

Corporate boards, shareholding structures and voluntary disclosure in emerging MENA economies

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Abstract

Purpose: This paper investigates the level of voluntary compliance with, and disclosure of, corporate governance best practices, and the extent to which board characteristics and shareholding structures can explain discernible differences in the level of voluntary corporate governance disclosure in a number of emerging Middle Eastern and North African (MENA) economies.

Design/methodology/approach: The paper uses a number of multivariate regression methods, namely ordinary least squares, weighted, non-linear, lagged-effects, two stage least squares and fixed-effects regression techniques to analyse data collected for a sample of listed corporations in emerging MENA economies from 2009 to 2014.

Findings: First, in general, MENA listed firms have a relatively lower level of voluntary compliance with, and disclosure of, corporate governance practices compared to listed firms in developed countries. Second, our evidence suggests that corporate board characteristics, including board diversity and audit firm size have a positive association with the level of voluntary corporate governance disclosure. In contrast, the findings indicate that unitary board leadership structure, director shareholdings, and government shareholdings impact negatively on the level of voluntary corporate governance disclosure. The study does not, however, find any evidence to suggest that board size and family shareholdings have any significant relationship with the level of voluntary corporate governance disclosure. The findings are generally robust to alternative measures and potential endogeneity problems.

Originality/value: This is one of the first empirical efforts at investigating the association between corporate governance mechanisms and voluntary disclosure in emerging MENA economies that observably relies on a multi-theoretical framework within a longitudinal cross-country research setting.

Keywords: corporate governance; voluntary disclosure; board characteristics; shareholding structures; emerging MENA economies.

Article classification: Research paper

1. Introduction

Prominent corporate scandals in the 1990s/2000s followed by the 2007/08 global financial crisis have increased global interest in pursuing good corporate governance (CG) reforms often aimed at enhancing greater corporate accountability, social responsibility, transparency, and disclosure (Ntim *et al.*, 2013; Al-Janadi *et al.*, 2016; Al-Bassam and Ntim, 2017; Elmagrhi *et al.*, 2016, 2017). This paper, therefore, examines the level of voluntary CG compliance and disclosure practices in emerging MENA economies, and the extent to which corporate board characteristics and shareholding structures can explain discernible variations in the level of voluntary CG compliance and disclosure practices. The analysis and interpretations of the findings draw inspiration from a multi-theoretical framework that draw insights from a number of CG and disclosure theories.

Whilst the push for improvement in the level of CG, accountability, responsibility and transparency has mainly been concentrated in developed countries for decades, such as UK and US, recent years have also witnessed emerging economies showing an increasing interest in promoting the level of firm compliance with, and disclosure of, best CG practices through the adoption of CG codes (Ntim *et al.*, 2012b; Al-Bassam *et al.*, 2015; Al-Janadi *et al.*, 2016; Elmagrhi *et al.*, 2016). MENA countries are also among a large group of emerging economies pursuing such CG reforms, which are primarily motivated by the ability of such CG codes to address systemic issues of corporate accountability, responsibility, and transparency (Hussainey and Al-Najjar, 2012; Samaha *et al.*, 2012). Implementation of such CG codes may also help reduce corporate financial risk and thereby improve corporate performance in these countries (Gompers *et al.*, 2003; Beiner *et al.*, 2006; Haniffa and Hudaib, 2006; Henry, 2008; Ntim *et al.*, 2012a; Ntim and Soobaroyen, 2013a, b; Ebaid, 2013; Aljifri *et al.*, 2014; Albitar, 2015). In general, recent adoption of CG codes in emerging MENA economies tends to seek to complement other economic and financial reforms that they have pursued and are aimed at encouraging domestic savings, as well as attracting foreign direct investments (Lagoarde-Segot and Lucey, 2008; Aljifri *et al.*, 2014; Al-Janadi *et al.*, 2016).

Meanwhile, theoretically, publicly listed corporations and their managers in emerging economies may commit to comprehensive compliance with, and disclosure of, best CG best practices for a number of reasons. First, increased commitment to transparency and accountability through voluntary CG compliance and disclosure practices can minimise agency problems (Ntim *et al.*, 2013; Ntim and Soobaroyen, 2013b; Al-Bassam *et al.*, 2015; Al-Janadi *et al.*, 2016) by reducing information asymmetry between managers and corporate stakeholders (Jensen and Meckling, 1976), which may enhance firm performance. Second, from legitimacy theory perspective (Aguilera *et al.*, 2007; Ntim and Soobaroyen, 2013b; Elmagrhi *et al.*, 2016), engaging in greater transparency and disclosure practices through voluntary CG compliance and disclosure practices can strategically enhance congruence of corporate goals and norms with those of society, which can facilitate sustainable corporate operations by improving corporate reputation and goodwill (Ntim and Soobaroyen, 2013b; Haque and Ntim, 2017).

Third, from a resource-dependence perspective, increased engagement with voluntary CG compliance and disclosure practices may help in facilitating access to essential resources, such as subsidies, tax exemptions, contracts, and finance, through minimising capital and political costs as a result of improved corporate image and reputation (Haniffa and Hudaib, 2006; Ntim and Soobaroyen, 2013b), that can also improve company performance. Finally, stakeholder theory argues that committing to more voluntary CG compliance and disclosure practices can be an effective strategy to gain the support of influential corporate stakeholders, such as regulators, investors, government, and employees who may be important to a corporation's ability to conduct economically viable operations (Dalton *et al.*, 1998; Eng and Mak, 2003; Ghazali and Weetman, 2006; Ntim and Soobaroyen, 2013b). To sum up, greater commitment to voluntary CG compliance and disclosure practices could have significant implications not only for its ability to improve corporate accountability, social responsibility, and transparency, but also corporate finance in the form of enhancing their investment, financing and liquidity opportunities (Ntim *et al.*, 2013; Ntim and Soobaroyen, 2013b; Al-Bassam *et al.*, 2015; Al-Janadi *et al.*, 2016; Elmagrhi *et al.*, 2016).

Whilst a number of prior studies have focused on the drivers of, and reasons for, the extent of CG compliance and disclosure practices (Ntim and Soobaroyen, 2013b; Al-Bassam *et al.*, 2015; Elmagrhi *et al.*, 2016), they seem to suffer from a number of limitations. First, although disclosure decisions are perceived to be mainly influenced by top management and shareholding structure mechanisms (Haniffa and Cooke, 2002, 2005; Ntim *et al.*, 2012b), existing CG disclosure studies have investigated whether CG disclosure practices are largely driven by general company features, such as firm size, profitability, liquidity and gearing (Hussainey and Al-Najjar, 2012; Samaha *et al.*, 2012; Al-Bassam *et al.*, 2015; Kamel and Awadallah, 2017). Second, existing voluntary disclosure studies have mainly employed a short period/one year cross-sectional data (Samaha *et al.*, 2012; Aljifri *et al.*, 2014; Albitar, 2015; Al-Janadi *et al.*, 2016; Ahmed *et al.*, 2017; Kamel and Awadallah, 2017), and thereby limiting our understanding of voluntary CG compliance and disclosure behaviour over-time. Third, although the limited ability of any single theory to fully explain the various reasons and motivations underlying corporate voluntary disclosure behaviour has become evident in the steady, but gradually increasing theoretical and empirical evidence (Ntim and Soobaroyen, 2013a, b; Al-Bassam *et al.*, 2015), existing studies on voluntary CG disclosure have largely relied on single theoretical perspectives (Hussainey and Al-Najjar, 2012; Ntim *et al.*, 2012b; Bin-Ghanem and Ariff, 2016; Elmagrhi *et al.*, 2016), or are mainly descriptive in nature (Alsaeed, 2006; Piesse *et al.*, 2012), and thereby impairing the development of new theoretical insights, advancement, and understanding. Finally and as previously noted, emerging markets have shown observable interest in developing CG practices by the considerable number of reforms that have been introduced over the last decade (Al-Shammair and Al-Sultan, 2010; Ebaid, 2013, Habash *et al.*, 2015; Bin-Ghanem and Ariff, 2016). However and by contrast, there is acute scarcity of studies that investigate CG practices in emerging economies, especially within a cross-country research setting (Hussainey and Al-Najjar, 2012; Elmagrhi *et al.*, 2016). Arguably, this

impairs current understanding of the motivations for, and determinants of, corporate voluntary CG disclosures, especially in emerging economies.

Therefore, the current study seeks to extend existing knowledge by offering a number of new contributions to the literature. First, we provide new evidence on the level of voluntary compliance with, and disclosure of, best CG practices among publicly listed MENA firms following the pursuance of CG reforms. Thus, the study contributes to the literature by offering evidence on the extent to which the existing MENA countries' national CG codes have helped in improving CG standards in listed corporations of these countries.

Second, we add to the existing literature by examining whether board characteristics and shareholding structures can explain observable changes in voluntary CG compliance and disclosure practices. This differs from a number of past studies that have mainly investigated how general company features, such as firm size, profitability, liquidity, and gearing affect voluntary CG compliance and disclosure practices. Our argument is that in a competitive and informationally asymmetric market, whereby voluntary CG compliance and disclosure practices have significant financial and non-financial cost implications, better-governed corporations need to distinguish themselves by credibly signalling their good governance, accountability and transparency qualities by committing to more voluntary CG compliance and disclosure practices (Ntim *et al.*, 2013; Al-Bassam *et al.*, 2015; Elmagrhi *et al.*, 2016). Arguably, this can help in improving current understanding of the main factors that drive the level of voluntary compliance and disclosure of CG practices in emerging MENA economies in which various stakeholders, such as the national governments and the national Stock Exchanges are interested in CG and stakeholder issues. Third, we use data collected over a relatively long and recent period (i.e., from 2009 to 2014) and thus allows us to distinctively shed crucial and timely empirical insights on voluntary CG compliance and disclosure practices over a relatively long period of time. Finally and given the different motivations for voluntary CG compliance and disclosure (Ntim and Soobaroyen, 2013a, b; Al-Bassam *et al.*, 2015), the study is distinguished from previous studies by its explicit examination of a number of theoretical perspectives, including agency, legitimacy, resource dependence, and stakeholder theories, as providing the likely basis for understanding and explaining voluntary CG compliance and disclosure practices in the particular context of emerging MENA economies.

