

# Quality Measurement of Risk Factors Disclosure by the Japanese Companies and its Corporate Governance Specific Determinants

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***Abstract:** Business organizations take various types of risks for maximization of shareholders' wealth. Disclosing related risk information will improve users' understanding regarding the impacts of those risks on business performance and help to evaluate their investment portfolio. Risk reporting has gained significant importance after the financial crisis in 2007-2008. Various rules and regulations have been introduced to improve risk disclosure practice. Though quantity has improved after the introduction of rules and regulations, quality of reporting has not improved much. The objective of this paper is to measure the quality of voluntary risk information disclosed based on four characteristics identified in the previous literature. Data have been collected from 1,001 company year observations through content analysis. Collected data reveals that most of the companies like to give basic description about the risk rather than detail description about the impacts of those risk factors. Again, risk reporting lacks information regarding specific risk management technique, risk experience and quantification of impacts on firm performance. It has also been found that only big firms emphasize on improving quality of risk disclosure to reduce information asymmetry and meet demand of various users. Other firm and corporate governance characteristics have no significant impact on improving the quality of risk factor disclosure.*

***Keywords:** TSE, ASB, RDQS, Risk, RRD, Corporate Governance, ASBJ.*

## 1.0 Introduction

Risk is an inherent element of a business. Business organizations take various types of risks for maximization of shareholders' wealth. But an organization may suffer in achieving its targeted goals and objectives and may damage shareholders' value if it cannot manage the risks in proper way. So, it is the responsibility of the management to inform shareholders about all the possible risk factors that have already or will impact on the business performance and financial position of the companies.

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A growing demand for better reporting of business risks has emerged in recent decades. This is based on the belief that improved understanding of business risks by investors and other users of corporate reporting should lead to better stewardship of companies and to a more efficient allocation of resources (ICAEW, 2011). A series of high-profile corporate failures (Enron, WorldCom) and incidents that have damaged well-known brands had already increased the interest in risk reporting in the early 2000s, but the financial crisis of 2007–08 drove the issue to the top of the agenda for regulators and investors (ACCA, 2014). Many new and enhanced reporting guidelines have been introduced after 2007-08 financial crunch such as IFRS 7 by IASB, Basel II Accord requirements and banks' risk disclosure practices.

Risk disclosure helps in investors' investment decisions-making process by evaluating the information disclosed by a firm in order to establish levels of various risks it faces, then; their decision will be taken based on expected return and risk considerations (Cabedo and Tirado, 2004). Risk reporting is essential to help investors in making more informed judgments about the nature and scale of corporate financial risk exposures (Aldridge and Colbert, 1997). Enhanced risk reporting provides forward looking information, reduces cost of capital, encourages better risk management and enhances management accountability and financial reporting usefulness (ICAEW, 1997). It is widely accepted that risk reporting results in both greater transparency and heightened investor confidence with benefits to the market performance of the firm (Solomon et al., 2000; Schrand and Elliott, 1998; Cabedo and Tirado, 2004; Linsley and Shrivs, 2006; Abraham and Cox, 2007; Linsley and Lawrance, 2007).

However, researchers in different countries found risk reporting as very generic, vague, qualitative, backward looking and uninformative to some extent. The lack of transparency of risk information is one of the main deficiencies of accounting and accountability reports that have been documented in risk reporting disclosure literature (Cabedo & Tirado, 2004). Previous studies find that there is a large variation in financial and non-financial disclosure (Lajili and Zéghal, 2005; Mohobbot, 2005; Konishi and Ali, 2007; Linsley and Shrivs, 2006), in quantitative and qualitative disclosure (Linsley and Shrivs, 2006; Beretta and Bozzolan, 2004; Lajili and Zéghal, 2005), in future and past risk disclosure (Linsley and Shrivs, 2005).

Different strands of theory have been proposed to explain why companies disclose risk information (Linsley & Shrivs, 2000). The theoretical frameworks used commonly to explain motivations for risk disclosure are agency theory, political costs theory, signaling theory, proprietary costs theory, stakeholder theory and legitimacy theory.

Agency theory explains how information asymmetry between shareholders and managers can be reduced through the implementation of monitoring mechanisms that are capable of inducing higher levels of disclosure (Jensen & Meckling, 1976). Agency theory suggests

that managers seek to reduce agency problems through increased disclosure to confirm that they work in the best interests of the shareholders. In the context of voluntary disclosure, signaling theory predicts that, in the presence of information asymmetry, investors may not be able to differentiate high quality companies, from low quality companies. As a result, investors may withdraw from the capital market or offer a low, or at least average, price for any security (Scott, 2003). Consequently, high quality companies have a greater incentive to disclose more information to the capital market to distinguish themselves from low quality companies (Campbell et al., 2001).

Political cost perspective examines the impact of political pressures on accounting practices. It argues that companies with high political visibility disclose more information than companies with low political visibility in order to reduce any potential political interference. Proprietary costs theory highlights the competitive disadvantages of additional disclosure (Verrecchia, 1983). Companies in the same industry are subject to competitive pressures to produce the same level of disclosure as their industry competitors, if they try to avoid negative perception. So, companies in the same industry will attempt to disclose at least the same level of information as their industry peers to avoid being undervalued by the market.

Stakeholder theory identifies the relationship between the company and a wide range of stakeholders and explains companies' incentives to provide a variety of information to satisfy stakeholders' demand for information. Legitimacy theory highlights the importance of disclosure in corporate annual reports in maintaining and restoring companies' legitimacy.

Most of the previous researchers mainly focused on the nature, types and quantity of risk information disclosed. Very few researches focused on measuring the quality of risk information disclosed and their decision usefulness. So, research objectives for this study have been set as: (i) develop a framework for measuring quality of risk information; (ii) measure the quality of risk information based on four characteristics and (iii) find out the impacts of corporate governance specific characteristics on quality risk information disclosure.

This study is structured in ten sections. After introduction, section 2 describes the definition of risks and risk reporting, section 3 describes risk reporting guidelines in Japan and section 4 mentions corporate governance system of Japan. Section 5 describes literature review, section 6 is devoted for hypothesis development, section 7 presents the research methodology. The empirical results are described in section 8, section 9 describes about overall findings and section 10 makes the conclusion.

