THE IMPACT OF CORPORATE GOVERNANCE MECHANISMS ON EARNINGS QUALITY – EVIDENCE FROM EGYPT

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ABSTRACT

This study investigates the impact of a number of corporate governance mechanisms on earnings quality of listed companies on the Egyptian Exchange (EGX) as one of the emerging markets before and after issuing and implementing the Egyptian Code of corporate governance in 2006. To achieve the study's objectives, the authors used 634 firm-year observations during the period 2003-2010. Four models of ordinary least square regressions were performed to regress six corporate governance variables namely board size, board shareholding, board independence, board leadership, audit committee and external auditor on earnings quality, which was estimated using the modified Jones (1991). We found that four independent variables (board shareholding, board independence, audit committee and external auditor) are significantly associated with the earnings quality, while the others are not. As a main finding, we found that the issuance and implementation of the Egyptian Code of corporate governance decreased the earnings management practices and improved the earnings quality of listed companies on the Egyptian Exchange.

Keywords *- Corporate governance mechanisms, Egypt, EGX 100, corporate governance practices, earnings quality, and earnings management.*

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1. INTRODUCTION

It is known for most users of financial reports that earnings numbers are the best measures of a firm's performance; and earnings quality (EQ) is the most imperative concerns of all such users of financial reports. Barragato and Markelevich (2008) stated that it is essential that the earnings numbers reported in a firm's financial reports to be reliable, relevant and free from manipulation. Also, Myers and Omer (2003) argued that poor quality of earnings is problematic because it can mislead investors resulting in misallocation of resources. Moreover, it can also mislead stakeholders and influence contractual outcomes (Healy and Wahlen, 1999). The most significant factor that has affected the integrity of the financial reporting is the aggressive applications of accounting standards. The premature revenue recognition and shifting liabilities are typical examples of such aggressive applications. The consequences could be numerous accounting scandals.

EQ can be measured by three factors: persistence, predictability and the absence of earnings management (EM). Consistent with previous studies on EQ (e.g. Van Tendeloo and Vanstraelen, 2005; Kang, Cheng and Gray 2007; Barth, Landsman and Lang, 2008), the current study uses the later factor, the absence of EM, as a measure of EQ. Levitt (1998) indicated that when EM increases the quality of financial reporting decreases.

EM is defined as "the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings" (Schipper, 1989, p.92). The accounting literature indicates that the use of EM to manipulate reported earnings is widely used and companies' incentives are diverse (Sweeney, 1994; Levitt, 1998; Klein, 2002; Kothari, Leone and Wasley, 2005; Niu, 2006 and Liu and Lu, 2007).

For instance, some companies' incentives for EM are management compensation plans (Holthausen, Larker, & Sloan, 1995). Some other companies are affected by debt contracts (Sweeney, 1994). The regulatory cases could also lead to EM practices (Jones, 1991; Cahan, 1992 and Key, 1997), and stock price motives such as stock offering (Teoh, Welch, & Wong, 1998), avoiding losses (Burgstahler & Eames, 2003) and meeting or beating analysts' and management's forecasts (Degeorge, Patel, & Zeckhauser, 1999). Generally speaking, the consequences of using earnings management whatever the companies' incentives are less earnings quality may lead to a greater need for effective corporate governance mechanisms (CGM).

In Egypt like other countries, companies are not free from practicing EM which indicates that their earnings numbers may be questionable. A number of studies which have been conducted in the Egyptian context have documented that Egyptian companies are engaged in EM practice (Khalil, 2005 and 2006; Abulkhair, 1997 and 1999; Mousa, 2012; Riyadh, 2012). For instance, Khalil (2005) examined EM practices by the Egyptian companies through using a sample of 15 Listed Companies in the Egyptian Exchange (EGX) from 1999 to

2004 and concluded that sampled Egyptian companies exercise EM. In a second study, Khalil (2006) confirmed his previous findings and provided evidence that EM practice is very high in Egyptian companies through discretionary accruals. Such practice has a positive impact on market prices of shares and negative impact on their real values. Furthermore, in two studies, Abulkhair (1997 and 1999) reported that there is a clear increase in the proportion of discretionary accruals, whether positive or negative, in the financial reports of the Egyptian companies indicating some practice of EM by the sampled companies.

More recently, Mousa (2012) investigated the EM practices of Egyptian listed companies and examined whether some company characteristics namely firm size, leverage, firm performance, audit quality and foreign listing affect such a practice using a sample of 183 listed companies. Mousa (2012) concluded that Egyptian listed companies exercise EM by increasing reported income. Similarly, Riyadh (2012) concluded that there is an adverse relationship between CG and EM through investigating a sample of 10 listed healthcare and pharmaceutical companies in Egypt and the increased level of the CG would mitigate EM.

Egypt, like other countries, has focused on this dilemma. The Egyptian Code of CG was issued in 2005 (revised in 2011) to be implemented by companies listed on the Egyptian stock exchange and financial institutions. Further, in 2006, the Code of CG for State Owned Companies was issued. The main goal of these Codes is to improve the level of quality of the accounting and auditing profession in general and to provide stakeholders with reliable accounting information.

The current study examines the impact of corporate governance mechanisms (CGM) on the quality of reported earnings within the business environment in Egypt. The study investigates several characteristics of board of directors (BOD) such as board size, board shareholding, board independence and board leadership structure; and evaluates whether these characteristics have any relationship with the practice of earnings management in the Egyptian listed companies. In addition, the study tests whether the existence of an audit committee and the quality of an external auditor are able to limit the incidence of earnings management.

The motivation for this study comes from several aspects. The initial motive is to evaluate whether Egyptian listed companies have engaged in practicing EM before and after the issuance and the implementation of the Code of CG covering a period of eight years (from 2003 to 2010). The second motive is the need for assessing the effectiveness of the Egyptian Code of CG in reducing or, at least, controlling EM practices, then improving EQ. The third motive is to measure whether or not a good practice of CGM is associated with EQ in Egypt as a developing country and to find out the need for improving these mechanisms or setting other new mechanisms, if any.

Although similar studies carried out in the developed countries such as Australia (Williamson-Noble and Haynes, 2003; Kang et al., 2007); the UK (e.g. Weir, Laing and McKnight, 2002) and the US (e.g. Carcello, et al., 2002; Xie, Davidson and DaDalt , 2003; Zhang, Zhou and Lobo, 2006), little research has looked at the association between CG and EM in general and EQ in particular of listed companies in countries with emerging capital markets such as China (Liu and Lu, 2007); Egypt (Riyadh, 2012); Jordan (Abed, Al-Attar and Suwaidan, 2012); Kingdom of Saudi Arabia - KSA (Habbash, 2012); Malaysia (Saleh, Iskandar and Rahmat, 2005; Rahman, 2006; Ismail, Dunstan and Van Zijl, 2009); Pakistan (Ali Shah et al., 2009). However, some of these studies were conducted in different environments (e.g. in China, KSA, Malyasia and Pakistan) and others, which were accomplished in Egypt, measured the effectiveness of the CG Code on the EM or EQ practices only after implementing such a code and for a short period.

For instance, Riyadh's study (2012) was limited to 10 companies in only one sector, healthcare and pharmaceutical, and covering a short period of 2006-2008 (after the issue of the Egyptian Code of CG). In other studies accomplished in Egypt (e.g. Khalil, 2005 and 2006; Abulkhair, 1997 and 1999; Mousa, 2012), the link between the CGM and EM or EQ was out of the focus of these studies. Thus, the current study tries to fill a gap in the existing literature in developing countries with emerging capital markets through examining CGM in Egypt, using a reasonably large sample size, covering a long period before and after implementing the Egyptian Code of CG (from 2003 to 2010 excluding 2006 when the Code was applied).

It is also worth noting that very limited research has been undertaken to provide evidence about the impact of CGM on EQ in Egypt, and the role of the BOD, audit committee, and the quality of an external auditor in improving the quality of earnings. The current study will determine the need, if any, for more new mechanisms of CG or revise the current ones.

The current study contributes to the literature on the following ground: (1) providing empirical evidence on EM practice by Egyptian listed companies, where relatively little is known about this practice and its determinants; (2) measuring the effectiveness of CGM on EQ by using both internal and external mechanisms and measuring the impact of each mechanism separately; (3) the empirical investigation of this study could help in providing benefits to investors and regulators; (4) finally, the current study may contribute in this area which may help in studying other capital markets in the Middle East area especially as Egypt has traditionally played an essential role in Middle Eastern politics (Merrill Lynch, 1996) and it is an important and a leading country in the Middle East and its economists and academics have great influence on other countries in which Arabic is the mother tongue (Sayigh, 1978). These characteristics give this

study a special importance, since the results could be applicable to a wide range of countries in the area.

The remainder of the paper is organized as following: Section 2 introduces an overview on the Egyptian Code of CG; section 3 reviews the literature on earnings quality and corporate governance and develops the research hypotheses; section 4 describes the research methods; section 5 contains data analyses and main findings; Section 6 summarises and concludes.

2. THE EGYPTIAN CODE OF CG

In the light of international interest on CG, some scandals around the world (such as what has happened in last years with Enron 2001, WorldCom 2002, Freddie Mac 2003, Lehman Brother Holding 2008 and Brenie Madoff 2008) have raised to international awareness that CG practices are considerable for long-term sustainability for companies and the efficient allocation of capital, especially in emerging capital markets. The development of CG is a global incidence and is influenced by legal, cultural, ownership and other structural differences (Mallin, 2009).

Concerning developing countries such as Egypt, it was concluded that improving CG can serve a number of important public policy objectives. For instance, good CG helps to reduce emerging market vulnerability to financial crises, reduces the cost of capital, and leads to capital market development. In contrast, weak corporate CG reduces investor confidence, and can discourage outside investment (World Bank, 2009). Furthermore, CG has several benefits for such countries and helps to recognize high and sustainable rates of growth; increases confidence in the national economy; deepens the capital market and increases its ability to mobilize savings; raises investment rates; encourages growth of the private sector by supporting its competitive capabilities and help to create job opportunities (Samaha et al, 2012). Johnson, Khurana and Reynolds (2002) stated that good CG practices is expected to enhance the quality of financial statements; while weak CG practices may offer a chance for managers to engage in behaviour that would ultimately result in a lower quality of reported earnings. (Dechow, Sloan and Sweeney, 1996).

