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Preliminary evidence on the relationship between corporate governance attributes and audit committee functionality in Egypt: beyond checking the box

Ahmed Abdel-Meguid, Khaled Samaha and Khaled Dahawy

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Abstract

Purpose – *This exploratory study aims to provide preliminary evidence regarding the non-audit committee corporate governance determinants of audit committee functionality.*

Design/methodology/approach – *The study is based on archival accounting, corporate governance data, and interviews of subjects of the top 100 companies listed on the Egyptian Stock Exchange (EGX100). A logistic regression is used to identify the non-audit committee governance attributes that affect the likelihood of of having a functional audit committee.*

Findings – *Board size and board independence, (CEO-chairman duality) are positively (negatively) related to audit committee functionality, suggesting complementary governance relations. On the other hand, the authors document a negative relation between auditor type (Big4) and audit committee functionality indicating a substitutive governance effect.*

Originality/value – *To the best of the authors' knowledge, this is the first study that explores the actual functioning of audit committees in Egypt beyond mere regulatory requirements. The study highlights the importance of assuring that the "spirit" of corporate governance laws and regulations is adhered to rather than the mere compliance with their "letter".*

Keywords *Corporate governance, Emerging markets, Audit committees, Board of directors, Corporate ownership, Chairman*

Paper type *Research paper*

1. Introduction

The separation between ownership and control in publicly listed companies generates various agency problems such as information asymmetry and moral hazard (Jensen and Meckling, 1976; Fama and Jensen, 1983). A classical treatment of such problems is aligning the interests of agents (i.e. managers) with those of principals (i.e. providers of capital) (see for example, Mirlees, 1976 and Holmstrom, 1979). However such alignment has its own adverse side effects. For example several empirical studies have shown that equity incentives may actually drive managers to behave myopically and boost stock prices in the short-run by manipulating accounting performance (Bar-Gill and Bebchuk, 2003; Cheng and Warfield, 2005). This supports the argument made by Goldman and Slezak (2006) who describe stock-based compensation as a "double-edged sword" that not only motivates managers to exert more effort but also motivates them to overstate performance. Thus interest alignment is not sufficient by itself to mitigate agency problems. Monitoring mechanisms which scrutinize managerial actions are also needed. These mechanisms are collectively known as corporate governance.

While there are several mechanisms that comprise the "corporate governance mosaic" (Cohen *et al.* 2004), the mechanism which has the closest proximity to the financial reporting process is the audit committee (AC). Both regulators and researchers have emphasized the

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importance of having a functioning AC with certain characteristics. Studies have shown that the AC plays two important monitoring roles. First, it regulates the auditor-client relation it terms of enhancing the auditor's independence and unbiased judgment (Carcello and Neal, 2000) and ''shielding'' the auditor from managerial retaliation (McMullen, 1996; Carcello and Neal, 2003). Second, it mitigates aggressive accounting choices by managers (Klein, 2002a).

On the other hand, regulatory frameworks underscore the role of ACs via the passage of enforceable laws and regulations such as the Sarbanes-Oxley Act of 2002 (SOX) (Securities and Exchange Commission, 2002) in the USA. In other settings, such as Egypt, ''guidelines'' prescribing best practices are issued. The Egyptian Code of Corporate Governance (ECCG) was issued in 2005 (Egyptian Institute of Directors (Eiod), 2005). This code represents the general framework for corporate governance of Egyptian enterprises. While the code itself is not mandatory, other regulatory bodies, namely the Egypt Stock Market, adopts some of its provision as part of its listing rules. One of these provisions relates to the formation of an ''independent'' AC.

Prior studies have focused on the drivers behind the voluntary formation of audit committees (e.g. Firth and Rui, 2007; Joshi and Wakil, 2004; Chen *et al.* 2009), or those behind their independence (e.g. Klein, 2002b). Given the relative novelty of corporate governance culture in Egypt relative to more developed countries, and the mandatory formation of ACs, we examine whether companies operating in such setting might be inclined to focus on the ''form'' of the AC rather than the ''substance'' of the AC. We refer to this phenomenon as creating ''pseudo'' audit committees rather than ''functioning'' AC. Accordingly, we empirically identify the factors which affect the likelihood of having a functioning AC.

We focus on corporate governance determinants of AC functionality. We argue that the relationships between such determinants and the likelihood of having a functioning AC take two forms. First, a substitutive association in which a weakness in a corporate governance mechanism is compensated by the existence of a functioning AC. Second, a complementary association in which strength in a corporate governance mechanism is reinforced by the existence of a functioning AC.

