Corporate governance, Islamic governance and earnings management in Oman: A new empirical insights from a behavioural theoretical framework

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Abstract

Purpose: This paper examines the impact of corporate (CG) and Islamic (IG) governance mechanisms on corporate earnings management (EM) behaviour in Oman.

Design/Methodology/Approach: We employ one of the largest and extensive datasets to-date on CG, IG and EM in any developing country, consisting of a sample of 116 unique Omani listed corporations from 2001 to 2011 (i.e.,1,152 firm-year observations) and a broad CG index containing 72 CG provisions. We also employ a number of robust econometric models that sufficiently account for alternative CG/EM proxies and potential endogeneities.

Findings: First, we find that, on average, better-governed corporations tend to engage significantly less in EM than their poorly-governed counterparts. Second, our evidence suggests that corporations that depict greater commitment towards incorporating Islamic religious beliefs and values into their operations through the establishment of an IG committee tend to engage significantly less in EM than their counterparts without such a committee. Finally and by contrast, we do not find any evidence that board size, audit firm size, the presence of a CG committee and board gender diversity have any significant relationship with the extent of EM.

Originality: To the best of our knowledge, this is a first empirical attempt at examining the extent to which CG and IG structures may drive EM practices that explicitly seeks to draw new insights from a behavioural theoretical framework (i.e., behavioural theory of corporate boards and governance).

Keywords: Corporate governance, Islamic governance, earnings management, behavioural theory, endogeneity, Oman.

Paper type: Research paper

1. Introduction

In this paper, we seek to contribute to the extant corporate governance (CG) and earnings management (EM) literature by distinctively examining how and why a firm's CG and Islamic governance (IG) mechanisms may influence its EM practices. Specifically, we investigate the extent to which a broad composite CG index, IG committee and other CG variables can explain observable changes in firm-level EM in Oman.

Although a number of previous studies have examined the association between CG and corporate EM practices (Chung et al., 2002; Klein, 2002; Xie et al., 2003; Chen & Zhang, 2012; Leventis & Dimitropoulos, 2012; Anglin et al., 2013; Albu & Girbin, 2015), a careful evaluation of this literature reveals a number of weaknesses. First, despite increasing evidence that CG mechanisms underpinned by agency driven rational/opportunistic economic motives and formal structures alone may not be able to fully explain underlying managerial motivations for engaging in EM (Daily et al., 2003; Hambrick et al., 2008) and thus new theoretical perspectives, such as behavioural theory, may need to be considered (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011), existing studies are still overhemingly informed by the ubiquitous agency theoretical perspective (Davidson et al., 2005; Mitra & Cready, 2005; Lin et al., 2006; Rahman & Ali, 2006; Jaggi & Tsui, 2007; Jiraporn & Gleason, 2007).

Second, Judge (2010) shows that the extent to which formal and informal CG structures/rules are used differ around the world. For example, equity markets tend to be the main CG mechanisms in Anglo-Saxon economies (e.g., UK and US) compared with concentrated ownership structures in Continental European (e.g., German and Italy), African (e.g., South Africa and Nigeria) and Asian (e.g., Malaysia and Singapore) economies. Similarly, CG structures in Scandinavian economies (e.g., Norway and Sweden) are dominated by social norms rooted in egalitarianism/utopianism cormpared with Shariah law in Isamic (e.g., Oman and Saudi Arabia) countries. In transition economies (e.g., China and Russia), however, the primary CG mechanism is often the state/informal networks, whilst in other countries (e.g., India, South Korea and Japan), business groups tend to be the main CG mechanism. Despite these differences in CG arrangements around the world, existing studies have focused disproportionately on evaluating the effect of Anglo-American CG mechanisms on EM to the neglect of the others (Epps & Ismail, 2009; Ghosh et al., 2010; Lo et al., 2010; Bekiris & Doukakis, 2011; Alves, 2012), and thereby arguably impairing current understanding of the impact of CG on EM in different economies.

Third, although a number of studies have investigated the link between CG and EM (Schipper, 1989; Healy & Wahlen, 1999; McNichols, 2000; Bowen et al., 2008; Jiang et al., 2008), they are observably concentrated in a few developed countries, such as UK and US, which tend to have largely similar CG, economic, legal and institutional contexts (Chia et al., 2007; Francis & Wang, 2008; Krishnan & Parsons, 2008; Gavious et al., 2012). However, it can be argued that in developing countries, such as Oman with different CG, economic and legal environment, the extent to which formal CG mechanisms are able to

restrain managerial ability to engage in EM may differ, and thus the association between CG and EM can be expected to vary from the findings of prior studies that were conducted in developed countries. In particular, behavioural theory suggests that managerial/corporate board decision-making may not only be influenced by their expertise, knowledge and skills, but also their experiences, beliefs and values (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011).

Indeed, there is an emerging behavioural literature, which shows that individual/corporate religious/cultural beliefs can affect their: (i) decision-making (Hilary & Hui, 2009) and risk-taking behaviour (Bartke & Schwarze, 2008); (ii) corporate social responsibility (CSR) (Brammer et al., 2007), equity-pricing (El Ghoul et al., 2012), social norms, cohesion and CG (Boytsun et al., 2011) and corrupt (Mensah 2014) practices; (iii) willingness to engage in tunnelling/expropriate shareholders' wealth (Du, 2013, 2014), evade tax/commit tax fraud (Stack 2006; Richardson 2008), financial reporting irregularities (Dyreng et al., 2012; McGuire et al., 2012), philanthropy (Du et al., 2014) and EM (Callen et al., 2011; Du et al., 2015; Kanagaretnam et al., 2015). A major issue, however, is that these studies have mainly been conducted within the Judo-Christian contexts to the neglect of others, such as Buddhism, Hinduism, Islam and Sikhism. In the case of Islam, although there are extensive normative/critical reviews relating to the distinctiveness of IG srtuctures (Lewis, 2005; Archer et al., 1998; Rahman, 1998; Choudhury & Hoque, 2006; Kamla et al., 2006; Abu-Tapanjeh, 2009; Williams & Zinkin, 2010), empirical evidence on how such IG mechanisms may drive corporate outcomes and practices, such as disclosure, performance, CSR, risk-taking and EM are rare (Safieddine, 2009; Farook et al., 2011; Rahman & Bukair, 2013; Ginena, 2014; Mollah & Zaman, 2015; Al-Bassam & Ntim, 2016). This also impairs current understanding of how IG mechanisms may impact on EM practices.

Consequently, this paper seeks to contribute to the existing literature by addressing some of the articulated limitations of prior studies. First, we offer new empirical insights on the CG-EM nexus by grounding our study in the emerging behavioural theory of corporate boards and governance, in which corporate decision-making is not only assumed to be underlined by formal incentives and CG mechanisms, but also informal CG arrangements, bounded rationality, political bargaining, routinisation and satisficing behaviour (van Ees et al., 2009; Huse et al., 2011). In this case, we distinctively depart from the dominant agency theoretical framework that is underpinned mainly by formal CG structures, rational economic motives, managerial opportunism and optimising behaviour.

Second, existing studies have mostly examined how individual CG mechanisms (e.g., board size and independent directors) can affect corporate EM practices. However, recent evidence suggests that CG structures tend to interrelate (i.e., CG structures are used in bundles) in order to be effective (Ntim et al., 2015a, b), and therefore examining direct associations between individual CG structures and EM may lead to spurious correlations. We overcome this limitation by investigating the relationship between a comprehensive CG index containing 72 distinct governance privisions and EM in addition to individual CG mechanisms that have been used in prior studies. Third, drawing from behavioural theory, we conjecture that in a predominantly Islamic context, such as Oman, corporate/managerial engagement in EM may not only be influenced by formal CG arrangements, expertise and skills, but also by their

informal Islamic religious experiences, beliefs and values. We test this by examining the extent to which the presence of a Shariah supervisory board/committee, as a unique IG mechanism, drives corporate EM practices. To the best of our knowledge, this is a first direct attempt at providing empirical evidence on how and why IG mechanisms may influence corporate EM practices. Oman offers an interesting research context to test these propositions for a number of reasons. First, in response to the 1997 Asian financial crisis and international corporate developments, Oman was the first country in the Middle East and North Africa (MENA) region to pursue CG reforms in the form of the UK-style 2002 voluntary CG Code issued by the Capital Market Authority (CMA). Similarly, Oman is one of the few countries in the MENA region, which has fully adopted international accounting and auditing standards for its listed firms. This, thus, places Oman at the forefront when it comes to CG, accounting and auditing reforms in the MENA region. The central objective of these reforms has been to restore investor confidence, enhance financial reporting quality and protect stakeholders' interests by improving board independence, accountability, disclosure, transparency and responsibility among Omani listed firms.

Second, distinct from most developed countries, but similar to other MENA countries, the Omani corporate context has a number of unique features. First, Omani corporate context is characterised by: (i) hierarchical social structures; (ii) greater reliance on informal rules and relationships (e.g., loyalty and trust based on kingship, nepotism and tribalism) rather than formal CG structures (e.g., boards and audit committee); (iii) increased commitment to Islamic religious beliefs and values. As previously noted and from a behavioural theoretical perspective, greater commitment to Islamic religious values is important because previous studies suggest that Judo-Christian religious beliefs and values can impact on serveral corporate practices, including EM (Bartke & Schwarze, 2008; Richardson, 2008; Hilary & Hui, 2009; Callen *et al*., 2011; McGuire *et al*., 2012). A major way by which Islamic religious beliefs and values can be incorporated into corporate operations and decision-making is through the establishment and operation of the Shariah supervisory board (Mollah & Zaman, 2015), whose central role is to certify whether corporate investments are Shariah compliant. Third and similar to most developing countries, Omani firms are characterised by high levels of concentrated ownership, primarily by families and government (Najib, 2007; Omran *et al*., 2008; Bishara, 2011). This is important because concentrated ownership structures can render the markets for corporate control, capital, services, executive talent and labour meant to discipline underperforming managers and corporations ineffective (Shleifer and Vishny, 1997; Jaggi and Tsui, 2007; Alves, 2012; Chen and Zhang, 2012), and thereby often leading to managerial entrenchment. Whilst these contextual issues are interesting, they also raise the question of whether a UK-style voluntary CG Code can be effective in improving CG standards and performance, including reducing EM. We, thus, examine the extent to which CG and IG mechanisms may drive corporate EM practices in Oman.

The remainder of the paper is organised as follows. The next section provides an overview of the institutional framework for Oman. The subsequent sections present the theoretical literature, review past empirical studies and develop hypotheses, present data and research methodology and report the empirical findings and discussion, whilst the final section summarises and concludes the paper.

2. Institutional framework for Oman

As briefly noted previously, the Omani CG regulatory framework was institutionalised through the issuance of the UK-style 2002 voluntary Code of good CG practices. The Code's publication was mainly attributed to two key factors. First, sharp declines in Muscat Security Market's (MSM) value of listed firms in 1997 had a negative impact on the Omani economy in general and firms in particular (Fleety, 2010). The government had to make major corporate policy reforms in order to respond to such negative effects. Second, Oman was also influenced by a worldwide proliferation of self-regulatory initiatives that aimed at improving CG standards as a potential remedy for corporate failures. Consequently, attempts at reforming CG practices in Oman started in June 2001, when the Capital Market Authority (CMA) organised a workshop to develop a CG Code. Consequently, the CMA issued a CG Code in June 2002, which came into effect in January 2003. The Code contained CG provisions relating to four main areas: (i) board and directors; (ii) accounting and auditing; (iii) external auditors and internal control systems; and (iv) disclosure and transparency (see the Appendix).

Discernibly, the Omani Code adopted UK-style voluntary compliance and enforcement regime ('comply or explain'). Specifically, the CG provisions and principles (e.g., accountability, fairness, independence, honesty, integrity and transparency) contained in the Omani Code was drawn mainly from the 1992 UK Cadbury Report, principally in relation to the composition and functions of the board of directors. For example, it advocated a UK-style one-tier corporate board, consisting of executive and non-executive directors, whose operations are supported by a number of subcommitees, including audit, nomination and remuneration committees. The central objective of these board structures is to enhance CG, disclosure and transparency by improving accounting, auditing, internal control and risk management systems. Additionally, Oman has made explicit efforts at developing and improving the institutional framework for accounting and auditing. For example, Oman is one of the first countries in the MENA region to have fully adopted International Accounting Standards (IASs) and subsequently, International Financial Reporting Standards (IFRS) with the main objective of increasing investor confidence and improving the credibility, comparability and quality of financial reports of Omani firms, and thereby reducing the extent of EM.