## **2.0 Definition of Risks and Risk Disclosure**

Defining the term 'Risk' is a very complicated issue. German Accounting Standard (GAS) 5 defines risk as the possibility of a future negative impact on the economic

position of a group. ICAEW (1997) define business risk as uncertainty to the benefits that a business will derive from pursuing its objectives and strategies.

Once, risk was considered as downside risk only. Currently, risk concept comprises volatility risk, too. ICAEW (2002) defines volatility risk as the risk associated with uncertainty which gives risk to the opportunity for gain as well as for loss. Linsley and Shrivs (2006) have defined any disclosure as risk disclosure 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. This definition has been considered in this study to ponder any information as risk disclosure presented by the companies.

The ASB of UK recommends that listed companies should discuss “principal risks and uncertainties in the main lines of business, together with a commentary on the approach to managing these risks and in qualitative terms, the nature of the potential impact on results” within the operating and financial review section of the annual report. Nevertheless, there exists a lack of transparency in the disclosure of information on risks, due to the absence of norms and uniform measures (Lajili & Zéghal, 2005), among other factors.

### **3.0 Risk Reporting Guidelines in Japan**

In February 2004, the Accounting Standards Board of Japan (ASBJ) issued guidelines to strengthen the disclosure system that included enhanced disclosure of risk information and urged companies to report business risk information (Konishi and Ali, 2007) though Japanese companies started risk reporting voluntarily before 2004.

Konishi and Ali (2007) found that after issuance of guidelines on risk reporting in 2004, the number of risk disclosures mainly future risk information increased remarkably in the annual reports. However, they found most of those forward looking information were nonmonetary/neutral information which are less useful for the users. So, usefulness of information provided under each risk factor has not improved much.

### **4.0 Corporate Governance System of Japan**

The Companies Act of Japan was enacted in May 2006 to fundamentally amend the commercial code of Japan. The Companies Act 2006 provides mainly two corporate organisational structures from which a Japanese company may select. These are: (i) the Board of Corporate Auditors Governance Structure (Kansayaku) which consists at least 3 members and (ii) the Committee Governance Structure. The Board of Corporate Auditors Governance Structure does not require the appointment of an outside director, but requires the appointment of at least two outside corporate auditors. Companies with Committees structure are required to have three committees: Nomination committee,

Audit committee and Remuneration committee. Each committee must consist of at least 3 directors, while the majority of the committee members must be outside directors.

The Board of Corporate Auditors Governance Structure is found the most dominant corporate organisational structure among listed companies in Japan. Though Companies Act 2006 does not necessitate Kansayaku Board structure to appoint independent directors but TSE's Securities Listing Regulations (amended in 2014) require a listed company must secure at least one independent director/kansayaku for the purpose of protecting general investors.

## **5.0 Literature Review**

It is widely believed that improved understanding of business risks by investors and other users of corporate reporting should lead to better stewardship of companies and to a more efficient allocation of resources (ICAEW, 2011). Including Statement of Business risks in annual reports may be a significant evolutionary step in responding both to investor demands for forward looking information and to wider concerns about short termism (ICAEW, 1997). This will reduce information asymmetry and make the market perform better. Abraham and Cox (2007) claim that this information can help investors to determine the risk profile of a company and estimate its market value. On the other hand, companies also benefit from risk disclosure by reducing the possibility of financial failure (Beretta and Bozzolan, 2004); it also can make a decline in the cost of external finance (Linsley and Shrides, 2006).

One recent concern is that companies do not provide sufficient information about risk and risk management (ICAEW, 2002). The lack of transparency of risk information is one of the main deficiencies of accounting and accountability reports that have been documented in risk reporting disclosure literature (Cabedo & Tirado, 2004). A common criticism of risk reporting practice is that risk disclosure is dominated by generic disclosure statements and boilerplate reporting which are not useful for investors seeking company specific information (Lajili and Zéghal, 2005; Abraham and Cox, 2007; Linsley and Shrides, 2006) because management are aware of utilizing this information by the competitors. Dobler (2007) has mentioned three potential explanations for a more restricted report on risks. These are (i) executives may not report because they do not have specific enough information about their risks; (ii) they cannot reveal them credibly; (iii) they can withhold information owing to the threats of commercial harm (Domínguez and Gámez, 2014).

Another major limitation of risk disclosure practice is that management have to make many assumptions, judgements and prediction of preparing this risk statement. Various regulatory efforts have been initiated in improving risk disclosure but these regulatory efforts have been short sighted because they are based on a disclosure model that only regards financial risk as constituting relevant information (Cabedo & Tirado, 2004).

Empirical studies evidenced that there are significant deficiencies regarding the mandatory risk disclosure under mandatory regime (Kajüter, 2003).

Voluntary risk disclosure were also found by most of the researchers as generic, vague, qualitative, backward looking and ineffective and not much information about the techniques utilized to manage those risks, in a word “Boilerplate Reporting”. Risk information become more informative when its impact is quantified. Mohobbot (2005) argues that there are some problems with quantifying risks, for instance the difficulty in measuring some risks and some measurement techniques only apply to certain risks. Beretta and Bozzolan (2004) found that 15.5% of total risk disclosures were quantified.

ASB of UK mentioned that companies need to assess carefully what are their principal risks and uncertainties, and report on those, together with the approach to managing and mitigating those risks, rather than simply provide a list of all their risks and uncertainties. Business organizations have to take risks if they try to maximize the wealth of shareholders. If directors begin disclosing actions to manage risks, then it positively encourages them to improve this aspects of managing the business as their actions are now open to public scrutiny (Linsley and Shrivess, 2000). In addition, disclosing business risks and their mitigation techniques will reduce the information gap among the shareholders and lead market work efficiently. This would help financial reports’ users to identify potential managerial problems (or opportunities) and assess management’s effectiveness in dealing with these issues (Lajili and Zéghal, 2005).

Previous studies related to the measurement of quality of risk information found that companies relatively provide little information on risks. Botosan (2004) measured the quality of risk information based on four qualitative characteristics of financial information and Domínguez and Gámez (2014) measured quality of risk information based on characteristics disclosed by constructing a risk disclosure index containing six items for measuring quality.

