

A Content Analysis of Risk Management Disclosures in Canadian Annual Reports

Kaouthar Lajili
Daniel Zéghal

University of Ottawa

Abstract

This research paper examines risk information disclosures in Canadian annual reports to provide insights into the current risk disclosure environment, its characteristics, and the analytical usefulness of the information disclosed to the firm's stakeholders. Following a content analysis, the authors describe and then analyze in greater detail the subject matter of risk disclosures of TSE 300 Canadian companies by summarizing and classifying disclosed risk-related information. Results show a high degree of risk disclosure intensity reflecting both mandatory and voluntary risk management disclosures. However, the analytical power of such disclosures, as captured by the risk assessment analysis, appears to lack uniformity, clarity, and quantification, thus potentially limiting their usefulness. The authors conclude that more formalized and comprehensive risk disclosures might be desirable in the future to effectively reduce information asymmetries between management and stakeholders.

JEL Classification: M410, G300, D210, D890

Keywords: Risk disclosure; content analysis; risk management.

Risk management strategies have long been examined within the boundaries of the firm (i.e., internally) as important managerial decisions since risk is present in almost every aspect of business operations. Recently,

The authors thank Iraj Fooladi (Co-Editor), Heather Wier (Area Editor), two anonymous reviewers, and Daniel Thornton for helpful comments and suggestions. Support from the Social Sciences and Humanities Research Council of Canada, and the CGA Accounting Research Centre at the School of Management at the University of Ottawa, are gratefully acknowledged.

Address correspondence to Kaouthar Lajili, School of Management, University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON, Canada K1N 6N5. E-mail: lajili@management.uottawa.ca

Résumé

La présente étude analyse les divulgations d'informations sur le risque dans les rapports annuels canadiens. Elle se propose de jeter une lumière sur l'environnement actuel de divulgation des risques, ses caractéristiques, et l'utilité analytique des informations divulguées pour les acteurs de l'industrie canadienne. Grâce à la méthode de l'analyse du contenu, les auteurs décrivent puis analysent de façon plus détaillée le contenu actuel des divulgations d'informations sur le risque des entreprises du TSE 300. Ils y parviennent en synthétisant et en catégorisant les informations divulguées. Les résultats montrent que les divulgations se font à une fréquence assez élevée, consécutive aux divulgations obligatoires et volontaires de gestion des risques. Cependant, vu la manière dont l'analyse d'évaluation des risques divulgue ces informations, leur pouvoir analytique semble manquer d'homogénéité, de clarté, et de quantification, ce qui limite potentiellement leur utilité. Les auteurs concluent qu'à l'avenir, les divulgations de risques gagneraient à être plus formalisées et plus complètes. Ceci permettrait de réduire l'asymétrie des informations entre les gestionnaires des risques et les investisseurs.

Mots clés : Divulgation du risque; analyse de contenu; gestion du risque

increasing research attention has been directed to risk management and control from an external viewpoint, and more specifically from the stakeholders' viewpoints. Driven by increased complexities in the business world, and an objective to promote transparency and improve disclosure quality by reducing information asymmetries, risk and risk management disclosures are potentially useful to analysts, investors, and other firm stakeholders. These disclosures provide guidance in evaluating management's effectiveness in dealing with increased market volatility and business uncertainty and their impact on firm-level economic value and growth, as well as trading volume sensitivity to different risks (e.g., Carlin & Mayer, 2003; Clarkson, Kao, & Richard-

son, 1999; Linsmeir, Thornton, Venkatachalam, & Welker, 2002; Rajan & Zingales, 1998; Venkatachalam, 1996). As part of good corporate governance, risk management information is expected to be increasingly sought by the firm's stakeholders and information users in general, to elicit potentially relevant information (namely risk exposure and control strategies) that might be intentionally withheld by management for strategic purposes. This would help identify potential managerial problems (and opportunities) and assess management's effectiveness in dealing with business uncertainties and opportunities.

The increased attention on effective risk management is also driven by the increasing importance of some types of risks and uncertainties, particularly in the new knowledge-based economy. In addition to the more commonly analyzed financial risk and business and operational risks (e.g., Lev, 1974; Linsmeir et al., 2002; Thornton, 1983), such risks also include strategic risks, technology risks, regulatory risks, and political risks. For instance, a sudden resignation of the CEO of a company could be considered a strategic risk and might potentially affect the company's operating performance and economic value in the capital markets, at least in the short run. Another example concerns the rapid change of technology such as the electronic information technology revolution of the late 1990s and its impact on managerial decisions in changing the production input mix, which will directly affect the operating leverage and risk (i.e., the ratio of fixed to variable operating costs) as examined in Lev (1974). While the reporting of most financial risk types (such as currency, credit, and financial instrument use risks) in Canada has been significantly improved since the mid-nineties¹ and continues to be debated in the accounting standard setting circles, other types of risk, which this paper will examine more closely, are only voluntarily disclosed by companies. We do not focus on the economic incentives for these voluntary disclosures, which could reduce information asymmetries between management and stakeholders. Rather, our objective here is to survey the way management reports these types of risks, and which firms and industries are reporting certain categories of risks and associated risk management strategies.

Risk has both downside and upside components (or opportunities). Therefore, in addition to controlling risk exposure and minimizing the effects of downside risks, firms should be able to take advantage of the upside risk potential at any point in time and place, and investors should be able to identify those firms that have done so. In examining Canadian risk disclosures and focusing on the voluntarily disclosed risk categories as explained in the subsequent sections of this research paper, we seek

evidence (if any) of the existence of upside risk disclosures in addition to downside risk disclosures that are most commonly reported in the firms' annual reports (see Thornton, 1983, for a detailed description and examples of reporting practices on contingencies and risks in Canada).