Egypt, as one of the developing countries with an emerging capital market, has started a reform process to develop the regulatory framework in the late 1990s to improve corporate governance practices. Many efforts were achieved to create a good environment of investment to attract more foreign investors in order to ensure sustainable growth and to create new employment opportunities. Therefore, CG has gained prominence in the Egyptian context and different guidelines, ideas and rules of CG have been formulated, developed and enacted since the early 2000s. In its study which assessed CG practices in the Egyptian capital market, the World Bank (2004) revealed that Egypt applied 82% of the

Organization for Economic Cooperation and Development (OECD) principles referring improvements over time. However, it concluded that Egyptian companies still need to improve their CG practice in general. Accordingly, many efforts were directed towards improving CG practice in the Egyptian capital market. For instance, the Capital Markets Authority (CMA) created a special Corporate Governance Department and EGX began to consistently enforce its new listing rules, leading to a notable wave of de-listings during the last years from a high of 1,148 companies in early 2002 to 373 by the end of 2008 and 212 by the end of 2013 and 2014. The Egyptian authorities have implemented many of the key recommendations of the World Bank in its two studies accomplished in 2001 and 2004 (World Bank, 2009).

As a consequence of the notable interest in improving CG practice in Egypt, the Egyptian Code of CG was drafted and its final version was issued in October 2005 by the Ministry of Investment and it was conducted in light of the Corporate Governance Principles and Standards set out by the OECD, as well as codes recently issued in selected developing countries of similar environments, including South Africa, Malaysia, and the Philippines (CIPE, 2005). The main goal of this Code is to improve the level of quality of the accounting and auditing profession in general and to provide stakeholders with reliable accounting information. The Code indicates that its rules should be regarded as an addition to other rules and provisions introduced in different company and related laws as well as the executive regulations and decrees regarding their implementation (Hassaan, 2013).

The Code of CG, which was issued in October 2005, is to be primarily implemented by companies listed on the EGX, especially those undergoing active trading operations and financial institutions in the form of joint stock companies. In addition, the Ministry of Investment, in 2006, issued the Code of CG for State Owned Companies based on the report of the OECD working group on Privatization and CG of State Owned Assets.

A number of mechanisms which are incorporated in both Codes include: BOD, external auditor and audit committee which play the most important role in accomplishing the Code goals. The Code added some new rules through these mechanisms that expand the corporate governance in Egypt. For instance, the BOD may constitute committees such as audit committee and remuneration committee to perform particular tasks and for specific periods. Establishing any committee should include; specifying the function of the committee, its term of operation, authorities granted to it during such terms and means of its monitoring via the board (CIPE, 2005).

The Code of CG corroborates that an accumulative system be adopted in voting for BOD members instead of the previous system which has enabled the majority group to designate the entire board via voting for each nominee separately, so that the final result can be a reflection of the proportional

representation of shareholders on the board. The Code also assures that the BOD should include a majority of non-executive members with an appropriate mix of skills, technical, or analytical experience that is of benefit to the board or corporation. An important aspect that the BOD undertakes is the designation of the chairperson and managing director; it is preferred that the two posts not be held by the same person, and if joining the posts be necessary, its reasons should be clarified in the corporation's annual report; further, a nonexecutive vice chairperson should be appointed. Remuneration received by an executive BOD member should be disclosed including remuneration, allowances, real privileges, stock options, and any other element of financial nature (CIPE, 2005).

In addition, an audit committee should be set up comprising at least three non-executive board members which should meet periodically at least on a quarterly basis. At least one of the committee members should have financial and accounting expertise; and it could include one member or more appointed from outside the corporation. New rules regarding the external auditor that the corporation's BOD, upon the recommendation of the audit committee, should nominate an external auditor who is efficient, has a good reputation, and appropriate experience; his/her efficiency, experience, and abilities must be appropriate to the size of the corporation, the nature of its operations, and its stakeholders. The company should not contract the external auditor to carry out any additional tasks, except upon the approval of the audit committee. The external auditor should be independent and unbiased.

The World Bank (2009) concluded that the Egyptian Code of CG, which is the first Code issued in the region and plays a key role in building awareness and setting a standard of good practice, constituted a major step to improve CG in general. However, an important opportunity was lost when the Code was issued on a voluntary basis (World Bank, 2009).

3. LITERATURE REVIEW AND HYPOTHESES DEVELOMENT

In the last few years, the accounting literature provides a considerable number of studies on the area of EM in general and in the effect of CGM in EM practices or EQ in particular (Xie et al., 2003; Saleh et al., 2005; Zhang et al., 2006; Liu and Lu, 2007; Ismail et al 2009; Ali Shah et al., 2009; Abed et al., 2012; Habbash, 2012; and Riyadh, 2012). Some of previous studies which linked between CGM and EM practices had focused on developed countries with advanced capital markets, while other studies had focused on developing countries with emerging capital markets including Egypt (e.g. Saleh et al., 2005 in Malaysia; Liu and Lu, 2007 in China; Ismail et al 2009 in Malaysia; Ali Shah et al., 2009 in Pakistan; Abed et al., 2012 in Jordan; Habbash, 2012 in KSA; Riyadh, 2012 in Egypt).

In the United States, as one of the developed countries, the CGM seemed to have failed to avoid EM practices before 2002. The lack of strong CGM during

the financial crisis is claimed to have been one of the main reasons for the collapse of many businesses such as dot-com and the high-profile accounting scandals including Enron and WorldCom (Johnson, et al., 2002; Rahman and Ali, 2006). To improve CG practices in the United States, the USA Congress passed the Sarbanes-Oxley Act in July 2002 which mandated certain fundamental changes to CG as related to the quality of financial reporting. Moreover, the NYSE and the NASDAQ proposed new governance rules with regard to BOD and audit committees for listed firms. A number of studies indicated that the Act does improve the quality of financial reporting. For instance, Zhang et al. (2006) indicates a decrease in discretionary accruals following the Serbane-Oxley Act. Similarly, Cohen et al. (2005) report a significant decline in the absolute value of discretionary accruals after passage of this Act. Accordingly, one of the expectations of the current study is that the Egyptian Code of CG can minimize the level of EM and enhances the level of EQ.

Other studies accomplished in developing countries provided diverse results on the relationship between EM or EQ from one side and CGM from the other. In China, Liu and Lu (2007) examined the relation between EM and CG and documented systematic differences in EM across the universe of China's listed companies for the period from 1999 to 2005 using a sample with 5977 firm-year observations, which represent 1009 unique listed firms. They concluded that firms with higher CG levels have lower levels of EM.

Saleh et al. (2005) aimed to assess the effectiveness of some characteristics of BOD to monitor management behaviour with respect to their incentives to manage earnings. They used data from year 2001 soon after the disclosure about the Malaysian Code of CG was mandated and matched DAC data with CG data of 561 Malaysian listed companies. They declared that discretionary accruals as a proxy for EM is negatively related to management ownership, but positively related to the existence of board leadership (role duality), after controlling for firm size, leverage and performance. They also revealed that the ratio of independent board members is not significantly related to EM in firms with duality status. Another study in Malaysia was accomplished by Ismail et al., (2009) to examine whether CGM are significant determinants of EQ after the implementation of the Malaysian Code of CG in 2001. They used 1625 firm-year observations during the period 2003-2007 and used the modified Jones (1991) and Kasznik (1999) models to test eleven variables of CG on EQ proxies. Ismail et al. (2009) concluded that the board size and size of the audit committee are positively associated with the level of EQ.

Abed et al. (2012) examined the association between CGM and EM for a sample of non-financial listed companies in Jordan during the period 2006-2009. Using Jones (1991) model, they measured EM by discretionary accruals and tested the relationship between EM and CG characteristics such as the existence of independence members within the BOD, board size, the role duality and the

percentage of insider ownership, however, firm size and firm leverage were used as control variables. They found that there is a significant negative relationship between EM and both the board size and insider ownership. However, positive relationship was reported for the percentage of outsiders in BOD and role duality.

In another developing country, Pakistan, Ali Shah et al. (2009) examined the relationship between the quality of CG and EM which was measured by discretionary accruals using a sample of listed companies in Pakistan in 2006. They reported a positive relationship between CG and EM. Ali Shah et al. (2009) concluded that the results were unconventional which may be due to the transition phase though which the Pakistani firms are passing after promulgation of the Code of CG in 2002.

In KSA, Habbash (2012) investigated the effect of CG regulations which were set by the Saudi Capital Market Authority on EM practice in KSA. Using Kothari et al. (2005) model, EM was measured by the magnitude of discretionary accruals for a sample of companies listed in the Saudi Stock Market during a period from 2006 to 2009. Habbash (2012) reported that there is a significant negative relationship between the board size and its independence from one side and EM from the other.

Using a small sample of 10 listed companies in Egypt from one sector, Riyadh (2012) used Jones (1991) model and measured EM by discretionary accruals to investigate the role of CG in mitigating EM and concluded that there is an adverse relationship between CG and EM by the sampled companies and increasing the level of corporate governance will mitigate earnings management.

On the other hand, the literature on principles and mechanisms of corporate governance has significantly emphasized a number of aspects related to corporate governance practices. These aspects include first: BOD characteristics (e.g.: board size, board holdings of shares in the company or board shareholding, board independence and board leadership or role duality); second: the existence of an audit committee; and third: quality of external auditor (Cadbury Report, 1992; and Kiel and Nicholson, 2003). In the light of the above discussion, several variables related to CGM are selected for the current investigation as follows:

3.1 BOD characteristics:

It is known that the BOD is one of the most important internal corporate governance mechanisms which is seen also as one of a central institution of a company to monitor managers (Fama, 1980). It plays a crucial role in setting the firm's strategic goals and in selecting the strategies and general policies that govern the work flow within the firm. As BOD has the obligation to ensure that adequate controls are in place to protect shareholder value (Keenan, 2004); it can be a good monitoring mechanism for shareholders if its structure is such as to ensure its independence from management. Lefort and Urzú (2008) stated that

BOD provides a key monitoring function in dealing with agency problems in the firm.