Using a sample of the top 100 companies listed in the Egyptian Stock Exchange (EGX100) as of December 31, 2009 we run a logistic regression to determine the factors which affect the propensity of having a functioning AC. The AC functionality is based on interviews which were conducted during the fourth quarter of 2009 with key accounting personnel in sample companies. Empirical results show that board size and board independence, (CEO-chairman duality) are positively (negatively) related to audit committee functionality, although the board size effect was weaker, suggesting complementary governance relations. On the other hand, we document negative relation between auditor type (Big 4) and audit committee functionality indicating a substitutive governance effect.

Our study contributes to the corporate governance literature in three ways. First, to the best of our knowledge, this is first paper to distinguish between ''substance'' and ''form'' regarding the mandatory formation of ACs in Egypt. Second, we empirically address the criticism of the 2009 Report on the Observance of Standards and Codes (ROSC) of the World Bank regarding the ''actual'' formation and functioning of board committees beyond their ''formal existence'' (World Bank, 2009). Third, we introduce a new setting in which we examine whether substitutive or complementary relations exist between ACs and other governance mechanisms.

The results of the study have regulatory implications in terms of putting in place more scrutinizing measures concerning the formation and functioning of ACs in Egyptian companies. One of these measures already in effect is Egyptian Financial Supervisory Authority is a public Authority (EFSA) which is new non-banking financial regulator established in 2009[1].

The remainder of the paper is organized as follows. Section (2) presents the literature review and hypotheses development. Section (3) describes the research design. Section (4) reports the empirical results. Section (5) is the summary and conclusion.

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2. Literature review and hypotheses development

2.1 The role of the audit committee as an element of corporate governance

Corporate governance has been defined in various ways by regulators, practitioners, researchers however there is a clear consensus concerning two points[2]. First, its importance in capital markets. Second, that it is a collection of mechanisms and tools that function together to facilitate the monitoring of agents (i.e. agents) and the preservation of invested capital. This paper focuses on one important monitoring mechanism which is the AC. The role of the AC and its importance has been established by both recommended best practices guidelines and enacted laws such as the Report of the Committee on the Financial Aspects of Corporate Governance which is also known as the Cadbury Report (Cadbury Committee, 1992), the Blue Ribbon Committee (BRC) (1999) on Improving the Effectiveness of Corporate Audit Committees , the Sarbanes Oxley Act (SOX) (Securities and Exchange Commission, 2002), the OECD (2004) Principles of Corporate Governance, and the Egyptian Code of Corporate Governance (Egyptian Institute of Directors (Eiod) 2005).

In addition, results of prior empirical studies have highlighted the dual role of ACs in both constraining opportunistic behavior of managers and monitoring the client-auditor relation. First, Klein (2002a) documents a negative reaction between audit committee independence and earnings management. Second, the results of McMullen (1996) suggest that the existence of an AC reduces the likelihood of auditor dismissal following a disagreement with its client. This conclusion is further supported by Carcello and Neal (2003) who find that auditor are less likely to be dismissed following the issuance of a ''going concern'' opinion in the presence of an independent AC.

2.2 Factors affecting voluntary audit committee formation

Several studies have examined the determinants of voluntary AC formation in different countries such as the USA (Pincus *et al.*, 1989), Australia (Chen *et al.*, 2009), Bahrain (Joshi and Wakil, 2004), and Hong Kong (Firth and Rui, 2007). Factors examined in these studies include leverage, company size, board size, board independence, chairman independence, managerial ownership, and auditor type. The implementation of these studies was possible due to the voluntary nature of AC formation either for the entire market (e.g. Hong Kong and Bahrain) or a unique segment of the market (e.g. NASDAQ companies in the USA and non-top 500 companies in Australia). We build on this stream of research but with some adjustments to match the nature of the Egyptian setting as described in the following section.

2.3 Formation of audit committee under Egyptian regulations

The focus on ACs and their composition has a longer history in developed countries than in developing ones. For example, the New York Stock Exchange started mandating independent ACs since 1978. The Cadbury Report (Cadbury Committee, 1992) reported that at the time of its issuance two-thirds of the top 250 British companies had already ACs. More recently SOX (2002) has reemphasized the importance of the AC and its independence[3].In Egypt the formation of ACs is primarily mandated by the Listing Rules of the Egyptian Stock Exchange (Capital Market Authority, 2002) which is consistent the recommendations of the Egyptian Code of Corporate Governance (Egyptian Institute of Directors (Eiod), 2005)[4].