Despite recent increased risk research attention on the international scene, there are few Canadian research studies that specifically address risk and risk management disclosure and the reporting environment in Canada (e.g., Clarkson et al., 1999; Linsmeir et al., 2002; Thornton, 1983). This paper examines all types of risk disclosure and risk management information in the annual reports in corporate Canada in 1999. More specifically, we identify and then analyze alternative ways followed by Canadian firms to communicate risk management information to interested outside parties, namely investors and stakeholders in general. Following a content analysis methodology, this research paper aims at giving a snapshot picture of the state of risk disclosures in corporate Canada. Although we encompass all types of risk categories disclosed, our emphasis is on non-financial risk types such as business and operational risk, regulatory risk, and environmental risks, as more valuable information about a firm's total risk exposure could be inferred from the non-financial side of operations, as discussed later.

The remainder of this paper is structured as follows. First, we present the relevance of risk management information and review the related literature. In a subsequent section, we discuss the disclosure of risk management information in corporate Canada and current risk disclosure guidelines and regulations. The remaining sections describe the research design and methodology and report the content analysis results. The paper concludes with some implications of the results and suggestions for future research.

Relevance of Risk Management Information and Related Research

Risk management strategies and economic performance are fundamental parts of managerial competency and decision-making. Managers are constantly under pressure to achieve the central core objective of enhancing their company's value assuming effective incentive mechanisms are in place to minimize agency-related costs and to facilitate good corporate governance. Risk management might be considered an integral part of internal control and governance and as such could be used as a performance check on how successful management is in meeting its objectives, given the uncertain-

ties and risks surrounding the firm's operations and global environment. Thus, careful identification, measurement, and assessment of risk types and contingencies that a firm faces represents a first step towards developing a risk management strategy. A subsequent step involves formulating the response to risk (both threats and opportunities) by managing risk. This formulation would include determining capacity for bearing risk, risk reduction procedures, and other strategies to benefit from the upside risk potential, in other words, developing a risk response model. Finally, a third stage in the risk management internal control strategy involves monitoring and checking the performance of the risk response model developed by management on a regular basis as the uncertainty unfolds. In the case of financial and market risk, disclosure of risk categories and risk management strategies is required by the standards setters institutions—the Canadian Institute of Chartered Accountants (CICA) in Canada and the Financial Accounting Standards Board (FASB) in the U.S.—and by the exchange regulators for publicly-listed companies. In other cases (e.g., business risk, political risk, environmental risk), disclosure is voluntary or encouraged, as discussed in the next section.

To date, more research in risk management accounting and disclosure has been directed to the U.S. setting with an emphasis on financial risk disclosures (e.g., Linsmeir et al., 2002; Roulstone, 1999; Venkatachalam, 1996). However, some international research studies are beginning to emerge (e.g., Kajuter, 2001; Linsley & Shrivs, 2000) motivated in part by the current international accounting debate about IAS and U.S. GAAP reporting quality comparisons (e.g., Ball, Robin, & Wu, 1999; Leuz, 2003). In the Canadian context, with the exception of the seminal research work by Thornton (1983) on the theory and practice of contingency accounting in Canada, a research gap persists between the theory and practice of risk measurement and disclosure.

In examining the U.S. risk disclosure setting, Linsmeir et al. (2002) use a sample of nonfinancial firms to investigate the impacts of forward-looking Securities and Exchange Commission (SEC) mandated market risk disclosures. They document a reduced trading volume sensitivity to variations in market rates and prices, namely interest rates, foreign currency exchange rates, and commodity prices, following SEC's mandated market risk disclosure. The authors interpret their findings based on the research hypothesis that mandated risk disclosures would decrease investors' uncertainty and diversity of opinion about the effects of market rate/price changes on investors' perceptions of firm risk exposure and consequent implications for firm values. They also examine the effectiveness of the three possible reporting

methods (i.e., tabular, sensitivity, and value-at-risk disclosures) as outlined by the SEC (1997, FR-48) and find that tabular disclosures are more effective in decreasing trading volume sensitivity to interest rate changes whereas sensitivity and value-at-risk (VAR) disclosures are more effective in reducing trading volume sensitivity to foreign exchange rate variations. In the current paper, although we focus our attention on non-financial types of risk disclosure practices in Canada, we nevertheless report our empirical findings for all types of risks, including financial risks, and we attempt to link risk disclosure practices to accounting and exchange regulations as discussed in the following sections.

Within the same risk disclosure literature, Venkatachalam (1996) presents evidence on the market value-relevance of U.S. banks' off-balance sheet derivatives disclosures under SFAS 119 "*Disclosure about Derivative Financial Instruments and Fair Value of Financial Instruments*". He finds that the fair value estimates for bank derivative financial instruments help explain cross-sectional variations in bank share prices and that fair values disclosures have incremental explanatory power with regard to contractual (or notional) amounts of derivatives. Interestingly, this study also finds that about half of the sample banks may be using derivatives to increase their risk exposure rather than reduce it, which is the subject of ongoing research.

