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An Analysis of Risk Management Disclosures: Australian Evidence

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Abstract

Purpose – Communication of risk management practices are a critical component of good corporate governance. Research to date has been of little benefit in informing regulators internationally. This paper seeks to contribute to the literature by investigating how listed Australian companies in a setting where disclosures are explicitly required by the ASX corporate governance framework, disclose risk management (RM) information in the corporate governance statements within annual reports.

Design/methodology/approach –To address our study’s research questions and related hypotheses, we examine the top 300 ASX-listed companies by market capitalisation at 30 June 2010. For these firms, we identify, code and categorise RM disclosures made in the annual reports according to the disclosure categories specified in Australian Stock Exchange Corporate Governance Principles and Recommendations (ASX CGPR). The derived data is then examined using a comprehensive approach comprising thematic content analysis and regression analysis.

Findings – The results indicate widespread divergence in disclosure practices and low conformance with the Principle 7 of the ASX CGPR. This result suggests that companies are not disclosing all ‘*material business risks*’ possibly due to ignorance at the board level, or due to the intentional withholding of sensitive information from financial statement users. The findings also show mixed results across the factors expected to influence disclosure behaviour. Notably, the presence of a risk committee (RC) (in particular, a standalone RC) and technology committee (TC) are found to be associated with improved levels of disclosure. we do not find evidence that company risk measures (as proxied by equity beta and the market-to-book ratio) are significantly associated with greater levels of RM disclosure. Also, contrary to common findings in the disclosure literature, factors such as board independence and expertise, audit committee independence, and the usage of a Big-4 auditor do not seem to impact the level of RM disclosure in the Australian context.

Research limitation/implications – The study is limited by the sample and study period selection as the RM disclosures of only the largest (top 300) ASX firms are examined for the fiscal year 2010. Thus, the finding may not be generalisable to smaller firms, or earlier/later years. Also, the findings may have limited applicability in other jurisdictions with different regulatory environments.

Practical implications –The study’s findings suggest that insufficient attention has been applied to RM disclosures by listed companies in Australia. These results suggest that the RM disclosures practices observed in the Australian setting may not be meeting the objectives of regulators and the needs of stakeholders.

Originality/value – Despite the importance of risk management communication, it is unclear whether disclosures in annual financial reports achieve this communication. The Australian setting provides an ideal environment to examine the nature and extent of risk management communication as the Australian Securities Exchange (ASX) has recommended risk management disclosures follow Principle 7 of its principle-based governance rules since 2007.

Keywords: Risk Management disclosure, corporate governance, agency theory, mixed method research

Article Classification: Research paper

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An Analysis of Risk Management Disclosures: Australian Evidence

Introduction

Over the last decade, large corporate collapses and the global financial crisis have caused widespread instability and concern in the world's major financial markets. Prominent among the concerns have been criticisms of inaccurate or inadequate corporate disclosures about governance practices, particularly those relating to risk management (RM) activities. These disclosure shortcomings are claimed to impact on investor's ability to fully assess public companies and their associated risks (Mokhtar and Mellett, 2013; Abraham & Shrives, 2014). Although there is general consensus on the need for effective risk management (RM) disclosure there is less agreement on how and to what extent RM practices should be communicated. While prior research across various jurisdictions has identified weaknesses and limitations in risk reporting in various jurisdictions, most of this research has focused on the usefulness of general risk narratives reported in various sections of annual reports, less attention has focused on the effectiveness on alternative approaches to risk management reporting. Consequently, the purpose of this study is to contribute to the understanding of an alternative regime by examining of the effectiveness of the Australian Securities Exchange (ASX) RM disclosure framework.

The Australian setting is of interest because corporate governance disclosures by ASX-listed companies are required to conform with the "*if not, why not*" approach in relation the ASX's Corporate Governance Principles and Recommendations (ASX CGPR)^[1]. Principle 7 of the ASX CGPR "Recognise and Manage Risk" is the primary guidance applicable to companies for RM disclosures. This principle requires that '*companies should establish a sound system of risk oversight and management and internal control*' (ASX Corporate Governance Council, 2007, p. 33). Companies are required to determine the '*material business risks*' they encounter and develop a set of policies to account for these risks while presenting a summary of this policy to external parties (ASX Corporate Governance Council, 2007). However, the ASX's Principle 7 goes further than RM disclosure regimes prescribed in other countries. Augmenting the principle-based approach, Principle 7 provides guidelines which categorise risk management areas that the ASX expects listed firms to comment on in their annual report disclosures. Thus, in contrast to previous research we are able to specifically examine RM disclosures against a benchmark thereby shedding light on how managers exercise their disclosure discretion in relation to specific areas of risk management. It has been claimed that in a principle-based regulatory environment, companies display a discretionary or a "*self-regulation*" approach by voluntarily disclosing more information than required and the information is more transparent on how the company is governed (Bauwhede and Willekens, 2008; Taylor and Zhang, 2011; Abraham & Shrives, 2014). However, the extent and quality of such discretionary disclosure remains an empirical issue in a setting where specific guidelines are provided that may alter the level of managerial discretion.

Thus, motivated by the paucity of research on alternative frameworks for RM disclosure, we seek to contribute to the knowledge about the effectiveness (to the users of annual reports) of RM disclosures in a setting where disclosures are explicitly required as a component of the corporate governance reporting framework. In investigating the effectiveness of the ASX's regime we identify and compare the nature and extent of corporate RM disclosures in annual

reports, and factors that influence the variation in disclosure. In particular, we examine how differences in risk factors and corporate governance (including board, risk and technology committees) impact on disclosure practices. Specifically the following research questions are addressed:

(RQ1) what is the nature and extent of corporate risk management disclosures provided in accordance with the ASX's CGPR Principle 7, and

(RQ2) what corporate risk and governance factors influence the level of risk management disclosures provided in accordance with this principle?

To address our research questions and related hypotheses we use a sample comprising the top 300 ASX-listed companies by market capitalisation at 30 June 2010. For these firms, we examine the corporate governance statements which forms part of the annual report for fiscal year 2010. We then identify, code and categorise RM disclosures according to the major risk disclosure categories specified in Principle 7 of the ASX CGPR. The derived data are then examined using a comprehensive approach comprising thematic content analysis and regression analyses.

With respect to RQ1, the results indicate widespread divergence in disclosure practices and low conformance with Principle 7 of the ASX CGPR. Approximately one-half of the top 300 ASX listed companies did not disclose useful information on 'material business risks' under the thirteen major risk categories identified in the commentary section of recommendation 7.1 & 7.4. Where disclosures are made, our risk category and thematic analyses reveals that disclosure frequency and quality is poor with companies less inclined to disclose sensitive information such as the failures in technological innovations, threats of legal action, and issues associated with environmental responsibilities and the quality of products and services. Thus companies appear to be failing to disclose all 'material business risks' as anticipated in the ASX's recommendations.

With respect to RQ2, the findings are mixed on the factors expected to influence RM disclosure behaviour and vary according to the specific RM disclosure sub-group. Factors found to be associated with improved levels of disclosure include: audit committee (AC) expertise, the presence of a risk committee (RC) (in particular, a standalone RC), and a technology committee. However, contrary to frequent findings in the voluntary disclosure literature (e.g. Malone et al. 1993), other common corporate governance proxies (e.g. board independence and expertise, audit committee independence, auditor quality) have little impact on the level of RM disclosure. Surprisingly, common corporate risk measures (apart from financial leverage) are not associated with increased disclosure levels. This result may be due to the selective disclosure finding noted for RQ1.

Overall, the study's findings suggest that insufficient attention has been applied to RM disclosures by listed companies in Australia. As a consequence, the RM disclosures provided under the ASX corporate governance framework are unlikely to be representative of the underlying risks encountered by listed ASX firms and therefore the disclosures may not be meeting the objectives of regulators and the needs of stakeholders.

The remainder of the paper is structured as follows: Section 2 provides an overview of relevant RM disclosure literature. The study's theoretical arguments and hypotheses are developed in Section 3. The comprehensive research design used to address the research

questions and test the hypotheses are outlined in Section 4 and the results from applying this design are presented in Section 5. The paper concludes with a summary and discussion of findings in Section 6.

Literature Review

Prior research on risk disclosure over the last two decades has predominantly examined the nature and extent of RM disclosures by scrutinising data collected from company annual reports, and by using content and statistical analysis techniques to examine the identified risk disclosures. Factors that impact on the level of risk disclosures are also often identified.

There has been much discussion internationally about what companies should disclose in their annual reports and often in particular the narrative sections of these reports. The seminal work of Beattie et al. (2004) established many of the content analysis processes later used to examine risk disclosures and was one of the first studies to focus on developing a framework to better understand the nature of the narrative annual report disclosures in order to develop a rich descriptive profile of a company's disclosures. This meaning oriented analysis (Smith and Taffler, 2000) recommended that studies analyse and categorise narrative annual report disclosures by topic, time orientation, financial/non-financial and quantitative/non-quantitative as a way of measuring disclosure quality. The study applied this meaning oriented framework to food and beverage company annual reports and found that it was an appropriate way to develop a detailed understanding of a company's narrative disclosures.

At a similar time, Beretta and Bozzolan (2004) developed a framework for analysing voluntary narrative risk disclosures in the annual reports of 85 non-financial listed Italian companies. Their framework also focused on developing a meaning oriented profile of a company's risk disclosures by categorising by economic sign (direction of expected impact of risks), the content of the risk disclosure, whether the disclosures were financial/non-financial, quantitative/non-quantitative and what outlook orientation the disclosures indicated. Beretta and Bozzolan (2004) found that risk disclosures are intrinsically narrative and that risk disclosure quality is dependent on quantity and richness.

Linsley and Shrivs (2005) was one of the first studies to examine voluntary risk disclosures in the UK, and similar to Beattie et al., (2004) and Beretta and Bozzolan (2004) developed a meaning oriented methodology to examining risk disclosures by categorising risk management sentences. The framework outlined by Linsley and Shrivs (2005) focused on categorising the disclosures into types of risks, whether the disclosures provided monetary or non-monetary information, whether the disclosure provided good, bad or neutral news and whether the disclosures discussed future or past information. The study found that disclosures were most prevalent in the strategic risk category, that there was a significantly higher proportion of future information disclosed, that most of the disclosures were not of a monetary nature and that neutral risk disclosures were greater than good or bad news risk disclosures. Also in 2005, Lajili and Zeghal (2005) examined the state, nature and volume of risk disclosures in Canadian Annual reports where risk disclosures were regulated by the Canadian Institute of Chartered Accountants (CICA). They also created a profile of risk disclosures and found that risk disclosures are exclusively qualitative in nature, are primarily located in the management discussion and analysis section or the notes to the accounts and found that financial risk, commodity and market risk were the most disclosed risk categories.

Risk disclosure research has developed since these seminal papers in three main ways. The first group include studies which have continued to undertake research on the quality of risk disclosures and have extended the seminal studies described above. The second group of studies has moved more towards analysing risk disclosures from the perspective of identifying and explaining the reasons why companies disclose risk information in annual reports within various jurisdictions. The third group of studies primarily focuses on examining and comparing risk disclosures across jurisdictions.

The first group includes a number of studies exploring the work on the quality aspects of risk disclosures. Amongst these studies are Beretta and Bozzolan (2008), Othman and Ameer (2009), Oliveira et al (20011a; 20011b), Miihkinen (2012) and Ismail et al. (2013). (Summary details for these studies cis presented in Appendix 1). Abraham & Shrives (2014) provide a more recent study that extends the literature on risk disclosure quality. For a sample of U.K. listed firms, they applied a multi-theoretic and longitudinal approach to examining the quality of risk disclosures with the objective of identifying how to improve corporate risk reporting. They found that disclosures tend to be general, they change very little and seem to bear limited or no relation to actual risks faced by companies. Despite the increased demand for improved risk reporting from professional accounting bodies, useful risk information appears to being withheld by companies. They proposed three questions managers should consider to improve their risk reporting processes namely: are there changes in reported risks in risk factor statements over time; are significant events identified in prior risk factor statements; and are significant risk factor statements discussed in subsequent risk factor statements?

The second group of risk disclosure studies focused on examining the reasons why risk disclosure levels vary within jurisdictions and include Linsley and Shrives (2006), Linsley and Lawrence (2007) and Abraham and Cox (2007) who examined voluntary risk disclosures in the UK and Canada in the period 2001-2002 (prior to mandatory requirements). These authors continued to use the seminal work described above to develop a profile of risk disclosures using sentences as the unit of analysis, but extended the literature in this area to focus more on statistical testing disclosure determinants such as company size, environmental risk, board of directors, institutional investors, dual-listed stock influenced the level of voluntary risk disclosures by U.K. companies. Linsley and Shrives (2006) found a positive association between company size and environmental risk, while Abraham & Cox (2007) found a negative relationship between the level of risk disclosures and share ownership by long term institutions, but found that the number of executives and number of independent board directors are positively related to the level of corporate risk reporting. Linsley & Lawrence (2007) examined the readability of risk disclosures and found the readability difficult or very difficult and that directors do not deliberately stop the disclosure of less favourable risk news.

This early work motivated Amran et al. (2009) to undertake similar work in Malaysia where there were greater regulatory requirements for risk reporting. This study focused on analysing the narrative section of company annual reports. They found that risk disclosure levels in Malaysian annual reports contain much less information than in the U.K. despite regulatory requirements. Additionally, they found that company size was significantly associated with the level of risk disclosures, but leverage was not significantly associated with the level of risk disclosures. A number of other studies from 2009 to 2014 have focused on explaining different aspects of risk disclosures within a single country for example Elzahar and Hussainey (2012), Elshandidy et al. (2013) and Al-Najjar and Abed (2014)

(UK); Amran et al. (2009) and Ismail and Rahman (2011) (Malaysia); Probohudono et al. (2013) (South East Asia); Hassan (2009) (UAE); Mokhtar and Mellett (2013) (Egypt); Hemrit and Arab (2011) (Tunisia); Sekome and Lemma (2014) (South Africa). The detailed results of these studies (provided in Appendix 1) show that levels of risk disclosure are positively related to company size, board size, board independence, the independence of the audit committee and block-holder ownership.

The third group of studies examined risk disclosures across a number of jurisdictions simultaneously. For example, Dobler et al. (2011) compared risk disclosures between the U.S., Canada, U.K. and Germany companies based on disclosures contained in all sections of the annual reports. The study did not distinguish between mandatory and voluntary risk disclosures. The study noted that these countries require risk disclosures in both the notes and supplementary management reports of the annual report. The study found a prevalence of risk disclosures located in the management report which were qualitative in nature and predominantly past, present and non-time specific in nature. Risk disclosures were found to be of a similar quantity across countries and the regression results revealed a size effect and evidence that risk disclosure quantity is associated with proxies for the level of firm risk.

