THE INFLUENCE OF ROYAL BOARD OF DIRECTORS AND OTHER BOARD CHARACTERISTICS ON CORPORATE RISK DISCLOSURE PRACTICES

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Abstract

This study focuses on Saudi's unique social and cultural context and its impact on board attributes and corporate risk disclosure (CRD) by addressing the relationship between royal family members on the board and CRD. Using content analysis of a sample of 307 company-year observations over the period of 2008-2011, the results from the descriptive statistics show a moderate level of CRD practices among firms. The initial and additional results from the panel data analysis show that board characteristics, namely, board size, board independence, royal family members on the board, and meeting frequency of the board of directors are important determinants of CRD in Saudi Arabia. The positive influence of royal family members on the board and disclosure, which indicates that not all types of families' members on the board have the same motivation towards corporate disclosure.

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1. INTRODUCTION

The emphasis on the importance of corporate annual reports content came about as a result of many factors. These include the increase of international trades through multinational companies, the internationalisation of capital markets, the transition from socialist centrally planned economies to free market economies, as well the growing need for companies to attract foreign investments. Rapid changes in business environment have further compelled companies to rely on financial instruments and international transactions, hence raising the issue on the importance of risk reporting (Dobler, 2008). When major accounting scandals and corporate collapses occurred in the early 2000s (e.g., Maxwell, Equitable Life, Enron, WorldCom, AIG, Lehman Brothers, Madoff) and the global financial crisis erupted in 2008-2009, it shook the confidence of investors and regulatory bodies, which consequently led to the increased attention of risk disclosure and risk management practices (Cole and Jones, 2005; Kirkpatrick, 2009). The stakeholders' reactions to these challenges are to enhance transparency, reduce information asymmetries by improving disclosure quality, and a focus on the importance of corporate risk reporting.

Much of risk reporting studies have been conducted in developed countries such as the U.S, the U.K, Germany, Italy, Canada, Australia and Japan (Lajili and Zeghal, 2005; Linsley and Shrives, 2006; Berger and Gleißner, 2006; Abraham and Cox, 2007; Konishi and Ali, 2007; Fang, 2010; Zhang et al., 2013; Maffei et al., 2014). In contrast, little is known about Corporate Risk Disclosure (CRD) in developing countries (e.g., Amran et al., 2009; Adamu, 2013; Ntim et al., 2013), particularly in Arab countries (Hassan, 2009, 2014; Mousa and Elamir, 2013; Al-Shammari, 2014; Abdallah et al., 2015). To the best of our knowledge, no study has yet investigated into CRD practices and its determinants in Saudi Arabia. It is therefore the focus of this study to explore the level and nature of CRD, and the impact of board characteristics on CRD in the Kingdom of Saudi Arabia.

The focus of this study is on Saudi Arabia due to its unique socio-economic setting. First, in terms of its economy, Saudi Arabia is ranked as one of the largest capital markets in the world for its market capitalisation where it adopts an open economic philosophy based on market economy and the liberalisation of trade (AMF, 2014). Second, the Saudi government has initiated several far-reaching reforms at the Saudi Stock Exchange to mobilise savings and attract foreign capital investment. These actions include the privatisation of state-owned



companies, and allowing foreign investors to own shares in Saudi listed companies. Third, compared to other countries with advanced capital markets, the accountancy profession in Saudi Arabia is still lagging behind in terms of offering professional certificates. Lastly, the Saudi regulatory framework includes various legislations that require the Saudi listed companies to provide informative risk-related disclosures in their annual reports. These factors make the investigation of CRD practices an important issue in Saudi Arabia.

This study contributes to the existing literature in several ways. First, it provides a starting point for further research on CRD practices in Saudi Arabia's non-financial listed companies. Second, the current study contributes to risk reporting and corporate governance literature, in general, and board characteristics, in particular; through a theoretical and empirical investigation on the impact of board characteristics, such as board independence, size, meeting frequency, and executive directors on the board on CRD in a developing country such as Saudi Arabia. Furthermore, this study investigates the extent of influence of Saudi royal family members on the board as a potential determinant of CRD; a factor that has not yet been investigated in prior research. The results of this study are applicable to other emerging capital markets, especially the GCC and Arab countries which have similar social, economic, and institutional characteristics. This may assist the national and international standard-setters and policy makers in improving corporate governance and risk reporting.

The paper is organised as follows: section two is an overview of the Saudi institutional context, section three is the literature review and hypotheses development, and section four is the research methodology. Section five is a discussion on the empirical findings. The last section presents the conclusion, limitations and future research.

2. AN OVERVIEW OF THE SAUDI INSTITUTIONAL CONTEXT

2.1. Corporate Governance and Corporate Risk Disclosure in Saudi Arabia

Financial accounting practices in Saudi Arabia are governed by the Saudi government. Under the government, along with related agencies, many laws and regulations were introduced in their attempt at improving accounting provision and creating an appropriate regulatory environment that protect investors and meet the information needs of users of financial reporting. The three main bodies that regulate corporate disclosure and governance in Saudi Arabia are The Saudi Accounting Association (SAA), Saudi Organization for Certified Public Accountants (SOCPA) and Capital Market Authority (CML).

