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Full Length Research Paper

Corporate Governance and Firm Outcomes: Evidence on Board Structure and Ownership from Egypt

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This study investigates the effect of board ownership and characteristics on firm performance (FP). It provides evidence on this effect using a sample of 96 of the most active listed Egyptian companies on the Egyptian Stock Exchange (EGX). The paper employs OLS and 2SLS regression analysis to test the association between board ownership and characteristics and FP measured by three different measures namely return on assets - ROA, return on equity - ROE, and Tobin's Q. Board characteristics variables are statistically significant associated with FP when measured by ROA. Only one of the three 2SLS models developed in this study (ROA model) is significant. Regarding the two competing arguments related to the effect of board ownership on FP (namely the interest alignment and the entrenchment effects), the argument of alignment effect was supported. Furthermore, findings from 2SLS regression models of FP when measured by ROA support the argument that non-linear relationship may exist between some variables of board ownership and characteristics from one side and FP from the other.

Keywords: Firm Performance, Board Ownership, Outside Directors, CEO/Chair Duality, The Egyptian Exchange, The EGX 100.

INTRODUCTION

The effect of board ownership and characteristics on firm performance (FP) 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. Tinker and Okcabol (1991) argued that public interest accounting can be considered a monitoring service in an agency theory sense. While, Benston (1982, p.102) pointed out that 'shareholders are likely to be well served by the accounting procedures voluntarily adopted by corporate managers and directors . . . social responsibility of accountants can be expressed best by their forbearing from social responsibility accounting'. Tinker and Okcabol (1991) have addressed three scenarios for an agency theory. Firstly, owners manage the firm, and thus no agency problem exists. A productive opportunity curve of the firm's investment projects is shown in first scenario, where projects are sequenced in order of their profitability (marginal productivity). Thus, the most profitable investment projects have the steepest slope. Second scenario: managers are hired by the owners and thus an agency

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relationship exists with moral hazard and the possibility of agency costs. The portion of the curve in this scenario falls below a productive opportunity curve (in first scenario) that reflects the agency loss due to management's consumption of nonpecuniary perquisites.

The agency loss is registered in a lower value for the firm. Lastly, managers are hired by owners (as in second scenario) but the owners strive to limit their agency losses using monitoring, bonding, and incentive contracts to restrict the managers' non-pecuniary consumption. This scenario shows that, by monitoring and bonding management, the owners can partially mitigate their agency loss. This partial recovery of their wealth is reflected by the net increase in the value of the firm. 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. Other 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.

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 (Jensen and Meckling, 1976). Presumably, these directors are less likely to take actions that would reduce shareholder wealth regardless of the extent to which they are independent. Therefore, FP 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 board ownership, represented by the share ownership of board members, and FP. 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 FP. Such studies reported inconclusive results and raised the argument related to the possibility of an endogeneity issue in relation to managerial ownership and FP. A number of studies (as Tinker and Okcabol ,1991; Briloff, l972) have addressed ways that management can use them to impact on Income reported consequently, the performance of the company. Briloff, (l972) argued that corporations who exercise the power and control over the corporation's resources should be assured by the independent certifying or attesting auditors. He showed how various corporations could and did hide or inflate income, bury or write off expenses, imply that growth in sales and profits came from internal operations when they came from mergers, etc.

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 FP. 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 FP.

The current study aims mainly to answer two questions. First: does board ownership affect FP and second what is the relationship between board characteristics as an important mechanism of corporate governance (CG) and FP? Because literature, regarding the relationship between managerial ownership and FP, 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 FP measured by three different measures namely return on assets - ROA, return on equity - ROE, and Tobin's Q (dependent variables) using a sample of 96 of the most active listed Egyptian companies on the Egyptian Stock Exchange (EGX). Egypt, the focus of this study, has a unique place among 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 context. Section 3 discusses arguments regarding the effect of board ownership on FP. Section 4 presents the relevant literature and hypotheses development related to the effect of board ownership and characteristic on FP. 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.

The Egyptian Context

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.

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.

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).