Similar cross jurisdictional risk disclosure studies were undertaken by Elshandidy and Neri (2014) using U.K. and Italian companies, and Elshandidy, Fraser and Hussainey (2014) between German, U.K. and U.S. companies. Elshandidy, Fraser and Hussainey (2014) found significant variations in mandatory and voluntary risk disclosures within and between firms across the three countries, while Elshandidy and Neri (2014) found that governance factors principally influenced the decisions of companies in the U.K. to exhibit higher levels of voluntary rather than mandatory risk disclosures whereas in Italy corporate governance motivates companies to provide more mandatory risk disclosures than voluntary disclosures.

In comparison with the number of U.S. and UK studies, there have been few Australian studies that have examined risk disclosures despite a specific requirement since 2007 that Australian listed companies are required to provide risk disclosures as part of a broader corporate governance disclosure framework (the ASX CGPR) – a framework (with disclosure guidelines) which differs from other countries studied above. Two notable studies are by Taylor et al. (2010) and Taylor & Zhang (2011). Taylor et al. (2010) analysed financial risk disclosures in the annual reports of 111 listed resource companies by analysing financial risk disclosures and developing a financial risk disclosure index. The study found that corporate governance and capital raisings of these listed resource companies are significantly and positively related to financial risk management disclosures in Australia. Taylor & Zhang (2011) undertook a broader study and analysed the annual reports of sixty-six of the top 201-top 350 listed ASX companies and considered the impact of institutional investors and audit committees on RM disclosure levels. The found a negative and weak association between long term institutional ownership and the level of RM disclosures and a strong and positive association between audit committee independence and RM disclosure levels. While these two studies are useful in understanding risk disclosures by certain ASX listed firms, neither provides an in depth analysis of the risk management disclosures against the categorical framework provided in the ASX's Principle 7 guidelines (Australian Stock Exchange (ASX) Corporate Governance Council, 2007).

In summary, the literature to date (as documented in Appendix 1), is still evolving with regulatory changes but to date, it appears to indicate that current risk reporting internationally does not provide investors with helpful and meaningful information. The first group of

international studies while expanding the knowledge on the different aspects of quality found within risk disclosures, has done little to impact the quality of risk disclosures currently being included in annual reports internationally, the second group of studies while better explaining the factors that may influence the level of risk disclosures, have not yet definitely identified specific characteristics impacting on risk disclosure levels. The third group of studies have indicated that there are differences between different country's risk disclosures - whether the disclosures are voluntary or mandatory and has attempted to provide a broader understanding of differences in the current international approaches to risk disclosures. Finally, most relevant to our study has been the small number of studies based in Australia which are governed by the ASX CGPR (Australian Stock Exchange (ASX) Corporate Governance Council, 2007). These studies have been limited to either a specific industry or a small sample and have not provided an in depth (categorical or thematically) analysis of the risk management disclosures.

Thus the literature review has revealed that most risk reporting studies focus on voluntary risk disclosures in various sections of annual reports. Few studies have examined risk management disclosures prescribed under corporate governance frameworks, and we are unable to identify any prior study that has examined risk management disclosure in a principle-based governance regime where specific guidelines on disclosure expectations are provided by the regulator. Consequently we are motivated to examine such an environment in this study.

Theoretical Approach and Hypothesis Development

Given our focus on risk management disclosure in the context of the ASX's corporate governance reporting framework, agency theory has particular applicability to this study. The theory posits that agency costs are incurred by a company as a result of principal/agent conflicts (Jensen and Meckling, 1976; Eisenhardt, 1989; Hendry 2002; Dalton et al., 2007). To reduce agency costs, principals via the board of directors and related committees introduce monitoring and incentives to align the actions of the agent (management) with that of the principal (shareholders) (Eisenhardt, 1989; Dalton et al., 2007). Effective external reporting and disclosure by managers facilitates monitoring of managers by stakeholders. Additionally, external governance mechanisms in the form of external auditing and institutional investor monitoring play an important role in mitigating agency costs. Thus, based on agency theory, a number of potentially influential governance factors are likely to be associated with the level and quality of RM disclosure. In combination with the quality of internal and external governance, we further expect that company characteristics, notably the level of risk faced by the firm plays a pivotal role in the nature of corporate RM disclosure. These governance and corporate characteristics are considered in developing our research hypotheses.

Factors Hypothesised to Influence RM Disclosure Board of Directors Characteristics

Prior research on mandatory and discretionary disclosure by publicly listed companies provides considerable evidence of the association between board characteristics and the level and quality of voluntary disclosures - such as risk management disclosure (Cornier et al., 2010; Eng and Mak, 2003). Thus, the degree of monitoring by the board appears to have a significant impact on the intensity and transparency of disclosures (Fama, 1980). Principle 1 of the ASX CGPR in the commentary section, identifies that one of the key responsibilities of

the board should be “reviewing, ratifying and monitoring systems of risk management and internal control, codes of conduct, and legal compliance” (Australian Stock Exchange (ASX) Corporate Governance Council, 2007), p.13). Thus, it is posited that increased board monitoring should result in higher quality risk management disclosures within the company’s annual report. In particular, independent directors are considered to enhance the quality of the board as they are expected to be more unbiased representatives of shareholders due to an assumed absence of conflicts of interest between the principal and the agent (Malin et al., 2005, O’Sullivan, 2000; Ismail and Rahman, 2011; Probohudono et al., 2013; Sekome & Lemma, 2014). Accordingly, Chen and Jaggi (2000) argue that a board that comprises mostly independent non-executive directors is more likely to promote high quality performance-related disclosure. Thus, the greater the number of independent directors on the board, the more likely the board will identify relevant risks and promote quality risk management disclosures to inform shareholders and ensure compliance with ASX listing rules and associated ASX CGPR (Australian Stock Exchange (ASX) Corporate Governance Council, 2007). Thus, the level of risk management disclosure is expected to be closely linked to the number of independent directors on a company’s board.

In addition to independence, another important measure of board effectiveness is the level of competence or professional expertise of board members (Gray and Nowland, 2013). The ASX CGPR (p. 19) under director competencies recommends that “in order to be able to discharge its mandate effectively the board should comprise directors possessing an appropriate range of skills and expertise” (Australian Securities Exchange (ASX) Corporate Governance Council, 2007). As the level of professional expertise on corporate boards increases the board is likely to be in a better position to identify relevant risks issues specific to the company and subsequently disclose these issues in annual reports. Accordingly, for our general board effectiveness proxies, the following are hypothesized:

***H_{1A}*: The level of risk management disclosure is positively related to the proportion of independent directors on the board.**

***H_{1B}*: The level of risk management disclosure is positively related to the proportion of board members with professional expertise.**

The Influence of the Audit Committee

The supervisory role on an independent audit committees (AC) has been previously identified as an effective monitoring and bonding mechanism that helps to mitigate agency costs and information asymmetry between management and shareholders (Taylor and Zhang, 2011; Al-Najjar & Abed, 2014). This opinion has been extensively supported by prior research which has tested the importance of ACs in ensuring the adequacy of financial control systems (Collier, 1993; Hoitash et al., 2009; Xie et al., 2003, Lary and Taylor, 2012). For ASX-listed companies, an audit committee not only monitors the presentation of a ‘true and fair’ view regarding financial disclosures, but also plays a critical role in ensuring that the non-financial section of a company’s annual report complies with the ASX CGPR (Blue Ribbon Committee, 1999; Smith Committee, 2003). Further, an audit committee should consider risk management to be a critical oversight function as part of its responsibilities in establishing and monitoring appropriate internal control systems. The ASX CGPR (p.27) supports this by indicating that the audit committee should report to the board the results of the committee’s review of risk management and internal control systems in line with

Principle 7 recommendations (Australian Securities Exchange (ASX) Corporate Governance Council, 2007). As all large Australian listed companies (ASX Listing Rule 12.7) must have an AC (as is the case of our sample), board members who serve on the AC would be expected to demonstrate both independence and professional expertise characteristics as part of their skill base in order to be able to perform the role of AC members (Australian Stock Exchange, 2010). The ASX CGPR (p.27) indicates that:

“The audit committee should include members who are all financially literate (that is, be able to read and understand financial statements); at least one member should have relevant qualifications and experience (that is, should be a qualified accountant or other finance professional with experience of financial and accounting matters); and some members should have an understanding of the industry in which the entity operates” (Australian Securities Exchange (ASX) Corporate Governance Council, 2007).

Prior research has examined the characteristics and qualifications of AC member expertise and found that boards valued positively AC members with accounting qualifications and audit committee experience (Iyer et al., 2013). Felo and Solieri (2009) examined the links between audit committee composition and disclosure quality and found that adding independent audit committee members with financial expertise resulted in improved disclosure quality. The skills of AC members are likely to influence the nature and extent of risk management disclosures. Prior evidence in other disclosure contexts supports the influential role of an independent AC (Iyer et al, 2013; Felo and Solieri, 2009) and profession expertise on the committee (see DeFond et al., 2005). Thus the following are hypothesised:

***H_{2A}*: The level of risk management disclosure is positively related to the proportion of independent members on the audit committee.**

***H_{2B}*: The level of risk management disclosure is positively related to the proportion of members on the audit committee with professional expertise.**

The Influence of Other Board Committees

Little prior research has specifically examined the effect of the existence of a risk management committee (RC) on the extent of RM disclosure. Brown et al. (2009) indicate that in many companies, oversight of risk management is beyond the scope and capabilities of the audit committee as they tend to focus on the oversight of financial reporting and related compliance risks rather than the broad risks categories outlined in the ASX CGPR. Similarly, Daly (2006/2007) argues that many audit committees are overwhelmed by their risk management responsibilities. Thus, companies are beginning to establish specific board level risk committees to focus on both financial and non-financial risk management. Research tends to support the role of the RC in assisting decisions related to RM disclosures. Hines & Peters (2015) indicate that standalone RCs are being increasingly utilised to assist the board with their risk management responsibilities but advise there is continuing debate over whether standalone RCs improve risk management outcomes of listed companies. Subramaniam et al. (2009) identified that specific (standalone) risk management committees tend to exist in companies with large boards and independent board chairs. They observe that companies with a combined audit and risk management committee had a different board structure, higher financial reporting risk and lower organisational complexity when compared with companies with standalone RCs. Sekome & Lemma (2014) explored the association

between certain firm characteristics and the formation of a stand-alone RC and found a strong positive relationship between the existence of a stand-alone RMC and board independence, board size, firm size and industry type.

Tao and Hutchinson (2013) considered the role of compensation and risk committees in monitoring the risk behaviour of Australian financial firms just prior to the global financial crisis. The study identified that it was important for risk committees to be composed of members who were independent of management, had board and industry experience, met frequently and were professionally qualified and thus, capable of improving firm performance.

It is also evident in the Australian context that many risk committees are merely extensions of the audit committee (i.e. they are joint committees with the same members sitting on both boards). Therefore, we expect that where these committees are standalone (the majority of members are not also on the board's audit committee), they will operate independently from the audit committee, and perform more effectively in discharging their risk management oversight responsibilities, and including ensuring risk disclosures are more completed and useful to stakeholders. Accordingly, the following is hypothesised:

H₃: The level of risk management disclosure is positively related to the presence of a (standalone) risk committee.

Listed companies have considerable capital invested in information technology (IT) assets which are an integral part of their ongoing business operations. Despite the increasing significance of these assets and the continual risks associated with day to day business reliance on IT assets, there is evidence of a lack of focus by boards on governing IT and managing the risks associated with business reliance on IT. (Huff et al., 2004, 2005, 2006; Bart and Turel, 2009, 2010). This lack of board awareness of IT related risks is supported by the number of IT service delivery failures by prominent financial institutions and Airlines in Australia (e.g. National Australia Bank, Westpac, and Virgin Australia). One recurring piece of advice in IT governance literature is that boards should establish a specific committee focused on managing risks associated with IT assets. This committee would include board members with specific IT skills or a specialised interest in the management of IT related risks (Nolan and McFarlan, 2005; Gillies, 2005; Bjelland and Wood, 2005). This committee should result in greater monitoring of risks associated with IT assets and greater disclosure of IT risks in annual reports than is possible without such a committee. Like RCs, the presence and influence of TCs is expected to improve the disclosure of risks associated with IT assets, and as these assets tend to be prevalent in all areas of modern corporations, the disclosures are likely to positively affect the quality of overall RM disclosure. Accordingly, it is hypothesized that:

H₄: The level of risk management disclosure is positively related to the presence of a technology committee.

External Auditing Oversight and Quality

Agency theory suggests that companies audited by high quality audit firms (e.g. 'Big-4' auditors) disclose more information than those that are not audited by such auditors in order

to mitigate conflict between internal management and external shareholders (De Angelo, 1981). Higher quality audit firms have reputational capital at stake, as a consequence they are more likely to undertake closer scrutiny of a company's annual report and the extent of their compliance with accounting standards than lower quality auditors (Malone et al., 1993). Research tends to support the association between auditor quality and disclosure quality (Crasswell and Taylor, 1992; Datar et al., 1991; Malone et al., 1993). In the context of RM disclosure in the Australian context, we would expect a similar association. Thus, we expect that companies audited by Big-4 auditors (a common proxy for auditor quality) are more likely to have more extensive and better quality RM disclosures than those audited by non-Big 4 auditors. The expectation is expressed in the following hypothesis:

H₅: The level of risk management disclosure is positively related to the engagement of a Big-4 external auditor.

Institutional Shareholders

Price (1993) suggests that an increase in the amount of institutional shareholders that a company possesses is linked to a greater intervention by these shareholders in determining the level of disclosures of corporate information and the requirements for more extensive access to corporate information. Thus, greater attention being paid by management to information disclosed due to pressure from institutional investors is believed to impact on the quality of RM disclosure (Price, 1993). However, Abraham and Cox (2007) find a negative relationship between institutional ownership and extent of RM disclosure risk information in UK FTSE 100 annual reports. Ismail & Rahman (2011) and Al-Najjar & Abed (2014) found a positive relationship between the level of risk disclosures and institutional investors. In the Australian context Taylor and Zhang's (2011) findings reveal a positive relationship between transient-type institutional block shareholders and risk disclosures, but reveal almost no influence of dedicated-type institutional shareholders. Following this Australian study, we also expect a positive association between institutional investors and RM disclosure. However, we do not confine our predictions to transient institutional investors because our focus is on the largest listed Australian firms where transient institutional investors are less common. We therefore propose the general hypothesis that:

H₆: The level of risk management disclosure is positively related to the level of direct shareholder ownership by institutional investors.

Corporate Risk Factors

Although a range of disclosure studies have documented the impact of various influential factors on the level of RM disclosures, such as governance characteristics, audit characteristics and institutional investors, little prior research has addressed the possible impact of risk-related factors. As argued in Linsley and Shrive (2006), if companies disclose all their material risks in RM disclosures, then it would be expected that common measures of corporate risk would be accurately captured in these disclosures. Dobler et al. (2011) found a positive association between the level of risk disclosure and the level of firm risk. Amran et al. (2009) found that leverage was not significantly associated with the level of risk disclosure. Three common measures of risk are equity (Beta) risk, the market-to-book ratio and financial leverage^[2].