The Saudi Accounting Association (SAA) was established in 1981 to improve the accounting profession. Under SAA, the first accounting standard in Saudi Arabia, known as 'General Presentation and Disclosure Standard' was issued in 1985. This standard became the main source to govern the preparation of financial statements, and the information contained which includes risk-related information. It specifies how to handle the changes in accounting policies, and the potential gains and losses. It also determines the disclosure requirements on the nature of the company's activities, accounting policies, changes in accounting estimates, financial commitments, collateral, and the subsequent events for the preparation of financial statements.

The Saudi Organization for Certified Public Accountants (SOCPA) was established under Article No. 19 of Chartered Accountants Law (CAL). The objectives of SOCPA are to promote and improve the accounting and auditing profession including issuing, reviewing, and developing accounting and auditing standards. As of February 2015, there were 21 Saudi Accounting Standards (SASs), 20 of which were issued by SOCPA, and all of which, with the exception of the Zakat and Income Tax Standard, were based on the International Accounting Standards (IASs), USA Generally Accepted Accounting Principles (GAAP), and UK Accounting Standards. Within the Saudi Accounting Standards, some standards, such as foreign currency, investment in securities, segmental reports, and accounting for the decline in the value of noncurrent assets standards, contain certain provisions to regulate risk reporting in Saudi listed companies.

The third main body is the Capital Market Authority (CMA) which was established in 2003 under the Capital Market Law (CML). The main objectives are to create an appropriate investment environment, enhance confidence, and reinforce transparency and disclosure standards in listed companies, as well as to protect the investors and dealers from illegal acts in the market (CMA, 2015). In order to raise the level of transparency, the CMA has issued a number of implementing regulations to apply the provisions of the CML. Among the most important of these implementing regulations are the Listing Rules and Corporate Governance Regulations. The Listing Rules (LR), issued by the CMA in 2004, is aimed at improving transparency and protecting shareholders' rights by regulating the public offering, registration and admission to the listing of securities in the Saudi capital market. These rules require, for example, a description of the significant plans and decisions of the issuer; the future prospects of the issuer's business and any risks facing the issuer; a geographical analysis of the issuer's gross revenues and its subsidiaries; the reservations of the external auditor on the financial statements; a declaration that the internal control system has been prepared on a sound footing and has been effectively implemented; and that there are no significant doubts about the ability of the issuer to continue as an ongoing concern.

In Saudi Arabia, the latest evolution in corporate governance is embodied by the issuance of the Saudi Corporate Governance Regulations (SCGRs) in 2006 by the CMA (CMA, 2006). The issuance of SCGRs reflects the CMA's commitment towards the development of the financial market in light of the growing international attention given towards the principles of corporate governance as the most important mechanism to raise market efficiency and increase transparency and the attractiveness of the traded securities. The SCGRs impose disclosure and transparency requirements beyond those required by previous laws, standards, and regulations. For example, the board of directors must ensure integrity in the procedures related to

preparing financial reports, appropriate control procedures for risk management are implemented by predicting possible risks and disclosing them with transparency, and to make annual review of the effectiveness of the internal control systems. In this regard, the board members composition and characteristics are important to SCGRs as an element of best practice of corporate governance and transparency; SCGR requires that a majority of the board members are non-executive members, and that the independent members of the board should not be less than two members, or one-third of the members, whichever is greater.

2.2. The Social and Cultural Context of Saudi Arabia

It is argued that corporate governance is strongly affected by the social and institutional environment contexts within a country (see Wanyama et al., 2009; Adams et al., 2010; Aguilera and Jackson, 2010; Alamri, 2014). The Saudi society is built on a strong structure of tribal system who determines the power and influence of key government polices (Helms, 1981). Saudi Arabia is an absolute monarchy and the country has been ruled by the Saudi dynasty since 1932 (Hain, 2011). Being the most powerful and influential family in the Saudi society, the Saudi royal family have high social status and royal authority (Alamri, 2014). To ensure policies that impact the social and economic structure of the nation are implemented, the Saudi government relies on the royal authority as well as the social and tribal relations.

In business, the government strives to create an attractive investment environment by enhancing governance and transparency in the Saudi capital market. To achieve this, the government is keen on having representatives on the companies' boards who invests and utilises their social and tribal networks that would ensure a sound implementation of governance and transparency. Hence, the Saudi government capitalises on their strong relationship with the royal family members who are on the companies' boards and other royal members from outside the board who invest in the financial market. As a result, royal family members on the board of directors are more powerful than other family members on the board with regards to influencing management behaviour and actions because they have tribal relationships and usually share leadership and political power with the Saudi ruling family. Thus, it is most likely that companies and shareholders would invite highly regarded members, (such as the princes and other royal family members) to join the board as the chairmen or board members in order to benefit from their power and prestige. In a study by Alamri (2014), a company board secretary stated in this regard:

"The board of directors in our company is composed of many individuals, one of whom is a member of the royal family, who would be better to nominate as the chairman? We need someone to add to the company's image and to represent us positively in the eyes of the public".