As previously noted and apart from pursuing CG, accounting and auditing reforms, the Omani corporate context is uniquely and interestingly characterised by hierarchical social structures, increased corporate commitment towards incorporating Islamic religious beliefs and values into corporate operations and concentrated ownership structures. This characterisation is typically evident in the establishment and operation of Shariah supervisory boards (SSB), whose main role is to certify whether corporate operations and investments are consistent with the tenents of Shariah law. Commitment to Islamic religious beliefs and values is of keen relevance to the current study because prior studies suggest that Judo-Christian religious beliefs and values can have an impact on a number of corporate decisions, including managerial commitment to engage in EM. Overall, and whilst these contextual issues are interesting, they also raise the question of whether a UK-style voluntary CG Code can be effective in improving CG standards and

performance, including reducing EM. We, therefore, investigate the extent to which CG and IG mechanisms may affect corporate EM practices in Oman.

3. Behavioural theoretical framework

Although a number of previous studies have examined the effect of a number of different CG mechanisms on corporate EM practices (Chung et al., 2002; Klein, 2002; Xie et al., 2003; Cornett et al., 2008; Krishnan & Parsons, 2008; Gavious et al., 2012), they are mostly informed by insights drawn from agency theory and often report conflicting findings (Jensen & Meckling, 1976; Jensen, 1993). Observably, agency theory is underpinned by rational economics, optimising and opportunistic behaviour arising from assumed information asymmetry between corporate agents (managers) and principals (shareholders) (Fama, 1980; Fama & Jensen, 1983). Agency theory, therefore, places emphasis on establishing formal CG structures, incentives and control mechanism to curb managerial opportunism and self-serving behaviour. However, increasing empirical evidence suggests that agency theory's heavy reliance on formal CG strucures, complete and/or perfect contractual (e.g., bonding and monitoring contracts) arrangements, blanket assumptions of managerial distrust, opportunistic and self-serving behaviour, rational economic incentives and control mechanisms have failed to provide full explanations for the various actual managerial/corporate motives for engaging in EM. Noticeably, the rational economic (agency theory) approach has been dominant/ubiquitous because of lack of a stronger non-economic alternative (van Ees et al., 2009), and therefore recent years have witnessed increasing clarion calls for alternative theoretical perspectives to be considered (Daily et al., 2003; Hambrick et al., 2008).

In response to these calls, increasing number of researchers have particularly highlighted the need to examine behavioural processes and interactions among directors in order to fully understand the pre-conditions for achieving effective CG arrangements (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011). Specifically and drawing on the behavioural theory of the firm, van Ees et al. (2009) have proposed a behavioural theory of corporate boards and governance, which posits that in practice, instituting optimal formal governance structures aimed at resolving conflict of interests arising from rational economic motives and opportunistic behaviour may be less of a concern for corporate boards, and instead boards may be more concerned with providing practical solutions to problems of co-ordination, communication, planning, control and information processing.

In particular, van Ees et al. (2009, pp.311-313) have outlined the four main behavioural assumptions that underline behavioural theory of corporate boards and governance in sharp contrast to those of the rational economics (agency) approach, including: (i) bounded rationality; (ii) satisficing behaviour; (iii) routinisation; and (iv) political bargaining. First and in contrast to the agency driven assumption of unbounded rationality, bounded rationality refers to the concept that there is a limit to corporate decision makers' cognitive ability to continuously process large amounts of complex information and find optimal solutions to complex problems. Thus, rationality is very expensive as a great amount of cognitive effort is required in order to be able to implement complex rational rules, which may

still not be able to necessarily deliver optimal solutions. Bounded rationality, therefore, suggests that top management (e.g., corporate boards) decision-making processes may be improved by following simplified decision-making rules, as the highly complex environment (i.e., internal and external economic, cultural, political, social and technological environment) within which modern corporations operate can render it very difficult to fully appreciate the various connections among all relevant variables.

However, bounded rationality does not necessarily suggest that the decision-makers are not attempting to maximise utility or achive optimal solutions; just that they are constrained by their cognitive and decision-making limitations. In this case, a behavioural theoretical explanation based on cognitive biases and limitations can be offered for any poor and inefficient decisions that have been made by management rather than simply attributing them to managerial opportunism and self-serving behaviour. For example, due to cognitive and information processing limitations, managers may make decisions (e.g., in reaching a forecasted or actual annual earnings figure) based on a selection of information rather than the complete information available. This may lead to corporate inefficiencies and failures, but it will be inappropriate to attribute such failures only to managerial opportunism instead of possible cognitive biases and incompetence.

Second, satisficing behaviour suggests that decision-makers tend to choose practical options that are just sufficient or 'good enough' to meet/satisfy current needs rather than look for the theoretically optimal solution. That is, any divergence from the theoretically optimal solution cannot be construed as opportunistic agent behaviour as the objective is to seek satificing solution that meet current needs or challenges. Consequently, behavioural theory suggests that the introduction of 'satisficing behaviour' instead of 'optimal behaviour' can minimise the possible benefits that agents may receive from engaging in opportunistic decisions. Hence, the importance of personal utility maximising behaviour being the major determinant of managerial decisions may be reduced – with organisational decisions not viewed necessarily as optimal solutions, but rather as practical solutions that meet current specific needs/aspirations. The current levels of aspiration ('satisfying goals') are set based on history (e.g., past performance) and social environment (e.g., peer group – industry and size). For example, a company may simply set its future earnings target by referring to its past and/or peer group performance rather than being presented always as a complex opportunistic attempt by managers to deliberately manage earnings either upwards or downwards for their own personal gain.

Third, van Ees et al. (2009, p.312) define routine as "*standard operating procedures" or "…as the codified memory of the organization; embodying the past experience, knowledge, beliefs, values, and capabilities of the organization and its decision makers*". Thus, routines tend to be (often taken-for-granted) tacit knowledge developed over many years and are widely accepted within an organisation, easily becoming part of the organisation's beliefs, capabilities, culture, experiences, knowledge and values. In this case, routinisation of decision-making can be a vital source of corporate unity and control by eliminating conflicts of interests and conserving cognitive efforts required in reaching optimal decision, often through prolonged discussions and negotiations. Similar to decision making under bounded rationality and satisficing behaviour, decisions made based on routines can also be biased and thus lead to

organisation inefficiencies and failures, but divergence from optimal decisions cannot be attributed only to managerial self-serving behaviour instead of possible inherent limitations associated with the organisational rountines themselves.

The final assumption underlying behaviouraly theory boards and governance is that it views corporations as complex coalitions of stakeholders engaged in continuous political bargaining. In this case, corporations are viewed as complex political system, consisting of coalitions and sub-coalitions of different stakeholders with different objectives and preferences. Distinct from agency theory, goal conflicts are resolved via negotiations and political barganining instead of alignment of rational economic motives by monitoring and incentivising managers. Therefore, organisational objectives and goals reflect the variety of goals and objectives that are pursued by the different stakeholders of coalitions and subcoalitions, which shift contantly through negotiations and political bargaining and problem solving processes that are aimed at achieving the objectives set by the dominant coalition.

To sum up, behavioural theory indicates that due to cognitive and information processing limitations, organisational actors are rarely able to fully assess all available alternatives during decision-making. Instead pragmatic solutions that are typically satisfactory in terms resolving immediate/current problems are sought. Such satisficing solutions are often inherent wihin the organisational routines and heuristics based on capabilities, beliefs, experiences, feelings/intutions, knowledge and values that are often taken-for-granted. Finally, goal formation and emerging conflicts are resolved through continuous process of negotiation and political bargaining towards achieving the objectives set by the dominant coalition. We, therefore, employ this behavioural theoretical perspective in developing our hypotheses and interpreting our findings.

4. Literature review and hypotheses development

Prior studies have examined: (*i*) the link between CG structures (e.g., board characteristics) and EM (Chung et al., 2002; Klein, 2002; Xie et al., 2003; Davidson et al., 2005; Mitra & Cready, 2005; Lin et al., 2006; Rahman & Ali, 2006; Jaggi & Tsui, 2007; Jiraporn & Gleason, 2007; Bowen et al., 2008; Jiang et al., 2008; Epps & Ismail, 2009; Ghosh et al., 2010; Kent et al., 2010; Lo et al., 2010; Bekiris & Doukakis, 2011; Alves, 2012; Chen & Zhang, 2012; Leventis & Dimitropoulos, 2012; Anglin et al., 2013; Albu & Girbin, 2015); (*ii*) the effect of gender on EM (Krishnan & Parsons, 2008; Gavious et al., 2012); (*iii*) the impact of audit firm size on EM (Chia et al., 2007; Francis & Wang, 2008) or audit quality (DeAngelo, 1981); (*iv*) the effect of terrorists attacks on EM (Iatridis, 2012); and (v) the effect of executive pay on EM (Cornett et al., 2008).

Others have investigated the effect of religion/culture on: (*i*) EM/earnings quality (Callen et al., 2011; Du et al., 2015; Kanagaretnam et al., 2015) and financial reporting irregularities (Dyreng et al., 2012; McGuire et al., 2012); (*ii*) CSR (Brammer et al., 2007) and corporate philanthropy (Du et al., 2014); (*iii*) agency problems (Du, 2013) and tunnelling (Du, 2014); (*iv*) equity-pricing (El Ghoul et al., 2012),

corporate decision-making (Hilary & Hui, 2009) and risk-taking (Bartke & Schwarze, 2008); and (*v*) tax evasion/tax fraud (Stack 2006; Richardson 2008) and corruption (Mensah 2014).

Finally, there are normative/critical reviews relating to the distinctiveness of IG srtuctures (Archer et al., 1998; Rahman, 1998; Lewis, 2005; Choudhury & Hoque, 2006; Kamla et al., 2006; Abu-Tapanjeh, 2009; Williams & Zinkin, 2010) and empirical evidence on how such IG mechanisms may drive corporate outcomes and practices, such as performance, CSR, risk-taking and EM (Safieddine, 2009; Farook et al., 2011; Rahman & Bukair, 2013; Ginena, 2014; Mollah & Zaman, 2015).

Consequently, we draw on the above strands of the literature, behavioural theory (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011) and relevant insights from the Omani corporate context to identify potential CG factors that may have effect on EM. Specifically, we examine how and why a broad composite CG index, the presence of an IG committee (i.e., Shariah supervisory board), board size, audit firm size, the presence of a CG committee and board diversity on the basis of gender, may affect a firm's EM practices.

4.1 Firm-level composite corporate governance index (OCGI) and earnings management

The dominant rational economics inspired agency theory suggests that managers are more likely to engage in EM because of the apparent conflict of interest that exists between managers and shareholders (Jensen & Meckling, 1976). As a result, agency theory suggests that formal monitoring CG structures, bonding arrangments and incentive packagages can be instituted that may serve as a motivation for managers to produce reliable and transparent financial reports that minimise cases of EM (Fama, 1980; Fama & Jensen, 1983; Shleifer & Vishny, 1986). This also implies that managers in poorly-governed firms are more likely to behave opportunistically by engaging in EM in order to benefit at the expense of shareholders and other stakeholders than those of better-governed firms.