The standard estimation of systematic equity risk (Beta) has been widely adopted in finance studies and can be applied in accounting research as a measurement of market risk (Ryan, 1997). It is defined as *'the extent to which stock return for company, including dividends and capital gains/losses, vary with the return in the broader financial market'* (Abdelghany, 2005, p. 868). Consistent with Tao & Hutchinson (2013) a company with higher equity risk (which is associated with greater volatility in company valuations) would be expected to provide higher levels of RM disclosures due to increased material risks associated with the company's operations and impact on the stability of the company's share price. This increased RM disclosure allows managers to signal accountability to stakeholders and demonstrate compliance with the ASX CGPR. Thus, it follows that a company exposed to higher levels of risk, as evidenced by more share price volatility, is more likely to disclose more information regarding material risks to meet stakeholder information needs than low-risk firms. Thus, equity beta is expected to be a positively associated with the level of RM disclosure.

The market-to-book ratio (MTB) is commonly measured as the firm's market capitalisation divided by the book value of shareholders' equity. Amongst other interpretations, the MTB ratio is considered a measure of risk as it indicates the variance between a firm's market and balance sheet valuations ^[3]. A larger MTB indicates greater expectations about future cash flows than a lower MTB. As future cash flows are inherently uncertain, high MTB firms tend to have more volatile share prices than small MTB firms. It is also argued that it captures bankruptcy risk because it provides a measure of the amount of capital (relative to current market valuation) that investors can retrieve in the event of bankruptcy (Peterkort and Nielson, 2005). Thus, companies with larger MTBs would be expected to disclose a greater amount of RM information to stakeholders than smaller MTB firms.

A number of accounting based-measures of corporate risk have been identified in the literature. The most common is financial leverage (or gearing ratio). Agency theory suggests that potential wealth transfers from debt-holders to shareholders will result in higher agency costs. It has been proposed that shareholders will desire a greater amount and transparency of information disclosure, including risk-related aspects, to better assess firm value and performance and minimise the potential risks associated with their investments (Grandia, 2003; Hossain et al., 1994). Although not always consistent, a number of prior studies report a positive relationship between leverage and corporate disclosure level (Eng and Mak, 2003; Jensen, 1986; Jensen and Meckling, 1976; Lim et al., 2007). Consistent with the arguments of Amran et al. (2009) corporate management, investors and debtholders are likely to view open and transparent RM disclosures as more important as debt levels increase. Thus, a positive relationship between RM disclosure and financial leverage is expected. The above arguments for alternative corporate risk measures is summarised in the following three hypotheses:

***H_{7a}*: The level of risk management disclosure is positively related to equity beta risk.**

***H_{7b}*: The level of risk management disclosure is positively related to the market-to-book ratio.**

***H_{7c}*: The level of risk management disclosure is positively related to the financial leverage.**

Research Design

Sample Selection and Data Source

The sample selected in this study consists of the top 300 ASX listed companies measured by market capitalization for year ended 30 June 2010. For these firms, all RM disclosures provided in the corporate governance statements of the 2010 annual reports were identified and used in the subsequent analysis of RM disclosures. The analysis of these disclosures is expected to provide an appropriate representation of major ASX listed company's risk disclosure patterns over the three years since the introduction of ASX CGPR in 2007 as sufficient time has elapsed since the transition period for companies to achieve compliance. Within the top 300 list, 20 companies that were delisted or suspended were replaced in the sample with the next 20 companies by market capitalization to ensure the sample comprised 300 companies for the purpose of data collection and analysis ^[4]. The profile of the sample is presented in Table 1.

Table 1

Profile of the Sample (Top 300 ASX Listed Companies)

Industry (GICS) Sector	No. of Companies	% of Sample
Consumer Discretionary	44	14.7
Consumer Staples	11	3.7
Energy	26	8.7
Financial Services	58	19.3
Health Care	15	5.0
Industrials	49	16.3
Information Technology	8	2.7
Materials	70	23.3
Telecommunication Services	6	2.0
Utilities	13	4.3
Total	300	100

Two Stage Approach

To comprehensively address the research questions we use a two stage approach. First we use a thematic content analysis followed by common content and regression analysis. It is argued that by combining these approaches the robustness and reliability of the overall study can be enhanced (Brewer and Hunter, 1989), and is consistent with the research approaches suggested by Beattie et al. (2004) as the most appropriate for analysing narrative disclosures in company annual reports. Content analysis is the preferred method in many previous disclosure studies (e.g. Anita and Lee, 2007; Chatterjee, 2011; Sandhu and Kapoor, 2010; Cowan and Gadenne, 2005) and risk management studies and allows the researcher to

provide useful insights into the nature and extent of disclosures (Linsley and Shrives (2006), Dobler et al (2011), Beretta and Bozollan (2004), Amran et al., 2009; Lajili and Zeghal, 2005; Taylor and Zhang, 2011, Maffei et al, 2014, Elshandidy et al., 2014; Elshandidy & Neri, 2014). However, we extend this approach by using thematic content analysis in addition to the more traditional content analysis. The thematic content analysis involved categorising RM disclosures within the corporate governance statement to themes using NVivo 10. The RM disclosures were categorised to common themes which were then linked to the risk categories identified in Principle 7 Recommendation 1 of the ASX CGPR (Australian Stock Exchange (ASX) Corporate Governance Council, 2007). Abraham and Shrives (2014) also employ an extended content analysis approach to categorise risk disclosures into substantive and symbolic themes.

To address *RQ1*, the extent of the disclosures was assessed by summing the number of companies disclosing some level of information relating to a particular theme. The level of information classified as a RM disclosure ranged from minimalist (*minor*) disclosures which a mere mention of a RM concept in one or two sentences to fuller, more detailed (*major*) disclosures extending to a paragraph or longer. The disclosures were also analysed to determine the nature of disclosures by assessing the broad nature of the RM disclosures and by assessing the quality of disclosures made within particular themes ^[5].

RQ2 considers the explanatory power of a number of governance and other influential factors on the level of RM disclosure. To determine the level of disclosure, corporate governance statements in annual reports are accessed and scrutinised. RM disclosure scores are then derived according to common content analysis approaches typically used in scoring corporate disclosures in annual reports. Three scores are used in the main analysis: an overall score for each company based on a coder determined assessment ^[6] of each sample firm's conformance with each of the 20 RM disclosure items required by ASX CGPR Principle 7; and, two sub scores, one based on the first 13 items (relating to specific business risks and associated policies) in Principle 7, Recommendation 1 and 4 and the other based on the remaining 6 (board oversight, compliance and regulatory) items relating to Principle 7, Recommendation 2-4. A score of 1 is given by the coder for each identified *major* disclosure and a 0 for each omitted or *minor* disclosure, where a major disclosure is defined as a statement in an annual report about a risk item that provides sufficient information to assess the nature of the underlying risk to the firm and a *minor* disclosure is defined as a statement in an annual report about a risk item that is vague or lacking enough information to assess the nature of the underlying risk to the firm. These scores form the dependent variables against which the hypothesised influential factors were regressed (as outlined below).

Research Model for Testing Hypotheses

As it is hypothesised RM disclosure is associated with a number of factors the following linear regression model (equation 1) is used to jointly test the hypothesised associations with the RM disclosure scores:

$$\begin{aligned}
 RMDscore = & \beta_0 + \beta_1 BINDP + \beta_2 BEXPTS + \beta_3 ACINDP + \beta_4 ACXPTS + \beta_5 RCSA + \beta_6 RCAC \\
 & + \beta_7 TC + \beta_8 ADBIG4 + \beta_9 INSTOWN + \beta_{10} BETA + \beta_{11} MTB + \beta_{12} LEV + \beta_{13} ROE + \\
 & \beta_{14} CROE + \beta_{15} MCAP + \beta_{16} INDFIN + \beta_{17} FOREIGN + e
 \end{aligned}
 \tag{1}$$

Where *RMDscore* is one of the following:

RMDS = Total score for each company based on an assessment of the company's conformance with each of the 20 RM disclosure items required by ASX CGPR Principle 7. A score of 1 is recorded for each major disclosure and 0 for a minor or an omitted disclosure;

RMDSR = An *RMDS* sub-score for the 13 disclosure items relating to specific business risks and associated policies listed in ASX CGPR Principle 7.1 and 7.4. (The 13 items are: operational, environmental, sustainability, compliance, strategy, ethical conduct, reputation, technological, product/service quality, human capital, financial reporting, market-related, and legal risk disclosures) (RMD1-13); and

RMDS C = An *RMDS* sub-score for the remaining 6 disclosure items identified in ASX CGPR Principle 7.2-7.4 relating to board oversight, compliance and regulatory RM issues. (RMD14-20).

The Independent Variables comprise the (governance and risk-related) test variables and control variables.

Governance Variables:

BINDP = proportion of independent non-executives on the board of directors (*tests H1a*);

BEXPTS = board expertise, measured as proportion of the board with a relevant degree (accounting, business, commerce, finance, economics or law) (*tests H1b*);

ACINDP = proportion of independent non-executives on the audit committee (*tests H2a*);

ACEXPTS = audit committee expertise, measured as the proportion of the AC with a relevant degree (accounting, business, commerce, finance, economics or law) (*tests H2b*);

RCSA = 1 if the firm has a standalone risk committee and 0 otherwise (*tests H3*);

RCAC = 1 if the firm has a combined risk and audit committee and 0 otherwise (*used to control for joint committees*);

TC = 1 if the firm has a technology committee and 0 otherwise (*tests H4*);

ADBIG4 = 1 if the firm has a Big-4 external auditor and 0 otherwise (*tests H5*);

INSTOWN = percentage of direct share ownership by institutional investors as reported in the Osiris (Bureau Van Dijk) database (*tests H6*);

Risk-related test variables:

BETA = equity (OLS) beta risk (systematic risk) sourced from the Risk Measurement Service, Centre for Research in Finance, Australian Graduate School of Management (*tests H7a*);

MTB = market to book ratio, measured as the market capitalisation divided by the book value of shareholders' equity at the fiscal year end date (*tests H7b*);

LEV = financial leverage, measured as total liabilities divided by total assets (*tests H7c*);

Control Variables:

ROE = return on shareholder's equity, measured by current year income divided by shareholders' equity;
CROE = growth in ROE over previous period;
MCAP = natural logarithm of market capitalisation;
INDFIN = 1 if the firm is in the (GICS) financial service industry sector, 0 otherwise;
FOREIGN = 1 if the firm has a foreign domicile, 0 otherwise.

The following discussion provides justification and further explanation for the control variables used in the regression models.

Corporate Size (MCAP)

Prior research has documented the notion that the larger the firm, the greater the nature and extent of corporate disclosure by the company (Abraham and Cox, 2007; Buzby, 1975; Eng and Mak, 2003; Linsley and Shrivess, 2005; Scott, 1994). The positive relationship between firm size and level of disclosure is supported by the following arguments. Firstly, larger firms may be willing to improve reporting systems since they possess excessive amount of resources and capital and the cost associated may be easily compensated (Zeghal et al., 2007). Secondly, bigger firms are motivated to disclose more information due to pressure from external parties such as regulatory parties (Buzby, 1975). Corporate size (*Mcap*) is measured by market capitalisation for each company as at the 2010 fiscal year end date.

Profitability (ROE & CROE)

The relationship between performance measures and level of disclosures has been tested by prior literature and is also supported by various theories. For instance, agency theory suggests that managers disclose information for promoting personal interests as a number of prior studies have documented the close relationship between managers' stock-based compensation schemes and extent of disclosures (Aboody and Kasznik, 2000; Murphy, 1996). Further, agency theory suggests that managers seek to disclose more information so that the company's shares are not undervalued by external parties (Inchausti, 1997). In addition, political cost theory proposes that companies with large profits are more likely to disclose more information to provide sufficient evidence and justifications for their profit levels (Inchausti, 1997). Return on Equity (*ROE*) is considered one of the most common measures of profitability and performance and growth in ROE (*CROE*) is also considered to provide more robust results (Burgstahler and Dichev, 1997; Hannagan, 2007). Therefore, positive relationships are expected to exist between ROE and CROE and level of risk disclosures.

Industry

The financial sector (*INDFIN*) and materials sector are the two dominant sectors in the sample and are expected to possess unique risk characteristics ^[7]. The financial sector consists mainly of companies involved in banking, finance, insurance, investment, real estate, etc. and potentially possesses higher risks due to the nature of services provided such as stock market forecasts, banking services and data analysis. This sector has been under increasing scrutiny by market participants and regulators in the aftermath of the global financial crisis and its members are therefore expected to be active disclosers of RM information.

Foreign Domicile (FOREIGN)

Approximately 10 per cent of the top 300 firms have foreign domiciles. A preliminary analysis of these firms' risk management revealed a tendency for them to follow their home exchange rules and securities' regulations when disclosing risk management information in preference to the specific ASX CGPR Principle 7 disclosure categories. Therefore we expect lower disclosures scores for these firms relative to locally domiciled firms.

Results and Analysis

Nature and Extent of RM Disclosures (RQ1)

Table 2 reports aggregate disclosure frequencies against each of the 20 risk categories identified in the ASX CGPR for the sample companies. To provide an indication of the extent and quality of the disclosures, they are classified as "no", "minor" and "major". As previously defined a minor disclosure is one which is vague or lacking enough information to assess the nature of the underlying risk to the firm. The other (more informative) disclosures are classified as major.

Table 2, Panel A reports the frequency of company conformance with each of the 13 material business risk management disclosure items in Principle 7. The frequency analysis clearly highlights low levels of *major* disclosures for many of the specific business risk disclosure items (RMDS1-13). Those related to technological (RMD1), product/service quality (RMD9), and reputation risk (RMD7) have the lowest number of *major* disclosures by companies (less than 5%), whereas those items related to compliance (RMD4), operational (RMD1), and financial reporting risks (RMD 11) have the highest number of *major* disclosures by companies (around 10%). These three RMD's also have the largest number of *minor* disclosures (20-35%). These results tend to indicate that whilst many companies are disclosing within these material business risk areas, the disclosures are minimalist and often appear to be a "box-ticking" exercise to risk disclosure. The results suggest that companies may be less inclined to disclose sensitive information such as the failures in technological innovations, threats of legal action, and issues associated with environmental responsibilities and the quality of products and services. Consistent with some prior research, it is possible that companies may perceive that the disclosure of sensitive RM information to the stakeholders may have a detrimental impact on the company's share price and reputation.

Further analysis of the business risk disclosures using thematic content analysis is also reported in Table 2, Panel A. The results indicate that sample companies report a wide variety of risks with 3 to 4 common themes being identified under a number of risk categories within the analysis. Notably the market related risk category includes the most themes with 13. These results indicate that the *nature of risk management disclosure* in Australian Listed companies appears to be quite broad. However, the results are consistent with the categorical analysis; the thematic analysis shows *the extent of risk management disclosure* in ASX top 300 listed companies required by recommendation 7.1 of the ASX CGPR was overall very low. The number of companies with *major* disclosures on a particular theme was predominantly low with only financial reporting and regulatory and compliance being the highest with 9 and 10 percent respectively. All the other themes indicated that the number of companies with *major* disclosures were less than 10% of companies.

