The impact of corporate ownership structure on corporate risk disclosure: Evidence from the Kingdom of Saudi Arabia

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Abstract: Understanding the role of corporate ownership structure on corporate disclosure allows an assessment of its current effectiveness and opportunities for potential improvements. Prior research on the determinants of corporate risk disclosure (CRD) has basically focused on firm-specific characteristics and corporate governance characteristics and has largely ignored the potential role of ownership structure on CRD. To the best of the authors' knowledge, there is no study has yet extensively investigated the effect of ownership structure on the level of CRD in Saudi Arabia. This study examines the influence of different types of ownership on CRD in a developing country with high ownership concentration and unique institutional setting, namely the Kingdom of Saudi Arabia. The study uses panel data analysis of the annual reports of Saudi listed companies over a period of four years. The findings show a strong impact of ownership structure on CRD. However, the extent and direction of this influence depend on the type of ownership. Companies with higher royal ownership and government ownership disclose more risk-related information. By contrast, companies with higher family ownership and institutional ownership tend to disclose less risk-related information. However, executive directors' ownership and non-executive directors' ownership have no impact on CRD. The results suggest that not all controlling families have the same characteristics and motivations towards CRD practice. Overall, the results confirm the essential role of ownership structure to influence the agency conflicts through increase (decrease) CRD. The results of this study support the use of different theories to better explain the phenomenon of CRD. The study has important implications for policymakers, regulatory authorities, and practitioners in Saudi Arabia and developing countries to improve CRD practices and optimize ownership structure.

JEL Classifications: M41, G32

Keywords: Ownership structure, corporate risk disclosure, Saudi Arabia, annual reports, panel data analysis

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1. Introduction

Corporate risk disclosure and its determinants have been identified as an important research area and have attracted researchers in accounting since the 2000s. In the wake of the major accounting scandals and corporate collapses of the early 2000's and the global financial crisis of 2008-2009 (Cole & Jones, 2005; Kirkpatrick, 2009), corporate risk-reporting received a great deal of interest. However, most empirical research has been focused in developed countries such as the U.S (Elmy, LeGuyader, & Linsmeier, 1998; Fang, 2010), the U.K (Abraham & Cox, 2007; Linsley & Shrives, 2006), Italy (Beretta & Bozzolan, 2004), Canada (Lajili & Zeghal, 2005), and Japan (Konishi and Ali, 2007; Mohobbot, 2005). By contrast, there is a dearth of research on risk reporting in emerging countries, in general, and in Arab countries, in particular. Furthermore, prior empirical

literature that investigated the determinants of CRD has largely ignored potential mixed effects of corporate ownership on CRD. Very few studies (e.g., Alzead & Hussainey, 2017; Habtoor, Ahmad, Mohamad, & Che Haat, 2017; Habtoor, Ahmad, Baabbad, Masood, Mohamad, & Che Haat, 2018) have documented CRD practices in Saudi Arabia. However, there is no comprehensive study to date that has investigated the impact of the unique ownership structure on CRD in Saudi Arabia.

The level and orientation of corporate disclosure are significantly affected by cultural environment, social values, and institutional settings in which companies operate (gray, 1988). It is argued that corporate disclosure practices and transparency depend largely on the willingness of companies' managers and owners to engage in effective disclosure (Ntim, Thomas, & Lindop, 2013; Tariq & Abbas, 2013). In fact, the quantity and quality of information streamed from insiders (company managers) to outsiders (stakeholders) are affected by the type of the company owners and the size of their ownership.

Saudi Arabia is a society with a strong tribal and social system where family and tribalism relations are expected to influence corporate governance effectiveness and transparency (Alamri, 2014; Albassam, 2014). Saudi corporate ownership is highly concentrated with a unique structure including different types of ownership with greater relative weights compared with their counterparts in Western countries. A large proportion of Saudi companies' shares are owned by a variety of controlling shareholders including the Saudi ruling family, other Saudi families, institutions, government, and companies' executive and non-executive directors that are expected to have different and mixed effects on CRD practices.

This study focuses on CRD as a unique and important type of corporate disclosure. Besides the information on opportunities and good news, CRD contains negative information that may affect the company value, which is rarely provided by other types of disclosure.

The focus on Saudi Arabia is due to its unique socio-economic setting. First, this study is motivated by calls for more research into the drivers of CRD in emerging markets (e.g., Dobler, Lajili, & Zeghal, 2011). Unlike developed economies, emerging markets are less efficient and suffer from a lack of compliance, regulations, enforcement, and transparency with greater behavioural variations (Al-Maghzom, Hussainey, & Aly, 2016a; Richardson & Welker, 2001). Hence, more research on risk reporting motivation and drivers would contribute to the empirical disclosure literature in developing countries.

Second, and more specifically, this study is encouraged by the calls made by Habbash, Hussainey, & Ibrahim (2016), Al-Maghzom et al. (2016a, 2016b), Habtoor et al. (2017), Habtoor & Ahmad (2017), and Habtoor et al. (2018) for more investigation on risk reporting practice and its determinants in Saudi companies since Saudi Arabia suffers from lack of transparency and low level of awareness of CRD because of corporate governance and CRD practices are still relatively new topics (Alamri, 2014).

Third, Saudi Arabia is one of the GCC and Arab countries with high concentration of ownership (Alajlan, 2004). It has a unique ownership structure including several and different types of ownership with greater relative weights compared with their counterparts in Western countries. A large proportion of Saudi companies' shares are owned by controlling shareholders including the Saudi ruling family, other Saudi families, institutions, and government. Furthermore, Saudi Arabia is a society with a strong tribal and social system where family and tribalism relations are expected to influence corporate

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governance effectiveness and transparency (Alamri, 2014; Albassam, 2014). Thus, the unique institutional setting and cultural dimensions of Saudi Arabia, which are expected to have different and mixed effects on CRD, is another motivation to investigate CRD and its determinants in such country.

Forth, prior risk disclosure studies in Saudi Arabia (e.g., Alzead & Hussainey, 2017; Habtoor & Ahmmad, 2017; Habtoor et al., 2017; Habtoor et al., 2018) has ignored the role of corporate ownership structure on CRD. Thus, this study attempts to fill the gap in risk literature in developing countries, in general, and in Saudi Arabia, in particular by investigating the effect of ownership structure on CRD in Saudi non-financial listed companies.

Fifth, on April 25, 2016, Saudi Arabia announced the Saudi Vision 2030. It is an ambitious economic plan intended to confirm the kingdom's status as the heart of the Arab and Islamic worlds and the hub connecting three continents. The vision adopts an open economic philosophy based on the market economy and liberalization of trade. Embracing best practices of governance, transparency and accountability are among the main pillars of vision 2030 to protect investors, minimize agency problems, and attract domestic and foreign funds. Thus, any research on corporate disclosure, in general, and CRD and its determinants, in particular, would be considered as a response to enhance the Saudi vision, since risk disclosure increases transparency, enhances investors' confidence, and obtains external funds at a lower cost of capital.

In doing so, this study extends, as well as makes a number of distinct and new contributions to the literature of CRD. First, this study contributes to the literature by applying analysis with insights from a number of disclosure theories, including agency theory, Stakeholder theory, legitimacy theory, resource dependence theory, management entrenchment theory, and proprietary cost theory. This is essential to strengthen our understanding of the relevance and ability of such theories in explaining the mixed behaviour and motivations of different types of owners towards CRD practices.

