The effects of corporate governance on financial performance and financial distress: evidence from Egypt

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Abstract

Purpose – *This paper aims to empirically examine the quality of corporate governance (CG) practices in Egyptian-listed companies and their impact on firm performance and financial distress in the context of an emerging market such as that of Egypt.*

Design/methodology/approach – *To assess the level of CG practices at a given firm, the current study constructs a corporate governance index (CGI) which consists of four dimensions: disclosure and transparency, composition of the board of directors, shareholders' rights and investor relations and ownership and control structure. Based on a sample of 86 non-financial firms listed on the Egyptian Exchange, the effects of CG on performance and financial distress are assessed. Tobin's Q is used to assess corporate performance. At the same time, the Altman Z-score is used as a financial distress indicator, as it measures financial distress inversely. The bigger the Z-score, the smaller the risk of financial distress.*

Findings – *The overall score of the CGI, on average, suggests that the quality of CG practices within Egyptian-listed firms is relatively low. The results do not support the positive association between CG practices and financial performance. In addition, there is an insignificant negative relationship between CG practices and the likelihood of financial distress. The current study also provides evidence that firm-specific characteristics could be useful as a first-pass screen in determining firm performance and the likelihood of financial distress.*

Research limitations/implications – *The sample size and time frame of our analysis are relatively small; some caution would be needed before generalizing the results to the entire population.*

Practical implications – *The findings may be of interest to those academic researchers, practitioners and regulators who are interested in discovering the quality of CG practices in a developing market such as that of Egypt and its impact on financial performance and financial distress.*

Originality/value – *This paper extends the existing literature, in the Egyptian context in particular, by examining firm performance and the risk of financial distress in relation to the level of CG mechanisms adopted.*

Keywords *Egypt, Corporate governance index, Firm performance, Emerging markets, Financial distress*

Paper type *Research paper*

1. Introduction

Attention to corporate governance (CG) has quite a long history since the seminal paper on the subject of the "principal–agent problem" by Jensen and Meckling (1976). They argued that the existence of the principal–agent problem as a consequence of the separation of ownership and control raises a conflict between the interests of managers and shareholders. As a result, many studies have made significant contributions by investigating the role of CG in minimizing such conflicts of interest between two sides (Ross, 1973; Fama, 1980; Fama and Jensen, 1983; Mallin, 2001).

The financial crisis in 2008 and high-profile financial scandals in Enron, World COM, Lehman Brothers, AIG and others have again drawn academic researchers, policymakers, regulatory institutions and investors to examine the level of CG practices and its impact on

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firm performance and financial distress. In general, the quality of CG can be evaluated on the basis of the principles of disclosure and transparency, relationship with shareholders and stakeholders, characteristics of board of directors, policies and compliance and ownership and control structure. According to Black *et al.* (2006) and Hodgson *et al.* (2011), good CG practices strengthen firm performance. At the same time, these practices protect firms against the risk of financial distress (Parker *et al.*, 2002; Wang and Deng, 2006; Abdullah, 2006).

In our context, the Egyptian economy over the past two decades has encountered profound changes from greater integration with the international economy (e.g. the Privatisation Law 203/1991, Capital Market Authority Law 95/1992, the Investment Law 8/1997 and the Central Depository Law 93/2000) (Abd-Elsalam and Weetman, 2003). As a result, CG has also witnessed remarkable changes. For instance, a joint project between the World Bank and the Ministry of Foreign Trade was undertaken in 2001 to benchmark Egyptian CG practices against the CG principles of the Organization of Economic Cooperation and Development (OECD) (Elsayed, 2007). Then, in October 2005, the Egyptian Institute of Directors (EIoD), as authorized by the Ministry of Investment, issued the Egyptian Corporate Governance Code as a set of guidelines and standards for the companies listed in the Egyptian Exchange (Ebaid, 2011). Finally, the proposed code as a voluntary code was reviewed by experts from OECD, the World Bank and the Institutional Finance Corporation (Samaha *et al.*, 2012).

Although this code developed on CG principles, there is still controversy about the impact of CG on firm performance and financial distress, in the developing countries in particular. Therefore, the current study extends the existing literature on CG by examining the quality of CG practices[1] in a sample of 86 non-financial firms listed on the Egyptian Exchange. The designated corporate governance index (CGI) consists of four dimensions:

1. disclosure and transparency (DC);
2. structure of the board of directors (BOD);
3. shareholders' rights and investor relations (SI); and
4. ownership and control structure (OC) for assessing the level of governance practices in a given firm.

To estimate the effects of CG on performance and financial distress, corporate performance is assessed using Tobin's Q. At the same time, the Altman *Z*-score is used as a financial distress indicator, as it measures financial distress inversely. The bigger the *Z*-score, the smaller the risk of financial distress. The overall score of the CGI suggests that the quality of CG practices within Egyptian-listed firms is relatively low. Our results do not support the positive association between CG practices and financial performance. In addition, there is an insignificant negative relationship between CG practices and the likelihood of financial distress. The current study also provides evidence that firm-specific characteristics could be useful as a first-pass screen in determining firm performance and the likelihood of financial distress. Our findings may be of interest to those academic researchers, practitioners and regulators who wish to discover the quality of CG practices in a developing market such as Egypt's, and its impact on financial performance and financial distress.

The remainder of this paper is structured as follows. The next section reviews the literature and develops the hypotheses. A detailed discussion of the CGI used to assess the quality of CG practices, measures of corporate performance and financial distress is presented in Section 3. Section 4 underlines the sample data and the measurement of variables. Section 5 describes the empirical results and discussion obtained by a Least Absolute Value (LAV) regression and logistic regression analysis and, finally, the research conclusions and suggestions for future work are presented in Section 6.

2. Literature review and hypothesis development

2.1 CG and financial performance

Over recent decades, numerous empirical researchers have been increasingly concerned with the impact of CG on financial performance. To date, a comprehensive literature review shows that no consensus has been reached among researchers (Agarwal and Knoeber, 1996; Xu and Wang, 1997; Lehman and Weigand, 2000; Gruszczynski, 2006; Black *et al.*, 2006; and Berthelot *et al.*, 2010). Some of these studies report a positive significant impact of CG on financial performance. For instance, Drobetz *et al.* (2004) conclude that measures of firm value such as Tobin's Q and market-to-book value are significantly related to better CG practices. Brown and Caylor (2006) find a significantly positive association between Tobin's Q and a constructed CGI which consists of 51 elements of internal and external governance mechanisms.