Table 2
Frequency of ASXCGPR Risk Management Disclosures

Panel A: Frequency of *Business* Risk Management Disclosures by Category & Theme

RM Code	Disclosure Category/Theme (n=300) <i>(Themes in italics below categories)</i>	No Disclosure No. (%)	Minor Disclosure No. (%)	Major Disclosure No. (%)
RMD1	Operational risks	212 (71)	66 (22)	22 (7)
	<i>Funding</i>	289 (96)	8 (3)	3 (1)
	<i>Insurance</i>	270 (90)	24 (8)	6 (2)
	<i>Operational - Other</i>	229 (76)	50 (17)	21 (7)
RMD2	Environmental risks	258 (86)	27 (9)	15 (5)
	<i>Climate Change</i>	294 (98)	4 (1.3)	2 (.7)
	<i>Environmental - Other</i>	259 (86)	26 (9)	15 (5)
RMD3	Sustainability risks	267 (89)	18 (6)	15 (5)
	<i>Liquidity</i>	278 (93)	12 (4)	10 (3)
	<i>Sustainability</i>	282 (94)	10 (3)	8 (3)
RMD4	Compliance risks	164 (55)	100 (33)	36 (12)
	<i>Sustainability</i>	282 (94)	10 (3)	8 (3)
	<i>Accounting Std. Compliance</i>	258 (86)	34 (11)	8 (3)
RMD5	Strategic risks	246 (82)	40 (13)	14 (5)
	<i>Investment</i>	280 (93)	11 (4)	9 (3)
	<i>Operational Strategy</i>	265 (88)	29 (10)	6 (2)
	<i>Sales and Marketing</i>	296 (98.6)	2 (.7)	2 (.7)
	<i>Supplier</i>	295 (98.3)	2 (.7)	3 (1)
RMD6	Ethical conduct risks (& theme)	276 (92)	12 (4)	12 (4)
RMD7	Reputation risks (& theme)	281 (94)	15 (5)	4 (1)
RMD8	Technological risks	287 (95)	8 (3)	5 (2)
	<i>Information Security</i>	294 (98)	4 (1.3)	2 (.7)
	<i>IT Failures</i>	295 (98.3)	2 (.7)	3 (1)
	<i>IT Project Development</i>	294 (98)	4 (1.3)	2 (.7)
RMD9	Product/service quality risks	279 (93)	20 (6.7)	1 (.3)
	<i>Allocation of resources</i>	287 (95.7)	12 (4)	1 (.3)
	<i>Product Service Quality</i>	292 (97)	8 (3)	0 (0)
RMD10	Human capital risks	237 (79)	47 (16)	16 (5)
	<i>Occupational Health & Safety</i>	248 (83)	40 (13)	12 (4)
	<i>Human Resources - Other</i>	283 (94.4)	13 (4.3)	4 (1.3)
RMD11	Financial reporting risks (& theme)	184 (61)	89 (30)	27 (9)
RMD12	Market-related risks	230 (77)	53 (18)	17 (5)
	<i>Competition</i>	289 (96)	7 (3)	4 (1)
	<i>Credit</i>	280 (93)	13 (4)	7 (3)
	<i>Equity</i>	291 (96.3)	7 (3)	2 (.7)
	<i>Commodity Fluctuations</i>	281 (94)	15 (5)	4 (1)
	<i>Asset Value Changes</i>	290 (96.7)	9 (3)	1 (.3)
	<i>Macroeconomic Environ't Changes</i>	290 (96)	5 (2)	5 (2)
	<i>Monetary Policy Changes</i>	296 (99)	4 (1)	0 (0)
	<i>Exchange rates</i>	262 (87)	32 (11)	6 (2)
	<i>Financial Instruments</i>	290 (96)	8 (3)	2 (1)
	<i>Interest Rates</i>	280 (93)	18 (6)	2 (1)
	<i>Political</i>	297 (99)	3 (1)	0 (0)
	<i>Market-related - Other</i>	280 (93)	15 (5)	5 (2)
RMD13	Legal risk disclosures (& theme)	241 (80)	48 (16)	11(4)

Panel B: Frequency of Administrative Risk Management Disclosures				
RM Code	Disclosure Category (n=300)	No Disclosure No. (%)	Minor Disclosure No. (%)	Major Disclosure No. (%)
Disclosure of Material Business Risks and associated Policies (Recommendation 7.1 & 7.4)				
RMD14	Disclosure of board review of effectiveness of RM and internal control systems	33 (11)	96 (32)	171 (57)
RMD15	Disclosure of internal audit analysis and appraisal of effectiveness of RM and internal control systems	221 (73)	35 (12)	44 (15)
RMD16	Audit Committee/ Risk Committee Assessment of RM information	101 (34)	102 (34)	97 (32)
RMD17	Disclosure of board's ultimate responsibility for RM	31 (10)	75 (25)	194 (65)
Disclosure of Board Compliance with Corporations Act requirements (Recommendation 7.3 & 7.4)				
RMD18	Disclosure of board compliance with Corporations Act S295A Declaration (based on a sound systems of RM and internal control systems)	86 (29)	4 (1)	210 (70)
Disclosure of Departures from Principle 7 & Summary of RM policies public available on a website (Recommendation 7.4)				
RMD19	Departures from ASX CGPR	286 (95.3)	2 (0.7)	12 (4)
RMD20	Public Availability of RM policies	179 (60)	5 (2)	116 (38)

Notes: Panel A tables the frequency of RM disclosures by category and theme for the 13 material business risk categories identified in the ASX CGPR Principle 7, Recommendation 7.1 (Commentary). Within these categories key risk disclosure themes were identified using Nvivo 10 analysis. Multiple themes were identified and are presented for all categories except those with single themes (RMD6, 7 and 13). Panel B tables the frequencies for the remaining 7 categories of RM disclosures which are a more general ('administrative') in nature based on the guidelines contained in Principle 7, Recommendations 7.1 - 7.4. Frequencies are classified into *no*, *minor* and *major*, where a *minor* disclosure is defined as a statement in annual report about a risk item that is vague or lacking enough information to assess the nature of the underlying risk to the firm. All other (more informative) disclosures are classified as *major*.

A number of examples highlight the differences in major/minor disclosures. Silex Systems Limited (2010) provides a typical *major* disclosure example in relation to the company's OH&S which outlines detailed procedures used to manage and control this risk factor:

“The Company recognises the importance of occupational health and safety (OH&S) issues and is committed to the highest levels of performance. To help meet this objective OH&S Committees have been established to facilitate the systematic identification of OH&S issues and to ensure they are managed in a structured and rigorous manner. This system has been operating for a number of years and allows the Company to:

- *monitor its compliance with all relevant OH&S legislation and regulations,*
- *continually assess and improve the effectiveness of the Company's OH&S program,*
- *encourage employees to actively participate in the management of all OH&S issues, and*
- *reinforce the importance of safe work practices throughout the Company, as mandated by management” (Silex Systems Limited, 2010, p. 49).*

Our analysis also found that disclosures within some themes varied. For instance, some companies such as the Commonwealth Bank of Australia provided detailed (*major*) disclosure in relation to regulatory risks:

“The Group regularly benchmarks and aligns its policy framework against existing prudential and regulatory standards. Potential developments in Australian and international standards and best practice generally are considered during a review” (Commonwealth Bank of Australia, 2010, p. 39).

In contrast, other companies simply documented phrases in their annual reports regarding regulatory changes to express the management's willingness to “*compliance with all regulatory and statutory requirements*” (Brambles Limited, 2010, p. 25). This extract may indicate that some companies are providing minimalistic disclosure on certain RM issues in order to satisfy ASX CGPR requirements. This type of disclosure were considered a *minor* disclosure.

Two themes which were rated as having very low disclosures were technological failures and technology project development and information security. These themes did not seem to garner the same degree of RM disclosure attention, which is concerning when many large ASX listed companies are dependent on IT for their daily operations. Large banks which form part of the sample, experienced major technological failures during 2010, which were reported in the press, however these risks were not disclosed in the annual reports of these companies. This lack of reporting on IT risks may indicate that companies are assessing their IT risks as not being *material business risks* and thus not reportable. For instance, the Commonwealth Bank of Australia did not provide any quality RM disclosure on technology risk. The company only mentioned ‘technological risk’ as a part of ‘operational business:

“Operational risk is defined as the risk of economic loss...It includes legal, regulatory, fraud, business continuity and technology risks. The Group's security risk management framework forms part of the operational risk framework and sets out the key roles, responsibilities and processes for security risk management across the Group. Security risk is defined as threats associated with theft and fraud, information and IT security, protective security and crisis management” (Commonwealth Bank of Australia, 2010, p. 41).

As this disclosure lacks explanation of the type of technological risks and policies and procedures to manage these risks it was classified as ‘no’ disclosure for the information security theme. However, because of the details provided under the operational theme (of the operational risk category) it was rated a *major* disclosure under this theme.

The results in Table 2, Panel A also highlight that in the majority of material business risk categories over 90% of companies disclose nothing at all. This is particularly concerning as it

seems unlikely that the majority of listed companies in Australia have little or nothing to disclose on the 13 material business risk categories identified by the ASX CGPR in Principle 7. This implies that a large number of companies appear to be ignoring the ASX CGPR Principle 7 requirement to disclose information about material business risks. Whilst a large number of companies with *minor* disclosures is below 20%, financial reporting and regulatory and compliance with 30% and 26% respectively show that a considerable percentage of companies could improve from '*minor*' to the *major* disclosures.

As a result of these low disclosure levels on most of the RM items, it could be expected that companies would have a high level of disclosure under "departures in order to comply with the '*If not, why not*' approach of the ASX CGPR" (ASX Corporate Governance Council, 2007, p. 40). However, the "explanation of any departures from Recommendations 7.1, 7.2, 7.3 or 7.4" (Australian Securities Exchange (ASX) Corporate Governance Council, 2007, p. 35) is also particularly low with only 4 percent of sample companies reporting any '*major*' departure and 1 percent reporting a '*minor*' departure. These results cast doubt on the effectiveness of Principle 7 of the ASX CGPR in achieving full disclosure of RM information in ASX listed companies and the self-reporting principles associated with corporate governance disclosures.

Table 2, Panel B shows that for more the remaining, more general (administrative) risk disclosure items (RMD14-20) relating to internal control systems, board responsibilities, Corporations Act s295A compliance and Principle 7 departures, most show higher levels of *major* disclosures and thus higher conformance than for the RMDS1-13 specific disclosure items. The exceptions are for RMD15 (audit analysis and appraisal of RM and internal control systems, and RMD16 (AC and RC assessment of RM information). Both would appear to be straightforward disclosures but less than 50 per cent of firms provide *major* disclosures about these items.

Further (un-tabulated) analysis of RM disclosures associated with recommendations 2-4 of Principle 7 of the ASX CGPR indicated that:

- (a) 57 percent of companies in the sample provided '*major*' and 32% provided '*minor*' disclosure on board review (recommendation 7.2 ASX CGPR);
- (b) 67 percent of companies provide '*major*' disclosure and 25% provided '*minor*' disclosure on whether the board had ultimate responsibility for risk oversight and risk management or whether a separate risk management committee exists (recommendation 7.2 ASX CGPR);
- (c) 70 percent of companies provided '*major*' disclosure and 1% provided '*minor*' disclosure on whether the board had received assurance from the CEO and CFO that the declaration provided in s295A of the Corporations Act is founded on a sound system of risk management and internal control and that the system is operating effectively in all material respects in relation to financial reporting risks (recommendation 7.3 ASX CGPR); and,
- (d) 39 percent of companies provided a '*major*' disclosure and 2% provided a '*minor*' disclosure about the company having publicly available summary of its RM policies and Principle 7 (Recommendation 7.4 ASX CGPR).

Additional analysis revealed noticeable industry differences. The financial services sector (banks) provided the most comprehensive RM disclosures, followed by the materials sector. In contrast the utilities, telecommunication services, consumer discretionary, consumer staples and energy sectors were generally poor RM disclosers.

Overall, the assessment of the nature of RM disclosure which addressed the first part of RQ1 indicates that the nature of RM disclosure in companies' annual reports is quite broad (33 RM disclosure themes which were linked to the 13 risk categories identified in Recommendation 7.1 of the ASX CGPR). However, the extent of RM disclosures in the top 300 ASX listed companies was overall very low with only 2 themes having *major* disclosure levels around 10%. Despite this low level of disclosure in relation to recommendation 1 of Principle 7 of the ASX CGPR, companies did not provide information on why they had not disclosed as required by recommendation 7.4 of the ASX CGPR. The thematic content analysis process also identified that some companies disclosed high quality RM information while other company disclosures were vague and minimalist, lacking the explanation of monitoring procedures and the identification of economic impacts that companies may experience if these risks are not controlled appropriately. The more concerning issue is the large number of companies that failed to make any disclosure on the 13 material business risk areas.

Factors Influencing Risk Management Disclosure (RQ2)

Descriptive Statistics

Disclosure Scores: Following the tenor of the previously results, Table 3, Panel A shows that the mean for overall RM disclosure score (*RMDSI*) is a low 7.12 (out of the 20) for the ASX CGPR disclosure items required under Principle 7. Thus, the top 300 companies are only disclosing an average of 35.6% of the RM disclosure items, and this result is considerably lower (mean of 3.39 out of 13 or 26%) when only the business risk disclosure items (*RMDR*) are considered. The low disclosures levels should be of concern to the corporate regulators as it indicates potential ineffectiveness of the ASX's CGPR in regulating RM disclosure.

Governance Variables: Panel A further shows than most boards are independent (*BINDP* mean = 68.1%) and nearly half have professional expertise (*BEXPTS* mean = 46.7%). A similar level of expertise is evident in ACs (*ACEXPTS* mean = 50.6%), but member independence is much lower (*ACINDP* mean = 25.8%). Thus, boards should have sufficient opportunities to discuss risk-related issues. Panel B of Table 4 indicates that most of the top ASX listed companies (54.7%) have a risk committee (*RC*) but only 15 percent have (the expected more effective) standalone committee (*RCSA*). The remainder are combined with their ACs (*RCAC* frequency = 39.7%). Also, most firms are audited by a Big 4 auditor (*ADbig4*) (88% of firms). In contrast, only 2.67 percent of the sample companies had a technology committee (*TC*), implying a lack of awareness or interest in risks associated with the technology operations in these companies. Consequently, apart from TCs, these statistics reveal, a high level of control and monitoring that should be exercised by company committees and professional auditors in assessing and ensuring appropriate communication of corporate RM practices.