Arguments Regarding the Effect of Board Ownership on FP

The separation of ownership and control creates potential conflicts of interests between board of directors and shareholders. Board ownership affects the degree of congruence between the interests of

owners and the board or management (Mak and Li, 2001). Stock ownership by officers and board members gives them an incentive to improve the FP (Brickley et al., 1988). 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". 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 (Booth et al., 2002). 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 board ownership on FP presents two competing arguments namely the convergence-of-interests or interest alignment and the entrenchment effects.

The first argument (the convergence-of-interests or interest alignment): This argument suggests that increasing board ownership creates a convergence of owner and manager interests, thus resulting in a positive impact on FP. 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, board 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 board ownership and FP supporting the argument that as ownership increases, there is greater alignment of managerial interests with stockholders of Japanese firms. For instance, Morck et al. (1988) examined the relation between board ownership and FP (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 board ownership between 0% and 5%; a negative and significant relationship between 5% and 25%; and a positive and significant relationship between 25% and 100%. Similarly, Hiraki et al. (2003) provided evidence that board ownership is positively related to the value of Japanese manufacturing companies.

Furthermore, McConnell and Servaes (1990) used Tobin's Q and reported a significant positive influence of board ownership, at least at the lower levels of ownership, which supported a curvilinear relationship between board ownership and FP. They considered the impact of both board ownership and ownership concentration on FP 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 board ownership. However, the coefficient beyond 25% board ownership was negative but not significant. Chung and Pruitt (1996) recognized that FP (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 FP. Cole and Mehran (1998) investigated the relationship between ownership structure and FP, using a sample of 94 thrift institutions that converted from mutual to stock ownership between 1983 and 1987. The authors found a significant increase in the percentage of the firm owned by the largest inside stockholder, and a significant improvement in FP after the increase in board ownership.

The second argument (the entrenchment effect): It suggests that high proportions of board ownership have an adverse influence on FP. This argument suggests that no significant positive association exists between board ownership and FP. Accordingly, there is a negative or non-existent relationship between board ownership and FP (e.g., Demsetz and Lehn, 1985; Cho, 1998; Ng, 2005). For instance, Demsetz (1983) argued that the increase in the level of board ownership can reduce FP. Managers who control a substantial fraction of shares can have enough voting power to guarantee their own stable employment in the firm. Thus, these managers can indulge in their own benefits rather than shareholder value via the large proportion of board ownership. This argument suggests that a high range of board ownership has a negative, non-linear effect on FP (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 board 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 board ownership may have a negative impact on FP. 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.

A non–linear relationship between board ownership and FP by using 349 publicly traded Australian firms in 1986 and 1989 was showed by (Craswell et al., 1997). Also, Hermalin and Weisbach (1988) investigated the effect of board ownership and board composition on FP. They reported a significant non-monotonic relation between different levels of board ownership and FP, 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 performance of corporations in 223 US firms by examining 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 board ownership and FP.

On the other hand, the literature on examining the relationship between ownership structure and FP presents a critical question regarding ownership structures causing changes in FP or FP leading to changes in ownership structure? Potential endogeneity suggests the possibility that performance is as likely to affect ownership structure as ownership structure is to affect FP. A number of studies (Demsetz, 1983; Fama and Jensen, 1983) argued that endogeneity is an important issue to consider and supported the possibility of an endogeneity issue in relation to ownership structure and FP (Demsetz and Lehn, 1985 and Drakos and Bekiris, 2010). For instance, Demsetz and Lehn (1985) argued that ownership structure should be regarded as an endogenous outcome of shareholder's decisions and market trading. This endogeneity, among other factors, by FP itself, must be taken into account when seeking to ascertain the relation between ownership and performance (Demsetz and Villalonga, 2001).

Drakos and Bekiris (2010) investigated the relationship between board ownership and FP using a sample of 146 firms listed in the Athens Stock Exchange between 2000 and 2004. The main findings indicated that when board ownership is treated as endogenous, managerial ownership has a positive impact on FP. In contrast, in Korea, Cho (1998) examined whether ownership structure affects investment which, in turn, affects FP using a sample of 326 Fortune 500 manufacturing firms in 1991. The results reported that there is a significant relationship between board ownership and investment but has a non–linear relation. The relation between board ownership and investment is positive for ownership levels below 7%, negative for the levels between 7% and 38%, and positive for levels above 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 mixed results have been reported on the relationship between board ownership and FP and it can be argued that although the relationship between board ownership and FP has received considerable attention in literature, such literature fails to reach a consensus regarding the nature of the relationship.