Second, this study contributes to the literature by providing empirical evidence on the essential role of ownership structure, as a governance mechanism, on CRD. Besides the significant impact of government ownership, family ownership, and institutional ownership, this study provides evidence, for the first time, on the significant role of royal ownership on CRD. Furthermore, previous research on the relationship between family ownership and disclosure has proposed that all-controlling families have the same characteristics and motivations to act opportunistically towards other shareholders' rights and company wealth, and thus, they have been placed in a homogeneous group (i.e., family ownership) using a unified measurement (Ho & Wong, 2001; Haniffa & Cooke, 2002; Abdullah, Mohamad, & Mokhtar, 2011; Arshad, Nor, & Noruddin, 2011; Alanezi & Albuloushi, 2011; Muttakin & Khan; 2014). However, the unique institutional sitting in Saudi Arabia creates different types of family ownership and thus, it suggests that may not all types of families invested in the Saudi companies' shares have similar incentives and behaviour towards transparency and disclosure. The above argument makes it imperative to investigate this issue by examining separately the impact of the royal ownership and other family ownership on CRD. The results from this study would enhance our view on the composition of family ownership and its impact on corporate disclosure.

Third, this study adds to the extremely limited literature on CRD in Arab countries, in general, and Saudi Arabia, in particular.

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The rest of this study is organized as follows. Section 2 provides an overview of corporate ownership structure, institutional and cultural environment in Saudi Arabia. Section 3 reviews CRD literature and discusses hypotheses development. Section 4 describes the research methodology. Section 5 reports empirical results and discussion. The final section concludes the study and highlights the limitations and future research.

2. Corporate ownership structure, institutional and cultural environment in Saudi Arabia

It is argued that corporate governance effectiveness and thus disclosure practices are strongly affected by the social and institutional environment contexts within a country (Adams, Hermalin, & Weisbach, 2010; Aguilera & Jackson, 2010; Wanyama, Burton, & Helliar, 2009; Aoki, 2001; Turnbull 1997; Alamri, 2014). Saudi Arabia is one of the GCC and Arab countries, which is characterized by highly concentrated ownership with a unique structure of companies' ownership and different types of ownership such as the Saudi ruling family, other Saudi families, government, institutions, and companies' managers. Saudi society depends on a strong structure of the tribal system and cultural values which determine the power and influence of key government policies (Helms, 1981). Saudi Arabia is an absolute monarchy that has been ruled by the Saud dynasty since 1932 (Maisel & Shoup, 2009). Therefore, Saudi ruling family is the most powerful and influential family in Saudi society, which has high social status and appreciation as a dynasty with a royal authority (Alamri, 2014). Ibn Khaldun distinguished between royal authority and leadership: "Leadership means being a chieftain, and the leader is obeyed, but he has no power to force others to accept his rulings. Royal authority means superiority and the power to rule by force"(Khoury & Kostiner, 1990). As heavily represented by Saudi ruling family, Saudi government has shown a marked interest to protect and promote the rights of nation and achieve economic welfare. To ensure and support the implementation of policies that may have an impact on the social and economic structure of the nation, Saudi government relies on the royal authority and the social and tribal relations.

Regarding the organization of the business environment, the government strives to create an attractive investment environment through enhancing governance and transparency in the Saudi capital market. Therefore, the government is keen on having representation on the companies' boards in which it invests and also utilizes its social and tribal networks with institutional investors and companies managers to ensure sound implementation of governance and transparency. For example, most of the government representatives on companies' boards are officials working within the government's institutional investor agencies (Alamri, 2014).

Furthermore, the Saudi government has strong communication with other royal family members on companies' boards and other royal members from outside the board who invest in the financial market. Therefore, royal family members on the board of directors are more powerful than other family members on the board to influence management behaviour and actions because they usually share leadership, political power, and tribal and social relations with the Saudi ruling family (Habtoor & Ahmmad, 2017).

Regardless of their actual existence or direct representation on companies' boards in which they invest, royal family owners are more likely to influence companies policies and actions related to corporate governance and disclosure so that in line with the

government's plans. As an integral part of the Saudi ruling family, royal family owners of a company shares are expected to react differently towards governance and transparency than other types of family owners in Saudi Arabia. While other family owners are more influenced by self-interest to expropriate other shareholders' rights, including hide valuable information, royal family owners are more likely to be more responsible to protect shareholder rights and adopt the government perspective towards best governance and transparency practices.

3. Literature review and hypotheses development

Corporate disclosure practice is driven by many factors including entrenchment argument, information argument, and agency problem. Therefore, some disclosure studies attempt to explain this variation within a coherent theoretical framework (e.g., Ntim et al., 2013; Oliveira, Rodrigues, & Craig, 2011; Singh & Van der Zahn, 2008; Al-Bassam, Ntim, Opong, & Downs, 2018). However, there is no comprehensive theory of accounting disclosure (Verrecchia, 2001). Instead, the combination of disclosure theories would be of great help in explaining and interpreting a particular phenomenon by providing richer insights into the understanding of corporate disclosure practices. Thus disclosure theories should be considered as complementary rather than competing (Carpenter & Feroz, 1992; Gray, Kouhy, & Lavers, 1995; Morris, 1987).

Prior research on the determinants of CRD has basically focused on firm-specific characteristics (e.g., Linsley & Shrives, 2006; Elshandidy, Fraser, & Hussainey, 2015; Habtoor et al., 2017) and corporate governance characteristics (e.g., Mokhtar & Mellett, 2013; Elshandidy & Neri, 2015; Habtoor & Ahmad, 2017). However, less attention has been paid to the role of ownership structure on CRD (e.g., Elzahar & Hussainey, 2012; Allini, Rossi, & Hussainey, 2016; Al-Maghzom et al., 2016a). The evidence indicates that corporate governance and disclosure practices in a concentrated ownership environment are affected by controlling shareholders due to their influence of on the company management and disclosure policies (Albassam, 2014; Darmadi & Sodikin, 2013; Setia-Atmaja, Tanewski, & Skully, 2009). Thus, CRD practices reflect the preferences of controlling shareholders, that may vary significantly by ownership composition.

Accordingly, and relying on insights from a number of disclosure theories, including agency, management entrenchment, legitimacy, Stakeholder, proprietary cost, and resource dependence theories, supplemented by the implications of Saudi context, this study identifies the potential types of ownership that might influence CRD practices. Specifically, this study investigates how ownership structure (i.e., government ownership, royal ownership, other families' ownership, institutional ownership, executive directors' ownership, and non-executive directors' ownership) affect CRD practices in Saudi non-financial listed companies.

3.1. Government ownership

Stakeholder theory suggests that government is a powerful stakeholder for companies with higher state ownership. Therefore, these companies tend to respond and satisfy the expected informatics needs of such a group of stakeholders through disclosing more risk information. Legitimacy theory proposes that government is a fundamental component of society to grant legitimacy for companies. Thus, companies with higher government

ownership are more likely to provide higher environmental and social disclosure including risk information as a signal of their commitment to social and environmental requirements, and then secure the approval of their existence and survival. Furthermore, resource dependence theory complements the view by assuming that companies with higher government ownership may also use risk disclosure to facilitate access to critical resources of finance, such as government contracts, privileges, and other facilities.

However, the government may focus on wealth distribution and maintaining social order (Xu & Wang, 1999) more than on enhancing the company value and protecting shareholders' interests. Therefore, disclosure and transparency issues may no longer be a priority of government shareholders. Furthermore, government-linked companies have easier access to financing sources and are more able to obtain their informatics needs from different channels other than public ones (Eng & Mak, 2003). Therefore, these companies have lower incentives to adopt strong governance mechanisms, which would lead to a weaker level of accountability and monitoring (Mak & Li, 2001), and, thus, less motivation regarding public disclosure including risk-related information.

Consistent with the conflicting theoretical predictions, the empirical evidence is mixed. For example, Amran, Che Haat, & Abdul Manaf (2008) and Elamer, Ntim, Abdou, Zalata, & Elmagrhi (2019) report a positive impact of government ownership on CRD. In contrast, Mokhtar (2010) demonstrates a negative impact of government ownership on CRD. However, Barakat & Hussainey (2013) find no significant association between the two variables.

