

# CORPORATE RISK DISCLOSURE: A REVIEW

Achintya Nath Sexena\* & Dr. Indrajit Dube\*\* & Dr. C. S. Mishra\*\*\*

*This paper reviews empirical studies and professional literature on corporate risk disclosures. Empirical studies done from the perspective of economic theory with application of statistical techniques have been growing over the years in the field of corporate disclosures. The very concept of risk and significance of corporate risk disclosures have been discussed in various studies and reports of professional bodies. Studies of corporate risk disclosures from the perspective of information asymmetry, utility as well as the perspective of economic theories of corporate governance have been steadily increasing over the last two decades or so. Associations between various firm characteristics and market behaviour have been sought to be studied by scholars in order to study the possible motivations behind risk disclosures as well as their usefulness to the end users of corporate disclosures viz. the shareholders, current and prospective investors, as well as the regulators. Methodologies from various disciplines like communications studies, econometrics, statistics, computer science etc. have been employed to study the phenomenon of corporate risk disclosure and its interaction with factors within and without the firm. Studies have been conducted for some jurisdictions in North America, Europe, Asia and Africa and scope exists for further study in more jurisdictions. The findings of empirical studies and discussions in professional literature are key aids for law and policy makers and researchers while formulating or proposing regulatory frameworks. This review paper aims to stimulate further research and debate on regulatory approach, policy and frameworks towards corporate risk disclosure based upon the conclusions drawn from empirical studies on corporate risk disclosure.*

INTRODUCTION.....	633
I. REVIEW METHODOLOGY.....	634
A. Academic Literature .....	634
B. Grey Literature .....	634
C. Process for Inclusion of Articles for Review .....	634
II. RISK DEFINED.....	636
III. SIGNIFICANCE OF CORPORATE RISK DISCLOSURE .....	639

---

\* Ph.D. Candidate, Vinod Gupta School of Management, IIT-Kharagpur. Research field: Corporate Governance.

\*\* Associate Professor of Law, Rajiv Gandhi School of Intellectual Property Law, IIT-Kharagpur. Research fields: Corporate Law and Corporate Governance.

\*\*\* Associate Professor of Accounting & Finance, Vinod Gupta School of Management, IIT-Kharagpur. Research fields: Financial Reporting and Analysis, Business Valuation.

IV. SURVEY OF METHODOLOGIES EMPLOYED IN EMPIRICAL STUDIES ON CORPORATE RISK DISCLOSURES .....	643
V. ASSOCIATION OF CORPORATE RISK DISCLOSURES WITH FIRM, GOVERNANCE AND MARKET CHARACTERISTICS.....	652
VI. PERIODIC DISCLOSURE OF CORPORATE RISK: A LEGAL PERSPECTIVE..	659
VII. GREY LITERATURE ON CORPORATE RISK DISCLOSURE .....	660
A. <i>Professional Body Reports &amp; Documents</i> .....	660
B. <i>Risk Disclosures through Surveys: A View from India</i> .....	661
VIII. GAPS AND SCOPE FOR FUTURE WORK.....	663
CONCLUSION.....	664

## INTRODUCTION

It is accepted that extensive narrative reporting, including description, discussion and analysis of risks faced by companies is a key component of investor protection and ensuring better accountability of companies<sup>1</sup>. Researchers have investigated the topic of corporate risk disclosure from various aspects and angles. While some have investigated the impact of corporate governance on the extent and quality of risk disclosures, others have investigated the phenomenon of risk disclosures and their content from a market economics aspect. Professional bodies have come out with reports on risk disclosures from time to time that stress on risk disclosure as a key component of sound corporate governance. There has been debate in academic and professional circles about the need for mandatory risk disclosure framework versus the sufficiency of the voluntary “disclose or explain” approach. The value relevance and usefulness of risk disclosures has also been investigated in the literature. The state of risk disclosures by corporations in different countries, group of countries and regions has been investigated. The area of corporate risk disclosures is an emerging and vibrant field of research drawing scholars from economics, finance, accounting and legal disciplines.

This paper reviews the literature on corporate risk disclosure available in the form of research articles in peer reviewed journals, reports of various committees, publications of various professional bodies and consultancy firms.

We start with a review of relevant literature on corporate disclosure that investigates impact of disclosure in general on the firm and compares the mandatory & voluntary disclosure policies and then move to review of

---

<sup>1</sup> Michael Duffy, *Towards Better Disclosure of Corporate Risk: A Look at Risk Disclosure in Periodic Reporting*, 35 ADELAIDE LAW REV. 385—408.

various aspects covered in risk disclosure literature, thus establishing a conceptual link between the existing ideas on corporate disclosure and corporate risk disclosure.

## I. REVIEW METHODOLOGY

### A. *Academic Literature*

Scopus and Hein Online databases were used for the purpose of searching academic literature on corporate disclosure. Seven different search strings and steps were used for this purpose and are described in the Appendix.

### B. *Grey Literature*

Grey literature was selected for the purpose of this review paper based on the definition of such literature given by the Fourth International Conference on Grey Literature (GL'99). The definition of grey literature given at the conference was "That which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers." (available on <http://www.greylit.org/about>, last accessed on 20<sup>th</sup> Dec. 2015). Search was performed on the google web search engine to identify relevant grey literature for the purpose of this paper.

### C. *Process for Inclusion of Articles for Review*

#### 1. Scopus

The duplicate results obtained during running of search strings 1 to 5 were harmonized and the abstracts of the resulting documents were perused. The documents that contained analysis of the content of risk disclosures in corporate annual reports and their relationship with various firm and governance characteristics were selected. Documents that included survey methodology to investigate the need and prevalence of corporate risk disclosures were also included.

Documents indexed on scopus database but not available due to lack of subscription were excluded.

Documents indexed on scopus database and available on the SSRN were included.

## 2. Hein Online

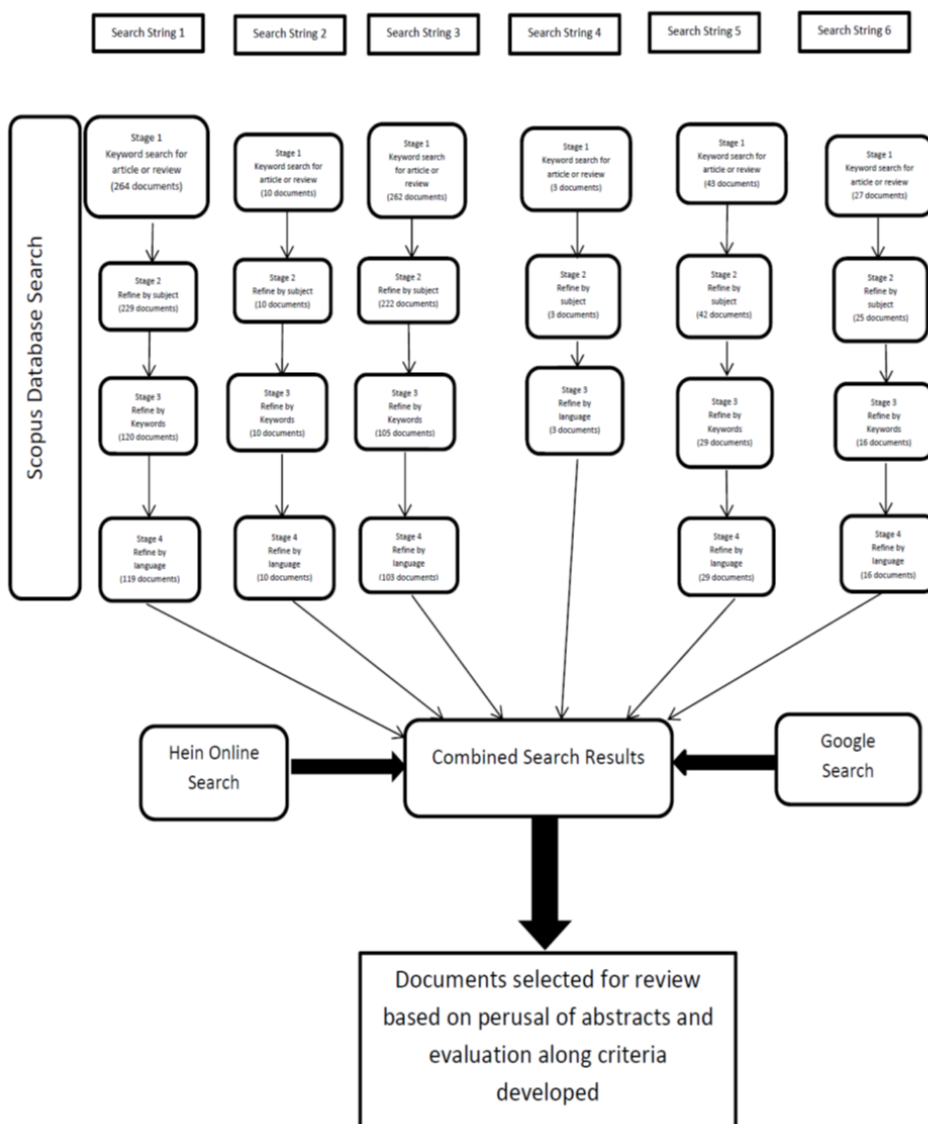
Upon reading the abstracts of the documents revealed in the search results, documents containing discussion of corporate risk disclosures, risk disclosure regimes, and disclosure of specific risk types were selected for the purpose of review.

No duplicate documents were found in the results of the two databases.

## 3. Grey Literature

The reports of professional and industry bodies on corporate risk disclosure have played a significant role in creating awareness about the role of risk disclosures in the overall scheme of corporate disclosures as a part of good corporate governance in industry as well as the academia and policy making levels.

Based on the results given by the google search engine from the input “corporate risk disclosure”, industry body reports and reports of professional bodies on the subject were selected according to their relevance in the development of the area of corporate risk disclosure.



**Figure 1 Process of selection of documents for review.**

## II. RISK DEFINED

There is no standard definition of risk though the common understanding of the word is with possibility of danger, loss or harm. Different literatures follow different ideas about risk though the understanding seems to be converging towards a general idea gradually.

Solomon et al.<sup>2</sup> have followed the definition of risk defined by the ICAEW report on a model statement of business risk by companies. It defined risk as the uncertainty associated with both a potential gain and loss. It further emphasized that prioritisation of risk is a key part of the risk management process in a company. The King Report on Corporate Governance for South Africa<sup>3</sup> defines risks as *uncertain future events that could influence the achievement of a company's objectives*. The report gives a broad classification of risks as related to a firm's strategic, operational, financial and compliance objectives. It recognizes that risks need to be taken in order to pursue an economic or business opportunity but at the same time, it also emphasizes on protection of a firm against avoidable risks. The ICAEW<sup>4</sup> follows the definition of risk given in the UK Financial Reporting Standard (FRS) No. 5 which defines risk as "Uncertainty as to the amount of benefits. The term includes both potential for gain and exposure to loss." Linsley & Shrives<sup>5</sup>, have followed the concept of risk proposed by sociologist Prof. Deborah Lupton which includes the possibility of both harm and reward as the possible outcome of a situation. The *disclosure 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* has been taken to be a disclosure of risk or risk disclosure by the authors. Dobler<sup>6</sup>, has followed the definition of risk as an unknown outcome governed by a known probability distribution propounded by economist Frank Knight in 1921. The ICAEW<sup>7</sup>, incorporates the ideas of Knight<sup>8</sup> further in terms of differentiating between risk and uncertainty as measurable and unmeasurable risk respectively, even

---

<sup>2</sup> N. L. Solomon, J. F. Soloman, A. Norton & S. D. Joseph, *A Conceptual Framework for Corporate Risk Disclosure Emerging from the Agenda for Corporate Governance Reform*, 32 BR. ACCOUNT. REV. 447—478 (2000), <http://www.sciencedirect.com/science/article/pii/S0890838900901458>.

<sup>3</sup> Mervyn King, King Report on Corporate Governance for South Africa (2002), [http://library.ufs.ac.za/dl/userfiles/documents/Information\\_Resources/KingII Final doc.pdf](http://library.ufs.ac.za/dl/userfiles/documents/Information_Resources/KingII%20Final%20doc.pdf).

<sup>4</sup> ICAEW, No Surprises: Working for Better Risk Reporting (2006), [https://www.icaew.com/~media/corporate/files/technical/research and academics/publications and projects/financial reporting publications/briefing 06 02 no surprises.ashx](https://www.icaew.com/~media/corporate/files/technical/research_and_academics/publications_and_projects/financial_reporting_publications/briefing_06_02_no_surprises.ashx).

<sup>5</sup> Philip M. Linsley & Philip J. Shrives, *Risk Reporting: A Study of Risk Disclosures in the Annual Reports of UK Companies*, 38 BR. ACCOUNT. REV. 387—404 (2006), <http://www.sciencedirect.com/science/article/pii/S0890838906000461>.