Literature Review and 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 of research examines the relationship between board ownership and FP. The second group of research examines the association between board characteristics and FP as follows:

Board Ownership and FP

The effect of board ownership on FP 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 board ownership and FP (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: Board ownership has a significant positive effect on FP (in the form of alignment effect).

H2: Board ownership has a significant negative effect on FP (in the form of the entrenchment effect).

Board Characteristics and FP

The structure of the board has received much attention from regulators as one part of the internal corporate governance mechanism. The board of directors is considered pivotal in a company's CG literature. It 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, three board characteristics are discussed in the current study as follows:

Board Size

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 FP 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 FP has provided inconclusive results. Accordingly, the following hypothesis is formulated as follow:

H3: Board size has a significant effect on FP.

Board Composition (Percentage of Outside Directors)

The role of outside directors in resolving agency problems are addressed heavily the CG literature. 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). Non-executive directors act as a reliable mechanism to diffuse agency conflicts between managers and owners (Fama and Jensen, 1983). They are viewed as providing the necessary checks and balances needed to enhance board effectiveness. 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.

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 FP.

Choi et al. (2007) reported that the increase in the percentage of outside directors is positively associated with an increase in FP as measured by Tobin's Q. Peng (2004) provided evidence on the positive effect of outside directors on FP 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 FP 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.

Other studies have reported no relationship between the percentage of outside directors and FP. For example, Chen et al. (2005) examined the effect of CG

on FP 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 FP. 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 FP.

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

H 4: the percentage of outside directors has a significant effect on FP.

CEO/Chair Duality

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) is one of the essential concerns in CG. The literature has argued that the separation between CEO and chairperson positions can improve the efficiency and effectiveness of internal control systems in companies, consequently, FP 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). 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(Jensen, 1993). 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.

Contradictory results have been reported by empirical studies, for instance, Chen et al. (2005) found a negative relationship between CEO/Chair duality and FP (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 FP (Brickley et al., 1997; Vafeas and Theodorou, 1998). In the same line, Omran (2009) ,in Egypt, reported that FP 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 FP.

RESEARCH METHOD

The current 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.

The Sample

The empirical investigation of the current research was based on a sample of 96 publicly traded companies included in the "EGX 100 Index" at the end of 2010. The "EGX 100 Index", which is semi-annually reviewed by the EGX administration, 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 2010); 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).

Definition and Measurement of Dependent and Independent Variables

Dependent Variables

Three measures for FP have been employed in this study as dependent variables. Two accounting measures of performance, namely, ROA and ROE, are used as dependent variables, in addition, Tobin's Q *as a* market measure.

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 FP. 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

Table 1. Definitions of the Variables Used in the Empirical Analysis

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

assets. Tobin's Q interpret as proxies for FP, 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 FP, 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.

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.

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 Chairman of the board of directors and 0 otherwise).

Control Variables

A set of control variables has been used by a number of studies (Demsetz andVillalonga, 2001;Demsetz and Lehn, 1985; Holderness et al. ,1999; Kole, 1996) to fix 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. 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. Definitions of the variables used in the empirical analysis are presented in Table 1 above.

Table 2. Descriptive Statistics for Variables Used in the Study

Variables	No	Minimum	Maximum	Mean	Std. D.
FP					
ROA	96	-6.27	32.59	2.526	5.899
ROE	96	-10.79	55.39	8.271	12.386
Tobin's Q	96	.56	3.14	1.463	.651
Managerial ownership					
Chairman Ownership (CHAOWN)	96	.000	23.330	2.303	4.854
CEO Ownership (CEOOWN)	96	.000	31.490	3.857	7.758
Directors Ownership (DIROWN)	96	.000	51.660	5.413	12.502
Board characteristics					
Board size (BSIZE)	96	5	17	9.14	2.726
Non-executive directors (OUTSID)	96	.10	.60	.341	.113
CEO/Chair duality (CCDUAL)	96	0	1	.35	.468
Control variables					
Firm size (FSIZE) (EGP' 000)	96	3879.54	54,662,000	9.2449E6	5.96316E7
Leverage (FLEVER)	96	.09	87.35	33.271	24.316
Liquidity (FLIQUI)	96	.25	7.18	1.772	1.455