Linsley and Lawrance (2007) used the mean Flesch reading ease ratings for the sample companies and found that ratings are all below 50 indicating that the level of readability of the risk disclosures is difficult or very difficult.

So, most of the researchers in different countries concluded that existing risk reporting practice is not very useful due to lack of quantification of risk information and lack of risk management techniques related information and sharing past experience. In Japan, though the companies started disclosing risk information since before 2003, it has not been analysed yet the decision usefulness of risk information disclosed by the companies. This paper will try to analyse the decision usefulness of risk information disclosed by the Japanese non-financial companies based on four characteristics and their corporate governance specific determinants that drive quality risk disclosure.

## 6.0 Hypotheses Development

Domínguez and Gámez (2014) mentioned that previous papers have concluded that the divulgation of voluntary information is determined by factors such as: the presence of independent directors (Abraham & Cox, 2007; Chen & Jaggi, 2000; Schellenger et al., 1989), Board activity (Banghoj & Plenborg, 2008), Board stock ownership (Lim et al., 2007), the corporate size (Amran et al., 2009; Beretta & Bozzolan, 2004; Linsley & Shrivess, 2006), leverage (Ahmed & Courtis, 1999; Domínguez et al., 2009), profitability (Chen & Jaggi, 2000; Marston & Polei, 2004) and the industrial sector (Gallego Álvarez et al., 2008; Watson et al., 2002). In this research, following hypotheses have been developed:

**Board Size:** Board size is considered as an important element of corporate governance structure. Big board size ensures sufficient expertise and knowledge whereas a small board size suffers from a shortage of sufficient expertise. So, the large board will help in increasing the number of members who have financial and accounting background, which could affect managers voluntary disclosure decisions and extend CRD level (Elzahar and Hussainey, 2012). However, Jensen (1993) said that in spite of increasing the monitoring capacity, a high number of directors may be detrimental to organizational efficacy, given that it can extend the decision-taking process and the communication procedures.

Abraham and Cox (2007), Domínguez et al. (2011) find that board size is positively related to the volume of information disclosed. On contrary, Elzahar and Hussainey (2012) in UK found that there is insignificant relationship between board size and risk disclosure. The next hypothesis is based on the discussion is:

***H<sub>1</sub>: Ceteris paribus, there is a significant association between board size and quality of risk factors disclosed (RDQS).***

**Board Independence:** Fama and Jensen (1983) hold that a higher proportion of independent (outside) directors on the Board may potentially lead to a more effective monitoring or control on behalf of the board, limiting opportunism in the management and placing the board in a better position to meet investors' preference concerning transparency and accountability (Domínguez and Gámez, 2014). Moreover, they can contribute to improve the quality of disclosure.

Larger and riskier listed companies, with more diffuse ownership structures, and with a greater number of independent non-executive directors, are more prone to report RRD in annual reports (Abraham & Cox, 2007; Kajüter, 2006). However, Elzahar and Hussainey (2012), Domínguez and Gámez (2014) found there is no significant relationship of board independence with compulsory and voluntary risk disclosure. Based on the above arguments, the next hypothesis is:

***H<sub>2</sub>: Ceteris paribus, there is a positive association between proportion of non-executive outside directors and quality of risk factors disclosed (RDQS).***

**Independence of Board of Corporate Auditors:** The Companies Act 2006 provides mainly two corporate organisational structures: (i) the Board of Corporate Auditors Governance Structure (Kansayaku) which consists at least 3 members and (ii) the Committee Governance Structure. The Board of Corporate Auditors Governance Structure does not require the appointment of an outside director, but requires the appointment of at least two outside corporate auditors. The Board of Corporate Auditors Governance Structure is found the most dominant corporate organisational structure among listed companies in Japan. The hypothesis to check is:

***H<sub>3</sub>: Ceteris paribus, there is a positive association between the number of outside corporate auditors and quality of risk factors disclosed (RDQS).***

**Committee system:** Most of the Japanese companies choose to have Board of Corporate Auditor system rather than having committee system. Till now, very few companies have introduced committee system rather than board of auditors system. This study will examine whether company with committee system disclose more information in comparison to the companies having board of corporate auditors. The next hypothesis is:

***H<sub>4</sub>: Ceteris paribus, there is a positive association between quality of risk factors disclosed (RDQS) and a company having committee system.***

**Board experience:** The Agency theory supposes that Board activity/experience has a positive effect on reducing information asymmetry among the stakeholders. Board experience is considered significant since it can reduce the problems of asymmetric information between the different types of managers and directors.

Along this line, Banghoj and Plenborg (2008) observe a positive relationship between the volume of information disclosed and the number of Board meetings. In contrast, Domínguez et al. (2011) do not find a significant relationship among these factors, finding a negative association. So, the next hypothesis to check is:

***H<sub>5</sub>: Ceteris paribus, there is a positive association between experienced board members and quality of risk factors disclosed (RDQS).***

**Firm size:** Big firms are assumed to disclose more information to reduce information asymmetry and stakeholders' demand. Previous disclosure studies found that a positive relationship exists between the size of the company and the number of disclosure. Beretta and Bozzolan (2004) found company size and industry have a significant association with both quality and depth index of risk information. Kajüter (2006), Linsley and Shrivés (2006), Konishi and Ali (2007), Abraham and Cox (2007), Elzahar and Hussainey (2012) and Domínguez and Gámez (2014) found significant relationship between risk

disclosure and firm size. On the other hand, Rajab and Schachler (2009) found non-significant relationship between risk disclosure and firm size. Considering this evidence, the proposed hypothesis is:

***H<sub>6</sub>: Ceteris paribus, there is a positive association between firm size and quality of risk factors disclosed (RDQS).***

**Firm performance:** Profitability is considered as a proxy for measuring the firm performance. Agency theory expects that managers of companies with high profitability would tend to provide more risk information in the interim reports, in order to justify their present performance to the shareholders (Elzahar and Hussainey, 2012). On the other hand, Signalling theory leads to a hypothesis that highly performed companies should try to give signal to the market by disclosing risk related information. Managers will want also to signal their superior risk management abilities to the marketplace via risk disclosures in the annual report (Konishi and Ali, 2007). In addition, profitable companies have more resources to bear the costs of disclosing more risk information. Theory of Political costs also supports more disclosure to justify higher returns.