According to the Egyptian Code of CG, listed companies in the EGX have BOD comprised of an odd number of members, with a minimum of three and no maximum. Further, two experts may be appointed to the board and they are full members of the board having the right to vote. It is the general assembly responsibility to elect directors for renewable terms of three years, set their remunerations, and can remove them if necessary. It is favoured that the majority of board members are non-executive members; and also the chairman and chief executive officer (CEO) are not the same persons. In the light of the above, five board characteristics namely board size, board shareholding, board independence, board composition, and board leadership structure will be discussed and examined in the current study as follows:

3.1.1 Board size:

One of the most crucial characteristics that is claimed to have an impact on the effectiveness of the monitoring function of the company performance is the board size. A board's ability to monitor and make important corporate decisions increases with a large number of directors, arguably, will subject the management and operations of the firm to a greater inspection and present access to a wider range of resources (Kiel and Nicholson, 2003). It is also claimed to have information and expertise advantage over smaller boards (Pierce and Zahra 1992). Prior studies suggested that there is a varied relation between firm performance and board size (Pierce & Zahra 1992). In bankruptcy context, the failed firms are found to have smaller boards than survivor firms (Chaganti, Mohajan and Sharma, 1985).

BOD plays an important role in monitoring the quality of earnings reported. Concerning the relation between board size and EM, previous studies have shown mixed results. For instance, Xie et al. (2003) found that a larger board is associated with lower levels of current discretionary accruals, indicating a larger board is more effective in monitoring discretionary accruals than a smaller board. Similar evidence was reported by other studies accomplished in developing countries (Liu and lu, 2007; Habbash, 2012 and Ibed et al., 2012). A larger board is more likely to include independent directors with diverse experience and is viewed as having greater ability to safeguard shareholder interest as it has more capabilities (Zahra and Pearce II, 1989). Consequently, the larger the number of BOD, the lower the practice of EM and the higher the EQ. However, Jensen (2010) suggests a limit to board membership to make it an efficient governance mechanism. Huther (1997) concluded that a large board can cause poorer communication and processing of information meaning that corporate dialogue could be difficult to achieve in large boards. Further, there is also empirical evidence showing that smaller boards are more likely to have better monitoring quality because agency problems increase with board size (Yermack, 1996).

In summary, board size influences the effectiveness of a board, then the quality of earnings, and one's can support that larger board is more effective in monitoring discretionary accruals than a smaller board. All the above arguments lead to the first hypothesis:

H1. *There is a positive significant association between board size and EQ.*

3.1.2 Board shareholding:

The percentage of company's shares owned by its BOD varies among companies. Booth et al. (2002) argued that when officers and board members have considerable holdings in a company's shares, their decisions influence 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. The association between EM and EQ from one side and the board shareholding from the other is an argument issue. Jensen and Meckling (1976) contend that managers with lower levels of firm ownership have greater incentives to manipulate accounting numbers, while managers with a greater level of shareholdings would be less likely to manipulate earnings in an attempt to mislead investors. Warfield et al. (1995) and Saleh et al. (2005) reported evidence on a negative relationship between board shareholding and earnings management.

An alternative view is presented by Liu and Lu (2007) who found a positive relationship between Board shareholding and EM. Consistent with this premise, Brickley et al. (1988) argued that stock ownership by officers and board members gives them an incentive to improve the firm performance and choose income increasing accruals. On the other hand, other studies found no association between board shareholding and EM (Ibed et al., 2012) and EQ (Ismail et al. 2009). In summary, board shareholding influences the effectiveness of a board, then the quality of earnings. The second hypothesis is formulated as follows:

H2. *There is a significant association between board shareholding and EQ.*

3.1.3 Board independence:

In general, from an agency perspective, it is vital that firms have BOD independent of their management. According to Fama (1980), an independent BOD is more likely to be attentive of agency problems as it contains a considerable number of non-executive directors who are able to observe management's behaviour. Therefore, appointing independent directors to the board mainly to be an effective CG mechanism to reduce the agency problem and increase EQ (Peasnell, Pope and Young, 2000a; Klein, 2002). Consistent with a number of previous studies (Booth et al. 2002; Saleh et al. 2005; Ismail et al. 2009), the researchers measure the independence of the BOD as a percentage of outside directors on the board.

The accounting literature in this field provided evidence on the association between board independence and EQ; and supported the view that a more independent board would perform a better monitoring function which would consequently result in a higher level of EQ. For instance, Beasley (1996), Habbash (2012) and Xie et al. (2003) reported a negative relation between the percentage of independent directors on the board and the likelihood of financial fraud and EM, whereas Dechow et al. (1996) revealed that firms with a large percentage of independent directors on the board are less likely to be subject to Securities and Exchange Commission (SEC) enforcement actions for alleged violations of GAAP. Therefore, firms with a greater percentage of independent directors on the board are less likely to engage in EM and more likely to show EQ.

Peasnell et al. (2000a) supported the above conclusion when they revealed that the probability of income-increasing accruals decreases as the proportion of outside-directors increases for UK sampled companies. Similarly, Klein (2002) and Niu (2006) reported a negative association between earnings management and the level of board independence in the U.S. and Canada, respectively. More recently, the same conclusion was reported by Jaggi et al. (2009) who used a sample of companies in Hong Kong. They found that a higher proportion of independent directors is associated with more effective monitoring to constrain earnings management. They conclude that EQ is higher for firms with a higher proportion of independent directors on the board. Conversely, Park and Shin (2004) examined a sample of Canadian firms from 1991-1997 and found that there were no significant associations between the proportion of independent directors and the level of EM. Similarly, Abed et al. (2012) reported the same result that there is no significant association between the proportions of independent directors and EM in Jordan. Further, Ismail et al. (2009) reported the same result that there is no significant association between the proportions of independent directors and EQ. Based on the above discussion, we formulate the following hypothesis:

H3. *There is a significant association between board independence and EQ.*

3.1.4 Board leadership structure:

Generally speaking, board leadership structure illustrates whether or not the same person holds dual positions as the chief executive officer (CEO) of the company and as the chairman of the BOD. According to the agency theory, the separation of duties or role duality could lead to more effective monitoring over the board process (Fama and Jensen 1983). In other words, in the absence of such a separation, the monitoring function of the board over EM may be exposed because the CEO has more discretion to manipulate financial reports (Finkelstein and D'Aveni 1994). In such a case, the CEO has more power over the board and firm without being supervised and evaluated by a chairman.

Prior research provided extensive evidence on the association between the existence of a board chairman who is also performing the role of CEO and EM. They argued that the separation between these two roles is associated and may improve the efficiency and effectiveness of internal control systems in companies. In the same way, the separation between the two jobs could improve EQ.

Firth et al. (2007) confirmed that when the chairman of the BOD holds the role of the CEO, the effectiveness of the board to monitor top management is diminished. Klein (2002) found that EM is positively related to the CEO who holds a position on the board's nominating and compensation committee. This finding is supported by Saleh et al. (2005) and Rahman and Ali (2006) who confirmed that the CEO with excessive power over board matters could easily manipulate earnings numbers. Similarly, Ismail et al. (2009) implied that lower EQ are likely to be associated with the existence of a board chairman who is also performing the role of CEO, the existence of a CEO on the board, and/or the existence of a chairman who is also an executive. However, Ibed et al. (2012) and Xie et al. (2003) found no association between the existence of a board chairman who is also performing the role of CEO and EM in Jordan and the USA respectively.

In the light of the above, it appears that most of the literature provides evidence that separation between the CEO position and the chairman position has improved EQ. Hence, the following hypothesis can be formed:

H4. *There is a negative significant association between the board leadership structure and EQ.*

3.2 The existence of audit committee:

An audit committee that is well-structured, active and well-functioning can help in avoiding any manipulation of accounting numbers (Xie, et al., 2003). The Egyptian Code of CG sets some criteria to insure the effectiveness of the audit committee such as size, independence, and activities. According to this code, the audit committee comprises at least three non-executive board members and one of its members should have financial and accounting expertise. It should meet periodically at least on a quarterly basis (CIPE, 2005). Moreover, the Code holds all functions allocated to the committee such as reviews and oversees of accounting and auditing tasks. It also sets new rules regarding the nomination of the external auditor by the firm's BOD (e.g. its selection should be based on the recommendation of the audit committee). Further, the company should not contract the external auditor to carry out any additional tasks except upon the approval of the audit committee (CIPE, 2005).

According to the Egyptian Code of CG, the audit committee plays an important role in assuring the quality of financial reporting; constraining EM practices and ensuring EQ. Composition, size and independence are factors

influencing the effectiveness of the audit committee. Carcello and Neal (2000) and Klein (2002) reported significant association between the composition of the audit committee and the practice of earnings management. Further, Xie et al. (2003), who examined the effect of some characteristics of the audit committee on constraining earnings management, reported that audit committee independence is not significantly associated with reduced level of earnings management. Other results were reported in Australia by Benkel, Mather and Ramsay (2006) and Davidson et al. (2005) who reported significant association between audit committee independence and a lower likelihood of earnings management. In developing countries, Ismail et al. (2009) reported a significant association between audit committee characteristics and EQ of Malaysian listed companies.

