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VALUE RELEVANCE OF VOLUNTARY RISK DISCLOSURE LEVELS: EVIDENCE FROM SAUDI BANKS

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ABSTRACT

This study seeks to examine whether the levels of voluntary risk disclosure in Saudi listed banks are value-relevant or not. The sample of this investigation consists of all banks listed on the Saudi Stock Market Exchange (Tadawul). All data was collected from the annual reports of the sample banks from 2009 to 2013 using manual content analysis. Other variables were collected using DataStream and Bloomberg. Ordinary least squares regressions analysis was used. The findings of the multivariate analysis demonstrated that there is no association between the levels of voluntary risk disclosure and firm value as measured by the market to book value at the end of the year (MTBV). But, the results generate from the accounting based measure (ROA) show that there is a positively significant association between the levels of voluntary risk disclosure and firm value. This study contributes to the literature on general accounting disclosure and in particular advances and contributes to the literature on risk disclosure in developing economies. It also contributes to the understanding of the role of accounting information in relation to the market valuation of a firm. The empirical findings of this study have several implications for banks' investors, regulatory bodies and any other interested group as they report the importance of corporate risk disclosure and its economic consequences. This can be used to increase the value relevance in the banking sector. This study also informs regulators about the current level of risk disclosure in all Saudi listed banks.To the best of the researcher's knowledge, no prior research has been conducted on the relationship between firm value and levels of risk disclosure in general nor especially in emerging markets, such as Saudi Arabia, the focus of this study.

JEL: M4, M49

KEYWORDS: Banks, Saudi Arabia, Risk Disclosure, Economic Consequences, Firm Value

INTRODUCTION

The need for financial reporting and disclosure raises from increased information asymmetry gaps and agency conflicts between insiders (managers) and outsiders (investors) (Kothari et al., 2009). However, corporate disclosures can assists in reducing such information gaps, ease such conflicts augment the credibility of such financial reportage, and complement the role of accounting information in relation to firm value. Previous researches have studies the consequences of disclosure on market valuation of firm (Klein et al., 2005). Enhanced accessibility of corporate information can enhance the capital market efficiency and entice more investors (Wang et al., 2008). Hassan et al., (2009) reported that disclosure is employed as an instrument to moderate agency costs ascending from the likelihood that insiders might not act in the best interest of investors. It has also been argued by Pagano et al., (2002) that disclosure is an instrument which permits stakeholders to enlarge their ability in monitoring and improving the valuation of the firm.

The literature on the economic consequences of disclosure has mostly explored well-developed economies and focused on non-risk voluntary disclosure (Healy and Palepu, 1993; Clarkson et al., 1996; Baek et al., 2004; Nekhili et al., 2012; 2015). In addition, Hassan et al. (2009) claimed that all the empirical findings on disclosure are in line with finance-theory extrapolations, implying that greater public disclosure of information to investors and interested groups increases the valuation of the firm. Prior investigations have explored the relationship between voluntary disclosure and the cost of capital and stock liquidity (Botosan and Plumlee, 2002; Easley and O'Hara, 2004; Healy et al., 1999; Leuz and Verrecchia, 2000), and a small stream of literature has examined the relationship between voluntary disclosure and firm value (Hassan et al., 2009; Nekhili et al., 2012, 2015; Uyar and Kilic, 2012). However, to the best of the researcher's knowledge, all prior research on the latter relationship has been conducted on developed economies, whilst there is no empirical research focusing on this association in developing economies. Thus, the objective of this study is to examine the relationship between the levels of voluntary risk disclosure and firm value in a developing economy, Saudi Arabia. Preceding literature has examined disclosure levels of firms and determinants of disclosure; whereas, there is not a large body of research which examine the effect of disclosure on FV (Uyar and Kilic, 2012) yet the dearth is even greater when it comes to the effect of voluntary risk disclosure on firm value. Thus, there is a need for more elaboration on the value that corporate information have on risk disclosure in banks.

This study is motivated by the fact that the effect of disclosure on firm value is still an empirical issue (Hassan et al., 2009). Further to this Al-Akra et al., (2010), has demounted that there is little empirical research to back the link between the two variables. Moreover, Hassan et al., (2009 p.80) has briefly touched upon this association by asserting that, "There is little direct empirical evidence with regard to the relationship between disclosure and firm value". Hence, this research is motivated to conduct an empirical study in Saudi listed banks to demonstrate what the level of voluntary risk disclosure can add value for the sample banks. It is also motivated by the rarity of studies exploring the impact of the level of risk disclosure in relation to firm value. In addition, Vogel (2005) argued that the findings associated with the relationship between disclosure and firm value still remain inconclusive. Such inconclusiveness creates ground for further investigation not just for risk disclosure, but also for other kinds of disclosure. Furthermore, prior researches have claimed that the association between firm value and disclosure is sensitive to the proxy used for valuation of the firm (Uyar and Kilic, 2012; Elzahar, 2013). The above argument also highlights the need for more research into this association. There is a dearth of academic examination that studies the potential economic consequences and valuation implications for banks. Finally, this study is motivated by the dearth of research on financial institutions reporting disclosures, risk disclosure and by the calls for more research on the valuation implications of such disclosures made by preceding studies (Hassan et al., 2009; Leuz and Wysocki, 2008).

This study makes some contributions to the literature of risk disclosure and economic consequences. Even though, there have been a dearth of empirical studies studying the link between risk disclosure and market valuation in the banking sector, as far as the researcher knows, this is the first study to empirically investigate this relationship in Saudi banks. The study offers a unique contribution to the existing literature by looking at the economic consequences of risk disclosure in Saudi listed banks. This study also contributes to the literature on general accounting disclosure and in particular advances the literature on risk disclosure in developing economies by empirically examining the link between voluntary risk disclosure levels and the market valuation of banks in Saudi Arabia. It also contributes to the literature by extending the traditional research on corporate disclosure beyond the narrow focus of financial disclosure to include risk disclosure in relation to firm value. This study also contributes to the existing literature by indicating that there is a positive firm value arising from the levels of voluntary risk disclosure. It also contributes to the understanding of the role of accounting information in relation to the market valuation of a firm. Studies about such markets are required and are fundamental to ameliorating the weak transparency and disclosure situation through attracting the attention of regulatory institutions and corporation directors

(Uyar and Kilic, 2012). There is a lack of research investigating the impacts of risk disclosure on the firm value for banks in a developing country. Thus this study fills this gap.

It has been suggested by previous literature that there is a positive link between the levels of disclosure in relation to firm value. However, this association continues to be vague whether rises in information can assurance an enhanced market valuation of the firm for MTBV and ROA or not. Hence, the possible impact of risk disclosure on firm value is still an open empirical question particularly for banks in emerging markets. This study fills this gap in the literature by providing a direct analysis of the association between risk disclosure and firm value based on two different measures namely market to book value at the end of the year and profitability (MTBV and ROA). The first measure is a market based measure and the second is an accounting based measure. This study focus is on banks in an emerging market context which offers a unique empirical setting which permits for a clearer and richer picture between their levels of voluntary risk disclosure and banks market valuation from well-developed countries. This investigation contributes to the literature by demonstrating that corporate risk disclosure is essential for efficient firm value. This proposes that policymakers, accounting and regulatory institutions such as SAMA, SOCOPA and the CMA might earnestly contemplate the quantity, quality and comprehensiveness of risk materials when endeavouring to facilitate capital market efficiency for Saudi listed bank by introducing a new form of risk disclosure' measures. Prior economic consequences studies tend to concentrate on the cost of equity and remain silent in regards to the valuation of firms (Dhaliwal et al., 2011). The findings of this investigation produce some awareness to help directors who attempt to increase the market value of their banks. The evidences of this investigation on the influence of risk disclosure in relation to firm value contribute to previous disclosure and risk disclosure literature by advancing the association between the two variables, which states that different proxies for firm value may have different effects on the level of risk disclosure.

Preceding research has concentrated on other forms of economic consequences ignoring the market valuation of banks. The effects of augmented disclosure on cost of capital (Easley and O'Hara, 2004; Kothari et al., 2009) analysts' forecasts (Wang et al., 2013) financial performance (Wang et al., 2008) and share price anticipation of earnings (Schleicher et al., 2007). This stream of literature is focused mostly on developed countries. There is a dearth of research investigating the link between disclosure and firm value stated Uyar and Kilic (2012), especially in developing economies. This stream of research is still in its early stage. However, to the best of the researcher knowledge research concerning the association between risk disclosure and firm value is absent in general and in particular in banks in developing markets. However, the economic consequences have not yet been empirically examined in in banks in developing markets and in the case of this study in Saudi Arabia measuring the influence of risk disclosure on firm valuation.