A major limitation of the agency theory is that it assumes that managers have unlimited ability to continuously make rational decisions based on a full assessment of all available information that can result in optimal outcomes. However, the findings of recent studies based on behavioural theory (see e.g., reviews by Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011) indicate that due to cognitive biases and information processing limitations, organisational actors are rarely able to fully assess all available alternatives during decision-making (i.e., managerial rationality is bounded). Instead pragmatic solutions that are typically satisfactory in terms of resolving immediate/current problems are sought. Such satisficing solutions are often inherent wihin organisational routines and heuristics based on known capabilities, beliefs, experiences, feelings/intutions, knowledge and value that are often taken-for-granted. Additonally, goal formation and emerging conflicts are resolved through continuous process of negotiation and political bargaining instead of via the alignment of rational economic motives of agents. Therefore, divergence of managerial decisions from optimal outcomes (in this case, poor earnings quality or management) may not necessarily be attributed mainly to opportunistic and self-serving behaviour of managers, but instead to their cognitive weaknesses rooted in bounded rationality, a commitment towards

achieving pragmatic and satisficing rather than theoretically oriented optimal solutions, often informed by trusted every day routines and heuristics based on past experiences, which usually would have emerged over many years of careful negotiations and political bargaining among coalitions of corporate stakeholders. This notwithstanding, it can be argued that in firms with better governance arrangements, rules underlying routines and heuristics, are more likely to have been better designed within an environment of healthy negotiations and political bargaining and thus, leading to a selection of satisficing decisions that minimise the extent of divergence from theoretically optimal solutions. In this case, better-governed firms can be expected to engage in less EM than their poorly-governed counterparts.

Empirically, whereas a number of studies have examined the relationship between a number of individual CG mechanisms and EM (e.g., Lin et al., 2006; Iatridis, 2012; Stockmans et al., 2013; Sun & Liu, 2013), studies investigating the association between a broad composite CG index and EM are rare. However, the limited studies that examine the association between firm-level EM and firm-level CG generally report that better-governed firms tend to engage less in EM (e.g., Bekiris et al., 2011; Leventis & Dimitropulos, 2012). Within the Omani corporate setting, Capital Market Authority, Muscat Security Market and regulatory authorities are keen on encouraging firms towards adopting good CG practices with the expectation that they will have positive impact on corporate performance and practices, including disclosure, financial transparency and earnings quality. Given the negative predictions of the theoretical and empirical literature, it can be hypothesised that the quality of CG, as proxied by a comprehensive CG index is expected to be negatively realted to EM. Hence, the first hypothesis of this paper is that:

> ***H1.*** *There is a negative association between the composite CG disclosure index and firm EM practices.*

4.1 Islamic governance committee (IGC) and earnings management

From behavioural theoretical perspective (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011), the ability of corporate agents to reach optimal decisions is limited by cognitive biases and complex information processing weaknesses. Managerial decision-making process will, therefore, be dominated by pragmatic attempts at reaching satisficing rather than optimising outcomes through continuous negotiations and political bargaining among coalitions of stakeholders within routines and heuristics arising from well-established standard operating rules and procedures. Decision-making in this context will be influenced by prior managerial beliefs, emotions, experiences, intuitions/feelings and values rather than rational thought only. Arguably, this will be particularly important in the case of Oman, whereby the corporate context is characterised by corporate commitment to incorporate Islamic religious beliefs and values into corporate operations (Archer et al., 1998; Rahman, 1998; Lewis, 2005; Choudhury & Hoque, 2006; Kamla et al., 2006; Abu-Tapanjeh, 2009; Williams & Zinkin, 2010). A prominent way by which Omani corporate decision-making process can be guided by Islamic religious beliefs and values is through the establishment of the IGC in the form of the SSB. As previously noted, the main role of the SSB is to offer guidance as to whether corporate investments, operations and activities are in lines with rules, beliefs, tenets and values of Islamic Shariah law. Noticeably and unlike directors that serve on other

board subcommittees (e.g., remuneration, nomination, risk and audit), the IGC members[2] ought to have superior knowledge of Shariah law, as well as financial training and experience in order to facilitate appropriate evaluation and interpration of corporate decisions and disclosures. In the context of EM, the presence of the SSB may offer additional assurance to shareholders and other stakeholders that managers of firms' with such a committee are less likely to engage in EM compared with those without it. For instance, Shariah principles relating to accountability, honesty, integrity, responsibility, transparency and truthfulnes directly prohibit managers from engaging in fraudulent activities, such as EM.

Empirically, the findings of a limited number of studies suggest that Judo-Christian religious beliefs and values have a positive impact on: (i) EM/earnings quality (Callen et al., 2011; Du et al., 2015; Kanagaretnam et al., 2015) and financial reporting irregularities (Dyreng et al., 2012; McGuire et al., 2012); (ii) CSR (Brammer et al., 2007) and corporate philanthropy (Du et al., 2014); (iii) agency problems (Du, 2013) and tunnelling (Du, 2014); (iv) equity-pricing (El Ghoul et al., 2012), corporate decision-making (Hilary & Hui, 2009) and risk-taking (Bartke & Schwarze, 2008); and (v) tax evasion/tax fraud (Stack 2006; Richardson 2008) and corruption (Mensah 2014). Similarly and within Islamic research context, the findings of a limited number of studies suggest that IG mechanisms have a positive effect on: (i) CG practices (Safieddine, 2009); (ii) risk management practices (Ginena, 2014); (iii) CSR practices (Farook et al., 2011; Rahman & Bukair, 2013); and (iv) financial performance (Mollah & Zaman, 2015). Of direct relevance to our study and using a sample of 2,624 firm-year observations over 1993-2008, Quttainah *et al*. (2013) provide evidence that there is no significant difference in the extent of EM between banks with IGC in comparison with those without IGC. In contrast, using a sample of 90 Islamic banks from 2000 to 2009, Hamdi and Zarai (2014) document evidence that suggests that banks with IGC are less likely to conduct EM compared with those without IGC. Despite inconclusive empirical evidence and following theoretical predictions, the second hypothesis of this paper is that:

> ***H2.*** *There is a negative association between Islamic governance committee and firm EM practices*.

4.2 Board size (BSIZE) and earnings management

Conventional agency theory suggests that firms with larger boards are likely to be less effective in monitoring managers because such boards may suffer from poor coordination and communication problems (Jensen, 1993), and thus allowing opportunistic managers to engage in self-serving behaviour by, for example, managing earnings upwards in order to boost their compensation packages (Jensen & Meckling, 1976). In this case, smaller boards are expected to provide more effective monitoring in reducing EM. An alternative perspective is that firms with larger boards have greater diversity in experience, technical expertise and skills, including accounting and financial knowledge than smaller boards. This implies that companies with larger boards are better placed to monitor managers, including the ability to detect financial reporting irregularities, such as EM (Pfeffer, 1972; Klein, 2002). Thus, from

[2]Similar to other board subcommittees, the SSB is recommended by a firm's board for approval by shareholders at a general assembly meeting.

this perspective, effective monitoring is more likely to be found in larger boards, which may help in reducing managers' incentive to engage in EM.

However, behavioural theory challenges the dominant rational economics led idea that always attributes questionable corporate behaviour and poor performance (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011), such as financial reporting mistakes to managerial motive to exploit corporate resources for their own benefits. In particular, behavioural theory suggests that there is a limit to the extent to which directors are able to think (cognitive biases), process complex information and make rational decisions (bounded rationality), and hence tend to engage in searching for satisficing rather than optimising solutions. Therefore, such managerial/corporate decisions may be based on formal and informal (e.g., personal beliefs, values and experiences) routines established over a period of time through careful political bargaining and negotiations among different coalitions of corporate stakeholders. Hence, the extent to which corporate boards may be able to ensure that companies are governed effectively may not only be limited to corporate boards' ability to monitor the so-called opportunistic managers, but also how they are able to formally and informally interact, relate, discuss and share ideas among themselves as a team. In this case and within the Omani corporate conext, symbiotic relationships in terms of thought, experiences, values and beliefs, especially religious (Islamic) beliefs may play important role in creating cohesive and fruitful discussions among directors and consequently, improving the corporate decision-making process, including those relating to enhancing accountability, transparency and financial reporting quality. We, therefore, suggest that one way of explaining corporate decisions and practices, such as EM is to look into individual and corporate behaviours, including formal and informal interactions, processes, routines, beliefs, experiences and values.

Empirically, a number of prior studies have provided some insights into the role of board size in mitigating EM, but their results are not only highly mixed, but also none (to the best of our knowledge) of them have examined it from a behavioural perspective and therefore, this offers genuine opportunities to contribute to the literature. For example, a negative relationship between board size and EM has been reported by Xie et al. (2003) and Ghosh et al. (2010). In contrast, Rahaman and Ali (2006), Epps and Ismail (2009) and Alves (2012) offer empirical evidence that suggests that board size has a positive relationship with EM. Following the mixed empirical and theoretical suggestions, we predict a significant relationship between board size and EM without specifying the direction of the coefficient. Therefore, the third hypothesis proposed in this paper is that:

H3. *There is a association between board size and firm EM practices*.

4.3 Audit firm size (BIG4) and earnings management

Accounting scandals, such as Enron and WorldCom, emphasise the crucial role of audit quality, where an external auditor's ability to professionally monitor managers by verifying financial statements is influenced by his/her qualities. One argument rooted in rational economics is that large audit firms have diverse set of skills, experiences, expertise, knowledge and financial resources, including information

processing capabilities to provide high-quality audits than their smaller counterparts (e.g., DeAngelo, 1981; Owusu-Ansah, 1998; Uang et al., 2006). Additionally, larger audit firms have higher reputation to protect compared with smaller audit firms, and thus have a lot to loose in case of post-audit detection of financial reporting irregularities, such as incidences of EM. Larger audit firms are, therefore, able to engage in effective audit negotiations, as well as challenge managerial decisions relating to a wide range of accounting transactions and treatments, and thereby able to expose financial reporting irregularities. Together, these suggest that managers electing to be audited by larger audit firms are lesss likely to engage in EM compared to those audited by smaller audit firms, and therefore a negative relationship between audit firm size and EM can be expected.

However, these agency theoretic assumptions do not take into consideration the fact that auditors ability to make such rational decisions are limited (cognitively) and that auditors may not always be able to secure optimal solutions. This is particularly important for auditing because due to information processing limitations, auditors often select a sample of accounting transactions and treatments in order to test the accuracy of an entire accounting system of a corporation, as well as in forming a satisfactory audit opinion regarding the true and fair view of the underlying accounting treatments and transactions. Such satisficing audit decisions and opinions are often made by auditors based on their formal and informal experiences, beliefs, knowledge and values, which are usually rooted in a well established personal and corporate rules, processes, procedures and routines. We, therefore, suggest that behavioural theory offers a promising way of explaining why corporate decisions may sometimes deviate from optimal, such as failing to identify financial reporting irregularities/EM without necessarily assuming rational opportunistic behaviour of corporate actors and stakeholders.

Empirically, studies examining the association between audit firm size and EM practices are rare, although a negative relationship has been reported by a few previous studies (e.g., Chia et al., 2007; Francis & Wang, 2008; Kent et al., 2010; Iatridis, 2012). In contrast, no significant association has been reported by some studies (e.g., Davidson et al., 2005; Firth et al., 2007). One discernible limitation of these studies is that they are all informed by the ubiquitous rational economics inspired agency theory and thus, providing insights from a behavioural theoretical perspective has the potential to contribute to the literature by offering new theoretical insights. In line with the mixed empirical and theoretical suggestions, however, we predict a significant relationship between audit firm size and EM without specifying the direction of the coefficient. Therefore, the fourth hypothesis proposed in this paper is that:

H4. *There is aassociation between audit firm size and firm EM practices.*

4.4 Corporate governance committee (CGCOM) and earnings management

Given the increased focus on board composition, board committees are considered internal CG mechanisms that help the board to actively monitor managers. Among these committees, a CG committee, as its name implies, is expected to fulfil the important role of assisting the board in ensuring good CG practices within a firm. In this sense, a CG committee aims to promote CG practices by clearly defining governance arrangements and ensuring that the governance framework adopted by the firm is followed

and updated. In particular and from a behavioural theoretical perspective, a CG committee may be able to assist in developing rules and routines based on corporate beliefs, experiences and values, which may lead to the achievement of satisficing solutions to CG challenges. Arguably, having a clear set of guidelines on best CG practices provided by a CG committee are more likely to reduce managers' discretion on financial reporting. Therefore, the theoretical prediction on the relationship between the presence of a CG committee and EM practices is more likely to be negative than positive.