Risk Factors: For the hypothesised risk factors Table 3, Panel A shows the median equity beta (*BETA*) is 1.115 which is only slight above market beta. Therefore, sample companies are not exposed to high levels of systematic risk. Likewise the sample firms do not have high market-to-book ratios (*MTB* median = 1.53) and are not highly leveraged (*LEV* median = 41.7%), indicating that sample companies are not likely to be facing high levels of market or financial risk, and related pressure to disclosure information about those risks. Similarly, high

disclosure demands are also likely to be absent from a financial performance perspective as the median return-on-equity (*ROE*) is a relatively high 7.9% and has increased over the previous year (*CROE* median = 1.9%).

Table 3
Descriptive Statistics and Frequency of Categorical Variables

Panel A: Descriptive Statistics						
Model Variables	N	Mean	Median	SD	Min.	Max.
RM Disclosure Scores						
<i>RMDS</i> (RMD1 -20)	300	7.217	7.000	3.987	0	19
<i>RMDSR</i> (RMD1 -13)	300	3.390	3.000	3.121	0	13
<i>RMDS</i> (RMD14 - 20)	300	3.827	4.000	1.469	0	7
Governance Variables						
<i>BINDP</i> (Board independence)	300	0.681	0.710	0.167	0.3	1
<i>BEXPTS</i> (Board expertise)	293	0.467	0.450	0.236	0	1
<i>ACINDP</i> (audit committee independence)	300	0.258	0.250	0.101	0	0.5
<i>ACEXPTS</i> (audit committee expertise)	300	0.506	0.500	0.294	0	1
<i>INSTOWN</i> (Institutional ownership)	297	49.463	49.65	26.299	0	99.34
Risk Variables						
<i>BETA</i> (equity risk)	292	1.266	1.115	0.674	0.300	2.990
<i>MTB</i> (market-to-book ratio)	300	2.59	1.53	4.75	-21.21	56.91
<i>LEV</i> (liabilities-to-assets)	300	0.417	0.415	0.240	0.007	1.369
Control Variables						
<i>ROE</i> (return-on-equity)	300	0.082	0.079	0.502	-7.384	3.021
<i>CROE</i> (change in ROE)	300	0.057	0.019	0.899	-13.695	4.058
<i>MCAP</i> (market capitalisation) (\$m)	300	396.0	99.9	1117.2	22.0	12,640
Panel B: Frequency of Categorical Governance Variables						
Model Variables	1 = Yes	%	0 = No	%		
<i>RC</i> (risk committee)	164	54.7	136	45.3		
<i>RCSA</i> (standalone RC)	45	15.0	255	85.0		
<i>RCAC</i> (RC & AC combined)	119	39.7	181	60.3		
<i>TC</i> (Technology committee)	8	2.7	292	97.3		
<i>ADBIG4</i> (audit by Big 4)	263	87.7	37	12.3		
<i>INDFIN</i> (financial Service sector)	58	19.3	242	80.7		
<i>FOREIGN</i> (foreign domicile)	30	10.0	270	90.0		

Notes: *RMDS* = sum of scores for all Principle 7 recommended disclosure categories (RMD1-20); *RMDSR* = sum of scores for 7.1 & 7.4 recommended disclosure categories (Material Business Risks and associated Policies) (RMD1-13); *RMDS* = sum of scores for other Principle 7 recommended disclosure categories (RMD14-20) were a score of 1 is recorded for each major disclosure and 0 for a minor or an omitted disclosure. *ACINDP* = proportion of independent non-executives on the audit committee. *ACEXPTS* = audit committee expertise - proportion of the AC with a relevant degree (accounting, business, commerce, finance, economics or law). *BINDP* = proportion of independent non-executives on the board of directors. *BEXPTS* = board expertise - proportion of the board with a relevant degree (accounting, business, commerce, finance, economics or law); *INSTOWN* = percentage of direct share ownership by institutional investors. *BETA* = equity

(OLS) beta risk (systematic risk). *MTB* = market to book ratio - market capitalisation divided by book value of shareholders' equity. *LEV* = leverage, measured as total liabilities divided by total assets (a measure of financial risk). *MCAP* = natural logarithm of market capitalisation; *ROE* = return on shareholder's equity, measured by current year income divided by shareholders' equity. *CROE* = change in ROE over previous period; *RC* = 1 if the firm has a risk committee, 0 otherwise. *RCSA* = 1 if the firm has a standalone risk committee, 0 otherwise. *RCAC* = 1 if the firm has a combined risk and audit committee, 0 otherwise; *TC* = 1 if the firm has a technology committee, 0 otherwise. *ADBIG4* = 1 if the firm has a Big-4 external auditor, 0 otherwise. *INDFIN* = 1 if the firm is in the financial service industry sector, 0 otherwise. *FOREIGN* = 1 if the firm has a foreign domicile, 0 otherwise.

Correlation Analysis

Table 4 documents the Pearson and Spearman correlations between the continuous independent variables (IV) prior to conducting the regression analysis. In relation to the dependent variables (DV), for ease of exposition only the overall RM disclosure (*RMDS*) is included in this correlation analysis. The correlation analyses presents preliminary evidence of the possible relationships between independent and dependent variables used in the regression models. Notably, the results show that the overall disclosure score (*RMDS*) is significantly correlated with Board and AC expertise (*BEXPTS* and *ACEXPTS*), the presence of a standalone risk committee (*RCSA*) but not for joint committees (*RCAC*), the presence of a technology committee (*TC*), and the use of a Big 4 auditor (*ADbig4*). Notably, financial leverage (*LEV*) is the only risk proxy that is significantly correlated with *RMDS*. It is evident that correlations between variables are low, indicating that multicollinearity threats are minimal and should therefore not hinder the interpretation of subsequent regression results.

Regression Analysis

Table 5 displays the results generated from estimating the regression models used to jointly test the hypothesised relationships. Despite the reasonable explanatory power of the models (adjusted R^2 range from 18.9% to 26.5%) and the correlation results reported above, mixed results are shown in the table for the hypothesised associations. These are discussed below.

Board Characteristics ($H_{1A\&B}$): Contrary to expectation none of the board governance factors for independence (*BINDP*) and professional expertise (*BEXPTS*) appear to have a significant impact on the level of the RM disclosures in any of the models. Thus hypotheses 1a and 1b are not supported.

Audit, Risk and Technology Committees ($H_{2A\&B}$, H_3 , H_4): We hypothesised that the level of RM disclosure is positively related to audit committee independence and expertise ($H_{2A\&B}$), the presence of a risk committee (H_3) and a technology committee (H_4). The results from the analysis in Table 5 indicate no significant influence of audit committee independence in any RM disclosure models; therefore H_{2A} is not supported. However, AC expertise is significantly predictor in the *RMDS* model. Additionally, the existence of a standalone risk committee (*RCSA*) in all models, a technology committee (*TC*) in the overall model (*RMDS*), and specific business risk model (*RMDSR*) have significant explanatory power. Interestingly, the combined RC and AC variable (*RCAC*) only has some explanatory power in the *RMDS* model which suggests that standalone risk committees are more effective in facilitating greater RM disclosures than combined audit/risk committees. Thus, in contrast to the lack of explanatory power for the board of director attributes, the board committees examined here are generally influential in improving RM disclosures as predicted (H_{2B} , H_3 and H_4).

Table 4
Correlation Analysis

	<i>RMDS</i>	<i>RCSA</i>	<i>RCAC</i>	<i>TC</i>	<i>ADBIG4</i>	<i>INSTOWN</i>	<i>BINDP</i>	<i>BEXPTS</i>	<i>ACINDP</i>	<i>ACEPTS</i>	<i>MTB</i>	<i>BETA</i>	<i>MCAP</i>	<i>LEV</i>	<i>ROE</i>	<i>CROE</i>	<i>INDFIN</i>	<i>FOREIGN</i>
<i>RMDS</i>		.223**	-0.011	.165**	.151**	-0.005	0.023	.145*	-0.105	.127*	-0.046	-0.054	.290**	.151**	0.008	0.112	.200**	-.147*
<i>RCSA</i>	.249**		-.341**	.220**	.129*	0.036	0.029	0.018	-0.063	-0.034	-.114*	-0.027	.147*	.159**	0.010	0.030	.196**	-0.109
<i>RCAC</i>	-0.025	-.341**		-0.092	0.055	.115*	0.026	-0.028	0.038	0.068	0.065	0.023	0.009	0.092	0.094	0.036	-.138*	-0.066
<i>TC</i>	.215**	.220**	-0.092		0.062	0.003	0.096	0.093	-0.097	0.096	-0.001	-0.104	.153**	.186**	0.105	-0.038	.129*	-0.055
<i>ADBIG4</i>	.145*	.129*	0.055	0.062		0.109	0.105	0.095	-0.101	0.021	-0.076	-0.075	.180**	.183**	0.055	-0.018	-0.022	0.091
<i>INSTOWN</i>	0.002	0.032	.136*	0.012	0.103		0.012	-0.047	-0.038	0.062	-0.060	0.032	.134*	0.011	0.008	-0.005	-.123*	-0.092
<i>BINDP</i>	0.030	0.034	0.016	0.091	0.080	0.010		0.055	0.003	-0.025	-0.023	-0.027	.204**	.122*	0.001	-.116*	0.014	-0.013
<i>BEXPTS</i>	.160**	0.003	-0.022	0.111	0.096	-0.051	0.048		-0.008	.598**	0.010	-.157**	0.081	.177**	0.077	0.057	.287**	-0.097
<i>ACINDP</i>	-0.050	-0.024	0.068	-0.059	-0.063	-0.026	0.107	0.012		.120*	.159**	0.068	-.165**	-0.088	0.032	-0.013	0.018	-0.071
<i>ACEPTS</i>	.137*	-0.039	0.068	0.096	0.019	0.053	-0.034	.620**	0.101		0.052	-0.021	.119*	.124*	0.099	0.041	.212**	-.117*
<i>MTB</i>	-0.045	-0.113	0.065	0.003	-0.063	-0.061	0.038	0.018	.121*	0.051		0.021	0.009	-0.100	.401**	-.137*	-.267**	-0.069
<i>BETA</i>	-0.092	-0.016	0.024	-0.104	-0.085	0.035	-0.010	-.204**	0.090	-0.063	-0.003		-.143*	-.142*	-0.079	.142*	-0.087	-.119*
<i>MCAP</i>	.402**	.177**	0.001	.212**	.177**	0.111	.201**	0.090	-0.099	.115*	0.002	-.173**		.215**	.145*	-0.019	.124*	-0.047
<i>LEV</i>	.219**	.177**	0.071	.207**	.179**	0.007	.114*	.175**	-0.054	.152**	-.120*	-.165**	.270**		.241**	-0.035	0.112	0.006
<i>ROE</i>	0.040	0.010	0.094	0.105	0.055	0.006	-0.006	0.071	0.038	.115*	.351**	-0.113	.172**	.240**		0.086	-0.019	-0.044
<i>CROE</i>	0.105	0.030	0.036	-0.038	-0.018	-0.013	-.140*	0.043	-0.015	0.044	-.118*	.145*	-0.016	-0.030	0.086		.207**	-0.024
<i>INDFIN</i>	.247**	.196**	-.138*	.129*	-0.022	-.126*	0.021	.287**	-0.005	.222**	-.224**	-0.078	.158**	.158**	-0.019	.207**		-.135*
<i>FOREIGN</i>	-.169**	-0.109	-0.066	-0.055	0.091	-0.104	-0.042	-0.112	-0.052	-.116*	-.114*	-0.113	-0.051	0.000	-0.044	-0.024	-.135*	

*,** Correlation is significant at the 0.05, 0.01 level (2-tailed), respectively. Pearson (Spearman Rho) Correlations are shown in the bottom (top) diagonal. Variable descriptions are as shown in Table 3 notation.

Table 5
Regression Results - Risk Management Disclosure Scores & Influential Factors

Dependent Variables	<i>RMDS</i>				<i>RMDSR</i>			<i>RMDS</i>		
	Expected Sign	Std. Coeff.	t-stat	Sig.	Std. Coeff.	t-stat	Sig.	Std. Coeff.	t-stat	Sig.
Intercept			-3.565	**		-3.999	**		-0.952	
Governance Variables										
<i>BINDP</i>	+	-0.077	-1.419		-0.086	-1.542		-0.028	-0.488	
<i>BEXPTS</i>	+	0.072	1.040		0.088	1.235		0.009	0.129	
<i>ACINDP</i>	+	0.015	0.291		0.004	0.078		0.034	0.614	
<i>ACEXPTS</i>	+	0.006	0.088		-0.052	-0.751		0.132	1.859 *	
<i>RCSA</i>	+	0.125	2.134 *		0.104	1.726 *		0.124	2.011 *	
<i>RCAC</i>	+	0.015	0.257		-0.025	-0.427		0.096	1.611 ^	
<i>TC</i>	+	0.076	1.406 ^		0.106	1.910 *		-0.020	-0.343	
<i>ADBIG4</i>	+	0.067	1.249		0.071	1.277		0.034	0.601	
<i>INSTOWN</i>	+	-0.035	-0.657		-0.043	-0.783		-0.004	-0.077	
Risk Factors										
<i>BETA</i>	+	-0.015	-0.280		-0.009	-0.168		-0.023	-0.391	
<i>MTBr</i>	+	0.017	0.280		0.033	0.524		-0.025	-0.380	
<i>LEV</i>	+	0.085	1.434 ^		0.072	1.190		0.080	1.286 ^	
Control Variables										
<i>ROEr</i>	+	-0.077	-1.280		-0.067	-1.078		-0.071	-1.116	
<i>CROEr</i>	+	0.105	1.922 *		0.072	1.279		0.138	2.407 **	
<i>MCAP</i>	+	0.388	6.664 **		0.362	6.069 **		0.294	4.815 **	
<i>INDFIN</i>	+	0.085	1.426 ^		0.111	1.817 *		-0.006	-0.088	
<i>FOREIGN</i>	-	-0.113	-2.121 *		-0.056	-1.035		-0.193	-3.470 **	
Adj. R-squared			0.265			0.226			0.189	
F-Stat.			7.013 **			5.879 **			4.886 **	
N			284			284			284	

^, *, ** significant at the 0.1, 0.05, 0.01 level (1-tailed), respectively.

RMDS = total score for each company based on an assessment of the company's conformance with each of the 20 RM disclosure items required by ASX CGPR Principle 7 were **a score of 1 is recorded for each major disclosure and 0 for a minor or an omitted disclosure**. *RMDSR* = a *RMDS* sub-score for the 13 disclosure items relating to specific business risks and associated policies listed in ASX CGPR Principle 7.1 and 7.4. (The 13 items are: operational, environmental, sustainability, compliance, strategy, ethical conduct, reputation, technological, product/service quality, human capital, financial reporting, market-related, and legal risk disclosures) (RMD1-13). *RMDS* = a *RMDS* sub-score for the remaining 6 disclosure items identified in ASX CGPR Principle 7.2-7.4 relating to board oversight, compliance and regulatory RM issues. (RMD14-20). All other variable descriptions are as shown in Table 3 notation except that *MTBr*, *ROEr* and *CROEr* are ranked measures of the underlying variables to correct for non-normality.