2.4 The effectiveness of corporate governance regulations

Despite the issuance of best practices corporate governance recommended guidelines and even mandatory corporate governance laws, such guidelines and laws might be necessary but not sufficient for an effective governance landscape. Mintz (2005, p. 595) states that:

> While new regulations can impose penalties for violating governance standards, they cannot create an ethical culture that fosters responsible behavior.

This argument is empirically supported by Park and Shin (2004) who do not find any significant change in the effectiveness of monitoring mechanisms of Canadian companies

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following the issuance of Toronto Stock Exchange's Corporate Governance Guidelines of 1994. In addition, the results of Abdel-Meguid *et al.* (2013) document a significant positive relation between the auditor's economic dependence on its client and earnings management in both pre-SOX and post-SOX periods under weak non-auditor governance regimes. This is also consistent with Holland (1999) who cautioned against the effects of a ''box ticking'' approach *vis-à-vis* the Cadbury and the Greenbury governance proposals in the UK. Thus even in the presence of the best drafted guidelines or the most stringent laws, governance imperfections will exist.

In the case of Egypt, the 2009 Report on the Observance of Standards and Codes (ROSC) of the World Bank commends the Egyptian efforts in the area of corporate governance by stating that ''Much has been achieved by the Egyptian government to improve the legal, regulatory, and institutional framework for corporate governance''. However it also states that ''On the other hand, actual corporate governance practices of EGX listed companies continue to lag behind the law on the books in particular for companies outside the EGX-30''.

The report also expresses specific concerns regarding the formation and functioning of committees of the board by stating that:

> Key board committees do not exist or, where existent, fail to provide assurance to investors due to a lack of independence. The LRs[5] require companies to establish audit committees composed of a majority of non-executive directors; recent decrees have also mandated audit committees for banks and insurance companies. And although 91 percent of EGX-30 companies *formally* have audit committees, their mandate, composition, and working procedures are not consistently defined and publicly disclosed by the board [Emphasis added].

Thus like other governance regulatory frameworks worldwide, the Egyptian model is not perfect.

2.5 Non-audit committee corporate governance and audit committee functionality

Building of the findings of the studies examining the determinants of AC formation in section 2.2 and given the ''mandatory'' nature of AC formation in Egypt *per se*ction 2.3, and the inherent imperfections in corporate governance regulations *per se*ction 2.4 we examine whether certain non-AC corporate governance determinants affect the functionality of ACs in Egypt. In other words, we attempt to identify the corporate governance factors that affect the likelihood of existence of a ''true functioning'' AC rather than a ''cosmetic pseudo'' AC.

An evolving debate in the corporate governance literature is whether different monitoring mechanisms are complements or substitutes. For example, Abbott and Parker (2000) document a positive relation between AC independence and the likelihood of engaging an ''industry specialist'' auditor. Such result is indicative of a complementary relation between AC strength and the need of specialized auditing expertise. On the other hand, Ahmed *et al.* (2008) argue that there is a substitutive relation between non-auditor governance strength (institutional ownership and board independence) and the likelihood of engaging a specialist auditor.

Within the context of AC formation Pincus *et al.* (1989) find that having a Big Eight auditor increased the likelihood of voluntary AC formation in a sample of NASDAQ listed companies suggesting a complementary relation. On the contrary, Firth and Rui (2007) find that listed companies in Hong Kong which are audited by non-Big 5 CPA firms are more likely to voluntary form ACs suggesting a substitutive effect. In conclusion, the type of interrelations among monitoring mechanisms such as the AC, the auditor, the board of directors and institutional investors seem to be inconclusive and sensitive to the setting of the study.

We extend this debate to the relation between non-AC corporate governance elements and AC functionality. We focus on five non-AC elements of corporate governance: board size, CEO-chairman duality, board independence, auditor type, blockholder ownership, and managerial ownership. Given the mixed results of prior studies examining the interrelations among monitoring mechanisms, we do not establish any a priori directional associations between the examined determinants and AC functionality.

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2.5.1 Board size. There is no consensus regarding whether larger boards enhance or deteriorate corporate governance strength. For example, larger boards were found to be associated with greater likelihood of fraud (Beasley, 1996) and lower Tobin-q values (Yermack, 1996). While results of other studies suggest that larger boards provide better monitoring due to the fact that they facilitate better allocation of directors to various committees (Klein, 2002b). Within the context of AC formation Chen *et al.* (2009) document a positive relation between the number of directors serving on the board and the likelihood of voluntary AC formation for non-top 500 Australian companies. The following hypothesis is developed:

H1. There is a relation between board size and the likelihood of AC functionality.