On the international scene, and within the accounting standards harmonization debate, some research studies have examined risk reporting and the disclosure environment in a comparative international context (e.g., IFAC, 1999; Kajuter, 2001; Shrivs & Linsley, 2003). Most of these studies highlight the shortcomings and lack of transparency in risk disclosure and reporting due mainly to the absence of standards and uniform measures for different risk components domestically and internationally. Studies also document that different countries in Europe and North America have different risk reporting requirements. For example, Kajuter finds that Germany has, in general, a more detailed domestic regulation of risk disclosure than the UK and U.S. However, the empirical analysis, based on risk reports issued by German companies, describes an overall poor disclosure practice. In a more recent study, Leuz (2003) examines one particular segment of the German trading market referred to as Germany's New Market, initiated in 1997, to investigate any differences between firms using the IAS or the U.S. GAAP (since firms trading in this market can choose between either accounting standard for financial reporting purposes) in information asymmetry and market liquidity using proxy variables. Leuz finds no statistically significant differences in information asymmetry proxies between firms adopting IAS compared to those choosing U.S. GAAP and concludes

that both accounting standards seem to be of fairly comparable informational and disclosure quality.

We attempt to contribute to this emerging risk disclosure literature first by describing current risk disclosure regulations in the Canadian setting, and second by presenting the Canadian risk disclosure practice findings and thus complementing other country-specific risk disclosure studies.

The Disclosure of Risk Management Information: An Overview of Canadian Regulations for Risk Disclosure

Risk information and management are usually communicated at three different levels: internal, external, and an intermediate level between the two.

Internal risk reporting to management and employees involves sharing the information about risk identification, measurement, performance development, and monitoring. Internal risk reporting is intended to help management and employees run the firm efficiently to meet its objectives by providing relevant operational and strategic information on a regular basis. This type of internal disclosure is usually informal and takes the form of internal meetings and updates that are integrated with the firm's organizational model. Internal risk reporting represents the original and most discretionary type of risk information and decision-making catalyst (see for example AICPA/CICA, 1999).

Risk information reported to the firm's board of directors is an intermediate stage between the internal information channel and the external public disclosure level. It is intended to reassure the board of directors about management control measures and success in handling risk-related issues in the firm. This form of risk reporting might be formal or informal depending on the organizational model followed and the corporate culture inside the firm.

External reporting (or public disclosure) of risk-related information is mainly required from firms and organizations using external financing and is often mandated by regulatory agencies, creditors (bankers and bondholders), and investors. Risk reporting in this case usually involves principal regulatory requirements in the form of prospectus uses and annual reports. Prospectus uses cover a full range of relevant risk types and considerations for prospective or potential investors, while annual reports provide qualitative and quantitative risk information in the financial statements (mainly in the footnotes) or in the exchange regulator requirement sections, namely the management discussion and analysis (MD&A) sections. Since our sample comprises all TSE 300 firms that may be cross-listed with other major for-

eign exchanges, namely, the U.S. securities exchanges, it is useful to briefly review the current regulatory climate in both countries with regard to risk disclosure.

Financial accounting standards bodies and security exchange commissions in Canada and the U.S. require business entities to provide information to financial statement users regarding their exposure to risk. Financial and market risk disclosures (such as currency, interest rate, and credit risks) are the most regulated categories of risk in terms of GAAP and CICA rules for financial reporting. In particular, in Canada, the *CICA Handbook*² (Section 3860) requires that firms disclose any information that assists users of financial statements in assessing the extent of risk related to both recognized and unrecognized financial instruments such as the extent and nature of the financial instruments including the terms and conditions. The risks listed in paragraph 44 of this section include price risk (currency risk, interest rate risk, and market risk), credit risk, liquidity risk, and cash flow risk. The section outlines the accounting policies and conditions under which specific types of transactions and balances for financial instruments should be disclosed such as measurement methods (i.e., cost or fair value methods) and depending on the potential significance of market risk exposure.

In addition to these disclosure requirements for financial instruments, the *CICA Handbook* (section 3860, paragraph 43) states: "entities are encouraged to provide a discussion of the extent to which financial instruments are used, the associated risks and the business purposes served". Other related sections of the *CICA Handbook* deal with more specific elements of risk disclosures, such as section 1650 covering foreign currency translation and changes in foreign operations, section 1701 on segment disclosure, and section 1508 on conditions for measurement uncertainty disclosures. Thus, mandatory risk disclosures concern primarily financial instruments use and risk exposure to financial and market risk usually reported in the footnotes to the financial statements. Any qualitative or quantitative discussion of the risks associated with the use of financial instruments and management's policies to manage those risks is currently voluntary to a great extent. While the Canadian regulations appear to deal more broadly with different types of financial instruments' use and exposure disclosures, the U.S. GAAP regulations contain more specific, detailed, and usually more complex risk disclosure requirements. For instance, two FASB documents—"Disclosure about fair value of financial instruments" (FASB, 1991) and "Accounting for derivative instruments and hedging activities" (FASB, 1998)—establish accounting and reporting standards for financial instruments and derivative instruments respectively. In particular, the latter requires that an entity recognize

all derivatives as either assets or liabilities in the statement of financial position and measure those instruments at fair value. Derivatives used for hedging, and thus risk control purposes, are classified under three categories depending on the source of risk exposure: (a) changes in fair value of recognized firm asset or liability or an unrecognized firm commitment, (b) changes in cash flows of a forecast transaction, and (c) changes in foreign currency positions.

In addition to the financial reporting statements for risk disclosure summarized above, securities exchange regulators both in Canada and in the U.S. require that registrant firms disclose certain information (including risk) mainly in the MD&A section of the 10K-reports (e.g., Clarkson et al., 1999). For instance, the Ontario Securities Commission (OSC) stresses materiality of the information to be disclosed in the MD&A,³ which may not be fully addressed in the financial statements and requires corporations to provide information regarding, for example, financial instruments and other instruments through rule 51-102.⁴ The requirements of this rule include a discussion of the nature and extent of the company's use of financial and other instruments and the business purpose they serve, a description and analysis of the risk associated with the instruments as well as management strategies to control risk including any hedging activities, and a discussion of significant assumptions made in determining the fair value of financial instruments and their classification.