In the context of developing economies, Mohanty (2004) confirms the existence of a significant positive linkage between CG practices and financial performance, as measured by Tobin's Q and excess stock return. Black *et al.* (2006) investigate whether the overall CGI is correlated with the market value of Korean public companies. The findings show that stronger CG predicts higher market values. At the same time, it leads to a reduction in the cost of a firm's of capital, as better CG is highly appreciated by investors. In addition, Ehikioya (2009) examines the link between CG structure and firm performance for 107 firms listed in the Nigerian Stock Exchange. The results, on the one hand, report the positive relationship between ownership concentration and firm performance where the highly concentrated ownership structure protects the interests of investors and other stakeholders. On the other, there is no association between board composition and firm performance. Huang (2010) reports that board size, number of outside directors and family-owned share positively affect bank performance. This articulation is consistent with the conclusion of Varshney *et al.* (2012), who provide empirical evidence that good CG practices positively affect a firm's performance as measured by economic value added. However, when other traditional performance measurements, such as Tobin's Q, return on capital used and return on assets are considered, this relationship cannot be validated.

Although the OECD made tremendous efforts to enhance the positive linkage between the best practices of CG and firm performance, such an association is not as clear-cut, in particular, in both transition economies and emerging markets. For instance, Aboagye and Otieku (2010) find no association between the state of CG among rural and community banks in Ghana and their financial performance. In addition, Al-Tamimi (2012) indicates that there is an insignificant positive relationship between the CG practices of UAE national banks and performance level. In this context, Makki and Lodhi (2014) investigate the existence of a critical structural relationship between CG, intellectual capital efficiency and financial performance. They find no direct association between CG and a firm's financial performance. However, good CG in a firm has a significant positive impact on intellectual capital efficiency which indirectly enhances its financial performance.

In the Egyptian context, Elsayed (2007) investigates the relationship between CEO duality and corporate performance for 92 Egyptian firms during the period from 2000 to 2004. The empirical findings reveal no evidence regarding the impact of CEO duality on corporate performance. However, such positive and significant effect can be noted when corporate performance is low. Omran *et al.* (2008) examine the association between ownership concentration as a CG mechanism and corporate performance, using 304 firms as a representative group from the Arab equity markets, including Egypt, Jordan, Oman and Tunisia. They conclude that ownership concentration has no significant impact on firm performance. Contrary to the agency theory (CEO non-duality structure) and the stewardship theory (CEO duality structure), Elsayed (2010) demonstrates that the appropriate board leadership structure varies with firm size, age and ownership structure. In addition, Elsayed (2011) finds a positive association between board size and corporate

performance in the presence of CEO non-duality. However, such association turns to be negative under the existence of CEO duality. A finding consistent with Wahba (2015) using a sample of 40 Egyptian-listed firms demonstrates that increasing the proportion of non-executive board members under CEO duality negatively affects firm financial performance.

In the light of the above mixed results, the expected positive impact of internal and external CG mechanisms is greatly affected by the environment. Therefore, the current study is highly motivated to re-examine whether CG practices can positively enhance the financial performance of Egyptian corporations. Based on the literature review and the main research question mentioned above, the first hypothesis is formulated as follows:

H1. Corporate governance practices positively affect Egyptian corporate performance.

2.2 Corporate governance and financial distress

The association between financial distress and CG has come to the forefront of academic debate since the 1980s. To validate this association, the basic stream of numerous studies in this field is devoted to clarifying how CG mechanisms in healthy firms differ from those in distressed firms and their impact on the probability of default (Daily and Dalton, 1994; Elloumi and Gueyié, 2001; Lee and Yeh, 2004; Wang and Deng, 2006; Persons, 2007; Swain, 2009; Al-Tamimi, 2012). Another stream of financial distress studies is mainly concerned with the impact of CG mechanisms on the survival of distressed firms (Cutting and Kouzmin, 2000; Parker *et al.*, 2002; Muranda, 2006).

Regarding the association between CG and financial distress, Hambrick and D'Aveni (1992) report that having a dominant CEO as a weak practice of CG is more likely to be associated with firm bankruptcy. Similarly, Daily and Dalton (1994) confirm the positive association between the likelihood of bankruptcy and bad practices of CG as measured by CEO duality and lower independence among directors. Lee and Yeh (2004) extend the literature by providing evidence that firms with weak CG increase the wealth expropriation risk and, in turn, reduce firm value. Hence, the prospect of default is highly predictable. In the context of the Chinese transitional economy, Wang and Deng (2006) confirm the negative linkage of financial distress probability and CG characteristics such as large shareholder ownership, state ownership and the proportion of independent directors. However, other CG attributes including CEO duality, board size, managerial ownership and degree of balanced ownership have no impact on the probability of default. Similarly, Abdullah (2006) reveals the existence of a negative association between the distressed status of Malaysian firms and ownership structure, as measured by the percentage of shares held by executive directors, non-executive directors and outside blockholders. In addition, Li *et al.* (2008) show that ownership concentration, state ownership, ultimate owner, independent directors and auditors' opinion are negatively associated with the likelihood of financial distress. However, they find a positive association between the administrative expense ratio and the probability of financial distress. Moreover, managerial ownership has no impact on financial distress. Yet, Al-Tamimi (2012) finds a positive significant relationship between financial distress and the CG practices of UAE national banks.

Regarding the impact of CG practices on the survival of the distressed firms, Parker *et al.* (2002), examining 176 -financially distressed firms in the USA, find a negative significant association between the replacement of the CEO with an outsider and the likelihood of firm survival. However, a large proportion of blockholder and insider ownership positively affects the likelihood of firm survival. Similarly, Muranda (2006) analyses the relationship between CG failures and financial distress, taking eight Zimbabwean financial institutions which are in financial distress. The results provide evidence that the lack of board independence creates a power imbalance in the board. Such imbalances between executive and non-executive board members lead to the collapse of board effectiveness.

Given this unique association between CG attributes and financial distress, there is a need to clarify such an association within the Egyptian context. Accordingly, the second hypothesis is set as follows:

H2. There is a significant negative association between corporate governance practices and the likelihood of financial distress.

3. Measuring CG, financial performance and financial distress

3.1 Corporate governance index

A CGI, has been constructed to assess the quality of CG practices using a sample of companies listed on the Egyptian Exchange. The constructed index is composed of categories which reflect the four mechanisms of CG, as follows:

1. disclosure and transparency;
2. board of directors' characteristics;
3. shareholders' rights and relationship with investors; and
4. ownership and control structure.