The empirical findings of this study indicate that the impact of the levels of voluntary risk disclosure on frim value vary depending on the proxy used for firm value. The results reported based on the market based measure show that there is a non-significant relationship between firm value and the levels of voluntary risk disclosure (MTBV). The results generate from the accounting based measure (ROA) show that there is a positively significant association between the levels of risk disclosure and firm value. The reminder of the paper proceeds as follows: section 2 provides the literature review and hypothesis development; section 3 discusses the theoretical framework; section 4 outlines the research design; section 5 discusses the results; and section 6 concludes.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Out of the many studies reported in the literature, only a few have explored firm value and disclosure in developed countries (Healy et al., 1999; Leuz and Verrecchia, 2000; Baek, Kang and Park, 2004; Da Silva and Alves, 2004; Uyar and Kilic, 2012; Elzahar et al., 2015) and only one study has examined firm value and disclosure in emerging economies (Hassan et al., 2009). To the best of the researcher's knowledge, not a single study has explored the effect of voluntary risk disclosure on firm value and thus this is the first to

do so. This dearth of literature makes this exploration of the relationship between firm value and voluntary risk disclosure in the context of Saudi Arabia all the more valuable. This study focuses particularly on the market valuation in relation to voluntary risk disclosure reported by all Saudi listed banks. It is worth noting that most of the preceding investigations into firm value have concentrated on disclosure in non-financial corporation (Baek et al., 2004; Hassan et al., 2009; Nekhili et al., 2012; 2015; Elzahar et al., 2015), leaving the association between the two variables in the banking industry completely un-researched. This study is intended to shed light on the effect of banks' voluntary risk disclosure on firm value in an emerging market. Risk disclosure in the banking industry is still relatively under-researched and suffers from major limitations (Oliveira et al., 2011a; Barakat and Hussainey, 2013). This is of particular importance for a number of reasons. Banks are risk management entities since their primary business it to take risks and provide liquidity. Accordingly, banks are predicted to release considerable amounts of risk disclosure in order to enlighten external investors (Bessis, 2002), thus indirectly increasing the market valuation of the firm. Generally, disclosure has ascended to a different level of significance within banks compared to non-financial corporations since by their nature banks are inherently opaque (Huang, 2006).

Prior literature on disclosure has indicated that corporate disclosure can moderate the information asymmetry amid internal and external personnel (Kothari et al., 2009). Therefore, improved disclosure may culminate in increased demand for a firm's shares and, thus, a rise in the price of shares (Clarkson et al., 1996; Hassan et al., 2009; Healy and Palepu, 1993) since the disclosure ought to reveal the firm's value (Healy et al., 1999). An environment rich in information might result in positive economic consequences, such as increases in the value of the firm (Beyer et al., 2010; Leuz and Wysocki, 2008). The consequences of augmenting the levels of disclosure are usually debated in terms of diminishing mispricing, increasing profitability and firm value (Botosan and Plumlee, 2002). Moreover, prior empirical researches provide some supporting proof in relation to the association between voluntary disclosure levels and firm value. Healy et al., (1999) documented that companies with increased levels of disclosure could at the same time enjoy considerable improvements in market valuation. This direct effect of the levels of disclosure on firm value influences administrators' decisions and effects the distribution of future cash flows (Lambert et al., 2007). Also, according to Elzahar et al., (2015) augmented disclosure will possibly enhance the market valuation of firms.

Substantial amounts of literature studied the effects of disclosure in generally, but the number of studies that investigated the impact of disclosure on firm value is limited. This lack is even greater when exploring risk disclosure in relation to firm value. Several empirical investigations established that voluntary disclosure augments stockholders' ability to forecast future earnings, which has an effect of the valuation of the firm (e.g., Hussainey et al., 2003). It has been contended by Rhodes and Soobaroyen (2010) that disclosure can limit the raise of agency conflicts by diminishing information asymmetry, consequentially augments market valuation of firms. Sheu et al., (2010) stipulated that the capital market only supplies higher firm valuations to firms, which opt for a more inclusive disclosure policy. Gordon et al., (2010) provided strong evidence that greater levels of voluntary disclosure are positively related with the valuation of the firm. Nonetheless, the findings of researches investigating the relationship between corporate disclosure and firm value are mixed. For instance, several investigations have documented a positive link between the two variables (see Baek et al., 2004; Cheung et al., 2010; Gordon et al., 2010; Jiao, 2011; Anam et al., 2011; Dhaliwal et al., 2011). However, Hassan et al., (2009) claimed that the effect of disclosure on firm value is still worthy of empirical investigation. They intimated that there is no significant association between firm value and discretionary disclosure although there is a negative and significant relationship between the market value of the firm and mandatory exposure. Concurring with their findings, Uyar and Kilic (2012) claimed that the link between discretionary disclosure and company value differs according to the proxy employed for the market value of the firm.

In theory, the market value of a firm raises due to augmented disclosure levels via either a reduction in the cost of capital or an upturn in the cash flow to the company's shareholders or both (Amihud and Mendelson,

1986; Diamond and Verrecchia, 1991). Debatably, high exposure levels decrease the cost of capital since they encourage investors to lower their estimation of the risk level and, thus, decrease the mandated rate of return when purchasing a company's shares (Coles et al., 1995; Clarkson et al., 1996). Moreover, the value of the company rises following the predicted enhancement in stock liquidity since the transaction costs are decreased whilst the demand for the company's shares soars (Amihud and Mendelson, 1986; Diamond and Verrecchia, 1991). There could be problems with information asymmetry and agency conflicts between company directors and external stakeholders (Healy and Palepu, 2001) since external investors do not generally have access to the in-house information of the firm that is freely available to company directors. This could affect the expectations of outside stakeholders concerning risk, mandated returns and company cost of capital and, thus, the company's share value. However, augmented voluntary corporate disclosure can be employed to mitigate these problems (Hassan, 2009).

Healy and Palepu (1993) argued that the higher the disclosure level, the more possibility there is that shareholders are able to understand the way managers operate. Also, Diamond and Verrecchia (1991) claimed that by lowering the information asymmetry amongst management and un-informed shareholders leads to less uncertainty regarding the future performance of the company and an enhancement in the liquidity of its shares. Hence, Coles et al. (1995) and Clarkson et al. (1996) contended that lower transaction costs in addition to a higher demand for shares could lead to an upturn in share price and, thus, the value of the firm. Nonetheless, the impact of augmented disclosure may not be positive since it might have a negative impact on the company's competitiveness (Healy and Palepu, 1993) and, thus, have an adverse impact on the company's valuation. High quality exposure has a positive impact on the value of a company due to institutional investors being attracted to the company (Dhaliwal et al., 2011). Hassan et al., (2009) argued that the association between the two variables is complicated and depends upon whether the exposure is voluntary or mandatory. However, the authors found no significant link between firm value and the voluntary exposure made by Egyptian companies, whereas they identified a negative and significant relationship between company value and mandatory exposure. Moreover, Uyar and Kilic (2012) established that the link between discretionary disclosure and firm value is influenced by the measurement of firm value. For example, when they used market-to-book value as opposed to market capitalisation as the dependent variable in the regression model, their findings went from positive to insignificant.

Furthermore, earlier investigations that examined the effect of disclosure on company value reported mixed findings as previously emphasised. The limited empirical literature examining the relationship between market value firms and voluntary disclosure suggests a positive relationship between the two variables (Baek et al., 2004, Lim et al., 2007; Anam et al., 2011; Sheu et al., 2010; Nekhili et al., 2012), for instance, Anam et al. (2011) and Sheu et al. (2010) reported that discretionary disclosure levels in Malaysia and Taiwan are associated with company value. Correspondingly, Silva and Alves (2004) established that financial information discretionarily reported by Latin American companies has a significant and positive relationship with company value. However, Uyar and Kilic (2012) and Elzahar et al., (2015) claimed that the link between discretionary exposure and company value differs according to the proxy employed for the market value of the firm, and Hassan et al., (2009) reported that the association between the two variables depends on the type of disclosure used. Vafaei et al.'s (2011) study included both developed and developing countries and documented that there is a significant association between disclosure and firm value for Hong Kong and the UK and reported a negative relationship between the two variables for Singapore and Australia. Therefore, based on the above discussion the following hypothesis is formulated:

H: there is a positive association between the levels of voluntary risk disclosure ANF rim value

THEORETICAL FRAMEWORK

An assertion has been made by Linsley and Shrives (2006) that there is a difficulty in considering any risk disclosure investigation, which is to clearly identify risk information. Thereforth, it is crucial to impeccably

define risk. Yet, defining risk can be problematic as the level of management control over risk varies in accordance to the type of risk, for example, financial risk could be controlled by financial instruments and other risks are operational (Schrand and Elliott, 1998).

Therefore, for the purpose of this study, the researchers adopted a well-defined and fit for purpose risk disclosure definition by Linsley and Shrives (2006, p.3), who defined risk reporting as "If the reader is informed of any opportunity or prospect or of any hazard, danger, harm, threat, or exposure, which 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".