With such close family, tribal and political ties with the Saudi government, the royal family members on the board are more likely to exert their power and prestige in the boardroom to convince other board members to support government plans and regulations, notably those related to transparency and disclosure. This is achieved by forcing the company management to comply with such requirements and to respond to the users' needs of information.

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Prior risk literature has mostly focused on firmspecific characteristics as determinants of CRD (Linsley and Shrives, 2006; Konishi and Ali, 2007; Hassan, 2009; Amran et al., 2009; Rajab and Handley-Schachler, 2009; Oliveira et al., 2011; Mousa and Elamir, 2013; Al-Shammari, 2014; Baroma, 2014; Abdallah et al., 2015). However, less attention has been paid to corporate governance mechanisms (see Abraham and Cox, 2007; Ismail and Rahman, 2011; Ntim et al., 2013; Zhang et al., 2013; Mokhtar and Mellett, 2013; Barakat and Hussainey, 2013; Elshandidy et al., 2013), and board characteristics (e.g. Elzahar and Hussainey, 2012; Dominguez and Gamez, 2014; Elshandidy and Neri, 2015). The current study draws from this literature and the Saudi corporate setting in order to identify possible determinants of CRD. This study specifically investigates the impact of board characteristics (i.e., board size, board independence, executive directors on the board, royal family members on the board, and board meeting frequency) on CRD in Saudi's non-financial companies.

3.1. Board Size

Prior literature has identified two main aspects related to the effect of board size (Cerbioni and Parbonetti, 2007); the board's ability to mitigate agency costs and the problem of communication and coordination (Jensen, 1993; Yermack, 1996). Lipton and Lorsch (1992), Jensen (1993), Yoshikawa and Phan (2003), and Florackis and Ozkan (2006) indicate that oversized boards could worsen agency problems. Large number of board members can lead to dispersal of the power in the boardroom, and thus adversely affect the effective coordination, communication, cohesiveness, and decision-making, and are more likely to be controlled by the CEO as the dominant figure (Zahra, et al., 2000). Moreover, Jensen (1993) adds that when boards have more than seven or eight members, they are less likely to function effectively and are more prone (compared to smaller board) to courtesy, favouritism and politeness at the expense of truth and frankness in the boardroom, so it is easier for the CEO to control the board.

The empirical evidence also provides mixed results. For instance, Akhtaruddin et al. (2009) report a positive relationship between board size and voluntary disclosures of 110 Malaysian listed companies. Similarly, Allegrini and Greco (2013) provide evidence from Italian listed companies that higher level of voluntary disclosure is related to companies with larger boards. Furthermore, Elzahar and Hussainey (2012), Ntim et al. (2013), and Elshandidy et al. (2013) document a positive association between board size and CRD in South Africa and the UK, respectively.

Recently, Dominguez and Gamez (2014) found that board size is negatively related to voluntary risk

disclosure, and positively related to compulsory risk disclosure of the largest Spanish companies. However, other studies find no relationship between board size and disclosure (e.g. Arcay and Zquez, 2005; Cheng and Courtenay, 2006; Matoussi and Chakroun, 2008; Khodadadi et al., 2010; Buckby et al., 2015).

In Saudi Arabia, the evidence indicates that Saudi companies' boards are oversized (Al-Abbas, 2009; Albassam, 2014; Al-Janadi et al., 2013) as the average number of board members exceeds eight directors (Jensen, 1993; Lipton and Lorsch, 1992). Furthermore, the appointment of board members is affected by the tribal and social factors and usually reflects the controlling shareholders' preferences who hire their relatives and friends. This means that such boards are more likely to be affected by courtesy, favouritism and politeness at the expense of truth and frankness in the boardroom, which make it less effective and easier to be controlled by the CEO or any other controlling group. Accordingly, a negative impact of board size on CRD can be hypothesised as follows:

H1. There is a negative relationship between board size and CRD.

3.2. Independent Directors on the Board of Directors

As long as the corporate disclosure policy emanates from the company board (Gul and Leung, 2004), and the annual reports are prepared under the supervision of the board of directors (Abraham and Cox, 2007), having effective and efficient boards is a crucial tool to alleviate any agency problems while enhancing corporate disclosure. Therefore, agency theory suggests that boards dominated by independent and outside directors are more effective in monitoring management behaviour and executive directors' decisions.