The CGI was constructed on the basis of governance indices developed in previous studies (Black *et al.*, 2006; Varshney *et al.*, 2012; Lima and Sanvicente, 2013). In addition, the best practices revealed in Egypt's set of CG guidelines and standards issued in October, 2005 are also considered to ensure compatibility between the constructed index and the Egyptian environment.

Accordingly, the CGI consists of 15 questions, as follows:

- three questions about disclosure and transparency;
- six questions concerning the different characteristics of the board of directors;
- two questions devoted to shareholders' rights and investor relations; and
- four questions on ownership and control structure.

The 15 elements of the CGI are summarized as follows:

1. Disclosure and transparency (DC):
   - Does the firm use one of the Big Four international auditing firms?
   - Does the firm disclose the amount of executives' compensations?
   - Does the firm disclose its governance structures and policies?
2. Board of directors' characteristics (BOD):
   - Does the Board have more than 50 per cent external directors (non-executive directors)?
   - Is there a permanent auditing committee?
   - Does the Board contain at least one-third of members as independent members?
   - Are Board committees chaired by independent members?
   - Do Board committees consist of at least three non-executive board members the majority of whom are independent?
   - Does the Board contain female members?
3. Shareholder rights and investor relations (SI):
   - Is there an institutional investor with at least 5 per cent of the firm's equity?
   - Does the firm exercise the one-share one-vote rule indiscriminately?

4. Ownership and control structure (OC):
   - Does the firm disclose its ownership structure?
   - Do controlling shareholders hold less than 70 per cent of voting rights?
   - Does the firm have employee stock options (ESOPs)?
   - Is there an ownership concentration where at least 5 per cent of the firm's equity ownership is held by an investor?

It should be noted that all 15 of the CGI questions are answered with publicly available data in the firms' annual reports and their Web sites. According to Lima and Sanvicente (2013), the use of such publicly available secondary data eliminates the risk of third-party response.

Typically, two different scoring approaches can be used: the weighted vs unweighted CGI. Following previous studies of scoring indices (Cooke, 1989; Botosan, 1997; Patel and Dallas, 2002; Kristandl and Bontis, 2007; Shahwan and Hassan, 2013; Kamel and Shahwan, 2014), the unweighted CGI has been adopted to measure the extent of CG practices by Egyptian-listed firms. Such a scoring scheme was chosen for the following reasons: first, empirical evidence from earlier studies (Wallace and Naser, 1995; and Coombs and Tayib, 1998) shows that weighted and unweighted indices are closely correlated. This implies that no significant difference is expected between them. Second, the use of weighted CGI may be affected by subjectivity risk where different weights are assigned to different items in the index. The previous literature (Abd-Elsalam, 1999; Kamel and Shahwan, 2014) indicates that such subjectivity adversely affects the scoring of the index.

Accordingly, by adopting the unweighted CGI, each of the index questions earns a score of "1" if the answer is "yes" and "0" otherwise. The total score of CGI for each company (j) can be defined as follows:

$$CGI_J = \frac{\sum_{i=1}^{n} X_{ij}}{\sum_{i=1}^{n} M_i} \quad (1)$$

where M_i is the maximum possible score awarded to any firm for all categories ($i=1$, [. . .],4). $X_{i,j}$ reflects the actual score attained by each firm.

To ensure the quality of the CGI, the constructed index should reflect a high degree of stability and consistency. Following Samaha *et al.* (2012), the reliability of our index is assessed as follows:

- First, the firm's annual reports and its Web site are read twice.
- Second, the scoring of the index for each firm is computed twice, with the aim of attaining a similar score both times.
- Third, the existence of any discrepancies between the first and second scores for a specific firm makes the firm liable to a third final assessment.

The adoption of these strategies is expected to enhance the reliability of our index, in particular against the non-disclosure of irrelevant items.

In addition, the internal consistency of the index is assessed using Cronbach's coefficient alpha (α), where the value of this coefficient is in the range of [0,1]. Nunnaly (1978) points out that the value of ($\alpha \geq 0.70$) represents a good indication of reliability. In the current study, Cronbach's α is found to be 0.75, which reveals an acceptable level of internal consistency with the other selected items of the index.

3.2 Measuring corporate performance and financial distress

Tobin's Q is adopted in the current study to measure firm performance. This popular measure was first introduced by Brainard and Tobin (1968) as an alternative measure of corporate performance. Following Florackis *et al.* (2009); Wu (2011); Banos-Caballero *et al.* (2014) and Upadhyay *et al.* (2014), Tobin's Q can be defined as the ratio of the market value of equity plus the book value of debt to the book value of assets, where the market value of equity equals the market price for share multiplied by the shares outstanding. It should be noted that Tobin's Q performs better than other accounting profit ratios, due to the following features:

- first, it is less affected by accounting practices (Banos-Caballero *et al.*, 2014); and
- second, Tobin's Q takes into account firm risk being based on the firm's capital market valuation (Smirlock *et al.*, 1984).

However, the use of Tobin's Q as a proxy for firm performance might be inflated by underinvestment in firms with access to debt financing (John and Litov, 2010; Dybvig and Warachka, 2015).

To assess the impact of CG practices on financial distress, the Altman *Z*-score is used as a proxy of the converse of financial distress, where the *Z*-score model becomes one of the most frequently used early warning models of the risk of financial distress (Yi, 2012). The original model of the *Z*-score was introduced by Altman (1968) as a good predictor of bankruptcy, and the score can be computed as follows:

$$Z - Score = 1.2\,X_1 + 1.4\,X_2 + 3.3\,X_3 + 0.6\,X_4 + 1.0\,X_5 \quad (2)$$

Where:

X_1 = working capital/total assets.

X_2 = retained earnings/total assets.

X_3 = earnings before interest and taxes/total assets.

X_4 = market value equity/book value of total debt.

X_5 = sales/total assets.

It should be noted that there is a converse relationship between the computed value of the *Z*-score and companies' financial distress, implying that the lower the value of the *Z*-score, the more likely a company is to go bankrupt. Following Altman (1968), a company with a *Z*-score over 2.67 is considered to be healthy, whereas a Z-score below 1.81 implies a predicted bankruptcy. Z-scores between 1.81 and 2.67 indicate potential bankruptcy or a gray area.