The decision to focus on MENA emerging economies is motivated by a number of reasons. First, and consistent with global developments, MENA emerging economies have pursued CG reforms by issuing national CG codes [1]. Similar to most emerging economies, MENA CG codes adopts a UK-style voluntary "comply or explain" compliance and disclosure regime (Piesse *et al.*, 2012; Al-Bassam *et al.*, 2015; Elghuweel *et al.*, 2017). However and distinct from most developed countries, MENA context has distinctive cultural features of having strong hierarchical social structure, where greater importance is usually attached to informal relationships, such as family loyalty, norms, and tribalism than formal CG and accountability mechanisms like corporate boards (Haniffa and Hudaib, 2007; Al-Bassam *et al.*, 2015). The MENA corporate setting is further characterised by concentrated shareholding

structures, especially by government and families, and low levels of institutional shareholdings, resulting in weak ability of shareholders to enforce managerial accountability, responsibility and control (Haniffa and Hudaib, 2007; Piesse *et al.*, 2012; Al-Janadi *et al.*, 2016). Arguably, these contextual challenges raise serious empirical questions as to whether voluntary compliance and disclosure CG codes that are prevalent in MENA economies can improve CG standards in their listed corporations (Samaha *et al.*, 2012; Al-Bassam *et al.*, 2015). This study, thus, seeks to contribute to the existing literature by investigating the motivations for, and determinants of, voluntary CG disclosures in MENA emerging economies.

The remainder of the paper is structured as follows. The next section briefly discusses the CG environment in MENA economies. The following sections present the theoretical framework, review the literature and develop hypotheses, discuss the research design, present the empirical and robustness analyses, whilst the final section offers concluding remarks.

2. The governance environment in MENA emerging economies

MENA economies provide a suitable context to conduct the current study for a number of reasons. First, most MENA economies have many cultural, social and economic features in common, along with other characteristics of developing countries. Specifically, the people speak Arabic as a common language, follow a common Islamic religion, and share many customs and traditions, which may arguably have an effect on economic features, business practices, shareholding structures, and the information environment, especially voluntary disclosure environment (Al-Shamri and Al-Sultan, 2010; Al-Bassam *et al.*, 2015; Albitar, 2015; Habbash *et al.*, 2015; Al-Janadi *et al.*, 2016; Elghuweel *et al.*, 2017). In this regard, MENA countries' corporate practices are expected to be affected by both formal and informal rules (Moideenkutty *et al.*, 2011; Elghuweel *et al.*, 2017). Specifically, managers can be expected to be influenced more by informal rules (e.g., family, norms, Arabic customs and tribalism) and thus they are likely to give such informal rules higher priority than formal rules and governance mechanisms, such as board characteristics (Haniffa and Hudaib, 2006; Al-Bassam *et al.*, 2015; Al-Janadi *et al.*, 2016; Elghuweel *et al.*, 2017). However, commitment to such traditional norms may arguably have a negative effect on MENA directors' ability to independently monitor managers and ultimately enhance voluntary disclosure of CG practices.

Second, most companies in MENA countries are either state owned or family held firms with concentrated shareholding structures. As such, they differ from companies in developed countries, which by contrast, tend to depend extensively on external finance from stock markets (Omran *et al.*, 2008; Piesse *et al.*, 2012; Aljifri *et al.*, 2014; Albitar, 2015; Al-Janadi *et al.*, 2016; Elghuweel *et al.*, 2017). Third, the legal system and corporate laws tend to provide limited protection to minority shareholders compared with those operating in developed economies (Omran *et al.*, 2008; Elamer *et al.*, 2017). Additionally, accounting standards are often developed and implemented by central government, with little involvement of national professional accounting bodies, which are often poorly

organised and/or even non-existent (Al-Shammair and Al-Sultan 2010; Dimitropoulos and Asterious, 2010; Aljifri *et al.*, 2014; Albitar, 2015).

Fourth, the financial systems in most MENA countries are bank-orientated (Ebaid, 2013), and therefore capital markets are not vibrant, and enforcement of capital markets rules are weak (Elghuweel *et al.*, 2017). This helps in explaining why most listed companies in these economies do not often adhere to the disclosure and transparency requirements that have been imposed by stock market authorities (Piesse *et al.*, 2012; Samaha *et al.*, 2012; Aljifri *et al.*, 2014; Albitar, 2015; Al-Janadi *et al.*, 2016). Consequently, minority shareholders' rights are limited because of the inefficiency in the information environment that encourages insiders and majority shareholders to gain from private information (Dimitropoulos and Asterious, 2010; Piesse *et al.*, 2012; Al-Janadi *et al.*, 2016).

Despite differences among MENA countries, almost all need to develop their investment environment, especially their stock markets and related governance mechanisms. Sound governance practices can help firms to gain access to finance, lower the cost of capital, achieve better performance, and provide fairer treatment of all stockholders (Claessens and Yurtoglu, 2013; Aljifri *et al.*, 2014). Similarly, Gulf Cooperation Council (GCC) countries depend extensively on extracting and exporting oil and have recently discovered the need for diversifying their finance and investment by developing their financial markets, especially given the volatility of oil prices of the early 1980s, late 1990s, and currently (2010s) (Piesse *et al.*, 2012; Aljifri *et al.*, 2014; Al-Janadi *et al.*, 2016; Elghuweel *et al.*, 2017). For other MENA countries, active capital markets are considered essential for the pursuance of successful economic and financial reforms, which began in the early 1990s. These reforms depend on large-scale privatisation programmes involving the divestiture of large public sector companies (Piesse *et al.*, 2012). Consequently, most MENA countries have thus engaged in economic and financial reforms (such as developing national stock exchanges, issuing national governance codes, and improving business-related laws and regulations) with the aim of encouraging domestic savings and attracting foreign investments (Al-Shammair and Al-Sultan 2010; Ebaid, 2013; Aljifri *et al.*, 2014; Albitar, 2015; Al-Janadi *et al.*, 2016; Elghuweel *et al.*, 2017). Indeed, the empirical evidence supports the role of good governance practices in enhancing market efficiency and the information environment of the MENA countries (Lagoarde-Segot and Lucey, 2008; Samaha *et al.*, 2012; Al-Basaam *et al.*, 2015; Albitar, 2015; Al-Janadi *et al.*, 2016; Bin-Ghanem and Ariff, 2016). However, other empirical evidence documents that their incentives for frequent disclosure and transparency are lower than their counterparts in developed countries (Alsaeed, 2006; Al-Shammair and Al-Sultan, 2010; Albitar, 2015; Al-Janadi *et al.*, 2016), due to the absence of standards set out by authoritative accounting and reporting bodies that can mandate public firms to improve their disclosure practices (Alsaeed, 2006; Aljifri, *et al.*, 2014; Albitar, 2015). Thus, the current study seeks to examine the extent to which MENA corporations voluntarily comply with and disclose their good governance practice recommendations contained in their CG codes.

3. Governance and voluntary disclosure: literature review and hypotheses development

A large number of scholars have investigated the motives and antecedents of voluntary disclosure of good CG practices (e.g., Haniffa and Cooke, 2002, 2005; Eng and Mak, 2003; Barako *et al.*, 2006; Ntim *et al.*, 2012b; Samaha *et al.*, 2012; Al-Bassam *et al.*, 2015; Elmagrhi *et al.*, 2016). The current study seeks to extend that voluntary disclosure literature. In particular, it draws on agency, legitimacy, resource dependence, and stakeholder theories to investigate the association between board characteristics, shareholding structures, and the level of voluntary CG compliance and disclosure practices in MENA listed firms.

3.1 Board size and voluntary disclosure

From the perspective of agency theory, large boards are more efficient in monitoring and evaluating managerial behaviour that may help in ensuring that their actions and inactions are consistent with shareholders' interests (Jensen and Meckling, 1976; Dalton *et al.*, 1998; Ntim *et al.*, 2017). This is because larger boards are arguably less likely to be influenced by a dominant CEO than their small counterparts (Ntim and Soobaroyen, 2013b). Similarly, and from the resource dependence and stakeholder theories perspectives, larger boards may provide a stronger advisory role, as well as offer a larger pool of experience and talent in the boardroom. For example, larger boards are more likely to include directors with different areas of expertise and stakeholder representation (e.g., bankers and CEOs of other firms) than their smaller counterparts. This can provide such firms with resources and information, including information relating to good CG voluntary practices (Dalton *et al.*, 1998; Ntim and Soobaroyen, 2013b; Alnabsha *et al.*, 2017).

In contrast, a number of studies have argued that larger boards tend to have poorer coordination and communication among their members (Tauringana and Mangena, 2014; Ntim, 2016). Thus, it is expected that smaller boards can be more effective in carrying out their monitoring role and engaging in more transparent voluntary disclosure practices (Dimitropoulos and Asterious, 2010; Tauringana and Mangena, 2014). Additionally, with larger boards, the decision-making process consumes more time, coordination problems are more likely to arise, and frank/open discussions of managerial performance are less likely (Jensen, 1993; Yermack, 1996). Consequently, the extent of voluntary disclosure (including CG practices) may deteriorate in firms with large boards.

The differences in theoretical views regarding the ideal board size have been supported by differing empirical results. On the one hand, some studies have concluded that board size is positively associated with the level of voluntary disclosure (e.g., Eng and Mak, 2003; Barako *et al.*, 2006; Hussainey and Al-Najjar, 2012; Ntim *et al.*, 2012b; Al-Bassam *et al.*, 2015; Albitar, 2015; Al-Janadi *et al.*, 2016; Elmagrhi *et al.*, 2016), whilst on the other hand, other studies have documented a negative association between board size and voluntary disclosure (e.g., Tauringana and Mangena, 2014; Alnabsha *et al.*, 2017). A third strand of studies have found no association between board size and

voluntary disclosure (e.g., Cheng and Courtenay, 2006; Samaha *et al.*, 2012; Kolsi, 2017). Given the inconclusive theoretical views and empirical evidence, our first non-directional hypothesis is as follows:

H1. There is an association between board size and the level of voluntary corporate governance disclosure.