Risk Disclosure Theories

A number of different theories have been proposed to explain why companies report risk information. However, there is no single theory which can explain the phenomena of disclosure as a whole, thus Researchers tend to choose the most articulated theory with their study's hypotheses (Linsley and Shrives, 2000). This section will consider the theoretical perspectives employed for the purpose of this study.
Modern firms are reknowned by the detachment of ownership from control (Fama and Jensen, 1983) and this contributes to the widening information gap between managers (insiders) and investors (outsiders). Thus, there is a great need for corporate risk disclosure as it represents a vital line of communications between the two parties. Cooke (1989) argued that where there is a detachment of ownership from control, the likelihood of agency costs arises due to disagreement between shareholders and managers and between bondholders and shareholder-managers. Also, Healy and Palepu (2001), Verrecchia (2001) and Hassan et al., (2009) contended that the need for more corporate disclosure arises from the information asymmetry problem. Henceforth, enhancing voluntary disclosure can reduce such conflicts and lessen future corporate performance uncertainty as well as facilitate trading in shares hence increases firm valuation (Hassan et al., 2009).

The influence of disclosure on firm value can be explained based on signalling theory. A number of prior researches have attempted to highlight the relationship between firm value and voluntary disclosure based on signalling theory (Gordon et al., 2010; Anam et al., 2011). All-inclusive disclosure indicates better corporate governance management and fewer agency conflicts, leading to a higher market valuation of the firm (Sheu et al., 2010). In addition, Gordon et al. (2010) asserted that voluntary disclosure in annual reports sends a clear signal to the capital market that is likely to increase a firm's present net value and in turn its stock market value. Gallego-Alvarez et al., (2010) argued that disclosure has a positive consequence on shareholder value creation. While, Cormier et al., (2011) claimed that, disclosure supplies value-relevant information to stock markets. In essence, signalling theory implies that a company will try to signal good news to investors and other interested groups by disclosing more voluntarily (Oliveira et al., 2006). Moreover, Linsley and Shrives (2005) posited that signalling theory is the most relevant theory in terms of illuminating the phenomena of voluntary risk disclosure. Furthermore, some previous investigations have reported that increasing the levels of voluntary disclosure culminates in less misevaluation of share prices, thus increasing firms' market value (Anam et al., 2011).

Moreover, according to the signalling theory, when a firm's performance is good, directors will prefer to signal their firm's performance to their investors and the rest of the market by reporting more supplementary information, whilst directors of firms that are performing badly do not. In fact, such disclosure by managers has many advantages, such as improved reputation of a firm, higher liquidity of stocks and increased market valuation of a firm, whereas when firms keep silent, investors and the rest of the market can misinterpret this as them withholding the worst possible information (Spence 1973; Verrecchia, 1983; Strong and Walker, 1987; Mohobbot, 2005; Linsley and Shrives, 2000; 2006; Hassan, 2009). Increased information disclosure allows shareholders to make accurate assessments of the fundamental parameters in relation the future stock returns, decreasing non-diversifiable estimation risk and uncertainty in relation to future cash

flows as well as future profitability (Clarkson et al., 1996). Also through augmented disclosure, the willingness for shareholders to trade is improved and enhances the liquidation of shares cultivating in an increased firm value (Easley and O'Hara, 2004).

It has been noted that some organisations restrict their disclosures to only mandatory disclosure, whereas others might aim for more transparency and the disclosure of other supplementary information. Also, it has been established by prior investigations that traditional mandatory disclosure is unsuccessful in capturing value relevant information (Healy and Palepu, 1993; Hussainey and Walker, 2009), whilst previous literature has claimed that there are a number of advantages to voluntary disclosure (Nikhil et al., 2015). Moreover, directors could opt for more voluntarily disclosure of information regarding their risk management and the methods used to deal with risks in their organisation as a means of conveying the firm's genuine value to external investors (Merkley, 2014). Furthermore, increased voluntary disclosure is predicted to increase stock liquidity by diminishing transaction costs and raising the demand for shares hence increase future profitability. It is also predicted that improved disclosure will decrease uncertainty surrounding the estimation of stock returns. Furthermore, the rate of return required by company shareholders will be reduced, the company's capital costs will plummet and the company's market value will rise. Moreover, prior studies have found that increased information disclosure can impact upon a company's market value by increasing the actual cash flow to investors as a consequence decreases agency conflicts (Lambert et al., 2007).This study incorporates as control variables a number of firm-specific characteristics, corporate governance attributes and board demographic traits which are discussed in the previous study. (For more information see Table 2).

RESEARCH DESIGN-METHODOLOGY

This section describes the sample, the sources of relevant information and the data collection procedure and defines all variables used for the purpose of this investigation. This study's sample incorporates all banks listed on the Saudi Stock Market (Tadawul) over a five-year period from 2009 to 2013. Initially, the researchers set out to undertake this empirical study over a ten-year period. However, as four banks did not have their market to book values for the entire period and some of them were not even listed ten years ago, the study period was shortened in order to include the entire population of listed banks in Saudi Arabia. According to SAMA (2015) there are only 12 listed Saudi banks on Tadawul. The data collection process was undertaken via manual content analysis of all the annual reports of the banks as well as some variables were collected from DataStream and Bloomberg. All reports were downloaded from the banks' websites. Kothari et al., (2009) indicate that annual reports are usually favoured as information source since they provide information which enables external shareholder to better understand the true economic picture of the firm.

For this investigation to examine the level of voluntary risk disclosure in Saudi listed banks a risk disclosure index, which is a checklist of different disclosure items included in banks' annual reports, was developed (see Arvidsson, 2003). For the purpose of constructing the risk disclosure indexes, an extensive review of prior studies was undertaken (e.g. Hassan, 2009; Al-Shammari, 2014; Abdullah et al., 2015). Therefore, for an item to be included, it must have been used in previous published disclosure studies. Hence, the following steps were taken as the basis for the development of the risk disclosure indices for this study:

Step 1: A comprehensive review of the prior risk disclosure literature was undertaken (e.g. ICAEW, 1997, 2000; Hassan, 2009; Lopes and Rodrigues, 2007; Al-Shammari, 2014; Lipunga, 2014; Abdullah et al., 2015). Based on this, the researchers identified some items which were used in previous studies. Therefore, the annual reports of listed Saudi banks should contain and disclose.

Step 2: The index were reviewed with 2 independent researchers who deal with bank reports and specialize in the area of disclosure and financial reporting to enhance the validity of the study, index and results.

Therefore, a risk disclosure index was developed solely for the purpose of measuring the level of voluntary risk disclosure in Saudi listed banks. This is similar to the approach used by prior voluntary risk disclosure investigations (e.g. Hassan, 2009; Abdullah et al., 2015). The risk disclosure index included a total of 54 items that were expected to be published in the annual reports of the sample banks, which were divided across 8 categories: accounting policies, financial and other risks, derivative hedging and general risks information, financial instruments, reserves, segment information, business risk and compliance with regulations. Moreover, one of the important issues during crafting the disclosure index was deciding whether some items should be weighted more heavily (i.e. important) than others. In accounting research, both weighted and un-weighted disclosure indices are utilized (Cooke, 1989; Marston and Shrives, 1991; Owusu-Ansah, 1998; Raffournier, 1995). For the purpose of this study, the un-weighted disclosure index was chosen because the study does not focus on a particular user group (Alsaeed, 2006; Naser et al., 2006). Instead the study addresses all users of annual reports, and therefore there is no need to confer different importance levels to the disclosed risk items (Oliveira et al., 2006). The contents of each bank's annual reports were compared to the items listed in the Appendix, and on the basis of a dichotomous model they were coded as 1 if disclosed or 0 if otherwise. This index coincides with other studies that quantify the extent of disclosure (Al-Razeen and Karbhari, 2004; Barako et al., 2006; Alsaeed, 2006; Owusu-Ansah, 1998; Oliveira et al., 2006). The total score for a bank is:

$$TD = \sum_{i=1}^{n} d_i \quad (1)$$

Where d = 1 if the item is disclosed; 0 = if the item is not disclosed; n = number of items.

Weber (1988) argued that the classification procedure should be reliable and valid. The reliability and validity of content analysis approaches need to be reviewed carefully. In human-scored schemes, reliability, that is the reproducibility of the measurement, is a major concern (Marston and Shrives, 1991; Healy and Palepu, 2001). The preceding studies argued that content analysis is not reliable if it is conducted only once or only by one specific person (Neuendorf, 2002). Consequently, to ensure the content validity of the initial research instrument, it was reviewed independently by two other researchers. Subsequently, after the researcher received the independent researcher's comments and suggestions. A fourth experienced academic was required to discuss any ambiguities raised. The final disclosure checklist included 54 items. In terms of validity the research instrument (disclosure index) is valid if they can measure what they claim to measure (Field, 2009). In this study the index has measure what it claimed to measure; therefore the researcher can safely claim that the research instrument is valid. To ensure the reliability of the research instrument, the author and the two independent researchers scored three randomly selected banks. Then, the results from the three researchers were compared. Given that the final research disclosure index was agreed by all researchers, differences in the compliance scores from the researchers were insignificant. This method was adopted by Marston and Shrives (1991), who argued that the index scores awarded to firm could be considered reliable if other researchers could replicate the same results. The final disclosure checklist is presented in Table 1.