Chen and Jaggi (2000) point out those independent directors would be able to exert greater influence on management decisions to disclose comprehensive information as their proportion on corporate boards is higher. Rahman and Ali (2006) add that independent directors on the board of directors are important in ensuring greater monitoring functions. The rationale for this view is that independent directors are viewed as a key indicator of corporate governance quality, as they are, at least, in theory, independent of corporate management, and free from any business or other relationship that could materially interfere with the exercising of their independent judgement (Abraham and Cox, 2007). A higher proportion of independent directors on the board is expected to provide more risk-related disclosures to attract cheaper capital, expand customer base, and retain reputation and legitimacy (Barakat and Hussainey, 2013; Ntim et al., 2013).

regarding Empirically, the findings the relationship between independent directors and CRD are inconsistent. For instance, Abraham and Cox (2007), Ntim et al. (2013), Elshandidy et al. (2013), and Barakat and Hussainey (2013) find that independent non-executive directors on the board are positively associated with the level of CRD. On the other hand, Lopes and Rodrigues (2007), Elzahar and Hussainey (2012), Elshandidy and Neri, 2015, and Buckby et al. (2015) report an insignificant relationship between the two variables.

In the Saudi context, the SCGRs emphasise the important role of board independence as a vital tool to protect the interests of shareholders and enhance transparency. Thus, any Saudi company boards with more independent members are more likely to disclose more risk-related information. Hence, the following can be hypothesised:

H2. The proportion of independent directors on the board of directors is positively associated with CRD.

3.3. Executive Directors on the Board

There is a dearth of research on the role of executive directors on corporate disclosure, particularly on CRD. The nature and direction of the association between executive directors on the board and can be corporate disclosure explained and interpreted by a number of disclosure theories. Agency theory links the prevalence of executive directors (as an integral part of management) on the board with greater agency problems and less disclosure (Abraham and Cox, 2007). Based on this theory, managers have the ability and desire to maximise their own benefits at the expense of the owners and potential investors. Therefore, they deliberately hide some valuable information, including risk-related information, to prevent from exerting strict outsiders control on management and making rational decisions.

Mak and Li (2001) indicate that executive directors as shareholders are negatively related to the board monitoring over management activities, which, in turn, leads to a reduction in the quality and quantity of disclosure. In contrast, Abraham and Cox (2007) find a positive relationship between executive directors and the level of corporate risk reporting. This could be because of the pressure exerted by independent directors on experienced executives to reveal their relative expertise regarding risks surrounding the company. Following agency theory perspective, it can be hypothesised that:

H3. The proportion of executive directors on the board is negatively related to CRD.

3.4. Royal Family Members on the Board of Directors

The country's social and institutional contexts are key determinants of the quality of governance and disclosure practices (Wanyama et al., 2009; Adams et al., 2010; Aguilera and Jackson, 2010; Alamri, 2014). Saudi Arabia is country made up of a society whose strong tribal system governs key economic policies (Helms, 1981; Alamri, 2014). The Saudi ruling family is the most powerful and influential family in the Saudi society; they are a dynasty that possesses royal authority (Khoury and Kostiner, 1990; Alamri, 2014). The Saudi government, represented by the Saudi ruling family, pay great attention to protect and enhance the nation's rights and to achieve economic welfare. This is evident through its considerable efforts aimed at creating an attractive business environment by regulating and promoting corporate governance and transparency practices in the Saudi financial market. In addition to the enforcement power of laws and regulations, the

Saudi government relies on its strong social and tribal communication with other royal family members on companies' boards in order to ensure best practices of governance and high disclosure quality. Because the government share leadership and political power with the Saudi ruling family, the royal family members on the board of directors are more powerful and are more influential than other family members with regards to monitoring top protecting management actions and the shareholders rights. They are also more likely to exert their power and prestige in the boardroom by convincing other board members to enforce the company management to adopt best governance and high transparency.

It can be argued that the royal family members' presence on the board may enhance the board diversity which may improve board effectiveness (Elzahar and Hussainey, 2012), link the company with its external environment and critical resources (Oliveira et al., 2011), and improve the company's reputation and legitimacy (Ntim et al., 2013). Nevertheless, evidence indicates that there are dissenting views to the presence of the royal family members in the companies' boards which materially affect the selection of board members and the evaluation of board independence and quality (Alamri, 2014). Thus, royal family members could exercise strict control on management and rely more on disclosure, especially risk-related information. The influence that the royal family has on monitoring and disclosure depends on the number of royal family members on the board of directors; the higher the number of royal family members on companies' boards, the higher the chance of CRD being an indicator of disclosure quality. Thus, it can be hypothesised that:

H4. There is a positive association between the percentage of royal family members on the board of directors and CRD.

3.5. Board Meeting Frequency

Board meetings are the most common occasions for discussions and exchanging of ideas, monitoring managers and discussing other board duties (Andres et al., 2005). Lipton and Lorsch (1992), Conger et al. (1998), and Vafeas (1999) emphasise both the important role of board meetings and the time allocated that improve board effectiveness. They suggest that boards that meet more frequently are more likely to perform their duties diligently and effectively in accordance with shareholders' interests.