2.5.2 CEO-chairman duality. The separation between the positions of CEO and the chairman of the board results in stronger board governance as the board becomes less susceptible to domination by the CEO (Fama and Jensen, 1983; Messier, 2000). Empirical studies find that CEO-chairman duality is positively related to earnings management (Davidson *et al.*, 2004) and even the likelihood of SEC enforcement actions (Dechow *et al.*, 1996). Auditor's view CEO-Chairman duality as a risk factor as evidenced by charging higher audit fees (Tsui *et al.*, 2001). Finally, Chen *et al.* (2009) find that companies with independent CEOs are more likely to form an AC. The following hypothesis is developed:

H2. There is a relation between CEO-Chairman Duality and the likelihood of AC functionality.

2.5.3 Board independence. There is extensive evidence regarding the role of board independence in promoting accounting conservatism (e.g. Ahmed and Duellman, 2007), mitigating earnings management (e.g. Klein, 2002a; Peasnell *et al.*, 2005), and deterring corporate fraud (e.g. Beasley, 1996; Dechow *et al.*, 1996; and Farber, 2005). Consistent with this evidence Firth and Rui (2007) and Chen *et al.* (2009) document a positive relation between voluntary AC formation and board independence in Hong Kong and Australia respectively suggesting complementary relation. However, given our previous argument concerning the possibility of substitutive and complementary relations between governance mechanisms we develop the following hypothesis:

H3. There is a relation between board independence and the likelihood of AC functionality.

2.5.4 Auditor type. Extant audit quality literature suggests that BigX auditors provide higher quality audits than their non-BigX counterparts and in turn are considered better governance mechanisms. This argument is based on two factors. First, BigX auditors have sufficient resources to attract, retain, and develop high caliber personnel. Second, the large portfolio of BigX clients makes it likely that the benefits of compromising independence *vis-à-vis* any one client less than the costs of loss of reputation and in turn other clients[6]. In support to this argument studies have found that the engagement of a BigX auditor results in less earnings management (Becker *et al.*, 1998; and Francis *et al.*, 1999) and higher earnings response coefficients (Teoh and Wong, 1993).

Regarding the effect of auditor type on the voluntary formation of ACs the results are mixed. Pincus *et al.* (1989) find a positive relation between engaging a BigX and the likelihood of AC formation. On the contrary, Firth and Rui (2007) document a negative relation, while Chen *et al.* (2009) do not find any significant relation[7]. Given this inconclusive evidence we develop the following hypothesis:

H4. There is a relation between auditor type and the likelihood of AC functionality.

2.5.5 Blockholder ownership. Blockholders are important monitoring mechanisms. Their effectiveness is a function of their stakes in the company. For example, Koh (2003) and Chung *et al.* (2002) document negative relations between institutional ownership and aggressive earnings management. In addition, companies with influential institutional investors are less likely to be associated with auditors whose reputation has been tarnished. This view is consistent with Barton (2005) who finds that Andersen clients with greater

institutional ownership defected faster than their counterparts with smaller institutional ownership. Finally, Firth and Rui (2007) document a positive relation between blockholder ownership and the likelihood of the existence of an AC for companies in Hong Kong.

H5. There is a relation between blockholder ownership and the likelihood of AC functionality.

2.5.6 Managerial ownership. As previously discussed in first section of the paper managerial ownership is used as an incentive aligning the interests of managers with those of shareholders and in turn reducing agency problems. However prior studies have shown that managerial ownership might have non-linear effects. For example, studies such as Morck *et al.* (1988), Rosenstein and Wyatt (1997) and Gul and Wah (2002) demonstrate that high levels of ownership could lead to managerial entrenchment which is an impediment to strong governance.

Within the context of ACs Chen *et al.* (2009) hypothesize a negative relation between managerial ownership and AC formation based on the argument that such ownership aligns manager-shareholder interests thus reducing the need for an AC (i.e. a substitutive relation). However, they do not find a significant relation. Therefore, we develop the following non-directional hypothesis:

H6. There is a relation between managerial ownership and the likelihood of AC functionality.

3. Research design

Our sample consists of the top 100 companies listed on the Egyptian Stock Exchange (EGX100). Company data was obtained from Egyptian Company for Information Dissemination (EGID) and from annual reports. Data for the variables of interest and control variables are were collected as of December 31, 2009.