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 FP as dependent variables and six independent variables (managerial ownership and board characteristics variables). The regression equation used is as follows:

Model 1

$Y\ (ROA, ROE, and\ TOBINQ) = \beta_0 + \beta_1\ CHAOWN + \beta_2\ CEOOWN + \beta_3\ DIROWN + \beta_4\ BSIZE + \beta5\ OUTSID + \beta6\ CCDUAL + \beta_7\ FSIZE_{+} + \beta_8\ FLEVER + \beta9\ FLIQUI + \varepsilon$

Model 2

$Y\ (ROA, ROE, and\ TOBINQ) = \beta_0 + \beta_1\ CHAOWN + \beta_2\ CEOOWN + \beta_3\ BSIZE + \beta4\ OUTSID + \beta5\ CCDUAL + \beta_{6\ FSIZE+} + \beta_7\ FLEVER + \beta8\ FLIQUI + \varepsilon$

Model 3

$Y\ (ROA, ROE, and\ TOBINQ) = \beta_0 + \beta_1\ CHAOWN + \beta_2\ DIROWN + \beta_3\ BSIZE + \beta4\ OUTSID + \beta5\ CCDUAL + \beta_6\ FSIZE_{+} + \beta_7\ FLEVER + \beta8\ FLIQUI + \varepsilon$

Model 4

$Y\ (ROA, ROE, and\ TOBINQ) = \beta_0 + \beta_1\ CEOOWN + \beta_2\ DIROWN + \beta_3\ BSIZE + \beta4\ OUTSID + \beta5\ CCDUAL + \beta_6\ FSIZE_{+} + \beta_7\ FLEVER + \beta8\ FLIQUI + \varepsilon$

Where Y = the FP; β_0 is a constant; $\beta_{i,\ i=1,\ \ldots,\ 9,}$ is parameters; and ε 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.

2SLS Models

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

Where Y = the FP; β_0 is a constant; $\beta_{i,\ i=1,\ \ldots,\ 9,}$ is parameters; and ε is error term.

EMPIRICAL RESULTS AND ANALYSIS

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 FP across the 96 companies included in the sample. For ROA (first one); the mean percentage is 2.526 % with a standard deviation of 5.899 %. The minimum value is –

6.27 % and the maximum value is 32.59 %. For ROE (the second); the mean percentage is 8.271% with a standard deviation of 12.386%. 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 2010 having losses because of the international financial crisis. For Tobin's Q (the third); the mean percentage is 1.463% with a standard deviation of 0.651%. 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 2.303% ; by CEO (CEOOWN) is 3.857% and Other directors (DIROWN) in the board is 5.413 % 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 (0.341%) with standard deviation of 0.113%. 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 to benefit the board and the company (This finding is in line with what has been reported in Egypt by Desoky and Mousa, 2012). While, the mean of CEO/Chair duality (CCDUAL) is 0.35% with a standard deviation of 0.468%. 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 33.271% with a standard deviation of 24.316%, while the minimum was 0.09% and the maximum was 87.35%. Table (2) shows the Descriptive statistics for variables used in this study

Correlation Analysis

In the beginning, it should be noted that the number of independent variables in the primary analysis was seven including chairman ownership (CHAOWN), CEO ownership (CEOOWN), other directors ownership (DIROWN), board size (BSIZE), non-executive directors (OUTSID), CEO/Chair duality (CCDUAL), and total management ownership (TOMOWN). However, the primary analysis showed a highly significant association (0.813) between two independent variables, total management ownership (TOMOWN) and other directors' ownership (DIROWN). Therefore, it was decided to omit the first one from the analysis. Tabachnick and Fidell (1996, p.86) pointed out that "we must think carefully before including two variables with a bivariate correlation of, say, 0.7 or more in the same analysis". However, to further assess the potential for multicollinearity among independent variables, linear regressions of all independent variables on ROA, ROE, and Tobin's Q were performed, and obtained variance inflation factors (VIF) below 2 and tolerance levels above 0.60 for all independent variables. 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". Therefore, 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 below presents the Pearson correlation coefficients matrix. 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). Concerning managerial ownership, Table 3 refers that there is an almost moderate significant positive association (0.271) between DIROWN and ROE as one of the accounting measures of FP. 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 FP. However, the table revealed that there are weak negative associations (-0.101 and -0.033) between the same independent variable, DIROWN, and other dependent variables of FP namely ROA and TOBINQ respectively. Managerial ownership variables, CHAOWN and CEOOWN, are weak and not significantly correlated with the other two dependent variables of FP, ROA and TOBINQ. Similar results were reported in other previous studies (e.g.: Vafeas and Theodorou, 1998 and Omran, 2009).