Based on the above discussion and what was required or mentioned on the Egyptian Code of CG concerning the audit committee, it is expected that the existence of an audit committee could decrease the earnings management practice and improve the quality of earnings. Accordingly, the following hypothesis can be formulated:

H5. *There is a positive significant association between the existence of an audit committee and EQ.*

3.3 The quality of external auditor:

In general, external auditors normally exercise a constraining influence on earnings management and improving EQ. It has been broadly believed that highly reputable external auditors are of higher quality than other auditors (DeAngelo, 1981). Krishnan (2003) concluded that auditors with a bigger client base have a higher reputation to lose, so they would ensure a higher quality of audit resulting in a higher EQ. Big auditors are perceived as more competent and more independent and, therefore, provide higher quality services than smaller, non-Big auditors (DeFond, 1992). If a firm is audited by one of the Big four auditors, the proxy for audit firm, administration of such a firm is less likely to practice EM.

The accounting literature provided evidence that a high quality of external auditor normally translates into lower accruals and higher EQ (Becker et al., 1998; Francis, Maydew, and Sparks, 1999). It was reported that there is an association between the quality of an external auditor and EM. In this concern, Francis et al. (1999) provided evidence that discretionary accruals in firms audited by one of the big auditors are less than that in firms audited by other auditors. However, Ismail et al. (2009) reported that there is no association between the quality of an external auditor and EQ of Malaysian companies. Based on the above discussion, it can be expected that the higher the quality of an external auditor, the higher will be the EQ. The association between the quality of external auditor and earnings quality is tested by Hypothesis 6.

H6. *There is a positive significant association between the quality of an external auditor and EQ.*

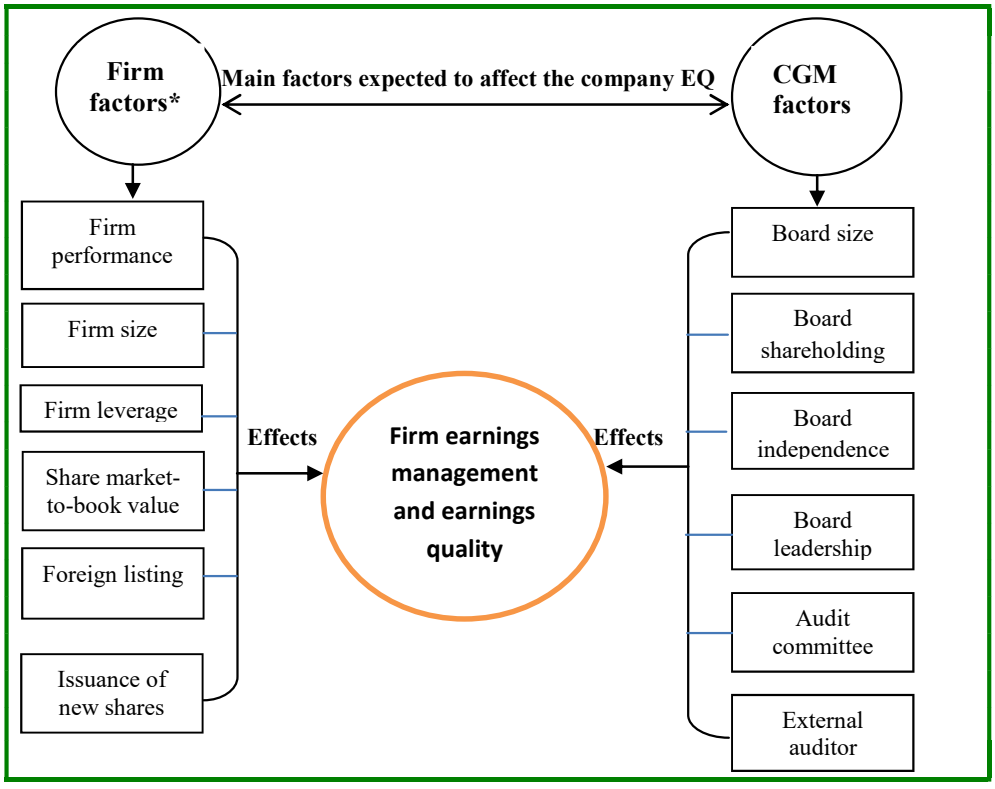
Figure 1 below links variables of CGM and control variables (firm factors) used in the current study with earnings quality.

4. RESEARCH METHODS

This section explains how the researchers operationalised the dependent, control and independents variables, where the researchers obtained the data and the form of data analysis being undertaken to investigate whether EQ quality, the dependent variable, is associated with the corporate governance mechanisms, the independent variables.

4.1 Estimation of discretionary accruals - DACC (The dependent variable)

In general, earnings can be managed through real transactions such as asset sales and/or accelerating or deferral of revenues and expenses using various accounting methods and estimates (Peasnell, Pope, and Young, 2000b). Accelerating or deferring of revenues and expenses, the latter method,



* Firm factors will be discussed later in section 4.2

Figure 1: The effects of CGM factors and firm factors on earnings quality.
Source: The authors

accumulates in accruals which are more likely to be used by managers to manage earnings than structuring actual transactions (Saleh et al. 2005). This may result in a lower quality reported earnings, indicated by a higher level of abnormal or discretionary accruals. This is based on the view that accruals which are not well-explained by accounting fundamentals (fixed assets and revenues) are an inverse measure of earnings quality (Francis, Olsson and Schipper, 2008). Previous research often splits total accruals into two categories; first, accruals resulting from managerial discretion, discretionary accruals, and those which are not, nondiscretionary accruals.

As mentioned earlier, to investigate the impact of CGM on EQ, the current study uses the absence of EM to measure EQ. Therefore, the absolute value of discretionary accruals is used in this research as a proxy for earnings quality. The most widely used method to measure EM in the accounting literature is the Jones (1991) model which was modified by Dechow, Sloan and Sweeney (1995). The absolute value of discretionary accruals was estimated using this modified model. Under this model, total accruals ($TACC_{it}$) are estimated based on a cross-sectional regression of prior years' annual change in revenue and gross property, plant, and equipment (PPE) on total accruals for firm *i* at year *t*. Dechow et al. (1995) modified the original Jones (1991) model by adjusting the change in revenues by the change in receivables. The modified model eliminates the conjectured tendency of the Jones model to measure discretionary accruals with error when discretion is exercised over revenues (Dechow et al., 1995).

Total accruals ($TACC_{it}$) of firm *i* in the year *t* are calculated by deducting the cash flows from operations (CFO) from operating earnings (EARNINGS) as follows:

$$TACC_{it} = EARNINGS_{it} - CFO_{it} \quad (1)$$

Furthermore, total accruals were regressed against its components and the error term. The formula used is as follows:

$$TACC_{it} / TASS_{it-1} = a\ (1 / TASS_{it-1}) + b\ (\Delta REV - \Delta REC) / TASS_{it-1} + c\ (PPE / TASS_{it-1}) + e_{it} \quad (2)$$

where:

$TACC_{it}$ = total accruals in year *t* for firm *i*;
$TASS_{it-1}$ = lagged total assets;
ΔREV_{it} = revenues in year *t* less revenues in year *t-1* for firm *i*;
ΔREC_{it} = receivables in year *t* less receivables in year *t-1* for firm *i*;
PPE_{it} = gross property, plant, and equipment in year *t* for firm *i*;
e_{it} = error term in year *t* for firm *i*;

In the above model, we followed Kothari, et al. (2005) in using assets as the deflator to mitigate heteroscedasticity in residuals. The regression was performed to estimate the discretionary accrual (DACC) values for each company included in the current study from the year 2003 to 2010 excluding year 2006 when the Egyptian Code of CG was issued. The discretionary accrual (DACC) can be calculated by using the fitted values of regression coefficients to measure normal accrual (NACC). To estimate companies' discretionary accrual, the normal accrual is deducted from total accrual using the following equation:

$$DACC_{it} = TACC_{it} - NACC_{it} \quad (3)$$

It should be noted that, according to the modified Jones model, the change in revenue in equation 2 has been adjusted by the change of accounting receivables as managers may boost earnings in the current period by an early recognition of revenue. As the change in revenue could lead to an endogenous bias, Dechow et al. (1995) suggested that the adjustment by change in accounting receivable could overcome such bias.

4.2 Independent and control variables

A number of variables related to CGM are selected for the current investigation. Table 1 below summarises independent variables (CGM) and control variables (some of firm factors) and their related proxies. In addition to CGM variables, dependent variables, a number of firm specific variables namely firm performance (FROA), firm size (FSIZE), firm leverage (FLEVER), share market-to-book value (SHMTOB), foreign listing (FORLID) and issuance of new shares (NISSUE) were used in the regression models as control variables.

Table 1: Definitions of independent and control variables used in the empirical analysis:

Variables	Predicted sign	Definitions
Independent variables:		
1- Board size (BOSIZE)	+	Number of the board of directors.
2- Board shareholding (BOSHAR)	+ or -	% of shares owned by board members.
3- Board independence (BOINDE)	+ or -	% of external members to total board members.
4- Board leadership (ROLDUA)	-	(1) if the chairman is the same as the CEO and (0) otherwise.
5- Audit committee (AUDCOM)	+	(1) if firm has an audit committee and (0) otherwise.
6- External auditor (EXTAUD)	+	(1) if the audit firm is one of the big four and (0) otherwise.
Control variables:		
1- Firm performance (FROA)	+ or -	Firm net profit to total assets (ROA).
2- Firm size (FSIZE)	+ or -	Firm total assets.
3- Firm leverage (FLEVER)	+ or -	Firm total liabilities/total assets.
4- Share market-to-book value (SHMTOB)	+ or -	Share market/book value.
5- Foreign listing (FORLIS)	+ or -	(1) If the firm is listed outside the EGX and (0) otherwise.
6- Issuance of new shares (NISSUE)	+ or -	(1) If the firm issued new shares in last year and (0) otherwise.

Notes: 1- Information on BOSIZE, BOSHAR, BOINDE, NISSUE, FROA, FSIZE, FLEVER and SHMTOB was computed at the end of 2010 financial period (US$1 = EGP 5.90); 2- Predicted signs of independent and control variable were based on their expected effects on EQ.