Audit committee functionality was based on interviews with key accounting personnel or their surrogates conducted during the fourth quarter of 2009. Based on these interviews a company was considered to have a functioning AC per the opinion of the subject which included their knowledge that the AC members held at least one ''actual'' meeting. Although such measurement is noisy it is used for three reasons. First, AC formation is mandatory of all listed companies in Egypt as discussed in section 2.3. Second, unlike other studies which examine whether an AC exists or not, we examine whether a ''formally'' existing AC is functional or not. Third, we believe that responses from insiders, although potentially noisy, actually biases against finding results yielding more conservative inferences. In addition insiders were used instead of AC members to reduce extremely biased responses about the latter group performance and to maximize the number of responses.

Given our research question and hypotheses we measure six different non-AC corporate governance variables; board size (*BSIZE*), CEO-chairman duality (*DUAL*), board independence (*BINDEP*), type of auditor (*AFIRM*), blockholder ownership (*BLOCK*), and managerial ownership (*MANAG*). Consistent with prior AC formation studies (e.g. Firth and Rui, 2007; Chen *et al.*, 2009) we control for size (LOGSIZE), leverage (LEVER). We also control for industry type (INDUS) and financial reporting risk (FINRISK) which were used by Subramaniam *et al.* (2009) in examining the determinants of risk management committees. Accordingly the following logistic regression model was estimated:

$$ACOM = \beta_0 + \beta_1 BSIZE + \beta_2 DUAL + \beta_3 BINDEP + \beta_4 AFIRM + \beta_5 BLOCK + \beta_6 MANAG + \beta_7 LOGSIZE + \beta_8 LEVER + \beta_9 INDUS + \beta_{10} FINRISK + \varepsilon$$

4. Empirical evidence

Table I presents the descriptive statistics. The mean of *ACOM* is 0.32, in other words out of the 100 companies in the sample 32 had functioning ACs while 68 had non-functioning ACs.

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Table I Descriptive statistics

Variable	*Min.*	*Max.*	*Mean*	*Std. deviation*
ACOM	0.000	1.000	0.320	0.4688
BSIZE	3.000	31.000	10.540	5.591
DUAL	0.000	1.000	0.620	0.488
BINDEP	0.000	0.910	0.189	0.2422
AFIRM	0.000	1.000	0.370	0.4852
BLOCK	0.000	0.970	0.539	0.270
MANAG	0.000	0.980	0.111	0.209
SIZE (Billions L.E.)	0.011	30.100	2.349	5.291
LEVER	0.000	19.510	1.295	3.588
INDUS	0.000	1.000	0.160	0.368
FINRISK	0.000	0.890	0.283	0.234

Audit committee functionality (ACOM): dichotomous variable equals 1if the company has a functioning audit committee and 0 otherwise; Board size (BSIZE): the total number of directors on the board; CEO-chair duality (DUAL): dichotomous variable equals 1 when the company's CEO also serves as the board chairman and 0 otherwise; Board independence (BINDEP): The fraction of non-executive directors on the board calculated by the number of non-executive directors divided by board size; Audit firm (AFIRM): dichotomous variable equals to 1 if the external auditor is a ''Big Four'' auditor and 0 otherwise; Block-holders ownership (BLOCK): fraction of shares held by major (institutional) shareholders of 5 percent or more; Managerial ownership (MANAG): fraction of shares held by management directors; Firm size (SIZE): total assets; Leverage (LEVER): total long term liabilities divided by total stockholders' equity; Industry type (INDUS): dichotomous variable equals to 1 if the company is in the financial sector and 0 otherwise; Financial reporting risk (FINRISK): the sum of the accounts receivable and inventory divided by total assets; $N = 100$

The average board members number (*BSIZE*) is 11. On average, 62 percent of the sampled companies have CEOs who also act as a board chairman (*DUAL*) while almost one-fifth of the board of directors (19 percent) is outside directors (*BINDEP*). Only 37 percent of the sample companies engage a Big-4 auditor (*AFIRM*). The average blockholder ownership (*BLOCK*) is 54 percent while that of managers (*MANAG*) is 11 percent. The average firm size in terms of total assets (*SIZE*) is 2.349 billion Egyptian pounds with the maximum (minimum) of total assets being 30.1 (0.011) billion Egyptian pounds[8]. Sampled companies are relatively highly leveraged with a mean leverage (*LEVER*) of 1.3. In terms of industry type (*INDUS*) around 16 percent of the sample companies are financial companies. Finally, on average around one-third of total company assets is comprised on accounts receivable and inventories (*FINRISK*).