Despite the conflicting perspectives and mixed findings, Saudi government can be viewed as having significant and strategic ownership stakes in Saudi listed companies with explicit interest in creating an attractive investment environment through enhancing good governance, transparency, and disclosure practices, including CRD. Embracing best practices of transparency and accountability are among the main pillars of vision 2030 to protect investors, minimize agency conflicts, and attract domestic and foreign funds. In doing so, Saudi government is keen to having representation and influence on the companies' boards of directors and executive management in which it invests and also utilizes its social and tribal networks to ensure sound implementation of good governance and transparency. Accordingly, this study hypothesizes that:

H1: *There is a positive association between government ownership and CRD.*

3.2. Royal ownership

The social and institutional settings in Saudi Arabia create a unique ownership structure of companies. In addition to the common categories of company owners, royal ownership is a unique type of ownership in countries with monarchy systems such as Saudi Arabia.

It seems that the characteristics of Saudi royal ownership differ from other types of ownership, as the latter is more affected by self-interests. However, royal ownership is closer to the Saudi government ownership characteristics being it belongs to owners who are considered to be an integral part of the Saudi ruling family. Due to the strong social, tribal and political linkages with Saudi ruling family, royal family owners are more likely to follow and support government plans and regulations towards high transparency and disclosure by exerting their power to monitor and force the company management to adopt best governance practices.

The positive role of royal ownership on corporate disclosure can also be explained from the agency theory perspective. Ownership structure, such as managerial ownership, can be used as a tool to mitigate information asymmetry, and thus, agency conflicts due to the alignment of interest between the company management and other shareholders, which encourage company managers and board members to act as owners and become more aware of other shareholders' interests, including their rights of getting sufficient information to make informed decisions (Jensen & Meckling, 1976; Morck, Shleifer, & Vishny, 1986). In Saudi Arabia, a significant proportion of royal ownership is related to members who are appointed as board members or serve as managers. Thus, they are more likely to strengthen risk-related disclosure, because such information is of great benefit to make investment decisions and it significantly affects the company's stock price (Cabedo & Tirado, 2004; Botosan, 1997; Linsley & Shrives, 2000).

Furthermore, the legitimacy theory suggests that royal ownership has the power and the authority, as an important social group, to grant legitimacy for companies. Hence, it is in the interests of these companies to appease such group of owners by providing more transparency and disclosure, and, thus, persuade it to legitimize the companies' activities. Stakeholder theory, on the other hand, assumes that royal ownership is more likely to have a positive impact on monitoring and disclosure, as it is a powerful stakeholder to convince management to satisfy its increasing and changing needs for information. Accordingly, this study proposes that the level of CRD could be positively affected by the proportion of shares owned by Saudi royal family members. Thus, it can be hypothesized that:

H2: *There is a positive association between royal ownership and CRD.*

3.3. Family ownership

According to the hypothesis of the convergence-of-interest, the existence of significant ownership by families could reduce the demand for more disclosure by other shareholders when they believe that their interests are better aligned with those of controlling shareholders who are keen to enhance corporate governance practices to maximize the company value for all parties. Therefore, companies with concentrated ownership, particularly family ownership, are more likely to disclose less information because less demand for information exists (Jensen & Meckling 1976). The higher the company shares held by family members, the less the divergence of interests with other shareholders. Consequently, the less likely monitoring needs to occur, and, thus, less information is disclosed publicly.

However, higher levels of concentrated ownership could lead to entrenchment, which creates incentives for controlling shareholders to expropriate wealth from other shareholders (Morck, Shleifer, & Vishny, 1988; Shleifer & Vishny 1997). From the entrenchment theory perspective, family members, as controlling shareholders, may extract private benefits from the company at the cost of minority shareholders. In that case, it is in the interests of the controlling shareholders to disclose less information publicly to limit the ability of other shareholders to exercise monitoring and then make informed decisions that may harm or interfere with their own objectives. On the other hand, these controlling shareholders usually have close contact with management, and thus, they can easily access internal sources of information to satisfy their needs, rather than relying on public disclosure (Adhikari & Tondkar, 1992).

Empirical evidence indicates that family-controlled companies are related to weaker public disclosure compared to non-family controlled companies. For example, Ho & Wong (2001) and Haniffa & Cooke (2002) find a negative association between the proportion of family members on the board and voluntary disclosure in Hong Kong and Malaysia respectively. Muttakin & Khan (2014) report a negative association between corporate social responsibility disclosure and family ownership in Bangladesh.

In Saudi context, families own a huge portion of Saudi listed companies (Alotaibi & Hussainey, 2016) and thus they are likely to become more entrenched to pursue policies that serve their own best interests and act opportunistically against other shareholders. Further, Saudi families utilize their social and tribal relations to easily access internal sources of information to satisfy their needs for risk information privately. Accordingly, a negative association between family ownership and CRD is expected as follows:

H3: *Family ownership is negatively related to CRD.*

3.4. Institutional ownership

Agency theory suggests that institutional investors could mitigate agency conflicts and information asymmetry by performing an effective monitoring role on the company management decisions (Abraham & Cox, 2007; Elzahar & Hussainey, 2012; Ismail & Rahman, 2011; Njah & Jarboui, 2013; Seifert, Gonenc, & Wright, 2005; Solomon, Solomon, Norton, & Joseph, 2000; Solomon, 1999). Likewise, stakeholder theory and legitimacy theory assume that managers are more likely to disclose more information, including risk details, to meet the information needs of institutional investors as a powerful group of stakeholders and a key element of society to legitimize the existence and survival of the company.

In contrast, agency theory also suggests that companies with a concentrated ownership structure may not have the desire or incentive to disseminate more information publicly because the main shareholders, such as institutional investors can easily obtain their information needs through other more effective means, such as private meetings with the company management (Barker, 1998; Marston, 2008). Furthermore, the proprietary cost theory argues that institutional investors, as a key owner of the company, may prefer a direct and private communication with management to meet their needs for valuable and sensitive information, notably risk-related information, as it is considered to be proprietary or private in nature and it is expected to be commercially sensitive. Thus, the company motivation to meet the information needs of other interested parties may be negatively affected in terms of less information disclosed.

The association between institutional ownership and disclosure has been extensively researched. However, the empirical evidence is mixed. For example, Lakhal (2005), Mangena & Pike (2005), and Laidroo (2009) find that companies with higher institutional ownership disclose more information. In contrast, Schadewitz & Blevins (1998), Celik, Ecer, & Karabacak (2006), and Ntim et al. (2013) find a negative relationship between institutional ownership and corporate disclosure. However, an insignificant relationship between the two variables is found by Elzahar & Hussainey (2012), Wang & Hussainey (2013), and Alnabsha, Abdou, Ntim, & Elamer (2018).

In the Saudi context, institutional investors may have different characteristics than those of western and developed countries due to the significant impact of cultural and social

factors on the structure and behaviour of Saudi institutional investors, in addition to the lack of experience as a monitoring instrument to mitigate information asymmetry and agency conflicts (Albassam, 2014; Alamri, 2014). The awareness among Saudi investors about the importance of the reporting on the actual and potential risks and the degree of their seriousness is still low because corporate governance and risk reporting are still new topics in the Saudi financial market (Saidi, 2011; Al Husseini, 2012). Furthermore, most of the institutional investors are individuals and family owners which are more likely to behave opportunistically towards transparency and other shareholders' rights (Albassam, 2014). Thus, they may have a negative impact on corporate transparency, in general, and CRD, in particular, to serve their interests and expropriate other shareholders' rights. Accordingly, It can be hypothesized that:

H4: *There is a negative relationship between institutional ownership and CRD.*

3.5. Executive directors' ownership

Agency theory and management entrenchment theory are the main theories that could explain the association between executive directors' ownership and corporate disclosure. Agency theory suggests that the incentives of company managers for disclosure are positively affected by the level of their ownership. In accordance with the convergence of interest hypothesis, higher executive ownership leads to the alignment of interests between executive management and other shareholders, and, thus, encourages managers to behave like owners (Jensen & Meckling, 1976; Morck et al., 1986). Managers with higher ownership become more aware of other shareholders rights and they are less likely to harm the company's long-term value as they will bear the consequences of being shareholders. In such a case, managers will have higher motivation to mitigate information asymmetry by increasing disclosure.