Firm specific variables were used by several studies in this area of research (e.g.: Abed et al, 2012; Habbash, 2012; Ismail et al, 2009; Saleh et al, 2005) to control for potential influences on the level of discretionary accruals. Hutchinson and Leung (2007) referred that many firm specific variables are likely to affect managers' opportunity and incentive to manipulate earnings, including size, debt levels, volatility and capital structure. Similarly, it was argued that EM is found to be related to firm specific factors such as size, performance and leverage (Young 1998). Thus, following previous studies, the current study used the above six variables as control variables.

4.3 The sample

The current empirical investigation depends on a sample which contains the most active listed companies included in "EGX 100 Index" covering the 2003-2010 financial periods excluding 2006 the year when the Egyptian Code of CG was implemented (see the Appendix). It should be noted that the EGX 100 Index, which was created in August 2009, includes all companies from various EGX sectors included in both the EGX 30 Index and the EGX 70 Index; and construction of each Index is reviewed semi-annually by the EGX administration to include some companies and exclude others. Of the 100 companies included in the EGX 100 Index in every year, different numbers of companies were included in each year because of adding some new companies and eliminating others. Companies with insufficient data were excluded and banking and insurance listed companies were excluded from the sample because of having specific industry characteristics and different regulations imposed by the Central Bank of Egypt.

To obtain the information required for various variables, annual reports, web site of each company and third party websites were investigated. "Egypt for Information Dissemination - EGID" which is the main provider of information about the Egyptian stock market was another source to gather information when it was difficult to find such information in the above mentioned sources. It should be noted that the researchers decided to limit the study to 2003-2010 financial periods because of the political troubles starting from 2011 in Egypt and some other countries in the area that noticeably affect the country in general and the economy and the stock market in particular.

Table (2) below provide the number of firm-year observations in each year with a total of 634 firm-year observations.

Table 2: Number of firm-year observations over the period of empirical investigation:

	Post-CG Code period				Pre-CG Code period		
Year	**2010**	**2009**	**2008**	**2007**	**2005**	**2004**	**2003**
- Number of companies in EGX 100	**100**	**100**	**100**	**100**	**100**	**100**	**100**
- Companies excluded	**4**	**7**	**8**	**11**	**12**	**12**	**12**
- Firm-year observations	**96**	**93**	**92**	**89**	**88**	**88**	**88**

4.4 Data analysis

For descriptive statistics and statistical analyses (univariate and multivariate analysis), the Statistical Package for Social Sciences – SPSS (version 17) was used. Descriptive statistics mainly depend on the percentage, the mean, and the standard deviation. Independent variables in this research include 3 continuous variables (BOSIZE, BOSHAR and BOINDE) and other 3 non-continuous variables (ROLDUA, AUDCOM, and EXTAUD). Pearson correlation was carried out to explore the strength of the relationship between the dependent variable (DACC) and both independent variables (six variables) and control variables (six variables). In addition to the correlation analysis, four ordinary least square (OLS) regression models with enter method (Models 1, 2, 3 and 4) were performed using discretionary accrual (DACC), the dependent variable (CGM) and both control and CGM variables. The regression equations used in the four models are as follows:

Model 1

$$DACC = \beta_0 + \beta_1 BOSIZE + \beta_2 BOSHAR + \beta_3 BOINDE + \beta_4 ROLDUA + \beta_5 AUDCOM + \beta_6 EXTAUD + \varepsilon$$

Model 2

$$DACC = \beta_0 + \beta_1 BOSIZE + \beta_2 BOSHAR + \beta_3 BOINDE + \beta_4 ROLDUA + \beta_5 AUDCOM + \beta_6 EXTAUD + \beta_7 FROA + \beta_8 FSIZE + \beta_9 FLEVER + \beta_{10} SHMTOB + \beta_{11} FORLIS + \beta_{12} NISSUE + \varepsilon$$

Model 3

$$DACC = \beta_0 + \beta_1 BOSIZE + \beta_2 BOSHAR + \beta_3 BOINDE + \beta_4 ROLDUA + \beta_5 EXTAUD + \beta_6 FROA + \beta_7 FSIZE + \beta_8 FLEVER + \beta_9 SHMTOB + \beta_{10} FORLIS + \beta_{11} NISSUE + \varepsilon$$

Model 4

$$DACC = \beta_0 + \beta_1 BOSIZE + \beta_2 BOSHAR + \beta_3 BOINDE + \beta_4 ROLDUA + \beta_5 AUDCOM + \beta_6 FROA + \beta_7 FSIZE + \beta_8 FLEVER + \beta_9 SHMTOB + \beta_{10} FORLIS + \beta_{11} NISSUE + \varepsilon$$

Where DACC = discretionary accruals is a proxy of EM; β_0 is a constant; $\beta_{1,..11}$ are parameters; and ε is error term. Also probability of $F \leq 0.05$ is included in the model. Regression diagnostics were applied to test for multicollinearity between independent variables (Table 6 below). In the regression models, Model 1 involves all of the six independent variables. Model 2 involves all of the six independent variables and other six control variables. Models 3 and 4 involve the same 12 variables eliminating AUDCOM from Model 3 and EXTAUD from Model 4 (this will be discussed later in section 5.3).

5. FINDINGS

This section of the study is devoted to presentation and discussion of the data needed for testing research hypotheses. The section is divided into three sub-sections namely "descriptive statistics", "univariate analysis" and "multivariate analysis".

5.1 Descriptive statistics

Tables 3 and 4 below report descriptive statistics. Table 3 shows the absolute values of discretionary accrual (DACC) based on Jones (1991) model modified by Dechow et al. (1995) for our sample of 634 firm-year observations over years before and after 2006 when the Egyptian Code of CG was issued and applied. In both the pre-CG Code and the post-CG Code periods, the discretionary accruals have an average mean of 0.130 and 0.069 with standard deviations of 0.234 and 0.197 respectively. The table shows the minimum and maximum of discretionary accrual for every year and for both periods. For instance, in the first period, pre-CG Code, the minimum was -1.338 (in year 2005) while the maximum was 1.080 (in the same year). Similarly, the minimum and maximum on the post-CG Code period were -0.847 and 1.545 respectively.

These results indicate that there is a high variation in the EM practice of the sampled companies over this period and may suggest that the EM practice by Egyptian listed companies is fairly high, especially in the pre-CG Code period (a minimum and a maximum DACC of -1.338 and 1.080 respectively). In general, the above result clearly reveals that EM practices by Egyptian listed companies, in average, were reduced after implementing the Egyptian Code of CG. Since lower practice of EM indicates higher EQ, The above result suggests that EQ was improved as a result of implementing such a Code in the business environment in Egypt.

Table 3 Descriptive statistics of earnings management (the dependent variables):

	No	Minimum	Maximum	Mean	Std. D.
Pre-CG Code period:					
- 2003	**88**	-0.110	0.427	0.127	0.109
- 2004	**88**	-0.087	0.295	0.095	0.090
- 2005	**88**	-1.338	1.080	0.167	0.379
- DACC for the pre-CG Code	**264**	**-1.338**	**1.080**	**0.130**	**0.234**
Post-CG Code period:					
- 2007	**89**	-0.263	1.153	0.061	0.172
- 2008	**92**	-0.847	1.545	0.072	0.247
- 2009	**93**	-0.252	0.677	0.047	0.154
- 2010	**96**	-0.625	0.872	0.093	0.203
- DACC for the post-CG Code	**370**	**-0.847**	**1.545**	**0.069**	**0.197**

This table reports on the minimum, maximum, mean and standard deviation of discretionary accruals over years.

Table 4 below shows that, across the 96 companies included in our sample, the mean score for board size (BOSIZE) is from 8-9 members with a standard

deviation of about 3. The minimum and maximum of board size is 3 and 19 respectively. Board shareholding (BOSHAR) of the sampled companies ranged between 0% and 88% with a mean of 24.96% with a standard deviation of 24.73% meaning that in some listed companies in the EGX, members of the board do not own any shares of their company, while in others they own up to about 88% of shares.

Concerning board independence (BOINDE), the table shows that its average is 48.37% with a minimum of 0% and a maximum of 90.90% indicating that, on average, almost half of board members of the sampled companies are independent. However, some companies have no independent members; while others have the vast majority of members of the BOD are independent which is mainly an effective CG mechanism to reduce the agency problem and improve EQ. Based on the Egyptian Code of CG, the board should comprise a majority of non-executive directors with the technical or analytical skills to benefit the board and the company.

Furthermore, Table 4 shows that 59 of the sampled companies (61.46%) have two different persons as CEO and the chairman of the BOD which leads to more effective monitoring over the board process; while other companies have the same person who holds dual positions. The Egyptian Code of CG suggested that preferably one person should not hold both positions. If deemed necessary, reasons should be stated in the annual report. In this case the deputy chairman should be a non-executive.

Finally, the table shows that only 54 firms (56.25%) in the sample have an audit committee. It is expected that the existence of audit committee could decrease the EM practice and improve the EQ. Also, 60 firms (62.5%) of the sample are audited by one of the Big 4 audit firms which are highly reputable external auditors with higher quality than other auditors. In general, external auditors, especially highly reputable ones exercise a constraining influence on EM which improving EQ. Two main reasons may justify this noticeably weak practice by Egyptian listed companies of the above two mechanisms. The first, the Egyptian Code of CG is not mandatorily required to be practiced by listed companies in Egypt; the second, CG in Egypt on its first stage of implementation and most of the above mechanisms are suggested for an advanced stage of the CG practice.

Table 4 also shows statistics of control variables used in the current study. It reveals that the mean of firm performance (FROA) is only 6.96% with a standard deviation of 7.5%. Regarding the firm size (FSIZE), it can be seen that LE 14.966 million was the minimum and LE 56,365 million was the maximum total assets and on average, sampled companies have total assets of LE 4,324 million. Further, the average leverage (FLEVER) for the total sample was 39.24% and the average share market-to-book value (SHMTOB) was 154% with a minimum of 11% and a maximum of 512%. Additionally, Table 4 shows that only 8 firms

(8.34%) are listed at least in one foreign stock exchange and 63 firms companies (65.63%) have been involved in new issuance of shares.