Furthermore, only one of the board characteristics variables, BSIZE, has about moderate significant positive association with FP 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 FP and the quality of decision-making. The same independent variable, BSIZE, is weakly correlated with FP when measured by ROE and TOBINQ. It should be noted that Table 3 reveals some correlations within FP dependent variables. For instance, positive correlations of 0.417 and 0.276 were found between ROA from one side and ROE and TOBINQ respectively, from the other. Similar

Table 3. Correlation between FP 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	.417**	1										
TOBINQ	.276*	.402**	1									
CHAOWN	-.131	-.069	.098	1								
CEOOWN	.055	.039	-.061	.515**	1							
DIROWN	-.101	.271**	-.033	.124	.141	1						
BSIZE	.241*	.047	.067	-.272**	-.233*	.145	1					
OUTSID	-.188	.052	.119	-.064	-.008	-.020	.322**	1				
CCDUAL	.151	.078	-.103	.068	.129	.065	.054	-.031	1			
FSIZE	.009	.322**	-.077	-.102	-.151	.508**	.140	.084	.125	1		
FLEVER	-.041	.533*	.298**	.277**	.124	.311*	-.078	.112	-.011	.289*	1	
FLIQUI	-.244*	-.240*	.017	.009	.031	.088	.017	.151	.241*	.015	-.079	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 96 observations.

findings were reported by Demsetz and Villalonga (2001) who reported a significant correlation between two different measures of FP, Tobins' Q and ROA. In addition, there is a significant positive association (0.515) within independent variables between CHAOWN and CEOOWN. In general, the above results suggest the potential for at least some of the hypotheses to be supported (See discussion below).

Regression Analysis

Results of the regression models, which were run using the Ordinary Least Squares (OLS) regression and Two-Stage Least Squares (2SLS) regression, were presented in Tables 4, 5, 6, and 7. Tables 4, 5, and 6 present OLS results for the three measures of FP, ROA, ROE, and TOBINQ respectively. For each measure of FP, four regression models were performed.

Table 4 below provides findings of four models for regression using ROA, the accounting measure of FP, as a dependent variable. The four models showed almost similar results with regard to the significance levels (p value is 0.001, 0.001, 0.003 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 0.185, 0.163, 0.152 and 0.181 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 FP when measured by ROA. The *F*-value of model 1 is 3.388 (*p*-value < 0.05). Consequently, this model is statistically significant explaining dependent variables (FP when measured by ROA). Accordingly, it could be concluded that at least some managerial ownership and board characteristics affect FP (ROA). In evaluating the individual variables in the four models of ROA, it could be noted that BSIZE has moderate significant positive correlation with FP when measured by ROA and is making a statistically significant unique contribution to the prediction of FP. This finding supports hypothesis 3 developed earlier in this study. Hermalin and Weisbach (2003) reported that board size is significantly associated with FP, however it was negatively associated.