In 1983, this model was modified by Altman, who substituted the firm's book value of equity for the market value in (X_4) (Altman, 1983). Following Cardwell *et al.* (2003), the modified *Z*-score can be defined as follows:

$$Z - Score = 0.717\,X_1 + 0.847\,X_2 + 3.107\,X_3 + 0.42\,X_4 + 0.998\,X_5 \quad (3)$$

According to this model, the gray area is specified within the range from 1.23 to 2.90 which reflects that a firm is in an unstable financial situation. The firm is in a stable financial status when the *Z*-score is greater than 2.90.

In 1993, Altman revised his model by excluding the variable X_5 (sales to total assets). Such modification is more applicable to non-manufacturing firms. Accordingly, the new revised model consists of four variables, as follows (Altman, 1993):

$$Z - Score = 6.567\,X_1 + 3.26\,X_2 + 6.72\,X_3 + 1.05\,X_4 \quad (4)$$

In this context, a company can be classified as bankrupt when its *Z*-score is less than 1.10. A *Z*-score of > 2.60 is a good indicator of a healthy firm, while a gray area for the firm is implied by a *Z*-score in the range of 1.10-2.60.

3.3 Control variables

To investigate the impact of CG on financial performance and financial distress, certain firm-specific variables derived from the previous literature including firm size, leverage, book-to-market ratio, current ratio, return on sales, capital intensity and ownership type have been used as control variables to control a firm's financial condition and to avoid any specification errors in the estimated model (Wang and Deng, 2006; Elsayed, 2007; Coles *et al.*, 2008; Ehikioya, 2009).

Following Zeitun and Tian (2007) and Ehikioya (2009), a firm's total assets can be used as a proxy for corporate size. However, the value of the Shapiro–Wilk test for normality (Shapiro–Wilk W = 0.490, $p < 0.001$) is significant, implying that the firms' total assets of our sample deviate from a normal distribution. Thus, the natural logarithm of the firms' total assets is used as a proper measure of corporate size. In this context, it is assumed that the likelihood of financial distress is expected to diminish when the firm size increases. At the same time, the firm size is expected to be positively related to its financial performance.

Another control variable is the firm leverage measured as the ratio of total debt to total assets. It is used as a proxy for financial risk. Several studies have investigated the relationship between leverage and corporate performance (Jensen, 1986; Johnson, 1997; Nickell and Nicolitsas, 1999; Michaelas *et al.*, 1999). However, the findings on this relationship are mixed. Regarding the association between leverage and financial distress, as in Baliga *et al.* (1996); Parker *et al.* (2002) and Elsayed (2007), it is expected here that the leverage is negatively associated with the likelihood of bankruptcy.

The ratio of book value of equity to market value of equity is also used as an indicator of firms' market risk perception. According to Fama and French (1992), a high book-to-market ratio illustrates a negative market perception of a firm's prospects and higher levels of market risk, consequently increasing the likelihood of bankruptcy (Parker *et al.*, 2002). Moreover, any increase in this ratio is expected to be negatively associated with the firm's financial performance.

Previous studies show that liquidity and profitability levels adversely affect the likelihood of financial distress (Altman *et al.*, 1977; Ohlson, 1980; Parker *et al.*, 2002; Wang and Deng, 2006). To control for the liquidity status in the current study, the current ratio is expressed as current assets to current liabilities. This ratio is used as an indicator of short-term solvency. According to Ross *et al.* (2005), a current ratio of less than one reflects a negative networking capital which is unusual in a healthy firm. As in Parker *et al.* (2002), return on sales as a proxy for profitability is here measured as earnings before interest and taxes (EBIT) scaled by sales. We expect that firms with lower current ratio and lower return on sales are more likely to go bankrupt. In addition, we include capital intensity, measured as the ratio of net fixed assets to the firm's total assets (Konar and Cohen, 2001; Elsayed and Paton, 2005; Elsayed, 2007).

Last, to control for the ownership structure, the firm ownership type is included as a dummy variable taking the value of "1" if the firm is state-owned, otherwise "0". Several studies have investigated the impact on financial performance and the likelihood of bankruptcy of the type of ownership a firm has (Shleifer and Vishny, 1994; Xu and Wang, 1997; La Porta and Lopez-de-Silanes, 1999; Anderson *et al.*, 2000; Wang and Deng, 2006). However, the findings of these studies are mixed. Following DuCharme *et al.* (2001), we expect that state-owned firms are positively associated with the likelihood of financial distress because they have different motives to manipulate their earnings, in particular before making initial public offerings.

In addition, the ownership concentration and institutional ownership are introduced as control variables to investigate the impact of CG structure on firm performance and financial distress. Ownership concentration is measured by the percentage of shares held by the largest shareholders, while institutional ownership is measured by the percentage of shares held by an institutional investor. It is assumed that higher levels of ownership

concentration and institutional ownership positively reduce the conflict between shareholders' interests and managers' by alleviating the free-ride problem (Shleifer and Vishny, 1997; Wang and Deng, 2006). Previous studies (Elsayed, 2007; Ehikioya, 2009) find that a larger blockholder ownership has a positive impact on firm performance. Similarly, Elloumi and Gueyie (2001) and Parker *et al.* (2002) indicate that higher levels of blockholders have a positive impact on firm survival.

4. Data collection and the measurement of variables

4.1 Data collection and sample selection

This study of the impact of CG on financial performance and financial distress in Egypt, takes as its initial sample 150 firms listed on the Egyptian Exchange in 2008. The yearly annual reports and the Web sites of the selected firms are the main sources of data. Hard copies of the firms' annual reports were obtained by personal visits to the Egyptian Capital Market Authority. It is widely known that financial companies and non-financial institutions are subject to different regulations, tax and accounting rules. Such differences may affect the accuracy of accounting measures (Leventis and Weetman, 2004; Iatridis, 2008; Omar and Simon, 2011; Kamel and Shahwan, 2014). Therefore, 31 financial companies (e.g. banks, insurance companies and brokerage companies were excluded from our initial sample. This brings the sample to 119 non-financial firms. In addition, 33 firms were excluded due to the unavailability of their financial reports, as well as missing values. Accordingly, our final sample consists of 86 non-financial firms. Table I, Panel A, summarizes the composition of the final sample.