As Clarkson et al. (1999) document, MD&A disclosures provide new, supplementary, and useful information particularly to investors and financial analysts, and as such represent a part of a firm's overall disclosure policy or package. The OSC (Policy Statement No. 5.10) establishes the MD&A as an information tool designed to "give the investor the ability to look at the Issuer through the eyes of management by providing both a historical and prospective analysis of the Issuer." Although this policy describes the OSC requirements in terms of disclosure content of the MD&A (namely the five specific subcomponents to be discussed, i.e. operations, financial condition, liquidity, forward-looking information, and risk and uncertainty), the general scope and flexibility in reporting in some of these areas, including risk, further suggest that the MD&A disclosures form another corporate disclosure channel. The Clarkson et al. (1999) study supports this argument and presents evidence on the variability of the MD&A disclosure quality across firms and within disclosure subcomponents, particularly for forward-looking information.

Forward-looking information is presently only encouraged in Canada, in contrast with the U.S. exchange rules in which the SEC requires companies to provide both quantitative and qualitative disclosures

about market risk including forward-looking information (e.g., SEC, 1997). Specifically, it requires that within both the "trading" and "other than trading" portfolios, separate quantitative information should be presented, to the extent material, for each market risk exposure category (i.e., interest rate risk, foreign currency exchange rate risk, commodity price risk, and other relevant market risks, such as equity risk) following three different disclosure format alternatives: tabular presentation, sensitivity analysis, and VAR-type disclosures as discussed in Linsmeir et al. (2002).⁵

In summary, most mandatory rules for risk disclosure in both Canada and the U.S. concern primarily financial types of risks and commodity or market risks. Nonfinancial types of risk are currently disclosed on a voluntary basis, to a large extent, and mostly in the MD&A sections under the condition of "materiality" and "significant risk exposure," which might give management a chance to exercise their discretion in choosing to publicly disclose potentially relevant risk information.

Empirical Analysis and Methodology

Our analysis in this paper is predominantly a content analysis, which has been widely used in the accounting research literature, particularly for examining social and environmental disclosures (e.g., Guthrie & Parker, 1990; Milne & Adler, 1999; Zéghal & Ahmed, 1990). We adopt this methodology in the current paper mainly because risk disclosures, particularly non-financial types, are largely disclosed qualitatively and content analysis may capture the extent and volume of such disclosures. A first step in analyzing risk disclosure by Canadian companies is to examine the intensity and nature of risk-related information, as well as the volume and location of such information. Our goal, at this stage, is to know in greater detail which industries and companies disclose such information, how much, and where they choose to report this information.

This research paper is based on the disclosure of risk management information by the TSE 300 companies as of December 1999, and uses the annual reports downloaded from the electronic Data Bank SEDAR.⁶ We examined any information related to risk management in the annual reports and synthesized it using the content analysis framework. Following previous content analysis research literature (e.g., Milne & Adler, 1999; Zéghal & Ahmed, 1990), a graduate student familiar with content analysis procedures was instructed to code the risk information in the annual reports and identify the categories reported by marking on the worksheet the number of words in each risk-related sentence and for each risk category. The number of words and the number of sen-

Table 1
Sample Distribution by Industry and Risk Disclosure Intensity

Industries	Number of Firms						Percentage of disclosure
	Total	Non-Disclosing Firms	Total Disclosing Firms	Mandatory Disclosures Only	Voluntary Disclosures Only	Both Mandatory and Voluntary Disclosures	
Auto & Parts	4	1	3	3	0	0	75.00%
Banks & Trusts	4	2	2	1	0	1	50.00%
Biotechnology / Pharmacy	8	4	4	1	0	3	50.00%
Breweries & Beverages	2	2	0	0	0	0	0.00%
Broadcasting	7	3	4	1	2	1	57.14%
Building Materials	7	2	5	2	0	3	71.43%
Business Services	6	1	5	1	0	4	83.33%
Cable & Entertainment	3	1	2	0	1	1	66.67%
Chemical & Fertilizers	8	3	5	0	0	5	62.50%
Conglomerates	3	2	1	0	0	1	33.33%
Departments Stores	1	0	1	0	0	1	100.00%
Fabricating & Engineering	16	3	13	2	2	9	81.25%
Financial Management	1	0	1	0	0	1	100.00%
Food Processing	12	3	9	3	0	6	75.00%
Food stores	3	0	3	0	2	1	100.00%
Gas & Electrical Utilities	15	5	10	2	3	5	66.67%
Gold & Precious Mineral	18	5	13	3	2	8	72.22%
Hospitality	2	0	2	1	0	1	100.00%
Households Goods	6	1	5	1	0	4	83.33%
Industrial Contractors	1	0	1	0	1	0	100.00%
Insurance	4	2	2	0	0	2	50.00%
Integrated Mines	9	1	8	4	0	4	88.89%
Integrated Oil	6	0	6	3	2	1	100.00%
Investments companies & Trusts	8	5	3	0	0	3	37.50%
Mining	4	0	4	0	0	4	100.00%
Mining Exploration	1	0	1	0	0	1	100.00%
Oil & Gas Services	6	1	5	1	1	3	83.33%
Oil & Gas Producers	32	4	28	2	4	22	87.50%
Paper & Forest Products	18	5	13	2	1	10	72.22%
Pipelines	2	0	2	1	0	1	100.00%
Publishing & printing	5	1	4	1	0	3	80.00%
Real Estate & Construction	16	2	14	2	4	8	87.50%
Specialty Industries	2	1	1	1	0	0	50.00%
Specialty Stores	10	2	8	2	2	4	80.00%
Steel Producers	6	1	5	0	0	5	83.33%
Technology Software	9	2	7	3	0	4	77.78%
Technology Hardware	8	1	7	1	1	5	87.50%
Telephone Utilities	8	2	6	4	2	0	75.00%
Tobacco	1	1	0	0	0	0	0.00%
Transport Equipments	4	1	3	0	0	3	75.00%
Transportation Services	11	2	9	4	1	4	81.82%
Wholesale Distributors	3	0	3	1	1	1	100.00%
Total	300	72	228	53	32	143	76.00%