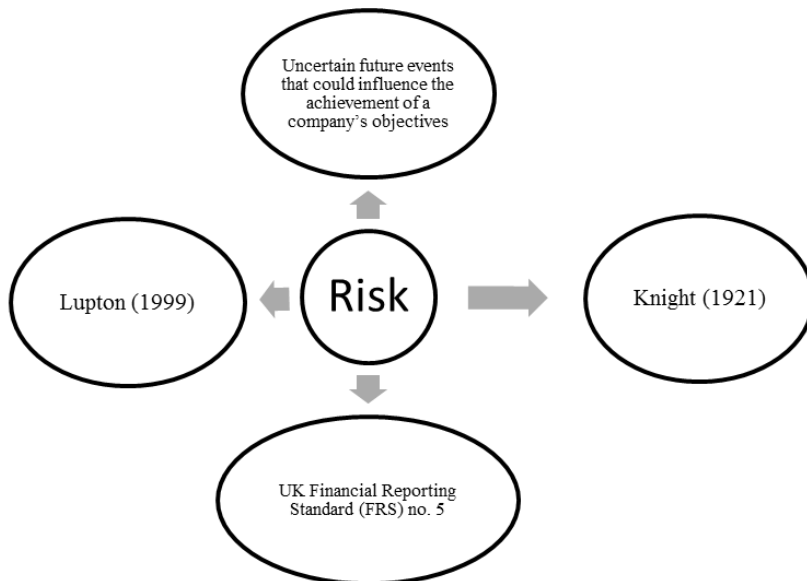
<sup>6</sup> Michael Dobler, *Incentives for Risk Reporting—A Discretionary Disclosure and Cheap Talk Approach*, 43 INT. J. ACCOUNT. 184—206 (2008), <http://www.sciencedirect.com/science/article/pii/S0020706308000368>.

<sup>7</sup> ICAEW, Reporting Business Risks: Meeting Expectations (2011), [http://www.icaew.com/~media/corporate/files/technical/financial reporting/information for better markets/ifbm/rbr final.ashx](http://www.icaew.com/~media/corporate/files/technical/financial_reporting/information_for_better_markets/ifbm/rbr_final.ashx).

<sup>8</sup> FRANK H. KNIGHT, RISK, UNCERTAINTY AND PROFIT (First ed. 1921).

accepting Knight's view that most business risks are uncertainties in the sense that it is difficult to quantify or measure them. The essential concept is that risk is a subjective idea about the real dangers or uncertainties of life that is faced by individuals and organizations that may not always be quantifiable. The IFC<sup>9</sup> follows a definition of the word risk inspired by the Mandarin Chinese language symbol for "crisis" which features two characters signifying danger and opportunity respectively. The idea is that risk signifies opportunity inherent in danger and vice versa. Ryan<sup>10</sup> defines risk as random variation in the future economic performance of firms given currently available information. This definition encompasses both risk and uncertainty defined by Knight.

Academic and professional literature seems to be converging on the acceptance of Knight's definition of risk and uncertainty after exploring definitions from other social sciences or attempts to define risk in the reports of various commissions. Considering the fact that Knightian uncertainties have the potential to cause greater harm to a firm than Knightian risks, the manner in which a firm assesses and reports uncertainties assumes importance.



**Figure 2 Summary of definitions of risk.**

<sup>9</sup> MAXINE ROGGI & OLIVIERO GARVEY, *RISK TAKING: A CORPORATE GOVERNANCE PERSPECTIVE* (2012).

<sup>10</sup> Stephen G. Ryan, *Risk Reporting Quality: Implications of Academic Research for Financial Reporting Policy*, 42 *ACCOUNT. BUS. RES.* 295—324 (2012), <http://dx.doi.org/10.1080/00014788.2012.681855>.

## III. SIGNIFICANCE OF CORPORATE RISK DISCLOSURE

Solomon et al. have asserted that if a firm wants to reduce its cost of capital by raising market confidence, it must disclose its risk management policies. The basic premise is that such a step will reduce the information asymmetry between investors and company directors and will thereby improve investor relations and corporate governance. It is further asserted that improvement in risk disclosure would further enable investors to take more effective decisions about diversification of risk. Linsley & Shrivess<sup>11</sup> have called for directors to clearly explain risks facing the company & steps taken to manage those risks, to shareholders. They assert that disclosure of risk and risk management information will result in better informed individual and institutional investors as well as lenders. Better informed investors and lenders will be able to better allocate their resources to their investment portfolio resulting in overall better allocation of resources in the financial markets. Linsmeir et al.<sup>12</sup> found that the market risk disclosures in Form 10K mandated by FRR No. 48 provide useful information to investors by reducing the uncertainty and diversity of opinion regarding possible outcomes resulting from changes in interest rates, foreign currency exchange rates and commodity prices. The ICAEW<sup>13</sup>, in its position paper on risk disclosure, calls on company directors to disclose more risk & risk management information in prospectuses and annual reports. The institute specifically asserts that such disclosure will reduce cost of capital for companies, along with risk management and corporate governance benefits and increase the usefulness of company disclosures. To investors, the benefits are of forward looking information and overall protection of their interests through such disclosures. Jorgensen & Kirschenheiter<sup>14</sup>, analysed managers' risk disclosure decisions. It was found that the cost of equity capital for non-disclosing firms in a voluntary disclosure environment is higher than firms which disclose risk information. A non-disclosing firm in a market where other firms disclose their risks was found to have a higher beta than the disclosing firms. A firm's expected beta and expected risk premium were found to be higher in a mandatory disclosure regime than in a

---

<sup>11</sup> Philip M. Linsley & Philip J. Shrivess, *Truth or Dare?*, FINANCIAL MANAGEMENT 40 (2001).

<sup>12</sup> M. Linsmeir, T. J. Thornton, D. B. Venkatacham & M. Welker, *The Effect of Mandated Market Risk Disclosures on Trading Volume Sensitivity to Interest Rate, Exchange Rate, and Commodity Price Movements*, 77 ACCOUNT. REV. 343—377 (2002), <http://www.jstor.org/stable/3068901>.

<sup>13</sup> Financial Committee ICAEW, *No Surprises: The Case for Better Risk Reporting*, 10 BALANCE SHEET 18—21 (2002).

<sup>14</sup> M. T. Jorgensen & B. N. Kirschenheiter, *Discretionary Risk Disclosure*, 78 ACCOUNT. REV. 449—469 (2003).



voluntary disclosure regime. Beretta & Bozzolan<sup>15</sup> have iterated the positive impact of disclosure of forward-looking information in the form of risk disclosure on the accuracy of analyst forecasts regarding firm value and earnings. The role of disclosure of forward-looking information in the form of risk disclosure on improving corporate governance as well as emphasis on the same by various professional accounting bodies has been highlighted by the authors. Lajili & Zehgal<sup>16</sup>, assert disclosure of risk management information as a key component of corporate governance. Disclosure of risk assessment and management information by managers helps investors, stakeholders and users of corporate communications to better evaluate a company's prospects as well as the competence of its managers and directors in managing uncertainty in business. Due to successive accounting scandals and financial crises, calls for greater and better corporate disclosures have grown. Disclosure of risks and risk management activities by companies has received a greater amount of attention in debates regarding corporate disclosures. Those in favour of increased risk related disclosures by companies have argued that good corporate governance requires directors to be accountable to shareholders for the risks that a company faces and improved risk disclosure enhances understanding of a company's risk profile<sup>17</sup>. Combes-Thuelin et al.<sup>18</sup> have iterated risk disclosure to be a focal issue of corporate communication. Abraham & Cox<sup>19</sup> assert that information about corporate risk is essential to help actual investment decisions approximate the utility maximizing decision model of portfolio management. Coherent and readable risk information provided by a company enables facilitates greater understanding of the risk position of a firm and also enables stakeholders to manage their own risk profiles<sup>20</sup>. According to Deumes<sup>21</sup>, study of risk disclosures is important because the

---

<sup>15</sup> Sergio Beretta & Saverio Bozzolan, *A Framework for the Analysis of Firm Risk Communication*, 39 INT. J. ACCOUNT. 265—288 (2004),

<http://www.sciencedirect.com/science/article/pii/S0020706304000378>.

<sup>16</sup> Kaouther Lajili & Daniel Zehgal, *A Content Analysis of Risk Management Disclosures in Canadian Annual Reports*, 22 CAN. J. ADM. SCI./REV. CAN. DES SCI. L'ADMINISTRATION 125—142 (2005).

<sup>17</sup> Philip M. Linsley & Philip J. Shrivess, *Examining Risk Reporting in UK Public Companies*, 6 J. RISK FINANC. 292—305 (2005).

<sup>18</sup> Elisabeth Combes-Thuelin, Sandrine Henneron & Philippe Tournon, *Risk Regulations and Financial Disclosure: An Investigation Based on Corporate Communication in French Traded Companies*, 11 CORP. COMMUN. INT. J. 303—326 (2006).

<sup>19</sup> Santhosh Abraham & Paul Cox, *Analysing the Determinants of Narrative Risk Information in UK FTSE 100 Annual Reports*, 39 BR. ACCOUNT. REV. 227—248 (2007).

<sup>20</sup> Philip M. Linsley & Michael J. Lawrence, *Risk Reporting by the Largest UK Companies: Readability and Lack of Obfuscation*, 20 ACCOUNTING, AUDIT. ACCOUNT. J. 620—627 (2007).

<sup>21</sup> R. Deumes, *Corporate Risk Reporting: A Content Analysis of Narrative Risk Disclosures in Prospectuses*, 45 J. BUS. COMMUN. 120—157 (2008).

transparency of companies about their risk is vital for the proper functioning of the capital markets. Due to rapid changes in business environment and business models, along with a series of corporate accounting and financial scandals, the conventional financial reporting section of a firm's annual report has been found to be inadequate to fulfil the information needs of stakeholders in the firm. The analysis of both financial and non-financial as well as both quantitative and qualitative disclosures in annual reports and regulatory filings has become essential in order to obtain a more comprehensive picture about a firm's current state and its future prospects<sup>22</sup>. The ICAEW<sup>23</sup>, asserts the role of corporate risk disclosures not only in reducing cost of capital of firms and improving investor informativeness, but also in improving corporate governance and stewardship of the firms themselves. Ryan<sup>24</sup> asserts that enhanced quality of risk reporting helps users of such information to better assess and predict the variation in a firm's future performance thereby aiding overall risk assessment for the firm. According to Miihkinen<sup>25</sup>, high quality narrative information in annual reports is necessary to increase usefulness of companies' public reporting for investors and other end users of corporate communications. The Institute of Chartered Accountants of Scotland (ICAS)<sup>26</sup>, asserts the utility of risk and risk management disclosures by firms in aiding investors to better distribute risk across their investment portfolio. They acknowledge the role of corporate risk disclosures in reducing distortions and increasing the efficiency of financial markets. Barakat & Hussainey<sup>27</sup>, assert that disclosure of risk information by firms results in the improvement of market efficiency in three ways. First, as an outside mechanism for monitoring the behaviour of senior management, second, by facilitating investors' assessment of the likely variations in a firm's future cash flows and lowering a firm's cost of capital, and third, facilitating the investors' trust in

---

<sup>22</sup> BCHM Amran, Azlan Bin, AMR Hassan, *Risk Reporting: An Exploratory Study on Risk Management Disclosure in Malaysian Annual Reports*, 24 *MANAG. AUDIT. J.* 39—57 (2009).

<sup>23</sup> ICAEW, *Reporting Business Risks: Meeting Expectations* (2011).

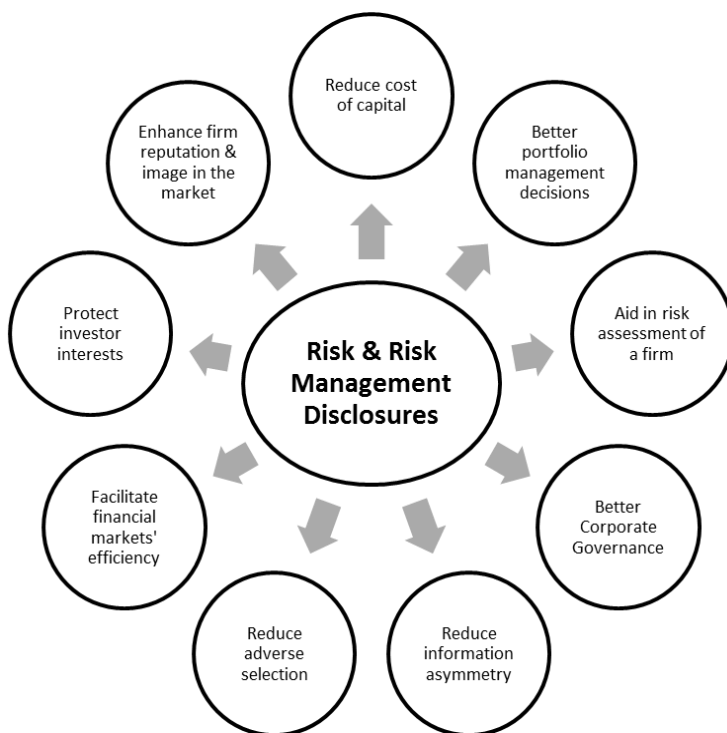
<sup>24</sup> Stephen G. Ryan, *Risk Reporting Quality: Implications of Academic Research for Financial Reporting Policy*, 42 *ACCOUNT. BUS. RES.* 295—324 (2012).

<sup>25</sup> Antti Miihkinen, *What Drives Quality of Firm Risk Disclosure?*, 47 *INT. J. ACCOUNT.* 437—468 (2012).

<sup>26</sup> Santhosh Abraham, Claire Marston & Phil Darby, *Risk Reporting: Clarity, Relevance and Location* (2012).