However, Konishi and Ali (2007), Elzahar and Hussainey (2012) and Domínguez and Gámez (2014) did not find any significant relationship between firm performance and risk disclosure. Therefore, the hypothesis set based on the arguments and findings is:

***H<sub>7</sub>: Ceteris paribus, there is a significant association between firm's performance and quality of risk factors disclosed (RDQS).***

**Company risk level:** Companies with higher level of leverage can reduce the agency costs among different groups like, owners, creditors and lenders by disclosing more information. Based on agency theory, agency costs are higher in highly leveraged firms. So, it can be considered that companies with higher level of risk will disclose greater amount of risk information to describe the causes of higher risks whereas companies with lower level of risk may disclose higher amount of disclosure to describe to the market that they have better risk management ability.

Abraham et al. (2007) argue that companies that are perceived to have higher levels of risk of the market have incentives to disclose more information in order to reduce monitoring costs that shareholders will incur when investing in the company. However, some authors argue that such companies may be reluctant to disclose risk information voluntarily because they may not want to pay attention to their risk level where investors then may consider them a risky business and decide not to invest in such risky companies (Mohobbot, 2005). By contrast, companies with lower risk levels would send good signals by disclosing more risk information in order to attract more capital. Konishi and Ali (2007), Abraham and Cox (2007), Amran et al. (2009) and Domínguez and Gámez (2014) and Dobler et al., (2011) did not find any significant relation between risk level

and risk factor disclosure whereas Ahmed and Courtis (1999), Domínguez et al. (2011) found positive association between leverage and risk disclosure.

Based on the above arguments, the next hypothesis is:

***H<sub>8</sub>: Ceteris paribus, there is an association between the level of company risk and quality of risk factors disclosed (RDQS).***

**Dual listing company:** Companies listed in another foreign stock exchange may be eager to disclose more information due to different reporting laws and regulations, demand of different stakeholders and to attract more foreign investors to invest in the companies. Prior risk reporting studies shows a positive association between cross-listing and levels of disclosure (Rajab and Schachler, 2009; Abraham and Cox, 2007) whereas Elzahar and Husainey (2012) found that overseas stock exchange listing characteristic has insignificant relationship with financial risk management disclosure patterns. Based on above findings, next hypothesis is:

***H<sub>9</sub>: Ceteris paribus, there is a positive relationship between the quality of risk factors disclosed (RDQS) and the company listed in foreign exchange market.***

**Institutional ownership:** Institutional shareholders hold a substantial portion of equity securities and they have significant influence on board decision. Due to their expertise and experience, they are assumed to play a strong role on monitoring business activities and improve disclosure practice.

Institutional ownership shows mixed result with disclosure practice. Solomon et al. (2000) found that institutional investors in the UK agree that increased corporate risk disclosure would help their portfolio investment decision making. However, Abraham and Cox (2007) found a negative association with long-term institutional investors in the UK and a positive association with short-term institutional investors. Taylor (2011) found no significant relationships between long-term institutional investors and risk disclosure in Australia and he argues it is consistent with a proprietary information perspective. Based on the discussion, the next hypothesis is:

***H<sub>10</sub>: Ceteris paribus, there is a significant relationship between the proportion of institutional ownership and quality of risk factors disclosed (RDQS).***

**Foreign ownership:** Regarding of foreign ownership, Mohobbot (2005) argues that if the number of foreign shareholders is high, the pressure mounts to the directors to disclose more risk information. However, Mohobbot (2005); Koshini and Ali, (2007) found insignificant association between risk disclosure and foreign ownership in Japan. The next hypothesis of this research is:

***H<sub>11</sub>: Ceteris paribus, there is a significant relationship between the proportion of foreign ownership and quality of risk factors disclosed (RDQS).***

**Ownership concentration:** Agency cost tends to be higher for companies with a widespread public ownership. Widespread companies are more likely to provide more information in their annual reports. On the other hand, companies with a concentrated ownership structure do not have to disseminate more risk information, because the main shareholders can easily obtain it, as they usually have access to that information (Elzahar and Hussainey, 2012). In case of concentration ownership, most of the risk information may be communicated at the boardroom meeting (Mohobot, 2005). Based on the arguments mentioned above, next hypothesis is set as:

***H12: Ceteris paribus, there is a negative relationship between the proportion of Major shareholders' ownership (Top 10 shareholders) and quality of risk factors disclosed (RDQS).***

## 7.0 Research Methodology

**7.1 Sample selection:** Companies included in JPX Nikkei 400 index containing 400 companies have been considered for this study. The focus of this study is on non-financial sectors. That's why, Banks, Insurance, Other Financing Business and Securities and Commodities industry related companies (47) have been excluded. From the rest 353 companies, 186 companies published risk information in English either in Annual report or in Annual Securities Report or Form 20F or in Website for the Fiscal years 2009 to 2014. Sega Sammy Holdings was excluded for not disclosing risk related data appropriately for the whole period and data from Japan Tobacco for FY 2009 & 2010 was not collected due to improves way of presentation for this study.

**Table 1: Sources of risk related data**

	2009	2010	2011	2012	2013	2014
Annual Report/Corporate Report	150	153	152	152	155	146
Annual Securities Report	4	4	6	7	11	10
Form 20F	9	9	10	8	7	6
Website	0	0	0	0	0	2
Total companies	163	166	168	167	173	164

This table describes the sources from which company specific risk related data were collected.

**7.2 Data Collection:** Most of the companies disclosed risk related information as part of MD&A in all the periods. Some of the companies disclosed risk information as part of Financial Review in Financial Section and very few companies disclosed risk information as a separate heading in AR. In case of ASR and Form 20F, risk information was disclosed under separate heading. Voluntary risk related information has been collected

only from that specific section allocated for disclosing risk information for the FY 2009 to 2014. Finally, total 1101 risk related information has been collected out of 1,110 (185 companies X 6 years) company year observations. Firm and Corporate Governance related data have been obtained from the Nikkei NEEDS-Cges Database.