Dependent variable: This study uses two different proxies for measuring firm value. Firstly it uses the market based measure which is the natural logarithm of market to book value at end of year (MTBV). This is in line with previous studies (Hassan et al., 2009; Uyar and Kilic, 2012). Secondly, it uses the accounting based measure, which is the return of assets (ROA). This is consistent with (Garay et al., 2013; Aras et al., 2010). Two measures examinations have different theoretical implications (Hillman and Keim, 2001). The current study employs two dependent variables related to firm value to test the hypothesis of the study. This is concurrent with preceding literature (Barontini and Caprio, 2006; Sheu et al., 2010). These two models measure how the level of voluntary risk disclosure affects the market value of the bank. This study's main emphasis is on exploring the relationship between the levels of voluntary risk disclosure and firm market

value. An extensive line of preceding literature has argued that discretionary disclosure is better used as an instrument intended to reduce information asymmetries and satisfy shareholders' information demands. The aim of this research is to investigate whether increased discretionary risk disclosure affects the firm's market value.

Table 1: Ensuring Validity of Research Instrument

Categories	Items Suggested by Author	Items Suggested by First Independent Researcher	Items Suggested By Second Independent Researcher	Final Index After Consultation	Weight
Accounting Policies	12	13	9	**10**	**18.51%**
Financial risks	15	18	10	**15**	**27.7%**
Derivatives hedging and General Risk Info	1	3	2	**11**	**20.37%**
Financial instruments	3	2	3	**2**	**3.7%**
Reserves	4	3	2	**3**	**5.5%**
Segment information	2	2	2	**2**	**3.7%**
Business risk	5	3	4	**5**	**9.25%**
Compliance with regulations	7	11	3	**6**	**11.11%**
Total	49	55	35	**54**	**100%**

*The weight is calculated based on final items for each standard dividend into total items (67). For example: weight of Accounting Policies = 10/67*100= 15%*

Endogenous variable: Risk Disclosure; which proxies for the level of voluntary risk disclosure of all banks included in the sample of the study. The level of voluntary risk disclosure is the totality of the scores attained from 54 items that fall into 8 different categories of information (See appendix). The level of voluntary risk disclosure was calculated based on an un-weighted (Dichotomous) risk disclosure index, whereby an item is assigned a score of 1 if it is disclosed and a score of 0 if otherwise (Uyar and Kilic, 2012; Hassan et al., 2009). This measure was preferred since the research does not concentrate on a specific user group (Naser et al., 2006) but rather addresses all users of annual reports. Thus, there is no need to put different weights on the reported risk items (Oliveira et al., 2006).

Table 2: Summary of Variable Names, Description and Sources

Abbreviated Name	Full Name	Variable Description	Predicted Sign	Data Source	Prior Studies
Dependent Variables					
FV	Firm value	Natural logarithm of the ratio of market value of equity to book value of equity at the financial year-end (MTBV) ROA (Return On Assets)		DataStream	Hassan et al., (2009); Uyar and Kilic (2012); Nekhili et al., (2015); Lins, (2003) Garay et al., (2013); Aras et al., (2010); Klapper and Love,(2002)
Independent Variable					
RISKD	Risk disclosure	Risk disclosure level based on risk index		Annual reports	Hassan et al., (2009); Uyar and Kilic (2012); Nekhili et al., (2015); (2015); Nitm et al. (2013)
Control Variables					
1. Firm-specific Characteristics					
SIZE	Bank size	Natural logarithm of total assets	+	DataStream	Elshandidy et al. (2013); Elzahar and hussainey (2012); (2007); Mokhtar and Mellet, (2013); Nekhili et al., (2015)
PROF	Profitability	ROA (Return On Assets)	+	DataStream	Nitm et al. (2013); Nekhili et al., (2015); Elzahar and Hussainey (2012); Uyar and Kilic (2012); Elshandidy and Neri (2015)
LEV	Leverage	Long-term debt/ total assets	+	DataStream	Abraham and Cox (2007); Nekhili et al., (2015); Uyar and Kilic (2012); (Hassan et al 2009); Nitm et al. (2013)
LIQ	Liquidity	Current Ratio: Current Assets/Current Liabilities	+	Annual report	Mokhtar and Mellet, (2013); Elzahar and Hussainey (2012); Elshandidy and Neri (2015);

DIVID	Dividend payout	Dividends per share	+	DataStream	Elshandidy and Neri (2015)
2. Corporate Governance Characteristics					
BSIZE	Board size	Number of board members	+	Annual report	Elshandidy and Neri (2015); Nekhili et al., (2015); Mokhtar and Mellet, (2013); Nitm et al. (2013); Elzahar and Hussainey (2012);
CHS	Internal Ownership	Percentage of shares held by internal shareholders	-	DataStream	Elshandidy et al. (2013); Nitm et al. (2013); Nitm et al. (2012); Marshall and Weetman, (2007); Elshandidy, (2014); Firth et al., 2007
NOCH-Factors	External Ownership	Percentage of shares held by external shareholders	+	DataStream	Elshandidy et al. (2013); Nitm et al. (2013); Nitm et al. (2012); Elshandidy and Neri (2015); Deumes and Knechel, (2008); Elshandidy, (2014); Firth et al., 2007
INDEP	Independent directors	Number of non-executive directors on the board of directors	+	Bloomberg Annual Report	Abraham and Cox (2007); Elshandidy et al. (2013); Alergini and Greco (2013); Oliveira et al., (2011); Allini et al. (2015); Allini et al., (2014)
NON	Non-executive directors	Dummy variable 1 if board contains non-executive directors and otherwise 0.	+	Bloomberg Annual Report	Gul & Leung, (2004); Cheng & Courtenay (2006); Elshandidy et al. (2013); Nitm et al. (2013); Elshandidy and Neri (2015);
ACINDEP	Audit committee independence	Dummy variable; 1 if an audit committee independence exists, and 0 otherwise	+	Bloomberg Annual Report	Nekhili et al., (2015); Taylor (2011); Oliveira et al., (2011b); Neri, (2010)
ACSIZE	Audit committee size	Number of audit committee members	+	Annual report	Felo et al. (2003); Elzahar and Hussainey (2012); Tauringana and Mangena (2009); Mangena and Pike (2005)
ACMEET	Audit committee meetings	Number of audit committee meetings	+	Annual report	Karamanou and Vafeas (2005); Alergini and Greco (2013); O'Sullivan et al. (2008); Allini et al. (2015)
3. Demographic Characteristics					
EDUC	Education	Number of board members holding a PhD	+	Annual report	Allini et al. (2015)
TENU	Tenure	Dummy variable 1 if the number of years the board member permanence on the board is above the sample median of 5 years, otherwise 0.	+	Annual report	Chung et al., (2015)
GENDER	Gender	Number of females on the board	+	Annual report	Allini et al. (2015); Nitm et al. (2013); Allini et al. (2014)
DIVE	Diversity	Number of other nationalities on the board	+	Annual report	Nitm et al. (2013); Allini et al. (2015);

This table provides the description and measures of risk disclosure reporting, as dependent variables, and firm characteristics, corporate governance mechanism and demographic traits as independent variables. It also provides the source of each variable.

Model Development

The aim of this research is to examine the association between firm value and voluntary risk disclosure level. Moreover, since all of the selected variables can affect firm value directly or indirectly by affecting the level of voluntary risk disclosure two synchronised models, wherein the level of voluntary risk disclosure is a strategic choice that relies on a wide range of variables, was developed (see Table 2).
The market based measure:

$$FV_{it} = \beta 0 + \beta 1\ \mathrm{RISKD} + \beta 2\ \mathrm{NOCH-FACTOR} + \beta 3\ \mathrm{BSIZE} + \beta 4\ \mathrm{INDEP} + \beta 5\ \mathrm{NON} + \beta 6\ \mathrm{ACINDEP} + \beta 7\ \mathrm{ACSIZE} + \beta 8\ \mathrm{ACMEET} + \beta 9\ \mathrm{EDUC} + \beta 10\ \mathrm{TENU} + \beta 11\ \mathrm{GENDER} + \beta 12\ \mathrm{DIVE} + \beta 13\ \mathrm{SIZE} + \beta 14\ \mathrm{PROF} + \beta 15\ \mathrm{CHS} + \beta 16\ \mathrm{LEV} + \beta 17\ \mathrm{LIQ} + \beta 18\ \mathrm{DIVID} + \varepsilon \quad (2)$$

Where:
FV = Firm Value (measure by MTBV)
β0 = the intercept
B1….. β18 = regression coefficients (See table 2 for explanation)
ε = error term