Unlike other board committees (e.g., audit and executive committees), however, the presence of a CG committee and its potential impact on EM has not been empirically investigated in the literature and hence, evaluating the extent to which the presence of a CG committee may drive corporate EM practices may help in expanding current understanding of an important aspect of corporate accounting behaviour. However, prior studies have shown that the presence of a CG committee impacts positively on: (i) CG disclosures (Ntim et al, 2012a); (ii) risk disclosures (Ntim et al., 2013); (iii) CSR disclosures (Ntim & Soobaroyen, 2013); (iv) performance (Ntim, 2015; Ntim et al., 2015b); and (iv) executive compensation (Ntim et al., 2015b). The presence of a CG committee can, therefore, be expected to restrain the extent of EM and therefore, the fifth hypothesis to be tested in this paper is that:

> ***H5.*** *There is a negative association between the presence of a CG committee and firm EM practices.*

4.5 Board diversity on the basis of gender (GNDR) and earnings management

From a behavioural theoretical perspective, prior studies indicate that female directors are more sensitive to ethical issues (e.g., Bernardi & Arnold, 1997) and exhibit greater risk aversion (e.g., Sunden & Surette, 1998) and has better board meetings attendance record (e.g., Adamas & Ferreia, 2009) than male directors. Female board participation is likely to create formal and informal discussions between board of directors and result in greater accountability for managerial decisions (Adamas & Ferreia, 2009). Further, female board participation can assist boards to benefit from a wide pool of talent by bringing different skills and experiences into the boardroom, including soft, but inteligent femine beliefs, emotions, experiences, feelings and values. Thus, this can improve the boards' professionalism in evaluating firms' financial reports and detecting any financial reporting irregularities (Pfeffer, 1972; Nielsen and Huse, 2010). Arguably, a mix of male and female non-executive directors on a board may not only help in improving managerial monitoring as inherent in the rational agency theoretical perspective, but also in reaching better satisficing decisions by bringing stronger emotional intelligence into the corporate board decision-making process and thereby potential minimising incidences of EM (Adams & Ferreia, 2009, Srinidhi et al., 2011).

Empirically, most previous studies (e.g., Clikeman et al., 2001; Krishnan & Parsons, 2008) mainly examine the effect of gender on earnings quality by considering female members of senior managers. In contrast, studies examining the impact of gender on earnings quality that consider the presence of females on corporate boards are limited (e.g., Srinidhi et al., 2011; Gavious et al., 2012). Given the theoretical

prediction and empirical literature, it can be hypothesised that board diversity on the basis of gender is likely to negatively influence EM. Hence, the final hypothesis to be tested in this paper is that:

> ***H6.*** *There is a negative association between board diversity on the basisof gender and firm EM practices.*

5. Data and research methodology

5.1 Data: Sample selection, sources and description

The dataset used in our paper is drawn from the population of Omani firms listed on Muscat Security Market during 2001 to 2011, and Table 1 contains a summary of the sample seclection procedure. The initial sample consisted of 168 firms as of December 2011. To determine the final sample, we excluded some firms based on the following criteria[3]: (i) a firm must have CG, accounting and financial information data for at least one year from 2001 to 2011 inclusive; and (ii) any given industry must have at least 10 observations over the 11 years examined.

Insert Table 1 about here

5.2 Research methodology: Definition of variables and model specification

We employ five main types of variables to conduct our regression analysis, namely: (i) EM's variable; (ii) a composite CG index; (iii) Omani context specific variable (i.e., IG committee); (iv) other CG variables; and (v) control variables, consisting of ownership and firm-specific characteristics. First, our main dependent variable is EM. A number of approaches have been suggested and used by researchers to measure EM. Therefore, in this study, we employ two widely used model. First, we employ the 1995 modified Jones model, as our primary model for calculating firm-level EM. Specifically, we follow a three stage approach in estimating EM. First, total accruals are regressed on revenues (REV) and gross property, plant, and equipment (PPE) using this equation: $\frac{TAC_{it}}{TA_{it-1}} = \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{\Delta\ Rev_{it}}{TA_{it-1}} + \alpha_3 \frac{PPE_{it}}{TA_{it-1}} + \varepsilon_{it}$ (1), where TAC refers to total accruals in year t for firm i, which is calculated as net income minus operating cash flow. TA refers to total assets in year t–1 for firm i. ΔRev refers to revenues in year t less revenues in year *t*–1 for firm *i*. PPE refers to gross property, plant, and equipment in year t for firm i. εit is the idiosyncratic error term in year t for firm i. All variables are divided by lagged total assets in order to mitigate any potential heteroskedasticity problems, and the cash flow approach is adopted in order to calculate total

[3]There were three main reasons for setting these criteria. First, the data collection started with financial year 2001 since it was the first year for which data was available. Second, the sample ends in the 2011 because it was the latest year for which data was available. Finally, using fewer than 10 observations can render the estimated coefficients inefficient since the EM measures used in this study require an estimation of a cross-sectional regression for each industry (McNichols, 2000). Using these criteria, and as outlined in Table 1, the sample procedure produced unbalanced panel data of 116 unique firms (i.e., a total of 1,152 firm year observations over the 11 years investigated). To the best of our knowledge, this is by far the largest dataset to be used in any Middle Eastern and North African study on CG to date. We collected all our CG data from corporate annual reports, which were downloaded from the *Perfect Information Database* and Muscat Security Market website, whilst financial (i.e., accounting and market) data was collected from *DataStream.*

accruals, which is in line with a considerable number of prior studies (e.g., Hribar et al., 2002; Davidson et al., 2005; Chen & Zhang, 2012).

Second, the coefficients estimated from equation (1) are used in equation (2) in order to estimate non-discretionary accruals as follows: $NDA_{it} = \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \left(\frac{\Delta Rev_{it}}{TA_{it-1}} - \frac{\Delta Rec_{it}}{TA_{it-1}} \right) + \alpha_3 \frac{PPE_{it}}{TA_{it-1}}$ (2), where everything remains the same as defined in equation (1) except that ΔREC_{it} is included, which presents receivables in year *t* less receivables in year *t*–1 for firm *i*. Finally, the amount of discretionary accruals (DA), which we use as evidence of the extent of EM is calculated by using the following equation: $DA_{it} = \frac{TAC_{it}}{TA_{it-1}} - NDA_{it}$ (3). Second, we use the 2005 Kothari et al. model to measure EM in order to check the robustness of our findings to alternative EM estimation techniques that takes into account the managerial opportunity to engage in real earnings manipulations rather than through discretaionary accruals (e.g., Cohen et al., 2008; Kothari et al., 2005, 2015). Observably, the two models have been chosen for the following reasons: (i) there is no theory that specifies which of the models produces better EM estimates; (ii) data limitations implies that we are unable to implement every model available; and (iii) the two models have been widely used in the extant literature (e.g., Jiang et al., 2008; Sun & Liu, 2013) to examine EM and therefore, their validity have been widely tested. Further, we adopt signed discretionary accruals rather than absolute abnormal accruals because we intend to measure firm-level EM in the presence of a particular directional prediction as the relation between signed abnormal accruals and CG variables can be predicted (Bowen et al., 2008).

Second, our main independent variable is a composite CG index. Following suggestions in the prior literature that CG can be better examined by a composite CG index (Karamanou and Vafeas, 2005; Bowen et al., 2008), we measured firm-level CG by using comprehensive CG index. Among the two commonly used measures of CG indices are: researcher constructed; and (ii) subjective analysts' CG rankings/indices. We construct our own index instead using subjective analysts' CG indices/rankings for three main reasons. The OCGI is constructed mainly based on the 2002 Omani code of CG. The eight CG themes contained in the code were categorised into four broad sections in order to extract CG provisions. This resulted in 72 individual CG provisions falling under four broad sections: (i) board of directors; (ii) accounting and auditing; (iii) external auditors and internal control systems; and (iv) disclosure and transparency. Some CG provisions contained in the 1974 Companies Act had to be added into the OCGI in order to achieve a comprehensive CG index. The OCGI is considered to be reliable as the Cronbach's coefficient alpha for the four categories in the OCGI is 0.78, suggesting that a random measurement error is less likely to reduce the power of the empirical tests (Pallant, 2010). The OCGI's construction was also guided by those of previsous CG studies (e.g., Ntim et al., 2012a, b). First, most subjective analysts' CG rankings are designed by international professional organisations; hence may not be applicable to the Omani corporate context due to differences in CG regimes. Second, there is no national professional organisation in Oman, which publishes ready to be used CG indices. Third, unlike subjective analysts' CG rankings, our constructed index is a direct measure of actual CG disclosure and covers a wide range of

internal CG disclosure items (Lang & Lundholm, 1993; Donelly & Mulcahy, 2008). Thus, we constructed a comprehensive Omani CG index (*OCGI*). The OCGI is constructed mainly based on the 2002 Omani code of CG. The eight CG themes contained in the code were categorised into four broad sections in order to extract CG provisions. This resulted in 72 individual CG provisions falling under four broad sections: (i) board of directors; (ii) accounting and auditing; (iii) external auditors and internal control systems; and (iv) disclosure and transparency. Some CG provisions contained in the 1974 Companies Act had to be added into the OCGI in order to achieve a comprehensive CG index. The OCGI is considered to be reliable as the Cronbach's coefficient alpha for the four categories in the OCGI is 0.78, suggesting that a random measurement error is less likely to reduce the power of the empirical tests (Pallant, 2010). The OCGI's construction was also guided by those of previsous CG studies (e.g., Ntim et al., 2012a, b). The CG score-sheet was designed to code firms on their level of CG practices, and the annual reports of the 116 firms were analysed and compared with the *OCGI*'s provisions. A score of 1 was assigned if a particular CG provision was applied, and 0 otherwise. The degree of CG's practices level for each firm was aggregated and expressed as a percentage, with the scoring ranging from complete non-compliance (zero score - 0%) to perfect compliance (a score of 72 - 100%).

The IG committee represents our third group of variables that we use in our study, which is uniquely relevant to the Omani corporate context. The fourth group of variables that we empoly in our analysis include other CG variables (i.e., board size, audit firm size , the presence of a CG committee, and board diversity on the basis of gender). Our final group of variables is our control variables, consisting of ownership (i.e., block ownership, foreign ownership, government ownership and institutional ownership) and other firm-specific characteristics (i.e., firm size, profitability, growth, leverage, industry dummy, and year dummy). Table 2 presents summary definitions of all variables includeded in our models.

Insert Table 2 about here

We begin our analysis by employing Ordinary Least Squares (OLS) as our initial estimation method and multiple linear regression as a statistical technique to examine the extent to which CG and IG can influence EM. Assuming all predicted relationships are linear, firm-level EM as a dependent variable were regressed on several explanatory variables as specified in the following regression model:

$$DA_{it} = \alpha_0 + \beta_1 OCGI_{it} + \beta_2 IGC_{it} + \beta_6 BSIZE_{it} + \beta_7 BIG4_{it} + \beta_8 CGCOM_{it} + \beta_9 GNDR_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (4)$$

Where *DA* refers to discretionary accruals, *OCGI* is the Omani CG index, *IGC* is Islamic governance committee, *BSIZE* is the board size, *BIG4* is audit firm size, *CGCOM* is the presence of a CG committee, and *GNDR* is board diversity on the basis of gender. *CONTROLS* refers to control variables, including ownership variables, consisting of block ownership (*BLKOWN*), foreign ownership (*FOROWN*), government ownership (*GOVOWN*) and institutional ownership (*INSOWN*) and firm-specific

characteristics, namely firm size (*LNTA*), growth (*GROWTH*), profitability, (*ROA*), leverage (*LVRG*), industry, and year dummies.

6. Empirical results and discussions

6.1 Empirical results: Descriptive statistics and univariate regression analysis

Summary descriptive statistics of the level of compliance with the Omani corporate governance index (*OCGI*) and its sub-indices for each of the eleven firm-years, as well as all variables included in our analysis are presented in Tables 3 and 4, respectively. First, the findings in Panel *A* of Table 3 indicate that the levels of compliance with the *OCGI*'s provisions across firm years vary substantially among Omani listed firms. Specifically and for example, the aggregate compliance levels have increased from 6.78% in 2001 to 60.93% in 2009, evidence which is largely consistent with those of prior studies that compliance with CG provisions improves over time (e.g., Akkermans et al., 2007; Ntim et al., 2012a, b). The aggregate mean scores range from a minimum of 1.39% to a maximum of 88.89%, with the average Omani firm complying with 47.89% of the 72 individual CG provisions examined over the 2001 to 2011 period.