3.2 Board diversity and voluntary disclosure

Corporate boards are required to fulfil certain roles, including advising managers, monitoring executives and securing resources (Jensen, 1993; Yermack, 1996; Ntim, 2015). Board diversity can enhance board effectiveness by improving their ability to fulfil their assigned roles. From the agency theory perspective, recruiting directors with a broader range of attributes can enhance board efficiency by increasing board independence, improving managerial monitoring and performance, and bringing diverse ideas and opinions to board discussions (Ntim and Soobaroyen, 2013b; Ntim, 2015; Elmagrhi *et al.*, 2016). Additionally, more heterogenous boards can have access to external organisations through different channels of communication provided by the different directors (resource dependence theory) (Ntim, 2013a, b, 2015). Likewise, diversified boards can enhance network ties that may provide access to resources, such as finance from external organisations (Ntim and Soobaroyen, 2013b). Similarly, and from the stakeholder and legitimation theoretical perspectives, more diverse boards provide better links between the company and its external environment and influential stakeholders (stakeholder theory) (Ntim and Soobaroyen, 2013b), by enhancing company legitimacy and the board's trustworthiness (legitimacy theory) (Ntim and Soobaroyen, 2013b; Elmagrhi *et al.*, 2016).

A large number of empirical studies have supported the positive impact of diverse boards on voluntary CG disclosure (e.g., Haniffa and Cook, 2002, 2005; Ntim and Soobaroyen, 2013a, b; Elmagrhi *et al.*, 2016), although there are fewer such studies with regard to MENA countries. In Jordan, Ibrahim and Hanefah (2014) document that board diversity (independence, gender, age, and nationality) has a positive impact on the level of CSR disclosure. Thus, based on these arguments, our second hypothesis is as follows:

H2. There is a positive association between board diversity on the basis of gender and ethnic minority and the level of voluntary corporate governance disclosure.

3.3 Board leadership structure and voluntary disclosure

The board chairperson is responsible for running board meetings, in addition to supervising, hiring, firing, evaluating, and compensating the CEO (Jensen, 1993; Ntim, 2012). Thus, agency theory suggests that concentrating the board leadership structure in one person (i.e., where the CEO also serves simultaneously as the chairperson) reduces the effectiveness of the board's monitoring regarding potential domination of the board. This is because the manager who initiates and implements important decisions (as CEO) also has to control and monitor these decisions (as chairperson), and therefore may take decisions that benefit him/her at the expense of shareholders' interests (Barako *et al.*, 2006). Thus,

separating the two roles can improve the quality of monitoring, and thereby improving corporate transparency (Haniff and Cook, 2002). Similarly, legitimacy theory suggests that separation of the two roles can improve checks and balances over management performance. If a CEO controls board meetings, determines agenda items, and selects board members, this can exacerbate the level of agency problems between management and owners (Haniff and Cook, 2002, 2005), which may have a negative impact on the legitimacy of managerial decisions.

Despite the conflicting results reported in the literature, the majority of empirical evidence has supported the negative impact of CEO role duality on the extent of voluntary disclosure (e.g., Haniff and Cooke, 2002; Eng and Mak, 2003; Barako *et al.*, 2006; Samaha *et al.*, 2012). Other studies have found no significant association between the two variables (e.g., Cheng and Courtenay, 2006; Al-Shemary and Al-Soultan, 2010; Ntin and Soobaroyen, 2013a; Alnabsha *et al.*, 2017). On the other hand, Al-Janadi *et al.*, (2016), using 87 companies from the Saudi stock market, find that the separation of CEO and chairperson positions has a negative significant impact on voluntary CG disclosure. Thus, based on these arguments, our third non-directional hypothesis is as follows:

H3. There is an association between combining the board leadership position and CEO and the level of voluntary corporate governance disclosure.

3.4 Audit firm size and voluntary disclosure

External auditing is used to attest the reliability and validity of financial statements provided by management, helping to reduce agency conflict between shareholders and managers by improving the external monitoring of shareholders and limiting the opportunistic activities of managers (Alsaeed, 2006; Barako *et al.*, 2006). Gul *et al.* (2013) argue that firms with high agency conflicts may hire a high-quality (Big 4) auditor in order to mitigate probable agency conflicts. Large audit firms are more likely to provide better-quality audit process (DeAngelo, 1981), because they have more professional audit expertise, a wider range of skills, reputation, accounting-and-auditing knowledge and ethical standards (DeAngelo, 1981; Ntim *et al.*, 2012a, b), suggesting a positive effect on corporate disclosure (Eng and Mak, 2003; Al-Bassam *et al.*, 2015).

Empirical studies have found mixed results of the relationship between audit firm size and the extent of voluntary disclosure. Some have found no association between disclosure level and audit firm size (e.g., Alsaeed, 2005; Barako *et al.*, 2006), while other researchers support the theoretical proposition of agency theory that large audit firms are associated with increased voluntary disclosures (e.g., Eng and Mak, 2003; Ntim and Soobaroyen, 2013a, b; Al-Bassam *et al.*, 2015; Al-Janadi *et al.*, 2016; Kamel and Awadallah, 2017). Accordingly, based on these arguments, our fourth non-directional hypothesis is as follows.

H4. There is an association between the audit firm size and the level of voluntary corporate governance disclosure.

3.5 Family shareholdings and voluntary disclosure

Firms that are controlled by founding families tend to experience lower agency problems arising from the separation of ownership and management (Gilson and Gordon, 2003; Chau and Gray, 2010). Family owners are more likely to keep their shareholdings on a long-term basis (Anderson *et al.*, 2003; Villalonga and Amit, 2006), have better access to information, and exercise closer monitoring of management, leading to lower demand for corporate voluntary disclosure (Chen *et al.*, 2008, Ali *et al.*, 2007; Chau and Gray, 2010). Ali *et al.* (2007) argue that family shareholders prefer to provide low levels of disclosures relating to their CG practices in order to facilitate employing family members on board without much interference from non-family shareholders.

Employing 4,415 observations from US listed firms in the period 1996–2000, (Chen *et al.*, 2008) find that family firms disclose lower voluntary information compared to non-family firms. Likewise, Ali *et al.* (2007) find that family firms provides lower disclosure about their corporate governance practices compared to their non-family counterparts. By contrast, Chau and Gray (2010) report positive effect of higher family shareholding (more than 25%) on voluntary disclosure. Thus, based on these arguments, our fifth non-directional hypothesis is as follows:

H5. There is an association between family shareholdings and the level of voluntary corporate governance disclosure.

3.6 Director shareholdings and voluntary disclosure

Director shareholdings probably influence decisions regarding voluntary CG disclosure practices (Eng and Mak, 2003; Ghazali and Weetman, 2006). From an agency theory perspective, higher director shareholdings can mitigate agency conflicts between directors and shareholders by aligning their interests (Jensen and Meckling, 1976, Lilienfeld-Toal and Ruenzi, 2014). Consequently, corporate boards need not strive hard in order to enhance voluntary CG disclosure (Eng and Mak, 2003; Samaha *et al.*, 2012; Alnabsha *et al.*, 2017). Furthermore, and from the legitimisation perspective, firms with lower director shareholdings tend to invest more in CG practices and voluntary CG disclosure in order to enhance company legitimacy and stakeholder confidence in the board (Eng and Mak, 2003; Ghazali and Weetman, 2006).

Empirically, existing evidence has indicated a negative association between director shareholdings and voluntary disclosure of CG practices (e.g., Hussain and Al-Najjar, 2012; Albitar, 2015). However, Samaha *et al.* (2012) and Alnabsha *et al.*, (2017) report an insignificant impact. Thus, based on these arguments, our sixth hypothesis is as follows:

H6. There is a negative association between director shareholdings and the level of voluntary corporate governance disclosure.

3.7 Government shareholdings and voluntary disclosure

Corporations with high government shareholdings seek to gain government support by engaging in good CG practices (Ntim and Soobaroyen, 2013b). This is because winning the support of government cannot only help in legitimatising corporate operations (legitimacy theory) (Aguilera *et al.*, 2007), but also aid in gaining essential resources, such as subsidies, tax exemptions and contracts that can improve company performance (resource dependence theory) (Haniffa and Hudaib, 2006). However, a number of studies argue that higher levels of state shareholdings, with wide and powerful political connections, provide protection against review and discipline by regulatory authorities (e.g., Jia *et al.*, 2009; Hou and Moore, 2010; Alnabsha *et al.*, 2017). Al-Janadi *et al.*, (2016) report that government shareholdings have a moderating negative effect on the association among board size, non-executive directors (NEDs) and voluntary disclosure. This indicates that government ownership can have a negative effect on the effectiveness of CG structures in a firm. Consequently, firms with high government shareholdings are less likely to voluntarily disclose CG practices.

Empirically, there is a lack of studies examining the association between government shareholdings and the extent of voluntary disclosure in emerging markets in general and MENA countries in particular. Eng and Mak (2003), Ntim *et al.* (2012b), Ntim and Soobaroyen (2013b), Al-Bassam *et al.* (2015) and Kolsi (2017) have documented that government shareholdings impact positively on voluntary disclosure practices in emerging markets. On the other hand, Al-Janadi *et al.*, (2016) and Alotaibi and Hussainey (2016) find a negative significant impact of state shareholdings on voluntary disclosure, while Alnabsha *et al.*, (2017) report an insignificant impact. Thus, based on these arguments and mixed results, our final hypothesis is as follows:

H7. There is an association between government shareholdings and the level of voluntary corporate governance disclosure.