<sup>27</sup> Ahmed Barakat & Khaled Hussainey, *Bank Governance, Regulation, Supervision, and Risk Reporting: Evidence from Operational Risk Disclosures in European Banks*, 30 *INT. REV. FINANC. ANAL.* 254—273 (2013).

the firm by acting as a support to its legitimacy and reputation. Ntim et al.<sup>28</sup>, have linked theories of corporate governance with significance of risk disclosure. Risk disclosure can reduce agency and information asymmetry problems that exist between insiders and stakeholders. From the perspective of institutional and legitimacy theories of corporate governance, corporate risk disclosure can enhance a firm's goodwill and reputation which can facilitate achievement of corporate goals with the co-operation of the society at large. From the perspective of stakeholder theory, corporate risk disclosure can aid in gaining support for achievement of corporate goals from stakeholders like investors, regulators, employees and the government. From the resource-dependence theory perspective, corporate risk disclosure can aid a firm in raising capital at a reduced cost from the market due to increase in reputation and improvement in its image.



**Fig. 3 Significance of corporate risk disclosures.**

The significance of risk disclosures in quantitative and qualitative forms is now well established. There is general agreement that information

<sup>28</sup> Collins G. Ntim, Sarah Lindop & Dennis A. Thomas, *Corporate Governance and Risk Reporting in South Africa: A Study of Corporate Risk Disclosures in the Pre- and Post-2007/2008 Global Financial Crisis Periods*, 30 INT. REV. FINANC. ANAL. 363—383 (2013).

regarding risk and risk management needs to be disclosed by companies in their annual reports and filings in order to enable better assessment of their future prospects by investors, regulators, and various other stakeholders. The role of disclosure of risk and risk management information by firms in reducing the cost of capital for them is also generally agreed upon by professional bodies as well as scholars.

#### IV. SURVEY OF METHODOLOGIES EMPLOYED IN EMPIRICAL STUDIES ON CORPORATE RISK DISCLOSURES

Meier et al.<sup>29</sup>, surveyed annual reports and filings of companies to investigate their reporting of the fallout of the first Gulf War on their business activities and financial results. The companies were first requested to provide their latest annual reports. Those firms that did not oblige the request, their SEC filings and annual reports were retrieved from the Disclosure Database. The Auditor opinion, MD&A, and the NFS section were analysed for any disclosures or opinions expressed regarding the impact of the first Gulf War on the business and financials of the firm and the results were tabulated. Solomon et al. derived a conceptual framework for firm risk disclosure from the Turnbull report and did a questionnaire survey of 552 institutional investors in the UK exploring the feasibility of their framework as well as the perception of institutional investors regarding requirement of corporate risk disclosure. Beretta & Bozzolan devised a framework for corporate risk disclosure analysis taking into account the literature of professional accounting bodies as well as academic research. An index of risk disclosure based on quantity, frequency and density of disclosure was created to measure risk disclosures. The resulting model was designed to measure both the extent as well as the quality of firm disclosure and was applied to Italy listed companies to evaluate its effectiveness. In order to extract information and fit into the model, manual content analysis of annual reports of target companies was performed. Lajili & Zehgal<sup>30</sup> employed manual content analysis to study statutory and voluntary risk disclosures by Canadian public companies. The extent of disclosures made by companies was measured by a simple score calculated by counting relevant keywords and sentences in the annual reports of the firms selected

---

<sup>29</sup> Heidi Hylton Meier, Sylwia Gornik Tomaszewski & Robert Tobing, *Political Risk Assessment and Disclosure in Annual Financial Reports: The Case of the Persian Gulf War*, 4 J. INT. ACCOUNTING, AUDIT. TAX. 49—68 (1995).

<sup>30</sup> Kaouther Lajili & Daniel Zehgal, *A Content Analysis of Risk Management Disclosures in Canadian Annual Reports*, 22 CAN. J. ADM. SCI./REV. CAN. DES SCI. L'ADMINISTRATION 125—142 (2005).

for study. The companies in the TSE 300 list in December 1999 were selected for the study. Linsley & Shrives<sup>31</sup>, used manual content analysis to survey risk disclosures by UK listed companies. The sample consisted of 79 non-financial companies included in the FTSE 100 on 1<sup>st</sup> January 2001. Disclosure of risks in the form of sentences was counted and compiled for each company by manually scanning their annual reports. Risk disclosures were differentiated into various categories according to the outlook given in annual reports. Linsley & Shrives<sup>32</sup>, extended their approach in the 2005 paper and performed regression with firm characteristics of risk disclosures. Manual content analysis was used to study annual reports in order to extract risk disclosure information. Combes-Thuelin et al. employed a qualitative research methodology approach using grounded theory to investigate risk disclosures by three French listed companies in their annual reports or “document of reference”. Abraham & Cox<sup>33</sup>, used manual content analysis to analyse risk disclosures in annual reports of FTSE 100 constituent non-financial companies for the year 2002. The quantity of risk disclosures made by each company was calculated using the sentence approach and the findings were regressed with firm characteristics of ownership, governance and dual (US) listing. Linsley & Lawrence<sup>34</sup>, assessed the readability of risk disclosures by UK companies in their annual reports. The 26 largest non-financial firms of the FTSE 100 on January 1, 2001 were selected for the purpose of the study. Manual content analysis was performed and the Flesch Reading Ease Formula was used to calculate the readability scores of the selected firm samples’ annual reports. Deumes, applied manual content analysis to analyse risk disclosures made in prospectuses of Dutch firms that issued securities on the Amsterdam Stock Exchange between the years 1997-2000. The sample consisted of 90 firms. Amran et al., conducted manual content analysis of annual reports of 100 randomly selected Malaysian companies listed on the Bursa Malaysia in the year 2005. Replicating the method of Linsley & Shrives (2006) for manual content analysis, the extent of disclosures so obtained was regressed with firm characteristics using a linear multivariate regression model. Hassan<sup>35</sup>,

---

<sup>31</sup> Philip M. Linsley & Philip J. Shrives, *Examining Risk Reporting in UK Public Companies*, 6 J. RISK FINANC. 292—305 (2005).

<sup>32</sup> Philip M. Linsley & Philip J. Shrives, *Risk Reporting: A Study of Risk Disclosures in the Annual Reports of UK Companies*, 38 BR. ACCOUNT. REV. 387—404 (2006).

<sup>33</sup> Santhosh Abraham & Paul Cox, *Analysing the Determinants of Narrative Risk Information in UK FTSE 100 Annual Reports*, 39 BR. ACCOUNT. REV. 227—248 (2007).

<sup>34</sup> Philip M. Linsley & Michael J. Lawrence, *Risk Reporting by the Largest UK Companies: Readability and Lack of Obfuscation*, 20 ACCOUNTING, AUDIT. ACCOUNT. J. 620—627 (2007).

<sup>35</sup> Mostafa Kamal Hassan, *UAE Corporations-Specific Characteristics and Level of Risk Disclosure*, 24 MANAG. AUDIT. J. 668—687 (2009).

performed manual content analysis of the annual reports of 41 UAE (Dubai and Abu Dhabi) listed companies. Annual reports for the financial years 2004-2005 were used for the purpose. An index was constructed based on accounting standards, previous academic literature, and UAE regulatory requirements to measure corporate risk disclosure. Lajili<sup>36</sup>, performed content analysis on annual reports of 225 companies listed on the Toronto Stock Exchange (TSX). The annual reports for the year 2002 were selected for the purpose. Risk disclosures over and above the mandatory regulatory requirements by the companies were analysed and regressed with corporate governance and board characteristics to investigate the effect of corporate governance on corporate voluntary risk disclosures. Oliveira et al.<sup>37</sup>, analysed risk disclosures by Portuguese non-finance companies. Manual content analysis of annual reports of 81 Portuguese non-finance companies for the year 2005 was performed and regression analysis done with corporate governance characteristics. Oliveira et al.<sup>38</sup>, analysed voluntary risk disclosures made by Portuguese banks. Manual content analysis was used to analyse annual reports of 111 Portuguese commercial banks for the year 2006 as published in the database of the Portuguese Central Bank on 31<sup>st</sup> December, 2007. Correlation and regression analysis was performed for various firm characteristics and the extent of voluntary risk disclosures. Horing & Grundl<sup>39</sup>, performed manual content analysis on the annual reports for the financial years 2005-2009 of all the firms included in the Dow Jones Stoxx 600 Insurance Index for Europe as of September 2009. To measure risk disclosure, an index was created based on the CRO Forum proposal for public risk disclosure. A regression model was constructed and regression performed with firm characteristics to analyse the effect of firm characteristics on risk disclosure by European insurance companies. Lajili et al.<sup>40</sup>, employed manual content analysis on 10-K filings of US manufacturing companies included in the S&P 500. The period studied was 2006-2009 and volume of narrative risk disclosures by US manufacturing

---

<sup>36</sup> Kaouther Lajili, *Corporate Risk Disclosure and Corporate Governance*, 2 J. RISK FINANC. MANAG. 94—117 (2009).

<sup>37</sup> Jonas Oliveira, Lúcia Lima Rodrigues & Russell Craig, *Risk-Related Disclosures by Non-Finance Companies: Portuguese Practices and Disclosure Characteristics*, 26 MANAG. AUDIT. J. 817—839 (2011).

<sup>38</sup> Jonas Oliveira, Lúcia Lima Rodrigues & Russell Craig, *Voluntary Risk Reporting to Enhance Institutional and Organizational Legitimacy: Evidence from Portuguese Banks*, 19 J. FINANC. REGUL. COMPLIANCE 271—289 (2011).

<sup>39</sup> D. Horing & H. Gründl, *Investigating Risk Disclosure Practices in the European Insurance Industry*, 36 GENEVA PAP. RISK 380—413 (2011).

<sup>40</sup> Kaouther Lajili, Daniel Zehgal & Michael Dobler, *An Empirical Investigation of Business and Operational Risk Disclosures*, 3 INT. J. MANAG. BUS. 53—71 (2012).

companies in this period was calculated. Regression with firm characteristics was performed to study their impact on risk disclosures. Elzahar & Hussainey<sup>41</sup>, employed manual content analysis to analyse risk disclosures by UK companies in their interim reports. The interim reports of FTSE 100 non-financial companies for the period between 1<sup>st</sup> June 2009 and 31<sup>st</sup> May 2010 were analysed and regression performed with firm characteristics and corporate governance mechanisms. Miihkinen<sup>42</sup>, performed manual content analysis on annual reports of Finland listed companies to investigate the impact of risk disclosure regulation on the quality of risk disclosures of companies in a jurisdiction. The sample consisted of companies listed on the OMX Helisinki exchange in the years 2005 and 2006. Regression was performed with firm characteristics. Miihkinen<sup>43</sup>, conducted manual content analysis on the annual reports of non-finance and banking companies listed on the OMX Helisinki exchange between 2005 to 2009 to investigate the usefulness of risk disclosures by companies for investors. Relative bid-ask spread and trading volume were used as proxies for information asymmetry. The information asymmetry indicators were regressed with risk disclosures and contingency factors. Elshandidy et al.<sup>44</sup>, employed automated content analysis using the NUD\*IST 6 software package to investigate the impact of risk levels and exposure on the risk disclosure of companies. The sample consisted of annual reports of 290 non-financial all-share firms included in the UK FTSE between 30<sup>th</sup> June 2005 and 30<sup>th</sup> June 2009 after eliminating incomplete and software unreadable data. Regression with firm risk level and corporate governance variables was performed using the Linear Mixed Model instead of the Ordinary Least Squares method. Barakat & Hussainey<sup>45</sup>, analysed annual reports of 85 EU banks having total assets of over one billion Euros for the years 2008, 2009 & 2010 to investigate the impact of governance, supervision and regulation on the quality of risk disclosures in the banking

---

<sup>41</sup> Hany Elzahar & Khaled Hussainey, *Determinants of Narrative Risk Disclosures in UK Interim Reports*, 13 J. RISK FINANC. 133—147 (2012).

<sup>42</sup> Antti Miihkinen, *What Drives Quality of Firm Risk Disclosure?*, 47 INT. J. ACCOUNT. 437—468 (2012).

<sup>43</sup> Antti Miihkinen, *The Usefulness of Firm Risk Disclosures under Different Firm Riskiness, Investor-Interest, and Market Conditions: New Evidence from Finland*, 29 ADV. ACCOUNT. 312—331 (2013).

<sup>44</sup> Tamer Elshandidy, Ian Fraser & Khaled Hussainey, *Aggregated, Voluntary, and Mandatory Risk Disclosure Incentives: Evidence from UK FTSE All-Share Companies*, 30 INT. REV. FINANC. ANAL. 320—333 (2013).