Table 4 Descriptive statistics of the independent and control variables:

Variables	Minimum	Maximum	Mean	Std. D.
Independent variables (CG Mechanisms):				
1- Board size (BOSIZE)	3	19	8.83	3.015
2- Board shareholding (BOSHAR) %	0	88	24.96	24.73
3- Board independence (BOINDE) %	0	90.90	48.370	22.32
	Yes	**No**		
4- Board leadership (ROLDUA)	59 (61.46%)	37 (38.54%)		
5- Audit committee (AUDCOM)	54 (56.25%)	42 (43.75%)		
6- External auditor (EXTAUD)	60 (62.50%)	36 (37.50%)		
Control variables:	**Minimum**	**Maximum**	**Mean**	**Std. D.**
1- Firm performance (FROA[1]) %	0.07	48.37	6.96	7.50
2- Firm size (FSIZE[1]) (EGP' Million)	14.966	56,365	4,324	11,250
3- Firm leverage (FLEVER[1]) %	1	101	39.24	22.78
4- Share market-to-book value (SHMTOB) %	11	512	154	102
	Yes	**No**		
5- Foreign listing (FORLIS)	8 (8.34%)	88 (91.66%)		
6- Issuance of new shares (NISSUE)	63(65.63%)	33 (34.37%)		

Note: 1- For variable definition and predicted sign refer to Table 1 above; 2- Information on BOSIZE, BOSHAR and BOINDE was obtained at the end of 2010 financial period; 3- FROA, FSIZE, FLEVER and SHMTOB were computed at the end of 2010 financial period.

5.2 Univariate analysis

This section of the findings, the univariate analysis, presents information about the relationship between earnings management - DACC (the dependent variable), CGM factors (dependent variables) and firm factors (control variables). Table 5 shows Pearson correlation coefficients and reveals a number of significant associations among the dependent and some independent variables. For instance, it shows that there is a significant negative association between the dependent variable (DACC) from one side and four of the independent variables of CG namely BOSHAR, BOINDE, AUDCOM, and EXTAUD from the other. This result confirms the argument that good corporate governance practices help to resolve agency problems, which in turn reduces firms' incentive to manage earnings, increasing a firm EQ. However, there is no significant association for the other independent variable (BOSIZE and ROLDUA).

Table 5 shows, as predicted, that there is a moderate negative association (-0.383) between board independence (BOINDE) and DACC as a dependent variable which consequently means that BOINDE is positively associated with EQ of a firm. This result is highly significant ($p<0.01$). It supports the view that a more independent board would perform a better monitoring function which would consequently result in a higher level of EQ. Based on this result, it can be concluded that issuing and implementing the Egyptian Code of CG may improve the firm EQ especially this Code assures that the board should include a majority of non-executive members with an appropriate mix of skills, technical, or analytical experience that is of benefit to the board. The above result is consistent

with other studies in both developed countries (Beasley, 1996; Peasnell et al., 2000a; Klein, 2002; Niu, 2006; Jaggi et al., 2009) and developing countries (Habbash, 2012). Conversely, the result conflicts with what was reported by Al-Abbas (2009) in KSA, Ismail et al. (2009) in Malaysia, Abed et al. (2012) in Jordan, and Park and Shin (2004) in Canada who reported that there is no significant association between the proportions of independent directors and the discretionary accruals.

A weak positive significant association (0.150 and $p<0.05$) was found between the dependent variable (DACC) and the board shareholding (BOSHAR). As predicted, this association indicates that the higher the board shareholding the higher the EM practice and the lower EQ of a firm. This is consistent with Liu and Lu (2007) while not consistent with Ismail et el. (2009) and Ibed et al. (2012) who found no association between EM and board shareholding. Furthermore, negative association (-0.248) was found between the dependent variable (DACC) and the existence of an audit committee (AUDCOM). This association is significant ($p<0.05$). This result supports what was expected earlier that the existence of an audit committee could decrease the EM practice and improve the firm EQ. It also maintains the argument that a well-structured, active and well-functioning audit committee can help in reducing a firm EM and improving a firm EQ. The above result is in line with some previous studies including Carcello and Neal, 2000; Klein, 2002; Ismail et al., 2009. Conversely, it is inconsistent with what was reported by Xie et al., 2003.

Similarly, Table 5 revealed that there is a negative association between EM and the quality of an external auditor (EXTAUD). This means that the quality of external auditor variable is positively associated with the dependent variable, DACC. This result, which is also highly significant ($p<0.01$), maintains what was expected earlier that the higher the quality of an external auditor, the lower EM and the higher the EQ. The result is in line with the findings of previous research (e.g.: Becker et al., 1998; Francis et al., 1999, and Krishnan, 2003) which reported evidence that a high quality of an external auditor usually translates into lower EM and higher EQ. However, this result conflicts with some previous studies such as Ismail et al. (2009) who reported that there is no association between the quality of an external auditor and EQ of Malaysian companies.

In contrast to the above results, very weak non-significant associations were found between the dependent variable (DACC) and BOSIZE and ROLDUA (negative associations of 0.059 and 0.004 respectively). The above results indicate that some CGM namely board size and board leadership structure are not associated with EM consequently EQ of a firm. This result is consistent with results of previous studies (e.g.: Yermack, 1996 and Jensen, 2010) who reported negative associations between board size and EQ. This supports the argument stated by Yermack (1996) that smaller boards are more likely to have better monitoring quality because agency problems increase with board size.

In conclusion, Table 5 shows that among the six independent variables of CGM, four are significantly correlated with EM (DACC) then a firm EQ. They are board shareholding (BOSHAR), board independence (BOINDE), the existence of an audit committee (AUDCOM), and the quality of an external auditor (EXTAUD). They have signs consistent with predictions. Nevertheless, other variables namely board size (BOSIZE) and the board leadership structure (ROLDUA) are not significantly correlated with EM (DACC) then a firm EQ.

A final point on the univariate analysis, although the results verify some significant association among the independent variables (e.g. AUDCOM vs. EXTAUD) and control variables (e.g. ROA vs. SHMTOB), this association, which is 0.586 and 0.515 respectively, does not exceed 0.7 and does not indicate a serious multicollinearity problem in the current study. However, for further assess any potential for multicollinearity, regressions of all explanatory variables on DACC were performed, and obtained variance inflation factors (VIF) below 2 and tolerance levels above 0.60 for almost all independent variables (see Table 6 below). According to Pallant (2013), if the tolerance value is very low (near 0), this indicates that the multiple correlation with other variables is high, advising the possibility of multicollinearity.

5.3. The multivariate analysis

Tables 7 and 8 present the results of the regression models used to identify which of the independent variables (BOSIZE, BOSHAR, BOINDE, ROLDUA, AUDCOM and EXTAUD) included in the four models contributes to the prediction of the dependent variables (DACC) then affects the EQ. The results show the explanatory power of the model as measured by the R^2 and adjusted R^2. The later, the adjusted R^2, provides a better estimation of the true population value, especially with a small sample (Tabachnick and Fidell, 1996).

Table (5) Correlation between firm performance measures and ownership identity:

Variables	DACC	BOSIZE	BOSHAR	BOINDE	ROLDUA	AUDCOM	EXTAUD	ROA	FSIZE	LEVER	HMTOB	FORLIS	NISSUE
DACC	1												
BOSIZE	-.059	1											
BOSHAR	**.150***	**-.248***	1										
BOINDE	**-.383****	**.317****	-.125	1									
ROLDUA	-.004	.058	.155	.018	1								
AUDCOM	**-.248***	.070	.068	.013	-.061	1							
EXTAUD	**-.266****	**.201***	-.078	.047	-.003	**.586***	1						
FROA	-.017	.142	-.097	.194	-.160	.024	.001	1					
FSIZE	-.037	.185	.196	.106	-.177	**.204***	**.248***	-.078	1				
FLEVER	-.193	**-.207***	.200	.049	-.016	.116	.112	-.171	.189	1			
SHMTOB	.056	.057	-.097	.002	-.003	.016	-.011	**.515****	-.041	**.251***	1		
FORLIS	.005	.193	.077	.092	-.131	.114	**.234***	-.083	**.487****	.102	-.101	1	
NISSUE	-.028	-.048	.081	.148	-.183	.152	.017	.049	-.067	-.018	-.005	.020	1

* Correlation is significant at the 0.05 level (2 – tailed); ** Correlation is significant at the 0.01 level (2 – tailed)

Notes: 1- Significant correlations are in bold;

2- Dependent, independent and control variables are defined in Table 1;

3- Pearson correlation was performed for all variables;

4- All coefficients are based on 96 observations (2010 financial period).

Table (6) Tolerance and variance inflation factors:

	Analysis 1			Analysis 2		
	Beta	Tolera	VIF	Beta	Tolerance	VIF
(Constant)						
BOSIZE	0	0.711	1.407	0	0	1.379
BOSHAR	0	0.791	1.265	0	0	1.282
BOINDE	-0	0.780	1.282	-0	0	1.282
ROLDUA	-0	0.844	1.184	-0	0	1.189
AUDCOM				-0	0	1.655
EXTAUD	-0	0.633	1.575			
FROA	-0	0.600	1.666	-0	0	1.736
FSIZE	-0	0.612	1.521	-0	0	1.591
FLEVER	-0	0.651	1.536	-0	0	1.589
SHMTOB	0	0.574	1.742	0	0	1.780
FORLIS	0	0.615	1.847	0	0	1.516
NISSUE	0	0.884	1.132	0	0	1.102

Notes: 1- Dependant variable is DACC. 2- VIF = variance inflation factors. 3- Analyses 1 and 2 were based on separate analyses. Separate regressions were undertaken because AUDCOM and EXTAUD are relatively highly correlated with each other.

Generally speaking, findings of the univariate analysis are supported by those of the multivariate analysis, especially results in Model 2 of the regression which related to the independent variable of board shareholding (BOSHAR), Board independence (BOINDE), the audit committee (AUDCOM) and the external auditor (EXTAUD). Accordingly, it is possible to conclude that results in the regression analysis, especially Model 2, are in line with the results obtained in the univariate analysis.