4. Data and research methodology

4.1 Data: sample selection, sources, and description

Our sample is based on 494 non-financial and non-utility corporations listed on the national stock exchanges of five MENA countries namely, Egypt, Jordan, Oman, Saudi Arabia, and United Arab of Emirates at the end of 2014. We exclude financials and utilities because they are subject to different regulations and have different capital structures (Tunyi & Ntim, 2017), which may affect their disclosure and CG practices (Ntim and Soobaroyen, 2013b; Elmagrhi *et al.*, 2016; Nasr & Ntim, 2017). We collected data relating to CG attributes and CG disclosure by hand from the annual financial reports over the period 2009 to 2014. Because traditional content analysis consumes a considerable amount of time and effort, we collected data on 600 firm year observations from 100 corporations (as illustrated in Table 1). Data of board characteristics and shareholding structures were manually collected from firms' annual reports and websites of sampled countries' capital markets. Financial and accounting variables were collected from *DataStream* database.

Insert Table 1 about here

4.2 Research methodology: definition of variables and model specification

We group our variables into three, namely: (i) dependent; (ii) independent; and (iii) control variables, which are also reported in Appendix 1 and Table 2 with detailed information regarding how each variable was operationalized. First, our main dependent variable is the CG index (*GINDEX*). This index follows a checklist developed by the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR), organised by the United Nations Conference Trade and Development (UNCTAD, 2006). This checklist (“UNCTAD *ISAR benchmark*”) of guidance on good practice in CG disclosure was based on five sections used to construct 5 sub-indices: (i) ownership structure and exercise of control rights (OSH); (ii) financial transparency (TCY); (iii) auditing (AUD); (iv) corporate responsibility and compliance (RTY); and (v) board and management structure and process (BMS). The *GINDEX* is constructed by awarding a value of ‘1’ if each of the 51 CG provisions is disclosed and ‘0’ otherwise. With this binary scoring scheme, a firm’s total disclosure score in a particular firm year can vary between 0 (perfect non-compliance and non-disclosure) and 100% (perfect compliance and disclosure).

Insert Table 2 about here

Independent variables are: (i) board characteristics including, board size (*BRDS*), gender and ethnicity diversity within the board of directors (*DIV*), unitary of board leadership (*UBL*), and the size of the audit firm (*AFSIZ*), and (ii) shareholding structures including, family shareholdings (*FSH*), director shareholdings (*DSH*) and government shareholdings (*GSH*). We include a number of control variables that may have an impact on voluntary CG disclosure (Eng and Mak, 2003; Hanifa and Cooke, 2002; Ntim et al., 2012a,b; Al-Bassam et al., 2015; Albitar, 2015; Elmagrhi et al., 2016; Kolsi, 2017). These control variables include firm size (*LNTA*), firm age (*AGE*), growth opportunity (*GRTH*), leverage (*LV*), profitability (*PROFIT*), dummy variables for the year of operation (*DYER*), dummy variables for industry (*DIND*), and dummy variables for countries (*DCOU*).

The following OLS regression model is used assuming that all relations are linear:

$$GINDEX_{it} = \alpha_0 + \beta_1 BRDS_{it} + \beta_2 DIV_{it} + \beta_3 UBL_{it} + \beta_4 AFSIZ_{it} + \beta_5 FSH_{it} + \beta_6 DSH_{it} + \beta_7 GSH_{it} + \sum_{i=1}^n \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (1)$$

Where *GINDEX* refers to overall MENA countries’ CG disclosure index. *BRDS* refers to board size. *DIV* refers to board diversity on the basis of both gender and ethnicity. *UBL* refers to unitary of board leadership. *AFSIZ* refers to audit firm size; *FSH* refers to family shareholdings, *DSH* refers to director shareholdings. *GSH* refers to government shareholdings. *CONTROLS* refers to firm-level control variables, namely, firm size (*LNTA*), firm age (*AGE*), growth opportunity (*GRTH*), leverage (*LV*), profitability (*PROFIT*), year dummies (*DYER*), industry dummies (*DIND*), and country dummies (*DCOU*).

5. Empirical results and discussions

5.1 Empirical results: descriptive statistics and univariate regression analysis

Table 3 contains summary descriptive analysis of the main dependent, independent and control variables over the 6 years investigated (2009-2014). Panel A of Table 3 shows descriptive statistics for the overall (*GINDEX*) index and its sub-indices. *GINDEX* shows wide variation, ranging from a

minimum of 31.37% (16 out of 51) to a maximum of 84.31% (43 out of 51), with the average (median) firm complying with 56.45 % (56.86%) of the 51 CG provisions examined. With regard to the GINDEX's 5 sub-indices, they also show substantial differences in their descriptive analysis. For example, ownership structure and exercise of control rights (OSH) ranges from a minimum compliance rate of 22.22% to a maximum of 100%, with the average firm complying with 63.31% of the 9 CG provisions investigated. Also, board and management structure and process (BMS) ranges from a minimum compliance rate of 22.22% to a maximum of 88.89%, with the average firm complying with 58.09% of the 18 CG provisions investigated. Thus, the descriptive statistics indicate considerable variations in the level of compliance and disclosure for both the overall GINDEX and its 5 sub-indices, which are consistent with the evidence of past CG disclosure studies in MENA countries (e.g., Samaha *et al.*, 2012; Aljifri *et al.*, 2014; Al-Bassam *et al.*, 2015; Albitar, 2015, Al-Janadi *et al.*, 2016; Elghuweel *et al.*, 2017). Accordingly, despite the existing CG codes, MENA listed firms generally show a lower extent of compliance with, and disclosure of, the overall GINDEX and its 5 sub-indices along with significant disparities at this level compared to developing countries [2]. These findings support the view that implementation and enforcement of corporate regulations, such as best CG practices are weak, and thereby leading to low levels of compliance and disclosure of CG best practice recommendations in MENA countries (Piesse *et al.*, 2012; Samaha *et al.*, 2012; Albitar, 2015; Al-Janadi *et al.*, 2016).

Insert Table 3 about here

The descriptive statistics for independent and control variables are reported in Panels *D* and *E*, respectively. Starting with independent variables, board size (BRDS) with a median of nine members is between a minimum of four and a maximum of 19. Board diversity (DIV) on the basis of both gender and ethnic minority ranges from 0% to 69.23% with an average of 7.88%, which suggests that on average MENA listed firms' boards are dominated by Arab men. Board diversity on the basis of gender (DIVG) and ethnic minority (DIVE) ranges from 0% to 37.50% and 66.67%, respectively, with averages of 2.71% and 5.20%. Limited sampled firms have unitary board leadership structure (UBL) with an average of 21%. The Big 4 audit firms audit (AFSIZ) most of the sampled firms with the mean of 59%. Shareholding structure mechanisms show variation, where family shareholdings (FSH), director shareholdings (DSH), and government shareholdings (GSH) range from a minimum of 1.08%, 0% and 0% to a maximum of 100%, 98.92% and 98.67% with an average of 49.85%, 44.94% and 16.15%, respectively. Shareholding statistics are consistent with the findings of previous studies conducted in MENA countries (e.g., Samaha *et al.*, 2012; Elghuweel *et al.*, 2017).

To provide further informative inferences from our analysis, we divided the total sampled firm-years into two sub groups: (i) firms with high GINDEX scores (i.e., firms with a GINDEX scores above the overall mean/median value); and (ii) firms with low GINDEX scores (i.e., firms with a GINDEX score below the overall mean/median value). Columns 7 and 8 of Table 3 report the findings of the *t*-test, comparing *mean* and *median* differences for our independent and control variables. Generally, the findings reported show that the two sub-groups have significant differences in the *means* and *medians*

between both of them. For instance, the *mean* is significantly different between the two sub-samples as follows: board size (-0.47); board gender and ethnicity diversity (3.66); board gender diversity (-1.45); board ethnicity diversity (5.15); unitary board leadership structure (-40.00); audit firm size (39.80); family shareholdings (4.61); and government shareholdings (6.69). Our findings suggest that firms with more diverse boards, audited by Big 4 auditor and with high family and government shareholding are more likely to engage in greater compliance with, and disclosure of, CG practices. On the other hand, firms with larger boards, greater gender diverse boards and have unitary board leadership structure are more likely to engage in low compliance with, and disclosure of, CG practices.

The OLS regression technique is used to test all the current studies hypotheses, and thus a number of OLS regression diagnostics assumptions were examined, including multicollinearity, autocorrelation, normality, homoscedasticity, and linearity. Table 4 presents the correlation matrix (including both Pearson's parametric and Spearman's non-parametric coefficients) for the variables to test for multicollinearity. The direction and magnitude of both coefficients are generally similar, hence suggesting that any remaining non-normalities may not pose a serious statistical problem. Noticeably, the bivariate correlations among the variables are also averagely low, indicating that any remaining multicollinearity problems may not be statistically harmful. In addition, the authors investigated (for brevity not presented here, but available on request) scatter plots for *P-P* and *Q-Q*, histograms, skewness and kurtosis, VIF, tolerance statistics, Breusch-Pagan test, Cook's distance, leverage values, and Durbin-Watson statistic. The results from these tests suggesting no serious violation of the OLS assumptions, except that some of the continuous variables (DIV, DIVG, DIVE, GRTH) are not normally distributed, thus and in line with previous studies (e.g., Cooke, 1989; Samaha *et al.*, 2012), these variables were transferred into ranks based on normal scores before running the OLS regression analysis [3].

Interestingly and as expected, Table 5 indicates that board diversity based on ethnicity (DIVE), audit firm size (AFSIZ), government shareholdings (GSH), firm size (LNTA), growth opportunity (GRTH), leverage (LV), and profitability (PROFIT) have a statistically significant positive relationship with the GINDEX. On the other hand, the correlation matrix shows that GINDEX has a negative significant correlation with board diversity based on gender (DIVG), unitary board leadership (UBL), director shareholdings (DSH), and firm age (AGE).