<sup>45</sup> Ahmed Barakat & Khaled Hussainey, *Bank Governance, Regulation, Supervision, and Risk Reporting: Evidence from Operational Risk Disclosures in European Banks*, 30 INT. REV. FINANC. ANAL. 254—273 (2013).

industry. An index was created for the purpose of measurement of quality of risk disclosure which was based on the provisions contained in the Capital Requirements Directive (CRD) issued by the European Parliament in 2006. A multivariate regression model was constructed to observe the impact of board governance supervision, and regulation on quality of risk disclosures in banking industry. Mokhtar & Mellett<sup>46</sup>, employed manual content analysis and constructed an index to measure amount of risk disclosures of 105 companies listed on the Egyptian Stock Exchange (EGX) in the year 2007. The sample was selected using stratified random sampling. Regression was performed with firm characteristics to investigate the impact of corporate governance, ownership structure and competition on risk disclosures by Egyptian companies. Ntim et al.<sup>47</sup>, conducted manual content analysis and calculated corporate risk disclosure scores for companies listed on the Johannesburg Stock Exchange between the years 2002 and 2011 in order to observe the trend of risk reporting in South African companies before and after the 2008 financial crisis. The sample for the study consisted of 50 non-financial companies from five non-finance industry sectors consisting of the 10 largest companies from each sector. Indices measuring quantity and quality of risk disclosures were developed and regression of the cumulative scores was performed with corporate governance characteristics. Abraham & Shrivs<sup>48</sup>, formulated a model for assessing the quality of risk disclosures based on proprietary cost and institutional theories. The model was tested on UK food products and processing sector companies. The sample was selected on the basis of the number of companies of the particular sector in the FTSE 100 in July 2008. Four companies met this criterion. Kravet & Muslu<sup>49</sup>, wrote a UNIX Perl code to analyse risk disclosures in 10-K filings between the years 1994-2007. The measure of risk disclosures was number of sentences. The sample consisted of 4,315 firms. Regression was performed between the risk disclosure measure and the market trading variables to investigate the association between changes in corporate risk disclosures and changes in stock market and analyst

---

<sup>46</sup> Ekramy Mokhtar & Howard Mellett, *Competition, Corporate Governance, Ownership Structure and Risk Reporting*, 28 MANAG. AUDIT. J. 838—865 (2013).

<sup>47</sup> Collins G. Ntim, Sarah Lindop & Dennis A. Thomas, *Corporate Governance and Risk Reporting in South Africa: A Study of Corporate Risk Disclosures in the Pre- and Post-2007/2008 Global Financial Crisis Periods*, 30 INT. REV. FINANC. ANAL. 363—383 (2013).

<sup>48</sup> Santhosh Abraham & Philip J. Shrivs, *Improving the Relevance of Risk Factor Disclosure in Corporate Annual Reports*, 46 BR. ACCOUNT. REV. 91—107 (2013).

<sup>49</sup> Todd Kravet & Volkan Muslu, *Textual Risk Disclosures and Investors' Risk Perceptions*, 18 REV. ACCOUNT. STUD. 1088—1122 (2013).



activity around the filings. Campbell et al.<sup>50</sup>, analysed the content of the “risk factor” section of 10-K filings. A computer program was composed to download and analyse HTML format 10-K filings from the EDGAR database. The quantification of risk disclosures in the risk-factor section was based upon counting and classification of risk disclosure keywords done automatically by the program. The period chosen for the study was between the fiscal years 2005 and 2008. The sample contained 9,076 firm-year observations. The risk disclosure measure was regressed with various characteristics of market activity before and after risk disclosures by firms and information asymmetry characteristic in form of bid-ask spread to investigate the association between corporate risk disclosure and its perception amongst investors. Klumpes et al.<sup>51</sup>, performed manual content analysis of annual reports of 13 top global insurers on the AM Services list for the period 2006-2012. Three risk disclosure indices based on previous studies were created to measure corporate risk disclosure from the perspective of utility to shareholders, regulatory compliance and internal control. A survey of internal risk reporting process and practice of these companies and its utility to the end users of such internal controls information was also conducted. The objective was to survey risk reporting practices in the global insurance industry. Semper & Beltran<sup>52</sup>, conducted manual content analysis of annual reports of 234 companies from six industry sectors listed on the Madrid Stock Exchange from the years 2007 to 2009. A disclosure index was constructed for the companies and used to investigate association between corporate risk disclosures and cost of equity. Dominguez & Gamez<sup>53</sup>, performed manual content analysis on annual reports of non-financial companies listed on the Madrid Stock Exchange in the years 2007, 2008, and 2009. An index of corporate risk disclosure was created and a regression model was constructed to investigate association between corporate governance and firm characteristics and corporate risk disclosure by Spanish listed companies. Elshandidy et al.<sup>54</sup>, performed automated content analysis on annual reports of Germany, UK & US listed companies in order to investigate the variations in risk reporting in these

---

<sup>50</sup> John L. Campbell et al., *The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings*, 19 REV. ACCOUNT. STUD. 396—455 (2013).

<sup>51</sup> R. Klumpes, P. I Kumar, A. Dubey, *Investigating Risk Reporting Practices in the Global Insurance Industry —Abstract of the Edinburgh Discussion*, BR. ACTUAR. J. 1—10 (2014).

<sup>52</sup> David Cabedo Semper & José Miguel Tirado Beltrán, *Risk Disclosure and Cost of Equity: The Spanish Case*, 59 CONTADURÍA Y ADM. 105—135 (2014).

<sup>53</sup> Luis Rodríguez Domínguez & Lúgía Carolina Noguera Gámez, *Corporate Reporting on Risks: Evidence from Spanish Companies*, 17 REV. CONTAB. 116—129 (2014).

<sup>54</sup> Tamer Elshandidy, Ian Fraser & Khaled Hussainey, *What Drives Mandatory and Voluntary Risk Reporting Variations across Germany, UK and US?*, 47 BR. ACCOUNT. REV. 376—394 (2014).

three jurisdictions. The software used for the purpose was the QSR version 6. The sample consisted of 219 German, 339 UK, and 320 US companies listed on the Frankfurt (CDAX), FTSE, and NASDAQ respectively. The period of analysis was 2005-2010. Risk disclosures were measured by number of statements containing pre-defined keywords relating to risk. Regression with firm characteristics was performed to investigate association between mandatory and voluntary risk disclosures and the firm characteristics. Bao & Dutta<sup>55</sup>, developed a variation of the Latent Dirichlet allocation topic model to simultaneously discover and quantify risk types from firm risk disclosures. The algorithm developed was applied to all section 1A of all 10-K filings between the years 2006-2010. The sample consisted of 1,924 firms. Risk disclosure sentences were classified along 30 topics and counted. Regression was performed with price movements and stock volatility to investigate the effect of corporate risk disclosures on investors' risk perceptions. Moumen et al.<sup>56</sup>, performed manual content analysis of annual reports of companies listed in nine MENA (Middle East & North Africa) countries. The sample consisted of non-financial companies listed in nine MENA countries between the years 2007 and 2009 selected on the basis of certain pre-defined criteria. An index for voluntary risk disclosures was created. Regression was performed with stock returns, change in earnings, and growth rate of book value to investigate the value relevance of voluntary risk disclosures for investors for the purpose of prediction of future earnings. Elshandidy & Neri<sup>57</sup>, employed automated text analysis using the software package QSR (6) on annual reports of 290 British and 88 Italian non-financial companies between the period of June 2005 and June 2010. Aggregated risk disclosure scores were calculated by counting frequencies of sentences based upon a previously constructed word list for the purpose. Mandatory and voluntary risk disclosure scores were further separated from the aggregated risk disclosure scores by analysing risk regulation in both countries. Regression was performed with corporate governance characteristics and market liquidity to investigate the impact of corporate governance characteristics on voluntary and mandatory corporate risk disclosure practices and, the impact of these practices on market

---

<sup>55</sup> Yang Bao & Anindya Datta, *Simultaneously Discovering and Quantifying Risk Types from Textual Risk Disclosures*, 60 *MANAGE. SCI.* 1371—1391 (2014).

<sup>56</sup> Néjia Moumen, Hakim Ben Othman & Khaled Hussainey, *The Value Relevance of Risk Disclosure in Annual Reports: Evidence from MENA Emerging Markets*, 34 *RES. INT. BUS. FINANC.* 177—204 (2015).

<sup>57</sup> Tamer Elshandidy & Lorenzo Neri, *Corporate Governance, Risk Disclosure Practices, and Market Liquidity: Comparative Evidence from the UK and Italy*, 23 *CORP. GOV. AN INT. REV.* 331—356 (2015).

liquidity. Abdallah et al.<sup>58</sup>, performed automated content analysis using the NUD\*IST6 software on annual reports for the year 2008 of 424 companies listed in the Gulf Co-operation Council (GCC) countries. The sample comprised of both the financial as well as non-financial firms. An index for the measurement of corporate risk disclosure was created by adapting the approach of Hassan<sup>59</sup>. Regression with firm characteristics was performed to investigate their relationship with corporate risk disclosures. Madrigal et al.<sup>60</sup>, performed manual content analysis on the corporate governance reports of companies quoted on the IBEX-35 index for the year 2009. A risk disclosure index was constructed and regression performed with firm characteristics to investigate the determinants of corporate risk disclosure in large Spanish companies. Buckby et al.<sup>61</sup>, performed content analysis on the annual reports of top 300 ASX listed companies by market capitalisation for the year 2010. A risk management disclosure score was generated based on the requirements for risk management disclosure as per the ASX corporate governance principles and recommendations (CGPR). Regression with corporate governance and board characteristics was performed to investigate the association between corporate risk management disclosures and corporate governance characteristics for Australian listed companies. Al-Hadi et al.<sup>62</sup>, analysed the annual reports of financial companies from the banking, financial services, insurance and investment sectors listed in the GCC member countries between the years 2007-2011 to investigate the relationship between market risk disclosures and the characteristics of firm risk committees. A market risk disclosure index was created based on previous studies, regulatory requirements, and guidelines of professional bodies. Ordinary Least Squares regression was performed to investigate the association between market risk disclosures, risk committee characteristics, and firm characteristics. Al-Hadi et al.<sup>63</sup>, analysed annual reports of

---

<sup>58</sup> Abed Al-Nasser Abdallah, Mostafa Kamal Hassan & Patrick L. McClelland, *Islamic Financial Institutions, Corporate Governance, and Corporate Risk Disclosure in Gulf Cooperation Council Countries*, 31 J. MULTINATL. FINANC. MANAG. 63—82 (2015).

<sup>59</sup> Mostafa Kamal Hassan, *UAE Corporations-Specific Characteristics and Level of Risk Disclosure*, 24 MANAG. AUDIT. J. 668—687 (2009).

<sup>60</sup> Mónica Hernández Madrigal, Beatriz Aibar Guzmán & Cristina Aibar Guzmán, *Determinants of Corporate Risk Disclosure in Large Spanish Companies: A Snapshot*, 60 CONTADURÍA Y ADM. 757—775 (2015).

<sup>61</sup> Sherrera Buckby, Gerry Gallery & Jiacheng Ma, *An Analysis of Risk Management Disclosures: Australian Evidence*, 30 MANAG. AUDIT. J. 812—869 (2015).

<sup>62</sup> Ahmed Al-Hadi, Mostafa Monzur Hasan & Ahsan Habib, *Risk Committee, Firm Life Cycle, and Market Risk Disclosures*, CORP. GOV. AN INT. REV. N/A—N/A (2015).

<sup>63</sup> Ahmed Al-Hadi, Grantley Taylor & Mahmud Hossain, *Disaggregation, Auditor Conservatism and Implied Cost of Equity Capital: An International Evidence from the GCC*, 29 J. MULTINATL. FINANC. MANAG. 66—98 (2015).

financial sector companies listed in the GCC companies between the years 2007-2011 for market risk disclosures. Relationship between disaggregated discretionary market risk disclosures, auditor conservatism, and implied cost of equity capital was investigated by performing regression. Disclosure index for market risk disclosures was constructed based upon previous studies and IFRS requirements.