Model 2, which is the most powerful model, includes all variable of CGM (independent variables) and firm variables (control variables). It is statistically significant (p value is 0.022) in explaining the dependent variable (DACC) with F-value of 2.109 and the highest adjusted R^2 of 0.197; which rank this model as the most powerful one. The accounting literature in this field of research reported varied results for the adjusted R^2. For example, it was reported at 22.3% (Saleh et al. 2005); 3% (Ismail et al., 2009); 7.48% (Liu and Lu, 2009); 7.1% (Ibed et al., 2012); 10.2% (Ali Shah et al., 2009); and 8% (Habbash, 2012).

In this model, firm performance (FROA), firm size (FSIZE), firm leverage (FLEVER), share market-to-book value (SHMTOB), foreign listing (FORLID) and issuance of new shares (NISSUE) were used as control variables. Significant results are found ($p<0.05$) for four independent variables namely BOSHAR, BOINDE, AUDCOM and EXTAUD. For instance, board shareholding (BOSHAR) is positively affecting EM of a firm indicating that when board shareholding increases, the EM practices increase, accordingly the EQ decreases. This finding supports hypotheses H2 developed earlier in this study which states that "There is a significant association between board shareholding and EQ". This result is in line with Liu and Lu (2007) who found a positive association between board shareholding and EM; and Brickley et al. (1988) who reported a

positive association between board shareholding and EM. Conversely, our result is not in line with a number of previous studies which found no association between board shareholding and EM (Ibed et al., 2012) and EQ (Ismail et al. 2009). Further, the above result is inconsistent with (Warfield et al., 1995 and Saleh et al., 2005) who reported a negative relationship between board shareholding and EM.

Furthermore, board independence (BOINDE) is negatively significantly associated with EM. This means that the higher the board independence, the lower the EM practice of a firm and the higher EQ. This result is in line with some previous studies (e.g.: Beasley, 1996; Peasnell et al., 2000a; Klein, 2002; Niu, 2006; Jaggi et al., 2009 and Habbash, 2012); while it not consistent with Park and Shin (2004) in Canada, Al-Abbas (2009) in KSA, Ismail et al. (2009) in Malaysia and Abed et al. (2012) in Jordan. Based on the above, research hypothesis H3 which states that "There is a significant association between board independence and EQ" is supported and can be accepted and the alternative one is rejected.

With respect of the existence of an audit committee (AUDCOM), Model 2 shows that AUDCOM is negatively significantly affecting EM. This finding is consistent with Carcello and Neal (2000), Klein (2002) and Ismail et al. (2009), but is not consistent with Xie et al. (2003). Consequently, the related hypothesis H5 "There is a positive significant association between the existence of an audit committee and EQ" is accepted and the alternative one is rejected.

Concerning the quality of external auditor (EXTAUD), the literature supports the argument that a high quality of external auditor normally translates into lower accruals and higher EQ. Our result is in line with some of the previous research which reported an association between the quality of an external auditor and EM (Becker et al., 1998; Francis, Maydew, and Sparks, 1999). On the other hand, the above result conflict with Ismail et al. (2009) who reported that there is no association between the quality of an external auditor and EQ of Malaysian companies. The above result suggests accepting H6 "There is a positive significant association between the quality of an external auditor and EQ", and rejecting the alternative one.

In summary, Model two shows that four independent variables of CGM are explaining the dependent variable (DACC) and affecting a firm EQ. Accordingly, four research hypotheses (H2, H3, H5 and H6) are accepted, while the other two are rejected. Finally, Model 2 clearly shows that other variables of CGM (BOSIZE and ROLDUA) are not affecting EQ, nor are they supporting other hypotheses H1 and H4 which are rejected.

Model 1, which includes only variables of CGM (independent variables), is statistically significant (p value is 0.003) in explaining the dependent variable (DACC) with F-value of 3.397 and an adjusted R^2 of 0.150 which explains 15%

of the variance in DACC. Besides, significant results are found ($p<0.05$) in this model for three independent variables namely BOSHAR, BOINDE and AUDCOM. The above results indicate that these three variables of CGM are explaining the dependent variable (DACC) and affecting a firm EQ.

As mentioned before in section 4.4, Models 3 and 4 involve the same independent and control variables eliminating AUDCOM from Model 3 and EXTAUD from Model 4. Model 3 is statistically significant (p value is 0.034) in explaining the dependent variable (DACC) with F-value of 2.007 and an adjusted R^2 of 0.180. Significant results are found ($p<0.05$) only for three independent variable (BOSHAR, BOINDE and EXTAUD). However, other independent variables are not significant in explaining the dependent variable. In Model 4, which is statistically significant (p value is 0.014) in explaining the dependent variable, we found an adjusted R^2 of 0.189 with F-value of 2.307. Model 4, reveals that three independent variable (BOSHAR, BOINDE and AUDCOM) are significantly ($p<0.05$) explaining the dependent variable and affecting a firm EQ.

Table (7) Regression models:

	Model 1				Model 2			
	B	Beta	T	Sig.	B	Beta	T	Sig.
(Constant)	0.595		2.348		0.168		2.176	
BOSIZE	0.006	0.089	0.828	0.410	0.002	0.037	0.327	0.744
BOSHAR	0.001	0.121	1.187	**0.038**	0.002	0.199	1.832	**0.041**
BOINDE	-0.006	-0.690	-2.699	**0.009**	-0.001	-0.152	-0.930	**0.035**
ROLDUA	-0.018	-0.043	-0.447	0.656	-0.047	-0.113	-1.068	0.288
AUDCOM	-0.079	-0.194	-1.399	**0.047**	-0.030	-0.074	-0.604	**0.040**
EXTAUD	-0.051	-0.123	-0.873	0.385	-0.085	-0.204	-1.598	**0.014**
FROA					-0.002	-0.084	-0.664	0.508
FSIZE					-4.433E-10	-0.025	-0.175	0.862
FLEVER					-0.002	-0.278	-2.309	**0.023**
SHMTOB					0.032	0.164	1.253	0.214
FORLIS					0.102	0.139	1.004	0.318
NISSUE					0.002	0.005	0.054	0.957
No. of Obs.			***96***				***96***	
R^2			***0.213***				***0.303***	
Adjusted R^2			***0.150***				***0.197***	
F value			***3.397***				***2.109***	
P value			***0.003***				***0.022***	

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

Table (8) Regression models:

	Model 3				Model 4			
	B	Beta	T	Sig.	B	Beta	T	Sig.
(Constant)	0.091		0.754		0.278		3.034	
BOSIZE	0.002	0.028	0.247	0.806	0.003	0.045	0.400	0.690
BOSHAR	0.002	0.223	2.047	**0.044**	0.002	0.200	1.862	**0.046**
BOINDE	-0.002	-0.263	-2.440	**0.017**	-0.002	-0.263	-2.440	**0.017**
ROLDUA	-0.055	-0.133	-1.269	0.208	-0.050	-0.121	-1.164	0.248
AUDCOM					-0.058	-0.142	-1.007	**0.017**
EXTAUD	-0.071	-0.170	-1.155	**0.039**				
FROA	-0.004	-0.133	-1.070	0.288	-0.003	-0.096	-0.767	0.445
FSIZE	-4.208E-11	-0.002	-0.016	0.987	-1.609E-10	-0.009	-0.064	0.949
FLEVER	-0.003	-0.313	-2.614	**0.011**	-0.002	-0.276	-2.306	**0.024**
SHMTOB	0.045	0.277	1.782	0.078	0.039	0.196	1.549	0.125
FORLIS	0.100	0.136	0.971	0.334	0.095	0.131	0.944	0.348
NISSUE	0.002	0.006	0.056	0.955	0.006	0.014	0.142	0.887
No. of Obs.			***96***				***96***	
R^2			***0.273***				***0.291***	
Adjusted R^2			***0.180***				***0.189***	
F value			***2.007***				***2.307***	
P value			***0.034***				***0.014***	

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

6. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

The main objective of this study was to investigate the impact of CGM on EQ of listed companies on the Egyptian Exchange (EGX) as one of the emerging markets. This investigation was based on 634 firm-year observations during the period 2003-2010 (before and after issuing and implementing the Egyptian Code of CG). In addition to descriptive statistics and univariate analysis, four models of (OLS) regression were used to regress CG factors on EQ through the absence EM which was estimated through the discretionary accruals (DACC) using the modified Jones (1991). We found that there is a high variation in the EM practice of the sampled companies over this period which suggests that EM practices of Egyptian listed companies is fairly high with a low EQ especially in the pre-CG Code period. This clearly reveals that EQ of Egyptian listed companies, on average, were improved after implementing the Egyptian Code of CG.

Among the six independent variables of CGM, four were significantly correlated with a firm EQ. They are board shareholding (BOSHAR), board independence (BOINDE), the existence of an audit committee (AUDCOM), and the quality of an external auditor (EXTAUD). These variables have signs consistent with predictions. However, other variables namely board size (BOSIZE) and the board leadership structure (ROLDUA) were not significantly correlated with a firm EQ.

There are several limitations of the current study. First, the study concentrates only on a limited number of CGM; while others such as size and independence of audit committee, the number of meeting of BOD, and the existence of remuneration and nomination committee were out of the focus of the

current study. Second, findings of the current study may not be generalized to different countries at different stages of development, or with different business environments and cultures. A comparative study for different countries with emerging capital markets might also be fruitful. Therefore, it would be interesting to duplicate this study in other countries in the area which have many similarities to the Egyptian environment. Third, the current investigation was based on a sample of the most active listed companies included in the EGX 100 excluding banking and insurance listed companies. Future research may extend the sample to include other listed companies not included in EGX 100.

