooladi (2012).

ROA as a dependent variable

Board characteristics (independent variables) have been regressed against the ROA (dependent variable). The adjusted R square for this model is equal to 6.46% which implies that only 6.46% of the variations of ROA are explained by the board characteristics namely, Board independence, Board meetings, CEO duality, Director ownership and Board size; while the remaining 93.54% of variations is attributed to other variables. The Probability of χ^2 showed that the overall model is significant.

Inconsistent with the first hypothesis specifically H1-2 that states there is a positive relationship between the proportion of independent directors on the board and firm financial performance as measured by ROA, similar to the ROE results; the results showed that there is a positive but not significant relationship with ROA; this implies that the outside independent directors cannot influence firms' financial performance. Based on this result H1-2 will be rejected. Consistent with this study's expectation board size results showed a positive significant relationship with ROA which is supported by Ehikioya, (2007), who showed a positive significant relationship with ROA. On the other hand the result is different from that conducted by Ghosh (2006) which stated that board size showed a negative significant relationship with ROA. Which means the second hypothesis is not supported

According to the agency theory, hypothesis 3-2 predicts CEO duality is negatively associated with the firm financial performance. The positively signed coefficient and the insignificant relationship showed in the results reject this study's argument and hypothesis.

This results is similar to the previous findings of Abdullah (2004); Brickley et al. (1997); Vafeas and Theodorou (1998) and Baliga, *et.al* (1996), which stated that the CEO duality has no effect on firm performance.

Inconsistent with this study's expectation, board meetings results showed a positive but insignificant relationship with ROA. This finding is in line with the previous findings of Coleman, *et al.* (2007) in a study conducted on a sample of multiple African countries. According to this result H4-2 will be rejected.

Hypothesis 5-2 predicts that director ownership is positively associated with firm performance as measured by ROA. The coefficient on director ownership is positive but insignificant. as mentioned above and similar to the ROE findings, this result may be because director ownership in this study sample is negligible.

As for the control variables, firm size showed a similar result to that of ROE; which is a positive significant relationship with ROA. Firm age showed an insignificant negative relationship. While firm leverage showed negative significant relationship with ROA which is similar to the previous findings of Ehikioya, (2007) who stated that firm leverage showed negative significant relationship with ROA. On the other hand, Sanda, *et.al*,(2005) stated that firm leverage had a significant positive relationship with performance measures.

Tobin's Q as a dependent variable

Board characteristics (independent variables) have been regressed against the Tobin's Q (dependent variable). The adjusted R square for this model is equal to 5.41% which implies that only 5.41% of the variations of Tobin's Q are determined by the board characteristics namely, Board independence, Board meetings, CEO duality, director ownership and Board size; while the remaining 94.59% of variations is attributed to other variables. The Probability of χ^2 showed that the overall model is significant.

Hypothesis 1-3 predicts that there is a positive relationship between the proportion of independent directors on the board and firm financial performance as measured by Tobin's Q, the results showed that there is a negative but not significant relationship with Tobin's Q; this implies that the outside independent directors cannot influence firms' financial performance which supports findings of Alfarooque *et.al*, (2007) where board independence showed no significant relationship with Tobin's Q. Based on this result H1-3 will be rejected

Opposing with this study's argument and with H2-3 that board size is positively and significantly associated with Tobin's Q, Board size showed an insignificant negative relationship with Tobin's Q which supports findings of a previous study by Yermack (1995) but different from Coleman, *et.al* (2007) where board size showed a significant positive relationship with Tobin's Q.

Inconsistent with hypothesis H3-3 predicts that CEO duality is negatively associated with the firm financial performance. And similar to ROE findings, the results showed that there is a positive significant relationship between CEO duality and Tobin's Q. CEO duality results is also supported by the study conducted by (Sanda, *et.al*, 2005); where CEO duality showed a significant positive relationship with ROE.

Inconsistent with this study's expectation, and similar to ROA findings board meetings (H4-3) results showed a positive but insignificant relationship with Tobin's Q which is supported by Uzun *et al.* (2004), they did not detect any significant relation between board meetings and firm performance. Also, Coleman, *et.al* (2007) finds that the frequency of board meetings has no association with financial performance in a study conducted on a sample of Tunisian listed firms.

Inconsistent with Hypothesis 5-3 that predicts director ownership to be positively associated with firm performance as measured by Tobin's Q. The coefficient on director ownership is negative but insignificant. This finding is in line with the previous findings of (Dalton, Certo and Roengpitya, 2003; Sheu and Yang, 2005), which denied the relationship between director ownership and firm performance.