Allegrini and Greco (2013) argue that diligent boards, measured by board and audit committee meeting frequency, may provide a better working environment among executive and non-executive directors by sharing information that would focus on board-level oversight of financial reporting process. Moreover, Vafeas (1999) argues that board activity, measured by the frequency of board meetings, is an important dimension of board operations. Vafeas (1999) adds that if higher board activity facilitates better board monitoring, outside directors are likely to demand more board meetings to enhance their ability to monitor management.

Empirical evidence supports this theoretical argument. Laksmana (2008) finds a positive

relationship between meeting frequency of the board of directors and the disclosure of the executive compensation practices. Kent and Stewart (2008) find that the quantity of disclosure is positively related to the frequency of board meetings. Similarly, Allegrini and Greco (2013) find that board meeting frequency is positively related to voluntary disclosure. Boards that meet more frequently are likely to be more informed about the company's activities and its managers performance, which positively affects the monitoring quality, and ultimately, greater disclosure including risk-related information.

Despite the SCGRs require boards to allocate ample time to perform their responsibilities, they do not identify a minimum number of meetings that should be held yearly. Therefore, this study aims to examine whether CRD is affected by board meeting frequency. Thus, a hypothesis can be formulated as follows:

H5. There is a positive relationship between board meeting frequency and CRD.

3.6. Control Variables

This study controlled for firm-specific characteristics (i.e., firm size and leveraged) as prior evidence indicates their impact on CRD (Taylor et al., 2008; Ismail and Rahman, 2011; Barakat and Hussainey, 2013; Ntim et al., 2013; Elshandidy et al., 2013; Dominguez and Gamez, 2014; Elshandidy and Neri, 2015).

4. RESEARCH METHODOLOGY

4.1. Sample and Data Collection

The initial sample of this study consists of all nonfinancial companies listed on the Saudi Stock Exchange (Tadawul) over a four year period, beginning from 2008 until 2011. This period is chosen for two reasons: first, 2008 is the second vear of SCGRs application; thus if other fiscal year before 2008 is selected instead, there might be a significant reduction in the sample size due to the unavailability of data on variables. The second reason is that the year 2011 is the most recent year at the time of carrying out this study. Financial companies (109) are excluded in the sample due to distinctive regulations and different disclosure frameworks applied (Beretta and Bozzolan, 2004; Linsley and Shrives, 2006; Abraham and Cox, 2007; Ntim et al., 2013; Mokhtar and Mellett, 2013; Elshandidy and Neri, 2015). The final sample is of 307 non-financial made up company-Observations, which exclude observations with incomplete data.

Annual reports are chosen in the study because they are considered the main source of reliable information for investors and other interested parties (e.g., Beattie et al., 2004; Donnelly and Mulcahy, 2008; Ntim et al., 2013; Elshandidy and Neri, 2015). Data on board characteristics and firmspecific characteristics were derived from the companies' annual reports downloaded from the Saudi Stock Exchange (Tadawul) website or directly from the web page of each listed company.

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4.2. Measurement of Corporate Risk Disclosure (CRD)

Content analysis is used to analyse and measure CRD (e.g., Linsley and Shrives, 2006; Rajab and Handley-Schachler, 2009; Mokhtar and Mellett, 2013; Zhang et al., 2013; Elshandidy and Neri, 2015; Abdallah et al., 2015). 'Sentence' is used as a unit of analysis to code risk-related disclosures as it is more likely to provide complete, reliable and meaningful data for further analysis (Milne and Adler, 1999).

In order to identify, classify and code riskrelated sentences, this study adopts the broad risk disclosure definition of Linsley and Shrives (2006, p.402).

"Sentences are to be coded as risk disclosures if the reader is informed of any opportunity or prospect or of any hazard, danger, harm, threat or exposure that has already impacted upon the company or may impact upon the company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure".

For the purpose of this study, a risk disclosure model is developed solely for identifying and

measuring CRD in Saudi non-financial listed companies. The model is taking into account the Saudi regulatory environment in which the sample companies operates, including laws, standards, and governance regulations. This model is classified into seven categories (general risk-related information, accounting policies, financial instruments, derivatives hedging, segmental information, operational risk, and financial risk) and 60 riskrelated items that expected to be disclosed in the company's annual reports. The analysis of riskrelated disclosures involves all sections of the company's annual reports (see Beattie et al., 2004).

4.3. Measurement of Independent and Control Variables

In this study, the independent variables are board size, board independence, executive directors on the board, royal family members on the board, and board meeting frequency. The study also controlled for firm-specific characteristics (firm size and leveraged) based on the previous research. Table 1 summarises the definitions of all variables used in this study.