Table II presents the univariate associations between AC functionality and non-AC governance variables and firm characteristics. Functionality (ACOM) is positively associated with board size (*BSIZE)*, board independence (*BINDEP*), company size

Table II Pearson correlations

	ACOM	*BSIZE*	*DUAL*	*BINDEP*	*AFIRM*	*BLOCK*	*MANAG*	*SIZE*	*LEVER*	*INDUS*	*FINRISK*
ACOM	1										
BSIZE	0.554**	1									
DUAL	−0.523**	−0.317**	1								
BINDEP	0.654**	0.476**	−0.380**	1							
AFIRM	0.096	0.294**	−0.040	0.180	1						
BLOCK	0.107	−0.041	−0.085	0.226*	0.085	1					
MANAG	0.095	0.081	0.010	−0.029	0.088	0.004	1				
SIZE	0.250*	0.540**	−0.080	0.320*	0.352*	0.120	0.331**	1			
LEVER	0.142	0.214*	−0.041	0.160	0.065	0.198*	−0.062	0.131	1		
INDUS	0.227*	0.335**	−0.108	0.061	0.287**	−0.039	−0.025	0.025	0.427**	1	
FINRISK	0.510**	0.280**	−0.295**	0.324**	0.115	0.013	−0.0060	0.061	−0.0019	0.040	1

Notes: * indicates significance at the <0.05 level; ** indicates significance at the <0.01, level; *** indicates significance at the <0.001 level; $N = 100$; All variables are defined in Table I Panel A

(*SIZE*), financial sector membership (*INDUS*), and financial reporting risk (*FINRISK*). However ACOM was negatively related to CEO-Chairman duality (*DUAL*).

Table III compares means of both non-AC governance variables and firm characteristics between companies with functioning ACs with those with non-functioning ACs. The results on Table III are consistent with those of Table II. Univariate analysis show that, on average, companies with functioning ACs have larger boards (*BSIZE*), are less likely to have CEO-Chairman duality (*DUAL*), and have greater board independence. There is no significant difference in terms of blockholder ownership (*BLOCK*) and managerial ownership (*MANAG*). In terms of firm characteristics companies with functioning ACs tend to be larger in size (*SIZE*), belong to the financial sector company (*INDUS*), and have greater financial reporting risk (*FINRISK*). Thus results suggest that there are complementary relations between each of board size, duality, board independence and AC functionality. However these univariate results in Tables II and III should be interpreted cautiously since the effects of other factors on AC functionality are not concurrently considered.

Table IV shows the results of the estimated logistic regression. The overall model fit is acceptable as suggested by the Hosmer-Lemeshow goodness-of-fit statistic ((2 = 23.704 df = 8, $p = 0.257$)[9]. In addition the Cox and Snell R^2 indicates that the variables of interest and controls explain a significant amount of variation in AC functionality. Overall the multivariate results in Table IV are consistent with the univariate results in Tables II and III.

Table III Differences between means: companies with functional ($N = 32$) and non-functional audit ($N = 68$) committees

Variable	*Functional audit committee*	*Mean*	*Mean difference*
BSIZE	Yes	15.03	6.6***
	No	8.43	
DUAL	Yes	0.25	−0.54***
	No	0.79	
BINDEP	Yes	0.42	0.34***
	No	0.08	
AFIRM	Yes	0.44	0.10
	No	0.34	
BLOCK	Yes	0.58	0.06
	No	0.52	
MANAG	Yes	0.14	0.04
	No	0.10	
SIZE (Billions L.E)	Yes	4.27	2.83*
	No	1.44	
LEVER	Yes	2.04	1.09
	No	0.95	
INDUS	Yes	0.28	0.18*
	No	0.10	
FINRISK	Yes	0.46	0.26***
	No	0.20	

Notes: * indicates significance at <0.05 level; ** indicates significance <0.01 level; *** indicates significance at < 0.001 level; Audit committee functionality (ACOM): dichotomous variable equals 1 if the company has a functioning audit committee and 0 otherwise; Board size (BSIZE): the total number of directors on the board; CEO-chair duality (DUAL): dichotomous variable equals 1 when the company's CEO also serves as the board chairman and 0 otherwise; Board independence (BINDEP): the fraction of non-executive directors on the board calculated by the number of non-executive directors divided by board size; Audit firm (AFIRM): dichotomous variable equals to 1 if the external auditor is a ''Big Four'' auditor and 0 otherwise; Block-holders ownership (BLOCK): fraction of shares held by major (institutional) shareholders of 5 percent or more; Managerial ownership (MANAG): fraction of shares held by management directors; Firm size (SIZE): total assets; Leverage (LEVER): total long term liabilities divided by total stockholders' equity; Industry type (INDUS): dichotomous variable equals to 1 if the company is in the financial sector and 0 otherwise; financial reporting risk (FINRISK): the sum of the accounts receivable and inventory divided by total assets