Similarly, the statistics in Panels *B, C, D* and *E* of Table 3 suggest that there is substantial degree of dispersion in the distribution of each sub-index, as well as similar increasing levels of compliance with respect to each sub-index over the period of our examination. For instance, the board and directors' sub-index ranges from 0% to 97.44% with the average corporations complying with 38.59%. Omani firms appear to have relatively higher compliance with both accounting and auditing provisions (75.37%), and disclosure and transparency provisions (64.04%), intermediate level of compliance with the board and directors provisions (38.59%), and lower level of compliance with external auditors and internal control systems provisions (2.43%). The key conclusion from examining the level of compliance with the 72 individual CG provisions is that despite the initial theoretical prediction that the issuance of the 2002 CG code would effectively encourage firms to adopt better CG measures, CG compliance among Omani listed firms is still low. Further, the evidence that emerges from Table 3 suggests that contrary to the expectation that the 2002 CG Code's reliance on Anglo-American model may not lead to improvement in CG standards among Omani listed firms due to the large differences in corporate contexts, the 2002 Omani voluntary CG Code appears to have helped in promoting good CG practices among Omani listed firms to some extent. The findings of this analysis are also consistent with those of prior studies (e.g., Ntim et al., 2012a, b) that contrary to general concerns about the ability of voluntary CG Codes to improve CG standards in a particular setting, Omani firms have shown some positive response to the best practice recommendations that are contained in the 2002 Omani CG Code.

Insert Table 3 about here

Second, Table 4 presents descriptive statistics relating to the EM, as well as the rest of the explanatory variables. For example, it shows that EM, denoted by the signed discretionary accruals (*DA*), ranges from a minimum of -0.1946 to a maximum of 0.3301, with an average of 0.0304 over the period of our

examination. This reveals that Omani listed firms, on average, appear to manage their earnings upwards with average abnormal accruals equal to about 3% of lagged total assets. Overall, the average *DA* is consistent with the figures reported by a number of past studies (e.g., Mitra and Cready, 2005; Jiang *et al.*, 2008; Lo *et al.*, 2010; Bekiris and Doukakis, 2011). We observe similar wide spreads among the explanatory and control variables. For instance, block ownership, labelled as *BLKOWN* ranges from 0.0000 to 0.9947 with an average of 55%.

Insert Table 4 about here

In addition to the statistical analysis that we conduct before examining our main research hypotheses, we test a number of OLS assumptions, including the presence of multicollinearity problems amon the variables. Table 5 presents the correlation matrix to test for multi-collinearity problems. As a robustness check, we report both the Pearson's parametric and Spearman's non-parametric coefficients. Generally, the coefficients indicate that no serious multicollinearities among all the variables used. Further, a number of statistical analysis were carried out (which for brevity are not reported here, but wiil be available on request) in order to test for other OLS assumptions before examining our hypotheses.[4]

Insert Table 5 about here

6.2 Empirical results: OLS (multivariate) regression analysis

Table 6 reports the effect of the *OCGI*, IG committee (*IGC*) and other CG variables (board size - *BSIZE*; audit firm size – *BIG4*; the presence of a CG committee – *CGCOM;* and board gender diversity - *GNDR*) on EM. Generally, Columns 2 and 3 of Table 6 present the findings of the main Model related to the effect of CG on EM. These findings indicate that *OCGI* and *IGC* are significant in explaining cross-sectional differences in the *DA*. First, the negative coefficient on the *OCGI* is in line with our behavioural theoretical framework, which suggests that the capacity of managers and corporate boards to think, process complex information and decide rationally is cognitively limited (bounded rationality) (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011). Therefore, managers tend to take pragmatic steps that are often aimed at securing satisficing ("satisficing behaviour and problemistic search") rather than optimising (rational economic behaviour) solutions by following well-established corporate beliefs, knowledge, values, rules, procedures, processes and routines ("routinisation of decision-making") that have usually been developed based on careful negotiations and political bargaining ("political bargaining in the context of corporations as coalitions of stakeholders") among a coalition of corporate stakeholders (van Ees et al., 2009, pp.311-312). Thus, deviations from optimal solutions and in this case, evidence of EM behaviour may not necessarily be explained by incentives of managers to self-serve their rational economic interests (e.g., to increase executive pay by managing earnings upwards

[4]The OLS assumptions, namely linearity, normality, multicollinearity, autocorrelation and heteroskedasticity were tested in order to ensure that OLS regression technique is statistically appropriate to be used to perform our regression analysis.The effects of outliers were minimised by winsorising, and the first-order autoregressive method was adopted in order to take account of serial correlation and heteroskedasticity. Overall, the diagnostics for the OLS assumptions indicate that the OLS estimation tool is statistically appropriate as a main estimation method to perform our OLS regression analysis.

and thereby expropriating corporate resources), but instead due to cognitive biases (bounded rationality) and pratical (complex information collection and processing challenges) limitations that may motivate managers to pragmatically seek satsisficing solutions to current problems. The findings offer further support to the behavioural theory's suggestions that informal interactions, relationships, discussions, emotions, experiences, beliefs and values are equally important in determining the effectiveness of CG structures. Empirially, the negative association between *DA* and the *OCGI* provides support for *H1* and the findings of past studies (e.g., Mitra & Credy, 2005; Jiraporn & Gleason, 2007; Cornett et al., 2008; Wang, 2014), who report evidence that suggests that companies with good CG practices tend to engage less in EM compared with those with poor CG structures.

Second, our model shows that *IGC* is negative and statistically significant at the 1% level of significance, suggesting that *H2* is also empirically supported. The evidence is largely in line with the predictions of our behavioural theoretical framework. Specfically and from behavioural theoretical perspective (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011), we argue that the ability of corporate agents to reach optimal decisions is limited by cognitive biases and complex information processing weaknesses. Managerial decision-making process will, therefore, be dominated by pragmatic attempts at reaching satisficing rather than optimising outcomes through continuous negotiations and political bargaining among coalitions of stakeholders within routines and heuristics arising from well-established standard operating rules and procedures. Decision-making in this context will be influenced by prior managerial beliefs, emotions, experiences, intuitions/feelings and values rather than rational thought and economic opportunism only. Arguably, this will be particularly important in the case of Oman, whereby the corporate context is characterised by corporate commitment to incorporate Islamic religious beliefs and values into business operations (Archer et al., 1998; Rahman, 1998; Lewis, 2005; Choudhury & Hoque, 2006; Kamla et al., 2006; Abu-Tapanjeh, 2009; Williams & Zinkin, 2010; Mollah & Zaman, 2015). A prominent way by which the Omani corporate decision-making process can be guided by Islamic religious beliefs and values is through the establishment of the IGC in the form of the SSB. As previously noted, the main role of SSB is to offer guidance as to whether corporate investments, operations and activities are in lines with rules, beliefs, tenets and values of Islamic Shariah law. In the context of EM, the presence of the SSB may offer additional assurance to shareholders and other stakeholders that managers of firms with such a committee are less likely to engage in EM compared with those without it. For instance, Shariah principles relating to accountability, honesty, integrity, responsibility, transparency and truthfulnes directly prohibit managers from engaging in fraudulent activities, such as EM. Empirically, it offers new insights on the effect of IG on EM, as well as lends support to the result of Hamdi and Zarai (2014).

Third, our model predicts no significant relationship between each of board size (*BSIZE*), audit firm size (*BIG4*), the presence of a CG committee (*CGCOM*), and board gender diversity (*GNDR*), and *DA*, implying that *H3*, *H4*, *H5* and *H6* are, respectively, not empirically supported. Finally, to ascertain how sensitie the findings are to our *DA* measure, we include several control (ownership and other firm-

specific characteristics) variables in Models 1 to 8 with all the findings being largely consistent across the eight Models. With specific reference to the control variables, our findings suggest that firms with high growth (*GROWTH*), leverage (*LVRG*), profitability (*ROA*) and block ownership (*BLKOWN*) tend to engage significantly more in EM, whereas those with high government ownership (*GOVOWN*) and institutional ownership (*INSOWN*) tend to engage significantly less in EM, and thereby offering additional new insights and contributions regarding the effect of CG, ownership and other firm-specific variables on the extent of corporate EM.

Furthermore, Models 2 to 4 present the effect of each group of variables on EM. In doing so, only the effect of the *OCGI* as an integrated system on EM in addition to control variables are included in Model 2 as reported by Columns 4 and 5 of Table 6. We find similar findings to those reported in the main Model indicating that the *OCGI* is statistically significant and negatively associated with *DA* at the 10% level of significance. Discernibly, the control variables also show significant relationships with *DA*. In addition, to examine the effect of the *IGC* separately from the other explanatory variables, Column 6 and 7 of Table 6 repeat Model 3 findings of multivariate regression of *DA* on the *IGC* and control variables with the findings contained in Colums 6 and 7 of Table 6 indicating that all the variables remain statistically significant. Thus, our evidence that the presence of an IG committee tend to constrain the extent of EM is robust to the inclusion of the other control variables. Similarly, the other CG variables (*BSIZE, BIG4, CGCOM* and *GNDR)* along with the control variables were examined separately from the *OCGI* and *IGC* in order to observe their impact on EM. The findings of this analysis that are also largely consistent with those contained in the main model are reported in Columns 8 and 9 of Table 6.

Moreover, in order to investigate which of the four sub-indies contributes more to *DA*, we re-regress equation (1) by replacing the *OCGI* with each sub-index one at a time. Statistically significant and negative effect of board and directors, and accounting and auditing on *DA* is observable in Models 5 and 6 of Table 6, while Models 7 and 8 show that external auditors and internal control systems and disclosure and transparency have negative effect on *DA*, but statistically insignificant.

Insert Table 6 about here

7. Robustness analysis

We conduct a series of robustness estimations to examine the extent to which our main findings are robust or sensitive to the use of: (i) alternative CG weighted index; (ii) alternative EM's proxy; (iii) financial firms inclusion; (iv) the pre- and post-2002 CG Code issuance; and (v) any potential endogeneity problems. The findings of these analyses are presented in Models 2 to 7 of Table 7 with the findings contained in Model 1 repeating our previous main findings in order to facilitate easy comparative analysis. First, we account for the likelihood that using weighted CG index may result in different findings. As explained earlier, un-weighted index was used to perform our main analysis where all 72 CG provisions constituting the four sub-indies of the *OCGI* have different weightings. The four sub-indies include 39, 7, 4, and 22 CG provisions contributing to the *OCGI* by 54%, 10%, 6% and 30%, respectively. Following prior studies' procedure in constructing weighted CG index (e.g., Beiner et al., 2006), an alternative *OCGI*

was constructed in which each sub-index was scored by awarding similar weight of 25%. We replaced our un-weighted *OCGI* with the weighted *OCGI* in equation (4), and the findings are reported in Model 2 of Table 7, with the results indicating that our main Model's findings are not sensitive to using a weighted CG index.

Insert Table 7 about here

Second, we replicate our main analysis by using a different measure of EM developed by Kothari et al. (2005) in order to examine whether our main findings are sensitive to the *DA*'s proxy employed that explicitly takes the likelihood of real earnings manipulations into account (e.g., Cohen et al., 2008; Kothari et al., 2005, 2015). The results presented in Model 3 of Table 7 suggest that our evidence is robust to the use of this alternative EM measure. Third, we account for the possibility that the inclusion of financial companies[5] in our data set may lead to different results by re-regressing equation (4) using only non-financial firms (859 firm years). The results reported in Model 4 are essentially similar to those presented in Model 1 of the same table. This may be due to the fact that Omani financial and non-financial firms operate in an environment, where corporate regulations, including CG ones are applicable to both financial and non-financial firms in an equal measure. Fourth, to ascertain whether our findings are sensitive over the sample period of our examination, we re-run our analysis by splitting our sample into two sub-samples: *Pre-2003* (i.e., from 2001 to 2002) and *Post-2003* (2003 to 2011) periods. It is evident from the reported results in Models 5 and 6 of Table 7 that the main variable (*OCGI*) is insignificant in the *Pre-2003* period compared with that of the *Post-2003* period, suggesting that the introduction of the 2002 Omani CG Code appears to have helped in reducing firms' EM. Finally, we employ the widely used *2SLS* technique to check the possibility of endogenity problems that may arise as a result of omitted variables and/or simultaneity (Larcker and Rusticus, 2010).[6] This may cause the OLS results (main results) to be biased and inconsistent. Following Larcher and Rusticus (2010) methodology, the Hausman test is employed to detect the existence of any endogeneity problems. The test is made up of two stages. In the first stage and as specified in equation (5) below, the *OCGI* is regressed on the control variables and its resulting predicted values are saved as *P_OCGI*.

$$OCGI_{it} = \alpha_0 + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (5)$$

Where the *OCGI* refers to the Omani CG index and *CONTROLS* refers to the control variables, which are the same as those used in equation (4). In the second stage, the *OCGI* and *P_OCGI* in addition to the control variables are included in the following equation.