Insert Table 4 about here

5.2 Empirical results: OLS (multivariate) regression analysis

Models 1 to 4 of Table 5 reports the findings of the cross-sectional pooled OLS regressions for the model examining the effect of board characteristics and shareholding structures on the extent of disclosure and compliance with CG practices. The results contained in Model 4, which is the study's main model, generally indicate that the independent variables (board characteristics and shareholding structures) are significant in explaining cross-sectional differences in the voluntary CG disclosures.

Insert Table 5 about here

The results in Model 4 of Table 5 suggest that BRDS is insignificantly related to the GINDEX, which is inconsistent with *H1*. This finding is inconsistent with the argument that firms with large boards are more efficient in monitoring and evaluating managers' behaviour especially decisions related to the quality of financial reporting (agency theory) (Dimitropoulos and Asteriou, 2010; Ntim and Soobaroyen, 2013b), and provide a better advisory role, as well as more presentation of stakeholders (resource dependence and stakeholder theories) (Dalton *et al.*, 1998; Ntim and Soobaroyen, 2013b). Empirically, our findings are consistent with a number of previous studies (e.g., Cheng and Courtenay, 2006; Samaha *et al.*, 2012; Kolsi, 2017).

The statistically significant and positively association between DIV and GINDEX provides empirical support for *H2*. Theoretically, the result is largely in line with the predictions of our multi-theoretical framework that draws insights from agency, resource dependence, legitimacy, and stakeholder theories, which suggest a positive effect of board diversity on voluntary CG compliance and disclosure practices. Empirically, the findings are consistent with the literature (e.g., Haniffa and Cooke, 2002; Elmaghrhi *et al.*, 2016). However, Model 3 in Table 5 shows that board diversity based on gender (DIVG) is positively but insignificantly associated with GINDEX, while boards with members from diverse ethnic minorities (DIVE) are positively and significantly associated with the extent of voluntary CG compliance and disclosure practices.

Unitary board leadership (UBL) has a negative and significant association with GINDEX, which supports *H3*. Theoretically, this finding is consistent with agency theory that suggests that boards with separate roles of chairperson and CEO are more likely to voluntarily comply and disclose CG practices. Also it enhances the legitimacy of managerial decisions by developing checks and balances over management's performance and reducing advantages gained from withholding information (legitimacy theory). Empirically, the results support previous studies which have documented a positive and significant association between separate CEO/chairperson roles and the extent of voluntary disclosure of CG practices (e.g., Haniff and Cooke, 2002; Eng and Mak, 2003; Barako *et al.*, 2006; Samaha *et al.*, 2012).

The positive AFSIZ–GINDEX nexus is consistent with the argument of agency theory that large audit firms have more professional audit expertise, a wide range of skills, reputation, accounting-and-auditing knowledge, and ethical standards, which can affect positively on voluntary CG disclosure (DeAngelo, 1981; Eng and Mak, 2003). This offers new empirical support for the findings of other previous studies (e.g. Eng and Mak, 2003; Ntim and Soobaroyen, 2013a, b; Al-Bassam *et al.*, 2015; Al-Janadi *et al.*, 2016; Kamel and Awadallah, 2017). Economically, the implications of this findings can be quantified as, a one standard deviation change in DIV, UBL, and AFSIZ may be associated with about 1.43% ($14.34\% \times 0.100$), .65% ($40.90\% \times 0.016$), and 1.33% ($49.30\% \times 0.027$) change in the level of the GINDEX, respectively.

The results in Model 4 of Table 5 suggest that FSH is statistically insignificant related to the GINDEX, implying that family shareholdings of MENA listed firms have no significant impact on the level of CG practices. This finding does not offer empirical support for agency theory, which suggests that family shareholdings provide closer managerial monitoring and lesser information asymmetry that is usually minimise agency problems, and hence a lesser need for increased CG disclosures (Chen *et al.*, 2008, Ali *et al.*, 2007; Chau and Gray, 2010). Empirically, our finding is inconsistent with previous studies that have reported significant association between family shareholdings and voluntary CG disclosure (Chen *et al.*, 2008; Ali *et al.*, 2007; Chau and Gray, 2010).

With respect to DSH, the findings in Model 4 of Table 5 suggests that *DSH* is statistically significant and negatively related to the GINDEX, implying that MENA listed firms with more director shareholdings provide less voluntary disclosure of CG practices. This finding offers empirical support for our multitheoretical framework, which argues that firms with lower director shareholdings tend to invest more in CG practices to enhance company's legitimacy and stakeholder confidence in the board (Eng and Mak, 2003; Ghazali and Weetman, 2006). This also supports *H6* and the findings of past studies, which suggest that *DSH* affects negatively on voluntary CG disclosure (Hussain and Al-Najjar, 2012; Albitar, 2015).

Furthermore, the findings in Model 4 of Table 5 also suggest that GSH is statistically significant and negatively related to the GINDEX, therefore *H7* is empirically supported. Although, some theoretical evidence suggests that firms with high government shareholding are more likely to voluntarily disclose good CG practices to facilitate gaining essential resources (resource dependence theory) (Haniffa and Huddaib, 2006), to mitigate agency conflict between management and owners (agency theory) (Ntim and Soobaroyen, 2013b), and to legitimise its operations (legitimacy theory) (Alguilera *et al.*, 2007). Empirically, the negative association between government shareholdings and GINDEX is congruent with the finding of Alotaibi and Hussainey (2016) and Al-Janadi *et al.*, (2016) suggesting that governments in MENA countries with significant shareholdings have no interest in providing sufficient information to mitigate agency conflict, and that the objective of the state when it has a controlling stake in companies is to attain political and social objectives, rather than shareholder value maximization (Piesse *et al.*, 2011). The economic relevance of these findings are that a one standard deviation change (increase) in DSH and GSH may be associated with about 1.14% ($27.90\% \times 0.041$) and 1.03% ($24.60\% \times 0.042$) change (decrease) in the level of the GINDEX, respectively.

The main CG index used in this study (GINDEX) contains five sub-indices. To infer the association between board characteristics and shareholding structures with the five sub-indices and assess whether these relations differ from the overall GINDEX, Table 6 shows the results of the OLS regression of the explanatory and control variables on the five sub-indices. For example, the coefficients of DIV and AFSIZ (except for OSH and BMS) remain significant and positively associated with the five sub-indices. Similarly, the coefficients of DSH (except for TCY and BMS), GSH (except for TCY) are negatively and significantly associated with the five sub-indices, while the coefficients of FSH

remains insignificantly associated with all the five sub-indices. Generally, the findings presented in Table 6 empirically support the former results illustrated in Table 5. The observed sensitivities in the coefficients implying that MENA corporations differ in terms of the importance that they attach to the various categories of the CG best practices. Finally, the coefficients on the control variables in Table 5 are generally consistent with expectations. For example, the coefficients on LNTA, and PROFIT are positively associated with the GINDEX, whereas the coefficient of AGE is negatively related to the GINDEX.

6. Robustness tests

The study carries out further analyses to examine the robustness of our findings. First, and as previously explained, all the 51 provisions constituting the GINDEX are equally weighted, but the number of provisions varies across the five sub-indices, resulting in different weights being assigned to each sub-index: OSH, 17.6%; TCY, 15.7%; auditing, 17.6%; RTY, 13.7%; and BMS, 35.3%. Accordingly, an alternative index (W- GINDEX) is created in which each of the five sub-indices is assigned an equal weight of 20% to find out whether the results hold regardless of the weighting of the five sub-indices. Model 1 of Table 7 shows that our results are largely consistent with those obtained using the non-weighted CG index (GINDEX) presented in Model 4 of Table 5.

Second, to investigate the existence of a non-linear association between (BRDS), (FSH), (DSH), and (GSH) and voluntary CG compliance and disclosure practices, Model 4 in Table 5 has been re-estimated by adding the square root of board size ($BRDS^2$), family shareholdings (FSH^2), director shareholdings (DSH^2) and government shareholdings (GSH^2). The results are documented in Model 2 of Table 7. The findings in Model 2 illustrate that the association between $BRDS^2$, DSH^2 , GSH^2 , and GINDEX is statistically insignificant, supporting the absence of a curvilinear relationship between these variables and voluntary CG disclosure. This evidence is incongruent with the findings of Elmagrhi *et al.* (2016), which suggest a non-linear relationship between board size and voluntary CG disclosure. On the other hand, our findings show that FSH^2 has a positive and significant impact on GINDEX, suggesting that family shareholdings become more entrenched at higher levels of ownership, which is consistent with theoretical suggestions that high family ownership increases the information asymmetry problem between controlling and minority shareholders, therefore firms may increase the extent of corporate disclosure to reduce agency costs between controlling and minority shareholders (Chau and Gray, 2010).

Third, to address potential endogeneity problems that may arise from a simultaneous relationship between the board/shareholding mechanisms and the CG disclosures, a lagged structure was estimated by introducing a one year gap between the CG disclosures and board characteristics and ownership mechanisms. The results reported in Model 3 of Table 7 is largely similar to those contained in Model 4 of Table 5, suggesting that the study's findings are generally robust to possible endogeneity problems that may result from the simultaneous link between board characteristics, shareholding

mechanisms, and the GINDEX. Fourth, and in order to address potential endogeneities that might arise as a result of omitted variables, a two-stage least squares (2SLS) model was estimated. First, the probability of an existence of an endogenous relationship between board characteristics and shareholding structure mechanisms on the one hand, and GINDEX on the other hand, was examined by a Durbin-Wu-Hausman exogeneity test (following Beiner *et al.*, 2006). The results reject the null hypothesis of no endogeneity. Consequently, estimating a 2SLS test using a CG mechanisms instrument that will be more correlated with CG mechanisms, but less with the regression structural errors, will seem more appropriate than the OLS model. The findings reported in Model 4 of Table 7 essentially suggest that the results of the OLS model presented in Model 4 of Table 6 are robust to the existence of endogeneities that may be caused by omitted variables.