**Table 1 Summary of methodologies employed in risk disclosure studies.**

<i>S. No.</i>	<i>Authors</i>	<i>Year</i>	<i>Country/Region from which sample was derived</i>	<i>Type of Content Analysis used</i>	<i>Risk Disclosure Index developed</i>
1	<i>Meier et al.</i>	1995	<i>United States</i>	<i>Manual</i>	<i>No</i>
2	<i>Linsmeier et al.</i>	2002	<i>United States</i>	<i>None</i>	<i>No</i>
3	<i>Solomon et al.</i>	2000	<i>United Kingdom</i>	<i>None (Questionnaire survey)</i>	<i>No</i>
4	<i>Beretta &amp; Bozzolan</i>	2004	<i>Italy</i>	<i>Manual</i>	<i>Yes</i>
5	<i>Lajili &amp; Zehgal</i>	2005	<i>Canada</i>	<i>Manual</i>	<i>No</i>
6	<i>Linsley &amp; Shrives</i>	2005	<i>UK</i>	<i>Manual</i>	<i>No</i>
7	<i>Linsley &amp; Shrives</i>	2006	<i>UK</i>	<i>Manual</i>	<i>No</i>
8	<i>Combes-Thu��lin et al.</i>	2006	<i>France</i>	<i>Manual</i>	<i>No</i>
9	<i>Abraham &amp; Cox</i>	2007	<i>UK</i>	<i>Manual</i>	<i>No</i>
10	<i>Linsley &amp; Lawrence</i>	2007	<i>UK</i>	<i>Manual</i>	<i>No</i>
11	<i>Deumes</i>	2008	<i>Netherlands</i>	<i>Manual</i>	<i>No</i>
12	<i>Amran et al.</i>	2009	<i>Malaysia</i>	<i>Manual</i>	<i>No</i>
13	<i>Hassan</i>	2009	<i>UAE</i>	<i>Manual</i>	<i>Yes</i>
14	<i>Lajili</i>	2009	<i>Canada</i>	<i>Manual</i>	<i>No</i>
15	<i>Oliveira, Rodrigues, &amp; Craig</i>	2011	<i>Portugal</i>	<i>Manual</i>	<i>No</i>
16	<i>Oliveira, Rodrigues, &amp; Craig</i>	2011	<i>Portugal</i>	<i>Manual</i>	<i>No</i>
17	<i>H��ring &amp; Gr��ndl</i>	2011	<i>European Union</i>	<i>Manual</i>	<i>Yes</i>
18	<i>Lajili et al.</i>	2012	<i>United States</i>	<i>Manual</i>	<i>No</i>
19	<i>Elzahar &amp; Hussainey</i>	2012	<i>United Kingdom</i>	<i>Manual</i>	<i>No</i>
20	<i>Miihkinen</i>	2012	<i>Finland</i>	<i>Manual</i>	<i>No</i>
21	<i>Miihkinen</i>	2013	<i>Finland</i>	<i>Manual</i>	<i>No</i>
22	<i>Elshandidy et al.</i>	2013	<i>United Kingdom</i>	<i>Automated using software</i>	<i>No</i>
23	<i>Barakat &amp; Hussainey</i>	2013	<i>European Union</i>	<i>Manual</i>	<i>Yes</i>
24	<i>Mokhtar &amp; Mellett</i>	2013	<i>Egypt</i>	<i>Manual</i>	<i>Yes</i>
25	<i>Ntim et al.</i>	2013	<i>South Africa</i>	<i>Manual</i>	<i>Yes</i>
26	<i>Abraham &amp; Shrives</i>	2013	<i>United Kingdom</i>	<i>Manual</i>	<i>No</i>
27	<i>Kravet &amp; Muslu</i>	2013	<i>United States</i>	<i>Automated using customized code</i>	<i>No</i>
28	<i>Campbell et al</i>	2013	<i>United States</i>	<i>Automated using customized code</i>	<i>No</i>

(table 1 continued)

<i>S. No.</i>	<i>Authors</i>	<i>Year</i>	<i>Country/Region from which sample was derived</i>	<i>Type of Content Analysis used</i>	<i>Risk Disclosure Index developed</i>
29	<i>Klumpes et al.</i>	2014	<i>Worldwide</i>	<i>Manual</i>	<i>No</i>
30	<i>Semper &amp; Beltrán</i>	2014	<i>Spain</i>	<i>Manual</i>	<i>Yes</i>
31	<i>Domínguez &amp; Gámez</i>	2014	<i>Spain</i>	<i>Manual</i>	<i>Yes</i>
32	<i>Elshandidy et al.</i>	2014	<i>Germany, US &amp; UK</i>	<i>Automated using software</i>	<i>No</i>
33	<i>Bao &amp; Datta</i>	2014	<i>United States</i>	<i>Automated using customized code</i>	<i>No</i>
34	<i>Moumen et al.</i>	2015	<i>MENA nations</i>	<i>Manual</i>	<i>Yes</i>
35	<i>Elshandidy &amp; Neri</i>	2015	<i>UK &amp; Italy</i>	<i>Automated using software</i>	<i>No</i>
36	<i>Abdallah et al.</i>	2015	<i>GCC nations</i>	<i>Automated using software</i>	<i>Yes</i>
37	<i>Madrigal et al.</i>	2015	<i>Spain</i>	<i>Manual</i>	<i>Yes</i>
38	<i>Buckby et al.</i>	2015	<i>Australia</i>	<i>Manual</i>	<i>No</i>
39	<i>Al-Hadi et al.</i>	2015	<i>GCC nations</i>	<i>Manual</i>	<i>Yes</i>
40	<i>Al-Hadi et al.</i>	2015	<i>GCC nations</i>	<i>Manual</i>	<i>Yes</i>

Content analysis is the standard technique employed for analysis of annual reports in all studies. The trend of automated content analysis i.e. using text analysis software or customized computer program to analyse text data in annual reports has been rising in the last two years. United Kingdom, United States and the European Union nations are the most studied jurisdictions for corporate risk disclosures. Regression analysis is the standard method employed for investigating association between risk disclosures and various firm, governance and market characteristics. Formulating of index as a measure of corporate risk disclosures in corporate annual reports has been employed in a significant number of studies. Counting sentence frequency and developing a score as a measure of corporate risk disclosure is the most prevalent method.

#### V. ASSOCIATION OF CORPORATE RISK DISCLOSURES WITH FIRM, GOVERNANCE AND MARKET CHARACTERISTICS

Beretta & Bozzolan<sup>64</sup> report significant positive association between quantity of corporate risk disclosure and firm size while no significant association between type of industry and amount of risk disclosure. No significant association was found between risk disclosure quality and either firm size or industry type. Majority of risks disclosed by companies were

<sup>64</sup> Sergio Beretta & Saverio Bozzolan, *A Framework for the Analysis of Firm Risk Communication*, 39 INT. J. ACCOUNT. 265—288 (2004).

found to have past and present rather than future outlook orientation. The analysed firms that disclosed some information about future strategies to deal with risks avoided any discussion on the possible impact of such measures. Depth of disclosures was found to have a significant association with size and industry type with chemical and utility firms having more in-depth risk disclosures than others. Linsley & Shrides<sup>65</sup>, observe a significant positive association between firm size and corporate risk disclosure in the UK. No significant association was found between firm risk levels and risk disclosure. Firms were found to disclose more strategic and operational risks leading to the suggestion that directors are more comfortable discussing exogenous risks for which they can attribute negative impact to factors outside of their control. Possible explanation for reluctance to discuss endogenous risks was attributed to the proprietary costs theory according to which the directors may be reluctant to disclose information owing to concerns about greater cost of such disclosures in the form of competitive advantage to other competing firms. The reluctance of directors to voluntarily disclose information that other firms are unwilling to disclose can also be explained by the proprietary costs theory. Linsley & Shrides<sup>66</sup>, observe positive association between lower levels of environmental risk and corporate risk disclosures leading to the conclusion that UK firms having lower levels of environmental risks disclose greater risk information than those with higher levels of environmental risks. Irrespective of firm characteristics, UK firms were found in general to report more non-monetary risks and good risks than monetary risks and bad risks, good risks being those that can be attributed to factors outside the directors' control and which do not lead to any loss of reputation, spoiling of relationship or litigation with investors or stakeholders. Abraham & Cox<sup>67</sup>, found the association between US dual listing and overall as well as business risk disclosures to be both positive as well as statistically significant. This was attributed to agency and transactions costs perspectives. Ownership by in-house managed corporate pension funds was found to have negative association with overall as well as business risk disclosures and explained by the theory that long-term institutions derive benefit from non-public non-material information. Ownership by life insurance firms was positively associated with overall risk disclosure. Number of executive and

---

<sup>65</sup> Philip M. Linsley & Philip J. Shrides, *Examining Risk Reporting in UK Public Companies*, 6 J. RISK FINANC. 292—305 (2005).

<sup>66</sup> Philip M. Linsley & Philip J. Shrides, *Risk Reporting: A Study of Risk Disclosures in the Annual Reports of UK Companies*, 38 BR. ACCOUNT. REV. 387—404 (2006).

<sup>67</sup> Santhosh Abraham & Paul Cox, *Analysing the Determinants of Narrative Risk Information in UK FTSE 100 Annual Reports*, 39 BR. ACCOUNT. REV. 227—248 (2007).

independent non-executive directors was found to have a positive and significant association with risk disclosure. Deumes<sup>68</sup>, observed positive association between risk disclosures and firm size. Positive association was also observed with future systematic risk (beta), past total return risk and high-risk industry sector. Positive association was observed between risk disclosures and declines in stock prices by one or five Euro within thirty months of issuance of prospectus by a company leading to the conclusion that prospectuses of Dutch companies provide sufficient indication of large negative price outcomes in the future. Risk disclosure was found to have a positive association with the issuance of initial public offer. Amran et al.<sup>69</sup>, found positive association between extent of risk disclosures and firm size in Malaysia. Association between leverage (used as a proxy for risk) and extent of risk disclosures was found to be positive but not statistically significant. Firms in the infrastructure and technology sector had a positive and significant association with level of risk disclosure. Hassan<sup>70</sup>, observed positive but insignificant association between firm size and corporate risk disclosure in the UAE. Debt-equity ratio, used as a proxy for risk, and the industry type, were observed to have a positive and significant association with risk disclosure. Level of reserves was found to have a negative and insignificant association with corporate risk disclosures. Horing & Grundl<sup>71</sup>, observed positive and statistically significant relation between risk disclosures and firm size of European insurance companies. Association between risk disclosures and insurance firm risk, ownership dispersion, US cross-listing was found to be positive and statistically significant. Insurance companies active in banking and having more presence in non-life insurance business had positive and statistically significant association with risk disclosures. Association between risk disclosures and profitability was found to be negative and statistically significant for European insurance companies. Oliveira et al.<sup>72</sup>, observed positive and statistically significant association between the volume of risk disclosure and firm size, auditor type (big 4), leverage and environmentally sensitive industry sector in

---

<sup>68</sup> R. Deumes, *Corporate Risk Reporting: A Content Analysis of Narrative Risk Disclosures in Prospectuses*, 45 J. BUS. COMMUN. 120—157 (2008).

<sup>69</sup> BCHM Amran, Azlan Bin & AMR Hassan, *Risk Reporting: An Exploratory Study on Risk Management Disclosure in Malaysian Annual Reports*, 24 MANAG. AUDIT. J. 39—57 (2009).

<sup>70</sup> Mostafa Kamal Hassan, *UAE Corporations-Specific Characteristics and Level of Risk Disclosure*, 24 MANAG. AUDIT. J. 668—687 (2009).

<sup>71</sup> D. Horing & H. Gründl, *Investigating Risk Disclosure Practices in the European Insurance Industry*, 36 GENEVA PAP. RISK 380—413 (2011).

<sup>72</sup> Jonas Oliveira, Lúcia Lima Rodrigues & Russell Craig, *Risk-Related Disclosures by Non-finance Companies: Portuguese Practices and Disclosure Characteristics*, 26 MANAG. AUDIT. J. 817—839 (2011).

Portuguese non-finance companies. Listed companies were found to disclose more risks and the association of listing status with volume of risk disclosures was found to be positive. Number of independent directors had a positive and statistically significant association with volume of risk disclosures. Ownership structure and dispersion was not found to have association with volume of risk disclosures. Audit committee independence had positive but statistically insignificant association with volume of risk disclosures. Oliveira et al.<sup>73</sup>, found positive association between level of risk disclosure and firm size, listing status (listed on exchange), firm age, depositor confidence (ratio of deposits to assets as a proxy), and risk management ability (regulatory capital adequacy ratio as proxy) in Portuguese banks. Level of risk disclosure had a negative association with Mutual Agriculture Credit Banks. No association was found between level of risk disclosure and ownership structure. Lajili et al.<sup>74</sup>, observed negative association between business risk disclosures and firm size, market to book ratio (proxy for firm risk), return on equity (proxy for financial performance), board independence, and board size for US manufacturing companies. Negative association between business risk disclosures and M/B ratio, board independence, and board size was observed to be statistically significant. Beta (proxy for systemic risk), gross profit margin (proxy for firm profitability), and leverage (proxy for financial risk), were found to have positive association with level of business risk disclosures. Firm size, leverage, M/B ratio, and return on assets (proxy for firm performance) were observed to have a positive relationship with extent of operational risk disclosures. Board independence, board size, gross profit margin, and beta were observed to have negative association with operational risk disclosures. Total business and operational risk disclosures were observed to have a positive association with firm size, leverage, profitability, and return on assets, while a negative association with beta, M/B ratio, board size and board independence. Elzahar & Hussainey<sup>75</sup>, observed positive and statistically significant association between level of risk disclosure in interim reports of UK companies, and firm size and the company being in manufacturing rather than the service sector. Positive association was also observed between risk disclosure level and firm profitability, liquidity,

---

<sup>73</sup> Jonas Oliveira, Lúcia Lima Rodrigues & Russell Craig, *Voluntary Risk Reporting to Enhance Institutional and Organizational Legitimacy: Evidence from Portuguese Banks*, 19 J. FINANC. REGUL. COMPLIANCE 271—289 (2011).

<sup>74</sup> Daniel Lajili & Kaouthar Dobler & Michael Zehgal, *An Empirical Investigation of Business and Operational Risk Disclosures*, 3 INT. J. MANAG. BUS. 53—71 (2012).