I = Bank
T = Year

The accounting based measure:

$$FV_{it} = \beta 0 + \beta 1\ \text{RISKD} + \beta 2\ \text{NOCH} - \text{FACTOR} + \beta 3\ \text{BSIZE} + \beta 4\ \text{INDEP} + \beta 5\ \text{NON} + \beta 6\ \text{ACINDEP} + \beta 7\ \text{ACSIZE} + \beta 8\ \text{ACMEET} + \beta 9\ \text{EDUC} + \beta 10\ \text{TENU} + \beta 11\ \text{GENDER} + \beta 12\ \text{DIVE} + \beta 13\ \text{SIZE} + \beta 14\text{CHS} + \beta 15\ \text{LEV} + \beta 16\ \text{LIQ} + \beta 17\ \text{DIVID} + \varepsilon \quad (3)$$

Where:

FV = Firm Value (measure by ROA)
β0 = the intercept
B1….. β17 = regression coefficients (See table 2 for explanation)
ε = error term
I = Bank
T = Year

EMPIRICAL RESULTS

Table 3 presents the summary descriptive statistics of the variables used in the analyses to determine the empirical directional or non-directional relationship between firm value and the voluntary risk disclosure levels in banks listed on the Saudi Stock Market (Tadawul). A number of interesting findings emerged from the descriptive statistics. It demonstrated a great disparity in voluntary risk reporting practices among the sample population. For example, RISKD ranged from a minimum of 51 percent to a maximum of 78 percent, with an average of 66.03 percent of voluntary risk disclosure levels in the sample. Also, it showed that the average market to book value of listed banks in Saudi Arabia is 1.72 percent with a maximum value of 4.02 and a minimum value of 0 percent.

The figures for all control variables (which were generated from corporate governance, demographic attributes and firm-specific characteristics) are presented in the next paragraph as minimum, maximum and mean values in percentages. (Also see table 3). Table 3 demonstrates that CHS holdings has in this model reported quite a large variation ranging from 0 percent for the minimum and 69 percent for the maximum with a mean of 19.1 percent. This phenomenon could be attributed to the nature of the ownership structure in the Kingdom of Saudi Arabia where some banks are wholly owned by a single family who sets on the board of directors and act as internal shareholders. Alrajhi bank is an example of such structure. While, Table 3 shows that NOCH holdings has reported a minimum of 25 percent, a maximum of 45 percent and a mean of 29.5 percent. Also, Table 3 illustrates that BSIZE ranges from 7 members to a maximum of 11 on the board of directors, with an average mean of 9 members. Whereas, the INDEP members of the board recorded an average mean of 5 members with a minimum of 3 and a maximum of 8. Table 2 also shows that NON members have a minimum of 1 member to a maximum of 11 members with an average mean of 7. The Table below illustrates that the descriptive statistics for the ACIND which has recorded a minimum of 0 members and a maximum of 1 audit committee independent member. ACSIZE has a mean of 3 members with a minimum of 2 and a maximum of 5. For the audit committee frequency of meetings (ACM) Table 3 shows that there is a minimum of 3 meetings, a maximum of 11 and an average mean 5. Further, GEN has a minimum of 0 members and a maximum of 1 on the board of directors. TENU has recorded a minimum of 0 and a maximum of 1, while EDUC recorded a minimum of 0 and a maximum of 1. Also DIVE recorded a maximum of 1. Table 3 also demonstrates that SIZE has an average mean of 8, a minimum of 7 and a maximum of 7.60 percent. While, PROF has a maximum of .04, a minimum of -.01 and a mean of .019. LEV on the other hand has a maximum of 13.7, a minimum of 0 percent and an average mean of 0.57. LIQ has reported in the table below a minimum of 1.10, a maximum of 10 percent and a mean of 1.4. Lastly, DIVID has reported a minimum of 0, a maximum of 69 and a mean of 25 percent.

Table 3: Descriptive Statistics for All Variables Included in this Study of MTBV

	N	Minimum	Maximum	Mean	Std. Deviation
FV	60	0.00	4.02	1.7218	0.70914
RISKD	60	0.51	0.78	0.6603	0.07059
CHS	60	0.00	69.00	19.1000	17.46056
NOCH	60	25.00	45.00	29.5000	5.08091
BSIZE	60	7.00	11.00	9.5500	0.94645
INDEP	60	3.00	8.00	5.1333	1.62049
NON	60	1	11	7.37	2.718
ACINDEP	60	0.00	1.00	0.7500	0.43667
ACSIZE	60	2.00	5.00	3.7667	0.96316
ACMEET	60	3.00	11.00	5.3667	1.95688
GENDER	60	0.00	1.00	0.0833	0.27872
TENU	60	0.00	1.00	0.6000	0.49403
EDUC	60	0.00	1.00	0.7000	0.46212
DIVE	60	0.00	1.00	0.3333	0.47538
SIZE	60	7.24	8.58	7.9940	0.35203
PROF	60	-0.01	0.04	0.0192	0.00869
LEV	60	0.00	13.76	0.5780	2.04382
LIQ	60	1.10	10.89	1.4118	1.26123
DIVID	60	0.00	69.15	25.8103	21.41391
Valid N (listwise)	60				

Note: This table presents the descriptive analysis for all variables used in the regression model for the purpose of this study. FV: Firm value (Market to Book Value); RISKD: Risk disclosure score (based on an unweighted disclosure index); CHS: Internal ownership (Percentage of shares held by internal shareholders); NOCH-Factors: External ownership (Percentage of shares held by all external shareholders); BSIZE: Board size (Number of board members); INDEP: Independent directors (Number of non-executive directors on the board of directors); NON: Non-executive directors (Dummy variable 1 if board contains non-executive directors and otherwise 0); ACINDEP: Audit committee independence (Dummy variable; 1 if audit committee independence exists, and 0 otherwise); ACSIZE: Audit committee size (Number of audit committee members); ACMEET: Audit committee meetings (Number of audit committee meetings); GENDER: Gender (Number of females on the board); TENU: Tenure (Dummy variable 1 if the number of years the board member permanence on the board is above the sample median of 5 years, otherwise 0); EDUC: Education (Number of board members holding a PhD); DIVE: Diversity (Number of other nationalities of the board); SIZE: Bank size (Natural logarithm of total assets); PROF: Profitability (Return On Assets); LEV: Leverage (Long-term debt/ total assets); LIQ: Liquidity (Current Ratio: Current Assets/Current Liabilities); DIVID: Dividend payout (Dividends per share). Table 1 fully defines all the variables used.

Market-Based Measure Results

Table 4 illustrates the correlations between firm value and the levels of voluntary risk disclosure along with the correlations for the other explanatory variables. It also presents the Pearsons correlation matrix for all variables employed in this study's regression analysis to check for multicollinearity. Bivariate analysis was used to check for multicollinearity. When the level of association between the risk disclosure score and firm value, measured by the market to book value at end of year and other associations between the control variables, was legitimately low, this indicated that there were no multicollinearity problems. Later in the ordinary least square (OLS) regression analysis, the calculated variance inflation factor (VIF) values support the absence of multicollinearity defects as multicollinearity did not exceed the 10 percent mark (Naser et al., 2006; Field, 2009).

Similarly, Pearsons correlation matrix was used to test for the directional and non-directional relationships between firm value and the rest of the control variables. This study further examined residual statistics and Durbin-Watson statistics for linearity and autocorrelation problems (See Model Summary in Table 5). However, the tests showed no serious violation of these linear assumptions. In addition, the Table illustrates that there is no statistically significant association between the dependent variable (FV based on MTBV) and the endogenous variable (RISKD) of this investigation. However, there are a number of statistically significant associations between the dependent variable and the control variables. For example, CHS, BSIZE, PROF and DIVID are statistically significant and positively associated to FV, while EDUC is statistically significant and negatively correlated to FV. The highest correlation that can be seen from Table 4 is between BSIZE and FV at a value of 0.604, followed by EDUC at a value of 0.463. Also, Table 4 indicates that there are insignificant correlations between the rest of the control variable and the dependent variable (Based on the market measure).