[5]As previously noted, both financial and non-financial firms were included in the main analysis. In this regard, and although the nature of financial firms' accruals may differ from those of non-financial firms, prior studies that examine the relation between CG and EM have not provided any empirical evidence to confirm the theoretical argument that the impact of CG on accruals in non-financial firms is not comparable to those in financial firms because the latter are subject to more specific accounting requirements. As a result, we aim to provide empirical evidence of whether there is a significant difference in CG's influence on EM between financial and non-financial firms in an emerging country like Oman.

[6]The potential of this problem arises when the *OCGI* assumed to be exogenous in equation (4) is associated with the error term because an important control variable is not included in the model (e.g., unavailability of data) and/or when the dependent variable simultaneously determines the independent variable (Wooldridge, 2009).

$$DA_{it} = \alpha_0 + \beta_1 OCGI_{it} + \beta_2 P\_OCGI_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (6)$$

Where *DA* refers to the discretionary accruals measured by the 1995 modified Jones Model, *OCGI* refers to the Omani CG index, *P_OCGI* refers to the predicted values of the *OCGI* and *CONTROLS* refers to the control variables, which are the same as those used in equation (4), with the test rejecting the null hypothesis of no endogeneity. In this sense, the *2SLS* technique was performed as follows. In the first stage, the *OCGI* is assumed to be determined by the six control variables and four new alternative CG variables.[7] The first stage regression is specified as follows (for brevity, the first stage results are not reported here, but will be available upon request).

$$OCGI_{it} = \alpha_0 + \beta_1 BDIV_{it} + \beta_2 NEXD_{it} + \beta_3 NBMs_{it} + \beta_4 CAPEX_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (7)$$

Where *OCGI* refers to the Omani CG index, *BDIV*, *NEXD*, *NBMs*, and *CAPEX* are defined as board diversity on the basis of nationality, the number of non-executive directors on the board, the number of board's directors meetings, and capital expenditure, respectively. *CONTROLS* refers to control variables which are the same as those used in equation (4). The predicted value of the *OCGI* is saved and referred to it as *P_OCGI*, as well as the residuals is saved and referred to it as *R_OCGI*. The correlation matrix (which for brevity is not reported here, but will be made available upon request) shows that the predicted value of the *OCGI* (*P_OCGI*) is highly correlated with the *OCGI* and lowly correlated with the *R_OCGI*, indicating that the *P_OCGI* is relevant and valid instrument for the *OCGI*. In the second stage, equation (4) is re-estimated by using the *P_OCGI* instead of the *OCGI* as specified below.

$$DA_{it} = \alpha_0 + \beta_1 P\_OCGI_{it} + \beta_2 IGC_{it} + \beta_6 BSIZE_{it} + \beta_7 BIG4_{it} + \beta_8 CGCOM_{it} + \beta_9 GNDR_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (8)$$

Where everthing remains the same as those used in equation (4) except that we replace the *OCGI* with its predicted values (*P_OCGI*). The results of the *2SLS* are presented in Model 7 of Table 7, which are considerably in line with those obtained by estimating the OLS model and reported in Model 1 of Table 7.[8] Overall, our sensitivity analysis suggests that our results are fairly robust to alternative CG/EM measures and estimation techniques, including any potential endogeneities.

8. Summary and conclusion

[7]The choice of the alternative CG variables is based on the theoretical literature, empirical literature and the availability of data. Drawing from prior literature (e.g., Lipton & Lorsch, 1992; Vafeas, 1999; Haniffa & Cooke, 2002; Petra, 2005; Bowen et al., 2008; McCabe & Nowak, 2008; Tariq et al., 2014), the four new alternative CG variables include, board diversity on the basis of nationality, the number of non-executive directors on the board, capital expenditure and the number of board meetings.

[8]Additionally and in an untabulated results, we conduct fixed-effect estimation in order to account for the potential existence of firm-level hetereogenities, such as company culture – with the central tenor of our findings remaining qualitatively or essentially the same, as reported previously.

Although a considerable number of studies have examined the effect of a number of corporate governance (CG) mechanisms on the extent of corporate earnings management (EM), their findings are largely mixed. Discernibly, existing studies have a number of limitations, including being informed mainly by the ubiquitous rational economics theory of agency, focusing primarily on developing countries and investigating mostly the effect of individual CG mechanisms on the extent of EM. By contrast, empirical evidence on why and how a firm's CG might influence its level of EM is generally limited in developing countries, but particularly acute in the Middle East and North Africa region. Additionally, despite increasing evidence that the heavy reliance on the dominant rational agency theory is unable to provide a full explanation for magerial motivation to engage in EM and that there is a need to consider alternative theoretical perspectives, none of the existing studies have explicitly informed their analysis by drawing, for example, on the insights of behavioural theory of corporate boards and governance (Gabrielsson & Huse, 2004; van Ees et al., 2009; Huse et al., 2011). Arguably, these developments limit current international understanding of how and why CG might constrain or facilitate corporate EM in different corporate contexts. Therefore, this paper has examined the effect of the quality of firm-level CG and Islamic governance (IG) committee on the extent of EM in Oman from 2001 to 2011. This coincides with a period in which the Omani authorities pursued CG reforms that were aimed at improving corporate performance and practices, including enhancing corporate disclosure and the quality of financial reports.

Apart from articulating and applying behavioural theoretical perspective, which may be used by future studies in interpreting their results, our findings makes a number of new contributions to the extant CG literature. First, despite the theoretical expectation that the introduction of the 2002 Omani voluntary CG Code will facilite uniformity and convergence of CG practices, the findings from our extensive summary descriptive statistics suggest that CG standards in Omani listed corporations still differ widely over the eleven years investigated. Whereas the level of variability observed is comparable to those reported by prior studies, it seems to indicate that some degree of hetereogeneity exists when it comes to the importance that Omani listed corporations attach to CG practices. However, despite concerns that a voluntary CG Code may be ineffective in raising CG standards in Omani corporations given the context, our findings suggest that there has been gradual and observable improvement in CG standards over the eleven years investigated. Second, we find that, on average, better-governed corporations tend to engage significantly less in EM than their poorly-governed counterparts. This offers the first empirical evidence on the effect of the Omani CG reforms on the extent of EM among Omani listed firms, and seems to suggest that adopting a UK-style CG regime appears to be working to a certain degree in mitigating EM. Third, we also find that corporations that have established IG committees engage significantly less in EM. In contrast, we do not find any evidence that board size, audit firm size, the presence of a CG committee, and board gender diversity have any significant relationship with the extent of corporate EM. Our results are fairly robust across a number of econometric models that sufficiently account for alternative CG and EM proxies, as well as potential endogeneity problems. Overall, our findings are generally consistent with the predictions of our behavioural theoretical framework.

Our results have a number of important implications for policy-makers and regulatory authorities. Evidence that CG standards in Omani listed corporations are generally improving imply that efforts by the various stakeholders of CG, such as the Omani Capital Market Authority and Muscat Securities Market have had a positive influence on CG practices. The relatively low and limited convergence in CG practices among Omani listed corporations, however, suggests that there is the need to further enhance compliance and enforcement. In this case, establishing a 'compliance and enforcement' unit that will continuously monitor corporate disclosures, including those relating to the various CG practices may be a step in the right direction. Finally and although our findings are fairly robust and important, its weaknesses need to be clearly articulated. Due to data limitations, we have focused mainly on how and why internal CG mechanisms may drive EM. Future research may improve their analsysis by examining how external CG structures, such as the media and the market for corporate and managerial control impact on EM. Similarly, due to data limitations, our analysis is limited to Omani listed firms. Thus, future studies may include non-listed firms, as well as firms from different countries to extend our evidence.

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Appendix: Corpoarate governance (CG) practice disclosure index

CG theme	OCGI Item: Information on or reference to	Range of scores	Total score per theme
(i) Board & directors	1. Whether the board of directors' number is between 5 and 12.	0-1	
	2. Whether the directors are clearly classified into executive, non-executive and independent directors.	0-1	
	3. Whether the roles of chairperson and CEO are split.	0-1	
	4. Whether the third of its board's members is independent directors.	0-1	
	5. Whether the board is composed by a majority of non- executive directors.	0-1	
	6. Whether the directors' membership number on other firms are specified and disclosed.	0-1	
	7. Whether directors' membership number on other firms are less than 5.	0-1	
	8. Whether the board meets at least four times a year.	0-1	
	9. Whether the board meetings' dates are disclosed.	0-1	
	10. Whether individual directors' meetings record is disclosed.	0-1	
	11. Whether individual directors' meetings attendance record at the general assembly is disclosed.	0-1	
	12. Whether directors' remuneration, interests and share options are disclosed.	0-1	
	13. Whether top five managers' remuneration are disclosed.	0-1	
	14. Whether individual directors' service contracts, and notice period and severance fees are disclosed.	0-1	
	15. Whether the board approves interim and annual financial statements.	0-1	
	16. Whether a board's report on the going concern status of firm is disclosed.	0-1	
	17. Whether the board has conducted a review on the effectiveness of firm's internal control systems.	0-1	
	18. Whether there is a narrative on directors' nomination procedures.	0-1	

	19. Whether a remuneration committee has been established.	0-1	39
	20. Whether remuneration's committee jurisdictions and duties are disclosed.	0-1	
	21. Whether the remuneration committee's members are disclosed.	0-1	
	22. Whether the chairperson of remuneration committee is an independent.	0-1	
	23. Whether the majority of remuneration committee are independent.	0-1	
	24. Whether remuneration's committee's members' remuneration is disclosed.	0-1	
	25. Whether remuneration's committee members' meetings attendance record is disclosed.	0-1	
	26. Whether a nomination committee has been established.	0-1	
	27. Whether nomination's committee jurisdictions and duties are disclosed.	0-1	
	28. Whether the nomination committee's members are disclosed.	0-1	
	29. Whether the chairperson of nomination committee is an independent.	0-1	
	30. Whether the majority of nomination committee's members are independent.	0-1	
	31. Whether nomination's committee members' compensation is disclosed.	0-1	
	32. Whether nomination's committee members' meetings attendance record is disclosed.	0-1	
	33. Whether a risk committee has been established.	0-1	
	34. Whether risk's committee jurisdictions and duties are disclosed.	0-1	
	35. Whether the risk committee's members are disclosed	0-1	
	36. Whether the chairperson of risk committee is an independent.	0-1	
	37. Whether the majority of risk committee's members are independent.	0-1	
	38. Whether risk's committee members' remuneration is disclosed.	0-1	
	39. Whether risk's committee members' meetings attendance record is disclosed.	0-1	
(ii) Accounting and auditing	40. Whether an audit committee has been established.	0-1	7
	41. Whether audit's committee jurisdictions and duties are disclosed.	0-1	
	42. Whether the audit committee's members are disclosed.	0-1	
	43. Whether the chairperson of audit committee is an independent.	0-1	
	44. Whether the majority of audit committee's members are independent.	0-1	
	45. Whether audit committee's members' compensation is disclosed.	0-1	
	46. Whether audit's committee members' meetings attendance record is disclosed.	0-1	
(iii) External auditors and internal control systems	47. Whether an external auditor's report on adequacy and efficacy of firm's internal control systems is disclosed.	0-1	4
	48. Whether an external auditor report's on firm's compliance with its internal control system is disclosed.	0-1	
	49. Whether an external auditor report's on firm's ability to carry out its activities is disclosed.	0-1	
	50. Whether an external auditor's report on frauds is disclosed.	0-1	
(iv) Disclosure and transparency	51. Whether there is a narrative on the distribution of shareholding.	0-1	
	52. Whether there is a narrative on how the firm is doing its activities in order to achieve its objectives.	0-1	
	53. Whether there is a narrative on investment opportunities.	0-1	
	54. Whether there is a narrative on firm's financial and operational performance.	0-1	
	55. Whether there is a narrative on risks and concerns and how are assessed and managed by the firm.	0-1	