External Governance Factors - Auditor and Institutional Investor Influence (H_5 & H_6): Table 5 further reveals positive associations between Big-4 auditor and the RM disclosure categories, but all are statistically insignificant at conventional levels. Similarly, the results in the table indicate an insignificant relation between our institutional investor ownership proxy (*INSTOWN*) and RM disclosure scores in all three RM disclosure models. Two recent studies, Taylor and Zhang (2011) and Ismail and Rahman (2011) tested the effect of different types of institutional investors on the level of RM disclosure and find some supporting evidence. Differences in variable measurement may explain the differences in results because our institutional investor proxy differs from those prior studies. Thus, neither H_5 nor H_6 is supported for the expected influence of external auditor quality and institutional investors on the level of RM disclosure.

Corporate Risk Measures (H_{7A-7C}): It is hypothesised that the level of RM disclosure is positively related to equity beta risk (*BETA*) (H_{7A}), the market-to-book ratio (*MTB*) (H_{7B}) and financial leverage (*LEV*) (H_{7C}). However, consistent with the UK findings of Linsley and Shrivs (2006), the results shown in Table 5 indicate that, apart from leverage, risk factors do not have explanatory power in the RM disclosure models. Thus, only hypothesis H_{7C} is supported for in the overall model. This finding appears to be mainly due to the influence this risk measure has on the specific business risk disclosures as captured in the *RMDSR* model.

Control Variables: The Table 5 results are consistent with prior studies (e.g. Burgstahler and Dichev, 1997; Hannagan, 2007) in that corporate size (*MCAP*) and changes in return-on-equity (*CROE*) are linked to a higher level of RM disclosure, whereas return-on-equity (*ROE*) does not appear to lead to a greater level of RM disclosure. As expected, the results show that firms in the financial services sector (*INDFIN*) provide high levels of business risk (*RMDSR*) and overall RM disclosures (*RMDS*). Also consistent with expectation, foreign domicile firms (*FOREIGN*) provide lower levels of RM disclosures due their tendency to comply with their home exchange rules for risk management reporting and this is most evident in the compliance sub-category (*RMDS*) model.

Robustness Tests

A number of further tests were conducted to strengthen the robustness of the findings with respect to the scoring method used to construct the RM disclosure index. We originally awarded one for each identified *major* disclosure and zero for a *minor* or an omitted disclosure. The reasoning behind this approach was that many of the minor disclosures were generally vague, minimalistic disclosures (boilerplate) that offered little useful information. Many appeared to simply give the impression of complying with ASX CGPR requirements. However, by grouping *minor* with the omitted category there still remains a possibility that we may have introduced an overly conservative bias in our hypothesis tests. Therefore, we recoded all the disclosures in each of the 20 categories (RMD1-20) with a score of two for each identified *major* disclosure, one for a *minor*, or zero for an omitted disclosure. This revised coding method implicitly increases the weighting for the insufficient disclosures. Table 6 provides the regression results from re-estimating the model with the revised alternative disclosure index (*RMDS2*). It is evident that while the results are similar, they are generally weaker when considering the lower model explanatory power (the adjusted R^2 is now lower for all models). Also contrary to expectation, the coefficient on the financial services sector variable (*INDFIN*) is now significantly negative.

Table 6
Regression Results - Risk Management Disclosure Alternative Scores & Influential Factors

Dependent Variables	<i>RMDS2</i>				<i>RMDSR2</i>			<i>RMDS2</i>		
	Expected Sign	Std. Coeff.	t-stat	Sig.	Std. Coeff.	t-stat	Sig.	Std. Coeff.	t-stat	Sig.
Intercept			-0.690			-2.637 **			2.241 *	
Governance Variables										
<i>BINDP</i>	+	-0.018	-0.304		-0.042	-0.730		0.025	0.410	
<i>BEXPTS</i>	+	-0.023	-0.310		0.020	0.268		-0.072	-0.934	
<i>ACINDP</i>	+	0.078	1.389 ^		0.121	2.153 *		-0.017	-0.297	
<i>ACEXPTS</i>	+	0.034	0.461		-0.049	-0.670		0.131	1.751 *	
<i>RCSA</i>	+	0.027	0.423		-0.015	-0.242		0.072	1.110	
<i>RCAC</i>	+	-0.039	-0.648		-0.107	-1.767 *		0.072	1.157	
<i>TC</i>	+	-0.003	-0.055		0.089	1.531 ^		-0.129	-2.147 *	
<i>ADBIG4</i>	+	0.087	1.501 ^		0.112	1.945 *		0.011	0.189	
<i>INSTOWN</i>	+	-0.089	-1.555 ^		-0.067	-1.174		-0.078	-1.319 ^	
Risk Factors										
<i>BETA</i>	+	-0.070	-1.194		-0.058	-0.990		-0.054	-0.894	
<i>MTBr</i>	+	-0.261	-3.902 **		-0.174	-2.615 **		-0.258	-3.753 **	
<i>LEV</i>	+	0.013	0.205		0.007	0.116		0.015	0.226	
Control Variables										
<i>ROEr</i>	+	0.008	0.131		-0.004	-0.055		0.021	0.317	
<i>CROEr</i>	+	0.146	2.489 **		0.122	2.088 *		0.111	1.832 *	
<i>MCAP</i>	+	0.320	5.127 **		0.343	5.508 **		0.139	2.162 *	
<i>INDFIN</i>	+	-0.096	-1.493 ^		-0.033	-0.515		-0.138	-2.085 *	
<i>FOREIGN</i>	-	-0.084	-1.471 ^		0.021	0.363		-0.189	-3.218 **	
Adj. R-squared			0.153			0.157			0.100	
F-Stat.			4.009 **			4.105 **			2.847 **	
N			284			284			284	

^, *, ** significant at the 0.1, 0.05, 0.01 level (1-tailed), respectively.

RMDS2 = total score for each company based on an assessment of the company's conformance with each of the 20 RM disclosure items required by ASX CGPR Principle 7 where a **score of 2 is recorded for each identified major disclosure, 1 for a minor, or 0 for an omitted disclosure**. *RMDSR2* = a *RMDS2* sub-score for the 13 disclosure items relating to specific business risks and associated policies listed in ASX CGPR Principle 7.1 and 7.4. (The 13 items are: operational, environmental, sustainability, compliance, strategy, ethical conduct, reputation, technological, product/service quality, human capital, financial reporting, market-related, and legal risk disclosures) (RMD1-13). *RMDS2* = a *RMDS2* sub-score for the remaining 6 disclosure items identified in ASX CGPR Principle 7.2-7.4 relating to board oversight, compliance and regulatory RM issues. (RMD14-20). All other variable descriptions are as shown in Table 3 notation except that *MTBr*, *ROEr* and *CROEr* are ranked measures of the underlying variables to correct for non-normality.

We also use a further coding scheme that allocates scores down to the individual theme level (the sub-item levels for each of the RMD1-13 categories shown in Table 2). Instead of a maximum score of 13 for RMD1-13 this new coding scheme produces a maximum score 29. The (un-tabulated) results produced from re-estimating our regressions based on the expanded coding scheme were again weaker than those produced under the original coding scheme. Thus finer, more detailed coding schemes appear to be unproductive in further explaining the nature and extent of risk disclosures under the ASX's risk disclosure framework.

Discussion and Conclusion

Motivated by the paucity of research on risk management disclosures in a world that is increasingly concerned about corporate risk, the objective of this study has been to better understand the effectiveness of RM disclosures in communicating information about corporate risk. We investigated firms in the Australian setting where a principle-based approach applies to the governance practices of firms listed on the Australian Securities Exchange (ASX). In contrast to other settings examined in prior research this principle-based (*“if not, why not”*) approach is augmented by guidelines which identify risk management areas that the ASX expects listed firms to comment on in their annual report disclosures. Thus, in contrast to previous research we were able to specifically examine RM disclosures against a benchmark thereby shedding light on how managers exercise their disclosure discretion. This enabled us to identify areas of disclosure that managers prefer or avoid. To achieve our objective our research questions focused on the nature and extent of corporate risk management disclosures (RQ1), and the risk and governance factors that impact on the level of risk management disclosures (RQ2) under the ASX corporate governance reporting framework.

With respect to RQ1 our results reveal widespread divergence in disclosure practices and low conformance with the ASX's Corporate Governance Principles and Recommendations (ASX CGPR) Principle 7. In fiscal year 2010 approximately one-half of the top 300 ASX listed companies did not disclose any significant information on the 13 major risk categories contained in recommendation 1 of the Principle 7 guidance and provided limited information on aspects of the other recommendations. Where disclosures are made, our thematic analysis indicates that the disclosure quality is generally not high. Often the disclosures were minimalistic and appear to be a “box-ticking” exercise against the ASX guidelines. Of concern, the findings suggest that companies are less inclined to disclose sensitive information such as the failures in technological innovations, threats of legal action, and issues associated with environmental responsibilities and the quality of products and services. Thus companies appear to be failing to disclose all ‘material business risks’ as anticipated in the ASX's recommendations. There may be various reasons for such non-conformance. For example, it may be due to ignorance at the management/board level or due to the intentional withholding of sensitive information from financial statement users. This non-conformance issue is worthy of further research, possibly using a survey or interview method.

With respect to RQ2, the findings show mixed results across the factors expected to influence disclosure behaviour and vary according to the specific RM disclosure sub-category examined. Factors found to be associated with improved levels of disclosure include: audit committee (AC) expertise, the presence of a risk committee (RC) (in particular, a standalone

RC), and a technology committee. Surprisingly, apart from financial leverage, we do not find evidence that company risk measures (as proxied by equity beta and the market-to-book ratio) are significantly associated with greater levels of RM disclosure. Also, contrary to common findings in the disclosure literature (e.g. Malone et al. 1993), factors such as board independence and expertise, audit committee independence, and the usage of a Big-4 auditor do not seem to impact the level of RM disclosure in the Australian context. These findings for RQ2 support the RQ1 findings in that the risk management disclosures provided in annual reports do not appear to reflect how the real underlying risks encountered by ASX-listed companies are managed with these firms.

Although the findings are subject to the usual limitations of content analysis (i.e. coding and scoring issues) and selection issues associated with the choice of sample and study period, the results nevertheless suggest that the top Australian listed companies are not providing the level of disclosure of risk management practices and strategies as recommended by the ASX in their corporate governance guidelines. Notably, we rarely observed instances of firms complying with the “*if not, why not*” principle in their RM disclosure practices. This makes it difficult for users of the annual reports to assess the extent to which the various ASX risk management categories are relevant to specific companies. Furthermore, while corporate governance appears to play some part in improving the nature and extent of RM disclosure it is concerning that risk does not appear to play a greater role in influencing disclosure behaviour. The implication is that the RM disclosures practices observed under the ASX corporate governance disclosure framework may not be meeting the objectives of regulators and the needs of stakeholders. Further guidance and oversight by the ASX or by external auditors, and greater internal oversight (through standalone risk and technology committees) may therefore be necessary to raise the standard of these disclosures. On this issue, we encourage further research on alternative approaches that may lead to more effective risk management disclosure.

Notes

1. ASX Listing Rule 4.10.3 requires a company to provide in its annual report – a corporate governance statement. The corporate governance statement must disclose the extent to which the company has followed the recommendations in the ASX Corporate Governance Code (CGC) during the period. Principle 7 of this Code contains very detailed requirements on risk that Australian listed companies must comply with and disclose this compliance in the corporate governance statement in the annual report. Although the “if not why not” approach in Australia, is similar to the “comply and explain” approach in the UK, the risk disclosure requirements are quite different as the UK corporate governance (2012) code has minimal risk disclosure requirements. While they have increased in the 2014 version, they remain minimal in comparison to the ASX’s CGC, Principle 7 requirements.
2. In sensitivity analysis, we also test other measures of risk including, total equity risk, industry adjusted Beta, asset coverage, operating risk, and bankruptcy risk (Z-scores). However, as none of these measures were significant in explaining RM disclosure scores and many are highly correlated we have excluded them from our main analyses reported later in the paper.
3. See Peterkort and Nielson (2005) and Dempsey (2010). The market-to-book ratio is also considered to be a measure of growth opportunities. Firms with great growth opportunities are generally considered to be more risky.
4. Subsequent analysis revealed missing data for 16 firms and these firms were excluded from the regression estimations.
5. Examples of RM disclosures which were identified as being extensive in nature under particular themes are included later in the paper to demonstrate compliance with the ASX CGPR.

6. A second coder was used to verify the accuracy of the scoring approach based on an independent assessment of the entire sample of RM disclosures. All data coding was then independently reviewed by a one of the authors to ensure the reliability and accuracy of the data coding.
7. We excluded the materials sector after sensitivity analysis revealed no significant association between this sector and RM disclosure scores. We find similar insignificant associations when we test the remaining GICS sectors.