Table 4: Pearson Correlation Analysis

	MTBV	**RISKD**	**CHS**	**NOCH**	**BSIZE**	**INDEP**	**NON**	**ACIND**	**ACSIZE**	**ACM**
MTBV	1	0.062	0.459**	-0.016	0.604**	-0.029	0.171	-0.212	0.174	0.243
RISKD	0.062	1	-0.129	0.411**	-0.107	-0.171	-0.095	0.074	0.136	0.054
CHS	0.459**	-0.129	1	-0.492**	0.364**	0.195	0.290*	-0.190	0.243	0.196
NOCH	-0.016	0.411**	-0.492**	1	0.073	-0.248	-0.308*	0.325*	-0.062	0.153
BSIZE	0.604**	-0.107	0.364**	0.073	1	-.038	0.467**	-0.072	0.013	0.566**
INDEP	-0.029	-0.171	0.195	-0.248	-0.038	1	0.439**	0.335**	0.335**	0.075
NON	0.171	-0.095	0.290*	-0.308*	0.467**	0.439**	1	0.050	0.454**	0.459**
ACIND	-0.212	0.074	-0.190	0.325*	-0.072	0.335**	0.050	1	0.141	-0.089
ACSIZE	0.174	0.136	0.243	-0.062	0.013	0.335**	0.454**	0.141	1	0.190
ACM	0.243	0.054	0.196	0.153	0.566**	0.075	0.459**	0-.089	0.190	1
GEND	-0.026	0.093	0.061	-0.215	0.016	0.050	0.138	0.174	-0.242	-0.212
TENU	0.048	-0.356**	0.195	-0.218	0.007	0.110	-0.103	-0.079	0.121	0.014
EDUC	-0.463**	-0.241	-0.059	-0.173	-0.081	0.326*	0.251	0.294*	-0.046	0.030
DIVE	0.075	0.375**	-0.261*	0.547**	0.226	-0.169	0.114	0.408**	-0.086	-0.024
SIZE	0.193	0.479**	0.006	0.071	0.101	-0.478**	-0.052	-0.225	0.019	-0.055
PROF	0.410**	0.271*	0.329*	-0.227	0.283*	-0.172	0.200	-0.279*	0.219	0.158
LEV	0.067	-0.093	0.049	-0.052	0.002	0.190	0.083	-0.062	-0.137	-0.123
LIQ	-0.106	-0.294*	0.063	-0.114	-0.069	-0.016	-0.174	-0.274*	-0.121	-0.093
DIVID	0.307*	0.318*	0.232	-0.113	0.135	-0.079	0.168	-0.086	0.302*	-0.004

	GEN	**TENU**	**EDUC**	**DIVE**	**SIZE**	**PROF**	**LEV**	**LIQ**	**DIVID**
MTBV	-0.026	0.048	-0.463**	0.075	0.193	0.410**	0.067	-0.106	0.307*
RISKD	0.093	-0.356**	-0.241	0.375**	0.479**	0.271*	-0.093	-0.294*	0.318*
CHS	0.061	0.195	-0.059	-0.261*	0.006	0.329*	0.049	0.063	0.232
NOCH	-0.215	-0.218	-0.173	0.547**	0.071	-0.227	-0.052	-0.114	-0.113
BSIZE	0.016	0.007	-0.081	0.226	0.101	0.283*	0.002	-0.069	0.135
INDEP	0.050	0.110	0.326*	-0.169	-0.478**	-0.172	0.190	-0.016	-0.079
NON	0.138	-0.103	0.251	0.114	-0.052	0.200	0.083	-0.174	0.168
ACIND	0.174	-0.079	0.294*	0.408**	-0.225	-0.279*	-0.062	-0.274*	-0.086
ACSIZE	-0.242	0.121	-0.046	-0.086	0.019	0.219	-0.137	-0.121	0.302*
ACME	-0.212	0.014	0.030	-0.024	-0.055	0.158	-0.123	-0.093	-0.004
GEN	1	-0.246	0.197	0.426**	-0.166	-0.181	0.336**	-0.054	-0.111
TENU	-0.246	1	0.134	-0.433**	-0.126	0.039	-0.091	0.108	-0.045
EDUC	0.197	0.134	1	0.077	-0.211	-0.148	0.123	0.114	-0.167
DIVE	0.426**	-0.433**	0.077	1	.112	-0.055	0.103	-0.085	-0.040
SIZE	-0.166	-0.126	-0.211	0.112	1	0.529**	-0.166	-0.299*	0.658**
PROF	-0.181	0.039	-0.148	-0.055	0.529**	1	-0.398**	-0.011	0.557**
LEV	0.336**	-0.091	0.123	0.103	-0.166	-0.398**	1	0.009	-0.233
LIQ	-0.054	0.108	0.114	-0.085	-0.299*	-0.011	0.009	1	-0.167
DIVID	-0.111	-0.045	-0.167	-0.040	0.658**	0.557**	-0.233	-0.167	1

*FV: Firm value (year-end Market to Book Value); RISKD: Risk disclosure score (from an unweighted disclosure index); CHS: Internal ownership (Percentage of shares held by internal shareholders); NOCH-Factors: External ownership (Percentage of shares held by all external shareholders); BSIZE: Board size (Number of board members); INDEP: Independent directors (Number of non-executive board of director members); NON: Non-executive directors (Dummy variable 1 if board contains non-executive directors and otherwise 0); ACIND: Audit committee independence (Dummy variable; 1 if audit committee independence exists, and 0 otherwise); ACSIZE: Audit committee size (Number of audit committee members); ACM: Audit committee meetings (Number of audit committee meetings); GEN: Gender (Number of females on the board); TENU: Tenure (Dummy variable 1 if the number of years the board member permanence on the board is above the sample median of 5 years, otherwise 0); EDUC: Education (Number of board members holding a PhD); DIVE: Diversity (Number of other nationalities of the board); SIZE: Bank size (Natural logarithm of total assets); PROF: Profitability (Return On Assets); LEV: Leverage (Long-term debt/ total assets); LIQ: Liquidity (Current Ratio: Current Assets/Current Liabilities); DIVID: Dividend payout (Dividends per share). Table 1 fully defines all the variables used. ** Denote correlation is significant at the 5% level (tow-tailed tests). * Denote correlation is significant at the 10% level (tow-tailed tests).*

For a more comprehensive analysis of the relationship between firm value and voluntary risk disclosure (Based on the market measure), a multivariate analysis, which controls for other variables expected to

impact upon the value of the firm, was conducted. The method used to study the relationship between firm value and voluntary risk disclosure levels in all listed Saudi banks was the ordinary least square (OLS) regression analysis. The results of the regression are presented in Table 5. This study's model used a market based measure; market to book value at year-end at the end as the dependent variable, total risk disclosure score as its endogenous variable and a mixture of corporate governance, demographic attributes and firm-specific characteristics as control variables (see Table 2). As can be observed from the model summary in Table 5 that the model is significant at the (0.000) level with an F value of (6.651) and with an adjusted R square of 0.672 percent. Therefore, the explanatory power of the independent and control variables on firm value are fairly high. However, based on this model the regression analysis Table indicates that there is an insignificant relationship between firm value and the level of voluntary risk disclosure in Saudi listed banks. Therefore, this study's hypothesis is rejected in this model. The results are consistent with previous studies, such as Uyar and Kilic (2012) and Hassan et al., (2009). This investigation's outcome based on the market based measure (MTBV) is inconsistent with the signalling theory, which indicates that when a firm's performance is good, directors will signal their firm's performance to their investors and the rest of the market by reporting more information voluntarily, whilst directors of firms that are performing badly will not do so. The purpose of such disclosure is to obtain a good market reputation and increase firm value since investors and the rest of the market may misinterpret a firm keeping silent as it is withholding the worst possible information (Mohobbot, 2005; Linsley and Shrives, 2000; 2006; Hassan, 2009). This research model finding is attributed to the deep-rooted tendency of the Saudi capital market to be opaque (Kamla and Roberts, 2010) and explained by Hofstede's cultural dimensions, where Saudi Arabia scored zero on the secrecy vs. transparency measure.

Table 5 also presents the multivariate analysis for all of the control variables, where BSIZE has a positively significant relationship with firm value at 5% level. Also, there is a positively significant relationship between PROF and firm value at 10% level. In addition, LEV has a positively significant association with firm value at 10% level, while there are negatively significant associations between EDUC and LIQ and firm value at 1% and 10% levels, respectively. However, the rest of the control variables are split between two groups, the first group being negatively insignificant and the second group being insignificantly associated with firm value.

Accounting-Based Measure Results

Table 6 shows the correlation matrix for the dependent and continuous independent variables. Consistent with this study's hypothesis, the levels of voluntary risk disclosure is positively significant with firm value based on ROA at a value of (0.271*). It signifies that the overall level of voluntary risk disclosure of all Saudi listed banks has strong impact on profitability. The correlation matrix also shows the interrelationships with this model's explanatory variables. It shows that CHS (0.329*); BSIZE (0.283*); SIZE (0.529**); DIVID (0.557**) are positively correlated with firm value. While, ACINDEP (-0.279*) and LEV (-0.398**) are negatively associated with firm value based on the second model. In terms of the other control variables, the correlation between them and firm value based on ROA is insignificant.

This study also presents the regression results for the second model, which shows the analysis of the association between the levels of voluntary risk disclosure and firm value (Based on the accounting measure). As can be observed from the model summary in Table 7 that the model is significant at the (0.000) level with an F value of (4.547) and with an adjusted R square of (0.505 %). Therefore, the explanatory power of the independent and control variables on firm value based on ROA are fairly high. However, the accounting based measure indicates in the Table below that there is a positively significant relationship between firm value and the level of voluntary risk disclosure in Saudi listed banks at a value of (0.031). Therefore, this study's hypothesis is accepted. The results are consistent with Botosan and Plumlee, (2002) who found that increased levels of disclosure have a positive economic consequence on profitability and value of the firm. Also, this finding is in line with the limited empirical literature examining the relationship

between firm value firm and voluntary disclosure, which documented a positive relationship between the two variables (Baek et al., 2004, Lim et al., 2007; Anam et al., 2011; Sheu et al., 2010; Nekhili et al., 2012). This result also supports Gallego-Alvarez et al., (2010) who have reported in their study that disclosure has a positive consequence on shareholder value creation.