In contrast, management entrenchment theory predicts a negative impact of high executive ownership on disclosure (Morck et al., 1986). Concentrated executive ownership would entrench the management and make the process of changing ineffective managers or even controlling their acts more difficult and costly. Thus, managers are more inclined to maximize their own interests at the expense of other shareholders and prevent outsiders from exerting effective monitoring on management by disclosing less information.

The empirical evidence of the impact of executive ownership on corporate disclosure is mixed. For example, agency theory perspective is supported by Ballesta & Garcia-Meca (2005), Chakroun & Matoussi (2012), and Htay, Rashid, Adnan, & Meera (2012) who find a positive association between executive ownership and disclosure.

In contrast, the management entrenchment theory expectation is empirically supported by Eng & Mak (2003), Akhtaruddin & Haron (2010), Hussainey & Al-najjar (2011), Barakat & Hussainey (2013), and Wang & Hussainey (2013) when they find a negative relationship between executive ownership and disclosure.

Nevertheless, Huafang & Jianguo (2007), Donnelly & Mulcahy (2008), and Jalila & Devi (2012) fail to find a significant influence of executive ownership on the level of disclosure.

It seems that the relationship between disclosure and executive ownership is more ambiguous because the orientation of this association may also depend on the volume of executive ownership. In this regard, Morck et al. (1988) suggest that the convergence-of-

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interest effects tend to dominate over the low ownership range (e.g. less than 5 %), while entrenchment effects begin to appear beyond this level.

Since the direction of the relationship between executive directors' ownership and CRD is significantly associated with the dominance of either the alignment or the entrenchment effect, this study proposes a non-specific direction hypothesis, as follows:

H5: *There is a relationship between executive directors' ownership and CRD.*

3.6. Non-executive directors' ownership

Agency theory suggests that the purpose of the creation of the board of directors is to reduce the agency problems related to the conflicts of interests between companies' owners and managers. Therefore, monitoring and directing management behaviour to be in line with shareholders' interests is the key function of effective boards. Jensen (1993) argues that many problems arise from the lower levels of ownership held by executive and non-executive board members. Company shares owned by non-executive directors would align their interests to other shareholders, and, thus, these directors are less likely to make or support decisions that threaten the wealth and company value (Chtourou, Bedard, & Courteau, 2001) as they realize that such decisions will affect their own wealth and that of other shareholders alike. This provides better incentives for them to monitor management and reduces information asymmetry by forcing management to disclose more information, notably risk-related information; as such information is highly appreciated by investors and it affects the company's stock price.

However, entrenchment theory suggests that when non-executive directors' ownership exceeds a certain threshold, these directors may become more entrenched and thus they are less fearful of disciplinary actions. Therefore, they have more incentive to serve their self-interests at the expense of minority shareholders and thus, the blocking of vital information, especially those associated with the risk details, is the best way to undermine external oversight. Thus, a negative effect of non-executive ownership on disclosure is expected.

Empirical evidence tends to enhance the alignment of interests proposed by the agency theory, and support the positive impact of non-executive directors' ownership on monitoring and reporting quality. For example, Beasley (1996) finds that higher shares held by outside directors strengthen their incentives to monitor management for the prevention of financial statement fraud. Moreover, Yafele (2012) finds that corporate disclosure is positively influenced by board ownership. On the other hand, Dominguez & Gamez (2014) find an insignificant association between board ownership and CRD.

The relationship between non-executive directors' ownership and CRD could be effected either by the alignment of interests or the entrenchment hypothesis. Thus, a non-specific direction hypothesis is formulated as follows:

H6: *There is a relationship between non-executive directors' ownership and CRD.*

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4. Research methodology

4.1. Sample selection

To test hypotheses, the sample of this study is drawn from the annual reports of Saudi companies listed on the Saudi Stock Exchange (Tadawul) over the period of 2008-2011. Out of the 558 firm-year observations, 153 financial firms, including the banking sector (44) and insurance sector (109), are dropped from the sample because they are subjected to more specific regulatory requirements. Furthermore, 98 observations of non-financial companies are also excluded from the sample due to missing data for some independent and control variables. This elimination results in a final sample of 307 non-financial firm-year observations.

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, McInnes, & Fearnley, 2004; Donnelly & Mulcahy, 2008; Ntim et al., 2013; Elshandidy & Neri, 2015). The annual reports for the period from 2008 to 2011 are chosen for three reasons. First, 2008 is the second year of application of the Saudi Corporate Governance Regulations (SCGRs) and the selection of any fiscal year before 2008 would lead to a significant reduction in the sample size due to the lack of data for some variables. Second, the sample ends in 2011 because it is the most recent year for which data are available. Third, this sample fulfills the requirement of using panel data analysis which controls for individual heterogeneity and mitigates multicollinearity problems and the undesirable effects resulting from the use of relatively small sample size, in addition to provide more informative data (Hsiao, 2003; Baltagi, 2005).

Data on CRD is collected from companies' annual reports downloaded from Tadawul or sample companies. Data on ownership structure and control variables are also collected manually from the annual reports of the selected sample.

4.2. Definition of variables and model specification

This study classifies variables involved in the regression model into three main categories with full definitions, as shown in Table 1.

First, the dependent variable is the level of CRD, which seeks to measure the quantity of CRD in terms of the number of risk-related sentences per annual report (see Table 1).

Following prior studies (e.g., Linsley & Shrives, 2006; Rajab & Handley-Schachler, 2009; Mokhtar & Mellett, 2013; Zhang, Taylor, Qu, & Oliver, 2013; Abdallah, Hassan, & McClell, 2015; Elshandidy & Neri, 2015), content analysis is applied to analyze and measure CRD. A risk-related 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 risk-related sentences, this study adopts 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 that has already impacted upon the company or may impact upon the

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company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure".

TABLE 1. DEFINITION AND MEASUREMENT OF VARIABLES

ABBREVIATED NAME	FULL NAME	DESCRIPTION / MEASUREMENT
DEPENDENT VARIABLE		
CRD	Corporate risk disclosure	Number of risk-related sentences per annual report
INDEPENDENT VARIABLE (OWNERSHIP STRUCTURE)		
GOVOWN	Government ownership	Percentage of company shares owned by government bodies.
ROYOWN	Royal ownership	Percentage of company shares owned by a member of the ruling family of Saudi Arabia (i.e., company shares held by a member of the House of Saud)
FOWN	Family ownership	Percentage of company shares owned by at least two members of a single family
NSOWN	Institutional ownership	Percentage of company shares owned by institutions.
EXEOWN	Executive directors' ownership	Percentage of company shares owned by executive directors
NEXEOWN	Non-executive directors' ownership	Percentage of company shares owned by non-executive directors
CONTROL VARIABLES (BOARD OF DIRECTORS AND FIRM CHARACTERISTICS)		
BSIZE	Board size	Number of board members
BIND	Board independence	Dummy variable of 1 if the level of board independence is equal to or above 33.3%, and 0 for otherwise (in accordance with Saudi governance code)
BMEET	Board meeting frequency	Number of meetings held by board members per year
FSIZE	Firm size	Total assets
LEV	Leverage	Ratio of total debt to total assets
OWNDISP	Ownership dispersion	Percentage of company shares owned by individuals after subtracting shares owned by controlling shareholders like Saudi government, institutions, managers and board members, controlling families, and other blockholders.

