# An Empirical Analysis of the Effect of Managerial Ownership and Board Characteristics on Corporate Performance: Evidence from Egypt

**Gehan A. Mousa**

Accounting Department, Faculty of Commerce, Benha University

# تحليل تجريبي لاختبار أثر ملكية الإدارة و خصائص مجلس الإدارة علي أداء الشركة: دليل من البيئة المصرية

**د. جيهان عبد الهادي موسي**

**مدرس بقسم المحاسبة ـ كلية التجارة ـ جامعة بنها**

يمثل الغرض الرئيسي من هذه الدراسة في اختبار أثر كل من ملكية الإدارة و خصائص مجلس الإدارة على أداء الشركات. وقد بنيت الدراسة الميدانية علي عينة عشوائية مكونة من ١٠٠ شركة من الشركات المسجلة في البورصة المصرية. وبالإضافة إلي التحليل الوصفي وتحليل الارتباط لبيرسون، فقد اعتمدت الدراسة علي طريقتين للتحليل الإحصائي الأولي نموذج الانحدار البسيط و الثانية نموذج الانحدار الثنائي. وقد تم قياس المتغير التابع ( أداء الشركة ) باستخدام مقاييس محاسبية ( مثل: العائد علي الأصول والعائد علي حقوق الملكية ) بالإضافة إلي مقياس "توبنز" لقياس أداء الشركة السوقي، وقد تمثلت المتغيرات المستقلة في المتغيرات المتعلقة بملكية الإدارة ( مثل: ملكية رئيس مجلس الإدارة، ملكية المدير التنفيذي، وملكية باقي أعضاء مجلس الإدارة) وكذلك المتغيرات المتعلقة بخصائص مجلس الإدارة (مثل: حجم مجلس الإدارة، ونسبة عدد أعضاء مجلس الإدارة التنفيذيين إلي الأعضاء غير التنفيذيين، والجمع بين منصبي رئيس مجلس الإدارة والمدير التنفيذي).

وفي سبيل تحقيق هدف الدراسة، تم تقسيمها إلي عدة أجزاء رئيسة. أولاً: مقدمة تستعرض مشكلة الدراسة، وتحدد أهدافها وأهميتها؛ ثانياً: البيئة المصرية؛ ثالثاً: الإطار النظري للدراسة؛ رابعاً: فروض الدراسة؛ خامساً: منهجية البحث؛ سادساً: نتائج الدراسة الميدانية؛ وأخيراً: الخلاصة وتشمل النتائج، وحدود الدراسة، والاقتراحات بدراسات مستقبلية.

وقد أظهرت نتائج الدراسة عند استخدام نموذج الانحدار الخطي البسيط أن متغير واحد فقط من المتغيرات المستقلة المتعلقة بملكية الإدارة (وهو متغيرملكية باقي أعضاء مجلس الإدارة ) قد ارتبط ارتباطا قويا مع المتغير التابع ( أداء الشركة ) عندما تم قياسه بمقياس العائد علي حقوق الملكية ، بينما لم تظهر باقي المتغيرات المستقلة الاخري المتعلقة بخصائص مجلس الإدارة ارتباطا مع المتغير التابع. كما أنه باستخدام مقياس توبنز لقياس أداء الشركة السوقي لم تظهر أية من المتغيرات المستقلة للدراسة ارتباطاً معه. بينما أظهرت نتائج الدراسة عند استخدام نموذج الانحدار الثنائي أن العلاقة بين المتغير التابع ( أداء الشركة عند قياسه بمقياس العائد علي الأصول) والمتغيرات المستقلة ( ملكية الإدارة و خصائص مجلس الإدارة) علاقة غير خطية.

# An Empirical Analysis of the Effect of Managerial Ownership and Board Characteristics on Corporate Performance: Evidence from Egypt

## Gehan A. Mousa[*]

### Abstract

The main purpose of this study is to empirically examine the effect of managerial ownership and board characteristics (i.e.: board size, the percentage of outside directors and CEO/Chair duality) on corporate performance. The paper extends the previous literature in this area and provides evidence on this effect using a sample of 100 of the most active listed Egyptian companies on the Egyptian Stock Exchange (EGX). In addition to Pearson correlation, the paper employs OLS and 2SLS regression analysis to test the association between managerial ownership and board characteristics (independent variables) and corporate performance measured by three different measures namely return on assets - ROA, return on equity - ROE, and Tobin's Q (dependent variables). Statistical analysis revealed that at least some managerial ownership and board characteristics variables affect corporate performance. Board characteristics independent variables explaining corporate performance when measured by ROA are statistically significant. Regarding corporate performance when measured by ROE, only one of three managerial ownership variables is significantly associated. However, board characteristics variables are not significantly associated with corporate performance when measured by ROE. Findings related to the market measure of corporate performance, TOBINQ, show that none of the models is significant. Only one of the three 2SLS models developed in this study (ROA model) is significant and the argument of alignment effect was supported. Furthermore, findings from 2SLS regression models of corporate performance when measured by ROA support the argument that non-linear relationship may exist between some variables of managerial ownership and board characteristics from one side and corporate performance from the other. The scope of this study is limited to a relatively small sample of 100 Egyptian listed companies and they may not represent all of the possible listed companies. Finally, it would be interesting to duplicate this study in other countries which have many similarities to the Egyptian environment.

---

[*] Gehan A. Mousa is a Lecturer at the Accounting Department, Faculty of Commerce, Benha University, Benha, Egypt. She obtained her Ph.D. from the University of Durham, UK. E-mail: gamousa@hotmail.com

# 1- Introduction

The effect of managerial ownership and board characteristics on corporate performance has received considerable attention in the literature. A number of studies were conducted to examine this relation. The centre of this examination lies on the agency theory (Jensen and Meckling, 1976). Chi and Wang (2009) identified two common agency problems: first arising from the separation of ownership and management, when the owners do not manage the firm by themselves. The second problem arises as a result of the different interests of managers, owners and outside shareholders as well as those between controlling and minority shareholders (Berle and Means, 1932; Jensen and Meckling, 1976; Shleifer and Vishny, 1986). A number of studies have suggested ways to manage these problems and reduce agency costs. For example, Jensen and Meckling (1976) proposed that managerial ownership can help to control agency problems and increase firm value by reducing private perquisite consumption. Kaplan and Minton (1994) suggested ownership concentration as another control mechanism that helps control these problems.

The notion that managerial ownership affects corporate performance refers backs to Berle and Means (1932) who argued that widely held corporations in the US, in which ownership of capital is dispersed among small shareholders and control is concentrated in the hands of insiders tend to underperform. Jensen and Meckling (1976) noted that as manager stock ownership increases, the interests of managers and outsiders become more closely aligned. That is, when directors have considerable holdings in a company's stock, their decisions impact their own wealth. Presumably, these directors are less likely to take actions that would reduce shareholder wealth regardless of the extent to which they are independent. Therefore, corporate performance improves when ownership and managerial interests are merged through concentration of ownership (see, for example, Agrawal and Mandelker, 1987; Baker and Weiner, 1992). Morck et al. (1988) examined the relationship between managerial ownership, represented by the share ownership of board members, and corporate performance. The authors reported a significant non-linear relationship and also presented mixed results regarding the different levels of managerial ownership. However, the results by Craswell et al. (1997) weakly supported a curvilinear relationship between managerial ownership and corporate performance. Such studies reported inconclusive results and raised the argument related to the possibility of an endogeneity issue in relation to managerial ownership and corporate performance.

On the other hand, another line of research has examined the impact of corporate governance mechanisms, especially issues related to board characteristics, to manage agency problems (Chung and Pruitt, 1996; Mak and Li, 2001; Chen et

al., 2005). Omran (2009) argued that CG can be seen as the set of internal and external mechanisms which attempt to align incentives of managers with those of shareholders, and hence motivate managers to work harder toward maximizing firm value. The board is considered one of a central institution in the internal governance mechanisms of a company to monitor managers (Fama, 1980). It is responsible for the company's major business decisions. It can be a good monitoring device for shareholders if its structure is such as to ensure its independence from management. One of the internal mechanisms is the board characteristics, such as the distinction between the chief executive officer (CEO) and the chairman, and the percentage of (non-executive) or outside directors in the board. Booth et al. (2002) identify two measures of independence on the board: the percentage of outside directors on the board and whether the CEO also serves as the board chairperson. Appointing outside directors to the board appears to be an effective CG mechanism to reduce the agency problem and increase earnings quality (Peasnell et al., 2000; Klein, 2002). Therefore, the structure of the board has received much attention from regulators. However, there are also grounds for expecting that the board of directors is complementary to some aspects of ownership structure (O'Higgins, 2002; Higgs, 2003; Donnelly and Kelly, 2005). For example, a number of studies have documented the impact of outside directors on corporate performance. For instance, the evidence in Black et al. (2006) showed that the increase in the number of outside directors leads to a rise in the market value of companies. In Japan, the same results reported by Kaplan and Minton (1994) who provided evidence that outside directors improve corporate performance.

The current study aims mainly to answer two questions. First: does managerial ownership affect corporate performance and second what is the relationship between board characteristics as an important mechanism of corporate governance (CG) and corporate performance? Because literature, regarding the relationship between managerial ownership and corporate performance, has presented different arguments and addressed the endogenous nature of this relationship, the study employs ordinary least square (OLS) and two stages least square (2SLS) regression analysis to test the association between managerial ownership and board characteristics (independent variables) and corporate performance measured by three different measures namely return on assets - ROA, return on equity - ROE, and Tobin's Q (dependent variables) using a sample of 100 of the most active listed Egyptian companies on the Egyptian Stock Exchange (EGX). Egypt, the focus of this study, has a unique place among African countries and the countries of the Mediterranean basin. Because of geographical location, historical and political events, Egypt has a heritage of culture and civilization since ancient times. These

characteristics give this study a special importance, since the results could be applicable to a wide range of surrounding countries.

The remainder of the paper is organized as follows. The next section, section 2, describes the main features of the Egyptian environment. Section 3 provides the theoretical background of the study. Section 4 presents hypotheses development related to the effect of managerial ownership and board characteristic on corporate performance. Section 5 discusses the methodology of the study, which includes the sample and the variables. Section 6 discusses the empirical results. Conclusions are drawn in Section 7.

## 2. The Egyptian environment

Egypt plays an essential role in policy-making in Arab regions and the continent of Africa. The Egyptian Exchange (EGX) was established in 1883 and 1903 in Alexandria and Cairo respectively; and reached their historic peak in the 1940's when, together, they constituted the fifth largest market in the world. After several decades of low market activity, the exchanges started growing again in the early 1990s, spurred by economic reform, privatization and changes in the regulatory environment.