Table 1. Summary of definitions and operationalisation of variables

Variable Measurement						
Dependent variables						
Corporate risk disclosure (CRD)	Natural log of the total number of risk-relate d sentences.					
	Independent variables					
Board Size (BS) Number of directors on the board of directors						
Independent Directors on the Board (<i>InDs</i>) Natural log of the proportion of independent directors on the board						
Executive Directors on the Board (<i>ExD</i>) Proportion of executive directors on the board						
Royal Family Members on the Board (<i>RoyFMem</i>) Natural log of the proportion of the number of royal family members on board of directors						
Meeting Frequency of the Board (<i>BM</i>) Natural log of the number of meetings held by the board of director						
Control variables						
Firm Size (FSize)	Natural log of total assets					
Leverage (Lev)	Ratio of total debt to total assets					

4.4. Research Design

Endogeneity is a concern when it comes to examining the influence of corporate governance on CRD (Ntim et al., 2013; Elshandidy and Neri, 2015). However, endogeneity can be controlled by using fixed effects models (e.g., Yermack, 1996; Wintoki, 2007; Guest, 2009; Brown et al., 2011). Given the panel nature of the data, this study employs unbalanced panel data analysis. The results of the Hausman test (Hausman, 1978) suggest the use of the fixed effects over random effects. Thus, the firm fixed effects regression model for CRD is as follows:

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\operatorname{CRD}_{\mu} = \beta_0 + \beta_1 \operatorname{BSIZE}_{\mu} + \beta_2 \operatorname{INDS}_{\mu} + \beta_3 \operatorname{EDS}_{\mu} + \beta_4 \operatorname{ROYMEM}_{\mu} + \beta_5 \operatorname{BM}_{\mu} + \beta_6 \operatorname{FSIZE}_{\mu} + \beta_2 \operatorname{LEV}_{\mu} + \varepsilon_{\mu} (1)
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Where: *CRD:* Corporate risk disclosure; *BSIZEB:* Board size; *INDS:* Independent directors on the board; *EDS:* Executive directors on the board; *ROYMEM:* Royal family members on the board of directors; *BM:* Frequency of board meetings; *FSIZE:* Firm size; *LEV:* Leverage; $\varepsilon:$ Error term. Prior to analysis, the main assumptions of multiple regression (i.e., outliers, normality, linearity, multicollinearity, heteroscedasticity, and autocorrelation) have been checked, and then corrected or controlled. Multicollinearity is checked using Pearson correlation matrix and Variance inflation factor (VIF). As shown in Tables 2 and 3, the results indicate no severe multicollinearity problem. This study employs fixed effects regression model clustered at the firm level as it produces a robust estimator to cross-sectional heteroscedasticity and within-panel correlation (Rogers, 1993).

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	CRD	Bsize	InDs	Eds	RoyMem	BM	FSize	Lev
CRD	1							
BSize	0.342**	1						
InDs	-0.211**	-0.090	1					
EDs	0.028	-0.004	-0.271**	1				
RoyMem	0.103*	0.020	0.046	0.014	1			
BM	0.215**	0.040	-0.045	-0.199**	0.027	1		
FSize	0.481**	0.376**	-0.281	-0.113*	0.023	0.178**	1	
Lev	0.357**	0.56	-0.156**	0.014	0.032	0.019	0.491**	1

Table 2. Pearson correlation matrix

**,* Correlation is significant at the 0.01 and 0.05 level, respectively

The dependent variable CRD is the logarithm of the total number of risk-related sentences. The independent variables are: BSize is the number of directors on the board of directors; InDs is the logarithm of the proportion of independent directors on the board; EDs is the proportion of executive directors on the board; RoyMem is the square root of the number of royal family members on the board; BM is the logarithm of the number of board meetings per year. The control variables are: FSize is the logarithm of company total assets; Lev is the rate of total liabilities divided by total assets

Furthermore, the VIF test, as shown in Table 3, confirm the absence of multicollinearity problem

because the highest value (1.78) is far less than the threshold value of VIF (10) (Hair et al., 2010).

Table 3. Results of VI	and tolerance tests
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Variable	VIF	1/VIF
FSize	1.78	0.562
Lev	1.37	0.730
InDs	1.22	0.821
BSize	1.20	0.833
EDs	1.18	0.848
BM	1.08	0.927
RoyMem	1.01	0.993
Mean VIF	1.26	

5. EMPIRICAL RESULTS AND DISCUSSION

5.1. Descriptive Statistics

Table 4 summarises the descriptive statistics of the variables included in the regression model. The results indicate significant variations among some variables' scores as shown by the minimum, maximum and standard deviation values. CRD varies largely among companies and ranges from a minimum of 22 sentences to a maximum of 282 sentences with a mean of 84.97 sentences per annual report and standard deviation of 44.451. This result indicates that Saudi Arabia is at a moderate level of CRD among developing and developed countries.