This study's findings based on the accounting measure is consistent with the signalling theory, which indicates that when a firm's performance is good, directors will signal their firm's performance to their investors and the rest of the market by reporting more information voluntarily. The purpose of such disclosure is to obtain a good market reputation, increase the trade of shares and thus increase firm value (Mohobbot, 2005; Linsley and Shrives, 2000; 2006; Hassan, 2009). Moreover, Gordon et al. (2010) asserted that voluntary disclosure in annual reports sends a clear signal to the capital market that is likely to increase a firm's present net value and in turn its stock market value. This model's finding is consistent with results of previous studies, which adopted signalling theory (Anam et al., 2011; Sheu et al., 2010; Curado et al., 2011). This positive association supports the traditional view that more information complements firms' value.

Table 5: Regression Analysis

	Coefficients[a]			
Model	**Beta**	**t**	**Sig.**	**VIF**
(Constant)		0.725	0.473	
RISKD	**-0.111**	**-0.811**	**0.422**	**3.436**
CHS	0.038	0.259	0.797	3.848
NOCH	-0.164	-0.825	0.414	7.193
BSIZE	**0.400**	**2.809**	**0.008****	3.716
INDEP	0.067	0.486	0.630	3.493
NON	-0.212	-1.194	0.240	5.777
ACINDEP	-0.091	-0.713	0.480	3.000
ACSIZE	0.111	0.943	0.352	2.522
ACMEET	0.094	0.708	0.484	3.230
GENDER	-0.008	-0.054	0.958	3.774
TENU	0.056	0.555	0.582	1.879
EDUC	**-0.379**	**-3.842**	**0.000*****	1.779
DIVE	0.270	1.487	0.145	6.046
SIZE	-0.117	-0.691	0.494	5.227
PROF	**0.336**	**2.552**	**0.015***	3.184
LEV	**0.166**	**1.721**	**0.094***	1.700
LIQ	**-0.195**	**-1.902**	**0.065***	1.926
DIVID	0.132	1.023	0.313	3.048

Model Summary: Adjusted R Square: 0.678; F value: 6.651; Sig. : 0.000. Notes: FV: Firm value (Market to Book Value at year-end); RISKD: Risk disclosure score (based on an unweighted disclosure index); CHS: Internal ownership (Percentage of shares held by internal shareholders); NOCH-Factors: External ownership (Percentage of shares held by all external shareholders); BSIZE: Board size (Number of board members); INDEP: Independent directors (Number of non-executive directors on the board of directors); NON: Non-executive directors (Dummy variable 1 if board contains non-executive directors and otherwise 0); ACINDEP: Audit committee independence (Dummy variable; 1 if audit committee independence exists, and 0 otherwise); ACSIZE: Audit committee size (Number of audit committee members); ACMEET: Audit committee meetings (Number of audit committee meetings); GENDER: Gender (Number of females on the board); TENU: Tenure (Dummy variable 1 if the number of years the board member permanence on the board is above the sample median of 5 years, otherwise 0); EDUC: Education (Number of board members holding a PhD); DIVE: Diversity (Number of other nationalities of the board); SIZE: Bank size (Natural logarithm of total assets); PROF: Profitability (Return On Assets); LEV: Leverage (Long-term debt/ total assets); LIQ: Liquidity (Current Ratio: Current Assets/Current Liabilities); DIVID: Dividend payout (Dividends per share). Table 1 fully defines all the variables used. Note that " ** ***" represent 10% 5% 1% respectively, which indicates that there is a positive correlation or a proof of influence exists between the respective factors and "-"indicates that there is a negative correlation or proof.*

Table 6: Pearson Correlation Analysis

	ROA	RISKD	CHS	NOCH	BSIZE	INDEP	NON	ACINDEP	ACSIZE
ROA	1								
RISKD	0.271*	1							
CHS	0.329*	-0.129	1						
NOCH	-0.227	0.411**	-0.492**	1					
BSIZE	0.283*	-0.107	0.364**	0.073	1				
INDEP	-0.172	-0.171	0.195	-0.248	-0.038	1			
NON	0.200	-0.095	0.290*	-0.308*	0.467**	0.439**	1		
ACIND	-0.279*	0.074	-0.190	0.325*	-0.072	0.335**	0.050	1	
ACSIZE	0.219	0.136	0.243	-0.062	0.013	0.335**	0.454**	0.141	1
ACM	0.158	0.054	0.196	0.153	0.566**	0.075	0.459**	-0.089	0.190
GEN	-0.181	0.093	0.061	-0.215	0.016	0.050	0.138	0.174	-0.242
TENU	0.039	-0.356**	0.195	-0.218	0.007	0.110	-0.103	-0.079	0.121
EDUC	-0.148	-0.241	-0.059	-0.173	-0.081	0.326*	0.251	0.294*	-0.046
DIVE	-0.055	0.375**	-0.261*	0.547**	0.226	-0.169	0.114	0.408**	-0.086
SIZE	0.529**	0.479**	0.006	0.071	0.101	-0.478**	-0.052	-0.225	0.019
LEV	-0.398**	-0.093	0.049	-0.052	0.002	0.190	0.083	-0.062	-0.137
LIQ	-0.011	-0.294*	0.063	-0.114	-0.069	-0.016	-0.174	-0.274*	-0.121
DIVID	0.557**	0.318*	0.232	-0.113	0.135	-0.079	0.168	-0.086	0.302*

	ACM	GEN	TENU	EDUC	DIVE	SIZE	LEV	LIQ	DIVID
ROA									
RISKD									
CHS									
NOCH									
BSIZE									
INDEP									
NON									
ACIND									
ACSIZE									
ACM	1								
GEN	-0.212	1							
TENU	0.014	-0.246	1						
EDUC	0.030	0.197	0.134	1					
DIVE	-0.024	0.426**	-0.433**	0.077	1				
SIZE	-0.055	-0.166	-0.126	-0.211	0.112	1			
LEV	-0.123	0.336**	-0.091	0.123	0.103	-0.166	1		
LIQ	-0.093	-0.054	0.108	0.114	-0.085	-0.299*	0.009	1	
DIVID	-0.004	-0.111	-0.045	-0.167	-0.040	0.658**	-0.233	-0.167	1

This table shows the Pearson's Correlation Analysis.

The mixed results of this study are in line with Vafaei et al., (2011) who reports significant and insignificant association between disclosure and firm value in one study. These results confirm the findings of previous studies such as Uyar and Kilic (2012) and Elzahar et al., (2015) who claimed that the association between voluntary disclosure and firm value varies according to the proxy employed for the market value of the firm. Where, this study found in the first model based on the market based measure (MTBV) an insignificant correlation between firm value and the levels of voluntary risk disclosure. While, in the second model which was based on an accounting based measure (ROA) found a positively significant association between the two variables. This variation in the result between the two models can be justified based on the adoption of different measures of firm value (MTBV and ROA). Overall, a healthy amount of disclosure could result in desirable economic consequences such as a decrease in the cost of capital of a company (Beyer et al., 2010) and an increase in the valuation of the firm (Leuz and Wysocki, 2008).

Table 7: Regression Analysis

Model	Beta	t	Sig.	VIF
(Constant)		-0.837	0.407	
RISKD	**0.351**	**2.227**	**0.031***	**2.971**
CHS	0.040	0.294	0.770	2.199
NOCH	**-0.544**	**-2.410**	**0.020***	6.081
BSIZE	**0.284**	**1.720**	**0.093****	3.242
INDEP	-0.018	-0.116	0.908	2.883
NON	-0.070	-0.342	0.734	5.052
ACINDEP	-0.122	-0.832	0.410	2.561
ACSIZE	0.051	0.367	0.715	2.330
ACMEET	-0.004	-0.027	0.979	2.796
GENDER	-0.273	-1.650	0.106	3.275
TENU	0.057	0.496	0.623	1.558
EDUC	0.035	0.292	0.772	1.758
DIVE	0.281	1.345	0.186	5.197
SIZE	0.132	0.666	0.509	4.703
LEV	**-0.263**	**-2.361**	**0.023***	1.478
LIQ	0.077	0.645	0.522	1.712
DIVID	0.174	1.166	0.250	2.659