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Appendix A:

Egyptian listed companies included in the study (Year 2010)

NO	ISIN	REUTER CODE	COMPANY NAME
1.	EGS3G191C017	NASR.CA	El Nasr Transformers (El Maco)
2.	EGS3H051C012	ALEX.CA	Alexandria Cement
3.	EGS42051C010	ETRS.CA	Egyptian Transport (EGYTRANS)
4.	EGS44012C010	MOIL.CA	Maridive & oil services
5.	EGS48031C016	ETEL.CA	Telecom Egypt
6.	EGS50091C015	AITG.CA	Assiut Islamic Trading
7.	EGS52051C017	OSTD.CA	B-Tech
8.	EGS69261C013	GRCA.CA	Grand Investment Capital
9.	EGS73541C012	CCAP.CA	Citadel Capital - Common Shares
10.	EGS30901C010	JUFO.CA	Juhayna Food Industries
11.	EGS44031C010	CSAG.CA	Canal Shipping Agencies
12.	EGS42111C012	ALCN.CA	Alexandria Containers and goods
13.	EGS48011C018	EMOB.CA	Egyptian Company for Mobile Services (MobiNil)
14.	EGS51191C012	SMFR.CA	Samad Misr -EGYFERT
15.	EGS3G0Z1C014	SWDY.CA	ELSWEDY ELECTRIC
16.	EGS681D1C010	EASB.CA	Egyptian Arabian (cmar) Securities Brokerage EAC
17.	EGS691A1C011	PRMH.CA	Prime Holding
18.	EGS681I1C015	EOSB.CA	El Orouba Securities Brokerage
19.	EGS30431C018	ESGI.CA	Egyptian Starch & Glucose
20.	EGS30401C011	CEFM.CA	Middle Egypt Flour Mills
21.	EGS32041C013	SPIN.CA	Alexandria Spinning & Weaving (SPINALEX)
22.	EGS32221C011	ACGC.CA	Arab Cotton Ginning
23.	EGS38171C012	BIOC.CA	Glaxo Smith Kline
24.	EGS38421C011	MOSC.CA	Misr Oils & Soap
25.	EGS38381C017	EFIC.CA	Egyptian Financial & Industrial
26.	EGS3C111C019	PRCL.CA	Ceramic & Porcelain
27.	EGS30201C015	SUGR.CA	Delta Sugar
28.	EGS65071C010	ELKA.CA	El Kahera Housing
29.	EGS67191C014	ICID.CA	International Co For Investment & Development
30.	EGS70271C019	RTVC.CA	Remco for Touristic Villages Construction
31.	EGS78021C010	MPRC.CA	Egyptian Media Production City
32.	EGS65091C018	ELSH.CA	El Shams Housing & Urbanization
33.	EGS01041C010	INFI.CA	Ismailia National Food Industries
34.	EGS02021C011	ISMA.CA	Ismailia Misr Poultry
35.	EGS02051C018	POUL.CA	Cairo Poultry
36.	EGS07061C012	IFAP.CA	International Agricultural Products
37.	EGS21171C011	ZMID.CA	Zahraa Maadi Investment & Development
38.	EGS21351C019	AIND.CA	Arabia Investments, Devel, Fin. Inv. Holding Co.
39.	EGS21451C017	DCRC.CA	Delta Construction & Rebuilding
40.	EGS21541C015	GGCC.CA	Giza General Contracting
41.	EGS23111C015	NCCW.CA	Nasr Company for Civil Works
42.	EGS02211C018	EPCO.CA	Egypt for Poultry
43.	EGS32331C018	APSW.CA	Arab Polivara Spinning & Weaving Co.
44.	EGS21531C016	UEGC.CA	Upper Egypt Contracting
45.	EGS23141C012	EDBM.CA	Egyptian for Developing Building Materials
46.	EGS3J041C011	WATP.CA	Modern Company for water proofing (Bitumode)
47.	EGS10001C013	ASCM.CA	Asek Company for Mining - Ascom
48.	EGS652L1C015	NDRP.CA	Namaa for Development and Real Estate Investment Co.
49.	EGS380S1C017	SKPC.CA	Sidi Kerir Petrochemicals
50.	EGS690C1C010	RAYA.CA	Raya Holding For Technology And Communications
51.	EGS46051C016	GMCI.CA	GMC Group for Iindustrial Commercial & Fin. Investments
52.	EGS30761C026	NCMP.CA	National company for maize products

53.	EGS69182C011	NAHO.CA	Naeem Holding
54.	EGS655L1C012	PHDC.CA	Palm Hills Development Company
55.	EGS300L1C011	ELNA.CA	El Nasr For Manufacturing Agricultural Crops
56.	EGS3E1E1C013	ARVA.CA	Arab Valves Company
57.	EGS02091C014	MPCO.CA	Mansourah Poultry
58.	EGS691S1C011	TMGH.CA	T M G Holding
59.	EGS691L1C018	PIOH.CA	Pioneers Holding
60.	EGS380P1C010	AMOC.CA	Alexandria Mineral Oils Company
61.	EGS30581C010	COSG.CA	Cairo Oils & Soap
62.	EGS32131C012	NCGC.CA	Nile Cotton Ginning
63.	EGS36021C011	RAKT.CA	Rakta Paper Manufacturing
64.	EGS38161C013	UNIP.CA	Universal For Paper and Packaging Materials (Unipack
65.	EGS38251C012	ZEOT.CA	Extracted Oils
66.	EGS38211C016	MICH.CA	Misr Chemical Industries
67.	EGS39011C019	EGAS.CA	Natural Gas & Mining Project (Egypt Gas)
68.	EGS38461C017	APPC.CA	Advanced Pharmaceutical Packaging Co. (APP)
69.	EGS3C071C015	ECAP.CA	El Ezz Porcelain (Gemma)
70.	EGS3C151C015	CERA.CA	Arab Ceramics (Aracemco)
71.	EGS3C251C013	ESRS.CA	Ezz Steel
72.	EGS3C351C011	SVCE.CA	South Valley Cement
73.	EGS30211C014	AJWA.CA	AJWA for Food Industries company Egypt
74.	EGS30291C016	SNFC.CA	Sharkia National Food
75.	EGS69021C011	AFDI.CA	El Ahli Investment and Development
76.	EGS69101C011	HRHO.CA	Egyptian Financial Group-Hermes Holding Company
77.	EGS69082C013	EKHO.CA	Egyptian Kuwaiti Holding
78.	EGS65081C019	DAPH.CA	Development & Engineering Consultants
79.	EGS65061C011	UNIT.CA	United Housing & Development
80.	EGS65211C012	AREH.CA	Egyptian Real Estate Group
81.	EGS65341C017	EHDR.CA	Egyptians Housing Development & Reconstruction
82.	EGS65441C015	MENA.CA	Mena Touristic & Real Estate Investment
83.	EGS65461C013	GIHD.CA	Gharbia Islamic Housing Development
84.	EGS65591C017	HELI.CA	Heliopolis Housing
85.	EGS65851C015	OCDI.CA	Six of October Development & Investment (SODIC)
86.	EGS65901C018	OCIC.CA	Orascom Construction Industries (OCI)
87.	EGS67221C019	AGIG.CA	Arab Gathering Investment
88.	EGS67181C015	ABRD.CA	Egyptians Abroad for Investment & Development
89.	EGS3D061C015	IRON.CA	Egyptian Iron & Steel
90.	EGS3D031C018	ALUM.CA	Arab Aluminum
91.	EGS70281C018	ROTO.CA	Rowad Tourism (Al Rowad)
92.	EGS70431C019	EGTS.CA	Egyptian for Tourism Resorts
93.	EGS74081C018	ORTE.CA	Orascom Telecom Holding (OT)
94.	EGS70021C018	CIRF.CA	Cairo Development and Investment
95.	EGS3F021C017	ENGC.CA	Engineering Industries (ICON)
96.	EGS3G231C011	ELEC.CA	Egyptian Electrical Cables

ملخص البحث باللغة العربية

أثر آليات حوكمة الشركات علي جودة الأرباح: الحالة المصرية

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يتمثل الغرض الرئيسي من هذه الدراسة في اختبار أثر آليات حوكمة الشركات علي جودة الأرباح في الشركات المدرجة في سوق الأوراق المالية المصرية – كإحدي الأسواق الناشئة – وذلك قبل وبد إصدار وتطبيق الكود المصري لحوكمة الشركات الصادر عام ٢٠٠٦ . ولتحقيق أهداف الدراسة أستخدمم الباحثان عينة من ٦٣٤ مفردة أثناء الفترة من ٢٠٠٣-٢٠١٠ باستثناء عام ٢٠٠٦ والذي تم فيه تطبيق الكود المصري لحوكمة الشركات . وبالاضافة إلي الاحصاءات الوصفية ومقياس الأرتباط ، تم استخدام أربعة نماذج للانحدار ولتحديد قدرة المتغيرات المستقلة (وهي حجم مجلس الإدارة ، نسبة ملكية أعضاء مجلس الإدارة ، استقلال مجلس الإدارة ، كون المدير التنفيذي للشركة هو رئيس مجلس الإدارة ، لجنة المراجعة ، المراجع الخارجي) علي تفسير ممارسات إدارة الأرباح من قبل الشركات المسجلة في البورصة المصرية والمتضمنة في المؤشر (EGX 100). وتعد الدراسة الحالية امتداداً للدراسات السابقة في هذا المجال البحثي، وقد اعتمدت علي نموذج Jones ١٩٩١ والمعدل عام ١٩٩٥. وأظهرت نتائج الدراسة أن هناك أربعة متغيرات مستقلة هي نسبة ملكية أعضاء مجلس الإدارة ، استقلال مجلس الإدارة ، لجنة المراجعة و المراجع الخارجي تفسر ممارسات إدارة الأرباح، ومن ثم جودة الأرباح ، بينما لاتفسر المتغيرات الأخري ممارسات إدارة الأرباح . وتؤكد النتيجة الرئيسة للدراسة أن إصدار وتطبيق الكود المصري لحوكمة الشركات في عام ٢٠٠٦ قد أدي إلي انخفاض مستوي ممارسات إدارة الربحية من قبل الشركات المسجلة في بورصة الأوراق المالية ، مما يعني زيادة مستوي جودة الأرباح لهذه الشركات.