Moreover, in the four models, OUTSID affects the FP 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 FP. Furthermore, CCDUAL is significantly associated with FP (ROA) in models 1 and 3. This finding supports hypothesis 5. Other independent variables, managerial ownership variables, are not significantly associated with FP

Table 4. Regression Models (ROA)

	Model 1			Model 2			Model 3			Model 4		
	B	Beta	t	B	Beta	t	B	Beta	t	B	Beta	t
(Constant)	0.079		0.032	0.770		0.314	0.966		0.381	-0.297		-0.109
CHAOWN	-0.211	-0.169	-1.432	-0.219	-0.180	-1.508	-0.046	-0.024	-0.341			
CEOOWN	**0.003**	**0.097**	**2.179**	**0.183**	**0.232**	**1.862**				0.170	0.195	1.718
DIROWN	**-0.089**	**-0.052**	**-1.771**				-0.079	-0.164	-1.411	**-0.104**	**-0.211**	**-1.795**
BSIZE	**0.871**	**0.345**	**3.631**	**0.758**	**0.341**	**3.254**	**0.745**	**0.336**	**3.192**	**0.889**	**0.398**	**3.756**
OUTSID	**-14.914**	**-0.288**	**-2.874**	**-13.004**	**-0.258**	**-2.561**	**-13.488**	**-0.261**	**-2.701**	**-14.416**	**-0.249**	**-2.788**
CCDUAL	**1.971**	**0.178**	**1.599**	2.089	0.154	1.699	**2.299**	**0.198**	**1.887**	1.917	0.181	1.565
FSIZE	3.113E-11	0.068	0.584	1.611E-11	0.038	0.348	1.261E-11	0.035	0.242	4.098E-11	0.091	0.774
FLEVER	0.019	0.076	0.738	0.011	0.041	0.394	0.019	0.087	0.065	0.009	0.041	0.780
FLIQUI	**-0.856**	**-.184**	**-2.061**	**-.918**	**-0.213**	**-2.279**	**-.865**	**-0.201**	**-0.189**	**-0.819**	**-2.107**	**-0.035**
No. of Obs.		*96*			*96*			*96*			*96*	
R^2		*0.269*			*0.241*			*0.222*			*0.263*	
Adjusted R^2		*0.185*			*0.163*			*0.159*			*0.181*	
F value		*3.588*			*3.416*			*3.114*			*3.471*	
P value		*0.001*			*0.001*			*0.003*			*0.002*	

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

Table 5. 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.		*96*			*96*			*96*			*96*	
R^2		*0.399*			*0.401*			*0.422*			*0.369*	
Adjusted R^2		*0.344*			*0.349*			*0.351*			*0.317*	
F value		*6.597*			*7.299*			*7.485*			*6.521*	
P value		*0.001*			*0.000*			*0.000*			*0.002*	

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

(ROA), hence are not making a significant unique contribution to the prediction of FP (ROA).

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 big difference 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 FP, provides some support for the results obtained in the correlation analysis.

Table 5 presents findings of four models for regression using ROE, the second accounting measure of FP, 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 (0.344, 0.349, 0.351 and 0.317 for the four regression models) with *F* values of 6.597, 7.299, 7.485 and 6.521 for models 1, 2, 3 and 4 respectively). In all models, for the independent variables of

Table 6. Regression Models (TOBINQ)

	Model 1			Model 2			Model 3			Model 4		
	B	Beta	t	B	Beta	t	B	Beta	t	B	Beta	t
(Constant)	0.941		3.336	0.966		3.412	0.899		3.154	0.981		3.437
CHAOWN	0.021	0.114	0.857	0.012	0.112	0.799	0.010	0.042	0.237			
CEOOWN	-0.016	-0.149	-1.280	-0.016	-0.166	-1.371				-0.008	-0.101	-1.012
DIROWN	-0.002	-0.033	-0.277				-0.003	-0.064	-0.502	-0.002	-0.022	-0.201
BSIZE	0.021	0.086	0.835	0.022	0.089	0.825	0.027	0.136	1.114	0.024	0.081	0.744
OUTSID	0.368	0.059	0.598	0.378	0.069	0.660	0.254	0.041	0.453	0.319	0.061	0.558
CCDUAL	-0.068	-0.052	-0.494	-0.064	-0.044	-0.489	-0.093	-0.067	-0.694	-0.059	-0.048	-0.467
FSIZE	9.951E-11	-0.193	-1.640	**1.084E-11**	**-0.213**	**-2.091**	8.711E-11	-0.181	-1.410	1.059E-11	-0.209	-1.748
FLEVER	**0.007**	**0.344**	**3.075**	**0.007**	**0.346**	**3.088**	**0.008**	**0.410**	**3.149**	**0.008**	**0.371**	**3.446**
FLIQUI	0.022	0.053	0.512	0.023	0.047	0.481	0.023	0.061	0.058	0.024	0.047	0.565
No. of Obs.	*96*			*96*			*96*			*96*		
R^2	*0.162*			*0.166*			*0.154*			*0.159*		
Adjusted R^2	*0.071*			*0.084*			*0.066*			*0.080*		
F value	*1.818*			*2.151*			*1.891*			*1.971*		
P value	*0.067*			*0.052*			*0.071*			*0.060*		