Model Summary: Adjusted R Square: 0.505; F value: 4.547, Sig. : 0.000. Notes: FV: Firm value (Return On Assets); RISKD: Risk disclosure score (based on an unweighted disclosure index); CHS: Internal ownership (Percentage of shares held by internal shareholders); NOCH-Factors: External ownership (Percentage of shares held by all external shareholders); BSIZE: Board size (Number of board members); INDEP: Independent directors (Number of non-executive directors on the board of directors); NON: Non-executive directors (Dummy variable 1 if board contains non-executive directors and otherwise 0); ACINDEP: Audit committee independence (Dummy variable; 1 if audit committee independence exists, and 0 otherwise); ACSIZE: Audit committee size (Number of audit committee members); ACMEET: Audit committee meetings (Number of audit committee meetings); GENDER: Gender (Number of females on the board); TENU: Tenure (Dummy variable 1 if the number of years the board member permanence on the board is above the sample median of 5 years, otherwise 0); EDUC: Education (Number of board members holding a PhD); DIVE: Diversity (Number of other nationalities of the board); SIZE: Bank size (Natural logarithm of total assets); LEV: Leverage (Long-term debt/ total assets); LIQ: Liquidity (Current Ratio: Current Assets/Current Liabilities); DIVID: Dividend payout (Dividends per share). Table 1 fully defines all the variables used. Note that " ** ***" represent 10% 5% 1% respectively, which indicates that there is a positive correlation or a proof of influence exists between the respective factors and "-"indicates that there is a negative correlation or proof.*

CONCLUSION

Prior research has explored the level of disclosure on firm value and its determinants; however, there is a dearth of literature on the effect of levels of disclosure on firm value in developing economies. The dearth is even greater when it comes to risk disclosure and firm value. Hence, there is a need for more research on the relationship between risk disclosure and firm value. Thus this study contributes to the disclosure literature by being the first study to measure the economic consequences in the banking sector in developing markets. Prior research concentrated on risk disclosure in nonfinancial companies ignoring the banking industry and risk disclosure economic consequences in emerging economies (Hassan, 2005; Amran et al., 2009; Abdullah and Hassan, 2013; Mousa and Elamir, 2013; Al-Shammari 2014; Abdullah et al., 2015).

This study empirically examines the relationship between the levels of voluntary risk disclosure and firm value of all Saudi listed banks. The findings of the multivariate analysis demonstrated that there is no association between the levels of voluntary risk disclosure and firm value as measured by the market to book value at the end of the year (MTBV). But, the results generate from the accounting based measure (ROA) show that there is a positively significant association between the levels of risk disclosure and firm value. This view is in line with Gelb and Zarowin (2002) who have documented that companies with high disclosure levels are more likely to demonstrate stronger levels of frim value. In terms of the control variable, the findings indicated that there is a positively significant relationship between firm value and board size, profitability and leverage. This research's outcomes showed that there are negatively significant associations between firm value and education and liquidity in the all listed banks in the first model. For the second model control variables BSIZE reported a positively significant relationship with firm value. Where, NOCH and LEV reported a negatively significant link with firm value. However, the rest of the control variables are split between two groups, the first group being negatively insignificant and the second group being insignificantly associated with firm value for both models.

Even though a large body of prior research existed on the economic consequences of general disclosure, no prior research had been conducted on the relationship between risk disclosure and firm value. Therefore, this study contributes to the literature by being the first study to examine the extent of voluntary risk disclosure and its economic consequences as evidenced in the annual reports of banks. It also contributes to the general accounting disclosure literature and in particular contributes to the literature on risk disclosure in developing economies. In particular in the GCC states since no prior research has examined such relationships. In addition, it furthers the understanding of the role of accounting information in relation to market valuation of firms. Such studies about these markets are necessary and are fundamental in relation to ameliorating the weak transparency and disclosure situation by attracting the attention of regulatory institutions and corporation directors (Uyar and Kilic, 2012).

This study has several important implications for banks' investors, regulatory bodies and any other interested groups on the importance of corporate voluntary risk disclosure and its economic consequences and can be used to increase the value relevance in the banking sector. It also informs regulators about the current level of risk disclosure in all Saudi listed banks as well as informing them of the influence risk disclosure has on the value of the firm. These institutions are expected to guide firms toward the best practices of disclosures since firms look for such guidance by performing motivating role in this new era of information disclosure. It also calls on to managers who prefer to withhold from offering information to shareholder to be more transparent if they prefer to increase their banks market value and entice more investment.

This study, like any other, suffers from a number of limitations. First, the sample of this study consisted only of listed Saudi banks. Thus, the results may not be valid for other sectors. Another potential limitation of investigation employing risk disclosure indexes to examine the levels of risk disclosure is that the outcomes are only valid to the extent that the risk disclosure index used is appropriate. Thirdly, annual reports have been used as the only source of data gathering, others such as interim reports, the internet, banks web sites and press releases could be used in future studies. In spite of the noted limitations, it is hoped this study will inspire further investigations in this area of research.

APPENDIX

Category and Type of Reported Risks	References
Accounting Policies	
Risk Management	Abdullah et al., 2015; Alfredson et al., 2007; Lopes and Rodrigues, 2007; ICAEW, 1997, 2000;
Objective of Holding Derivatives/ instruments	Alfredson et al., 2007; Lopes and Rodrigues, 2007; ICAEW, 1997, 2000; Abdullah et al., 2015;
Use of Estimates	Abdullah et al., 2015; Alfredson et al., 2007; ICAEW, 1997, 2000; Hassan, 2009
Collateral Assets against Loans	Alfredson et al., 2007; Abdullah et al., 2015; Hassan, 2009
Financial Assets Impairment	Abdullah et al., 2015; Alfredson et al., 2007; Lopes and Rodrigues, 2007; ICAEW, 1997, 2000; Hassan, 2009
Other Assets Impairment	Alfredson et al., 2007; Abdullah et al., 2015; Lopes and Rodrigues, 2007; ICAEW, 1997, 2000; Hassan, 2009
Contingent Liabilities	Alfredson et al., 2007; ICAEW, 1997, 2000; Abdullah et al., 2015; Hassan, 2009
Contingent Assets	Alfredson et al., 2007; ICAEW, 1997, 2000; Abdullah et al., 2015; Hassan, 2009
Detailed risk management	Lopes and Rodrigues, 2007; Alfredson et al., 2007;
Contingency	Abdullah et al., 2015; Hassan, 2009;
Financial and other risks	
Pricing Risk	ICAEW, 1997, 2000; Abdullah et al., 2015, Lipunga, 2014;
Commodity risk	Abdullah et al., 2015;
Liquidity risk	Abdullah et al., 2015; Alfredson et al., 2007; ICAEW, 1997, 2000; Lipunga, 2014; Hassan, 2009
Credit risk	Lopes and Rodrigues, 2007; ICAEW, 1997, 2000; Lipunga, 2014
Capital Adequacy	Lipunga, 2014; Abdullah et al., 2015
Changes in Interest Rates	Abdullah et al., 2015
Credit Risk Exposure	Abdullah et al., 2015
Operational Risk	Abdullah et al., 2015; ICAEW, 1997, 2000; Lipunga, 2014
Insurance Risk	Abdullah et al., 2015; ICAEW, 1997, 2000

Market Risk	Abdullah et al., 2015; Ahmed et al., 2004; Lipunga, 2014
Interest Rate	Lipunga, 2014; Abdullah et al., 2015;
Currency risk	Lipunga, 2014
Exchange Rate	Abdullah et al., 2015
Sustainability Risk	
Sensitivity Analysis	Abdullah et al., 2015; Ahmed et al., 2004
Derivatives hedging and general risks information	
Cash flow Hedge	Alfredson et al., 2007; Lopes and Rodrigues, 2007; Abdullah et al., 2015
Equity Risk	Abdullah et al., 2015
Customer Satisfaction	Abdullah et al., 2015
Competition (Service Market)	Abdullah et al., 2015; ICAEW, 1997, 2000
Natural Disasters	ICAEW, 1997, 2000; Abdullah et al., 2015; Lipunga, 2014
Communications	Abdullah et al., 2015
Outsourcing	Abdullah et al., 2015
Reputation	Abdullah et al., 2015; Lipunga, 2014
Reputation risk	Abdullah et al., 2015; Lipunga, 2014
Physical disasters (Explosions and Fire)	Lipunga, 2014
Changes in Technology	Abdullah et al., 2015;
Financial instruments	
Derivatives	Hassan, 2009; Abdullah et al., 2015
Cumulative Change in Fair value	Lopes and Rodrigues, 2007; Alfredson et al., 2007; Abdullah et al., 2015;
Reserves	
General Reserves	Hassan, 2009; Abdullah et al., 2015
Statutory Reserves	Hassan, 2009; Abdullah et al., 2015
Other Reserves	Hassan, 2009; Abdullah et al., 2015
Segment information	
Geographical Concentration	Alfredson et al., 2007; Abdullah et al., 2015; ICAEW, 1997, 2000;
Customer Concentration	Hassan, 2009; Abdullah et al., 2015; ICAEW, 1997, 2000
Business risk	
General Financial Problems	Hassan, 2009
Regional Financial Problems	Hassan, 2009
Political risk	Abdullah et al., 2015
Diversification	
Performance	Abdullah et al., 2015;
Compliance with regulations	
Compliance with listing rules	Lipunga, 2014
Compliance with financial regulations	Lipunga, 2014
Compliance with companies act requirements	Lipunga, 2014
Compliance with other regulations and laws	Lipunga, 2014
Litigation risk	Lipunga, 2014
Health and Safety	Lipunga, 2014

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