Table 4. Descriptive statistics for dependent, independent, and control variables

Variable	Min	Мах	Mean	Std. Dev.	Skewness	Kurtosis
Total number of CRD Sentences	22	282	84.97	44.451	1.253	1.837
General Risk Information	0	53	8.78	8.219	2.299	7.366
Accounting Policies	4	68	24.52	13.243	1.017	0.64
Financial Instruments	0	21	3.15	4.052	1.501	2.59
Derivatives Hedging	0	25	3.4	5.471	2.055	3.49
Segment Information	0	43	6.92	8.448	1.602	3.058
Operational Risk	2	126	24.83	17.961	1.776	4.258
Financial Risk	0	57	13.02	9.545	1.05	2.201
BSize	4	12	8.16	1.50	0.11	0.02
InDs	0	1	0.50	0.20	0.43	-0.39
EDs	0	0.5	0.14	0.11	0.65	0.03
RoyMem	0	0.4	0.03	0.08	2.75	7.35
BM	1	19	5.12	2.23	1.86	6.24
Lev	0.22	84.98	37.69	21.15	.225	992
FSize	97182	332783648	13014026.41	41195766.24	5.735	35.784

5.2. Multivariate analysis

Table 5 presents the results of the firm fixed effects regression analysis for CRD. The regression model is

statistically significant (p-value > 0.01) and the R2 within is 0.241, which indicates that the regression model explains 0.241 of the variation of CRD.

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Variables	Predicted sign	Model 1 Initial results		Model 2 Alternative measurement (Board independence)		Model 3 Alternative measurement (Executive directors on the board)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant		-1.673	-2.12**	-1.362	-1.84*	-1.660	-2.10**
BSize	-	-0.023	-2.55***	-0.029	-3.39***	-0.023	-2.43**
InDs	+	0.304	1.49			0.298	1.54
InDsDummy				0.077	3.28***		
EDs	-	-0.071	-0.52	-0.070	-0.53		
EDsDummy2						-0.020	-0.76
EDsDummy3						-0.008	-0.18
RoyMem	+	0.354	2.10**	0.357	1.95*	0.371	2.42**
BM	+	0.116	2.28**	0.120	2.39**	0.125	2.43**
FSize	+	0.568	4.50***	0.523	4.41***	0.564	4.43***
Lev	+	-0.001	-0.73	-0.001	-0.59	-0.001	-0.57
F- value			6.04***		7.40***		5.56***
R ² within			0.241		0.270		0.242
N			307		307		307

***, **, * Significant at 1%, 5%, and 10% levels, respectively

The dependent variable CRD is the natural log of the total number of risk-related sentences. The independent variables are: BSize is the number of directors on the board of directors; InDs is the natural log of the proportion of independent directors on the board; EDs is the proportion of executive directors on the board; RoyMem is the natural log of the number of royal family members on the board; BM is the natural log of the number of board meetings per year. The control variables are: FSize is the natural log of company total assets; Lev is the rate of total liabilities divided by total assets.

The regression results in Table 5 reveal a significant and negative impact of board size on CRD, which indicates that Saudi companies with larger boards disclose less risk-related information. This result is consistent with the argument of the productivity losses arising from inflated working groups (e.g. Hackman, 1990; Jensen, 1993). Large boards are related to lower communication, less coordination and cohesiveness, and lack of motivation, which make them lose much of their power as an effective monitoring tool (e.g. Jewell and Reitz, 1981; Lipton and Lorsch, 1992; Jensen, 1993; Yoshikawa and Phan, 2003; Florackis and Ozkan, 2006).

The negative influence of board size on CRD in Saudi Arabia can be justified. According to Jensen (1993), when the board size exceeds seven or eight members it becomes less effective and more vulnerable to courtesy, favouritism and politeness at the expense of truth and frankness in the boardroom, which make it easier to be controlled by the CEO or any other controlling group. This is the case in Saudi Arabia where the average number of board members exceeds eight members (8.16). Furthermore, and like other GCC countries, most of the board members in Saudi companies are either directly or indirectly affiliated and related to the key owners, such as family and institutional owners (Alamri, 2014; Albassam, 2014), which compel them to take into account the interests of these controlling groups. This result suggests that the drawbacks of large boards in the Saudi companies outweigh the benefits suggested by agency theory, stakeholder theory, legitimacy theory, and resource dependency theory that larger boards are more able to monitor management behaviour and actions, and assure higher disclosure.

The initial results from the panel data regression (model 1 of Table 5) show that board independence (measured by the percentage of independent members on the board) has no significant influence on CRD. This result contradicts the theoretical perspective and empirical evidence. The insignificant influence of board independence in the Saudi listed companies could be attributed to the nature of the ownership structure of these companies. concentrated ownership In а environment, such as in Saudi Arabia, non-executive directors may not be truly independent (Barako et al., 2006). Controlling shareholders, such as family ownership and institutional ownership dominate the Saudi listed companies, and, thus, have a strong influence on board composition with a tendency to assign board members with less independence to better serve their interests (Setia-Atmaja et al., 2009).

Despite the interpretation of the initial result, further analysis is conducted to confirm the robustness of the initial result, and to identify whether the SCGRs requirement for the minimum level of board independence (shall not be less than two members or one-third of the members, whichever is greater) is effective. Therefore, the analysis is repeated in model 2 of Table 5 with an alternative measurement of board independence using a dummy variable (InDsDummy) of 1 if the level of board independence is equal to or above 33.3%, and 0 for otherwise (Johari et al., 2008). The results show a significant positive impact of board independence on CRD, which emphasises the usefulness of the threshold of board independence suggested by the SCGRs. This result reflects the theoretical arguments (e.g., agency and resource dependency theories) and empirical evidence (e.g., Elshandidy et al., 2013; Ntim et al., 2013) that independent directors on the board are more likely to strengthen board effectiveness and promote CRD.