<sup>75</sup> Hany Elzahar & Khaled Hussainey, *Determinants of Narrative Risk Disclosures in UK Interim Reports*, 13 J. RISK FINANC. 133—147 (2012).



institutional ownership, role duality (if CEO is the chairperson also), board size and audit committee size. Negative association was observed between risk disclosure level, firm gearing, US cross listing, and number of non-executive directors in the board. Barakat & Hussainey<sup>76</sup>, observed positive association between quality of operational risk disclosures by European banks and the proportion of outside directors in the board. Frequency of audit committee meetings was found to have a positive association with operational risk disclosures. Mokhtar & Mellett<sup>77</sup>, observed a significant positive association between risk disclosure and board size in Egyptian companies. Significant negative association was observed between ownership concentration, role duality and mandatory risk reporting. Significant negative association was observed between auditor type (international audit firm or not), and voluntary risk reporting. Positive but non-significant association was observed between voluntary risk disclosure and role duality. Firm size was observed to have negative but non-significant association with mandatory and voluntary risk disclosure. Liquidity was found to have nonsignificant and positive association with mandatory and nonsignificant and negative association with voluntary risk disclosures. Barriers to entry had significant positive association with voluntary risk disclosures. Ntim et al.<sup>78</sup>, observed significant negative association between corporate risk disclosure and percentage of block ownership, as well as percentage of institutional ownership in South African companies. Government ownership, board diversity, board size, and number of independent non-executive directors were found to have a positive association with corporate risk disclosures. Dual board leadership was found to have a positive but statistically insignificant association with risk disclosures. Kravet & Muslu<sup>79</sup>, observed positive and significant association between changes in risk disclosures by US companies and changes in daily stock return volatility, changes in relative volatility of negative daily returns, filing volume, changes in trading volume, and changes in the volatility of forecast revisions leading to the conclusion that risk disclosures by US firms are not boilerplate and serve as important source of information to investors.

---

<sup>76</sup> Ahmed Barakat & Khaled Hussainey, *Bank Governance, Regulation, Supervision, and Risk Reporting: Evidence from Operational Risk Disclosures in European Banks*, 30 INT. REV. FINANC. ANAL. 254—273 (2013).

<sup>77</sup> Ekramy Mokhtar & Howard Mellett, *Competition, Corporate Governance, Ownership Structure and Risk Reporting*, 28 MANAG. AUDIT. J. 838—865 (2013).

<sup>78</sup> Collins G. Ntim, Sarah Lindop & Dennis A. Thomas, *Corporate Governance and Risk Reporting in South Africa: A Study of Corporate Risk Disclosures in the Pre- and Post-2007/2008 Global Financial Crisis Periods*, 30 INT. REV. FINANC. ANAL. 363—383 (2013).

<sup>79</sup> Todd Kravet & Volkan Muslu, *Textual Risk Disclosures and Investors' Risk Perceptions*, 18 REV. ACCOUNT. STUD. 1088—1122 (2013).

Campbell et al.<sup>80</sup>, observed that risk factor disclosures by US firms in form 10-K are positively associated with pre-disclosure measures for firm risk. Risk factor disclosures were found to have positive association with post-disclosure market based measures of risk. Negative association was found between risk factor disclosures and post-disclosure information asymmetry. Dominguez & Gamez<sup>81</sup>, observed positive association between mandatory disclosure of risks and board size in Spanish companies. Firm size was found to have significant negative association with voluntary risk disclosures. Semper & Beltran<sup>82</sup>, observed significant positive association between financial risk disclosure and cost of equity. Elshandidy et al.<sup>83</sup>, observed a positive and significant association between level of mandatory risk reporting and firm size, systematic risk, firm growth, length of annual reports, and variations with time in US, UK & German firms. Significant negative association was observed between level of mandatory risk reporting and profitability, equality of power distribution, and type of legal systems (more in civil law countries i.e. Germany). Significant and positive association was observed between level of voluntary risk disclosures and firm size, systematic risk, annual report length, legal systems, equitable distribution of power, and variations with time. Significant and negative association was observed between level of voluntary risk disclosures and profitability. For individual jurisdictions, in UK, significant and positive association was observed between mandatory risk disclosure levels and firm size, dividends and the length of annual reports while significant negative association was observed with variations over time. For voluntary risk disclosures, in the UK, significant positive association was observed with systematic risk levels, firm size, annual report length, and disclosure variations over time. In the US, for mandatory risk disclosures, significant positive association was observed with total risk, liquidity risk, firm growth, firm size, annual report length, and disclosure variations over time while significant negative association was observed with firm profitability. For voluntary risk disclosures, in the US, significant positive association was observed with annual report length and significant negative association was observed with annual report length. In Germany, mandatory risk disclosure

---

<sup>80</sup> John L. Campbell et al., *The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings*, 19 REV. ACCOUNT. STUD. 396—455 (2013).

<sup>81</sup> Luis Rodríguez Domínguez & Ligia Carolina Noguera Gámez, *Corporate Reporting on Risks: Evidence from Spanish Companies*, 17 REV. CONTAB. 116—129 (2014).

<sup>82</sup> David Cabedo Semper & José Miguel Tirado Beltrán, *Risk Disclosure and Cost of Equity: The Spanish Case*, 59 CONTADURÍA Y ADM. 105—135 (2014).

<sup>83</sup> Tamer Elshandidy, Ian Fraser & Khaled Hussainey, *What Drives Mandatory and Voluntary Risk Reporting Variations across Germany, UK and US?*, 47 BR. ACCOUNT. REV. 376—394 (2014).

levels were found to have significant positive association with systematic risk levels, firm size, and annual report length while significant negative association with firm profitability and disclosure variation over time. Voluntary risk disclosure levels by companies in Germany were found to have significant positive association with systematic risk levels, financing risk levels, firm size, disclosure variation over time, and annual report length while significant negative association with total risk levels and profitability. Elshandidy & Neri<sup>84</sup>, observed significant positive association between voluntary risk disclosure and board size, number of non-executive directors on the board, and firm size while a significant negative association with dividend yield for UK companies. Significant negative association was observed between mandatory risk reporting and audit quality, firm profitability, firm growth and firm risk for UK companies. For Italy, significant positive association of mandatory risk disclosures was observed with board size, non-executive directors, role duality, firm size and firm risk while significant negative association with audit quality and firm liquidity. Voluntary risk disclosure levels of Italian companies were found to have significant negative association with firm liquidity. In strongly governed UK companies (companies with higher than median independent directors on the board), significant positive association of voluntary risk disclosure was found with firm size and number of non-executive directors. Significant negative association between voluntary risk disclosure and dividend yield and firm profitability was observed in strongly governed UK firms. Mandatory risk disclosure levels in strongly governed UK firms were observed to have significant negative association with firm growth and firm profitability. Strongly governed Italian firms were observed to have significant positive association of mandatory risk disclosure levels with board size and role duality and significant negative association with audit quality and firm liquidity. Voluntary risk disclosure levels in strongly governed Italian firms were observed to have significant negative association with firm liquidity. Mandatory risk disclosure levels in weakly governed UK firms (companies with lower than median independent directors on the board) were observed to have significant negative association with firm risk and firm growth. Voluntary risk disclosure levels in weakly governed UK firms were found to have significant positive association with firm size and significant negative association with audit quality. In weakly governed Italian firms, mandatory disclosure levels were observed to have significant positive association with firm size. Madrigal et

---

<sup>84</sup> Tamer Elshandidy & Lorenzo Neri, *Corporate Governance, Risk Disclosure Practices, and Market Liquidity: Comparative Evidence from the UK and Italy*, 23 CORP. GOV. INT. REV. 331—356 (2015).

al.<sup>85</sup>, observed significant positive association of level of risk disclosure in Spanish companies with firm size, firm risk level and nature of industry. Al-Hadi et al.<sup>86</sup>, observed significant and positive association of level of market risk disclosures with existence of dedicated risk committees in companies listed in the GCC (Gulf co-operation council) countries and the presence of directors representing the government on the board. Significant negative association was observed between level of market risk disclosures and presence of family directors on the board. Qualifications of members of the risk committee and size of the risk committee were observed to have positive association with market risk disclosures. Abdallah et al.<sup>87</sup>, observed significant positive association of level of corporate risk disclosure with quality of corporate governance and significant negative association with following of Islamic principles (Islamic financial institutions) in companies of the GCC countries. Buckby et al.<sup>88</sup>, observed significant positive association of risk management disclosures with existence of stand-alone risk committee, existence of technology/information technology committee, and expertise of audit committee measured by presence of specialized degree holders in the top 300 companies by market capitalization listed on the ASX.

#### VI. PERIODIC DISCLOSURE OF CORPORATE RISK: A LEGAL PERSPECTIVE

Duffy<sup>89</sup>, links emphasis on risk disclosure and risk management in contemporary corporate governance to the evolution of quality assurance and product standards in the industry in the 1970s and 80s as well as the duty of care principle evolved in the landmark *Donoghue Vs Stevenson* case (1932 AC 562). The evolution of risk management principles in Australian corporate landscape through amendments in Australian company law, enactment of listing rules as well as principles of good corporate governance by ASX & ASIC respectively are discussed and their link with increased

---

<sup>85</sup> Mónica Hernández Madrigal, Beatriz Aibar Guzmán & Cristina Aibar Guzmán, *Determinants of Corporate Risk Disclosure in Large Spanish Companies: A Snapshot*, 60 *CONTADURÍA Y ADM.* 757—775 (2015).

<sup>86</sup> Ahmed Al-Hadi, Mostafa Monzur Hasan & Ahsan Habib, *Risk Committee, Firm Life Cycle, and Market Risk Disclosures*, *CORP. GOV. INT. REV.* N/A—N/A (2015).

<sup>87</sup> Abed Al-Nasser Abdallah, Mostafa Kamal Hassan & Patrick L. McClelland, *Islamic Financial Institutions, Corporate Governance, and Corporate Risk Disclosure in Gulf Cooperation Council Countries*, 31 *J. MULTINATL. FINANC. MANAG.* 63—82 (2015).

<sup>88</sup> Sherrena Buckby, Gerry Gallery & Jiacheng Ma, *An Analysis of Risk Management Disclosures: Australian Evidence*, 30 *MANAG. AUDIT. J.* 812—869 (2015).

<sup>89</sup> Michael Duffy, *Towards Better Disclosure of Corporate Risk: A Look at Risk Disclosure in Periodic Reporting*, 35 *ADELAIDE LAW REV.* 385—408 (2014).

corporate risk disclosure is established. It is noted in the final analysis that the trend of Australian regulation is moving towards greater periodic disclosure of corporate risks.

## VII. GREY LITERATURE ON CORPORATE RISK DISCLOSURE

### A. *Professional Body Reports & Documents*

The ICAEW<sup>90</sup>, in 2002, reiterated its position taken in 1997 and 1999 for better disclosure of risks by companies in the UK. The institute recommends that company annual reports should contain information about risks being faced by a company in the broadest sense and also the actions and measures being taken to manage them. The institute opines that the level of disclosure by companies on their risks and risk management strategies should be of “prospectus standards” and that the misgivings over commercial sensitivity and directors’ legal liability are unfounded. No changes in existing regulatory framework were considered to be necessary by the institute for the purpose of improved company risk disclosures. CICA<sup>91</sup>, in 2008, issued a guidance document for preparers of annual reports. The document provides guidance for preparing better MD&A section in the annual reports for better risk disclosures. The guidance document gives a ten-question checklist for members of the board and board committees for self-assessment of the adequacy and relevance of risk disclosures made by their company. The ICAEW<sup>92</sup>, in 2011, expressed the need for better risk reporting as increasingly relevant in the light of the financial crisis of 2008-2009. The report reviews the extant research on corporate risk disclosure and summarizes the evidence. Calls for better risk reporting by companies in the two decades preceding the publication of the report are summarized. Legal requirements for risk disclosures in various developed nation jurisdictions are reviewed and reported in brief. The report enumerates seven principles for better corporate risk reporting as general principles for all industry sectors and jurisdictions. Abraham et al.<sup>93</sup>, on behalf of the Institute of Chartered Accountants of Scotland (ICAS), investigated the usefulness of risk disclosures by listed companies. Interviews of analysts and annual report preparers were conducted and

---

<sup>90</sup> Financial Committee ICAEW, *No Surprises: The Case for Better Risk Reporting*, 10 BALANC. SHEET 18—21 (2002).

<sup>91</sup> CICA, *Building a Better MD&A: Risk Disclosure* (2008).

<sup>92</sup> ICAEW, *Reporting Business Risks: Meeting Expectations* (2011).

<sup>93</sup> Santhosh Abraham, Claire Marston & Phil Darby, *Risk Reporting: Clarity, Relevance and Location* (2012).

content analysis of annual reports of UK listed companies performed for the purpose of this study report. Analysts considered face-to-face meetings with management to be more important than annual reports for the purpose of risk analysis of a company. Within the annual report, the cash flow statement was considered by analysts to be the most important out of 26 sections for the purpose of risk analysis. Annual report was considered as important for the purpose of risk analysis by private investors. Preparers consider the annual report to be an important source of information about firm risk and also show understanding that certain disclosures like the ones on financial instruments are difficult to understand for stakeholders and that they can issue clarifications if the analysts demand them. The report recommends that regulators should not insist on more disclosures but issue some guidance notes on best practices. The report identifies five areas for this purpose viz. risk factor statement, internal control reporting, forward-looking information, financial instruments and pension risk disclosure, and the IASB and management commentary. The AIRMIC<sup>94</sup>, undertook a study of risk reporting in FTSE 100 and FTSE 250 across eight different sectors. The risk reporting by companies was evaluated in five areas viz. risk agenda, risk assessment, risk response, risk communication, and risk governance. Variations across industry sectors were observed which is attributed to variations in the nature and practice of business in different sectors. The report concludes that risk disclosure by companies creates confidence in shareholders about the company and the leadership of its board.