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Detailed Analysis of Risk Management Disclosure Literature (1991-2014)

Appendix 1

Authors	Journal/Conference	Where study conducted	Method	Period of Study	Sample	Theory applied	Measurement Approach	Main Results
Marston & Shrivies (1991)	British Accounting Review	UK	Conceptual	1991	N/A	<ul style="list-style-type: none"> No theory 	N/A	<ul style="list-style-type: none"> Review of the literature indicates that index construction and awarding scores is difficult and involves subjective judgement on the part of the researchers.
Anonymous (2002)	Balance Sheet Journal	UK	Conceptual	1999	Discussion of Annual Report Requirements	<ul style="list-style-type: none"> No theory 	N/A	<ul style="list-style-type: none"> Position paper on risk management within the corporate environment. Recommended directors present disclosures of key risk planned and relevant measures. Followed by Turnbull report (1999) which links internal control to the risk management and recommends a risk based approach to establishing a sound system of internal control.
Solomon et al. (2000)	British Accounting Review	UK	Survey	2000	Survey of 552 institutional investors	<ul style="list-style-type: none"> Development of an internal control, RM and Risk Disclosure Framework. Focuses on the disclosure aspect of conceptual framework for IC. 	<ul style="list-style-type: none"> Survey of UK institutional investors canvassing their attitudes towards risk disclosure in relation to their portfolio investment decisions. 	<ul style="list-style-type: none"> Findings indicate that institutional investors do not generally favour a regulated environment for corporate risk disclosure or a general statement of business risk. Respondents agree that increased risk disclosure would help them with portfolio investment decisions.
Linsmeier et al. (2002)	Accounting review	US	Hypothesis and Statistical testing	1997	337 SEC companies	<ul style="list-style-type: none"> No theory applied – Regulation on 10-K market risk disclosures discussed. 	<ul style="list-style-type: none"> Content analysis of risk information disclosed in relation to 10-K Market risk disclosures. 	<ul style="list-style-type: none"> Found that 34% of sample companies did not disclose risk information. 65% disclosed risk information.
Carlson et al. (2003)	Australian accounting review	Australia	Content analysis	1998	Annual reports of 54 Australian listed companies in mining sector	<ul style="list-style-type: none"> No theory 	<ul style="list-style-type: none"> Content analysis of risk disclosures. 	<ul style="list-style-type: none"> Found no agreed conceptual framework internationally on regulating reporting of risk. Discussed alternative definitions of risk and the scope of risk reporting. Found considerable variation in the content and level of RM disclosures in Australian Mining sector.
Beattie et al. (2004)	Accounting forum	N/A	Conceptual, content analysis	1999	Annual reports of 11 UK companies from the Food and Beverage sector.	<ul style="list-style-type: none"> Introduces a 4 dimensional framework for holistic content analysis of accounting narratives. Computer implementation recommended. 	<ul style="list-style-type: none"> Content analysis of risk disclosures. Risk disclosures analysed by considering topic + time orientation + financial orientation + quantitative orientation. 	<ul style="list-style-type: none"> Explored quality and the problematic nature of quality measurements. Discussed limitations of prior measurement approaches. Identified new attributes of quality. Method discussed and further extended to suggest possible new dimensions of disclosure quality Presented a diagram of approaches to analysis of narratives.
Beretta & Bozzolan (2004)	International journal of accounting	Italy	Content Analysis, Disclosure Index and regression analysis	2001	Annual reports of 85 non-financial companies listed on Italian Stock Exchange	<ul style="list-style-type: none"> Proposed a framework for the analysis of voluntary risk disclosures that considers 4 different but complementary dimensions- content, economic sign, types of measures and managerial approach. 	<ul style="list-style-type: none"> Content analysis- used sentences as the unit of analysis. Coding based on content, economic sign, type of measure, and outlook orientation. Considered quantity, depth, density and outlook profile as ways to measure risk disclosures. Categorised RM disclosures into type of measures and developed disclosure index. Regression analyses undertaken. 	<ul style="list-style-type: none"> Disclosure of risk is narrative by nature - quantity of disclosure is not a suitable proxy for disclosure quality. Identified that quality depends on both quantity of disclosure and richness of its content. Richness is a function of type of content disclosed, type of measures used to disclose the expected impacts of considered factors and the approach management adopted to disclose identified risks. Found in regression analysis that quality is not influenced by company size or industry.

Authors	Journal/Conference	Where study conducted	Method	Period of Study	Sample	Theory applied	Measurement Approach	Main Results
Linsley & Shrivs (2005)	Journal of risk finance	UK	Content Analysis	2001	Annual reports of 79 UK public companies	<ul style="list-style-type: none"> No theory. Prior literature discussed. 	<ul style="list-style-type: none"> Content analysis: used sentence based approach. RM voluntary disclosures categorised into monetary or non-monetary, good, bad or neutral news, future or past information. 	<ul style="list-style-type: none"> Found that companies provided a minimal approach to quantity of RM disclosure and much of it generalised statements of risk policy. Company size associated with volume of RM disclosure. Forward looking information is being released.
Lajili & Zeghal (2005)	Canadian Journal of Administrative sciences	Canada	Content Analysis, risk disclosure scores developed	1999	Annual reports of TSE 300 listed Canadian companies	<ul style="list-style-type: none"> No theory. Prior literature discussed. 	<ul style="list-style-type: none"> Content analysis: counted words in each risk related sentence and for each risk category. Number of sentences and words were added together to calculate disclosure scores for firms and industries in the sample. 	<ul style="list-style-type: none"> Risk information disclosed exclusively qualitative in nature and located in notes to accounts or management discussion and analysis section. Most frequently cited risk categories were financial risk, commodity and market risk. Large variation, particularly in voluntary risk reporting and much of the disclosures are quite limited in nature.
Linsley & Shrivs (2006)	British Accounting Review	UK	Content analysis, statistical analysis of hypotheses	2001	Full Annual reports of 79 UK listed companies	<ul style="list-style-type: none"> No theory. Prior literature discussed. Concept of risk included credit risk, market risk, interest rate risk, operational risk and capital structure & adequacy. 	<ul style="list-style-type: none"> Content analysis: Used number of sentences to determine extent of disclosure. Specifically examining time orientation, whether they are monetarily quantified and if good or bad risk news is disclosed. Considered hypothesis variables company size and level of risk to explain the extent of voluntary RM disclosure. 	<ul style="list-style-type: none"> Found a total of 6168 risk disclosure sentences were identified within the same of annual reports. Found a correlation between company size and environmental risk and volume of risk disclosure. No correlation for other variables. Monetary assessments uncommon, but forward looking information was observed.
Linsley et al. (2006)	Journal of Banking Regulation	Canada & UK	Content analysis, statistical testing	2001	Annual reports of matched pairs of 9 UK and Canadian banks	<ul style="list-style-type: none"> No theory. Prior literature discussed. 	<ul style="list-style-type: none"> Content analysis:-counted RM sentences rather than words or pages. Set of decision rules were created for consistent coding. Disclosure grid developed. Tested hypotheses using statistical tests. 	<ul style="list-style-type: none"> Overall dominance of general risk policy information indicates a risk information gap exists. Quantitative and future risk information disclosed less than qualitative and past information.
Abraham & Cox (2007)	British Accounting Review	UK companies in US	Content analysis, disclosure index, regression analysis	2002	Annual reports of FTSE 100 (excluding financial companies) Narrative disclosures examined for business, financial and internal control risk	<ul style="list-style-type: none"> Agency theory 	<ul style="list-style-type: none"> Content analysis - Sentences as the unit of analysis. Scoring based on whether sentence includes risk information or not. Disclosure index - sum of business, financial and internal control risk measures. Measured relationship between risk disclosure levels and board of directors, institutional pension plans, dual-listed stock. 	<ul style="list-style-type: none"> Examines narrative risk disclosure from a broad perspective. Extends the analysis of risk reporting to examine the relationship between UK firms dual listed in the US. Found that risk reporting is negatively related to share ownership by long-term institutions and that different types of board directors fulfil different functions as no. of executives and no. of independent directors are positively related to risk disclosure.
Linsley & Lawrence (2007)	Accounting, auditing and accountability journal	UK	Content analysis	2001	Annual reports of 25 largest non-financial companies listed in the FTSE 100	<ul style="list-style-type: none"> No theory. Prior literature discussed. 	<ul style="list-style-type: none"> Uses the Flesch Reading Ease formula to measure the readability of the risk disclosures. Content analysis - authors independently identified risk-related sentences - sample of seven annual reports. Creation of decision rules for the consistent coding of the remainder of the sample. 	<ul style="list-style-type: none"> Found that no prior studies had focused on testing for readability of risk disclosures. Identified that it is important that transparent risk information is provided to the marketplace. This study is valuable in its examination of the clarity of communication of published risk information.

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Beretta & Bozzolan (2008)	Journal of Accounting, Auditing and Finance	Italy	Development of conceptual framework, content analysis	2001	Annual reports of 85 Non Financial Italian Listed companies	<ul style="list-style-type: none"> Development of conceptual framework is used as theory development and then conceptual framework tested 	<ul style="list-style-type: none"> A new framework includes quantity of information disclosed and the richness of its content. Richness defined as a function of width of the disclosures on different topics regarding a firm's business model and value-creation strategy, and of the depth of the disclosures in relation to the presence insights into a firm's future performance. Tested validity of framework with sample companies using content analysis and statistics. 	<ul style="list-style-type: none"> Explores idea that the quantity of disclosure is a sound proxy for the quality of disclosure. Adopts a multidimensional framework and an index for quality disclosure is proposed. Found that the proposed framework captures dimensions of annual report disclosure that are considered useful by financial analysts in forecasting earnings. Stronger positive association between with accuracy & disclosure and a stronger negative association with the dispersion of financial analysts' earnings forecasts than a simple index of disclosure quantity.
Dobler (2008)	International journal of accounting	N/A	Conceptual	N/A	N/A	<ul style="list-style-type: none"> Reviews models associated with risk management disclosures and presents a comparison of risk reporting requirements in US, IFRS and Germany 	N/A	<ul style="list-style-type: none"> Reviews discretionary disclosure model on verified risk reporting including disclosure costs and uncertainty of information availability. Reviews cheap talk models on unverified risk reporting such as the single-period cheap talk and multi-period cheap talk. Found that incentives for risk reporting do not appear as prevalent as suggested in prior literature & provides reasons why risk reporting may not occur. Presents a summary of regulatory requirements in US, IFRS and Germany. Presents a short summary of risk reporting studies.
Taylor et al. (2008)	Asian Review of Accounting	Australia	Development of Financial Instrument disclosure index and Corporate governance composite score, Content analysis, statistical tests, regression analysis	2005	Annual reports of 30 Australian listed mining companies. No detail provided on whether all of annual report analysed or only a section.	<ul style="list-style-type: none"> Agency Theory 	<ul style="list-style-type: none"> Development of a Financial Instrument Disclosure Index (FIDI) measuring 120 financial instrument disclosure items in annual report disclosures. Corporate governance composite score measures 13 corporate governance items. Content analysis used to determine FIDI and CGS scores. Regression analysis measured level of FIDI based on level of CGS. 	<ul style="list-style-type: none"> Examined the relationship between corporate governance and managerial behaviour in the form of disclosures. Developed a Financial instruments disclosure index and corporate governance scoring measurement. Found a positive and significant relationship between corporate governance structure (CGS) and extent of financial instrument disclosures (FIDI).
Amran et al. (2009)	Managerial Auditing Journal	Malaysia	Content analysis and regression analysis	2005	Narrative section of annual reports of 100 Malaysian companies drawn from main and second board of Bursa Malaysia	<ul style="list-style-type: none"> Stakeholder theory 	<ul style="list-style-type: none"> Content analysis - extent of risk disclosures (existence and types of risk disclosures). Sum of the total number of sentences was used as the measure of risk disclosure. Multiple regressions used to assess the variability of the extent of RM disclosures and the relationship between risk disclosures and the level of risk, size, industry & leverage. 	<ul style="list-style-type: none"> Found the majority of companies studied did disclose risk information in the Chairman's statement in annual reports of Malaysian companies. Found the number of sentences related to RM disclosure in annual reports of Malaysian companies was less than UK companies (Linsley & Shrivs, 2006). Size was significantly associated with level of risk disclosure. Leverage was not significant. Two out of eight industry variables were found significant at 5% level.

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Brown et al. (2009)	Corporate Governance- An international Review	Australia	Conceptual		N/A	<ul style="list-style-type: none"> Discusses traditional corporate governance model, draws on corporate governance models and risk management models 	N/A	<ul style="list-style-type: none"> Role of the Audit committee (AC) in RM examined & compared to traditional role of the AC in overseeing financial and non-financial risk in complex risk environments. Found the traditional governance mode in relation to the role of the AC being responsible for RM is inadequate for high technology companies who operate in a complex risk management environment.
Hassan (2009)	Managerial Auditing Journal	UAE	Development of RM disclosure index (CRD index), content analysis, regression analysis	2005	Annual reports of 41 companies listed on the Dubai Financial market or Abu Dhabi Security Market	<ul style="list-style-type: none"> Positive accounting theory - economic consequences and institutional theory - social legitimacy 	<ul style="list-style-type: none"> Development of a corporate risk disclosure index (CRD). Grouped RM disclosures and scored disclosures based on risk information disclosed. Regression analysis tested for associations between size, debt to equity, industry type, leverage, and reserves. 	<ul style="list-style-type: none"> Investigates the relationship between the level of corporate risk disclosure and UAE corporation characteristics.. Found support for the debt to equity and industry membership hypotheses.
Othman & Ameer (2009)	Journal of Financial Regulation and compliance	Malaysia	Content analysis and descriptive results	2006	Annual reports of 429 Main Board, Second board and MESDAQ companies	<ul style="list-style-type: none"> Financial Instrument Disclosure Requirements 	<ul style="list-style-type: none"> Content Analysis used to code the disclosures into different risk categories and other characteristics 	<ul style="list-style-type: none"> Study explores the market risk disclosure practices among Malaysian listed firms under FRS132 – Financial Instruments standard Found that whilst the majority of companies complied, the extent of compliance varied. Disclosure on various risks varied considerably.
Cheung et al. (2010)	Pacific Accounting Review	Australia	Interviews and questionnaires	N/A	Four leading accounting professors in Australian universities, a regulator and accounting professional body representative.	<ul style="list-style-type: none"> No theory. Based on literature and accounting standards. 	<ul style="list-style-type: none"> Reviews the literature on quality in relation to financial reporting in Australia. Investigates how the qualitative characteristics of relevance, reliability, comparability and understandability developed in Australia and their relationship to financial reporting. 	<ul style="list-style-type: none"> Investigates what is meant by "quality in relation to financial reporting. Found that quality is related to 4 characteristics being relevance, reliability, comparability and understandability. Identified that there are still unresolved issues in relation to how characteristics relate to financial reporting.
Taylor et al. (2010)	Accounting & Finance	Australia	Content analysis, RM disclosure index and composite score, regression analysis	2002-2006	Sample of 111 Listed resource companies	<ul style="list-style-type: none"> Agency theory used as conceptual framework to examine RM disclosures 	<ul style="list-style-type: none"> Content analysis coded to develop the financial risk management disclosure index (FRMD). FRMDI score developed - sum of 27 financial RM disclosure items. Proxy measures for corporate governance structure developed from ASX corporate governance principles & recommendations. Statistical testing and regression analysis used to test hypotheses. 	<ul style="list-style-type: none"> Explored extent of RM disclosures and IFRS adoption of Financial instruments IFRS standard, the strength of corporate governance structures, the occurrence of capital raisings, listing in more than one jurisdiction and financial risk management disclosures (mandatory and discretionary). Found that corporate governance and capital raisings of firms are significantly and positively associated with financial risk management disclosures in Australian resource companies.
Dobler et al. (2011)	Journal of international accounting research	USA, Canada, UK and Germany	Detailed content analysis, regression analysis to test hypotheses	2005	Annual reports (notes to financial statements and management reports) of matched samples of 160 listed companies - manufacturing sector across the 4 countries.	<ul style="list-style-type: none"> No theory. Discussion of prior research and risk disclosure regulation. 	<ul style="list-style-type: none"> Content analysis used sentences & more detailed than Linsley & Shrives (2006). Selection of international and larger sample in one industry. Includes location of RM disclosures, and type of reference to risk. Regression analysis of relationship between risk disclosures and proxies for level of firm risk while controlling for firm size. 	<ul style="list-style-type: none"> Conducted a detailed international analysis of corporate risk disclosure. Found a consistent pattern of risk disclosures focused on the management report and on financial risk, with relatively less quantitative and forward-looking disclosures across all sub-samples. Regression results revealed a size effect and indicate that risk disclosure quantity is associated with level of firm risk.