To examine the association between CG and financial distress, the financial distress of the Egyptian-listed companies was assessed and defined on the basis of the Altman *Z*-score, as illustrated in Section 3.2. The *Z*-scores of the manufacturing firms and non-manufacturing companies were obtained through equations (3) and (4), respectively. Following Altman (1983, 1993) and Cardwell *et al.* (2003), manufacturing and non-manufacturing companies are more likely to be classified as "distressed firms" when their *Z*-scores are less than 2.90 and 2.60, respectively. Accordingly, our data set could be split into two categories: distressed and non-distressed (healthy) firms. Table I, Panel B, illustrates such classification and the industry-wise profile of the final sample firms which

Table I Sample size and industry representation

Characteristics of the sample	*No. of firms*	*% of sample*
Panel A: Description		
Initial sample	150	126
Financial companies	(31)	(26)
Non-financial companies	119	100
Companies with unavailable annual reports and insufficient data in 2008	(33)	(27.7)
Final sample	86	72.3
Panel B: Decomposition of the final sample		
1. Food and beverage	20	23.3
2. Construction and real estate	29	33.7
3. Industrial goods and services	9	10.5
4. Healthcare and pharmaceuticals	8	9.3
5. Chemicals	7	8.1
6. Basic resources	13	15.1
Total of the final sample firms	86	100
a) Distressed firms	45* (52%)	
b) Non-distressed firms	41** (48%)	

Notes: * and; ** refer to firms which are classified as distressed and non-distressed firms, respectively; the classification is based on the Altman *Z*-score as a proxy of the converse of financial distress

were drawn from six different industries. From the 86 firms in the sample, 45 firms (52 per cent) were defined as distressed firms according to their Altman *Z*-score as a proxy of the converse of financial distress.

To ensure the representativeness of the selected sample, both internal and external validity of the sample are tested as follows: first, following Wahba (2015), the sample encompasses firms that constitute the main index of the Egyptian Exchange (EGX 30). Second, the sample size consisting of 86 firms represents 23.1 per cent of the total listed firms (373 firms) at the end of 2008. Such size is comparable to previous studies in the Egyptian context (Abdel Shahid, 2003; Wahba, 2008; Elsayed and Wahba, 2013; Kamel and Shahwan, 2014; Wahba, 2015). Third, the total market capitalization of the sample represents 40.7 per cent (LE 193 billion) of the total market capitalization of all listed firms in 2008 (LE 474 billion). Given that the sample's market capitalization of comparable studies ranges from as little as 40 to 45 per cent (Abdel Shahid, 2003; Kamel and Shahwan, 2014; Wahba, 2015), it can be argued that the sample represents its target population. Finally, Table II reports the results of the Kruskal–Wallis test for investigating the significant variation among the industrial sectors. Of the 12 variables analyzed, the χ^2 statistic of seven variables (Tobin's Q, Altman *Z*-score, Book-to-Market ratio, Capital Intensity, Return on Sales, Ownership Concentration and Ownership Type) are found to be statistically significant at an α level of 0.05 or less. However, the industrial sectors have no significant variation regarding the size of the firm, the firm's financial leverage, the firm's current ratio, the institutional ownership and the CGI.

Table III, Panel A, presents the descriptive statistics for key variables related to firm performance, financial distress status and firm-specific heterogeneity.

In our sample, the average Tobin's Q is about 2.955 with a range of 0.602 to 51.814. Altman *Z*-score as a proxy for financial distress ranges from −14.390 to 37.83, with a mean of 3.756. The average firm size as measured by the natural logarithm of the total assets is 19.835 and a maximum of 23.646. The average firm experiences leverage of 0.592. This implies that the capital structure of Egyptian firms tends to rely on debt as a major source of financing. The mean (standard deviation) book-to-market ratio of our sample is 0.692 (0.547), while the mean (standard deviation) of the firms' capital intensity is 0.358 (0.222).

As a proxy of firms' liquidity, the range of current ratios is between 0.34 and 25.83, with a mean of 2.32. In addition, the return on sales as an indicator of firm profitability ranges from −1.41 to 77.621, with a mean of 1.23.

The ownership structure in our sample is measured by ownership concentration, institutional ownership and ownership type. The blockholder ownership percentage ranges from 0.00 to 0.994, with a mean of 0.209. The maximum institutional ownership percentage

Table II Kruskal–Wallis rank test of variables across industrial sectors

Variables	χ^2
Tobin's Q	13.059*
Altman *Z*-score	21.597***
Firm size	7.254
Leverage	3.370
Book-to-market ratio	13.123*
Capital intensity	18.065**
Current ratio	9.104
Return on sales	31.362***
Ownership concentration (%)	13.876*
Institutional ownership (%)	6.359
Ownership type	14.564*
CGI	8.501

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table III Descriptive summary statistics

Variables	*Mean*	*SD*	*Minimum*	*Maximum*
Panel A: Variables related to firm performance, financial distress status, and firm specific heterogeneity				
Tobin's Q	2.955	6.492	0.602	51.814
Altman *Z*-score	3.756	4.964	−14.390	37.83
Firm size	19.835	1.531	16.447	23.646
Leverage	0.592	0.752	0.032	5.119
Book-to-market ratio	0.692	0.547	0.009	2.517
Capital intensity	0.358	0.222	0.003	0.933
Current ratio	2.320	3.423	0.34	25.83
Return on sales	1.23	8.360	−1.41	77.61
Ownership concentration (%)	0.209	0.289	0.000	0.994
Institutional ownership (%)	0.034	0.102	0.000	0.584
Ownership type	0.209	0.409	0.000	1
Panel B: The aggregate CGI and its components				
Aggregate CGI	0.147	0.155	0.000	0.667
Components of CGI				
1. DC	0.136	0.186	0.000	0.667
2. BOD	0.054	0.157	0.000	0.833
3. SI	0.151	0.254	0.000	1
4. OC	0.294	0.343	0.000	1

is 0.584, while the mean is 0.034. Regarding the ownership type, the government ownership represents 20.9 per cent of our sample.

As shown in Table III, Panel B, the range of the aggregate CGI is between 0.00 and 0.667, with a standard deviation of 0.155. It implies that there is little variation in practicing CG mechanisms among these Egyptian firms. However, the mean value of the CGI is 0.147. This implies that practicing CG attributes within Egyptian firms is clearly weak despite the significant efforts taken by the Egyptian authorities. We should also notice that the average percentage of the CGI within Egyptian firms is lower than previous studies in other emerging markets. For example, the mean score of the CGI in Brazil in 2008 is 67 per cent (Lima and Sanvicente, 2013), 0.467 in Korea in 2008 (Pae and Choi, 2010) and 0.3178 in India (Varshney *et al.*, 2012).