The initial results (Table 5 model 1) reveal an insignificant relationship between executive directors on the board and CRD. Further analysis is carried out using a categorical measurement according to -1 and +1 of standard deviation (Tabachnick and Fidell, 2007). The results confirm the initial evidence indicating that executive members on the board have no influence on CRD. This result can be explained by agency theory.

Executive directors are more willing to provide less disclosure and hide some vital information, such as risk-related information to mitigate outsiders' control and serve their own interests. Proprietary cost theory attributes the poor effect of executive directors on CRD to the nature of most of the riskrelated information as private and for internal use only with a high degree of commercial sensitivity.

As they usually work alongside the managers, executive directors on the board may face difficulty to monitor and affect management's actions (Fama and Jensen, 1983). The close tribal and social relationships between Saudi executive directors and companies' management and controlling shareholders, such as family owners, may create common interests that force executive directors to appease management and controlling shareholders at the expense of the accuracy and integrity of their judgments to protect all shareholders' rights. This could affect their ability to influence CRD.

The results show a positive and significant relationship between royal family members on the board of directors and CRD. This finding indicates that members of the royal family in Saudi Arabia may be more effective than other families' members on the board and that they have a different view regarding CRD as a key tool to monitor management and protect shareholders rights. In fact, royal family members derive their monitoring power from their close tribal, social, and political relationships with the ruling family, in addition to being an integral part of the Saudi government. This makes it imperative for them to enhance government plans and regulations, especially those related to transparency and disclosure. The result also supports the proposition that royal family members could use CRD to signal their effective monitoring role to mitigate information asymmetry, and thus, persuade dissenting views of the roval representation on the companies' boards and their intervention in the management.

With regards to the role of board meeting frequency, the results show a significant positive association between board meeting frequency and CRD, indicating that the Saudi companies' boards that meet frequently are more effective in enhancing CRD. This result offers empirical support for the SCGRs requirement for Saudi corporate boards to meet frequently and allocate sufficient time to perform their responsibilities effectively. It also provides further empirical support for the findings of Laksmana (2008), Kent and Stewart (2008), Allegrini and Greco (2013) that reveal a positive impact of board meeting frequency corporate disclosure. However, Dominguez and Gamez (2014) find insignificant relationship between board meetings and CRD.

With respect to control variables, firm size is found to be significantly and positively related to CRD, indicating that large Saudi companies disclose a higher level of CRD. This result offers empirical support for prior findings that reveal a positive influence of firm size on CRD (e.g., Probohudono et al., 2013; Dominguez and Gamez, 2014; Al-Shammari, 2014; Elshandidy and Neri, 2015; Abdallah et al., 2015). However, the results report an insignificant association between leverage and CRD. This implies that leverage does not affect CRD. Despite a finding that contradicts the theoretical argument, it is consistent with prior risk disclosure studies (e.g., Linsley and Shrives, 2006; Abraham and Cox, 2007; Lopes and Rodrigues, 2007; Amran et al., 2009; Mousa and Elamir, 2013; Dominguez and Gamez, 2014; Baroma, 2014).

6. CONCLUSION, LIMITATION, AND FUTURE RESEARCH

This study attempts to investigate empirically the impact of board characteristics and firm-specific features on CRD in 307 annual reports of 85 Saudi non-financial companies over four years, from the period of 2008 to 2011. The results from the content analyses indicate that Saudi companies disclose a moderate level of risk-related information in developing and developed countries. A multitheoretical framework has been used in developing the hypotheses. Using unbalance panel data, the results of firm fixed effects regression model is consistent with the theoretical perspective and empirical evidence. As expected, CRD is significantly influenced by board characteristics. Boards that are small in size, more independent, comprise more royal family members and meet more often disclose more risk-related information. Furthermore CRD is found to be positively affected by firm size. On the other hand, executive directors on the board, and leveraged, have no impact on CRD. The results of this study have some implications for regulatory bodies regarding the appropriate board structure to enhance corporate disclosure.

However, this research has some limitations. First, annual reports are not the sole source of CRD, thus, other alternative means, such as interim reports and websites, may be subjected to future research. Second, content analysis, including the classification and scoring process of CRD, is another limitation as it is inevitably subjective. Third, as this study highlights the role of board characteristics on CRD, there is a need for more risk reporting research to investigate the influence of corporate governance, such as board committees and ownership structure on CRD. Finally, the unique setting of Saudi Arabia can be serve as a motive for deeper research on the impact of family, tribal and social values and cultural dimensions on CRD which can strengthen the results and deepen our understanding of key determinants of CRD in Saudi Arabia. Despite these limitations, this study offers insights concerning corporate governance and CRD practices in Saudi Arabia.

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