Source: Author's compilation.

For the purpose of this study, a risk disclosure model is developed solely for identifying and measuring CRD in Saudi non-financial listed companies. This model is constructed based on an extensive review of risk-related regulations (e.g., ICAEW 1997; ICAS 1999; IFAC 1999; Turnbull Report 1999; GASB 2000; IRM 2002), and previous studies on risk classification (e.g., Miller 1992; Beretta & Bozzolan 2004; Lajili & Zeghal 2005; Abraham & Cox 2007; Deumes 2008; Dobler et al., 2011; Ismail & Rahman 2011; Mousa & Elamir 2013; Probohudono, Tower, & Rusmin, 2013), as well as taking into account the Saudi regulatory environment in which the sample companies operate, including laws, standards, and governance regulations. This model is shown in Appendix A which is classified into seven categories (general risk-related information, accounting policies, financial instruments, derivatives hedging, segmental information, operational risk, and financial risk) and 60 risk-related items that expected to be disclosed in a company's annual report. The analysis of risk-related disclosures involves all sections of the company's annual reports (see Beattie et al., 2004).

In order to achieve the validity of the measurement, the risk classification model has been discussed with two independent academics to take advantage of their experience in

reviewing and developing the coding scheme and strengthening its validity. The reliability of the measurement can be achieved by using multiple coders to code the same content or employ a single coder with adequate training (Milne & Adler 1999). A single coder (i.e., the researcher) has coded the risk-related information in the annual reports after spending enough time in practicing the coding process in order to become familiar with the coding scheme. Furthermore, a clear list of decision rules proposed by Linsley & Shrives (2006) (refer to Appendix B) is also adopted to guide the coder in analysing the content into the intended categories and items.

Prior to the final coding, the researcher spent enough time practicing the coding process in order to become familiar with the coding scheme. After that, the researcher followed Ghazali & Weetman (2006) and Mokhtar (2010), and the first round of an initial coding of a sample of the annual reports was conducted by the researcher. This was followed by the second round of coding for the same initial sample in order to ensure consistency of the coding process. In the cases where significant differences exist between the first and second coding, the annual reports were subjected to the third round of coding. The final results indicate the absence of significant variations between the rounds of coding. The correlation test between the rounds of coding indicates that the overall agreement across the coding intervals was 93%, which ensures an acceptable level of intra-coder reliability (Milne & Adler, 1999). Consequently, the researcher completed the coding for all annual reports by himself.

Second, to test the main hypotheses (H1 to H6), the independent variables include government ownership, royal ownership, family ownership, institutional ownership, executive directors' ownership, and non-executive directors' ownership (see Table 1).

Finally, to control for potential omitted variable bias (Gujarati, 2003; Wooldridge, 2010) and to rule out alternative explanations for the mean results (Singh, House, & Tucker, 1986), this study includes an extensive number of control variables, including board characteristics (i.e., board independence, board size, board meeting frequency) and firm-specific characteristics (i.e., firm size, ownership dispersion, and leverage) (see Table 1). For brevity, this study does not develop direct theoretical relationships between these control variables and CRD, but there is extensive theoretical and empirical literature which suggests that they can affect CRD (e.g., Alsaeed, 2006; Abraham & Cox, 2007; Ismail & Rahman, 2011; Allegrini & Greco, 2013; Ntim et al., 2013; Elshandidy & Neri, 2015; Allini et al., 2016; Al-Maghzom et al., 2016a; Alotaibi & Hussainey, 2016; Habtoor et al., 2017).

4.3. Data analysis

This study employs panel data analysis to examine the influence of ownership structure on CRD. Compared to cross-sectional or time-series, panel data analysis controls for individual heterogeneity, mitigates multicollinearity problems and the undesirable effects resulting from the use of relatively small sample size, and provides more informative data (Baltagi, 2005; Hsiao, 2003). The panel data set in this study is unbalanced as some entities have not been observed in all time periods due to the lack of data.

Endogeneity is a concern when it comes to examining the influence of corporate governance on CRD (Ntim et al., 2013; Elshandidy & Neri, 2015). However, endogeneity can be controlled by using fixed effects model as it eliminates the impact of time-invariant unobservable variables. Given the panel nature of the data, this study employs unbalanced

panel data analysis (see Wintoki, 2007; Guest, 2009; Brown, Beekes, & Verhoeven, 2011; Elshandidy et al., 2015).

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. Tests of normality for dependent and continuous independent and control variables suggest non-symmetrical distribution. Thus, all continuous variables are transformed into normal scores using Van der Waerden approach as it transforms actual observations to their equivalent values on the normal distribution and also minimizes the effect of outliers (Cooke, 1998). To check for non-linearity, the result (for brevity not reported here, but available on request) of the scatter plots do not indicate a clear departure from linearity. Multicollinearity is checked using Pearson correlation matrix (see Table 2) and Variance inflation factor (VIF) (see Table 3), and the results indicate no severe multicollinearity problem as shown in Table 2 and 3 respectively.

TABLE 2. PEARSON CORRELATION MATRIX FOR VARIABLES

PART 1 OF TABLE 2							
VARIABLES	1	2	3	4	5	6	7
1.CRD	1						
2.GOVOWN	0.21**	1					
3.ROYOWN	0.10	0.10	1				
4.FOWN	0.08	-0.22**	0.02	1			
5.INSOWN	0.13*	-0.32**	-0.11	-0.06	1		
6.EXEOWN	0.08	-0.24**	0.05	0.39**	0.11*	1	
7.NEXEOWN	-0.05	-0.31**	0.13*	0.48**	-0.14*	0.27**	1
8.BSIZE	0.35**	0.22**	0.03	0.04	0.08	0.17**	0.08
9.BIND	0.03	-0.11	0.06	0.08	-0.23	-0.00	0.11*
10.BMEET	0.22**	0.39**	0.12*	0.01	-0.15*	-0.16**	-0.11
11.FSIZE	0.49**	0.50**	-0.05	-0.14*	0.23**	-0.13*	-0.22**
12.LEV	0.34**	-0.02	0.04	0.06	0.32**	-0.05	-0.05
13.OWNDISP	-0.32**	-0.34**	-0.09	-0.11	-0.46**	-0.08	0.01

TABLE 2. PEARSON CORRELATION MATRIX FOR VARIABLES (cont-d)

PART 2 OF TABLE 2					
VARIABLES	8	9	10	11	12	13
8.BSIZE	1					
9.BIND	0.10	1				
10.BMEET	0.04	-0.02	1			
11.FSIZE	0.42**	-0.27**	0.16**	1		
12.LEV	0.06	-0.17*	0.03	0.46*	1	
13.OWNDISP	-0.13*	0.25**	-0.21**	-0.44**	-0.31**	1

Note: *, ** significant at the 0.05 and 0.01 levels (2−tailed) respectively.
Variables: CRD is corporate risk disclosure; $GOVOWN$ is government ownership; $ROYOWN$ is royal ownership; $FOWN$ is family ownership; $INSOWN$ is institutional ownership; $EXEOWN$ is executive directors' ownership; $NEXEOWN$ is non-executive directors' ownership; $BSIZE$ is board size; $BIND$ is board independence; $BMEET$ is board meeting frequency; $FSIZE$ is firm size; LEV is leverage; $OWNDISP$ is ownership dispersion

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TABLE 3. VARIANCE INFLATION FACTOR (VIF) AND TOLERANCE TESTS

VARIABLES	VIF	1/VIF
GOVOWN	3.63	0.275
INSOWN	2.88	0.347
FSIZE	2.77	0.361
OWNDISP	2.56	0.391
NEXEOWN	1.68	0.558
FOWN	1.58	0.632
LEV	1.55	0.644
BSIZE	1.51	0.661
EXEOWN	1.37	0.732
BMEET	1.25	0.800
BIND	1.21	0.828
ROYOWN	1.10	0.908
Mean VIF	1.92	

To identify whether the ordinary least squares (OLS) or panel data (fixed and random effects) technique is more appropriate to analyze the data set, Lagrange Multiplier (LM) test (Breusch & Pagan, 1980) is applied to test the presence of random effects by comparing a random effects model with OLS model. In addition, the F-test is also conducted to check for fixed effects by comparing a fixed effects model with OLS model. The results (for brevity not reported here, but available on request) of both tests (LM and F-test) show significant P-values, which strongly indicate the presence of both the random and fixed effects. This means that the application of panel data models (fixed and random effects models) is more appropriate than OLS model.