Table III, Panel B, also presents the mean values of the four sub-categories of the aggregate CGI, i.e. DC, BOD, SI and OC. The mean values ranged from 5.4 to 29.4 per cent which almost reveal the same behavior of the aggregate CGI in terms of the poor practicing of CG attributes. The most frequently complied-with category among Egyptian companies is the attributes related to ownership and control structure, followed by the provisions of shareholders' rights and investor relation, disclosure and transparency and practices related to board of directors' structure.

Having discussed the level of CG practices within Egyptian firms, attention should now be given to investigate whether there is significant difference between the levels of CG practices across the four sub-categories of the aggregate index. The results of Wilcoxon signed-rank test and *t*-test are shown in Table IV. The results, on the one hand, provide

Table IV Test results of the difference between quality of CG practices across the four sub-categories of the CGI

CG dimensions		*Wilcoxon test*		*t-test*	
		Z-statistic	p-*value*	t-*statistic*	p-*value*
Disclosure and transparency (DC)	DC vs BOD	3.492	0.0005*	3.561	0.0006*
Board of Directors' structure (BOD)	DC vs SI	−0.302	0.7628	−0.468	0.6412
Shareholders' rights and investor relations (SI)	DC vs OC	−3.044	0.0023*	−3.726	0.0004*
	BOD vs SI	−3.020	0.0025*	−3.456	0.0009*
Ownership and control structure (OC)	BOD vs OC	−5.330	0.0000*	−6.358	0.0000*
	SI vs OC	−4.827	0.0000*	−4.845	0.0000*

Note: *Significance change in the CG quality at the 1% significance level

statistically significant evidence of the low level of CG practices in terms of BOD compared to other sub-categories of the CGI, i.e. DS, SI and OC. On the other hand, the level of CG practices related to OC outperforms other dimensions of CG at the 1 per cent significance level. Moreover, there is no statistically significant difference between the level of CG practices related to DC and SI.

4.2 Testing the hypotheses

Based on applicability to our Egyptian data, the first regression model based on the LAV was used to test the cross-sectional relationship between CG and firm performance. The variables included in the model were derived from the review of prior research on CG and firm performance (Elsayed, 2007; Coles *et al.*, 2008; Ehikioya, 2009; Al-Tamimi, 2012).

Accordingly, the following model is designed to test *H1* and can be defined by equation (5) as follows:

$$PERF_{it} = \beta_0 + \beta_1(CGI)_{it} + \beta_2(OWN\_CONS)_{it} + \beta_3(INS\_OWN)_{it} + \beta_4(CAP\_INT)_{it} + \beta_5(BM)_{it} + \beta_6(LEV)_{it} + \beta_7(LN\_TA)_{it} + \beta_8(OWN\_TYPE)_{it} + \varepsilon_i \quad (5)$$

where $PERF_{it}$ represents the financial performance – as measured by Tobin's Q – of firm i at time t. *CGI* represents the total score of CGI for each company (i); *OWN_CONS* refers to ownership concentration as measured by the percentage of shares held by the largest shareholders; *INS_OWN* denotes the institutional ownership ratio; *CAP_INT* is the capital intensity; *BM* is the book-to-market ratio; *LEV* refers to leverage = total debt divided by total assets; *LN_TA* = the log of the firm's total assets; *OWN_TYPE* refers to the type of ownership of a firm = a dummy variable set equal to "1" if the institution is a state-owned firm, otherwise "0"; β_0 is constant; β_i is the regression coefficient of independent variables; and ε_i is the error term.

To test whether a multicollinearity problem exists among the proposed explanatory variables, the Pearson correlation matrix was estimated as shown in Table V, Panel A. Following Anderson *et al.* (1990), any correlation coefficients higher than 0.7 indicate the presence of multicollinearity in our model. Accordingly, no possibility was found of a multicollinearity problem among these variables.

The second model is mainly concerned with examining the relationship between CG practices and firm financial distress, where the following logistic regression model was deployed to test the hypothesized relationship:

$$Logit\ P_i = \alpha_0 + \alpha_1(CGI)_i + \alpha_2(OWN\_CONS)_i + \alpha_3(INS\_OWN)_i + \alpha_4(ROS)_i \pm \alpha_5(CR)_i + \alpha_6(BM)_i + \alpha_7(LEV)_i + \alpha_8(LN\_TA)_i + \alpha_9(OWN\_TYPE)_i + \varepsilon_i \quad (6)$$

where P_i represents the estimated probability of financial distress for the $_i$th company. In the current study, the manufacturing and non-manufacturing companies are more likely to be classified as "distressed firms" when their *Z*-scores are less than 2.90 and 2.60, respectively. This implies that P_i will take the value of "1" if the firm is classified as distressed, otherwise "0". *ROS* is the return on sales = earnings before interest and taxes (EBIT) divided by sales; *CR* refers to the current ratio measured by (current assets/current liabilities); and all other control variables are previously defined.

It should be noted that the return on sales is used to capture the firm's ability to recover from financial distress, while both the leverage and liquidity ratios are used to control for a firm's financial condition. Following Anderson *et al.* (1990), the Pearson correlations shown in Table V, Panel B, provides no evidence of possible multicollinearity, as the correlations between the dependent and independent variables do not exceed 0.7.

Table V Correlation matrix

Variables	*Tobin's Q*	*CGI*	*OWN_CONS*	*INS_OWN*	*CAP_INT*	*BM*	*LEV*	*LN_TA*	*OWN_TYPE*
Panel A: CG and firm performance									
Tobin's Q	1								
CGI	−0.079	1							
OWN_CONS	0.072	0.485**	1						
INS_OWN	−0.076	0.501**	0.257*	1					
CAP_INT	−0.037	−0.081	−0.023	0.050	1				
BM	−0.307**	0.037	−0.093	0.108	0.039	1			
LEV	0.651**	−0.070	0.047	−0.001	−0.071	−0.078	1		
LN_TA	−0.075	0.120	0.000	0.048	0.246*	0.165	−0.153	1	
OWN_TYPE	0.159	0.015	0.278**	−0.031	−0.122	−0.351**	0.069	−0.006	1

Variables	*Pi*	*CGI*	*OWN_CONS*	*INS_OWN*	*ROS*	*CR*	*BM*	*LEV*	*LN_TA*	*OWN_TYPE*
Panel B: CG and firm financial distress										
Pi	1									
CGI	0.066	1								
OWN_CONS	0.140	0.485**	1							
INS_OWN	0.124	0.501**	0.257*	1						
ROS	−0.121	0.033	−0.085	−0.032	1					
CR	−0.247*	−0.144	−0.173	−0.057	−0.017	1				
BM	0.053	0.105	−0.030	0.120	0.003	0.159	1			
LEV	−0.027	−0.070	0.047	−0.001	−0.053	−0.177	−0.553**	1		
LN_TA	0.164	0.120	−0.001	0.048	−0.026	−0.212	0.228*	−0.153	1	
OWN_TYPE	0.262*	0.015	0.278**	−0.031	−0.065	−0.107	−0.270*	0.069	−0.006	1