In 1991, the Egyptian government started a wide policy of economic reform and implemented an ambitious programme (the privatisation programme) aiming to transfer public sector enterprises to the private sector in several ways, among them the transfer of ownership, the leasing, or the transfer of management. The success of both the privatisation programme and the change towards the free-market economy had many requirements, among them an effective capital market. The Egyptian stock market has witnessed a lot of developments especially after the government started the economic reform programme in the early 1990s. The Capital Market Authority (CMA), which is an official supervisory authority in Egypt, is responsible for assuring the development of transparent and secure market activities and for facilitating capital growth by improving required disclosure, encouraging more secure institutions for trading securities, and promoting the introduction of markets for new investment instruments. The Capital Market Law (CML) No. 95 of 1992 regulates the capital market, and provides the framework and supervision of the stock exchange and market intermediaries. The second part of this law concerns the stock exchanges and the third part concerns the companies allowed to work under this law in the stock market. Furthermore, the early 2000s witnessed great efforts by the Egyptian government and their agents including issuance of new rules to establish and activate CG practices in the Egyptian stock market. For example, CMA requires listed companies to practice transparency and disclosure (T&D).

Moreover, Egypt aims to create a good environment to attract more foreign investment in order to ensure sustainable growth and to create new employment opportunities. This leads to a growing concern for a high profile regarding corporate governance. Because of this concern, the Egyptian CG code was issued in light of OECD guidelines in 2005. The implementation and enforcement of this code is considered a critical contribution to make Egyptian companies more transparent and understandable for international investors. The final version of the Egyptian corporate governance code, issued in 2006, demonstrates the principles for equitable treatment of all shareholders including the state as a shareholder, conflict of interest issues, transparency and disclosure, and responsibilities of the board of directors. Recent years in Egypt have witnessed a number of major reforms, mostly incorporated in new stock exchange listing rules. The EGX listing rules contain three criteria to begin the process of differentiating and "branding" listed issuers. The new criteria include profitability, minimum share capital, and the number of shareholders.

Egyptian companies have single tier boards comprised of an odd number of members, with a minimum of three. Two "experts" may be appointed to the board; they are full members of the board, and they vote. The general assembly meeting elects directors for renewable terms of three years, sets their remuneration, and can remove them if necessary. It is preferred that the majority of board members are non-executive members and also the chairman and CEO are not the same persons. The board is the ultimate body governing the corporation and is responsible for monitoring the implementation of the company's objectives set by the general assembly meeting. Board functions include appointing management, calling shareholder meetings and submitting financial statements and reports, investing company funds and making loans. The directors' report includes a summary of activities, market conditions, and plans for the following year (World Bank, 2004; CIPE, 2005).

## 3. The theoretical background of the study

The separation of ownership and control creates potential conflicts of interests between top management and shareholders. Managerial ownership affects the degree of congruence between the interests of owners and management (Mak and Li, 2001). Brickley et al. (1988) argued that stock ownership by officers and board members gives them an incentive to improve the firm performance. Moreover, Porter (1992, p.13) pointed out that "outside owners should be encouraged to hold larger stakes and to take a more active and constructive role in companies. Ownerships should be expanded to include directors, managers, employees, and

even customers and suppliers". Booth et al. (2002) argued that when officers and board members have considerable holdings in a company's stock (either direct holdings of stocks or options on the firm's stock) their decisions impact their own wealth. Further, the impact of the directors' decisions on their wealth is compounded when the receipt of stock or options is a component of their compensation package.

In general, an extensive review of the relevant literature regarding the effect of managerial ownership on corporate performance presents two competing arguments namely the convergence-of-interests or interest alignment and the entrenchment effects[1].

**The first argument** (the convergence-of-interests or interest alignment): This argument suggests that increasing managerial ownership creates a convergence of owner and manager interests, thus resulting in a positive impact on corporate performance. According to Jensen and Meckling (1976), the greater the percentage of stocks owned by top managers, the more likely they will make decisions consistent with maximizing stockholders' wealth since that will maximize their own wealth. Therefore, managerial ownership serves as an important means of controlling agency problems.

In Japan, a number of studies (Morck et al., 2000; Hiraki et al., 2003; Chen et al., 2005) have reported a positive relationship between managerial ownership and corporate performance supporting the argument that as ownership increases, there is greater alignment of managerial interests with stockholders of Japanese firms. For instance, Hiraki et al. (2003) provided evidence that managerial ownership is positively related to the value of Japanese manufacturing companies. Furthermore, Morck et al. (1988) examined the relation between managerial ownership and corporate performance (as measured by Tobin's Q) for large 371 US firms (Fortune 500 firms) in a 1980. They reported a significant non-linear relationship (the form of U shape). For instance, a positive and significant relationship of managerial ownership between 0% and 5%; a negative and significant relationship between 5% and 25%; and a positive and significant relationship between 25% and 100%.

Furthermore, McConnell and Servaes (1990) used Tobin's Q and reported a significant positive influence of managerial ownership, at least at the lower levels of ownership, which supported a curvilinear relationship between managerial

---

[1] For more details about these two arguments (see, Demsetz and Lehn, 1985; Cho, 1998; Morck et al., 2000; Hiraki et al., 2003; Chen et al., 2005; Ng, 2005).

ownership and corporate performance. They considered the impact of both managerial ownership and ownership concentration on corporate performance in two different cross-sectional samples, one for 1976 and the other for 1986. The authors examined piece-wise regressions using the same breakpoints as Morck et al. (1988) 5 and 25%. The results showed a strong positive significant coefficient in the range of 0–5% and a less strong positive significant coefficient within the 5–25% range of managerial ownership. However, the coefficient beyond 25% managerial ownership was negative but not significant. Chung and Pruitt (1996) recognized that corporate performance (measured by the firm's Tobin's Q), executive stock ownership and executive compensation are jointly determined, because stock ownership and compensation are both mechanisms by which executives are bonded in order to act in the best interests of the shareholders. The authors found a strong positive correlation between CEO ownership and corporate performance. Cole and Mehran (1998) investigated the relationship between ownership structure and corporate performance, using a sample of 94 thrift institutions that converted from mutual to stock ownership between 1983 and 1987. They found a significant increase in the percentage of the firm owned by the largest inside stockholder, and a significant improvement in corporate performance after the increase in managerial ownership.

**The second argument** (the entrenchment effect): It suggests that high proportions of managerial ownership have an adverse influence on corporate performance. This argument suggests that no significant positive association exists between management ownership and corporate performance. Accordingly, there is a negative or non-existent relationship between managerial ownership and corporate performance (e.g., Demsetz and Lehn, 1985; Cho, 1998; Ng, 2005). Demsetz (1983) argued that the increase in the level of managerial ownership can reduce corporate performance. Managers who control a substantial fraction of shares can have enough voting power to guarantee their own stable employment in the firm. Thus, those managers can indulge in their own benefits rather than shareholder value via the large proportion of managerial ownership. This argument suggests that a high range of managerial ownership has a negative, non-linear effect on corporate performance (see for example, Fama and Jensen; 1983; Demsetz, 1983; Villalonga and Amit, 2006). Explanation of this argument is provided by Fama and Jensen (1983) who pointed out that significant managerial ownership can create additional costs. Despite a lack of personal incentives, market discipline can force managers to pursue shareholder value maximization. In contrast, when managers own a substantial fraction of firm shares, which gives them substantial voting power, they may satisfy their position without endangering their employment or salary. Thus, excessive managerial ownership may have a negative impact on corporate

performance. Chen et al. (2005) provided evidence of poor alignment between managerial incentives and shareholder interests at low levels of family ownership, and evidence of managerial entrenchment at higher levels of family ownership, using a sample of 412 publicly listed firms in Hong Kong during 1995–1998.

Also, Craswell et al. (1997) found a non–linear relationship between managerial ownership and corporate performance by using 349 publicly traded Australian firms in 1986 and 1989. Hermalin and Weisbach (1988) investigated the effect of managerial ownership and board composition on corporate performance. They reported a significant non-monotonic relation between different levels of managerial ownership and corporate performance, for instance, a positive relation between 0% and 1%; a decreasing relation between 1% and 5%; an increasing relation between 5% and 20%; and decreasing beyond 20%. Demsetz and Villalonga (2001) examined the relation between the ownership structure and the corporate performance of 223 US firms using two dimensions of this structure likely to represent conflicting interests, the fraction of shares owned by management and the fraction of shares owned by the five largest shareholding interests. They found no statistically significant relation between managerial ownership and corporate performance.

On the other hand, the literature on examining the relationship between ownership structure and corporate performance presents a critical question regarding ownership structures causing changes in corporate performance or corporate performance leading to changes in ownership structure? Potential endogeneity suggests the possibility that performance is likely to affect ownership structure as ownership structure is to affect corporate performance. A number of studies (Demsetz, 1983; Fama and Jensen, 1983) argued that endogeneity is an important issue to consider. They supported the possibility of an endogeneity issue in relation to ownership structure and corporate performance. For instance, Demsetz and Lehn (1985) argued that ownership structure should be regarded as an endogenous outcome of shareholder's decisions and market trading.

Drakos and Bekiris (2010) investigated the relationship between managerial ownership and corporate performance using a sample of 146 firms listed in the Athens Stock Exchange between 2000 and 2004. The main findings indicated that when managerial ownership is treated as endogenous, managerial ownership has a positive impact on corporate performance. In contrast, in Korea, Cho (1998) examined whether ownership structure affects investment which, in turn, affects corporate performance using a sample of 326 Fortune 500 manufacturing firms in 1991. The results showed that there is a significant relationship between managerial

ownership and investment but has a non–linear relation. The relation between managerial ownership and investment is positive for ownership levels below 7%; and above 38%, but negative for the levels between 7% and 38%. It should be noted that, when an endogeneity problem exists, ordinary least square (OLS) regression yields inconsistent results. In such cases, 2SLS (two stage least square) is recommended as an appropriate analysis method (Kennedy, 1998).

The above discussion shows that the literature provides mixed results on the relationship between managerial ownership and corporate performance and it can be argued that although this relationship has received considerable attention in literature, such literature fails to reach a consensus regarding the nature of the relationship.

## 4. Hypotheses development

In the light of the objectives of the current study, the relevant literature can be classified into two groups of research. The first group examines the relationship between managerial ownership and corporate performance, while the second examines the association between board characteristics and corporate performance.