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Table IV Logistic regression of audit committee functionality on non-audit committee governance variables and controls ($N = 100$)

Variable	*Predicted sign*	*Coefficient estimate*	*Standard error*	*Wald statistic (z-ratio)*
BSIZE	?	0.191	0.130	2.163*
DUAL	?	−2.164	1.094	3.913***
BINDEP	?	12.886	5.063	6.479****
AFIRM	?	−4.766	2.083	5.237***
BLOCK	?	−2.805	2.633	1.134
MANAG	?	0.850	2.527	0.113
LOGSIZE	+	0.982	0.427	5.290****
LEVER	+	0.043	0.236	0.033
INDUS	?	2.534	1.637	2.397*
FINRISK	+	11.432	4.121	7.695***
Intercept	?	−25.412	9.703	6.859****
Model summary	−2 Log likelihood ratio = 28.781			
Model χ^2	23.704 (df = 8, $p = 0.257$)			
Cox and Snell R^2	0.619			

Notes: * indicates significance at <0.15 level; ** indicates significance at <0.1, level; *** indicates significance at <0.05, level; **** indicates significance at <0.01, level; (all one-tailed where signs are predicted, two-tailed otherwise); Audit committee functionality (ACOM): dichotomous variable equals 1 if the company has a functioning audit committee and 0 otherwise; Board size (BSIZE): the total number of directors on the board; CEO-chair duality (DUAL): dichotomous variable equals 1 when the company's CEO also serves as the board chairman and 0 otherwise; Board independence (BINDEP): the fraction of non-executive directors on the board calculated by the number of non-executive directors divided by board size; Audit firm (AFIRM): dichotomous variable equals to 1 if the external auditor is a ''Big Four'' auditor and 0 otherwise; Block-holders ownership (BLOCK): fraction of shares held by major (institutional) shareholders of 5 percent or more; Managerial ownership (MANAG): fraction of shares held by management directors; Firm size (SIZE): total assets; Leverage (LEVER): total long term liabilities divided by total stockholders' equity; Industry type (INDUS): dichotomous variable equals to 1 if the company is in the financial sector and 0 otherwise; Financial reporting risk (FINRISK): the sum of the accounts receivable and inventory divided by total assets

ACOM is positively related to *BSIZE,* although at a marginal level of significance (<15 percent), partially supporting *H1*. This result suggests that companies with larger boards are more likely to have functional ACs. This could be explained by the fact that larger boards could yield more efficient division of responsibilities among directors who could dedicate their time and effort serving as members on fewer committees (i.e. high functionality). This argument is supported by evidence of Klein, 2002b and Chen *et al.* (2009). Thus we argue that a complementary relation between AC functionality and board size exists in our setting.

ACOM is negatively and significantly related to *DUAL* suggesting that a CEO who also serves as the chairman of board impedes or at least does not encourage the actual functioning of the AC beyond its formal existence. Such as result is not surprising given the evidence of prior studies (e.g. Davidson *et al.*, 2004; Dechow *et al.*, 1996; Chen *et al.*, 2009) presented in section 2.5.2. Thus *H2* is supported and a complementary relation between *DUAL* and *ACOM* is documented.

Regarding board independence, the significant positive relation between *ACOM* and *BINDEP* is consistent with prior studies which document the benefits of having an independent board as discussed in details in section 2.5.3 (e.g. Ahmed and Duellman, 2007; Klein, 2002a; Peasnell *et al.*, 2005; Beasley, 1996; Dechow *et al.*, 1996; Farber, 2005; Firth and Rui (2007); Chen *et al.*, 2009). Our evidence provides support for *H3* and indicates a complementary relation.

The significant negative relation between *ACOM* and *AFIRM* is consistent with Firth and Rui (2007) who find that forming an audit committee is a substitute for engaging a higher quality auditor. Thus the evidence supports *H4* and suggests a substitutive relation between auditor size and audit committee functionality.

The remaining two hypotheses *H5* and *H6* regarding blockholder ownership and managerial ownership were not supported. Consistent with prior studies and with our univariate results

we document a significant positive relation between *LOGSIZE* and *ACOM* implying that the size of larger, and presumably more complex, companies necessitates the proper functioning of ACs. The positive relation between *FINRISK* and *ACOM* is consistent with Subramaniam *et al*. (2009) who find that companies with higher financial reporting risk are more likely to have risk management committees (RMCs) in Australia. We argue that within the Egyptian setting the AC may be partially assuming some of the duties of the RMC. Therefore, higher financial reporting risk is a diver behind AC functionality.