Notes: Tobin's Q is the measure of firm financial performance. P_i is a dummy variable set equal to 1 if the firm is classified as a "distressed firm", 0 otherwise; CGI represents the total score of corporate governance index for each company; OWN_CONS refers to ownership concentration as measured by the percentage of shares held by the largest shareholders; INS_OWN denotes the institutional ownership ratio = the percentage of shares held by the financial institutions; CAP_INT is the capital intensity = (net fixed assets/ total assets); BM = ratio of book value to market value for the company, LEV refers to leverage = ratio of total liabilities to total assets for the company; LN_TA = natural logarithm of the book value of total assets for the company; OWN_TYPE represents ownership type = 1 if the company is a state-owned firm, 0 otherwise; ROS represents return on sales = (EBIT/sales); and CR refers to current ratio = (current assets/ current liabilities); **significant at 0.01 (two-tailed); *significant at 0.05 (two-tailed)

5. Results and analyses

5.1 CG and firm performance

To examine the relationship between CG and firm performance, we estimated a regression equation linking the two variables, after controlling for some firm characteristics, as illustrated in equation (5). Then we tested the main assumptions of ordinary least square (OLS), i.e. problems of multicollinearity, normality, heteroskedasticity and the existence of outliers. Table VI summarizes the results of these tests. Regarding the multicollinearity problem between the explanatory variables, the variance inflation factor (VIF) was estimated. Following Caramanis and Spathis (2006), a VIF of 1 indicates zero collinearity, while a VIF above 5 indicates severe collinearity. In our model, the VIF score is less than 2, indicating the absence of serious multicollinearity in our model.

Table VI Tests for the OLS assumptions

Tests	*Tobin's Q*
VIF	< 2
Shapiro–Wilk W test	0.6073**
Smirnov–Kolmogorov test	57.12**
Cook–Weisberg test	304.62**
Cook's test	Yes*
Interquartile range test (IQR)	Yes*
Number of observations	86

Notes: **Significant at 0.01 (two-tailed) and; *significant at 0.05 (two-tailed)

To test the normality of the residuals, both the Smirnov–Kolmogorov test and the Shapiro–Wilk W Test were run. They show that the residuals are non-normally distributed, as the probability is less than 0.05. Similarly, Cook's D and Interquartile Range Test were used to check the existence of severe outliers. The significant result of these tests led to rejecting normality at the 5 per cent significance level. In addition, the Cook–Weisberg test was deployed to investigate the residuals for heteroskedasticity. The significant result indicates the existence of heteroskedasticity.

Due to the violation of the two main assumptions of OLS, i.e. the normality and homoskedasticity of the residuals, we resorted to the LAV regression as a good alternative to OLS estimation. According to Elsayed (2007), the LAV, by minimizing the sum of the absolute residuals, provides better robustness than the OLS estimation on the existence of outliers.

To illustrate the association between financial performance and the CG practices within Egyptian listed firms, Table VII summarizes the estimated coefficients of LAV regression for the score of the CGI and other control variables as defined in equation (5).

The results in Table VII show that the coefficient of the CGI, as a proxy for CG practices within Egyptian firms, is not significantly associated with the Tobin's Q. Therefore, *H1* is not supported. The insignificant relationship between CG practices and financial performance may be affected by the underlying interdependency among CG mechanisms. Bozec and Dia (2007); Elsayed and Wahba (2013) and Wahba (2015) point out that the relationship between CG mechanisms and financial performance is not a monotonic relationship. It is affected by the interaction of different CG mechanisms which may substitute for or complement each other. Therefore, future research is encouraged to address such potential interrelationship between the CG practices and the financial performance.

Of the seven explanatory control variables analyzed, two variables (Leverage and Book-to-Market) were found to be statistically significant at the 1 per cent level. This positive influence of leverage on firm performance ($\beta_6 = 1.291$, p-value < 0.01) is in line with studies conducted by McConnell and Servaes (1995); Elsayed and Paton (2005) and Elsayed (2007). A possible explanation, on the one hand, is that higher leverage increases the pressure on managers to reduce their moral hazard behavior and, in turn, increases the firm value. This argument is in line with the "control hypothesis" dubbed by Jensen (1986) where debt's role can be used as a monitoring device in the presence of low CG practices. In this context, Sarkar and Sarkar (2008) confirms the role of debt as a potential disciplining mechanism for solving agency problem in emerging economies. At the same time, they argue that the role of debt as a mechanism for expropriation is limited even for firms vulnerable to high expropriation possibilities. However, as argued by Baer and Gray (1996), the absence of transparency, disclosure, proper incentives for creditors and an efficient legal framework for debt collection would enable the insiders to use debt as an

Table VII CG and firm performance: LAV regression results

Explanatory variables	*Tobin's Q*
Constant	2.256 (1.53)
CGI	0.213 (0.240)
OWN_CONS	−0.038 (−0.090)
INS_OWN	−0.585 (−0.550)
CAP_INT	0.374 (0.770)
BM	−0.971 (−4.530)**
LEV	1.291 (10.980)**
LN_TA	−0.382 (−0.500)
OWN_TYPE	0.141 (0.460)
Pseudo R^2 (%)	19.76
N	86

Notes: The values in parentheses are *t*-values; **denotes 1% level of significance

expropriation mechanism rather than a control device in transitional economies. On the other hand, a high level of debt financing creates more incentives for managers to improve their performance and minimize their waste of organizational resources as a way of avoiding the cost of bankruptcy (Grossman and Hart, 1982). This is one of the interesting findings of the present study, in that it highlights the positive impact of capital structure on firm performance in the context of Egypt where firms rely heavily on debt as a major source of financing.

The sign for the coefficient of book-to-market ratio is as expected. It has a significant negative impact ($\beta_5 = -0.971$, p-value < 0.01) on firm performance. The other control variables – firm size, ownership type, institutional ownership, ownership concentration and the level of capital intensity – have no statistical association with Tobin's Q.

Overall, the empirical findings of the current study do not support the contention that there is significant positive association between the CG practices of Egyptian listed firms and their firm performance.