### 4.1 Managerial ownership and corporate performance

As presented in the previous section, the effect of managerial ownership on corporate performance is theoretically complex and empirically ambiguous. Consequently, the literature has reported inconclusive results and show both linear and curvilinear relations, depending on the tradeoffs between the alignment and entrenchment effects. Entrenchment viewpoint suggests that a negative or no significant relationship exists between managerial ownership and corporate performance (e.g., Demsetz and Lehn, 1985; Morck et al., 1988; McConnell and Servaes, 1990; Cho, 1998; Holderness et al., 1999). while, a positive relation is suggested by an alignment viewpoint (Chung and Pruitt, 1996; Morck et al., 2000; Hiraki et al., 2003; Chen et al., 2005; Lin et al., 2008). Therefore, the following hypotheses can be suggested:

**H1**: Managerial ownership has a significant positive effect on corporate performance (in the form of alignment effect).

**H2**: Managerial ownership has a significant negative effect on corporate performance (in the form of the entrenchment effect).

### 4.2. Board characteristics and corporate performance

The board of directors is considered pivotal in a company's CG literature. However, the board is just one of several governance mechanisms (Donnelly and Kelly, 2005). The board provides a key monitoring function in dealing with agency

problems in the firm (Lefort and Urzú, 2008). The structure of the board has received much attention from regulators as one part of the internal corporate governance mechanism. The board of directors of any firm plays an essential role in setting the firm's strategic goals and in selecting the strategies and general policies that govern the work flow inside the firm. The board has the obligation to determine the firm's overall strategy, and to ensure that adequate controls are in place to protect shareholder value (Keenan, 2004). In practice, corporate boards delegate most of their duties to the management team but retain the power to hire, compensate and, if necessary, replace the top executives (Fama and Jensen, 1983). The ultimate responsibility for corporate decisions, however, remains with the board.

Several board characteristics (e.g.: board size, board composition, role duality) have been examined in the literature (John and Senbet, 1998; Kiel and Nicholson, 2003; Pye, 2000; Yarmack, 1996). Following Jensen (1993) who argued that three board characteristics affect the monitoring potential of a board namely board size, board composition and CEO/Chair duality, these characteristics are discussed in the current study as follows:

### 4.2.1. Board size

The number of directors on the firm's board can play a critical role in monitoring of the board and in taking strategic decisions. Board size affects the efficiency of the board control function. Previous studies showed that a board's ability to monitor and make important corporate decisions increases with its size (John and Senbet, 1998; Kiel and Nicholson, 2003). However, other studies argued that firms with large boards are less effective than firms with a small board. For example, Jensen (1993) and Pye (2000) pointed out that a limited number of board members is important to make effective governance mechanisms. Yermack (1996) found that firms with small boards have increased quality of monitoring and decision making by the board of directors. According to this argument, firms with small boards have higher market values and provide stronger CEO performance incentives from compensation and threat of dismissal than firms with larger boards. Hermalin and Weisbach (2003) reported that board size is negatively related to corporate performance and the quality of decision-making. In the light of the above previous studies, it can be concluded that empirical research examining the relationship between board size and corporate performance has provided inconclusive results. Accordingly, the following hypothesis is formulated as follow:

H3: Board size has a significant effect on corporate performance.

## 4.2.2 Board composition (percentage of outside directors)

The CG literature emphasizes the role of outside directors in resolving agency problems through the design of incentive contracts for executives and the monitoring of management behavior (Fama and Jensen, 1983; Firth et al. 2007). Outside directors are motivated to work in the best interests of the minority shareholders as they bear substantial reputation costs if they fail in their duties (Fama and Jensen, 1983; Srinivasan, 2005). Fama and Jensen (1983) argued that non-executive directors act as a reliable mechanism to diffuse agency conflicts between managers and owners. They are viewed as providing the necessary checks and balances needed to enhance board effectiveness (Franks and Mayer, 2001). Moreover, it was argued that outside directors seem to be more influential in terms of board decision making (Pye, 2000). Boards dominated by outsiders are in a better position for monitoring and controlling managers (Dunn, 1987). Fama and Jensen (1983) declared that outside directors have an incentive to act as monitors of management because they want to protect their reputations as effective, independent decision makers.

A number of empirical studies were carried out to investigate the relationship between the board composition and corporate performance. For instance, Lefort and Urzúa (2008) investigated the effect of outside directors as an internal CG mechanism in companies with high ownership concentration by using a sample of 160 Chilean companies for a period of four years. They reported that an increase in the proportion of outside directors affects company value. Also companies that present more exacerbated agency conflicts tend to incorporate professional directors to the boards, in an effort to improve CG and ameliorate the agency problem. Using a sample of 52 newly privatized Egyptian listed companies in the period from 1995 to 2005, Omran (2009) provided evidence that outside directors are an effective corporate governance mechanism and argued that the higher proportion of outside directors has a positive effect on corporate performance.

Furthermore, Choi et al. (2007) reported that the increase in the percentage of outside directors is positively associated with an increase in corporate performance as measured by Tobin's Q. Peng (2004) provided evidence on the positive effect of outside directors on corporate performance from a sample of Chinese listed firms when performance was measured in terms of sales growth. In the same line, Booth et al. (2002) reported the same results by using the market value and net income of the firm as a measurement of performance. Also, Black et al. (2006) explored the factors affecting board composition in Korea, and found that the percentage of outside directors in Korean firms has a positive correlation with Tobin's Q.

In contrast to the above previous studies, a negative relationship between outside directors and corporate performance was reported. For example, Klein (2002) found a significant negative association between the magnitude of abnormal accruals and the percentage of outside directors on the board. Furthermore, in the UK, Peasnell et al. (2000) provided evidence of a significant negative association between income-increasing accruals and the proportion of outside board members.

On the other hand, a number of studies (Hermalin and Weisbach, 1988; Anderson and Reeb, 2003) concluded that there is no relationship between the percentage of outside directors and corporate performance. For example, Chen et al. (2005) examined the effect of CG on corporate performance using a sample of 412 publicly listed companies in Hong Kong during 1995–1998. They concluded that the composition of the board of directors as one of CG mechanism has little impact on corporate performance. Similarly, in the US, Hermalin and Weisbach (2003) pointed out that firms with a higher proportion of outside directors are not significantly associated with superior corporate performance.

In the light of the above, it appears that the literature provided mixed findings regarding the relationship between board composition and corporate performance. Accordingly, the following hypothesis can be formed:

**H4:** the percentage of outside directors has a significant effect on corporate performance.

### 4.2.3 CEO/Chair duality

One of the essential concerns in CG is the board leadership structure or CEO/Chair duality (means the same person holding the positions of company CEO and chairman of the board of directors). Literature on CG has argued that the separation between CEO and chairperson positions can improve the efficiency and effectiveness of internal control systems in companies, consequently, corporate performance will be affected. When the chairman of the board of directors also takes the role of the CEO, the effectiveness of the board to monitor top management is decreased (Firth et al., 2007). Jensen (1993) argued that when the CEO also holds the position of chairman of the board, internal control systems fail as the board cannot effectively perform its key control functions. In contrast, Brickley et al. (1997) argued that the separation of duties incurs costs and they found that these costs outweigh the benefits in large U.S. companies.

Empirical studies have reported different results, for instance, Chen et al. (2005) found a negative relationship between CEO/Chair duality and corporate performance (measured by return on assets, return on equity, and the market-to-book ratio). However, other studies reported that the separation between the two

positions, chairperson and CEO has no significant impact on corporate performance (Brickley et al., 1997; Vafeas and Theodorou, 1998). In the same line, Omran (2009) ,in Egypt, reported that corporate performance is not affected by a separation between CEO and chairperson positions. Consistent with literature, the following hypothesis can be suggested:

**H5**: the separation between CEO and chairperson positions has a significant effect on corporate performance.

## 5. Research method

This section is devoted to explaining the methodology that was adopted in the study, where the researcher obtained the data and how the dependent and independents variables are identified. Also the form of data analysis being undertaken to test the hypotheses developed earlier in this research.

### 5.1 The sample

The empirical study of the current research was based on a random sample of 100 publicly traded companies included in the "EGX 100 Index"[2] at the end of 2009. The "EGX 100 Index" includes all companies of both the "EGX 30 Index" and the "EGX 70 Index". Among these companies, banking and insurance listed companies were excluded from the sample because of different regulations imposed by the Central Bank of Egypt. To build the database for this study, several sources have been relied on; one main source was "Egypt for Information Dissemination - EGID" which is a fully owned subsidiary of the Egyptian Exchange (EGX) and is the main provider of information about the Egyptian stock market. Data on companies' ownership structure and board of directors was obtained from EGID. Other sources were companies' annual reports (the financial period 2009); the web page of each of the selected companies (if available); and other specialized websites which include data bases of listed companies in the EGX (e.g. www.mistnews.com; and www.mubasher. net;). Companies' annual reports and various web pages were used to obtain data related to dependent variable (e.g.: return on assets - ROA, return on equity - ROE, and Tobin's Q).

## 5.2 Definition and measurement of dependent and independent variables
### 5.2.1 Dependent variables

As the main aim of the present study is to investigate the effect of manageria ownership and board characteristics on corporate performance, three measures fo corporate performance have been employed in this study as dependent variables

---

[2] It should be noted that the "EGX 100 Index" construction is semi-annually reviewed by the EGX administration.

Two accounting measures of performance, namely, ROA and ROE, are used as dependent variables, in addition, Tobin's Q *as a* market measure.

For market measure of corporate performance, Tobin's Q is used in a number of studies (Demsetz and Lehn, 1985; Morck et al., 1988; McConnell and Servaes, 1990; and Demsetz and Villalonga, 2001) to examine the relationship between ownership structure and corporate performance. In the current study, following previous studies (Lefort and Urzúa, 2008; Mak and Li, 2001; Himmelberg et al., 1999), Tobin's Q is defined as the sum of market value of ordinary shares issued, the total book value of debt and the book value of preference shares, divided by the book value of total assets. Tobin's Q interpret as proxies for corporate performance, in general, well-managed firms should have ratios larger than one, indicating that the current allocation of the firms' assets is value-increasing. For the accounting measures of corporate performance, following a number of previous studies (e.g.: Sun and Tong, 2003; Mak and Li, 2001; Omran, 2009), the current study considers return on assets (ROA) is measured as the ratio of the net profit to total assets and return on equity (ROE) is measured as the ratio of the net profit to total equity.

### 5.2.2 Independent variables

In addition to the above dependent variables, there are six independent variables. Three variables relate to managerial ownership, first is chairman ownership (CHAOWN) measured as the fraction of total company shares outstanding held by the chairman; the second is CEO ownership (CEOOWN) measured as the fraction of total company shares outstanding held by the CEO and the third is directors' ownership (DIROWN) measured as the fraction of total company shares outstanding held by other directors in the board. The study did not take into account the employee ownership variable because of the difficulty of tracing information on this factor, in addition to the non-proliferation in the Egyptian environment.