Fourth, we know that CG disclosure may be affected by other firm-specific opportunities and difficulties that corporations encounter and tend to vary over time (Henry, 2008). Therefore, a fixed-effect model was estimated to address potential unobserved firm-specific heterogeneities that the OLS regression model may fail to control (Henry, 2008; Ntim *et al.*, 2012a; Elmagrhi *et al.*, 2016). The estimated fixed-effect model is based on the re-estimation of Model 4 in Table 6, by including 99 dummies to represent the 100 sampled firms. The findings illustrated in Model 5 of Table 7 imply that the study's findings are robust to potential unobserved firm-specific heterogeneity.

Finally, a considerable number of evidence suggests that firm size can influence the extent to which firms' disclosure their CG practices (Samaha *et al.*, 2012; Habbash *et al.*, 2015; Elmagrhi *et al.*, 2016). Therefore and to ascertain the possible impact of firm size on the voluntary disclosure–CG relationship, we split the sample into two using high (i.e., above the median score) and low (i.e., below the sample median score) median scores. In general, the findings presented in Models 6 and 7 of Table 7 indicate that larger firms are more likely to have sufficient resources to bear the cost of complying with CG rules compared with their smaller counterparts (Samaha *et al.*, 2012; Habbash *et al.*, 2015; Elmagrhi *et al.*, 2016). To sum up, the evidence resulting from the study's additional analyses suggest that the study's findings appear not to be sensitive to different endogenous relationships.

7. Summary and conclusion

Although recent decades have witnessed increasing interest in the study of international corporate governance, the literature examining MENA countries level of compliance with, and disclosure of, CG practices is still limited. Consequently, this study investigates the extent of compliance with, and disclosure of, good CG practices among firms listed in MENA countries. Specifically, it examines whether board characteristics and shareholding structures can explain cross-sectional variations in the extent of compliance with, and disclosure of, good CG practices in MENA countries using a multi-theoretical framework.

MENA countries have recently recognised the importance of efficient national securities markets that comply with international CG practices. Since the early 1990s negative net capital

importing countries, including Egypt and Jordan have commenced economic reform programmes targeting securities markets as important vehicles to accelerate the implementation and success of those reforms. Likewise, positive net capital exporting countries, including Oman, Saudi Arabia, UAE and other Gulf Cooperation Council (GCC) countries, have recently recognised the importance of functional securities markets as an alternative channels for finance and investment. Furthermore, another objective of most MENA countries' economic reform programmes is to attract private and foreign direct investments. Therefore, enhancing the level of compliance with, and disclosure of, good CG practices in MENA countries may arguably help in improving the reputation of the region for foreign direct investments.

Hence and employing a multi-theoretical framework that incorporates insights from agency, legitimacy, resource dependence, and stakeholder theories, we examine the effect of board characteristics (i.e., board size, gender and ethnicity diversity within the board of directors, unitary of board leadership, and the size of the audit firm) and shareholding structures (i.e., family shareholdings, director shareholdings, and government shareholdings) on voluntary CG compliance and disclosure practices in firms listed in MENA countries. The findings from this study suggest that board characteristics and shareholding structures are generally significant in explaining differences in the voluntary CG disclosures. Specifically, the study's results suggest that corporations with diversified boards based on gender and ethnicity, and employing a Big 4 auditor disclose considerably more than those that are not. By contrast, our findings suggest that unitary board leadership and an increase in director and government shareholdings significantly reduce the amount of voluntary CG disclosures. In contrast, the role of board size and family investors as active monitors of managers is statistically negligible.

The study's findings have important implications for regulators, policy makers, managers, and corporations not only in MENA countries, but also in other developing countries and emerging markets intending to pursue CG reforms. For example, the high degree of heterogeneity among MENA listed firms in terms of the levels of compliance supports the argument that most listed companies in these countries do not adhere to disclosure and transparency requirements, given the lack of legislative enforcement. Therefore, this suggests that there is a need for the regulatory authorities and policy makers to further enhance CG compliance and enforcement. This can be achieved by strengthening legislative enforcement and establishing a "compliance and enforcement" unit that will continuously observe the implementation of CG practices. Likewise, as the presence of a Big 4 audit firm, low director shareholdings, and low government shareholdings are demonstrated to have a positive effect on good CG practices, it provides the national stock exchanges the impetus to encourage greater auditing by Big 4 audit firms but implement measures that will encourage reductions in the level of director and government shareholdings of MENA listed corporations. Also, for managers and corporations, our evidence suggests that they can improve their CG standards by diversifying their

boards and separating CEO and board chairperson positions with the view of enhancing the process of monitoring firms' compliance with best CG practices.

Finally, although the findings are generally robust across a number of econometric models, there are some limitations that need to be acknowledged. This study depends on a relatively limited sample size (i.e., 600 firm-year observations collected from five MENA economies) because the data was collected manually, which was labour intensive. Thus, future studies could employ a much larger sample that may help enhance generalisability of their findings. Similarly, the study investigated the impact of a relatively limited set of firm-level internal CG mechanisms (i.e., board characteristics and shareholding structures) on CG disclosure. Future studies might examine the impact of other sets of internal CG mechanisms (e.g., board of directors' efficiency and frequency of meetings, and existence and characteristics of the audit committee), along with other external CG characteristics (e.g., government regulations, media exposure, market competition, and takeover activities), and county-level cultural factors (e.g., cultural practices and social norms) on voluntary CG disclosure. Finally, annual reports can sometimes carry mixed messages. Therefore, future studies may improve on the study's evidence by employing qualitative approaches, such as conducting face-to-face interviews with relevant stakeholders, such as auditors, company directors, and investors. This may provide a better understanding of the different determinants of voluntary CG disclosures.

Notes

1. Oman was the first country in the MENA region to issue a national CG code, in 2002 (3 June 2002, according to Circular number 11/2002, which later amended by Circular number 1/2003 for public listed companies).
2. For example: Mateescu (2015) and Elmagrhi et al., (2016) report that the average compliance with national CG codes by four of Europe's emerging countries and UK listed firms were 86% and 61.73%, respectively.
3. VIF values are reported in Tables 5 to 7 indicate that there is no statistically harmful problems relating to potential multicollinearities as all the VIF values are observably lower than 10 (Gujarati, 2003).

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Appendix. Full List of the UNCTAD ISAR Corporate Governance Disclosure Benchmark Provisions

GINDEX Theme	Disclosure Item	Range of scores	Total score per item
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(i) Ownership Structure and Exercise of Control Rights	1. Ownership structure	0-1	9
	2. Process for holding annual general meetings	0-1	
	3. Changes in shareholdings	0-1	
	4. Control structure	0-1	
	5. Control and corresponding equity stake	0-1	
	6. Availability and accessibility of meeting agenda	0-1	
	7. Control rights	0-1	
	8. Rules and procedures governing the acquisition of corporate control in capital markets.	0-1	
	9. Anti-takeover measures	0-1	
(ii) Financial Transparency	10. Financial and operating results	0-1	8
	11. Critical accounting estimates	0-1	
	12. Nature, type and elements of related-party transactions	0-1	
	13. Company objectives	0-1	
	14. Impact of alternative accounting decisions	0-1	
	15. The decision-making process for approving transactions with related parties	0-1	
	16. Rules and procedures governing extraordinary transactions	0-1	
	17. Board's responsibilities regarding financial communications	0-1	
	(iii) Auditing	18. Process for interaction with internal auditors	
19. Process for interaction with external auditors		0-1	
20. Process for appointment of external auditors		0-1	
21. Process for appointment of internal auditors/scope of work and responsibilities		0-1	
22. Board confidence in independence and integrity of external auditors		0-1	
23. Internal control systems		0-1	
24. Duration of current auditors		0-1	
25. Rotation of audit partners		0-1	
26. Auditors` involvement in non-audit work and the fees paid to the auditors		0-1	
(iv) Corporate Responsibility and Compliance	27. Policy and performance in connection with environmental and social responsibility	0-1	7
	28. Impact of environmental and social responsibility policies on the firm's sustainability	0-1	
	29. A code of ethics for the board and waivers to the ethics code	0-1	
	30. A code of ethics for all company employees	0-1	
	31. Policy on "whistle blower" protection for all employees	0-1	
	32. Mechanisms protecting the rights of other stakeholders in business	0-1	
	33. The role of employees in corporate governance	0-1	
(v) Board and Management Structure and Process	34. Governance structures, such as committees and other mechanisms to prevent conflict of interest	0-1	18
	35. "Checks and balances" mechanisms	0-1	
	36. Composition of board of directors (executives and non-executives)	0-1	
	37. Composition and function of governance committee structures	0-1	
	38. Role and functions of the board of directors	0-1	
	39. Risk management objectives, system and activities	0-1	
	40. Qualifications and biographical information on board members	0-1	
	41. Material interests of members of the board and management	0-1	
	42. Existence of plan of succession	0-1	
	43. Duration of director's contracts	0-1	
	44. Compensation policy for senior executives departing the firm as a result of a merger or acquisition	0-1	
	45. Determination and composition of directors` remuneration	0-1	
	46. Independence of the board of directors	0-1	
	47. Number of outside board and management position directorships held by the directors	0-1	
	48. Existence of procedure(s) for addressing conflicts of interest among board members	0-1	
	49. Professional development and training activities	0-1	
	50. Availability and use of advisorship facility during reporting period	0-1	
	51. Performance evaluation process	0-1	
Total	51 GINDEX Items		51
Scoring procedure			
0: If a particular corporate governance item is not disclosed.			
1: If a particular corporate governance item is disclosed.			