**7.3 Development of Risk Disclosure Quality Score (RDQS) Index:** Content analysis has been chosen for collecting data for this study. In this study, in order to judge the usefulness/quality of the risk information disclosed, a Risk Disclosure Quality Score (RDQS) index containing four characteristics (Table 2) of each risk information has been considered. First characteristic is about the description of risk. A risk factor should be described in a way so that users can properly understand the impact of that risk factor on business performance. Second characteristic is the management technique used for minimizing the impact of that risk factor. Third characteristic is the quantification of risk information. Forth characteristic is sharing the experience regarding that risk factor i.e, any previous incident that happened regarding that risk factor.

To complete the calculation of the disclosure index, different weight has been assigned to each characteristic based on the information disclosed regarding the risk. A measurement scale of has been used for measuring the quality of first (Description about the risk factor) and second (Risk Management related information) characteristics. For the rest two characteristics, 0 to 1 measurement scale has been used. Criteria for assigning different measurement scale are described in Table 2.

**Table 2: Criteria to assign different weight to different characteristics of risk information**

<b>Score 0 to 3</b>	<b>Criteria for weighting 1st and 2nd characteristics</b>
<b>0</b>	A score of zero (0) indicates that the company does not report anything about that particular risk factor.
<b>1</b>	A score of one (1) indicates that information about risk factor has been disclosed in a very generic and vague way.
<b>2</b>	A score of two (2) indicates that information about risk factor has been disclosed in detail and understandable way.
<b>3</b>	A score of three (3) indicates that risk factor has been disclosed in a very high degree of detail information.
<b>Score 0 to 1</b>	<b>Criteria for weighting 3rd and 4th characteristics</b>
<b>0</b>	A score of zero (0) indicates that the company does not quantify risk information or does not share any past experience regarding that particular risk factor.
<b>1</b>	A score of one (1) indicates that the company either quantify risk information or share any past experience regarding that particular risk factor.

This table mentions the criteria considered for weighting the characteristics used for measuring quality of risk information

To measure the total score of RDQS index of each company for each year, score per risk factor has been calculated first based on the information disclosed (on the basis of four characteristics and their weight) to describe that risk factor and then summed up the total score of each risk factor disclosed under each category. After calculating the total score of each category separately, total score of RDQS index of a company-year has been calculated by summing the total score of each category of risk information.

#### 7.4 Model development and definition of variables:

Pooled ordinary least square (OLS) multiple regression has been used to assess the corporate governance specific and firm specific factors that drive the quality of risk factors disclosed by the companies. The models for measuring quality of risk disclosure are:

$$\text{RDQS} = f(\text{corporate governance characteristics, Control variables, } \epsilon_i) \dots\dots\dots(1)$$

In order to estimate the model (1) empirically, the following model is used:

$$\text{RDQS} = \beta_0 + \beta_1 \text{ board size} + \beta_2 \text{ board independence} + \beta_3 \text{ independent corporate auditor} + \beta_4 \text{ committee system} + \beta_5 \text{ board experience} + \beta_6 \text{ fsize} + \beta_7 \text{ fperformance} + \beta_8 \text{ frisk} + \beta_9 \text{ duallist} + \beta_{10} \text{ institutional ownership} + \beta_{11} \text{ foreign ownership} + \beta_{12} \text{ ownership concentration} + \sum_{t=1}^n \epsilon_{it} \dots\dots\dots(2)$$

Here,

- RDQS refers the index of measuring score of quality risk information.
- board size is the number of board members measured in terms of number of members in board.
- board independence is measured in terms of ratio of outside non-executive board members in the board.
- independent corporate auditor is measured in terms of number of outside corporate auditors in the Board of Corporate Auditors.
- committee system is a dummy variable taking value 1 if a company has committee system and 0 otherwise.
- board experience is a measure of experience of board members in terms of average age of members in the board.
- fsize is firm size measured in terms of natural log of total sales.
- fperformance is firm performance measured in terms of return on assets.
- frisk is the measure of level of risk of firm in terms of debt asset ratio.
- duallist is a dummy variable taking value 1 for a company listed in foreign stock market and 0 otherwise.
- institutional ownership is stock ownership by institutional shareholders in percentage.
- foreign ownership is the square root of stock ownership by foreign shareholders in percentage.

- ownership concentration is the stock ownership by major shareholder in percentage.
- $\Sigma_{yr\_t}$  are the dummy variables for the time.

## 8.0 Empirical Results

**Overall discussion:** 1,001 company year observations disclosed on average 13.12787 risk factors in each year and RDQS per company per year is 28.53946 with median value 25 (Table 3 Panel A). It reflects that on average companies disclose very little information about the risk factor. On the other hand, high standard deviation (17.64) and high Range value (124) also indicate there is substantial deviation among the companies in risk disclosure practice in terms of quality.

Panel B of Table 3 describes the average mean value of RDQS over the years. It shows moderate upward trend. From FY 2009 to FY 2010, average RDQS increased at a higher rate because most of companies narrated in detail about the impacts of East Japan earthquake and Tsunami on the business operations, shared their experience and this trend also remained in the FY 2011.

**Table 3: Descriptive Statistics of RDQS Panel A: Descriptive statistics**

Variable	N	Mean	Median	Sd	Variance	Min	Max	Range
RDQS	1001	28.53946	25	17.64	311.41	0	124	124
<b>Panel B: Mean value of RDQS over the years</b>								
	2009	2010	2011	2012	2013	2014	Total	
RDQS	26.46	28.30	29.13	28.93	28.98	29.37	28.53946	
N	163	166	168	167	173	164	1001	

This table displays descriptive statistics regarding RDQS point of the companies

Table 4 portrays the frequency distribution with percentage of the four characteristics used for measuring the quality of risk information over the periods from FY 2009 to FY 2014.

**Table 4: Frequency of the four characters with percentage used for measuring quality of risk information**

Score Characteristics	0 Not Revealed		1 Basic Description		2 Detail Description		3 Very Detail Descript.		Total
	N	%	N	%	N	%	N	%	
Description	787	5.99	6856	52.17	4763	36.25	735	5.59	13,141
Risk Management	7631	58.07	2974	22.63	2106	16.02	430	3.27	13,141

	0 Not revealed			1 Revealed					
Quantification	12368	94.12%	773	5.88%					13,141
Experience	12400	94.36%	741	5.64%					13,141

The table shows the frequency distribution of different weights assigned for measuring the extent of four characteristics of risk information.