	56. Whether there is a narrative on firm's performance in comparison to board based index of MSM.	0-1	
	57. Whether the firm has obtained a certificate from external auditor on its CG practices.	0-1	
	58. Whether the firm has provided a separate chapter in its annual report on CG	0-1	
	59. Whether the firm provides a statement on the compliance or non-compliance with the 2002 code of CG.	0-1	
	60. Whether there is a narrative on penalties and strictures that might be imposed on firm by MSM, CMA or any statutory authority.	0-1	
	61. Whether there is a narrative on financial transactions that may have conflict of interests.	0-1	22
	62. Whether there is a narrative on high and low market share prices during each month.	0-1	
	63. Whether there is a narrative on the professional profile of external auditor.	0-1	
	64. Whether there is a narrative on dividend policy.	0-1	
	65. Whether there is a narrative on firm's loans.	0-1	
	66. Whether the firm posts its results online.	0-1	
	67. Whether there is a narrative on firm's convertible instrument.	0-1	
	68. Whether firm sends its half-yearly results to each shareholders or not.	0-1	
	69. Whether there is a narrative on firm's analysis of segment and product wise performance.	0-1	
	70. Whether there is a narrative on how firm sees and predicts its future.	0-1	
	71. Whether the firm includes management discussion and analysis chapter as part of its annual report.	0-1	
	72. Whether there is a narrative on directors' biography, experience and responsibilities.	0-1	
Total of 4 themes	**72 OCGI Items**		**72**

Table 1
Summary of the sample selection procedure

Panel A: Industrial composition of firms listed on the MSM available to be sampled as at31/12/2011		No. of firms	Percentage of firms
Basic materials		30	17.9
Consumer goods		25	14.9
Consumer services		24	14.3
Financial		53	31.5
Industrial		26	15.5
Utilities		5	2.9
Health care		2	1.2
Telecommunications		2	1.2
Oil & Gas		1	0.6
Total firms		168	100.0
Less: Firms with no data available	48		
Firms with missing data	4		
Total excluded firms		52	27.9
Total sampled firms with full data		116	69.0
Panel B: Industrial composition of sampled firms with full data			
Basic materials		22	19.0
Consumer goods		21	18.1

Consumer services	21	18.1
Financial	29	25.0
Industrial	13	11.2
Utilities	5	4.3
Health care	2	1.7
Telecommunications	2	1.7
Oil & Gas	1	0.9
Total sampled firms with full data	116	100.0

Source: Muscat Securities Market's website

Table 2
Definition of dependent and independent variables

Dependent variables	
DA	Discretionary accruals represent a firm-level EM practices as measured by modified Jones Model.
Independent variables	

OCGI	Omani corporate governance index consisting of 72 governance provisions that take a value of 1 if a particular provision is disclosed, and 0 otherwise; scaled to a value between 0% and 100%.
IGC	1 if a firm has set up a Islamic governance committee, 0 otherwise.
BSIZE	The total number of directors on the board of a firm.
BIG4	1 if a firm is audited by one of the biggest four audit firms (PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young and KPMG), 0 otherwise.
CGCOM	1 if a firm has set up a corporate governance committee, 0 otherwise.
GNDR	1 if a firm has at least one woman on its board, 0 otherwise
Control variables	
BLKOWN	Percentage of shares held by shareholders with at least 5% of the total firm shareholdings.
GOVOWN	1 if a firm has government ownership, 0 otherwise.
INSOWN	Percentage of institutional ownership to total firm ordinary shareholdings.
FOROWN	Percentage of foreign ownership to total firm ordinary shareholdings.
LNTA	Natural log of total assets.
ROA (%)	Operating profit to total assets.
GROWTH (%)	Current year's sales minus last year's sales to last year's sales.
LVRG (%)	Book total debt scaled by total assets of a firm.
INDUSTRY	Dummies for each of the eight industries.
YEAR	Dummies for each of the ten years.

Table 3
Summary descriptive statistics of levels of compliance with corporate governance disclosure index (*OCGI*) and sub-indices (%)

	All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Panel A: *All provisions contained in the Oaudi corporate governance index (OCGI)*												
Mean	47.8974	6.7819	17.4190	33.6627	47.2222	54.0351	55.3686	58.6336	59.6248	60.9284	61.0749	60.1768
Median	54.1667	5.5556	8.3333	41.6667	50.0000	54.1667	55.5556	58.3333	59.0278	59.7222	59.7222	59.7222
STD	21.7747	2.3565	16.7201	21.7550	17.4887	11.5620	10.9602	10.7947	9.9774	9.9513	9.9535	9.2303
Min	1.3889	1.3889	2.7778	1.3889	1.3889	4.1667	6.9444	34.7222	34.7222	34.7222	30.5556	33.3333
Max	88.8889	12.5000	62.5000	73.6111	75.0000	77.7778	77.7778	88.8889	87.5000	88.8889	87.5000	84.7222
Panel B: *Board & Directors*												
Mean	38.5884	1.5276	11.0577	25.0330	37.0538	43.0499	43.8856	48.0480	49.4602	50.9447	51.2821	51.9114
Median	41.0256	1.2821	2.5641	28.2051	35.8974	38.4615	41.0256	46.1538	48.7179	51.2821	53.8462	53.8462
STD	21.8379	1.7362	16.1583	20.4284	17.4004	13.9938	13.3751	14.8256	13.8301	14.2274	14.4050	13.6839
Min	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	20.5128	25.6410	25.6410	17.9487	20.5128
Max	97.4359	7.6923	58.9744	71.7949	74.3590	79.4872	76.9231	97.4359	97.4359	97.4359	97.4359	97.4359
Panel C: *Accounting & Auditing*												
Mean	75.3720	0.0000	20.6845	54.6392	79.8319	92.1805	92.9945	92.6641	92.9825	94.8622	95.0311	94.0260
Median	100.0000	0.0000	0.0000	71.4286	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
STD	38.9407	0.0000	34.8000	44.4166	35.9808	17.4053	17.0077	18.1587	16.3762	14.6141	14.2912	13.3202
Min	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	28.5714
Max	100.0000	0.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Panel D: *External Auditors & Internal Control Systems*												
Mean	2.4300	2.3900	2.3400	3.3500	1.9600	1.3200	2.8800	2.4800	2.4100	2.1900	2.3900	2.9500
Median	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
STD	7.7670	7.3950	7.3250	8.5610	6.7540	5.6120	8.7490	8.2260	8.1260	7.8430	8.0930	8.1080
Min	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Max	50.0000	25.0000	25.0000	25.0000	25.0000	25.0000	50.0000	50.0000	50.0000	50.0000	50.0000	25.0000
Panel E: *Disclosure & Transparency*												
Mean	64.0349	19.0522	30.3977	47.7976	63.1462	71.0048	73.3392	76.9451	77.5917	78.7081	78.4980	74.7521
Median	72.7273	18.1818	22.7273	54.5455	68.1818	72.7273	77.2727	77.2727	77.2727	77.2727	77.2727	77.2727
STD	24.3873	6.6750	18.4114	24.4262	20.7058	13.5908	12.8886	11.3299	11.6433	11.6212	11.8488	11.1949
Min	4.5455	4.5455	9.0909	4.5455	4.5455	13.6364	18.1818	40.9091	36.3636	36.3636	36.3636	40.9091
Max	100.0000	40.9091	81.8182	86.3636	100.0000	95.4545	95.4545	95.4545	100.0000	100.0000	100.0000	95.4545

Notes: This Table reports descriptive statistics of the aggregate levels of compliance with the Omani corporate governance index (*OCGI*) from 2001 to 2011.

Table 4
Summary descriptive statistics of the other variables for all (1,152) firm years

Variables	Mean	Median	Std. Dev.	Minimum	Maximum
Dependent variables					
DA	0.0304	0.0308	0.1017	-0.1946	0.3301
Independent variables					
OCGI	47.8974	54.1667	21.7747	1.3889	88.8889
IGC	0.0122	0.0000	0.1096	0.0000	1.0000
BSIZE	7.3437	7.0000	1.7885	4.0000	13.0000
BIG4	0.7100	1.0000	0.4539	0.0000	1.0000
CGCOM	0.1588	0.0000	0.3656	0.0000	1.0000
GNDR	0.1770	0.0000	0.3819	0.0000	1.0000
Control variables					
BLKOWN	54.8402	56.5927	24.3699	0.0000	99.4700
GOVOWN	0.2578	0.0000	0.4376	0.0000	1.0000
INSOWN	20.3921	12.4205	22.6782	0.0000	90.8500
FOROWN	10.4591	0.0000	20.0972	0.0000	90.1300
LNTA	16.6222	16.4241	1.4732	14.4500	19.9400
ROA	0.0573	0.0504	0.0980	-0.1368	0.2500
GROWTH	0.7858	0.6735	0.4408	0.1990	1.8570
LVRG	0.3300	0.2678	0.2937	0.0001	0.9530

Notes: *DA* denotes the firm-level *EM* practices, *OCGI* denotes the Omani corporate governance index, *IGC* denotes Islamic governance committee, *BSIZE* denotes the size of board, *BIG4* denotes the audit firm size, *CGCOM* denotes the presence of a corporate governance committee, *GNDR* denotes board diversity on the basis of gender, *BLKOWN* denotes block ownership, *GOVOWN* represents government ownership, *INSOWN* denotes institutional ownership, *FOROWN* represents foreign ownership, *LNTA* denotes firm size, *ROA* denotes firm profitability, *GROWTH* denotes firm growth and *LVRG* denotes leverage.

Table 5
Pearson's and Spearman's correlation matrices of the dependent, independent, and control variables

	DA	OCGI	IGC	BSIZE	BIG4	CGCOM	GNDR	BLKOWN	GOVOWN	INSOWN	FOROWN	LNTA	ROA	GROWTH	LVRG
DA		0.007	-0.061**	-0.016	-0.018	0.015	-0.001	0.004	-0.011	-0.010	-0.003	0.014	0.278***	0.032	0.060**
OCGI	0.039		0.073**	0.088***	0.100***	0.299***	0.086***	-0.007	0.155***	0.015	0.076***	0.347***	0.173***	0.006	-0.077***
IGC	-0.047	0.038		0.156***	0.071**	-0.048	0.094***	-0.039	0.007	-0.028	0.069**	0.181***	-0.067**	-0.046	0.162***
BSIZE	-0.023	0.046	0.175***		0.252***	-0.055*	0.013	-0.266***	0.085***	-0.001	0.008	0.391***	0.054*	-0.111***	-0.032
BIG4	-0.018	0.030	0.071**	0.255***		0.110***	0.056*	-0.161***	0.062**	0.001	0.020	0.377***	0.098***	-0.072**	-0.039
CGCOM	-0.003	0.279***	-0.048	-0.052*	0.110***		0.022	-0.013	0.048	0.010	0.001	0.092***	0.069**	0.012	-0.177***
GNDR	-0.007	0.079***	0.094***	0.006	0.056*	0.022		0.054*	0.059**	-0.050*	0.067**	0.110***	0.045	0.017	0.057*
BLKOWN	0.002	0.068**	-0.038	-0.272***	-0.160***	-0.009	0.051		0.109***	0.226***	0.339***	-0.223***	-0.128***	0.053*	0.094***
GOVOWN	-0.027	0.154***	0.007	0.101***	0.062**	0.048	0.059**	0.118***		-0.031	0.047	0.154***	0.206***	-0.114***	-0.118***
INSOWN	0.006	0.029	-0.043	-0.045	-0.011	0.016	-0.019	0.314***	-0.062**		-0.029	-0.163***	0.035	-0.036	0.044
FOROWN	0.005	0.072**	0.053*	-0.044	-0.007	0.019	0.057**	0.355***	0.038	-0.150***		0.140***	0.005	-0.128***	0.021
LNTA	-0.009	0.275***	0.244***	0.441***	0.369***	0.069**	0.113***	-0.206***	0.169***	-0.187***	0.087***		0.179***	-0.149***	0.044
ROA	0.285***	0.180***	-0.045	0.080***	0.101***	0.064**	0.057*	-0.114***	0.207***	0.024	-0.041	0.170***		-0.197***	-0.346***
GROWTH	0.016	-0.006	-0.054*	-0.096***	-0.073**	-0.004	0.014	0.044	-0.088***	-0.043	-0.096***	-0.176***	-0.193***		-0.043
LVRG	0.090***	-0.092***	0.194***	-0.009	0.034	-0.193***	0.046	0.084***	-0.081***	0.059**	0.046	0.086***	-0.355***	-0.055*	