Table 1. Sample selected

Economic Sector/Country	Egypt	Jordan	Oman	Saudi Arabia	United Arab of Emirates	Total
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Oil & Gas	-	-	2	2	2	6
Basic Materials	4	4	3	2	-	13
Industrials	4	6	6	4	5	25
Consumer Goods	4	4	4	5	4	21
Health Care	2	2	-	-	2	6
Consumer Services	2	2	4	4	4	16
Telecommunications	2	1	1	3	3	10
Technology	2	1	-	-	-	3
Total	20	20	20	20	20	100

Table2. Summary of variables and measures

Dependent variables	
GINDEX	Corporate governance (CG) Compliance and Disclosure Index containing 51 CG provisions using the CG benchmark of the United Nations Conference Trade and Development (UNCTAD 2006)'s guidance on good practice in CG disclosure, that takes 1 if each of the CG provisions is disclosed, 0 otherwise; scaled to a value between 0 and 100%.
OSH	Sub-index of GINDEX related to ownership structure and exercise of control rights consisting of 9 provisions that take a value of 1 if each of the 9 provisions is disclosed 0 otherwise; scaled to a value between 0 and 100%.
TCY	Sub-index of GINDEX related to financial transparency consisting of 8 provisions that takes a value of 1 if each of the 8 provisions is disclosed 0 otherwise; scaled to a value between 0 and 100%.
AUD	Sub-index of GINDEX related to auditing consisting of 9 provisions that takes a value of 1 if each of the 9 provisions is disclosed 0 otherwise; scaled to a value between 0 and 100%.
RTY	Sub-index of GINDEX related to corporate responsibility and compliance consisting of 7 provisions that takes a value of 1 if each of the 7 provisions is disclosed 0 otherwise; scaled to a value between 0 and 100%.
BMS	Sub-index of GINDEX related to board and management structure and process consisting of 18 provisions that takes a value of 1 if each of the 18 provisions is disclosed 0 otherwise; scaled to a value between 0 and 100%.
Independent variables	
BRDS	Natural log of the total number of directors on the board of directors.
DIV	The percentage of the total number of women and ethnic minority (non-Arab) directors to the total number of board members.
DIVG	The percentage of women directors to the total number of board members.
DIVE	The percentage of ethnic minority (non-Arab) directors to the total number of board members.
UBL	A dummy variable that takes the value of 1 if the roles of chairperson and CEO of firm are combined at the end of its financial year, 0 otherwise.
AFSIZ	A dummy variable that takes the value of 1 if a firm is audited by a Big 4 audit firm (PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young, and KPMG), 0 otherwise.
FSH	Percentage of shares held by family members to the total number of shares issued.
DSH	Percentage of shares held by directors to the total number of shares issued.
GSH	Percentage of shares held by government to the total number of shares issued.
Control variables	
LNTA	Natural log of the book value of the total assets of a firm.
AGE	Natural log of the total number of years since a company was established.
GRTH	The percentage of current year's sales minus previous year's sales divided by previous year's sales
LV	The percentage of total debt divided by total assets.
PROFIT	Percentage of operating profit to total assets at the end of its financial year
DYER	Dummies for the years 2009 to 2014 inclusive.
DIND	Dummies for each of the eight main industries: basic materials; oil and gas; industrial; customer goods; customer services; health care; technology, and telecommunication.
DCOU	Dummies for each of the five countries

Table 3. Summary of descriptive statistics of the GINDEX, independent and control variables for all sampled firms

High – Low GINDEX

Variables	Mean	Median	STD	Min	Max	Mean Diff.	Median Diff.
Panel A: The GINDEX based on all 600 MENA firm-years							
GINDEX%	56.45	56.86	11.59	31.37	84.31	-	-
OSH%	63.31	66.67	11.77	22.22	100.00	-	-
TCY%	74.12	75.00	13.03	37.50	100.00	-	-
AUD%	53.70	55.56	22.24	0	100.00	-	-
RTY%	26.76	14.29	21.59	0	85.71	-	-
BMS%	58.09	61.11	15.58	22.22	88.89	-	-
Panel B: Firm-years with high GINDEX							
GINDEX%	65.50	64.71	6.35	56.86	84.31	-	-
OSH%	63.10	66.67	11.54	22.22	100.00	-	-
TCY%	79.59	87.50	10.58	50.00	100.00	-	-
AUD%	68.83	66.67	13.89	33.33	100.00	-	-
RTY%	37.39	28.57	22.46	0	85.71	-	-
BMS%	69.70	66.67	8.32	50.00	88.89	-	-
Panel C: Firm-years with low GINDEX							
GINDEX%	45.84	45.10	5.98	31.37	54.90	-	-
OSH%	63.57	66.67	12.05	22.22	77.78	-	-
TCY%	67.71	62.50	12.73	37.50	87.50	-	-
AUD%	35.95	33.33	16.27	0	77.78	-	-
RTY%	14.29	14.29	11.56	0	57.14	-	-
BMS%	44.46	44.44	10.11	22.22	66.67	-	-
Panel D: Independent variables							
BRDS	8.52	9.00	2.59	4.00	19.00	-0.47**	-0.34
DIV%	7.88	0	14.34	0	69.23	3.66***	2.33**
DIVG%	2.71	0	6.61	0	37.50	-1.45***	-1.78***
DIVE%	5.20	0	12.78	0	66.67	5.15***	4.16***
UBL%	21.00	0	40.90	0	100.00	-40.00***	-36.90***
AFSIZ%	59.00	100.00	49.30	0	100.00	39.80***	38.70***
FSH%	49.85	47.06	28.39	1.08	100	4.61*	3.49
DSH%	44.94	47.89	27.90	0	98.92	-1.96	-2.16
GSH%	16.15	3.29	24.60	0	98.67	6.69***	7.26***
Panel E: Control variables							
LNTA (\$m)	2089.75	184.45	5728.52	3.45	35222.66	3187.25***	3350.94***
AGE	21.84	20.00	10.06	1.00	47.00	-2.68***	-1.98**
GRTH %	9.06	6.01	45.46	-92.59	594.06	8.07**	8.89**
LV%	20.38	17.99	17.65	0	69.75	3.76***	4.55***
PROFIT %	6.56	6.11	7.76	-32.09	31.03	2.48***	1.93***

Notes: GINDEX, MENA countries' CG disclosure index; OSH, ownership structure and exercise of control rights; TCY, financial transparency; AUD, auditing; RTY, corporate responsibility and compliance; BMS, board and management structure and process; BRDS, board size; DIV, board diversity on the basis of both gender and ethnicity; DIVG, board diversity on the basis of gender; DIVE, board diversity on the basis of ethnicity; UBL, unitary of board leadership; AFSIZ, audit firm size; FSH, family shareholdings; DSH, director shareholdings; GSH, government shareholdings; LNTA, firm size; AGE, firm age; GRTH, growth opportunity; LV, leverage; PROFIT, profitability. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively.

Table 4. Pearson and Spearman correlation matrices of all variables

	GINDEX	BRDS	DIV	DIVG	DIVE	UBL	AFSIZ	FSH	DSH	GSH	LNTA	AGE	GRTH	LV	PROFIT
GINDEX	1	-.052	.034	-.178***	.245***	-.501***	.420***	-.059	-.137***	.166***	.464***	-.124***	.084**	.144***	.119***
BRDS	-.033	1	.054	.276***	-.119***	.243***	.150***	-.035	.093**	.273***	.355***	-.005	.099**	.016	.077*
DIV	.055	.062	1	.612***	.753***	.039	.163***	-.273***	.308***	.016	-.047	-.134***	-.021	.006	.186***
DIVG	-.167***	.274***	.559***	1	.027	.311***	.018	-.158***	.169***	.167**	-.061	-.063	-.018	-.138***	.135***
DIVE	.237***	-.074*	.786***	.030	1	-.244***	.233***	-.243***	.236***	-.097**	.045	-.157***	-.016	.132***	.152***
UBL	-.500***	.249***	-.003	.279***	-.236***	1	-.296***	.091**	.068*	-.023	-.196***	.067	.013	-.087**	-.012
AFSIZ	.421***	.135***	.181***	.026	.235***	-.296***	1	-.299***	.154***	.350***	.482***	-.088**	.104**	.225***	.174***
FSH	-.066	-.060	-.285***	-.151***	-.253***	.095**	-.315***	1	-.607***	-.440***	-.281***	.128***	-.048	-.011	-.205***
DSH	-.155***	.107***	.323***	.152***	.262***	.072*	.145***	-.597***	1	.206***	.125***	-.143***	.105***	.078*	.255***
GSH	.140***	.167***	-.052	.077*	-.123***	-0.027	.238***	-.470***	.273***	1	.547***	.114***	.050	-.009	.137***
LNTA	.454***	.352***	-.029	-.078*	.059	-.204***	.482***	-.305***	.137***	.529***	1	-.091**	.156***	.298***	.066
AGE	-.172***	-0.030	-.101**	-.042	-.117***	.117***	-.123***	.117***	-.082**	.053	-.217***	1	-.081**	-.226***	-.077*
GRTH	.079*	.094**	-.013	-.016	-.017	.012	.110***	-.074*	.113***	.029	.172***	-.121***	1	.036	.290***
LV	.141***	.026	.028	-.137***	.144***	-.080**	.212***	-.017	.063	-.053	.329***	-.282***	.047	1	-.169***
PROFIT	.098**	.086**	.177***	.120***	.148***	.001	.158***	-.197***	.233***	.046	.053	-.030	.274***	-.209***	1

Notes: GINDEX, MENA countries' CG disclosure index; BRDS, board size; DIV, board diversity on the basis of both gender and ethnicity; DIVG, board diversity on the basis of gender; DIVE, board diversity on the basis of ethnicity; UBL, unitary of board leadership; AFSIZ, audit firm size; FSH, family shareholdings; DSH, director shareholdings; GSH, government shareholdings; LNTA, firm size; AGE, firm age; GRTH, growth opportunity; LV, leverage; PROFIT, profitability. The bottom left half of the table presents Pearson's parametric correlation coefficients, whilst the upper right half of the table presents Spearman's non-parametric correlation coefficients. The correlation matrix depicts the strength and sign of the relationship amongst the variables. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively.