Among the total 13,141 risk factors, companies mostly liked to give basic description of the risk factors rather than detailed description or very detailed description. Table 4 shows that companies gave basic description for 6,856 risk factors which represents 52.17% of total risk factors. Detailed description has been given for 4,763 risk factors which is 36.25% of total risk factors. For 787 (5.99%) risk factors, companies gave no description and for 735 (5.59%) risk factors, companies gave very detailed description. No description has been given about the risk management techniques for 7,631 risk factors which represents 58.07% of total risk factors. Basic description about risk management techniques has been given for 2,974 risk factors (22.63%) and detailed description has been given for 2,106 risk factors (16.02%). Only 430 (3.27%) risk factors have been equipped with very detailed risk management techniques. This analysis clearly shows the intention of management not to provide sufficient information to the users.

It has been found that 94.12% of total risk factors disclosed has not been quantified (Table 4). Only 773 risk factors have been quantified among total 13,141 risk factors. It has been found companies like to quantify foreign exchange related risk and litigation related risk mostly.

Out of total 13,141 risk factors, no experience has been shared by the companies for 12,400 (94.36%) risk factors (Table 4). Only 741 risk factors have been equipped with experience. Mostly, impact of Great East Japan earthquake & tsunami and litigation related experience have been shared by the companies.

### **Bivariate Analysis**

Pearson's correlation coefficient shows that firm size, risk level and dual listing characteristics have strong positive relationship with quality risk disclosure whereas firm performance has no significant relationship with quality of risk disclosure. However, Spearman's correlation coefficient shows that firm performance has significant negative relationship with quality risk disclosure.

Based on Pearson's correlation coefficient, major shareholders' shareholding ratio shows significant negative relationship. Institutional shareholders' shareholding ratio and foreign shareholder's shareholding ratio do not show significant relationship with RDQS based on Pearson's correlation coefficient. But, Spearman's correlation coefficient shows foreign shareholders' shareholding ratio has significant positive relationship with RDQS.

Board Size, Board independence and committee system show significant positive relationship with RDQS based on Pearson's correlation coefficient. Number of outside members in the Board of Corporate Auditors and board members' experience do not show any significant relationship with RDQS. In contrast, Spearman's correlation coefficient shows significant relation between number of outside members in the Board of Corporate Auditors & RDQS and board members' experience with RDQS.

**Table 5: Correlation analysis with Risk Disclosure Quality Score (RDQS)**

	Variables	Pearson Correlation	Spearman Correlation
Board Size	brd_num	0.1215***	0.1316***
Board Independence	neodrto	0.1114***	0.1698***
No of outside Corporate Auditor	oadt_num	0.0051	0.1309***
Committee System	comms	0.1439***	0.1073***
Board Members' Experience	brd_ageav	-0.0134	0.0899***
Firm Size	lsls	0.4135***	0.4216***
Firm Performance	Roa	-0.0055	-0.2104***
Company Risk	dass	0.2146***	0.2248***
Company listed in foreign stock market	duallist	0.2781***	0.2449***
Ownership Characteristics	inst	0.0066	0.0127
	frgn	0.0547*	0.0735**
	majorshsrto	-0.0734**	-0.1350***

This table represents coefficient of Pearson's correlation and Spearman's correlation of firm and corporate governance characteristics with firm's RDQS. This analysis has been made without considering the risk information of yahoo Japan Corporation due to outlier problem. *RDQS* is the risk disclosure quality score measurement index, *brd\_num* is the measure of the number of board members in the board, *neodrto* is the ratio of non-executive outside directors in the board, *oadt\_num* is the measure of number of outside auditors in the board of corporate auditors, *comms* is also a dummy variable taking the value of 1 if the firm adopts committee system and 0 otherwise, *brd\_ageav* is the measure of the average age of board members *lsls* is the natural log of total sales, *lass* is the natural log of total assets, *roa* is the measure of return on assets, *tobinq* represents the ratio of the market value of a firm's existing shares to the replacement cost of the firm's physical assets, *debt* is the measure of total debt, *dass* is the measure of the ration of total liabilities to total assets, *duallist* is a dummy variable taking the value of 1 if the firm is listed on another foreign stock exchange and 0 otherwise, *inst* is the measure of ownership of institutional shareholder in percentage, *frgn* is the measure of ownership of foreign shareholders in percentage, *majorshsrto* is the ownership of major shareholders (Top 10 shareholders) in percentage. \*\*\*, \*\* and \* indicate significance level at 1%, 5% and 10% respectively.

### Multivariate Analysis

The regression result (Table 6) shows that company size and dual listing characteristic have significant positive effect on quality risk reporting whereas firm performance and risk level have no significant impact on improving the quality of risk reporting.

Institutional shareholders' shareholding ratio and major shareholders' (Top 10 shareholders) shareholding ratio have significant negative impact on the quality of risk information. Foreign shareholders' shareholding ratio does not show any significant impact on improving usefulness of risk disclosure practice.

Independence of board and board of corporate auditor have significant positive impact on quality risk disclosure whereas board experience has significant negative impact on quality risk disclosure. Companies which have committee system rather than traditional governance system tend to disclose quality risk information. However, board size does not have any significant impact on quality risk disclosure.

Robustness check through the regression analysis with standard errors clustered as firm level show that only firm size has significant positive impact on quality risk disclosure practice by the companies. No other firm and corporate governance characteristic has significant impact on quality risk disclosure.