Table 2
Descriptive Statistics and Mean Comparison Tests between Mandatory and Voluntary Risk Disclosures^a

	Firms with mandatory only disclosures	Firms with mandatory and voluntary disclosures	t-test for Equality of Means ^b	
	Mean (Std. Deviation)	Mean (Std. Deviation)	t-value	sig. (2-tailed)
Total Assets	8319313 (34707274) N = 53	3645454 (17925814) N = 175	1.302	0.194
Sales	2772856 (4476413) N = 53	2336281 (11487837) N = 175	0.270	0.787
Profits	130876 (382420) N = 53	82753 (460521) N = 175	0.692	0.490
Beta	0.50 (0.51) N = 36	0.51 (0.34) N = 96 ^c	-0.149	0.882
Debt/ Equity	0.91 (1.24) N = 50	0.85 (0.81) N = 167	0.464	0.643
Debt/ Total assets	0.48 (0.72) N = 52	0.56 (3.95) N = 159	-0.424	0.672

Notes:

^a The above mean comparison tests are run between firms disclosing only mandatory risk information and firms disclosing both voluntary and mandatory risk as well as voluntary only risk information.

^b Non-parametric tests (e.g., Mann-Whitney tests) were also run and results were fully consistent with the above shown. Mean comparison tests were also run between risk disclosing firms and non-disclosing firms and similar results obtained.

^c The total number of observations for beta, debt/equity, and debt/assets ratios do not add up to the total number of disclosing firms (228 in the sample) in the above tests because some companies have missing observations on these variables in the database used (Stock Guide).

tences were then added together to compute the disclosure scores for firms and industries in the sample. Consistent with Milne and Adler, and to increase the reliability of such content analysis, two more knowledgeable coders (authors of the current paper) verified the graduate student's scoring worksheet, in addition to using two scoring and measurement options (number of words and number of sentences).

Sample Characteristics

The descriptive results and sample distribution of disclosing and non-disclosing firms by industry for the study sample appear in Table 1 where 228 companies and 42 industries have been identified with risk management information in the annual reports reflecting a dis-

closure rate of 76%, while 72 companies (or 24%) have no disclosure of risk management information. While this disclosure rate appears relatively high, one might question the degree of relevance and potential analytical usefulness of the information disclosed. This particular concern will be addressed later in the current paper. Table 1 also shows the distribution of disclosing companies by distinguishing between firms disclosing "mandatory only" risk categories (23% of the disclosing firms in the sample), those disclosing "voluntary only" risk information (14% of the disclosing firms), and those disclosing both mandatory and voluntary risk categories, which represent the majority of disclosing firms with 63% of the total disclosing group in the sample. In terms of intensity of disclosure by industry group, Table 1 shows the following characteristics:

Table 3
Volume of Risk Disclosure

Location in the Annual Report	Words	Sentences
MD&A		
Number of firms	194	194
Mean	216.07	10.1
Median	185.5	8
Std. Deviation	159.38	7.23
Minimum	3	1
Maximum	955	42
Notes to the Financial Statements		
Number of firms	188	188
Mean	204.05	10.07
Median	159.5	8
Std. Deviation	167.9	10.01
Minimum	4	1
Maximum	1128	94

1. Ten industries in the sample have 100% of their firms reporting risk. These industries are usually highly concentrated with six firms or less in the industry. It includes, for example, the “food stores,” “mining,” and “wholesale distributors” industries.
2. The remaining 30 industries have a combination of disclosing and non-disclosing firms with disclosure intensity varying between 33% and 87%.
3. There are two industries with zero disclosure (“breweries and beverages” and “tobacco”).
4. The “oil and gas producers” industry has the highest number of disclosing firms (28) and an industry disclosure intensity of 87.5%, whereas the lowest industry disclosure is displayed by “conglomerates” with 33.33%.

To investigate any statistically significant differences between firms disclosing only mandatory risk information and firms disclosing both mandatory and voluntary risk information, we conducted a one-way ANOVA analysis according to the following firm characteristics: total assets, sales, profits, beta, debt/equity ratio, and debt to total assets ratio. These variables were available and thus directly collected from the Stock Guide database. The mean and standard deviation for the above accounting variables for each group and the t-test results are reported in Table 2. Because some observations on the leverage ratios (e.g., debt/equity and debt/assets) and on the systematic risk (beta) were missing in the Stock Guide database for some sample firms, the total number of observations in Table 2 do not always

add up to the total number of disclosing firms (228 in the study sample).