In addition, another three variables are related to board characteristics. Board size (BSIZE) measured as the total number of board members; percentage of outside directors (OUTSID) measured as the fraction of outside or non-executive directors on the board to the total number of board members; and last CEO/Chairman duality (CCDUAL) which is equal to 1 when the CEO also serves as a Chairman of the board of directors and 0 otherwise)[3]

---

[3] Definitions of the variables used in the current study are provided in Table (1).

## 5.2.3 Control variables:

A number of studies (Demsetz andVillalonga, 2001;Demsetz and Lehn, 1985; Holderness et al. ,1999; Kole, 1996) have used a set of control variables to fixed effects to control for the endogeneity of managerial ownership, such variables as (firm size; capital intensity, advertising intensity, cash flow, investment rate, profit rate, advertising-to-sales ratio, fixed assets-to-sales ratio, market risk; and leverage). Himmelberg et al. (1999) argued that firm size has an ambiguous effect on the agency problems' aspects. Also, monitoring and agency costs can be greater in large firms, increasing desired managerial ownership. Large firms are likely to employ more skilled managers, who are consequently wealthier, suggesting a higher level of managerial ownership. These firms might enjoy economies of scale in monitoring by top management and by rating agencies, leading to a lower optimal level of managerial ownership. Following Cho (1998) and Morck et al. (1988) who used control variables such as firm size and financial leverage, type of industry.

Table (1) Definitions of the variables used in the empirical analysis

| Variables | Definitions |
|---|---|
| **Dependent variables:**<br>1- Return on assets (ROA)<br>2- Return on Equity (ROE)<br>3- Tobin's Q (TOBINQ) | 1- net profit to total assets.<br>2- net profit to total equity.<br>3- (market value of common stock + the book value of preferred stock + and total book value of debt) / book value of total assets. |
| **Independent variables:**<br>1- Chairman ownership (CHAOWN)<br>2- CEO ownership (CEOOWN)<br>3- Directors' Ownership (DIROWN)<br><br>4- Board size (BSIZE)<br>5- Non-executive directors (OUTSID)<br><br>6- CEO/Chair duality (CCDUAL) | 1- Percentage of shares owned by the Chairman.<br>2- Percentage of shares owned by the CEO.<br>3- Percentage of shares owned by the Board of Directors.<br>4- Number of board members.<br>5- Fraction of outside directors to total number of board members.<br>6- Dummy variable takes one if the chief executive officer and the chairman of the board are the same person, and zero otherwise. |
| **Control variables:**<br>1- Firm size (FSIZE)<br>2- Leverage (FLEVER)<br>3- liquidity (FLIQUI) | 1- Firm total assets.<br>2- Firm total liabilities/total assets.<br>3- Firm total current assets / total current liabilities. |

The current study has used three control variables namely firm size (FSIZE) as measured by book value of total assets, leverage (FLEVER) as measured by total debts to total assets, and liquidity (FLIQUI) as measured by current assets to current liabilities.

## 5.2.4. Data analysis

Besides the descriptive statistics which mainly depend on the percentage, the mean, and the standard deviation, a statistical analysis (Pearson correlation and regression analysis) was carried out using the Statistical Package for Social Sciences (SPSS).

Pearson correlation was used to explore the strength of the relationship between dependent variables (ROA, ROE and TOBINQ) and independent variables (CHAOWN, CEOOWN, DIROWN, BSIZE, FLEVER and FLIQUI). In addition to the correlation analysis, two types of regression analysis were performed (OLS and 2SLS) for the three measures of corporate performance as dependent variables and six independent variables (managerial ownership and board characteristics variables). The regression equation used is as follows:

<u>Model 1</u>
$Y$ (ROA, ROE, and TOBINQ) $= \beta_0 + \beta_1$ CHAOWN $+ \beta_2$ CEOOWN $+ \beta_3$ DIROWN $+ \beta_4$ BSIZE $+ \beta_5$ OUTSID $+ \beta_6$ CCDUAL $+ \beta_7$ FSIZE $+ \beta_8$ FLEVER $+ \beta_9$ FLIQUI $+ \varepsilon$

<u>Model 2</u>
$Y$ (ROA, ROE, and TOBINQ) $= \beta_0 + \beta_1$ CHAOWN $+ \beta_2$ CEOOWN $+ \beta_3$ BSIZE $+ \beta_4$ OUTSID $+ \beta_5$ CCDUAL $+ \beta_6$ FSIZE $+ \beta_7$ FLEVER $+ \beta_8$ FLIQUI $+ \varepsilon$

<u>Model 3</u>
$Y$ (ROA, ROE, and TOBINQ) $= \beta_0 + \beta_1$ CHAOWN $+ \beta_2$ DIROWN $+ \beta_3$ BSIZE $+ \beta_4$ OUTSID $+ \beta_5$ CCDUAL $+ \beta_6$ FSIZE $+ \beta_7$ FLEVER $+ \beta_8$ FLIQUI $+ \varepsilon$

<u>Model 4</u>
$Y$ (ROA, ROE, and TOBINQ) $= \beta_0 + \beta_1$ CEOOWN $+ \beta_2$ DIROWN $+ \beta_3$ BSIZE $+ \beta_4$ OUTSID $+ \beta_5$ CCDUAL $+ \beta_6$ FSIZE $+ \beta_7$ FLEVER $+ \beta_8$ FLIQUI $+ \varepsilon$

Where $Y$ = the corporate performance; $\beta_0$ is a constant; $\beta_i,\ _{i=1, ..., 9,}$ is parameters; and $\varepsilon$ is error term. In the OLS models, Model 1 involves all of the six independent variables and three control variables. Models 2, 3 and 4 involve the same nine variables eliminating DIROWN from Model 2; CEOOWN from Model 3; and CHAOWN from Model 4. Furthermore, in 2SLS models the following equation is used.

<u>2SLS Models</u>
$Y$ (ROA, ROE, and TOBINQ) $= \beta_0 + \beta_1$ CHAOWN $+ \beta_2$ CEOOWN $+ \beta_3$ DIROWN $+ \beta_4$ BSIZE $+ \beta_5$ OUTSID $+ \beta_6$ CCDUAL $+ \beta_7$ FSIZE $+ \beta_8$ FLEVER $+ \beta_9$ FLIQUI $+ \varepsilon$

Where $Y$ = the corporate performance; $\beta_0$ is a constant; $\beta_i,\ _{i=1, ..., 9,}$ is parameters; and $\varepsilon$ is error term.

# 6. Empirical results and analysis

## 6.1 Descriptive statistics

Table 2 shows the descriptive statistics for the dependent and all independent variables used in this study. Concerning dependent variables, Table 2 shows that three variables were used to measure corporate performance across the 100 companies included in the sample. For ROA (first one); the mean percentage is 2.4362 % with a standard deviation of 6.009 %. The minimum value is -6.31 % and

38

the maximum value is 33.52 %. For ROE (the second); the mean percentage is 8.3591% with a standard deviation of 14.294%. The minimum value is -10.79% and the maximum value is 55.39%. It can be noted that the minimum value is negative for both ROA and ROE this may be related to some companies in 2009 having losses because of the financial crisis. For Tobin's Q (the third); the mean percentage is 1.4750% with a standard deviation of 0.643%. The minimum value is 0.56 % and the maximum value is 3.14%. Concerning independent variables, Table 2 shows three variables for managerial ownership, three variables for board characteristics and three control variables. First for managerial ownership variables, the mean percentage of shares held by Chairman ( CHAOWN) is 2.302752% ; by CEO (CEOOWN) is 3.857345% and Other directors (DIROWN) in the board is 5.413092 % with a standard deviation of (4.854 %;7.758% and 12.502% respectively).

Concerning board characteristics variables, the minimum board size (BSIZE) of Egyptian listed companies was 5, while 17 members was the maximum number of board of directors. The mean of the outside directors (OUTSID) to the total number of the board members is (0.3340%) with standard deviation of 0.117%. This result indicates that the majority of board members in Egyptian listed companies are executive directors. However, according to Egyptian CG code, the board should comprise a majority of non-executive directors with the technical or analytical skills

Table (2) shows the descriptive statistics for variables used in this study

| Variables | No | Minimum | Maximum | Mean | Std. D. |
|---|---|---|---|---|---|
| **Corporate performance** | | | | | |
| ROA | 100 | -6.31 | 33.52 | 2.4362 | 6.009 |
| ROE | 100 | -10.79 | 55.39 | 8.3591 | 14.294 |
| Tobin's Q | 100 | .56 | 3.14 | 1.4750 | .643 |
| **Managerial ownership** | | | | | |
| Chairman Ownership (CHAOWN) | 100 | .0000 | 23.3300 | 2.302752 | 4.854 |
| CEO Ownership (CEOOWN) | 100 | .0000 | 31.4900 | 3.857345 | 7.758 |
| Directors Ownership (DIROWN) | 100 | .0000 | 51.6600 | 5.413092 | 12.502 |
| **Board characteristics** | | | | | |
| Board size (BSIZE) | 100 | 5 | 17 | 9.14 | 2.726 |
| Non-executive directors (OUTSID) | 100 | .10 | .60 | .3340 | .117 |
| CEO/Chair duality (CCDUAL) | 100 | 0 | 1 | .34 | .479 |
| **Control variables** | | | | | |
| Firm size (FSIZE) (EGP' 000) | 100 | 3879.54 | 54,662,000 | 9.2449E6 | 5.96316E7 |
| Leverage (FLEVER) | 100 | .08 | 88.25 | 34.551 | 26.418 |
| Liquidity (FLIQUI) | 100 | .25 | 7.18 | 1.7722 | 1.4548 |

to benefit the board and the company (This finding is in line with what has been reported in Egypt by Desoky and Mousa, 2010). While, the mean of CEO/Chair duality (CCDUAL) is 0.34% with a standard deviation of 0.479%. Finally Regarding control variables, the firm size (FSIZE), it can be seen that EGP 54.662 billion was the maximum total assets. Also, the mean of leverage (LEVER) for the total sample was 34.551% with a standard deviation of 26.41815%, while the minimum was 0.08% and the maximum was 88.25%.

## Correlation analysis

fore discussing the correlation results, it should be noted that the number of dependent variables in the primary analysis was seven including chairman nership (CHAOWN), CEO ownership (CEOOWN), other directors ownership IROWN), board size (BSIZE), non-executive directors (OUTSID), CEO/Chair ality (CCDUAL), and total management ownership (TOMOWN). However, the imary analysis showed a highly significant association (0.832) between two dependent variables, total management ownership (TOMOWN) and other rectors' ownership (DIROWN). Therefore, it was decided to omit the first one om the analysis. Tabachnick and Fidell (1996, p.86) pointed out that "we must ink carefully before including two variables with a bivariate correlation of, say, .7 or more in the same analysis". However, to further assess the potential for ulticollinearity among independent variables, linear regressions of all independent ariables on ROA, ROE, and Tobin's Q were performed, and obtained variance nflation factors (VIF) below 2 and tolerance levels above 0.60 for all independent variables (see Table 3). According to Pallant (2001, p.143), if the tolerance value "is very low (near 0), then this indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity". Thus, inter-correlation among the six independent variables does not appear to be problematic, and multicollinearity should not be a serious concern in this study.