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

managerial ownership hypotheses, only managerial ownership, measured by the percentage of shares owned by the chairman, is significantly negative when associated with FP 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 FP. Regarding board Results with regard to the explanatory power for the four models are weak (0.071, 0.084, 0.066 and 0.080 for models 1, 2, 3 and 4 respectively) with *F* values of 1.818, 2.151, 1.891 and 1.971 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 FP with Tobins' Q.

This section of the results presents 2SLS results of the three measures of FP, ROA, ROE and TOBINQ. The literature provides evidence that a non-linear relationship may exist between managerial ownership and FP (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 characteristics variables, they are not significantly associated with FP when measured by ROE. Therefore they are not making a significant contribution to the prediction of FP. Consequently, board characteristics variables explaining FP (ROE) are not statistically significant and none of the board hypotheses is supported by the above finding.

Finding of four regression models of Tobins' Q, the market measure of FP, are presented in table 6. ownership and FP has argued that such relationship has an endogeneity nature. Following Demsetz and Villalonga (2001), the current study investigates the relationship between managerial ownership and FP 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 7 above reveals finding of three models of 2SLS regression (one model for each measure of FP). 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, .078 and .032 (with *F* value of 3.859, 1.502 and 0.871). In the ROA model, of the managerial ownership variables, only CEOOWN is significantly positively associated with FP

Table 7. 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	-7.011	1.161	0.244	1.177	4.266	0.004
CHAOWN	-0.189	-1.325	0.188	-0.258	-0.762	0.445	0.024	1.754	0.831
CEOOWN	0.190	2.046	**0.042**	-0.072	-0.361	0.689	-0.011	-1.278	0.197
DIROWN	-0.078	-1.676	0.097	0.318	2.779	**0.007**	-0.003	-0.286	0.769
BSIZE	0.828	3.564	**0.001**	-0.308	-0.524	0.591	0.014	0.501	0.618
OUTSID	-15.159	-2.996	**0.004**	8.023	0.524	0.541	0.567	0.966	0.337
CCDUAL	1.358	1.150	0.253	2.077	0.686	0.480	-0.087	-0.637	0.531
No. of Obs.	96			96			96		
R^2	0.199			0.131			0.086		
Adjusted R^2	0.148			0.078			0.032		
F value	3.859			1.502			0.871		
P value	0.002			0.176			0.514		

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).

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 FP 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 FP, Tobins' Q. Therefore they are not making a significant contribution to the prediction of FP when measured by Tobins' Q. Findings from the above table of 2SLS regression models of the FP (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 FP from the other.

SUMMARY AND CONCLUSIONS

Despite the fact that the impact of managerial ownership and board characteristics on FP has been examined in developed markets, 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 FP by using a sample of 96 listed companies in the EGX at the end of 2010. The study has important implications for investigating FP 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 FP 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 FP. Board characteristics variables explaining FP when measured by ROA are statistically significant. BSIZE, OUTSID and CCDUAL affect the FP while other independent variables, managerial ownership variables, are not correlated with FP when measured by ROA and hence are not making a significant unique contribution to the prediction of FP (ROA). Regarding FP when measured by ROE, only one of the managerial ownership variables, CHAOWN, is significantly associated. However, board characteristics variables are not significantly associated with FP when measured by ROE. Findings related to the market measure of FP, 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 FP 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 FP 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 FP, 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 FP from the other.

This study is not free from limitations. It investigated the relationship between managerial ownership and FP using a sample of 96 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 FP, 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 FP 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 FP. 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 FP.

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Appendix A. Egyptian listed companies included in the study (96 companies)

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 Devel. & 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	Trans Oceans 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
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

Appendix A. Continue

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
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