Furthermore, the Hausman test (Hausman 1978) compares the random effects model to the fixed effects model based on the null hypothesis that the individual effects are uncorrelated with the regressors. Thus, if the null hypothesis is not rejected, the random effects model is favoured. Otherwise, the fixed effects model is preferred. The result (for brevity not reported here, but available on request) of the Hausman test shows a significant P-value, which rejects the null hypothesis and indicates that the fixed effects model is more appropriate to analyze the data set of this study.

To test heteroscedasticity and autocorrelation in the fixed effects model, the Modified Wald statistic test for groupwise heteroscedasticity in the fixed effects regression model (Greene 2003), and Wooldridge test (Wooldridge 2002) for autocorrelation are applied, respectively. The results (for brevity not reported here, but available on request) show significant P-values, indicating the presence of both heteroscedasticity and autocorrelation, which need to be solved or controlled. Therefore, this study estimates the fixed effects model of CRD based on the estimator of Rogers (1993) clustered at the firm level as it produces an estimator that is robust to cross-sectional heteroscedasticity and within-panel correlation.

Assuming all the hypothesised relations are linear, the fixed effects regression model to be estimated is specified as follows:

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$$CRD_{it} = \beta_0 + \beta_1 GOVOWN_{it} + \beta_2 ROYOWN_{it} + \beta_3 FAMOWN_{it} + \beta_4 INSOWN_{it} +$$

$$\beta_5 EXEOWN_{it} + \beta_6 NEXEOWN_{it} + \beta_7 FSIZE_{it} + \beta_8 BIND_{it} + \beta_9 BMEET_{it} + \beta_{10} FSIZE_{it}$$

$$+\beta_{11} LEV_{it} + \beta_{12} OWNDISP_{it} + \varepsilon_{it.}$$

Where, CRD is corporate risk disclosure; GOVOWN is government ownership; ROYOWN is royal ownership; FOWN is family ownership; INSOWN is institutional ownership; EXEOWN is executive directors' ownership; NEXEOWN is non-executive directors' ownership; BSIZE is board size; BIND is board independence; BMEET is board meeting frequency; FSIZE is firm size; LEV is leverage; $OWNDISP$ is ownership dispersion; ε is error term.

5. Empirical results and discussion

5.1. Descriptive statistics

TABLE 4. DESCRIPTIVE STATISTICS OF THE DEPENDENT VARIABLE (CRD)

	ALL YEARS	2008	2009	2010	2011
MIN	22	25	26	22	27
MAX	282	212	230	217	282
MEAN	84.97	75.44	80.38	85.22	95.76
STD. DEV.	44.451	40.252	41.817	43.703	48.659
SKEWNESS	1.253	1.118	1.191	1.121	1.401
KURTOSIS	1.837	1.158	1.506	1.039	2.401

Source: Author's compilation.

TABLE 5. DESCRIPTIVE STATISTICS OF INDEPENDENT AND CONTROL VARIABLES

VARIABLES	N	MIN	MAX	MEAN	STD. DEV.	SKEWNESS	KURTOSIS
GOVOWN	307	0	0.84	0.10	0.19	2.41	5.07
ROYOWN	307	0	0.50	0.02	0.07	4.50	22.63
FOWN	307	0	0.58	0.08	0.13	1.82	2.91
INSOWN	307	0	0.75	0.19	0.22	0.98	-0.24
EXEOWN	307	0	0.29	0.03	0.06	2.69	6.70
NEXEOWN	307	0	0.59	0.06	0.12	2.68	7.31
BSIZE	307	4	12	8.16	1.50	0.11	0.02
BIND	307	0	1	0.50	0.20	0.43	-0.39
BMEET	307	1	19	5.12	2.23	1.86	6.24
FSIZE	307	97182	332783648	13014026.41	41195766.24	5.74	35.78
LEV	307	0.22	84.98	37.69	21.15	0.23	-0.99
OWNDISP	307	0.03	1	61	0.23	-0.06	-1.15

Source: Author's compilation.
Note: Size in thousands of Saudi Riyals (SR).

Table 4 presents the descriptive statistics of the level of CRD. The results show that the level of 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. Moreover, the level of CRD generally improves over time, with a mean of 75.44 sentences in 2008 to 95.76 sentences in 2011.

On the other hand, Table 5 summarizes the descriptive statistics of the independent and control variables which indicate significant variations in the sample, and thus mitigate the possibility of sample selection bias.

5.2. Multivariate analysis

Table 6 summarizes the results of the firm fixed effects regression analysis of the impact of ownership structure on the level of CRD. The F-value of the model is statistically significant at level 1, which confirms the fitness of the model in predicting the outcome of variables. The R^2 within is 32.43%, which reflects the explanatory power of the model and indicates that the independent and control variables explain 32.43% of the variation of in the level of CRD. The results indicate that most of the ownership variables are significant in explaining the differences in CRD.

TABLE 6. FIRM FIXED EFFECTS REGRESSION RESULTS OF THE IMPACT
OF CORPORATE OWNERSHIP STRUCTURE ON THE LEVEL OF CRD

VARIABLES	PREDICTED SIGN	COEFFICIENT	T-STATISTIC	P-VALUE
Constant		-.0564922	-3.79	0.000***
INDEPENDENT VARIABLES: CORPORATE OWNERSHIP STRUCTURE				
GOVOWN	+	.2988293	2.47	0.015**
ROYOWN	+	.9579202	6.46	0.000***
FOWN	-	-.1474446	-1.69	0.094*
INSOWN	-	-.3574585	-4.47	0.000***
EXEOWN	-/+	-.0989757	-1.51	0.135
NEXEOWN	-/+	-.0844051	-1.21	0.230
CONTROL VARIABLES: CORPORATE GOVERNANCE CHARACTERISTICS				
BSIZE		-.2170967	-3.41	0.001***
BIND		.1695631	2.63	0.010**
BMEET		.078519	2.55	0.013**
CONTROL VARIABLES: FIRM-SPECIFIC CHARACTERISTICS				
FSIZE		1.26547	4.14	0.000***
LEV		-.0344097	-0.31	0.760
OWNDISP		-.1293694	-1.42	0.161
F-value			17.50***	
R^2 within			0.3243	
N			307	

Note: *, ** - Significant at the 0.05 and 0.01 levels (2−tailed) respectively.
Variables: *CRD* is corporate risk disclosure; *GOVOWN* is government ownership; *ROYOWN* is royal ownership; *FOWN* is family ownership; *INSOWN* is institutional ownership; *EXEOWN* is executive directors' ownership; *NEXEOWN* is non-executive directors' ownership; *BSIZE* is board size; *BIND* is board independence; *BMEET* is board meeting frequency; *FSIZE* is firm size; *LEV* is leverage; *OWNDISP* is ownership dispersion

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The regression results reveal a significant positive relationship between government ownership and CRD, which indicates that government ownership plays a positive role in enhancing CRD in Saudi listed companies (see Table 6). This result is expected and justifiable as it is largely consistent with the theoretical perspectives and the Saudi government efforts to enhance corporate governance and disclosure.