Table 6: The results of the regression analysis

Variables		Equation 1 ROE	Equation 2 ROA	Equation 3 Tobin's Q
Constant	Coefficient	0.2452	0.098	2.46
	Z	2.10	1.55	3.75
	Sig.	0.018	0.060	0.000
BINDEP	Expected sign	+	+	+
	Coefficient	0.0079	0.0191	-0.062
	Z	0.09	0.40	-0.07
	Sig.	0.463	0.343	0.471
BMEET	Expected sign	+	+	+
	Coefficient	0.0190	0.0058	0.0282
	Z	2.18	1.26	0.31
	Sig.	0.0145	0.104	0.377
CEODUAL	Expected sign	-	-	-
	Coefficient	0.0142	0.0047	0.068
	Z	0.60	0.36	0.28
	Sig.	0.0275	0.358	0.039
DOWN	Expected sign	+	+	+
	Coefficient	0.111	0.0020	-0.589
	Z	1.25	0.45	-0.65
	Sig.	0.1065	0.327	0.256
BSIZE	Expected sign	+	+	+
	Coefficient	0.001	0.0006	-0.033
	Z	0.33	0.28	-0.73
	Sig.	0.0371	0.0389	0.234
FSIZE	Expected sign	?	?	?
	Coefficient	0.0119	0.0011	-0.173
	Z	0.90	0.17	-1.29
	Sig.	0.0183	0.0433	0.038
FAGE	Expected sign	?	?	?
	Coefficient	-0.1514	-0.0567	-1.0579
	Z	-4.39	-3.05	-2.99
	Sig.	0.576	0.595	0.003
FLEV	Expected sign	?	?	?
	Coefficient	0.0484	-0.0428	1.057
	Z	1.21	-1.99	0.83
	Sig.	0.1125	0.023	0.02025
# of Observations		475	475	475
Adjusted R square		8.24%	6.46%	5.41%
Wald chi 2		32.51	15.08	14.56
Prob> chi2		0.0001***	0.0375**	0.0268**

As for the control variables, all control variables showed significant relationships with Tobin's Q. Firm size indicated a significant negative relationship with Tobin's Q which supports findings of Sanda, et.al. (2005) where firm size showed a significant negative relationship with Tobin's Q. but different from Cheng (2005) where firm size showed a significant positive relationship with both ROA and Tobin's Q. Also firm age indicated a significant negative relationship with Tobin's Q. On the other hand firm leverage showed a significant positive relationship with Tobin's Q consistent with findings of Ehikioya (2007) and Sanda, et.al. (2005), where leverage had a significant positive relationship with Tobin's Q. Table 6 shows the results of the regression model

7. Conclusion

The overall aim of this research is to interpret the relationship between the board characteristics and the firm performance represented by the ROA, ROE and Tobin's Q. Inconsistent with the first hypothesis that states there is a positive relationship between the proportion of independent directors on the board and firm financial performance as measured by ROE, ROA and Tobin's Q, the results showed that there is a positive but not significant relationship with ROE, ROA and Tobin's Q; this implies that the outside independent directors cannot influence firms' financial performance. This study finds that board size (second hypothesis) is positively and significantly associated with ROE and ROA, which is consistent with this study's argument, but this hypothesis is not supported for the Tobin's Q.

The third hypothesis predicts that CEO duality is negatively associated with the firm financial performance. The positively signed coefficient and the significant relationship showed in the results reject this study's argument and hypothesis with regard to ROE, ROA and Tobin's Q. The fourth hypothesis reflects that as board meetings frequency increase, the firm financial performance will increase, this hypothesis is supported with regard to ROE but not supported for the ROA and Tobin's Q. The fifth hypothesis predicts that the relationship between the director ownership and the company financial performance is positive. The study results showed that there is a positive but not significant relationship between ROE and ROA and the directors' ownership. Also the relationship between the director ownership and Tobin's Q is negative but not significant; therefore, this hypothesis is rejected.

The firm size as a control variable has a positive significant relationship with ROE and ROA, this result supports claims in prior studies that higher firm performance is associated with larger sized firms, but the relation is negative with the Tobin's Q. While, Firm age showed an insignificant negative relationship with ROE and ROA but the relation is significant with the Tobin's Q. The firm leverage showed a positive but not significant relationship with ROE, negative and significant relationship with ROA, and positive significant with Tobin's Q.

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