Table (3) Tolerance and Variance Inflation Factors.

|  | ROA | | ROE | | TOBINQ | |
|---|---|---|---|---|---|---|
|  | Tolerance | VIF | Tolerance | VIF | Tolerance | VIF |
| CHAOWN | .651 | 1.536 | .651 | 1.536 | 651 | 1.536 |
| CEOOWN | .642 | 1.558 | .642 | 1.558 | .642 | 1.558 |
| DIROWN | .928 | 1.077 | .928 | 1.077 | .928 | 1.077 |
| BSIZE | .775 | 1.291 | .775 | 1.291 | .775 | 1.291 |
| OUTSID | .885 | 1.130 | .885 | 1.130 | .885 | 1.130 |
| CCDUAL | .973 | 1.027 | .973 | 1.027 | .973 | 1.027 |

Notes:
1-Dependant variables are ROA, ROE, and Tobin's Q. 2- VIF = variance inflation factors. 3- Separate linear regressions were undertaken because CHAOWN vs CEOOWN and BSIZE vs OUTSID are relatively highly correlated with each other.

The Pearson correlation coefficients matrix is presented in Table ٤ below. It shows a number of moderate significant associations among dependent (ROA, ROE and TOBINQ) and some independent variables either of managerial ownership or board characteristics (e.g.: DIROWN and BSIZE). Regarding managerial ownership, Table 3 reveals that there is an almost moderate significant positive association (0.263) between DIROWN and ROE as one of the accounting measures of corporate performance. The above finding is consistent with findings reported in some previous studies (e.g.: Morck et al., 2000; Hiraki et al., 2003; Chen et al., 2005) who have reported a positive relationship between managerial ownership and corporate performance. However, the table revealed that there are weak negative

associations (-0.078 and -0.019) between the same independent variable, DIROWN, and other dependent variables of corporate performance namely ROA and TOBINQ respectively. Other dependent variables related to managerial ownership, CHAOWN and CEOOWN are weak and non significantly correlated with the other two dependent variables of corporate performance, ROA and TOBINQ. Similar results were reported in other previous studies (e.g.: Vafeas and Theodorou, 1998 and Omran, 2009).

On the other hand, only one of the board characteristics variables, BSIZE, has about moderate significant positive association with corporate performance when measured by ROA. However, contradictory results were reported by previous studies in this area of research. For example, Hermalin and Weisbach (2003) concluded that board size is negatively related to corporate performance and the quality of decision-making. The same independent variable, BSIZE, is weakly correlated with corporate performance when measured by ROE and TOBINQ.

Table 4 Correlation between corporate performance measures (dependent variables) and independent variables (managerial ownership, board characteristics and control variables)

| Variable | ROA | ROE | TOBINQ | CHAOWN | CEOOWN | DIROWN | BSIZE | OUTSID | CCDUAL | FSIZE | FLEVER | FLIQUI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROA | 1 | | | | | | | | | | | |
| ROE | .453** | 1 | | | | | | | | | | |
| TOBINQ | .228* | .421** | 1 | | | | | | | | | |
| CHAOWN | -.108 | -.068 | .097 | 1 | | | | | | | | |
| CEOOWN | .055 | .041 | -.064 | .574** | 1 | | | | | | | |
| DIROWN | -.078 | .263** | -.019 | .124 | .122 | 1 | | | | | | |
| BSIZE | .241** | .047 | .066 | -.257** | -.249* | .163 | 1 | | | | | |
| OUTSID | -.171 | .046 | .114 | -.058 | -.013 | -.018 | .317** | 1 | | | | |
| CCDUAL | .147 | .071 | -.073 | .060 | .120 | .063 | .057 | -.028 | 1 | | | |
| FSIZE | .007 | .307** | -.090 | -.105 | -.135 | .513** | .141 | .089 | .110 | 1 | | |
| FLEVER | -.027 | .527** | .279** | .276** | .118 | .314* | -.074 | .102 | -.006 | .295* | 1 | |
| FLIQUI | -.204* | -.232* | .010 | .017 | .022 | .076 | .016 | .101 | .249* | .013 | -.088 | 1 |

* Correlation is significant at the 0.05 level (2 – tailed); ** Correlation is significant at the 0.01 level (2 – tailed)
Notes: 1- Dependent variables and independent variables are defined in Table 1.
2- Pearson correlation was performed for all variables. 3- All coefficients are based on 100 observations.

It should be noted that Table 3 reveals some correlations within corporate performance dependent variables. For instance, positive correlations of 0.453 and 0.228 were found between ROA from one side and ROE and TOBINQ respectively, from the other. Similar findings were reported by Demsetz and Villalonga (2001) who reported a significant correlation between two different measures of corporate performance, Tobins' Q and ROA. In addition, there is a significant positive

association (0.574) within independent variables between CHAOWN and CEOOWN. As a general point about correlation results, the above results suggest the potential for at least some of the hypotheses to be supported (See discussion below).

## 6.3 Regression analysis

Tables 5, 6, 7, and 8 show results of the regression models which were run using the Ordinary Least Squares (OLS) regression and Two-Stage Least Squares (2SLS) regression. Tables 5, 6, and 7 present OLS results for the three measures of corporate performance, ROA, ROE, and TOBINQ respectively. For each measure of corporate performance, four regression models were performed.

Table 5 below provides findings of four models for regression using ROA, the accounting measure of corporate performance, as a dependent variable. The four models showed almost similar results with regard to the significance levels (p value is 0.001, 0.002, 0.004 and 0.002 respectively). The results show the explanatory power of the four models as measured by the adjusted $R^2$, which provides a better estimation of the true population value, especially with a small sample (Tabachnick and Fidell, 1996). Values of the adjusted $R^2$ are 0.176, 0.156, 0.142 and 0.166 for the four regression models. In model 1, all independent variables (three variables related to both managerial ownership and board characteristics) were used to investigate their effect on corporate performance when measured by ROA. The F-value of model 1 is 3.343 ($p$-value $< 0.05$). Consequently, this model is statistically significant explaining dependent variables (corporate performance when measured by ROA). Accordingly, it could be concluded that at least some managerial ownership and board characteristics affect corporate performance (ROA). In evaluating the individual variables in the four models of ROA, it could be noted that BSIZE has moderate significant positive correlation with corporate performance when measured by ROA and is making a statistically significant unique contribution to the prediction of corporate performance. This finding supports hypothesis 3 developed earlier in this study. Hermalin and Weisbach (2003) reported that board size is significantly associated with corporate performance, however it was negatively associated.

Moreover, in the four models, OUTSID affects the corporate performance when measured by ROA. This finding supports hypothesis 4 and is consistent with Lefort and Urzúa (2008) who reported that an increase in the proportion of outside directors affects corporate performance. Furthermore, CCDUAL is significantly associated with corporate performance (ROA) in models 1 and 3. This finding

42

supports hypothesis 5. Other independent variables, managerial ownership variables, are not significantly associated with corporate performance (ROA), hence are not making a significant unique contribution to the prediction of corporate performance (ROA).

Table 5: Regression Models (ROA)

| (Constant) | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | Beta | t | B | Beta | t | B | Beta | t | B | Beta | t |
| (Constant) | 0.074 | | 0.030 | 0.756 | | 0.303 | 0.924 | | 0.367 | -0.289 | | -0.115 |
| CHAOWN | -0.207 | -0.167 | -1.419 | -0.225 | -0.182 | -1.531 | -0.048 | -0.039 | -0.375 | | | |
| CEOOWN | 0.002 | 0.092 | 2.176 | 0.170 | 0.214 | 1.859 | | | | 0.135 | 0.170 | 1.684 |
| DIROWN | -0.100 | -0.056 | -1.788 | | | | -0.078 | -0.161 | -1.386 | -0.106 | -0.218 | -1.882 |
| BSIZE | 0.833 | 0.321 | 3.602 | 0.732 | 0.332 | 3.225 | 0.739 | 0.335 | 3.189 | 0.870 | 0.395 | 3.766 |
| OUTSID | -14.860 | -0.290 | -2.896 | -13.216 | -0.258 | -2.587 | -13.568 | -0.264 | -2.609 | -14.582 | -0.284 | -2.828 |
| CCDUAL | 1.926 | 0.153 | 1.587 | 2.080 | 0.166 | 1.698 | 2.299 | 0.183 | 1.875 | 1.905 | 0.152 | 1.561 |
| FSIZE | 3.093E-11 | 0.066 | 0.575 | 1.602E-11 | 0.034 | 0.337 | 1.245E-11 | 0.026 | 0.230 | 4.090E-11 | 0.087 | 0.763 |
| FLEVER | 0.017 | 0.076 | 0.723 | 0.009 | 0.040 | 0.388 | 0.014 | 0.061 | 0.061 | 0.008 | 0.037 | 0.716 |
| FLIQUI | -0.821 | -.200 | -2.077 | -.911 | -0.222 | -2.296 | -.862 | -0.210 | -0.210 | -0.838 | -2.110 | -0.038 |
| No. of Obs. | 100 | | | 100 | | | 100 | | | 100 | | |
| $R^2$ | 0.251 | | | 0.224 | | | 0.211 | | | 0.234 | | |
| Adjusted $R^2$ | 0.176 | | | 0.156 | | | 0.142 | | | 0.166 | | |
| F value | 3.343 | | | 3.282 | | | 3.044 | | | 3.470 | | |
| P value | 0.001 | | | 0.002 | | | 0.004 | | | 0.002 | | |

Significant variables are in bold at the 0.05 level (2 – tailed).

Aiming to achieve improved results from other models, some independent variables were eliminated in model 2, 3 and 4. However, adjusted $R^2$ was slightly different as a result of such elimination. For instance, DIROWN, CEOOWN and CHAOWN were eliminated from model 2, 3 and 4 respectively, however, no change has been noted in the adjusted $R^2$ of these models. Another point should be noted that the regression analysis, when ROA is used as a measure of corporate performance, provides some support for the results obtained in the correlation analysis.