It seems that the stakeholder theory and legitimacy theory, among disclosure theories, are more applicable to explain the role of Saudi government ownership on CRD. The Saudi government acquires a large proportion of listed companies' shares up to 80% in some companies with a mean of 10% of ownership, which makes it a powerful stakeholder to force companies to provide more transparency including a higher level of risk-related information. Besides its concentrated ownership, the Saudi government is an essential component of society to grant legitimacy for companies. Hence, companies with higher government ownership are more likely to provide higher environmental and social disclosure including risk information as a signal of their commitment to social and environmental requirements, and thus, secure the approval of their existence and survival (legitimacy theory).

Moreover, Saudi companies with significant government ownership may draw more public attention to moral hazard issues, such as financial and managerial corruption, and self-interested behaviour. In addition, government-owned companies are usually related to higher agency costs due to the adoption of weak governance systems and inefficient oversight of corporate management actions. Thus, more corporate disclosure is an effective tool to alleviate these problems (Eng & Mak, 2003).

Regarding royal ownership, the current study investigates the role of royal ownership, as a unique type of ownership structure which differs from other family ownership, on CRD in Saudi Arabia. The result shows a significant positive relationship between royal ownership and CRD (see Table 6). This finding highlights the role of royal ownership as a key driver of CRD in Saudi Arabia, which indicate that companies with a higher portion of shares held by royal family members disclose a higher level of CRD.

The positive impact of royal ownership on CRD can be explained from the legitimacy theory and stakeholder theory perspectives. Royal ownership returns to owners who are an integral part of the Saudi ruling family and an important social group with less affected by self-interests. This group of owners has the power and prestige to grant or at least support legitimacy for companies. Consequently, company shares owned by members of the Saudi ruling family would encourage management to disclose more information as a means to appease these owners and persuade them to legitimize companies' activities. Furthermore, stakeholder theory considers royal ownership as a powerful stakeholder that can convince management to satisfy its increasing and changing needs for information.

Furthermore, this result is consistent with the perspective of the agency theory, which suggests that at a low level of ownership (0-5%), especially managerial ownership, a higher level of risk-related information is expected to be disclosed due to the dominance of the convergence of interest between management and shareholders at this level of ownership (Morck et al., 988). This is further supported by the results from the descriptive statistics which show that the royal ownership ratio is less than 5%, and a large part of it belongs to royal members who serve as board members or executives.

For family ownership, the results show that CRD is significantly and negatively influenced by the proportion of family ownership, suggesting that Saudi companies with higher

representation of family ownership are more likely to disclose less risk-related information (see Table 6). Although this result may be inconsistent with the convergence of interest proposed by the agency theory, it confirms the dominance of the entrenchment theory perspective in the Saudi context.

Saudi family businesses represent a significant proportion of the overall economy of Saudi Arabia (Piesse, Strange, & Toonsi, 2012). This is supported by the result from the descriptive statistics which reveal a high level of family ownership with a mean of 8.5% of company shares. It is suggested that entrenchment effects begin to emerge beyond the level of 5% of ownership (Morck et al., 1988). Higher levels of family ownership could lead to entrench these controlling shareholders and motivate them to expropriate other shareholders' rights (Shleifer & Vishny 1997; Morck et al., 1988). As a result, it is of interest to Saudi family ownership to disclose less information publicly to limit the ability of other shareholders to exercise monitoring and make informed decisions that may harm or interfere with their own objectives.

Furthermore, in countries such as Saudi Arabia where families own substantial equities, little physical separation exists between those who own the company and those who are delegated to run it. Consequently, family members sit on companies' boards both as the executive and non-executive directors, and have strong voting power to nominate and elect board and management members, and even the CEO or the chairman (Alanezi & Albuloushi, 2011). As such, key owners do not have to rely extensively on public disclosure to monitor their investments as they have greater access to internal information (Adhikari & Tondkar, 1992).

With respect to institutional ownership, the results indicate that institutional investors are significantly and negatively associated with CRD, implying that Saudi companies with a higher level of shares owned by institutions are more likely to disclose less risk-related information (see Table 6).

The result contradicts the stakeholder theory and legitimacy theory perspectives that institutional investors are related to a higher level of CRD as a powerful category of stakeholders and a key element of society to legitimize the company existence and survival. However, this result is expected and explainable from the agency theory, entrenchment theory, and proprietary cost theory perspectives. In concentrated ownership by institutional investors, the agency theory proposes an inverse association between institutional ownership and CRD. The higher the level of institutional ownership, the lower the incentive to convince management to disclose more information publicly because they become more able to satisfy their needs for information through direct contact with management rather than relying on public disclosure. The descriptive statistics show that institutional ownership is highly concentrated in Saudi Arabia with a mean of 19% of company shares, which support the above finding. Furthermore, most institutional investors are individuals and family owners (Albassam, 2014) that are more likely to be more entrenched and behave opportunistically towards transparency and other shareholders' rights. Thus, it may be in their interest to provide less disclosure to serve their own interests and expropriate other shareholders' rights.

On the other hand, proprietary cost theory suggests that Saudi institutional investors as controlling shareholders may exert pressure on the company management to disclose less risk information publicly because they believe that such information is proprietary or private in nature, in addition to its commercial and competitiveness sensitivity.

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Regarding the executive directors' ownership and non-executive directors' ownership, the results show an insignificant relationship with CRD, which indicates that company shares held by executive and non-executive directors have no effect on CRD (see Table 6). This result is inconsistent neither with the theoretical perspectives of agency and entrenchment theories nor the empirical evidence.

The possible explanation of the inconsistent result is attributed to the curvilinear effect of managerial ownership on corporate disclosure. According to Morck et al. (1988) the effect of managerial ownership (including executive and non-executive directors' ownership) may not always be a simple linear one, instead, it can be non-linear or curvilinear, depending on the range of ownership and the institutional set-up in a certain country.

For control variables, the results are generally consistent with prior evidence (see Table 6). For example, board independence, board meeting frequency, and firm size are associated with a higher level of CRD (Al-Maghzom et al., 2016a; Albassam & Ntim, 2017; Habtoor & Ahmad, 2017), whereas board size has a negative influence on CRD (Habtoor & Ahmmad, 2017). However, ownership dispersion and leverage have no impact on CRD (Alsaeed, 2006).

6. Research limitations

This study has some limitations that could be potential avenues for future research.

First, as this study focuses on annual reports to examine CRD, other alternative means, such as interim reports and the internet may be subject to future research to strengthen the results of this study.

Second, the objective of this study is to examine the influence of ownership structure on CRD. However, investigating the consequences of CRD on areas, such as the cost of capital in Saudi context allows an assessment of the level of awareness of the importance of risk-related information by Saudi companies and investors in making investment decisions.

Third, an important contribution of this study is the significant positive impact of royal ownership on CRD. This study is the first to investigate such issue where the positive role of this variable on CRD has been attributed primarily to the dominance and influence of cultural and social factors, such as family and tribalism relations with the Saudi ruling family whose of their interest to protect stakeholders' rights and enhance transparency. However, further research of such new issue is essential to frame the association and enrich our understanding of the impact of this variable on transparency, in general, and CRD, in particular. In this regard, future research may re-examine the role of royal ownership on CRD and other types of corporate disclosure in different sectors in Saudi Arabia or other GCC countries. Furthermore, the unique setting of Saudi Arabia can be served 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.

Finally, the findings of this study indicate that ownership is highly concentrated in Saudi companies with significant and mixed effects on transparency. Thus, further research is needed to enrich our understanding of the multiple roles of ownership structure on the effectiveness of corporate governance mechanisms and CRD. One potential area for future research is to examine the potential moderating role of ownership, such as family

ownership and government ownership on the relationship between board effectiveness and CRD.