#### *B. Risk Disclosures through Surveys: A View from India*

Since the year 2012, Pinkerton India and the Federation of Indian Chambers of Commerce & Industry (FICCI) have been conducting surveys regarding risk perceptions with senior management and business leaders in India and releasing them in the form of an annual India Risk Survey report that lists the key risks perceived by the Indian industry for a particular year. The surveyors list some business risks as well as ask the respondents to include any type of risk that they feel are relevant and to rate them in order of importance. In the India Risk Survey 2012<sup>95</sup>, respondents comprising of senior management of firms based in India and outside India were surveyed. Terrorism and information technology risk were perceived as major risks by respondents in the IT/ITES, Financial Services, Government/PSU, and

---

<sup>94</sup> AIRMIC, Risk Reporting: Review of Risk Reporting by Selected FTSE 350 Companies and Commentary on the Relevance and Benefits of Detailed Risk Disclosure (2013).

<sup>95</sup> FICCI Pinkerton, India Risk Survey 2012 (2012).

Telecommunications sectors. Respondents in the manufacturing and infrastructure sector rated fire and natural hazards as the major risks while fire was also rated as the most important risk by the telecommunications sector. In the Northern & Eastern regions, terrorism was rated as the major risk while in the Western and Southern regions, information technology and cybersecurity was rated as the major risk. Fire was perceived as major risk in India by firms outside India. In the India Risk Survey 2013<sup>96</sup>, “strikes, closure & unrest” was rated as the overall major risk across sectors and regions in India. In the Northern & Southern regions also “strikes, closures & unrest” was rated as the highest risk while in the Western and Eastern regions, political & governance instability was rated as the highest business risk. Political and governance instability was rated as the highest business risks in India by firms from outside India. IT/ITES, Financial Services and Telecom sectors rated “information & cyber security” to be the chief risk while manufacturing and the security services sectors rated “strikes, closure and unrest” to be the highest risk. The hospitality industry sector rated natural hazards as the highest risk while the infrastructure sector rated “corruption, bribery & corporate frauds” as the highest risk. “Corruption, bribery & corporate frauds” was rated as the second highest risk by the manufacturing, government/PSU, and the financial services sector. In the India Risk Survey 2014<sup>97</sup>, the risks were classified along the broad categories of strategic, financial, and safety risks. Overall, “corruption, bribery & corporate frauds” was rated as the highest risk in India. Though only in the Western region was “corruption, bribery & corporate frauds” rated as the highest risk while in the Northern and the Southern regions, “political and governance instability” was rated as the highest risk and in the Eastern region, “terrorism & insurgency” was rated as the highest risk. Firms from outside India perceived “information and cyber insecurity” as the highest risk in India. “Corruption, bribery & corporate fraud” was rated as the top risk in the education and the infrastructure sectors while the security services sector rated “political and governance instability” as the top risk. The manufacturing sector rated “intellectual property theft”, the government/PSU sector rated “strikes, closure & unrest” and the IT/ITES as well as the financial services sectors rate “information & cyber insecurity” as the highest risks respectively. In the India Risk Survey 2015<sup>98</sup>, “corruption, bribery & corporate frauds” was again rated as the overall highest risk. In the Northern and Western regions of India, “corruption,

---

<sup>96</sup> FICCI Pinkerton, India Risk Survey 2013 (2013).

<sup>97</sup> FICCI Pinkerton, India Risk Survey 2014 (2014).

<sup>98</sup> FICCI Pinkerton, India Risk Survey 2015 (2015).

bribery & corporate frauds” was rated the highest risk, in the Southern region, “strikes, closures & unrest” was the rated the top risk and in the Eastern region, “terrorism & insurgency” was rated as the highest risk. Firms outside India rated “workplace violence & sexual harassment” as the highest risk. “Information & cyber insecurity” was rated as the highest risk in the IT/ITES and the security services industry, “terrorism & insurgency” by the education and the government/PSU sectors, “corruption, bribery & corporate frauds” was rated as the top risk by the financial service industry and the manufacturing sector rated “strikes, closures & unrest” as the highest risk.

#### VIII. GAPS AND SCOPE FOR FUTURE WORK

From the preceding review, it is clear that industry, policy makers and the academia have acknowledged the key role of disclosure of corporate risks in the overall scheme of corporate disclosures and corporate governance.

Tremendous scope exists for future work in the field of study of corporate risk disclosures. The broad categories of future work can be enumerated as below:

##### (1) Empirical

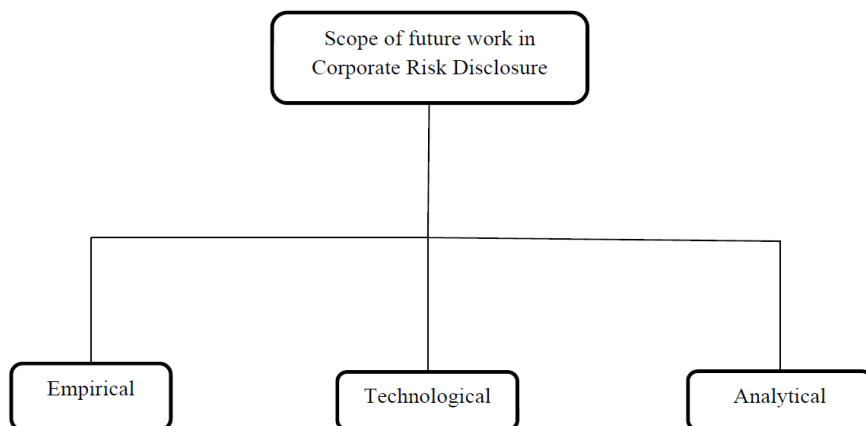
There exists scope for empirical work in the form of surveys of key managerial personnel as well as annual reports of companies for the purpose of study of corporate risk disclosures in different global jurisdictions. Studies on corporate risk disclosures have not been conducted for most of the world’s nations/jurisdictions. Studies on corporate risk disclosures in emerging important markets like India and China will help in greater understanding about risk disclosures and risk disclosure patterns. Surveys on risk disclosures in various jurisdictions will also help in the evolution of a globally acceptable standard of risk classification that has so far eluded the industry and academia.

##### (2) Technological

There is scope for development of text analysis and classification algorithms/software in order to facilitate faster analysis of textual and quantitative risk disclosures by companies in various documents. Automated text analysis is still in its early stage of application in the field of corporate risk disclosures and development of more tools in the form of algorithms and software will not only be of great application in this specific field but will also aid in the development of all other areas that require researchers to sift through large volume of textual/qualitative data in order to classify and



analyse it according to their requirements.



**Fig. 4 Scope for future work in corporate risk disclosure.**

### (3) Analytical

Scope exists for analysis of issues relating to corporate risk disclosure from the perspective of legal theory, game theory, and microeconomic theory apart from the economic theories of corporate governance that have been so far used to analyse and explain observations in studies so far. A reliable measure of risk disclosure quality has eluded researchers ever since it was attempted by Beretta & Bozzolan (2004) which remains a challenge.

## CONCLUSION

We have attempted to comprehensively review the existing academic and grey literature on corporate risk disclosure. The existing literature landscape points to the growing importance of the field of corporate risk disclosure especially after the 2008 financial crisis. Content analysis of documents is observed to be the primary method of empirical study of corporate risk disclosures. A trend of automation of the content analysis process is observed in the last five years either by the use of proprietary software packages or by development of customized computational algorithms for the purpose. This is a positive development and deserves future research. Definition of risk is found to converge on that given by Knight. Firm size is consistently found to have positive association with the extent of corporate risk disclosures across all jurisdictions and there is found to be a general agreement that greater corporate risk disclosures do lead to a

reduction in cost of capital for the firms. Studies of corporate risk disclosures are needed for the leading Asian and South American economically significant jurisdictions and this has to be one of the major thrust areas for future research in the field.

Ensuring timely and accurate disclosure of risks remains a challenge for policy makers and regulators. The debate between mandatory vs. voluntary or mixed approach towards corporate risk disclosure public and regulatory policy is inconclusive and requires further investigation. The choice between voluntary, mandatory or a mixed approach for this purpose needs to be taken with due regard to consequences of such disclosure to the firms as well as interest of stakeholders. Empirical academic literature indicates positive association between greater risk disclosures and board diversity, number of independent directors, diffused ownership, and board size across most of the jurisdictions surveyed. Therefore, the challenge for regulators and legislatures will be to ensure that companies implement these characteristics in their boards and at the same time with little impact on their status as a going concern or increasing their cost of doing business which can have a negative impact on the financial markets as well as the overall economy.

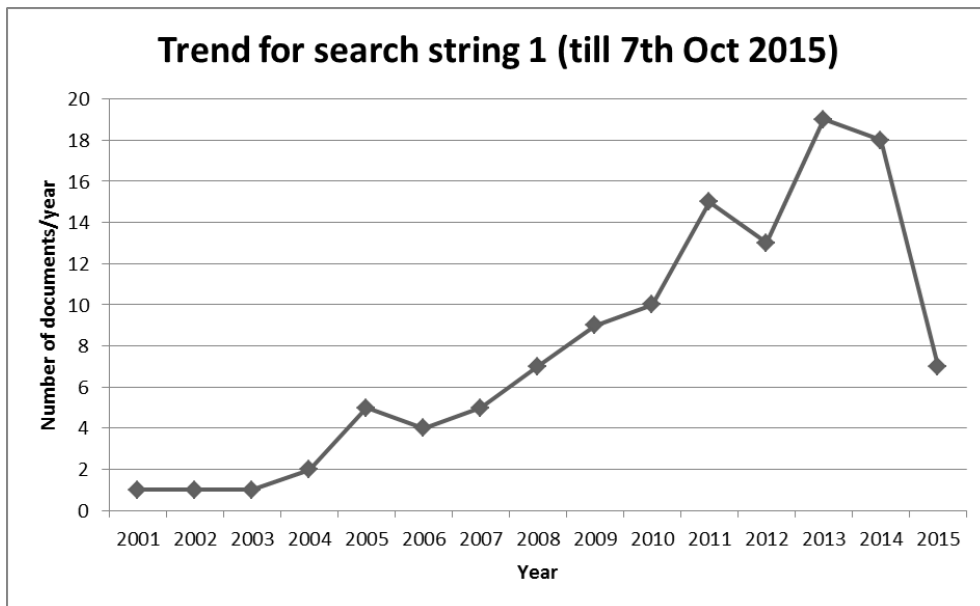
**Appendix 1**  
**Search Strings followed for Scopus Database**

**In Scopus****Search String 1**

- (1) Type 'corporate risk disclosure' in field 'Article Title, Abstract, Keywords'.
- (2) Refine by Article or Review, All Years to Present, Social Sciences. (264 documents).
- (3) Refine by Business, Accounting & Management and Economics, Econometrics & Finance. (229 documents).
- (4) Refine by keywords Corporate governance, Disclosure, Risk Management, Risk assessment, Content Analysis, Corporate disclosure, voluntary disclosure, information disclosure, financial reporting, risk, risk analysis, risk disclosure, risk reporting, annual reports, corporate reporting, information asymmetry. (118 documents).
- (5) English language (117 documents).

The search finally yielded 117 documents. The final search string is as follows.

TITLE-ABS-KEY (corporate risk disclosure) AND DOCTYPE (ar OR re) AND SUBJAREA (mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND LIMIT-TO (EXACTKEYWORD, "Corporate governance") OR LIMIT-TO (EXACTKEYWORD, "Disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk management") OR LIMIT-TO (EXACTKEYWORD, "Risk assessment") OR LIMIT-TO (EXACTKEYWORD, "Content analysis") OR LIMIT-TO (EXACTKEYWORD, "Corporate disclosure") OR LIMIT-TO (EXACTKEYWORD, "Voluntary disclosure") OR LIMIT-TO (EXACTKEYWORD, "Information disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk") OR LIMIT-TO (EXACTKEYWORD, "Financial reporting") OR LIMIT-TO (EXACTKEYWORD, "Risk analysis") OR LIMIT-TO (EXACTKEYWORD, "Risk disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk reporting") OR LIMIT-TO (EXACTKEYWORD, "Annual reports") OR LIMIT-TO (EXACTKEYWORD, "Corporate reporting") OR LIMIT-TO (EXACTKEYWORD, "Information asymmetry"))

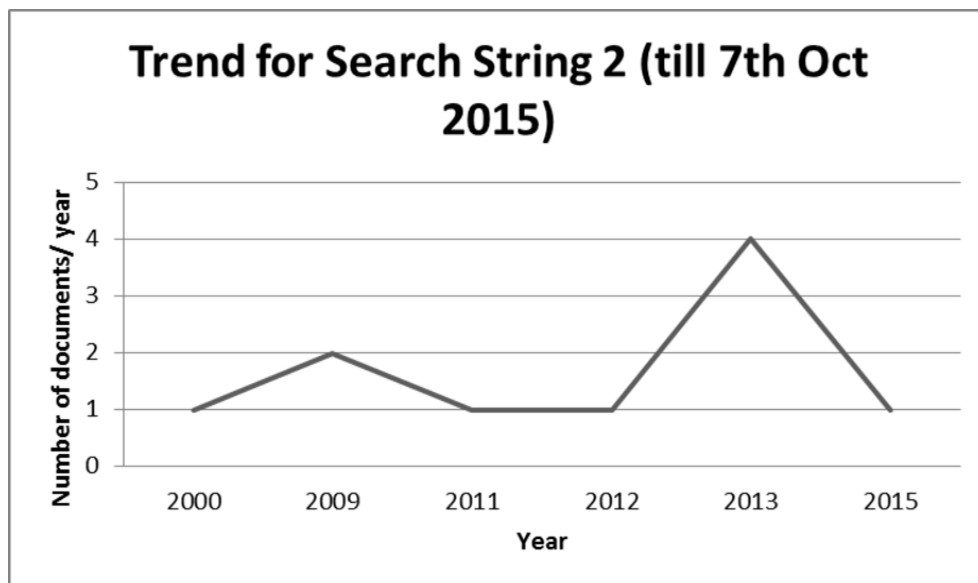


**Search String 2**

- (1) Type 'corporate risk disclosure' as a phrase in the field 'Article Title, Abstract, Keywords'.
- (2) Refine by Article or Review, All Years to Present, Social Sciences. (10 documents).
- (3) Refine by Business, Accounting & Management and Economics, Econometrics & Finance. (10 documents).
- (4) English language (10 documents).