All the t-tests resulting from the ANOVA analysis⁷ do not seem to indicate any significant differences between strictly mandatory risk disclosures and other more voluntarily disclosed risk information. According to Table 2, firms disclosing only mandatory risk information are not statistically distinguishable from firms with both mandatory and voluntary risk disclosures. This result should be interpreted with caution since the results compare firms across different industry groups, which potentially introduces variability and “noise” beyond the risk disclosure choice. Nevertheless, the extent to which these firms are disclosing potentially relevant intrinsic risk information about their business operations, as will be discussed in detail later in this paper, would suggest that management considers disclosing both qualitative and quantitative risk information to be potentially useful to the firm’s various stakeholders and investors in particular. Therefore, a closer look at what companies report about their intrinsic (or firm-specific) risk exposure and management strategies is needed to be able to more accurately assess the potential value gains and current as well as future profitability and growth prospects.

Location, Volume, and Categories of Risk Disclosure in the Annual Reports

In this section, we examine how and where Canadian companies disclose relevant information about their risk exposure and risk management strategies and how such information could be measured and analyzed.

The two sections of the annual report where the information on risk management can be found are MD&A and the notes to the financial statements. We measure the volume of risk disclosure by the number of words and sentences used in each firm’s disclosure, either in the MD&A or footnote sections, following content analysis as explained above. However, it is only by examining the actual content of risk disclosure that the quality and potential value of such sensitive information could be assessed.

Results of the content analysis are presented in Table 3. This table shows that the mean risk disclosure in the MD&A is 216 words and 10 sentences, whereas the mean disclosure in the notes to the financial statements is 204 words and 10 sentences. The median is 185 words and 8 sentences for the MD&A and 159 words and 8 sentences in the notes. However, a relatively high dispersion and variability between the sample firms exist as shown by the standard deviation figures (159 words and 7 sentences for the MD&A and 167 words and 10 sentences

Table 4*Location of Risk Disclosure and Frequency Distribution of Risk Categories*

Panel A: Location of Risk Disclosure in the Annual Reports

Section in the annual report	Number of Firms	Percentage
MD&A	194	85.09%
Notes to the FS	188	82.46%
MD&A and Notes to the FS	154	67.55%
Total	228	

Panel B: Frequency Distribution of Risk Categories Disclosure

Number of categories reported by firms	Number of Firms	Percentage	Cumulative %
1	11	4.82%	4.82%
2	44	19.30%	24.12%
3 ^a	56	24.56%	48.68%
4	53	23.25%	71.93%
5	34	14.91%	86.84%
6	17	7.46%	94.30%
7	10	4.39%	98.68%
8	2	0.88%	99.56%
9	1	0.44%	100.00%
Total	228	100.00%	

Notes:

^a The most frequent combination of categories of risk is "Financial", "Commodity", and "Market"

for the notes). Table 4 (panel A) summarizes the location and relative disclosure intensity of the risk information in the annual reports. It shows that 85.09% of the companies disclosed the information on risk management in the MD&A only, 82.46% disclosed in the notes to the financial statements, and 67.55% disclosed in both sections. We also find that risk information disclosed in the footnotes is exclusively financial risk information, whereas the MD&A sections cover a wide range of risk types including financial risks, which seems to be consistent with the Canadian risk disclosure and reporting guidelines and regulations outlined earlier in the paper. The analysis by risk category is central and will be covered in more detail in the remaining sections of the paper to look more closely at the different types of risks reported and their relative importance and potential effects on firm operations.

Table 4 (panel B) further describes the volume and

risk disclosure intensity by reporting the frequency of risk disclosure and highlighting the most frequently disclosed combinations of risk categories as reported by the sample firms. In general, some firms disclose only one risk category, others more than one for a maximum of nine risk categories. The most frequently disclosed combination comprises three risk factors with 56 firms in the sample disclosing three or fewer risk categories, thus representing about 25% of the total sample and a cumulative distribution of about 49%. Financial risk with its first four sub-categories (i.e., currency, interest rate, credit, and financial instruments value) and commodity and market risk categories are the most frequently disclosed combination. This empirical evidence further supports the predominance of financial, commodity, and market risks information in risk disclosure compared to the other types of risk, consistent with the emphasis that Canadian disclosure regulations place on these areas.

Table 5
Risk Sources and Management

Risk Sources ^A	Risk Management
Financial	
Currency	
A significant portion of the revenues & expenses is foreign currency (42) ^B (Ma) ^C	Hedging using options contracts (20) ^B
Fluctuation of the Canadian \$ (46) (M ^b)	Hedging using forward contracts (25)
	Hedging using futures contracts (18)
	Adjusting the selling prices (5)
	Hedging using swaps contracts (15)
	Borrowing in a variety of currencies (2)
Interest rate	
Rising of interest rates (35) (M ^c)	The mix of fixed and variable loans (3)
	Hedging using swaps contracts (29)
	Hedging using forward contracts (25)
Credit	
Non-guaranteed accounts receivable, investing and derivative transactions (19) (M ^d)	Transaction only with pre-authorized counterparties where agreements are in place (8)
Default of the counterparties respecting any commitments (35) (M ^e)	Establishing credit limits for all parties with whom a credit risk exposure exists (12)
	Monitoring customers credit on a regular basis (22)
	Dealing with highly rated counter-parties (15)
Financial instruments value	
Fluctuation of the derivative instruments value during the time (loss on derivative financial instruments) (45) (M ^f)	The unrealized gains and losses on outstanding contracts are offset against the gains and losses of the hedged item at the maturity for cash flow hedges; for fair value hedges, gains and losses on the hedged item go to earnings along with losses and gains on the hedging instrument (4)
Fluctuation of foreign currency exchanges rates (3) (M ^g)	
Market	
High competition (29)	Reduce costs (13)
Loss of a big customer (8)	Anticipate and respond promptly to continuous and rapid developments (8)
The sudden variation in the number of products sold by the customer (6)	Favorable relations with suppliers (7)
Advent of competition in the local service market (10)	Provide value-added services to the customers (7)
New alliances and joint ventures (5)	Widening of the major customer base (2)
Appreciation of the Canadian \$ ^D (1) (M ^h)	Accurate estimation of the costs of new contracts or projects (3)
	Developing custom loyalty (8)
	Innovation (new products) (8)
	Developing E-business (1)
	Entering new markets (6)
	Market repositioning (6)