**Table 6: Regression Results**

	VARIABLES	Expected Sign	Model 1	Model 2
	Constant		-9.167 (11.75)	-9.167 (22.47)
Firm Size	lsls	+	5.036***	5.036***
Firm Performance	roa	+/-	0.127*	0.127
Company Risk level	dass	+/-	0.0184	0.0184
Dual listing	duallist	+	8.968***	8.968
Ownership Characteristics	inst	+/-	-0.166***	-0.166
	frgns	+/-	0.790	0.790
	majorshsrto	-	-0.0986**	-0.0986
Board Size	brd_num	+/-	0.175	0.175
Board Independence	neodrto	+	0.0879***	0.0879
No of outside Corporate Auditor	oadt_num	+	1.660**	1.660
Committee System	comms	+	11.75***	11.75
Board Members' Experience	brd_ageav	+	-0.615***	-0.615*

Year Dummy	yr_2010		1.113	1.113**
	yr_2011		1.877	1.877***
	yr_2012		1.908	1.908***
	yr_2013		1.433	1.433
	yr_2014		1.938	1.938
	Observations		984	984
	R-squared		0.271	0.271
	F value		19.97	7.40
	P value		0.0000	0.0000

This table represents coefficient of pooled OLS regression of firm and corporate governance characteristics on firm's risk disclosure factors. This analysis has been made without considering the risk information of yahoo Japan Corporation due to outlier problem. *RDQS* is the risk disclosure quality score measurement index, *lsls* is the natural log of total sales, *roa* is the measure of return on assets, *dass* is the measure of the ration of total liabilities to total assets, *duallist* is a dummy variable taking the value of 1 if the firm is listed on another foreign stock exchange and 0 otherwise, *inst* is the measure of ownership of institutional shareholder in percentage, *frgn* is the measure of ownership of foreign shareholders in percentage, *majorshsrto* is the ownership of major shareholders (Top 10 shareholders) in percentage, *brd\_num* is the measure of the number of board members in the board, *neodrto* is the ratio of non-executive outside directors in the board, *oadt\_num* is the measure of number of outside auditors in the board of corporate auditors, *comms* is also a dummy variable taking the value of 1 if the firm adopts committee system and 0 otherwise, *brd\_ageav* is the measure of the average age of board members. Standard error value is shown in parenthesis. Model (1) is pooled OLS without controlling for heteroskedasticity. Model (2) is based on robust standard errors clustered at the firm level. \*\*\*, \*\* and \* indicate significance level at 1%, 5% and 10% respectively, correspondingly using a one-tailed test for directional hypotheses, two tailed test otherwise.

## 9.0 Discussion of Findings

The findings explore that most of the companies disclose risk factors without providing detail information regarding the impacts of that factors on business operations, do not quantify or share experience regarding that risk and not much information is provided about the risk management techniques utilized to manage and mitigate the impacts of that risks. This findings support the finding of Domínguez and Gámez (2014). Companies are interested to comply 21 with regulations by disclosing risk information without providing any substantial information to the users. This practice may be categorized as boilerplate, vague and generic risk disclosure practice.

In OLS regression analysis, firm size, dual listing character, board independence, outside auditors' ratio and committee system characteristics are found to have significant positive impact on improving risk disclosure quality whereas institutional shareholders' & major

shareholders' shareholding ratio and board experience indicate significant negative impact on the quality of risk disclosure. However, regression with standard error clustered at firm level confirm that only firm size has significant positive impact on improving the quality of risk disclosure. So, only big firms disclose quality risk information to reduce the agency cost and to give signal to the market about their better risk management abilities and reduce information asymmetry. As these companies are more focused in the society and have more stakeholders, they like to meet the demand of different stakeholders, analysts and media by disclosing quality risk information. In addition, big firms have expertise and more financial strength to produce and disseminate risk information to the public.

**10.0 Conclusion:** This research contributes to the disclosure literature in several aspects through examining risk disclosure practice by the Japanese companies as this topic has not been given much attention in Japan yet. This research finds out a comprehensive picture of the voluntary risk disclosure practice by the Japanese companies regarding the quality of risk information revealed. Characteristics considered for developing quality index will be helpful for the preparers to improve risk disclosure practice in future. Regulatory authority and policy makers might be aware of any systematic differences in the disclosure practices of the different companies/industries and be inspired to formulate new regulations for improving quality of risk disclosure practice. Firm specific and corporate governance specific characteristics that drive quantity and quality of risk information might be given priority in future by regulatory authority and policy maker in improving disclosure practice. Lastly, by improving risk disclosure practice, information asymmetry among the investors will be minimized and help market behave more efficiently.

## References

- Abraham, S. and Cox, P. (2007). "Analysing the determinants of narrative risk information in UK FTSE 100 annual reports", *The British Accounting Review*, Vol. 39 No. 3, pp. 227-248.
- Abraham, S., Solomon, A. and Stevenson, J. (2007). "A ranking of risk disclosure in UK annual reports", working paper, available at: [http://www.nottingham.ac.uk/business/rmgic/Risk&Financial\\_Accounting\\_Abraham\\_Solomon\\_Stevenson.pdf](http://www.nottingham.ac.uk/business/rmgic/Risk&Financial_Accounting_Abraham_Solomon_Stevenson.pdf) (accessed on 25th July 2015).
- ACCA. (2014). "Reporting Risks", available at: <http://www.accaglobal.com/content/dam/acca/global/PDF-technical/financial-reporting/pol-afbrr.pdf> (accessed on 15th January 2015).
- Ahmed, K. and Courtis, J. (1999). "Associations between corporate characteristics and disclosure levels in annual reports: a meta-analysis", *The British Accounting Review*, Vol. 31 No. 1, pp. 35-61.