5. Summary and conclusion

The AC plays an important role in corporate governance as it directly oversees the financial reporting process and regulates the client-auditor relation. Given the mandatory nature of AC formation in Egypt and the concerns of the ROSC report (2009) of the World Bank we empirically examine whether certain non-AC governance factors affect the actual functionality of the AC beyond the mere regulatory compliance.

Using the top 100 companies in the Egyptian Stock Exchange (EGX100) and by conducting interviews with accounting personnel of companies or their surrogates we examine the effects of six non-AC corporate governance characteristics on the likelihood of AC functionality; board size, CEO-Chair duality, board independence, auditor type, blockholder ownership, and managerial ownership. We find that board size and board independence, (CEO-chairman duality) are positively (negatively) related to audit committee functionality, although the board size effect was weaker, suggesting complementary governance relations. On the other hand, we document negative relation between auditor type (Big4) and audit committee functionality indicating a substitutive governance effect.

Results suggest that board size, CEO-Chair duality, and board independence have complementary effects on AC functionality. In other words; as these characteristics improve AC functionality improves and vice versa. On the other hand we find a substitutive relation between auditor type and AC functionality implying that as the auditor quality improves the AC functionality deteriorates. A limitation of our study is that the responses of the interviewed subjects might be biased however we believe that such bias works against finding results making our inferences relatively conservative. However, our preliminary evidence provides a basis for more in-depth analysis of audit committees in Egypt as more information becomes available.

Our study highlights the importance of continuous monitoring of corporate governance systems to assure that they are properly functioning beyond mere cosmetic regulatory compliance. Such efforts are already on there way by the establishment of the Egyptian Financial Supervisory Authority (EFSA).

Notes

1. The Egyptian Financial Supervisory Authority (EFSA) is a public Authority was established by Law #10 of 2009. EFSA is responsible for supervising and regulating non-banking financial markets. One of its objectives is maintain a certain level of stability and competitiveness for the purpose of attracting local and foreign investments to the Egyptian market. It could be considered the counterpart of the US Public Company Accounting Oversight Board (PCAOB) created by the Sarbanes Oxley Act (Securities and Exchange Commission, 2002).

2. Shleifer and Vishny (1997) define corporate governance as ''the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. How do the suppliers of finance get managers to return some of the profits to them? How do they make sure that managers do not steal the capital they supply or invest it in bad projects? How do suppliers of finance control managers?'' While it is defined by the Cadbury Report (Cadbury Committee, 1992) as ''the system by which companies are directed and controlled''. Finally the Organization for Economic Co-operation and Development (OECD) (2004) Principles of Corporate Governance describes governance as ''a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and

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monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and should facilitate effective monitoring''.

3. See for example Section 301. Public Company Audit Committee (SOX) states that ''*Each* member of the audit committee of the issuer shall be a member of the board of directors of the issuer, and shall otherwise be *independent*'' [Emphasis added].
4. Article Seven of Securities Listing & De-listing Rules of Cairo and Alexandria Stock Exchanges (Capital Market Authority, 2002) states that ''Each company having securities listed on the Stock Exchange shall have an Audit Committee to be selected by the company's Board of Directors with at least three qualified non-executive independent directors, one of them, is to be selected as the Chairman. If the company does not have a sufficient number thereof, the Committee may include experienced persons and shall perform its work separately from the company's management.'' While Article 6.1 of the Egyptian Code of Corporate Governance states that ''An audit committee to be set up comprising at least three non-executive board members. At least one of its members should have financial and accounting expertise. If the number of non-executives on the board of directors is less than three, one or more members may be appointed from outside the corporation''.
5. Listing requirements.
6. DeAngelo (1981) defines audit quality as the ''market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach''.
7. Given the different time periods used in these studies and the associated change in the number of BigX auditors Big 8, Big 5, and Big 4 labels are used in Pincus *et al.* (1989), Firth and Rui (2007), and Chen *et al.* (2009) respectively.
8. The USD exchange rate is around 1USD = L.E.5.7 which translates into roughly $0.002, $0.41, $0.52 billion of minimum, average, and maximum total assets.
9. A Hosmer-Lemeshow statistic greater than 0.05 is indicative of good model fit (Cox, 1970; Hosmer and Lemeshow, 1989; Kleinbaum *et al.*, 1982).

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