5.2 CG and firm financial distress

Table VIII, Panel A, reports the results of the logistic regression to examine the relationship between CG practices and a firm's financial distress. The firm financial distress status was regressed on the CGI and eight control variables. There are three points to notice. First, regarding the CG practices as measured by the CGI, we find insignificant negative association between CG practices and the probability of financial distress. This result did not confirm *H2*. Such a result might be expected due to the low quality of the CG practices within our sample. Thus, there is a need for Egyptian corporations to raise the level of their CG practices.

Second, of the eight independent control variables analyzed, two (current ratio and ownership type) are found to be statistically significant at the 0.05 significance level. As expected, the coefficient of the current ratio has a significant negative effect ($\alpha_5 = -0.702$, p-value < 0.05). This is consistent with the results of Parker *et al.* (2002) and Wang and

Table VIII CG and financial distress: logistic regression results

Independent variables	*Expected sign*[a]	*Coefficients*	*Standard error*	χ^2	p-*value*
Panel A: coefficients estimate for CG measure and firm-specific variables					
Constant	N/A	−0.384	3.632	0.011	0.916
CGI	−	−1.253	2.072	0.366	0.545
OWN_CONS	−	−0.118	0.985	0.014	0.904
INS_OWN	−	5.044	4.401	1.314	0.252
ROS	−	−0.471	0.440	1.146	0.284
CR	−	−0.702	0.320	4.814	0.028**
BM	+	0.389	0.520	0.562	0.454
LEV	−	−0.315	0.475	0.439	0.507
LN_TA	−	0.082	0.175	0.220	0.639
OWN_TYPE	+	1.487	0.698	4.540	0.033**
Pseudo R^2		29.8%			
χ^2		21.723			0.010***
N		86			

Company	*Predicted company*		
Observed	*0*	*1*	*Correctly predicted percentage*[b]
Panel B: classification results of logistic regression analysis			
Non-distressed firm "0"	24	17	58.5
Distressed firm "1"	11	34	75.6
Overall percentage			67.4

Notes: **and; ***are significant at the 5 and 1% levels, respectively; [a]expected sign shows the expected attitude of the association between CGI, firm's characteristics and firm's financial distress; [b]the cut value is 0.5

Deng (2006), where the firms in a poor liquidity situation are most likely to go bankrupt. In addition, the coefficient of the ownership type has a significant positive effect ($\alpha_9 = 1.487$, p-value < 0.05), indicating that state-owned enterprises have an increased probability of being classified as financially distressed firms.

Finally, the coefficients for each company of other control variables including a firm's ratio of book value to market value, its financial leverage, size, return on sales, ownership concentration and institutional ownership are not significant. Pseudo R^2 for the fitted model equals 0.298, indicating that about 30 per cent of the variance in the dependent variable can be explained by the model. Moreover, there is a statistically significant relationship between the dependent and independent variables ($\chi^2 = 21.723$, p-value = 0.010). This implies that there is no reason to reject the adequacy of the fitted model at the 90 per cent or higher confidence level.

Table VIII, Panel B, shows the percentage of correctly predicted companies as "0" (non-distressed firms) and "1" (distressed firms) for the logistic regression analysis. At a cut-off value equaling 0.5, out of 41 firms defined as non-distressed, 24 firms (58.5 per cent) are correctly classified as non-distressed firms. At the same time, 34 out of 45 distressed firms (75.6 per cent) are correctly classified as distressed firms. Accordingly, the overall accuracy of the proposed model based on the percentage of correctly classified firms is 67.4 per cent.

6. Conclusions and implications

Using a sample of 86 non-financial firms listed on the Egyptian Exchange in 2008, the primary objective of the current study is to investigate the level of CG practices within these firms and how such practices could affect both the firms' financial performance and the corporate financial distress. The following conclusions and policy recommendations may be summarized as follows:

- Our primary finding implies that Egyptian-listed firms, as a whole, recorded low levels of CG practices, especially in practicing different attributes related to board of directors' structure. One implication of this study is that Egyptian Capital Market Authority should motivate all Egyptian-listed firms to invest in more comprehensive CG. Such investment is of significant important to improve the firms' overall competitiveness (Baek *et al.*, 2009; Pae and Choi, 2010). Moreover, the adoption of high level of CG practices can have a direct impact on attracting more foreign investors (Leuz *et al.*, 2009).
- We find no significant association between the investigated practices of CG and firm performance as measured by Tobin's Q. These results clearly show the need to develop and improve the Egyptian CG code based on the good practice of CG. In addition, the implementation of such practices should be further controlled by the Egyptian legislative framework and compliance with these practices should be mandatory.
- Ownership concentration and institutional ownership appear to be unrelated to firm performance. However, leverage as a proxy of financial risk turns out to be positively associated with firm performance. This result sheds light on the nature of the capital structure of Egyptian firms which heavily rely on debt financing. To enhance the function of debt as a control device in an emerging economy like Egypt, substantial effort should be directed toward not only developing CG practices but also providing additional legal protection for creditors' interests. Future studies are required to investigate the impact of CG on capital structure choices of Egyptian firms. Moreover, the association between debt structure and financial performance under different characteristics of CG should be explored.
- The finding also reveals the adverse effects on the corporate financial condition of a large book-to-market ratio as a proxy of a firm's market risk. This implies that efforts to

implement good practice in CG should be combined with additional efforts to improve the overall relative efficiency of Egyptian firms, developing their competition policy, reducing the influence of the social elite and strengthening the regulations on investors' protection.

- We find, on the one hand, an insignificant negative association between CG practices and the likelihood of financial distress. On the other, our findings provide evidence that firm-specific characteristics, such as type of ownership and liquidity, have a crucial role in determining the likelihood of financial distress.

Overall, the empirical findings of the current study extend the understanding of CG practices in Egypt and its impact on firm performance and financial distress. However, our results are not conclusive, due to various shortcomings related to sample size and the period of analysis. Therefore, to validate the results, the sample size need to be extended. Future research is encouraged to examine such association between CG practices and financial performance using panel data analysis. Beyond examining the impact of internal governance mechanisms on firm performance and financial distress, future studies are strongly recommended to investigate the impact of board effectiveness. Another fruitful extension of this study would be to investigate the association between CG and firm intellectual capital performance.

Note

1. Quality of CG practices refers to the level of practicing CG attributes within Egyptian firms compared to the best practices specified in the Egyptian CG code as a voluntary code and other relevant CG codes. Therefore, an aggregate CGI comprising four CG dimensions has been designed to assess such quality.

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