- Aldridge, C. and Colbert, J. (1997). "We Need Better Financial Reporting. Management Accounting", available at: <http://college.cengage.com/accounting/resources/students/readings/aldridge.htm>, pp. 32-36 (accessed on 23rd January 2016).
- Amran, A., Bin, A. M. R. and Hassan, B. C. H. M. (2009). "Risk reporting: an exploratory study on risk management disclosure in Malaysian annual reports", *Managerial Auditing Journal*, Vol. 24 No. 1, pp. 39-57.
- Banghoj, J. and Plenborg, T. (2008). "Value relevance of voluntary disclosure in the annual report", *Accounting and Finance*, Vol. 48, pp. 159-180.
- Beretta, S. and Bozzolan, S. (2004). "A framework for the analysis of firm risk communication", *The International Journal of Accounting*, Vol. 39 No. 3, pp. 265-288.
- Botosan, C. (2004). "Discussion of a framework for the analysis of firm risk communication", *The International Journal of Accounting*, Vol. 39 No. 4, pp. 289-295.
- Cabedo, J. and Tirado, J. (2004). "The disclosure of risk in financial statements", *Accounting Forum*, Vol. 28 No. 2, pp. 181-200.
- Campbell, D., Shrivess, P. and Bohmbach-Saager, H. (2001). "Voluntary Disclosure of Mission Statements in Corporate Annual Reports: Signaling What and to Whom", *Business and Society Review*, Vol. 106 No. 1, pp. 65-87. 23
- Dobler, M. (2007). "Incentives for risk reporting: A discretionary disclosure and cheap talk approach", *In Paper presented at the European Risk Conference Münster, Germany*.
- Dobler, M., Lajili, K. and Zéghal, D. (2011). "Attributes of corporate risk disclosure: an international investigation in the manufacturing sector", *Journal of International Accounting Research*, Vol. 10 No. 2, pp. 1-22.
- Domínguez, L. R., Gallego Álvarez, I. and García Sánchez, I. M. (2011). "Corporate governance and strategic information on the internet: A study of Spanish listed companies", *Accounting, Auditing and Accountability Journal*, Vol. 24, pp. 471-501.
- Domínguez, L. R. and Gámez, L. C. N. (2014). "Corporate reporting on risks: Evidence from Spanish companies", *Spanish Accounting Review*, Vol. 17 No. 2, pp. 116-129.
- Elzahar, N. and Hussainey, K., (2012). "Determinants of narrative risk disclosures in UK interim reports", *The Journal of Risk Finance*, Vol. 13 No. 2, pp. 133-147.
- Fama, E. and Jensen, M. (1983). "Separation of ownership and control", *Journal of Law and Economics*, Vol. 26 No. 2, pp. 301-325.
- ICAEW. (1997). "Financial reporting of risk: proposal for a statement of business risk", ICAEW, London.
- ICAEW. (2002). "No surprises: the case for better risk reporting. Balance Sheet", ICAEW, London.
- ICAEW. (2011). "Reporting Business Risks, Meeting Expectations", ICAEW, London.
- Jensen, M. C. and Meckling, W. H. (1976). "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3, pp. 305-360.

- Jensen, M. C. (1993). "The modern industrial revolution, exit and the failure of internal control systems", *The Journal of Finance*, Vol. 48 No. 3, pp. 831-880.
- Kajüter, P. (2003). "Risk Reporting in Germany: Evidence from a Longitudinal Study", working paper, Department of Auditing and Control, Dusseldorf University.
- Kajüter, P. (2006). "Risk management systems: empirical evidence from German listed firms" *Proceedings at the IFSAM VIIIth World congress*, Berlin, Germany.
- Konishi, N. and Ali, M. M. (2007). "Risk reporting of Japanese companies and its association with corporate characteristics", *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 4 No. 3, pp. 263-285. 24
- Lajili, K. and Zéghal, D. (2005). "A content analysis of risk management disclosures in Canadian annual reports", *Canadian Journal of Administrative Sciences*. Vol. 22 No. 2, pp.125-142.
- Linsley, P. and Shrides, P. (2000). "Risk management and reporting risk in the UK", *Journal of Risk*, Vol. 3, pp. 115-129.
- Linsley, P. and Shrides, P. (2005). "Examining risk reporting in UK public companies", *The Journal of Risk Finance*, Vol. 6 No. 4, pp. 292-305.
- Linsley, P. and Shrides, P. (2006). "Risk reporting: a study of risk disclosures in the annual report of UK companies", *The British Accounting Review*, Vol. 38 No. 4, pp. 387-404.
- Linsley, P. M. and Lawrence, M. J. (2007). "Risk reporting by the largest UK companies: readability and lack of obfuscation", *Accounting, Auditing & Accountability Journal*. Vol. 20 No. 4, pp. 620-627.
- Mohobbot, A. (2005). "Corporate risk reporting practices in annual reports of Japanese companies", *Japanese Journal of Accounting*, Vol. 16 No. 1, pp. 113-133.
- Rajab, B. and Schachler, M. (2009). "Corporate risk disclosure by UK firms: trends and determinants", *World Review of Entrepreneurship, Management and Sustainable Development*, Vol. 5 No. 3, pp. 224-243.
- Schrand, C. and Elliott, J. (1998). "Risk and financial reporting: A summary of the discussion at the 1997 AAA/FASB Conference", *Accounting Horizons*, Vol. 12 No. 3, pp. 271-282.
- Scott, W. (2003). *Financial Accounting Theory*, Toronto: Pearson Education Inc.
- Solomon, J. F., Solomon, A., Norton, S. D. and Joseph, N. L. (2000). "A conceptual framework for corporate risk disclosure emerging from the agenda for corporate governance reform", *The British Accounting Review*. Vol. 32 No. 4, pp. 447-478.
- Taylor, D. (2011). "Corporate Risk Disclosures: the Influence of Institutional Shareholders and the Audit Committee", available at: [http://www.afaanz.org/openconf/2015/modules/request.php?module=oc\\_proceedings&action=view.php&a=Accept+as+Forum&id=269](http://www.afaanz.org/openconf/2015/modules/request.php?module=oc_proceedings&action=view.php&a=Accept+as+Forum&id=269) (accessed on 06th August 2015).
- Verrecchia, R. E. (1983). "Discretionary Disclosure", *Journal of Accounting and Economics*, Vol. 5, pp. 179-94.

**Appendix A: Decision Rules for Risk Disclosures 25**

The decision rules were adopted from Linsley and Shrives (2006), Konishi and Ali (2007) and Abraham and Cox (2007) with some modifications. These are:

**(1) Risk Disclosure**

Linsley and Shrives (2006) – a disclosure is considered as risk 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”.

- (2) All risk disclosures must be specifically stated, they cannot be implied.
- (3) Risk disclosure sentences shall be classified according to the coding stages.
- (4) If the sentence has more than one possible classification, the information will be classified into the category that is most emphasized within the sentence.
- (5) If a disclosure is too vague in its reference to risk then it shall not be recorded as a risk disclosure.
- (6) Quantification of risk information means those risk information that either disclose directly the financial impact of a risk or disclose sufficient information to enable the reader to calculate the financial impact of a risk.
- (7) Risk experience means if company discloses any past impact of any risk factor on business organization.