Table 5. Determinants of voluntary CG compliance and disclosure practices (GINDEX)

Ind. variables (Model)	Dependent Variable				VIF
	GINDEX 1	GINDEX 2	GINDEX 3	GINDEX 4	
BRDS	0.014 (0.204)	-	0.017 (0.136)	0.015 (0.202)	1.59
DIV	0.095*** (0.001)	-	-	0.100*** (0.001)	1.56
DIVG	-	-	0.058 (0.415)	-	-
DIVE	-	-	0.180*** (0.000)	-	-
UBL	-0.016* (0.087)	-	-0.016* (0.072)	-0.016* (0.071)	2.01
AFSIZ	0.028*** (0.000)	-	0.027*** (0.000)	0.027*** (0.000)	1.62
FSH	-	0.002 (0.912)	0.018 (0.203)	0.014 (0.320)	2.39
DSH	-	-0.042*** (0.003)	-0.040*** (0.004)	-0.041*** (0.003)	2.21
GSH	-	-0.051*** (0.001)	-0.039** (0.033)	-0.042** (0.018)	2.16
Control variables					
LNTA	0.005** (0.031)	0.015*** (0.000)	0.009*** (0.002)	0.010*** (0.000)	4.93
AGE	-0.016*** (0.007)	-0.013*** (0.032)	-0.016*** (0.006)	-0.014** (0.013)	1.66
GRTH	-0.005 (0.419)	-0.005 (0.408)	-0.002 (0.721)	-0.003 (0.631)	1.26
LV	0.018 (0.351)	0.017 (0.393)	0.006 (0.749)	0.012 (0.553)	1.79
PROFIT	0.091** (0.026)	0.112*** (0.007)	0.099** (0.015)	0.102** (0.013)	1.46
DYER	Included	Included	Included	Included	-
DIND	Included	Included	Included	Included	-
DCOU	Included	Included	Included	Included	-
Constant	0.533***	0.482***	0.506***	0.501***	-
Durbin-Watson	2.097	2.081	2.129	2.086	-
F-value	53.00***	53.37***	49.13***	49.56***	-
Adjusted R ²	68.46%	67.73%	69.97%	69.42%	-
Mean VIF	3.02	3.08	3.04	3.05	-
No. of observations	600	600	600	600	-

Notes: GINDEX, MENA countries' CG disclosure index; BRDS, board size; DIV, board diversity on the basis of both gender and ethnicity; DIVG, board diversity on the basis of gender; DIVE, board diversity on the basis of ethnicity; UBL, unitary of board leadership; AFSIZ, audit firm size; FSH, family shareholdings; DSH, director shareholdings; GSH, government shareholdings; LNTA, firm size; AGE, firm age; GRTH, growth opportunity; LV, leverage; PROFIT, profitability; DYER, year dummies; DIND, industry dummies; and DCOU, country dummies. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively.

Table 6. Determinants of voluntary CG compliance and disclosure practices (Sub-indices)

Ind. variables (Model)	Dependent variables				
	OSH 1	TCY 2	AUD 3	RTY 4	BMS 5
BRDS	-0.043** (0.012)	0.035** (0.025)	0.053*** (0.010)	-0.101*** (0.000)	0.060*** (0.000)
DIV	-0.024 (0.589)	0.149*** (0.000)	0.137** (0.013)	0.400*** (0.000)	0.004 (0.917)
UBL	0.015 (0.270)	-0.005 (0.699)	-0.029* (0.084)	-0.011 (0.606)	-0.033** (0.012)
AFSIZ	-0.002 (0.877)	0.044*** (0.000)	0.029** (0.021)	0.086*** (0.000)	0.009 (0.353)
FSH	-0.032 (0.130)	0.020 (0.296)	0.028 (0.288)	0.014 (0.674)	0.028 (0.175)
DSH	-0.042** (0.043)	-0.012 (0.538)	-0.053** (0.038)	-0.089*** (0.007)	-0.029 (0.148)
GSH	-0.017* (0.478)	0.099*** (0.000)	-0.067** (0.020)	-0.115*** (0.002)	-0.054** (0.017)
Control variables					
LNTA	0.022*** (0.000)	-0.016*** (0.000)	0.011** (0.040)	0.028*** (0.000)	0.009** (0.019)
AGE	-0.014 (0.112)	-0.016** (0.041)	-0.020* (0.065)	-0.000 (0.985)	-0.017** (0.047)
GRTH	-0.002 (0.822)	-0.001 (0.907)	-0.013 (0.274)	0.005 (0.717)	0.003 (0.752)
LV	0.037 (0.210)	0.082*** (0.002)	0.037 (0.307)	-0.050 (0.288)	0.021 (0.463)
PROFIT	0.074 (0.227)	0.153*** (0.006)	-0.015 (0.836)	0.201** (0.037)	0.113* (0.056)
DYER	Included	Included	Included	Included	Included
DIND	Included	Included	Included	Included	Included
DCOU	Included	Included	Included	Included	Included
Constant	0.665***	0.936***	0.305***	0.292***	0.404***
Durbin-Watson	1.690	1.972	1.873	2.344	1.874
F-value	11.68***	26.72***	56.95***	23.15***	39.81***
Adjusted R ²	33.30%	54.59%	72.34%	50.86%	64.47%
Mean VIF	3.05	3.05	3.05	3.05	3.05
No. of observations	600	600	600	600	600

Notes: OSH, ownership structure and exercise of control rights; TCY, financial transparency; AUD, auditing; RTY, corporate responsibility and compliance; BMS, board and management structure and process; BRDS, board size; DIV, board diversity on the basis of both gender and ethnicity; UBL, unitary of board leadership; AFSIZ, audit firm size; FSH, family shareholdings; DSH, director shareholdings; GSH, government shareholdings; LNTA, firm size; AGE, firm age; GRTH, growth opportunity; LV, leverage; PROFIT, profitability; DYER, year dummies; DIND, industry dummies; and DCOU, country dummies.
*, **, ***Significant at 10, 5 and 1 per cent levels, respectively.

Table 7. Sensitivity analyses of the determinants of CG disclosures

Ind. variables (Model)	W-GINDEX 1	Non-linearity 2	Lagged-effects 3	2SLS 4	Fixed-effects 5	High-Size 6	Low-Size 7
BRDS	0.001 (0.944)	-	0.015 (0.209)	0.023 (0.509)	0.011 (0.351)	-0.021 (0.211)	0.020 (0.150)
BRDS ²	-	0.003 (0.225)	-	-	-	-	-
DIV	0.133*** (0.000)	0.100*** (0.001)	0.097*** (0.003)	0.353*** (0.000)	0.431*** (0.000)	0.168*** (0.000)	0.031 (0.406)
UBL	-0.017** (0.048)	-0.017* (0.071)	-0.018* (0.051)	-0.051*** (0.007)	-0.025*** (0.009)	-0.044** (0.024)	0.000 (0.971)
AFSIZ	0.033*** (0.000)	0.029*** (0.000)	0.026*** (0.000)	0.135*** (0.000)	0.012** (0.043)	0.100*** (0.000)	-0.024*** (0.000)
FSH	0.011 (0.414)	-	0.000 (0.989)	0.209 (0.203)	0.025 (0.282)	-0.024* (0.070)	-0.015 (0.129)
FSH ²	-	0.036*** (0.004)	-	-	-	-	-
DSH	-0.045*** (0.001)	-	-0.053*** (0.000)	-0.054* (0.098)	-0.015** (0.018)	-0.082*** (0.000)	0.028* (0.079)
DSH ²	-	-0.016 (0.252)	-	-	-	-	-
GSH	-0.036** (0.044)	-	-0.033** (0.042)	-0.141*** (0.000)	-0.316** (0.047)	0.022 (0.213)	-0.038 (0.172)
GSH ²	-	-0.018 (0.345)	-	-	-	-	-
Control variables							
LNTA	0.011*** (0.000)	0.010*** (0.001)	0.009*** (0.002)	0.010*** (0.000)	0.007*** (0.005)	-0.007 (0.192)	0.010** (0.015)
AGE	-0.013** (0.021)	-0.017*** (0.003)	-0.014** (0.024)	-0.014** (0.013)	-0.015*** (0.009)	-0.004 (0.580)	-0.004 (0.656)
GRTH	-0.003 (0.673)	-0.004 (0.523)	-0.000 (0.949)	-0.003 (0.631)	-0.002 (0.632)	-0.007 (0.424)	-0.004 (0.581)
LV	0.017 (0.383)	0.007 (0.729)	0.007 (0.747)	0.012 (0.553)	0.026 (0.259)	0.056* (0.054)	0.010 (0.646)
PROFIT	0.105*** (0.010)	0.097** (0.018)	0.078* (0.078)	0.102** (0.013)	0.114*** (0.006)	0.190*** (0.003)	0.015 (0.722)
DYER	Included	Included	Included	Included	Included	Included	Included
DIND	Included	Included	Included	Included	Included	Included	Included
DCOU	Included	Included	Included	Included	Included	Included	Included
Constant	0.520***	0.435***	0.516***	0.111	0.631***	0.716***	0.436***
Durbin-Watson	2.152	2.066	2.186	2.086	1.481	1.924	2.083
F-value	46.30***	49.08***	45.06***	49.56***	74.67***	30.30***	34.56***
Adjusted R ²	67.92%	69.21%	70.45%	69.42%	93.45%	73.29%	75.19%
Mean VIF	3.05	3.03	3.00	3.42	-	2.55	2.35
No. of ob.	600	600	600	600	600	300	300

Notes: GINDEX, MENA countries' CG disclosure index; BRDS, board size; BRDS², board size squared; DIV, board diversity on the basis of both gender and ethnicity; UBL, unitary of board leadership; AFSIZ, audit firm size; FSH, family shareholdings; FSH², family shareholdings squared; DSH, director shareholdings; DSH², director shareholdings squared; GSH, government shareholdings; GSH², government shareholdings squared; LNTA, firm size; AGE, firm age; GRTH, growth opportunity; LV, leverage; PROFIT, profitability; DYER, year dummies; DIND, industry dummies; and DCOU, country dummies. *, **, ***Significant at 10, 5 and 1 per cent levels, respectively.