Table 6 presents findings of four models for regression using ROE, the second accounting measure of corporate performance, as a dependent variable. All of the four models are significant and show nearly similar results with regard to the explanatory power as measured by the adjusted R2 (0.336, 0.337, 0.343 and 0.309 for the four regression models) with $F$ values of 6.570, 7.280, 7.469 and 6.537 for models 1, 2, 3 and 4 respectively). In all models, for the independent variables of managerial ownership hypotheses, only managerial ownership, measured by the percentage of shares owned by the chairman, is significantly negative when associated with corporate performance measured by ROE. This finding supports H2 and the argument of the entrenchment effect. In the same lime, previous studies such as Demsetz and Lehn (1985) and Ng (2005) reported a negative or non existent relationship between managerial ownership and corporate performance. Regarding board characteristics variables, they are not significantly associated wit

corporate performance when measured by ROE. Therefore they are not making a significant contribution to the prediction of corporate performance. Consequently, board characteristics variables explaining corporate performance (ROE) are not statistically significant and none of the board hypotheses is supported by the above finding.

Table 7 shows finding of four models for regression using Tobins' Q, the market measure of corporate performance, as a dependent variable. Results with regard to the explanatory power for the four models are weak (0.068, 0.077, 0.061 and 0.070 for models 1, 2, 3 and 4 respectively) with $F$ values of 1.798, 2.033, 1.799 and 1.934 for the models. Furthermore, none of the models is significant. Consequently, none of the hypotheses developed earlier in this study, either of managerial ownership or board characteristics is supported when measuring corporate performance with Tobins' Q.

### Table 6: Regression Models (ROE)

| | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | Beta | t | B | Beta | t | B | Beta | t | B | Beta | t |
| (Constant) | 1.521 | | 0.285 | 0.734 | | 0.139 | 1.645 | | 0.314 | 0.0337 | | 0.062 |
| CHAOWN | **-6.74** | **-0.229** | **-2.169** | **-0.653** | **-0.222** | **-2.107** | **-0.651** | **-0.221** | **-2.433** | | | |
| CEOOWN | 0.029 | 0.015 | 0.149 | 0.064 | 0.034 | 0.331 | | | | -0.184 | -0.097 | -1.060 |
| DIROWN | 0.115 | 0.100 | 0.966 | | | | 0.119 | 0.103 | 1.016 | 0.097 | 0.084 | 0.799 |
| BSIZE | 0.001 | 0.000 | 0.002 | 0.118 | 0.022 | 0.247 | -0.013 | -0.002 | -0.026 | 0.122 | 0.023 | 0.244 |
| OUTSID | 0.224 | 0.002 | 0.020 | -1.673 | -0.014 | -0.155 | 0.412 | 0.003 | 0.038 | 1.131 | 0.009 | 0.101 |
| CCDUAL | 3.829 | 0.128 | 1.478 | 3.651 | 0.122 | 1.413 | 3.883 | 0.130 | 1.522 | 3.761 | 0.126 | 1.423 |
| FSIZE | 7.794E-11 | 0.069 | 0.679 | 1.321E-11 | 0.118 | 1.320 | 7.525E-11 | 0.067 | 0.668 | 1.105E-11 | 0.098 | 0.952 |
| FLEVER | **0.280** | **0.517** | **5.516** | **0.289** | **0.534** | **5.805** | **0.279** | **0.516** | **5.548** | **0.251** | **0.464** | **5.026** |
| FLIQUI | **-2.190** | **-0.224** | **-2.595** | **-2.085** | **-0.214** | **-2.493** | **-2.196** | **-0.225** | **-2.619** | **-2.246** | **-0.230** | **-2.610** |
| No. of Obs. | 100 | | | 100 | | | 100 | | | 100 | | |
| R² | 0.396 | | | 0.390 | | | 0.396 | | | 0.365 | | |
| Adjusted R² | 0.336 | | | 0.337 | | | 0.343 | | | 0.309 | | |
| F value | 6.570 | | | 7.280 | | | 7.469 | | | 6.537 | | |
| P value | 0.000 | | | 0.000 | | | 0.000 | | | 0.000 | | |

Significant variables are in bold at the 0.05 level (2 – tailed).

### Table 7: Regression Models (TOBINQ)

| | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | Beta | t | B | Beta | t | B | Beta | t | B | Beta | t |
| (Constant) | 0.939 | | 3.301 | 0.951 | | 3.401 | 0.881 | | 3.125 | 0.964 | | 3.412 |
| CHAOWN | 0.014 | 0.108 | 0.866 | 0.014 | 0.106 | 0.852 | 0.004 | 0.027 | 0.249 | | | |
| CEOOWN | -0.014 | -0.160 | -1.297 | -0.014 | -0.166 | -1.379 | | | | -0.009 | -0.107 | -1.000 |
| DIROWN | -0.002 | -0.035 | -0.281 | | | | -0.003 | -0.064 | -0.525 | -0.001 | -0.027 | -0.221 |
| BSIZE | 0.022 | 0.095 | 0.851 | 0.021 | 0.087 | 0.811 | 0.029 | 0.122 | 1.108 | 0.020 | 0.084 | 0.759 |
| OUTSID | 0.346 | 0.063 | 0.592 | 0.375 | 0.068 | 0.657 | 0.258 | 0.047 | 0.443 | 0.327 | 0.059 | 0.560 |
| CCDUAL | -0.069 | -0.051 | -0.497 | -0.066 | -0.049 | -0.480 | -0.094 | -0.070 | -0.684 | -0.067 | -0.050 | -0.487 |
| FSIZE | 9.955E-11 | -0.197 | -1.627 | **1.080E-11** | **-0.214** | **-2.032** | 8.701E-11 | -0.172 | -1.434 | 1.065E-11 | -0.211 | -1.757 |
| FLEVER | **0.008** | **0.342** | **3.078** | **0.008** | **0.336** | **3.096** | 0.009 | 0.351 | 3.156 | 0.009 | 0.367 | 3.426 |
| FLIQUI | 0.023 | 0.051 | 0.503 | 0.021 | 0.048 | 0.473 | 0.025 | 0.058 | 0.0564 | 0.024 | 0.054 | 0.530 |
| No. of Obs. | 100 | | | 100 | | | 100 | | | 100 | | |
| R² | 0.152 | | | 0.152 | | | 0.137 | | | 0.145 | | |
| Adjusted R² | 0.068 | | | 0.077 | | | 0.061 | | | 0.070 | | |
| F value | 1.798 | | | 2.033 | | | 1.799 | | | 1.934 | | |
| P value | 0.079 | | | 0.051 | | | 0.087 | | | 0.064 | | |

Significant variables are in bold at the 0.05 level (2 – tailed).

This section of the results presents 2SLS results of the three measures of corporate performance, ROA, ROE and TOBINQ. The literature provides evidence that a non-linear relationship may exist between managerial ownership and corporate performance (McConnell and Servaes, 1990; Morck et al., 1988). Literature (e.g; Demsetz, 1983; Fama and Jensen, 1983; Demsetz and Lehn, 1985; Drakos and Bekiris, 2010) on the relationship between managerial ownership and corporate performance has argued that such relationship has an endogeneity nature. Following Demsetz and Villalonga (2001), the current study investigates the relationship between managerial ownership and corporate performance if ownership is treated as an endogenous variable. Therefore, 2SLS regression is suggested as an appropriate analysis method to study this relationship and avoid biases (e.g., Cho, 1998).

Table 8: 2SLS Regression Models

| | Model 1 (ROA) | | | Model 2 (ROE) | | | Model 3 (TOBINQ) | | |
|---|---|---|---|---|---|---|---|---|---|
| | B | t | Sig. | B | t | Sig. | B | t | Sig. |
| (Constant) | -0.371 | -0.156 | 0.876 | -7.021 | 1.163 | 0.248 | 1.182 | 4.269 | 0.004 |
| CHAOWN | -0.189 | -1.325 | 0.188 | -0.276 | -0.764 | 0.447 | 0.024 | 1.751 | 0.830 |
| CEOOWN | 0.190 | 2.046 | 0.042 | -0.084 | -0.362 | 0.718 | -0.014 | -1.292 | 0.199 |
| DIROWN | -0.078 | -1.676 | 0.097 | 0.330 | 2.785 | 0.006 | -0.002 | -0.287 | 0.774 |
| BSIZE | 0.828 | 3.564 | 0.001 | -0.313 | -0.530 | 0.598 | 0.014 | 0.504 | 0.616 |
| OUTSID | -15.159 | -2.996 | 0.004 | 8.023 | 0.535 | 0.534 | 0.568 | 0.963 | 0.338 |
| CCDUAL | 1.358 | 1.150 | 0.253 | 2.078 | 0.693 | 0.490 | -0.088 | -0.638 | 0.525 |
| No. of Obs. | 100 | | | 100 | | | 100 | | |
| $R^2$ | 0.199 | | | 0.129 | | | 0.089 | | |
| Adjusted $R^2$ | 0.148 | | | 0.079 | | | 0.030 | | |
| F value | 3.859 | | | 1.505 | | | 0.863 | | |
| P value | 0.002 | | | 0.185 | | | 0.525 | | |

Note: Instrument variables include the three control variables (FSIZE, FLEVER, and FLIQUI) and Log ROA (Model 1); Log ROE (Model 2); and Log TOBINQ (Model 3).

Table 8 reveals finding of three models of regression (one model for each measure of corporate performance). Only one of the three models, the ROA model, is significant with p value of .002. The table shows the explanatory power of the three models as measured by the adjusted R2 with values of .148, .079 and .030 (with $F$ value of 3.859, 1.505 and 0.525). In the ROA model, of the managerial ownership variables, only CEOOWN is significantly positively associated with corporate performance when measured by ROA. This finding supports the argument of alignment effect hence hypothesis 1 could be accepted. For board variable, BSIZE and OUTSID are significantly associated and support hypotheses 3 and 4. Regarding the ROE model, only one independent variable of both managerial ownership and board characteristics, DIROWN, is significantly positively associated with corporate performance when measured by ROE. However none of the board variable is significantly associated. Concerning the TOBINQ model, none of the six independent variables is significantly associated with the market measure of corporate performance, Tobins' Q. Therefore they are not making a significant contribution to the prediction of corporate performance when measured by Tobins'

Q. Findings from the above table of 2SLS regression models of the corporate performance (when measured by ROA) support the argument that a non-linear relationship may exist between some variables of managerial ownership and board characteristics from one side and corporate performance from the other.

## 7. Summary and conclusions

While the impact of managerial ownership and board characteristics on corporate performance has been examined in developed markets settings, particularly the US and UK, understanding their effectiveness in emerging markets like Egypt is particularly important due to differences that exist in the structure of business in different markets. This study investigates the effect of managerial ownership and board characteristics on corporate performance by using a random sample of 100 listed companies in the EGX 100 at the end of 2009. The study has important implications for investigating corporate performance in different sectors. The regulatory body may be interested to find out whether a minimum requirement of ownership by all directors (executive and non executive) of public companies is necessary or not. This study helps researchers and practitioners to understand the relationship between managerial ownership and corporate performance in the Egyptian environment and makes several contributions to the existing literature on CG. The findings of this study also imply that policy makers should consider the characteristics of firms as well as the institutional environment before they implement additional corporate governance reforms.