7. Conclusions

This study is the first to extensively investigate the potential impact of ownership structure on the level of CRD in Saudi Arabia. Understanding the role of corporate ownership structure on CRD allows an assessment of its current effectiveness as governance mechanisms as well as opportunities for potential improvements. Different types of ownership are involved as determinants of CRD in this study. The study employs panel data analysis using a sample of Saudi non-financial listed companies over a period of four years.

The empirical results indicate a significant impact of ownership structure on CRD. However, the extent and direction of this influence depend on the type of ownership. This study finds that CRD is positively associated with government ownership and royal ownership. In contrast, family ownership and institutional ownership have a negative association with CRD. However, no evidence has been found on the role of executive ownership, non-executive ownership on CRD. The empirical evidence on the impact of royal ownership and family ownership on CRD suggests that not all controlling families have the same characteristics and motivations towards CRD practices.

The results of this study have several theoretical and practical implications. First, most of the risk literature has focused primarily on the agency theory to explain the role of corporate governance and ownership structure on CRD as a means to address agency conflicts. However, the literature reflects inconsistent and inconclusive evidence to support the theory. This study adds to the understanding of the role of the agency theory and other complementary and competing theories in a developing country where ownership is highly concentrated and agency conflicts are complicated. The results of this study support the use of different theories to better explain the phenomenon of CRD.

Second, this study focuses on two important issues, which are CRD and corporate ownership. Clearly, there is a dearth of research on these issues, particularly in emerging markets such as the Saudi capital market. Therefore, this study attempts to fill the gap in the risk literature by providing empirical evidence on the significant impact of ownership structure on CRD practices in a developing country that has different social (i.e., monarchy and Islamic system), economic (i.e., oil country), and institutional (i.e., concentrated ownership) contexts.

Based on the results, it is wise for the relevant regulatory bodies to think about the proper mechanisms that could help mitigate agency conflicts by increasing the level of CRD, which help minority shareholders to make more informed decisions.

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Appendix

APPENDIX A. RISK DISCLOSURE CATEGORIES AND ITEMS

CRD CATEGORIES AND ITEMS	Saudi Laws and Regulations	IAS 37 / FRS 12	ICAEW (1997, 2011)	GASB (2000)	Miihkinen (2013) / FAPB (2006)	EAS (2006)	Mokhtar and Mellett (2013)	Rajab (2009)	Miller (1992)	Hassan (2009)	Linsley and Shrives (2006)	Lajili and Zeghal (2005)	Adamu (2013)	Ismail and Rahman (2011)	Dobler et al. (2011)	Ntim et al. (2013)	Lopes and Rodrigues (2007)
GENERAL RISK INFORMATION																	
1. Strategic goals and plans	√		√			√				√							
2. Prospects and expectations	√																√
3. Political and economic risk			√	√	√	√		√	√	√		√	√				
4. Natural disasters									√	√		√	√		√	√	
5. Competition in the product market			√			√	√	√	√	√			√			√	
6. New alliances and joint ventures						√		√		√	√	√					
ACCOUNTING POLICIES																	
7. Use of estimates judgments	√					√				√							
8. Collateral assets against loans	√		√			√				√							√
9. Financial assets impairment						√				√							√
10. Other assets impairment	√									√							√
11. Derecognition of financial assets						√				√							√
12. Risk management policies (general)	√		√	√	√	√		√		√		√	√	√		√	√
13. The objective of holding derivatives instruments								√		√		√	√			√	√
14. Contingent liabilities		√	√							√						√	
15. Commitments capital expenditure	√	√	√	√													
16. Contingent assets and gains		√	√							√						√	
17. Inventory evaluation	√		√							√							
18. Key sources of estimation uncertainty	√									√							√
19. Foreign currency translation	√		√			√											
FINANCIAL INSTRUMENTS																	
20. Reclassification of instruments			√							√							√
21. Cumulative change in fair value										√							√
DERIVATIVES HEDGING																	
22. Hedging description							√	√		√	√						√
23. Change in fair value of assets and liabilities	√					√				√	√						√
24. Cash flow hedge	√					√				√	√						√
SEGMENT INFORMATION																	
25. Business major segments	√									√							
26. Geographical major segments	√	√								√	√						
27. Geographical concentration	√	√								√	√						
28. Customers, suppliers, and assets concentration	√	√								√	√	√				√	
OPERATIONAL RISK																	
29. Product and service development			√	√	√	√		√		√	√					√	

APPENDIX A. RISK DISCLOSURE CATEGORIES AND ITEMS

CRD CATEGORIES AND ITEMS	Saudi Laws and Regulations	IAS 37 / FRS 12	ICAEW (1997, 2011)	GASB (2000)	Miihkinen (2013) / FAPB (2006)	EAS (2006)	Mokhtar and Mellett (2013)	Rajab (2009)	Miller (1992)	Hassan (2009)	Linsley and Shrives (2006)	Lajili and Zeghal (2005)	Adamu (2013)	Ismail and Rahman (2011)	Dobler et al. (2011)	Ntim et al. (2013)	Lopes and Rodrigues (2007)
30. Product and service failure			√		√		√	√	√		√	√	√			√	
31. Brand name erosion and change			√		√		√				√	√				√	
32. Efficiency and performance			√				√				√						
33. Performance incentives			√				√				√						
34. Customer satisfaction					√		√				√	√	√			√	
35. Internal control	√		√	√				√				√	√	√		√	√
36. Infrastructure			√					√	√		√			√			
37. Information processing and technology risk			√	√	√			√	√		√	√			√		
38. Recruiting of qualified and skilled professionals			√	√							√	√				√	
39. Sourcing and availability			√	√			√			√	√					√	
40. Continuity and sustainability	√			√			√										
41. Health and safety			√	√	√		√	√			√	√				√	
42. Environmental risk			√	√			√	√	√		√	√	√			√	
43. Regulatory environment risk			√		√		√	√	√	√	√	√	√		√	√	
44. Legal/regulatory sanctions	√							√									
45. Saudization risk	√																
46. Reservations chartered accountant	√																
47. Events beyond the balance sheet	√										√					√	
48. Other operation risks			√				√	√			√			√			
FINANCIAL RISK																	
49. Exposure to interest rate risk			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
50. Managing interest rate risk			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
51. Exposure to currency exchange rate risk	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
52. Managing currency exchange rate risk	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
53. Exposure to liquidity risk			√	√	√	√	√	√	√	√	√	√	√	√	√	√	
54. Managing liquidity risk			√	√	√	√	√	√	√	√	√	√	√	√	√	√	
55. Exposure to credit risk			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
56. Managing credit risk			√	√	√	√	√	√	√	√	√	√	√	√	√	√	
57. Exposure to commodity price risk			√		√		√	√			√	√	√			√	
58. Managing commodity price risk			√		√		√	√			√	√	√			√	
59. Exposure to Other Price Risk			√	√	√			√	√		√		√			√	
60. Sensitivity analysis			√							√							

Source: Habtoor et al. (2018).

APPENDIX B. DECISION RULES FOR CORPORATE RISK DISCLOSURES

1. To identify risk disclosures, a broad definition of risk is to be adopted as explained below.
2. 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.
3. The risk definition stated above shall be interpreted such that "good" or "bad" "risk" and uncertainties will be deemed to be contained within the definition.
4. Risk-related disclosures shall be classified according to risk disclosure categories and items in Appendix A.
5. If a sentence has more than one possible classification, the information will be classified into the category that is most emphasized within the sentences.
6. Tables (quantitative and qualitative) that provide risk information should be interpreted as one line equals one sentence and classified accordingly.
7. Any disclosure that is repeated shall be recorded as a risk disclosure sentence each time it is discussed.
8. If disclosure is too vague in its reference to risk, then it shall not be recorded as risk disclosure.

Source: Linsley & Shrives (2006).

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