The search finally yielded 10 documents. The final search string is as follows.

TITLE-ABS-KEY ("corporate risk disclosure") AND DOCTYPE (ar OR re) AND SUBJAREA (mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (LANGUAGE, "English"))

**Search String 3**

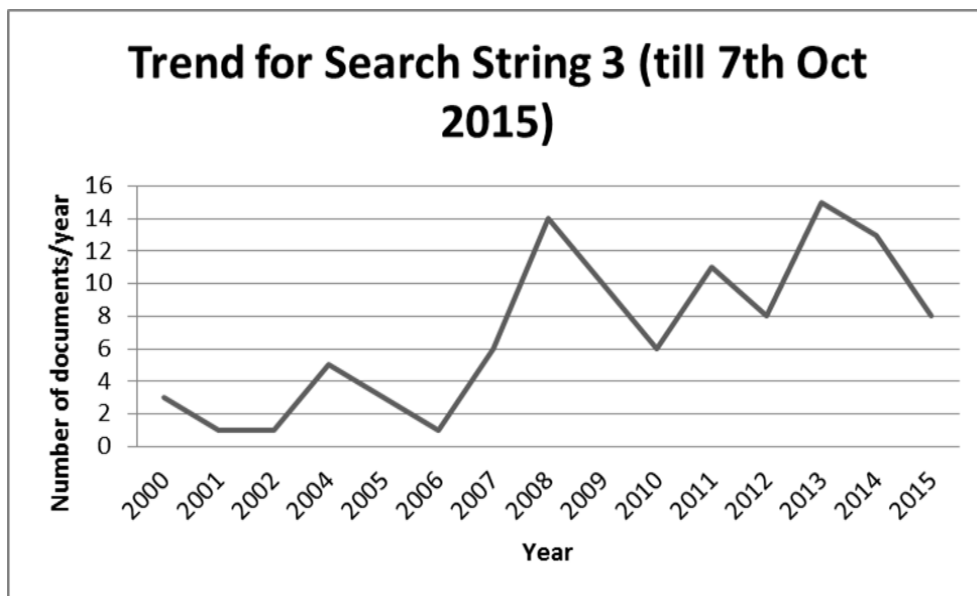
- (1) Type 'corporate risk reporting' in field 'Article Title, Abstract, Keywords'.
- (2) Refine by Article or Review, All Years to Present, Social Sciences. (262 documents).
- (3) Refine by Business, Accounting & Management and Economics, Econometrics & Finance. (222 documents).

(4) Refine by keywords Corporate governance, Disclosure, Risk Management, Risk assessment, Content Analysis, Corporate disclosure, corporate reporting, voluntary disclosure, financial reporting, risk, risk reporting, annual reports. (107 documents).

- (5) English language (105 documents).

The search finally yielded 105 documents. The final search string is as follows.

TITLE-ABS-KEY (corporate risk reporting) AND DOCTYPE (ar OR re) AND SUBJAREA (mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (EXACTKEYWORD, "Corporate governance") OR LIMIT-TO (EXACTKEYWORD, "Risk management") OR LIMIT-TO (EXACTKEYWORD, "Financial reporting") OR LIMIT-TO (EXACTKEYWORD, "Disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk assessment") OR LIMIT-TO (EXACTKEYWORD, "Risk") OR LIMIT-TO (EXACTKEYWORD, "Content analysis") OR LIMIT-TO (EXACTKEYWORD, "Corporate disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk reporting") OR LIMIT-TO (EXACTKEYWORD, "Corporate Governance") OR LIMIT-TO (EXACTKEYWORD, "Corporate reporting") OR LIMIT-TO (EXACTKEYWORD, "Annual reports")) AND (LIMIT-TO (LANGUAGE, "English"))



#### Search String 4

- (1) Type 'corporate risk reporting' as a phrase in the field 'Article Title, Abstract, Keywords'.
- (2) Refine by Article or Review, All Years to Present, Social Sciences. (3 documents).
- (3) Refine by Business, Accounting & Management and Economics, Econometrics & Finance. (3 documents).
- (4) English language (3 documents).

The search finally yielded 3 documents. The final search string is as follows.

TITLE-ABS-KEY ("corporate risk reporting") AND DOCTYPE (ar OR re) AND SUBJAREA (mult OR arts OR busi OR deci OR econ OR psyc OR soci)

#### Search String 5

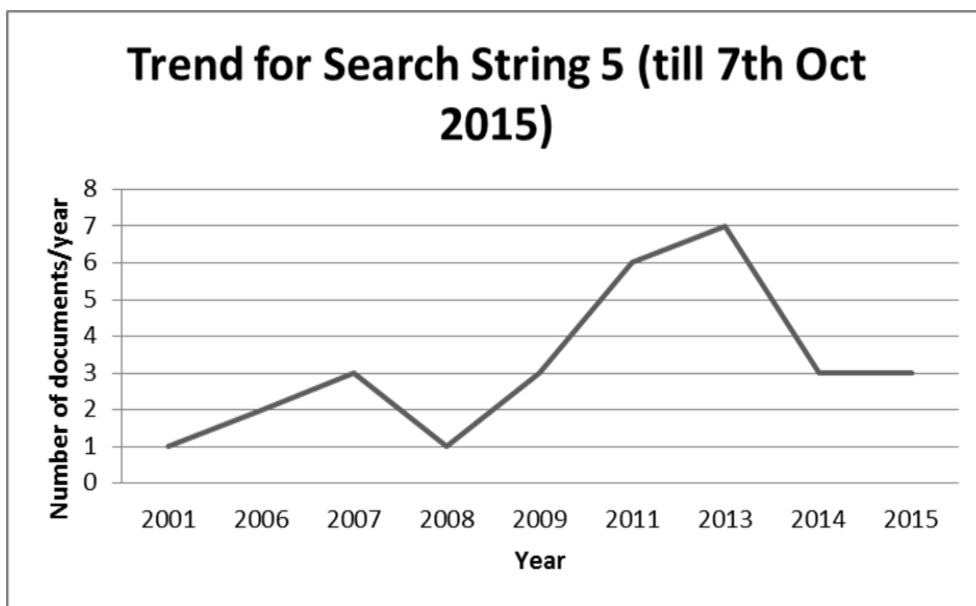
- (1) Type 'corporate risk disclosure' AND 'annual report' in field 'Article Title, Abstract, Keywords'.
- (2) Refine by Article or Review, All Years to Present, Social Sciences. (43 documents).
- (3) Refine by Business, Accounting & Management and Economics, Econometrics & Finance. (42 documents).
- (4) Refine by keywords Corporate governance, Disclosure, Risk Management, Risk assessment, Corporate disclosure, voluntary disclosure, risk, risk reporting, annual reports, agency theory, automated content analysis, automated textual analysis, information asymmetry, financial reporting. (29 documents).

- (5) English language (29 documents).

The search finally yielded 29 documents. The final search string is as follows:

(TITLE-ABS-KEY (corporate risk disclosure) AND TITLE-ABS-KEY (annual report)) AND DOCTYPE (ar OR re) AND SUBJAREA (mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (EXACTKEYWORD, "Risk management") OR LIMIT-TO (EXACTKEYWORD, "Corporate governance") OR LIMIT-TO (EXACTKEYWORD, "Disclosure") OR LIMIT-TO (EXACTKEYWORD, "Annual reports") OR LIMIT-TO (EXACTKEYWORD, "Corporate disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk reporting") OR LIMIT-TO (EXACTKEYWORD, "Voluntary disclosure") OR LIMIT-TO (EXACTKEYWORD, "Risk") OR LIMIT-TO (EXACTKEYWORD, "Agency theory") OR LIMIT-TO (EXACTKEYWORD, "Content analysis") OR LIMIT-TO (EXACTKEYWORD, "Financial reporting") OR LIMIT-TO (EXACTKEYWORD, "Information

asymmetry") OR LIMIT-TO (EXACTKEYWORD, "Automated Textual Content Analysis") OR LIMIT-TO (EXACTKEYWORD, "Automated content analysis")) AND (LIMIT-TO (LANGUAGE, "English"))



#### Search String 6

(1) Type 'corporate risk reporting' AND 'annual report' in field 'Article Title, Abstract, Keywords'.

(2) Refine by Article or Review, All Years to Present, Social Sciences. (27 documents).

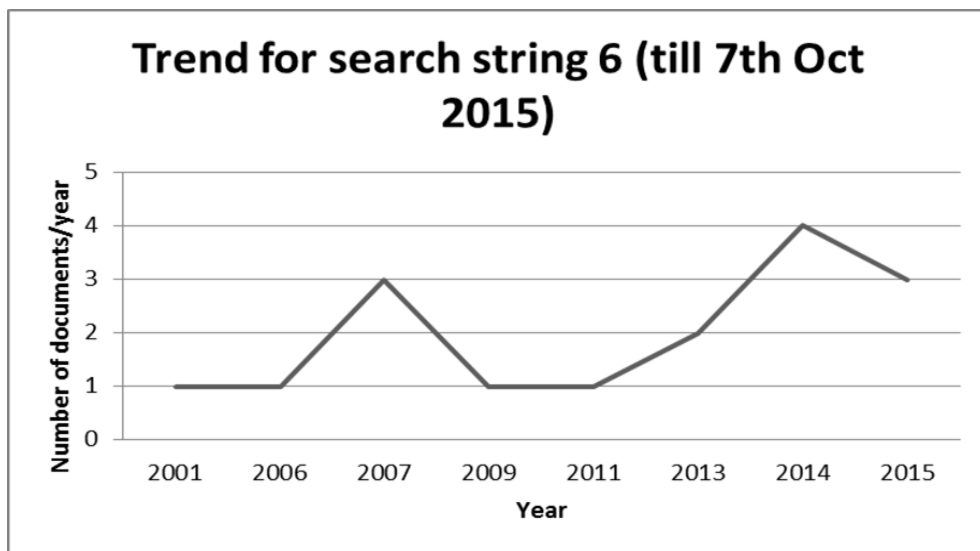
(3) Refine by Business, Accounting & Management and Economics, Econometrics & Finance. (25 documents).

(4) Refine by keywords Corporate governance, Disclosure, Risk Management, Risk, Corporate disclosure, voluntary disclosure, financial reporting, risk reporting, annual reports. (16 documents).

(5) English language (16 documents).

The search finally yielded 16 documents. The final search string is as follows

(TITLE-ABS-KEY (corporate risk reporting) AND TITLE-ABS-KEY (annual report)) AND DOCTYPE (ar OR re) AND SUBJAREA (mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (EXACTKEYWORD, "Annual reports") OR LIMIT-TO (EXACTKEYWORD, "Risk reporting") OR LIMIT-TO (EXACTKEYWORD, "Corporate disclosure") OR LIMIT-TO (EXACTKEYWORD, "Corporate governance") OR LIMIT-TO (EXACTKEYWORD, "Disclosure") OR LIMIT-TO (EXACTKEYWORD, "Financial reporting") OR LIMIT-TO (EXACTKEYWORD, "Risk management") OR LIMIT-TO (EXACTKEYWORD, "Risk") OR LIMIT-TO (EXACTKEYWORD, "Voluntary disclosure") OR LIMIT-TO (EXACTKEYWORD, "Automated Textual Content Analysis") OR LIMIT-TO (EXACTKEYWORD, "Content analysis") OR LIMIT-TO (EXACTKEYWORD, "Corporate Governance")) AND (LIMIT-TO (LANGUAGE, "English"))



#### Appendix 2

#### Search String followed for Hein Online Database

- (1) Type phrase 'risk disclosure' in field 'Text'.
- (2) AND phrase 'annual report' in field 'Text'.
- (3) AND 'narrative' in field 'Text'.
- (4) AND 'corporate' in field 'Text'.
- (5) Date Range 1995-2015. Type of documents 'Articles'. (40 articles).

Upon reading the abstracts, only one article was found to be of direct relevance to the topic of corporate risk disclosure. Three other articles investigating disclosure of risks to companies arising out of climate change were not included in the review as climate change risk is a subjective sub-category of overall corporate risk disclosures and individual firms may have different approach towards the issue of climate change risk.

Database does not record search string sequence.