Notes: 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. *DA* denotes the firm-level EM practices, *OCGI* denotes the Omani corporate governance index, *IGC* denotes *Islamic governance committee*, *BSIZE* denotes the size of board, *BIG4* denotes the audit firm size, *CGCOM* denotes the presence of a corporate governance committee, *GNDR* denotes board diversity on the basis of gender, *BLKOWN* denotes block ownership, *GOVOWN* represents government ownership, *INSOWN* denotes institutional ownership, *FOROWN* represents foreign ownership, *LNTA* denotes firm size, *ROA* denotes firm profitability, *GROWTH* denotes firm growth and *LVRG* denotes leverage . The correlation matrix depicts the strength and sign of the relationship amongst the variables. ***, ** and * denote correlation is significant at the 1%, 5% and 10% level, respectively.

Table 6
The effects of corporate and Islamic governance mechanisms on corporate earnings managements

Model	*Model 1*		*Model 2*		*Model 3*		*Model 4*		*Model 5*		*Model 6*		*Model 7*		*Model 8*	
Independent Variable	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*
OCGI	-0.0005	0.0749*	-0.0004	0.0800*	-	-	-	-	-0.0004	0.0919*	-0.0003	0.0237**	-0.0002	0.6570	-0.0003	0.1603
IGC	-0.0601	0.0012***	-	-	-0.0613	0.0011***	-	-	-0.0603	0.0313**	-0.0627	0.0250**	-0.0622	0.0272**	-0.0601	0.0323**
BSIZE	0.0175	0.2158	-	-	-	-	0.0130	0.3522	0.0175	0.2343	0.0167	0.2530	0.0167	0.2605	0.0165	0.2623
BIG4	-0.0040	0.5758	-	-	-	-	-0.0036	0.6146	-0.0039	0.5830	-0.0040	0.5778	-0.0042	0.5604	-0.0042	0.5591
CGCOM	0.0118	0.1695	-	-	-	-	0.0093	0.2759	0.0120	0.1702	0.0115	0.1794	0.0087	0.3096	0.0093	0.2745
GNDR	-0.0098	0.2061	-	-	-	-	-0.0106	0.1799	-0.0094	0.2328	-0.0100	0.2068	-0.0095	0.2330	-0.0101	0.2048
Control Variables:																
BLKOWN	0.0003	0.0508*	0.0002	0.1278	0.0003	0.0625*	0.0003	0.0358**	0.0003	0.0605*	0.0003	0.0806*	0.0003	0.0437**	0.0003	0.0700*
GOVOWN	-0.0186	0.0142**	-0.0178	0.0171**	-0.0188	0.0133**	-0.0195	0.0111**	-0.0186	0.0133**	-0.0190	0.0111**	-0.0195	0.0097***	-0.0193	0.0099***
INSOWN	-0.0003	0.0263**	-0.0003	0.0403**	-0.0004	0.0213**	-0.0004	0.0165**	-0.0004	0.0192**	-0.0003	0.0233**	-0.0004	0.0119**	-0.0003	0.0267**
FOROWN	-0.0001	0.7016	-0.0001	0.6451	-0.0001	0.6937	-0.0001	0.6535	-0.0001	0.6599	-0.0001	0.6971	-0.0001	0.6452	-0.0001	0.7076
LNTA	-0.0042	0.1384	-0.0046	0.0828*	-0.0047	0.0687*	-0.0060	0.0317**	-0.0044	0.1384	-0.0047	0.1096	-0.0054	0.0671*	-0.0045	0.1238
ROA	0.4867	0.0000***	0.4806	0.0000***	0.4813	0.0000***	0.4879	0.0000***	0.4856	0.0000***	0.4882	0.0000***	0.4848	0.0000***	0.4891	0.0000***
GROWTH	0.0195	0.0046***	0.0190	0.0057***	0.0188	0.0066***	0.0194	0.0052***	0.0194	0.0047***	0.0193	0.0049***	0.0193	0.0053***	0.0194	0.0049***
LVRG	0.0971	0.0000***	0.0887	0.0000***	0.0944	0.0000***	0.0944	0.0000***	0.0974	0.0000***	0.0966	0.0000***	0.0994	0.0000***	0.0976	0.0000***
Industry dummies	*Included*		*Included*		*Included*		*Included*		*Included*		*Included*		*Included*		*Included*	
Year dummies	*Included*		*Included*		*Included*		*Included*		*Included*		*Included*		*Included*		*Included*	
Constant	0.0618	0.2223	0.0988	0.0579*	0.0812	0.0946*	0.0772	0.1250	0.0536	0.3253	0.0733	0.1799	0.0626	0.2557	0.0671	0.2200
Durbin-Watson Stat.	2.0147		2.0153		2.0162		2.0172		2.0150		2.0151		2.0166		2.0155	
F- value	8.9868***		10.2196***		10.2998***		9.2323***		8.9489***		9.0367***		8.8487***		8.9164***	
Adjusted R^2	0.1865		0.1833		0.1846		0.1816		0.1857		0.1874		0.1838		0.1851	
No. of observations	1152		1152		1152		1152		1152		1152		1152		1152	

*Notes: OCGI denotes the Omani corporate governance index. IGC denotes Islamic governance committee, BSIZ denotes board size. BIG4 denotes audit firm size. BLKOWN, GOVOWN, INSOWN and FOROWN represent block ownership, government ownership, institutional ownership and foreign ownership structures, respectively. LNTA denotes firm size. ROA denotes firm profitability. GROWTH denotes firm growth. LVRG denotes firm leverage. Industry dummies represent dummy variables that are used to capture the basic materials sector, consumer goods sector, consumer service sector, financial sector, health care sector, industrial sector, utility sector and telecommunications sector. Year dummies represent dummy variables that are used to capture year effects (2001-2011). The asterisks ***, **, * indicate significance at the 1, 5 and 10% levels, respectively. Adj. R^2 denotes adjusted R square. F-Stat denotes the F-statistics.*

Table 7

Robustness tests of the effects of corporate and Islamic governance mechanisms on earnings managements

	Dependent variable													
Model	*Main Model* (1)		*Weighted-OCGI* (2)		*Kothari Model* (3)		*Non-financial* (4)		*Pre 2003* (5)		*Post 2003* (6)		*2SLS* (7)	
Independent Variable	Coeff.	*P*-values	Coeff.	*P*-values	Coeff.	*P*-values	Coeff.	*P*-values	Coeff.	*P*-values	Coeff.	*P*-values	Coeff.	*P*-values
OCGI	-0.0005	0.0749*	-0.0006	0.0442**	-0.0005	0.0844*	-0.0009	0.0014***	-0.0008	0.1161	-0.0004	0.0950*	-	-
P_OCGI	-	-	-	-	-	-	-	-	-	-	-	-	-0.0302	0.0843*
IGC	-0.0601	0.0012***	-0.0610	0.0009***	-0.0625	0.0007***	-	-	-0.0548	0.0425**	-0.0622	0.0417**	-0.0549	0.0530*
BSIZE	0.0175	0.2158	0.0177	0.2100	0.0155	0.2710	0.0323	0.0393**	0.0526	0.0800*	0.0116	0.4607	0.0162	0.2715
BIG4	-0.0040	0.5758	-0.0040	0.5719	-0.0046	0.5182	-0.0093	0.1966	0.0035	0.8607	-0.0057	0.4434	-0.0046	0.5167
CGCOM	0.0118	0.1695	0.0118	0.1641	0.0136	0.1120	0.0152	0.1119	0.0074	0.7478	0.0097	0.2518	0.0088	0.3012
GNDR	-0.0098	0.2061	-0.0100	0.1978	-0.0090	0.2445	-0.0141	0.1119	-0.0197	0.1977	-0.0071	0.3833	-0.0104	0.1899
Control Variables:														
BLKOWN	0.0003	0.0508*	0.0003	0.0529*	0.0003	0.0694*	0.0003	0.0874*	0.0001	0.7572	0.0003	0.0497**	0.0003	0.0562*
GOVOWN	-0.0186	0.0142**	-0.0186	0.0142**	-0.0184	0.0155	-0.0004	0.0782*	-0.0061	0.7599	-0.0223	0.0042***	-0.0189	0.0118**
INSOWN	-0.0003	0.0263**	-0.0003	0.0251**	-0.0003	0.0316**	-0.0003	0.1249	0.0001	0.7476	-0.0004	0.0090***	-0.0004	0.0102***
FOROWN	-0.0001	0.7016	-0.0001	0.6951	-0.0001	0.7089	-0.0003	0.1452	-0.0004	0.4129	-0.0001	0.5862	-0.0001	0.6541
LNTA	-0.0042	0.1384	-0.0044	0.1156	-0.0012	0.6780	0.0003	0.9239	-0.0076	0.2171	-0.0035	0.2618	-0.0050	0.0854*
ROA	0.4867	0.0000***	0.4858	0.0000***	0.1836	0.0000***	0.4314	0.0000***	0.3343	0.0014***	0.5007	0.0000***	0.4880	0.0000***
GROWTH	0.0195	0.0046***	0.0194	0.0047***	0.0207	0.0026***	0.0173	0.0162**	0.0204	0.2675	0.0152	0.0389**	0.0213	0.0023***
LVRG	0.0971	0.0000***	0.0975	0.0000***	0.0940	0.0000***	0.0846	0.0000***	0.1053	0.0008***	0.0873	0.0000**	0.0999	0.0000***
Industry dummies	Included		Included		Included		Included		Included		Included		Included	
Year dummies	Included		Included		Included		Included		Included		Included		Included	
Constant	0.0618	0.2223	0.0705	0.1629	0.0022	0.9653	-0.0197	0.7560	-0.1725	0.0278**	0.0813	0.1517	0.1739	0.0428**
Durbin-Watson Sta.	2.0147		2.0147		2.0154		2.0085		1.9998		2.0047		2.0166	
F- value	8.9868***		9.0380***		5.3106***		6.0874***		1.7459**		8.3125***		8.9552***	
Adjusted R^2	0.1865		0.1874		0.1101		0.1556		0.0869		0.1910		0.1859	
No. of observations	1152		1152		1152		859		190		962		1152	

Notes: *OCGI* denotes the Omani corporate governance index. *IGC* denotes *Islamic governance committee*, *BSIZ* denotes board size. *BIG4* denotes audit firm size. *BLKOWN*, *GOVOWN*, *INSOWN* and *FOROWN* represent block ownership, government ownership, institutional ownership and foreign ownership structures, respectively. *LNTA* denotes firm size. *ROA* denotes firm profitability. *GROWTH* denotes firm growth. *LVRG* denotes firm leverage. Industry dummies represent dummy variables that are used to capture the basic materials sector, consumer goods sector, consumer service sector, financial sector, health care sector, industrial sector, utility sector and telecommunications sector. Year dummies represent dummy variables that are used to capture year effects (2001-2011). The asterisks ***, **, * indicate significance at the 1, 5 and 10% levels, respectively. Adj. R^2 denotes adjusted *R* square. *F*-Stat denotes the *F*-statistics.