Table 5—continued

Risk Sources ^A	Risk Management
Environment	
Environmental incidents (20)	Implantation of procedures for managing materials containing environmentally sensitive substances (26)
Use of environmentally sensitive products (7)	Monitoring and training staff (22)
Environment activists (1)	Convert the production processes (1)
Environment laws and regulations (30)	Meet world and/or national environmental standards (20)
	Inform customers (1)
	Recycling (1)
Government Regulation	
Adverse changes of government control and regulation and taxation (26)	Ensure to be at all times in compliance with current laws (6)
Many levels of regulations (federal, provincial, municipal) (2)	Developing and marketing innovative products and tools (2)
Government's funding cuts (1)	Negotiation (1)
High degree of government regulation (1)	Adopting a proactive approach to public policy initiatives (2)
	Maintaining comprehensive programs and contingency plans to control health, safety and environmental risks (4)
	Assesses the risk before making an investment (1)
Operational	
Technical failure (e.g., computer system) (17)	Purchase of insurance (16)
Labour disputes (1)	Hiring and retaining highly trained and experienced staff (14)
Extreme weather conditions (1)	Developing control quality system and equipments maintenance (9)
Natural disasters (e.g., earthquakes) (6)	Implementing software which allows better design, drafting, estimation, and manufacturing (2)
Changing regulatory requirements (3)	Diversification of revenue streams (3)
Accidents (e.g., blowouts, fires) (10)	Involving engineering, administrative and operating staff to identify risks and develop control programs (4)
Human error (11)	Installing efficient, environmentally sensitive production infrastructure (1)
Loss of certain key employees (3)	Developing an operational emergency response plan (1)
Insufficient resources (5)	Extensive use of new technology (5)
Supplier	
Key suppliers (16) (M ⁱ)	Several sources of supply (8)
Not secure suppliers (4)	Developing good relations with the suppliers (6)
	Owning a supply network (1)
	Looking for secure suppliers (5)
Natural Resources	
Low quality of reserves (9)	Searching for high quality natural resources (7)
Low supply (2)	Developing relationships with strategic vendors to secure supplies (1)
Insufficient quantities of reserves (10)	Generation of exploration prospects internally (5)



Table 5—continued

Risk Sources ^A	Risk Management
Legislation restricting exploration in some areas (1)	Maintaining a highly motivated, energetic, and talented staff (4) Focusing on geographic areas in which the geological and engineering considerations are well understood by the company (2) Maintaining a large inventory of drillable prospects to “high grade” drilling prospects (2)
Political	
Working in an international environment (13)	Joint venture agreements with local partners (5)
Unexpected changes in regulatory requirements (3)	Financing for foreign operations with the involvement of international banking syndicates (5)
Complex local procurement practices and requirements (1)	Adopting strategies that are responsive to changing political and economic conditions (2)
Difficulties in enforcing rights in foreign courts (2)	Acquiring political risk insurance (3)
The laws of some foreign countries do not protect the company’s intellectual rights (1)	Reviewing closely political and social conditions before investing (2)
Adverse political developments (5)	Hiring employees who have experience working in the international arena (1)
Technology	
Rapid technological change (12)	Developing e-commerce (2)
Internet (2)	Adopting and benefiting from new technologies (3) Hiring highly qualified experienced professionals and training of personnel (4) Supporting and developing diversified product offerings (1)
Weather	
Severe climatic conditions (7)	Investing in all season businesses (3)
Unusual (unexpected) weather conditions (2)	Geographic diversification (3)
Unfavourable weather conditions (3)	Limiting the activities it costs too much and there is risk of incidents) (1)
Seasonality	
Natural seasonal patterns (6)	Sales reporting and merchandise planning using reliable information system (1)
Weather (1)	Investing in four-season businesses (1) Geographic diversification (1)
Cyclicity	
Natural cyclical trend (6)	Geographic diversification (3) Industry diversification (1)

Notes:

^A Risk disclosure categories

Financial risk: changes in interest rate, currency, credit and financial instrument value

Political risk: conducting business internationally

Market risk: changes in competition, number of products sold by customer, loss of market share

Technology risk: rapid technological change

Environmental risk: environment incidents, environment laws and regulations



Table 5—continued*Notes—continued*

- Weather risk: severe, unfavourable climatic conditions
- Government regulation risk: changes in government control, regulation and taxation
- Seasonality risk: natural seasonal patterns
- Operational risk: technical failures, accidents, human error, loss of key employees
- Cyclicity risk: natural cyclical trend
- Supplier risk: dependence on key suppliers, not secure suppliers
- Natural resources risk: insufficient quantities of reserves, low quality of reserves

^B The figures represent the number of firms that have chosen a particular source or a particular way of managing.

^C “M” refers to mandatory risk disclosures. We classify a risk disclosure item as mandatory if an explicit accounting rule or security exchange requirement exists and is applicable to the companies in the sample. Therefore, if a risk disclosure item involves management’s judgment (or discretion) as to the materiality and significance of the risk information disclosed, it is classified as voluntary.

^D The appreciation of the Canadian dollar could be considered both a currency risk and a market risk because it potentially leads to foregone sales in the international markets and loss of market share.