Statistical analysis revealed that at least some managerial ownership and board characteristics variables affect corporate performance. Board characteristics variables explaining corporate performance when measured by ROA are statistically significant. BSIZE, OUTSID and CCDUAL affect the corporate performance while other independent variables, managerial ownership variables, are not correlated with corporate performance when measured by ROA and hence are not making a significant unique contribution to the prediction of corporate performance (ROA). Regarding corporate performance when measured by ROE, only one of the managerial ownership variables, CHAOWN, is significantly associated. However, board characteristics variables are not significantly associated with corporate performance when measured by ROE. Findings related to the market measure of corporate performance, TOBINQ, show that none of the models is significant. Consequently, none of the hypotheses developed earlier in this study, either of managerial ownership or board characteristics is supported when measuring corporate performance with TOBINQ. The three 2SLS models developed in this study are significant. In the ROA model, of the managerial ownership variables, only CEOOWN is significantly positively associated with corporate performance

when measured by ROA supporting the argument of alignment effect. Furthermore, board variable, BSIZE and OUTSID are significantly associated. Findings from 2SLS regression models of the corporate performance, only when measured by ROA, support also the argument that non-linear relationship may exist between some variables of managerial ownership and board characteristics from one side and corporate performance from the other.

This study is not free from limitations. It investigated the relationship between managerial ownership and corporate performance using a sample of 100 Egyptian companies, firstly; the sample may need to be extended in future research. Secondly; although the study can contribute to the understanding of the relationship between managerial ownership and corporate performance, it may not be able to be generalized to other countries. Such relationship could be different from country to country due to industrial composition, economic status and corporate governance rules and regulations. Therefore, there is a need to investigate the relationship between managerial ownership and corporate performance among different countries.

The study suggests possible avenues for future research. One possibility is to replicate the present study by studying the impact of other factors such as ownership concentration and ownership identity on corporate performance. The study addresses only one aspect of CG including board characteristics. Therefore, other attributes of CG need to be considered in future research. Other interesting issues that can be explored is the extent to which differences in legal environments, protection of minority stockholders' rights, and restrictions on takeovers in different countries would affect corporate performance.

# References

Agrawal, A. and Mandelker, G. (1987). Managerial incentives and corporate investment and financing decisions. *Journal of Finance*, Vol. 42, No. 4, pp. 823–837.

Anderson, R. and Reeb, D. (2003). Founding-family ownership and firm performance: evidence from the S&P 500, *Journal of Finance*, Vol.53, pp. 1301-1328.

Baker, S. and Weiner, E. (1992). Latin America: The big move to financial markets, Business Week, 15 (June), pp.50–55.

Berle, A.A., Means, G.C., (1932). The Modern Corporation and Private Property, Commerce Clearing House, New York.

Black, B., Jang, H., and Kim, W. (2006). Does corporate governance predicts firm's market value? Evidence from Korea, *Journal of Law, Economics & Organization*, Vol. 22, pp. 366-413.

Booth, J., Cornett, M., and Tehranian, H. (2002). Boards of directors, ownership, and regulation, *Journal of Banking & Finance*, Vol.26, pp.1973–1996.

Brickley, J., Coles, J. and Jarrell, G. (1997). Leadership structure: Separating the CEO and chairman of the board, *Journal of Corporate Finance*, Vol. 3, pp.189-220.

Brickley, J., Lease, D., and Smith, R.C. (1988). Ownership structure and voting on anti-takeover amendments. *Journal of Financial Economics*, Vol. 20, pp. 267–291.

Center for International Private Enterprise - CIPE (2005). Draft of corporate governance code of Egyptian companies. Available at www.cipe-arabia.org/pdfhelp.asp

Chen, Z. CheungT, Y., Stouraitis, A. and Wong, A. (2005). Ownership concentration, firm performance, and dividend policy in Hong Kong, *Pacific-Basin Finance Journal*, Vol. 13, pp.431–449.

Chi, W. and Wang, Y. (2009). Ownership, performance and executive turnover in China, *Journal of Asian Economics*, Vol. 20, pp. 465–478.

Cho, M. (1998). Ownership structure, investment and the corporate value: an empirical analysis, *Journal of Financial Economics*, Vol.47, pp.103-121.

Choi, J. J., Park, S. W., and Yoo, S. S. (2007). The value of outside directors: Evidence from corporate governance reform in Korea. *Journal of Financial and Quantitative Analysis*, Vol. 42, No. 4, pp. 941-962

Chung, K.H., Pruitt, S.W., (1996). Executive ownership, corporate value, and executive compensation: a unifying framework, *Journal of Banking and Finance*, Vol. 20, pp.1135– 1159.

Cole, R A. and Mehran, H, (1998). The effect of changes in ownership structure on performance: Evidence from the thrift industry, *Journal of Financial Economics*, Vol. 50, pp. 291-317.

Craswell, A, Taylor, S and Sayweli, R, (1997). Ownership structure and corporate performance: Australian evidence, *Pacific-Basin Finance Journal*, Vol. 5, pp. 301-323.

Demsetz, H., (1983). The structure of ownership and the theory of the firm, *Journal of Law and Economics*, Vol. 26, pp. 375–390.

Demsetz, H and Villalonga, B. (2001). Ownership structure and corporate performance, *Journal of Corporate Finance*, Vol. 7, pp. 209–233.

Demsetz, H. and Lehn, K. (1985). The structure of corporate ownership: causes and consequences, *Journal of Political Economy*, Vol. 93, pp. 1155–1177.

Desoky, A. M and Mousa, G. A, (2010). Corporate governance practices: Transparency and disclosure – Evidence from the Egyptian exchange, The 2010 International Conference on Asia Pacific Business Innovation and Technology Management, January 24-26, 2010, Cebu, Philippines.

Drakos, A. A and Bekiris, F.V. (2010). Corporate performance, managerial ownership and endogeneity: A simultaneous equations analysis for the Athens stock exchange, *Research in International Business and Finance*, Vol.24, pp. 24–38.

Dunn, D., (1987). Directors aren't doing their jobs, *Fortune*, pp.117–119.

Donnelly, R. and Kelly, P, (2005). Ownership and Board Structures in Irish plcs ,European Management Journal, Vol. 23, No. 6, pp. 730–740.

Fama, E.F. (1980). Agency problems and the theory of the firm, *Journal of Political Economy*, Vol. 88, pp. 715– 732.

Fama, E., and Jensen, M. (1983). Separation of ownership and control, *Journal of Law and Economics*, Vol.26, pp.301–325.

Firth, M, Fung, P. M and Rui, O. M. (2007). Ownership, two-tier board structure, and the informativeness of earnings –Evidence from China, *Journal of Accounting and Public Policy*, Vol. 26, pp.463–496.

Hermalin, B. E., and Weisbach, M. S. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature, Economic Policy Review-Federal Reserve Bank of New York, Vol. 9, pp. 7–26.

Hermalin, B., Weisbach, M., (1988). The determinants of board composition, *RAND Journal of Economics*, Vol. 19, pp. 589–606.

Higgs, D. (2003). Review of the Role and Effectiveness of Non- Executive Directors, Department of Trade and Industry, London.

Himmelberg, C., Hubbard, R.G., Palia, D., (1999). Understanding the determinants of managerial ownership and the link between ownership and performance, *Journal of Financial Economics*, Vol. 53, pp.353–384.

Hiraki, T., Inoue, H., Ito, A., Kuroki, F., Masuda, H., (2003). Corporate governance and firm value in Japan: Evidence from 1985 to 1998, *Pacific-Basin Finance Journal*, Vol. 11, pp.239–265.

Holderness, C.G., Kroszner, R.S., Sheehan, D.P. (1999). Were the good old days that good? Changes in managerial stock ownership since the great depression, *Journal of Finance*, Vol. 54, pp.435–469.

Jensen, M., and Meckling,W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics*, Vol.3, pp.305–360.

Jensen, M.C., (1993). The modern industrial revolution, exit, and the failure of internal control systems, *Journal of Finance*, Vol. 48, pp.831–880.

John, K., and Senbet, L.W., (1998). Corporate governance and board effectiveness, *Journal of Banking and Finance*, Vol. 22, pp.371–403.

Kaplan, S.N., Minton, B., (1994). Appointments of outsiders to Japanese boards: determinants and implications for managers, *Journal of Financial Economics*, Vol. 36, pp. 225–257.

Keenan, J. (2004). Corporate governance in UK/USA boardrooms, *Corporate Governance – An International Review*, Vol. 12, pp. 172–176.

Kennedy, P., (1998). A guide to econometrics, 4th edn. MIT Press, Massachusetts.

Kiel, G. and Nicholson, G. (2003). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance, *Corporate Governance – An International Review*, Vol. 11, pp.189–205.

Klein, A., (2002). Audit committee, board of director characteristics, and earnings management, *Journal of Accounting and Economics*, Vol. 33, No.3, pp. 375-400.

Kole, S., (1996). Managerial ownership and firm performance: incentives or rewards? *Advances in Financial Economics*, Vol. 2, pp. 119–149.

Lefort , F. and Urzúa, F, (2008). Board independence, firm performance and ownership concentration: Evidence from Chile, *Journal of Business Research*, Vol. 6, pp. 615–622.

49

Lin, Y., Huang, S and Young, S (2008). An empirical study on the relationship between ownership and firm performance: Taiwan evidence, *Afro-Asian Journal of Finance and Accounting*, Vol. 1, No. 1, pp. 67-80.

Mak, Y.T. and Li, Y, (2005). Determinants of corporate ownership and board structure: Evidence from Singapore, *Journal of Corporate Finance*, Vol. 7, pp.235-256.

Mayers, D., Shivdasani, A., Smith, C.W., (1997). Board composition and corporate control: Evidence from the insurance industry, *Journal of Business*, Vol. 70, pp. 33-62.

McConnell, J.J., Servaes, H., (1990). Additional evidence on equity ownership and corporate value, *Journal of Financial Economics*, Vol. 27, pp.595-612.

Morck, R., Shleifer, A., Vishny, R., (1988). Management ownership and market valuation: an empirical analysis, *Journal of Financial Economics*, Vol. 20, pp.293-316.

Morck, R., Nakamura, M., Shivdasani, A., (2000). Banks, ownership structure, and firm value in Japan, *Journal of Business*, Vol. 73, pp.539-567.