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Hemrit & Arab (2011)	The Journal of Operational Risk	Tunisia	Content analysis and Risk disclosure index, statistical testing	2000-2009	14 Tunisian insurance companies	<ul style="list-style-type: none"> Agency theory and information asymmetry 	<ul style="list-style-type: none"> Disclosure index developed from 4 conceptual elements of operational risk. Coded using content analysis of risk disclosures. Statistical tests of hypotheses. 	<ul style="list-style-type: none"> Examines the disclosure practices related to operational risk in Tunisian insurance companies over a decade. Provides a table of RM research. Found that leverage and provisions intensity have a significant effect on operational risk reporting policy. Size was related positively to the probability of disclosure. Companies with low capital costs and large size were found to be more motivated to disclose the events of operational risk.
Ismail & Rahman (2011)	Journal of Corporate Governance	Malaysia	Content analysis, RM scored developed, regression analysis	2006-2008	124 List companies on main board Bursa Malaysia	<ul style="list-style-type: none"> Agency theory 	<ul style="list-style-type: none"> Content analysis used to code RM disclosures RM score checklist developed to measure extent of RM disclosure based on disclosures related to 3 mandatory elements. Three point scale used to measure extent. Measurement of independent and control variables based on prior literature. RM disclosure categorised into 2 main elements (mandatory and voluntary). 	<ul style="list-style-type: none"> Examines the effects of institutional investors and board characteristics in monitoring RM disclosure level. Disclosure has slightly increased from 2006 to 2008. Mandatory disclosure is 71%. Voluntary disclosure is around 50%. Institutional investors were found to have a significant relation with level of RM disclosure. Results are mixed on relationship between board of directors and RM disclosure levels.
Oliveira et al. (2011a)	Journal of Banking Regulation	Portugal	Content analysis	2006	Annual reports of 190 Portuguese credit institutions (excluding financial institutions and credit institutions)	No theory, prior research and regulation discussed.	<ul style="list-style-type: none"> Content analysis used to quantify the risk related quantitative information and narrative information disclosed in annual reports. Coded to 6 risk disclosure categories. 	<ul style="list-style-type: none"> The adoption of IFRS has brought greater flow of risk related information but not increased transparency. Found that risk related disclosures lacked comparability because of different maturity time bands and different reporting practices for capital structure and adequacy. Misalignment of quantitative disclosures and related narrative disclosures led to problems of relevance, reliability and understandability
Oliveira et al (2011b)	Journal of Financial Regulation and compliance	Portugal	Content Analysis	2006	Annual reports of 111 banks.	<ul style="list-style-type: none"> Institutional theory Legitimacy theory, Resource based theory 	<ul style="list-style-type: none"> Content analysis of entire annual report using sentences as unit of analysis - assess voluntary operation risk and capital structure and adequacy disclosures based on disclosure categories from the 3rd Pillar of Basel II accord. Economic sign of disclosure coded (monetary/non-monetary) and type of measure (past/future). 	<ul style="list-style-type: none"> Explores the factors that affected the voluntary risk related disclosures (RRD) in individual annual reports of Portuguese banks. Found low levels of RRD - mean of 16.78 sentences. Also identified that narratives difficult to read and failure of narratives to explain numerical disclosures. Highest level of disclosures by large listed banks consistent with theory.
Taylor & Zhang (2011)	AFAANZ Conference	Australia	Content analysis and regression analysis	2009	Annual reports of 66 companies in Top 201-Top 350 listed ASX companies	<ul style="list-style-type: none"> Agency Theory 	<ul style="list-style-type: none"> Content analysis - Sentences the unit of analysis to assess RM disclosures. Considered impact of Institutional investors, audit committees on RM disclosure levels. 	<ul style="list-style-type: none"> Found that long-term institutional ownership was negatively and weakly related to RM disclosure levels. Positive association between audit committee independence and RM disclosure levels.

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Abraham et al. (2012)	Institute of Chartered Accountants Scotland	UK	Interviews, content analysis	2009-2010	32 analysts & 16 preparer interviews with representatives of 16 FTSE-listed companies representing FTSE 100, 250 and AIM Markets Annual reports of 18 food and beverage companies	<ul style="list-style-type: none"> No theory. Prior literature discussed. 	<ul style="list-style-type: none"> 32 Interviews covered 3 broad themes: sources of RM information, impact of regulation on RM disclosures and types of RM disclosed and constraints on disclosure. Content analysis of 18 annual reports of companies in food and beverages sector of financial times share service. 	<ul style="list-style-type: none"> Identified that analysts found one to one meetings are the most useful source of RM information. Mixed views about the usefulness of RM disclosures in the annual reports, with some analysts considering them to be useful while others see them as too general or boilerplate. RM disclosures have increased but concern over emphasis on quantity rather than quality.
Elzahar & Hussainey (2012)	Journal of risk finance	UK	Content analysis & regression analysis	2009-2010	Interim report narrative sections of 72 UK companies	<ul style="list-style-type: none"> Agency theory Signaling theory 	<ul style="list-style-type: none"> Content analysis - risk related sentences used to measure level of risk information in interim reports. Regression considered impact of firm characteristics - sector type, firm size, cross listing, profitability, liquidity, gearing, institutional ownership, board size, role duality, board composition, AC size on level of risk disclosures. 	<ul style="list-style-type: none"> Used agency and signaling theory to identify potential drivers of risk information in interim company reports. Found that company size, type of business is positively associated with RMD. Other characteristics insignificant.
Aebi et al. (2012)	Journal of banking and finance	North America	Statistical analysis	2006	Annual reports and proxy statements forms of 573 US banks	<ul style="list-style-type: none"> No theory, prior literature discussed 	<ul style="list-style-type: none"> Collected data on RM & Chief Risk Officer (CRO) and board members, dedicated bank risk committee, board independence, board size, percentage of directors with experience as an executive officer in a bank or insurance company. Five further variables related to the risk committee, 10 corporate governance variables and 3 measures of bank performance were collected. 	<ul style="list-style-type: none"> Considers whether RM disclosure related to corporate governance mechanisms. Found that where the CRO reports to the board, the bank performed significantly better in financial crisis than other banks in the sample. Other variables were not significantly associated with bank performance.
Miihkinen (2012)	International journal of accounting	Finland	Content analysis, developed a composite model of the overall quality of risk disclosure	2005-2006	129 listed companies at OMX Helsinki	<ul style="list-style-type: none"> No theory, prior literature discussed 	<ul style="list-style-type: none"> Define risk disclosure - all information firms provide in the risk reviews they present in their annual reports. Includes both historical and forward looking information. Content analysis based on number of risk disclosure words. Used to assess RM disclosures against the Risk disclosure standard of the Finnish Accounting Practice Board. 	<ul style="list-style-type: none"> Examines the impact of a detailed national disclosure standard on the quality of companies overall risk reviews under IFRS. Considers quality for risk disclosure by applying disclosure quality indicate from Beattie (2004) and Beretta & Bozzolan (2004). The results demonstrate that the risk disclosure standard resulted in improved quality of risk disclosure across several dimensions.
Elshandidy et al. (2013)	International review of Financial Analysis	UK	Content analysis, score development & regression analysis	2005-2009	Annual reports of 339 UK listed companies	<ul style="list-style-type: none"> Disclosure theory and prior research 	<ul style="list-style-type: none"> Automated content analysis - used sentences to measure three levels of risk disclosure (aggregated, voluntary and mandatory). Count of risk statements in whole annual report rather than restricting to specific sections used). Used Nvivo to search for risk related keywords and all statements including at least one keyword are counted. 	<ul style="list-style-type: none"> Investigates how firm risk levels impact aggregated, voluntary and mandatory risk disclosures in UK companies. Found that aggregated and voluntary risk disclosures are positively associated with systematic and financing risk and risk-adjusted returns. Mandatory risk disclosures influenced by other firms and corporate governance characteristics than firm's risk levels.

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Ismail et al. (2013)	Journal of applied Business Research	Malaysia	Content analysis	2006-2009	Annual reports of 17 Islam Banks	<ul style="list-style-type: none"> No theory, prior literature discussed 	<ul style="list-style-type: none"> Content Analysis - three point scale to determine extent of RM disclosure. 	<ul style="list-style-type: none"> Overall result for mandatory disclosure was 89%. Voluntary disclosure varied from 87-86% dependent on type of risk. Highest was RM framework disclosure.
Mokhtar & Mellett (2013)	Managerial Auditing Journal	Egypt	Content analysis and unweighted disclosure index developed, statistical analysis	2007	Annual reports of 105 listed companies- stratified random sample	<ul style="list-style-type: none"> Proprietary costs theory Agency theory, Stakeholder theory Political cost theory signaling theory Legitimacy theory 	<ul style="list-style-type: none"> Content analysis used to code disclosures to measure the level of compliance with mandatory risk disclosure standard. Sentences is the unit of analysis used. Sentences codes according to nature of evidence, type of news, outlook and type of risk. Unweighted disclosure index developed from coding. 	<ul style="list-style-type: none"> Explores the extent of mandatory and voluntary risk reporting and the impact of competition, corporate governance and ownership structure. The average level of compliance is 21.57% and ranged from 5-71%. This implies the cost of compliance exceeds the cost of non-compliance. Found little voluntary reporting, more qualitative compared to quantitative risk reporting, good news and non-financial reported. RM disclosures tended to be backward looking compared to forward looking. Significant positive associated between board size and risk.
Probohudono et al. (2013)	Social Responsibility Journal	South East Asia	Content analysis and development of a Risk disclosure index, regression analysis	2007-2009	Annual reports of 60 listed Manufacturing companies in Indonesia, Malaysia, Singapore & Australia	<ul style="list-style-type: none"> Agency theory 	<ul style="list-style-type: none"> Content analysis used to code risk disclosures. Dichotomous scored 1 or 0. Risk disclosure index developed from scoring, regression analysis assess determinants of risk disclosures. 	<ul style="list-style-type: none"> Found that the disclosure of risk data is relatively consistent across the three years at 26-29%. Low level of risk disclosure. Country, size and board independence were found to be positively significantly associated with level of risk disclosure. Leverage is negatively associated with the extent of voluntary risk disclosure.
Abraham & Shrivies (2014)	British Accounting Review	UK	Content analysis	2002-2007	Annual reports of FTSE 100 - 2008 (Food Producers and Processors Sector)	<ul style="list-style-type: none"> Proprietary costs theory Institutional theory 	<ul style="list-style-type: none"> Content analysis to identify risk factors in annual reports. Moves away from counting words & sentences. Divided risk statements into general and company specific and analysed for meaning. 	<ul style="list-style-type: none"> Longitudinal study of quality of RM disclosures which develops multi-theoretic framework, Found that RM disclosures tend to be quite general and routine, follow prior disclosures closely, often boiler plate. Companies do not appear to signal good RM through comprehensive disclosures and appear to prefer general non-specific routine information.
Tao & Hutchinson (2013)	Journal of Contemporary Accounting and Economics	Australia	Regression analysis	2006-2008	Unbalanced panel data set of 317 ASX listed companies in the financial sector	<ul style="list-style-type: none"> Agency theory 	<ul style="list-style-type: none"> Regression analysis with 2 dependent variables - Risk measured by Beta and Firm performance measured by Earnings per share. Independent variables – risk committee and compensation committee characteristics. 	<ul style="list-style-type: none"> Examines the role of compensation and risk committees in managing and monitoring the risk behaviour of Australian firms in the lead up to the global financial crisis. Composition of the risk and compensation committees is positively associated with risk, which in turn is associated with firm performance.
Al-Najjar & Abed (2014)	Managerial Auditing Journal	UK	Content analysis and regression analysis	2006	Narrative sections of Annual reports of 238 UK companies listed on London Stock Exchange	<ul style="list-style-type: none"> Agency Theory options optimal contract existence of independence directors, undertaking internal & external audits, increase level of information disclosed by companies 	<ul style="list-style-type: none"> Hypothesized that corporate disclosure associated with board independence, AC, independence, blockholding ownership and CEO turnover. Used key word search to identify forward looking information. Scoring based on Abed & Roberts (2011). Regression analysis used to assess hypotheses. 	<ul style="list-style-type: none"> Found that the independence of AC and blockholder ownership are associated with level of voluntary disclosure of Forward Looking information. Corporate disclosure is significantly related to company size, performance, cross listing and operating cash flow.

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Elshandidy & Neri (2014)	Corporate Governance- An international Review	UK and Italy	Content analysis and score development	2005-2010	290 UK and 88 Italian non-financial companies	<ul style="list-style-type: none"> Agency theory Stewardship theory 	<ul style="list-style-type: none"> Automated content analysis to capture risk disclosure scores. Developed a list of key words and generated aggregate risk disclosure scores for each country by counting the frequency of sentences containing at least one of these risk words. Developed measures for voluntary and mandatory risk disclosure levels. 	<ul style="list-style-type: none"> Considers influence of corporate governance on mandatory and voluntary risk disclosures in UK and Italy. Found corporate governance significantly motivates UK firms to higher levels of voluntary than mandatory risk disclosures in narrative sections of their annual reports. In contrast, corporate governance in Italy motivates companies to provide more mandatory risk disclosures than voluntary.
Elshandidy et al. (2014)	The British Accounting Review	Germany, UK and US	Content analysis, score development and regression analysis	2005-2010	219 German, 339 UK and 320 US listed companies	<ul style="list-style-type: none"> Institutional theory 	<ul style="list-style-type: none"> Content analysis used via Nvivo to measure both mandatory and voluntary risk disclosures. Risk related keywords used to code data. All statements including a risk related word counted. A disclosure score developed for mandatory disclosure. 	<ul style="list-style-type: none"> Investigates how firm and country characteristics explain variations in mandatory and voluntary risk reporting both within and between non-financial firms across Germany, UK and US. Germany focused on mandatory, UK is focused on voluntary and US is a combination of the two approaches. Found significant variations in mandatory and voluntary risk reporting between firms across the 3 countries.
Maffei et al. (2014)	Managerial Auditing Journal	Italy	Content analysis	2011	Notes to the Financial Statements and Annual reports of 66 Italian Banks	<ul style="list-style-type: none"> Regulation used as theory 	<ul style="list-style-type: none"> Content analysis used to investigate the variation in the level of RM disclosure between notes to financial statements and public reports. 	<ul style="list-style-type: none"> Italian Banks formally comply with the Bank of Italy's instructions but option to choose information which affects the quantity of RM disclosure in each report and for each risk category.
Sekome and Lemma (2014)	Managerial Auditing Journal	South Africa	Content analysis and regression analysis		Annual reports of 181 non-financial listed companies on Johannesburg Securities Exchange	<ul style="list-style-type: none"> Multi-theoretic approach including Agency, corporate legitimacy theory, signaling and institutional theory 	<ul style="list-style-type: none"> Content analysis used to assess the extent of disclosures. Regression analysis applied to assess the determinants of risk disclosure. 	<ul style="list-style-type: none"> Strong positive relationship between the separate RM Committee and board independence, board size, firm size and industry type. No support for independent board chair, auditor reputation, reporting risk and financial leverage.