Ng, C.M. (2005). An empirical study on the relationship between ownership and performance in a family-based corporate environment, *Journal of Accounting, Auditing and Finance*, Vol. 20, pp.121-146.

O'Higgins, E. (2002). Non-Executive Directors on Boards in Ireland: co-option, characteristics and contributions, *Corporate Governance*, pp.19-28.

Omran, M (2009). Post-privatization corporate governance and firm performance: The role of private ownership concentration, identity and board composition, *Journal of Comparative Economics*, Vol. 37, pp. 658-673.

Peasnell, K.V., Pope, P.F. and Young, S. (2000). Detecting earnings management using cross-sectional abnormal accruals models, *Accounting and Business Research*, Vol. 30, No. 4, pp. 313-326.

Peng, M. W., (2004). Outside directors and firm performance during institutional transitions, *Strategic Management Journal*, Vol. 25, pp. 435-471.

Porter. M.E., (1992). Capital choices: changing the way America invests in industry, *Journal of Applied Corporate Finance*, Vol. 5, No. 2, pp. 4-16.

Pye, A. (2000). Changing scenes In, From and Outside the Board Room: UK Corporate Governance in Practice from 1989 to 1999, *Corporate Governance - An International Review*, Vol. 8, pp. 335-346.

Shleifer, A., and Vishny, R. (1986). Large shareholders and corporate control, *Journal of Political Economy*, Vol. 94, pp. 461-488.

Srinivasan, S., (2005). Consequences of financial reporting failure for outside directors: evidence from accounting restatements and audit committee members, *Journal of Accounting Research*, Vol. 43, No. 2, pp. 291-334.

Sun, Q., and Tong, W. (2003). China share issue privatization: The extent of its success, *Journal of Financial Economics*, Vol.70, pp.182-222.

Vafeas, N., Theodorou, E., (1998). The association between board structure and firm performance in the UK, *British Accounting Review*, Vol. 30, pp.383-407.

Villalonga, B., and Amit, R. (2006). How do family ownership, control, and management affect firm value? *Journal of Financial Economics*, Vol.80, No.2, pp.385-417.

World Bank, (2004). Report on the observance of standards and codes (ROSC) - Corporate governance country assessment: Arab Republic of Egypt. Available at: http:www.worldbank.org/ifa/rocs_cg_egyp2.pdf. (Accessed 15 October 2009).

Yermack, D., (1996). Higher market valuation of companies with a small board of directors, *Journal of Financial Economics*, Vol. 40, pp.185–211.

Yuan, M., Deng, Z., Song, Z., Tang, Y., (2005). A review of the ownership structure and corporate performance, *China-USA Business Review*, Vol. 4, pp. 49–54.

**Appendix A**: Egyptian listed companies included in the study

| ISIN | REUTERS CODE | COMPANY NAME |
|---|---|---|
| EGS67191C014 | ICID.CA | International Co For Investment & Development |
| EGS70271C019 | RTVC.CA | Remco for Touristic Villages Construction |
| EGS70431C019 | EGTS.CA | Egyptian for Tourism Resorts |
| EGS30221C013 | ADPC.CA | The Arab Dairy Products Co. ARAB DAIRY |
| EGS74081C018 | ORTE.CA | Orascom Telecom Holding (OT) |
| EGS78021C010 | MPRC.CA | Egyptian Media Production City |
| EGS70021C018 | CIRF.CA | Cairo Development and Investment |
| EGS3F021C017 | ENGC.CA | Engineering Industries (ICON) |
| EGS3G231C011 | ELEC.CA | Egyptian Electrical Cables |
| EGS44031C010 | CSAG.CA | Canal Shipping Agencies |
| EGS44012C010 | MOIL.CA | Maridive & oil services |
| EGS47021C018 | UASG.CA | United Arab Shipping |
| EGS48031C016 | ETEL.CA | Telecom Egypt |
| EGS48011C018 | EMOB.CA | Egyptian Company for Mobile Services (MobiNil) |
| EGS50091C015 | AITG.CA | Assiut Islamic Trading |
| EGS52041C018 | NEDA.CA | Northern Upper Egypt Development & Agricultural Production |
| EGS51191C012 | SMFR.CA | Samad Misr -EGYFERT |
| EGS3E071C013 | ACRO.CA | Acrow Misr |
| EGS3E181C010 | EGAL.CA | Egypt Aluminum |
| EGS02051C018 | POUL.CA | Cairo Poultry |
| EGS21531C016 | UEGC.CA | Upper Egypt Contracting |
| EGS23141C012 | EDBM.CA | Egyptian for Developing Building Materials |
| EGS67181C015 | ABRD.CA | Egyptians Abroad for Investment & Development |
| EGS3D061C015 | IRON.CA | Egyptian Iron & Steel |
| EGS79072C012 | TRTO.CA | TransOceans Tours |
| EGS3G191C017 | NASR.CA | El Nasr Transformers (El Maco) |
| EGS42051C010 | ETRS.CA | Egyptian Transport (EGYTRANS) |
| EGS52051C017 | OSTD.CA | B-Tech |
| EGS32221C011 | ACGC.CA | Arab Cotton Ginning |
| EGS38211C016 | MICH.CA | Misr Chemical Industries |
| EGS38391C016 | CPCI.CA | Cairo Pharmaceuticals |
| EGS3A221C018 | RUBX.CA | Rubex Plastics |
| EGS3C151C015 | CERA.CA | Arab Ceramics (Aracemco) |
| EGS3C401C014 | SCEM.CA | Sinai Cement |
| EGS30201C015 | SUGR.CA | Delta Sugar |
| EGS30471C014 | AFMC.CA | Alexandria Flour Mills |
| EGS30411C010 | SCFM.CA | South Cairo & Giza Mills & Bakeries |
| EGS32041C013 | SPIN.CA | Alexandria Spinning & Weaving (SPINALEX) |
| EGS69082C013 | EKHO.CA | Egyptian Kuwaiti Holding |
| EGS65081C019 | DAPH.CA | Development & Engineering Consultants |
| EGS65461C013 | GIHD.CA | Gharbia Islamic Housing Development |
| EGS65851C015 | OCDI.CA | Six of October Development & Investment (SODIC) |
| EGS30581C010 | COSG.CA | Cairo Oils & Soap |
| EGS65341C017 | EHDR.CA | Egyptians Housing Development & Reconstruction |
| EGS651B1C018 | CCRS.CA | Gulf Canadian Real Estate Investment Co. |
| EGS690C1C010 | RAYA.CA | Raya Holding For Technology And Communications |
| EGS655L1C012 | PHDC.CA | Palm Hills Development Company |

| | | |
|---|---|---|
| EGS691L1C018 | PIOH.CA | Pioneers Holding |
| EGS07061C012 | IFAP.CA | International Agricultural Products |
| EGS21451C017 | DCRC.CA | Delta Construction & Rebuilding |
| EGS21541C015 | GGCC.CA | Giza General Contracting |
| EGS23111C015 | NCCW.CA | Nasr Company for Civil Works |
| EGS02211C018 | EPCO.CA | Egypt for Poultry |
| EGS32331C018 | APSW.CA | ARAB POLVARA SPINNING & WEAVING CO. |
| EGS360A1C011 | EPPK.CA | El Ahram Co. For Printing And Packing |
| EGS10001C013 | ASCM.CA | Asek Company for Mining - Ascom |
| EGS652L1C015 | NDRP.CA | Namaa for Development and Real Estate Investment Co. |
| EGS380S1C017 | SKPC.CA | Sidi Kerir Petrochemicals |
| EGS46051C016 | GMCI.CA | GMC Group for Industrial Comm. & Fin. Investments |
| EGS30761C026 | NCMP.CA | National company for maize products |
| EGS3G0Z1C014 | SWDY.CA | ELSWEDY CABLES |
| EGS69182C011 | NAHO.CA | Naeem Holding |
| EGS300L1C011 | ELNA.CA | El Nasr For Manufacturing Agricultural Crops |
| EGS673T1C012 | AUTO.CA | GB AUTO |
| EGS691S1C011 | TMGH.CA | T M G Holding |
| EGS691A1C011 | PRMH.CA | Prime Holding |
| EGS30361C017 | MILS.CA | North Cairo Mills |
| EGS30431C018 | ESGI.CA | Egyptian Starch & Glucose |
| EGS30401C011 | CEFM.CA | Middle Egypt Flour Mills |
| EGS32131C012 | NCGC.CA | Nile Cotton Ginning |
| EGS33061C010 | KABO.CA | El Nasr Clothes & Textiles (Kabo) |
| EGS36021C011 | RAKT.CA | Rakta Paper Manufacturing |
| EGS38161C013 | UNIP.CA | Universal For Paper and Packaging Materials (Unipack |
| EGS38251C012 | ZEOT.CA | Extracted Oils |
| EGS38421C011 | MOSC.CA | Misr Oils & Soap |
| EGS38381C017 | EFIC.CA | Egyptian Financial & Industrial |
| EGS3C111C019 | PRCL.CA | Ceramic & Porcelain |
| EGS3C071C015 | ECAP.CA | El Ezz Porcelain (Gemma) |
| EGS3C161C014 | LCSW.CA | Lecico Egypt |
| EGS3C251C013 | ESRS.CA | Ezz Steel |
| EGS3C351C011 | SVCE.CA | South Valley Cement |
| EGS30211C014 | AJWA.CA | AJWA for Food Industries company Egypt |
| EGS30291C016 | SNFC.CA | Sharkia National Food |
| EGS69021C011 | AFDI.CA | El Ahli Investment and Development |
| EGS69101C011 | HRHO.CA | Egyptian Financial Group-Hermes Holding Company |
| EGS65091C018 | ELSH.CA | El Shams Housing & Urbanization |
| EGS65071C010 | ELKA.CA | El Kahera Housing |
| EGS65061C011 | UNIT.CA | United Housing & Development |
| EGS65211C012 | AREH.CA | Egyptian Real Estate Group |
| EGS65441C015 | MENA.CA | Mena Touristic & Real Estate Investment |
| EGS65511C015 | NRPD.CA | National Real Estate Bank for Development |
| EGS65591C017 | HELI.CA | Heliopolis Housing |
| EGS65571C019 | MNHD.CA | Medinet Nasr Housing |
| EGS65541C012 | CIRA.CA | Cairo Investment & Real Estate Development |
| EGS65901C018 | OCIC.CA | Orascom Construction Industries (OCI) |
| EGS30481C013 | BISM.CA | Bisco Misr |
| EGS30451C016 | UEFM.CA | Upper Egypt Flour Mills |
| EGS30471C014 | AFMC.CA | Alexandria Flour Mills |
| EGS30581C010 | COSG.CA | Cairo Oils & Soap |
| EGS36021C011 | RAKT.CA | Rakta Paper Manufacturing |