Relevant Rules and Regulations for Mandatory Risk Disclosures

^a CICA 1650 Foreign currency translation, and FASB* 133 Establishing hedging accounting and Statement No.133 Hedging Activities, and SEC* – FRR No.48 Mandatory forward looking market risk disclosure and Item 305 a, b Quantitative & Qualitative information about market risk

^b CICA 1650.50 Hedging of foreign currency items; 3860.92 Using Financial instrument as a hedge of risks, and FASB 133 Establishing hedging accounting and Statement No.133 Hedging Activities and SEC-FRR 36 Prospective information; FRR No.48; Item 305 a, b

^c CICA 3860.57, .58, .63, .64 Interest rate, and FASB 133 Establishing hedging accounting and Statement No. 133 Hedging Activities, and SEC-FRR 36 Prospective information; FRR No.48; Item 305 a, b

^d CICA 3860.75 Concentration of credit risks; 3860.74 Financial instrument obligation guarantor, and FASB Statement No. 105 Concentration of credit risk and SEC-FRR 36 Prospective information; FRR No.48; Item 305 a, b

^e CICA 3860.75 Concentration of credit risks; 3025 Impaired loans, FASB Statement No. 114 Impairment of a loan

^f CICA 3860.44, .51 Financial instrument gains & losses net basis disclosure; 3860.45, .59, .61 Financial instrument price risks, and FASB Statement No. 119 Quantitative Information about Market Risk and FASB 133 Establishing hedging accounting and activities, and SEC-FRR 36 Prospective information; FRR No.48; Item 305 a, b

^g CICA 3860.44, .45, .61 Financial instrument, and FASB 133 Establishing hedging accounting and hedging activities, and SEC-FRR 36 Prospective information; FRR No.48; Item 305 a, b

^h CICA 1650 Foreign currency translation

ⁱ CICA 1701.42, .43 Major customers; and FASB Statement 14 Major customer

*Mandatory risk disclosure from FASB and SEC are applied to companies that are cross-listed on the U.S. and Canadian exchanges.

The content analysis followed in this research paper resulted in the identification of different risk categories as reported by sample firms to distinguish between various risk sources and types that a company faces depending on the nature of its business and global environment. All types of risks (e.g., financial and non-financial), whether mandatory or voluntary, are included in the content analysis. The analysis by category of risk reported, as found in the Canadian annual reports of the TSE 300 companies in this study, reveals that the highest volume of disclosure is associated with the financial risk category with 29.28% intensity relative to the other risk categories. This finding is consistent with *CICA Handbook* rules for risk disclosure presented earlier in the paper and also the TSX exchange requirements. The relatively high degree of disclosure for the financial risk categories can also be explained on the basis that some Canadian companies are cross-listed on the Canadian and U.S. exchanges and so would provide more market risk disclosures as required by the SEC. Other most frequently disclosed risk categories include market risks, govern-

ment regulation, and environmental risks, which will be discussed in more detail in Table 5. The analysis of the volume and intensity of disclosure by risk category can be used to classify firms and industries in terms of intensity of disclosure by risk category for the purpose of analyzing in more depth the risk disclosure behaviour and information value by groups of firms facing similar risk environments. Such a process can facilitate analytical comparisons and the design of performance-oriented measures of the effects of disclosure on the value of the firm in the capital markets as well as investors’ perceptions. To that end, we classify the risk categories under three major classes depending on the extent of intensity (or volume) of risk disclosure: C1 where risk disclosure intensity is high and exceeds 20% (financial risk belongs to this class); C2 where risk disclosure is low and is less than 5% (e.g., supplier, natural resources, political, and technology risk categories); and C3 where risk disclosure is medium (higher than 5% and lower than 20%). In this class, we find commodity, market, environment, government regulation, and operations risk categories.

Analysis of Risk Exposure and Risk Management

The objective of this analysis is to capture the essence of risk information disclosure by examining in greater detail the sources of risks for each risk category and the risk management strategies employed to mitigate or manage the identified risks. Table 5 shows, on one side, the sources of risks for each risk category, and on the other, firms' responses to those risks in terms of risk management strategies with the specification of the number of firms in the sample disclosing such information. It outlines the actions taken by management to mitigate or eliminate those risks. It is worth noting at this point the clear emphasis by Canadian companies on the down-side aspect of risk and the absence of the up-side risk potential or opportunity-seeking strategies in risk management to create economic value in the current risk disclosure environment. This fact has also been documented in similar risk-reporting studies in other countries such as the United Kingdom (see for example Linsley & Shrives, 2000).

Table 5 summarizes risk disclosures in the annual reports by identifying the sources of risk and the risk management strategies followed by management to control such risks. It also documents whether the risk information and items disclosed are part of mandatory disclosure rules and regulations based on the regulatory framework outlined previously in this paper. We classify a risk disclosure item as mandatory if an explicit accounting rule or security exchange requirement exists and is applicable to the sample firms. Therefore, if a risk disclosure item involves management's judgment (or discretion) as to the materiality and significance of the risk information disclosed, it is classified as voluntary or discretionary. Consistent with the content analysis presented above, financial risk (with its sub-categories), which is the most frequently disclosed risk type, is closely associated with firms having a significant portion of their operations (revenues and expenses) in foreign currency, which are affected by fluctuations in the Canadian dollar (currency risk). The risk management tool most frequently cited by companies to control for currency risk is hedging using forward options, futures, and swaps contracts (i.e., financial instrument use). Similarly, interest rate risk refers to a possible increase in interest rates. Note that the one-way change in interest rates (i.e., increase but not decrease) provides further evidence on the down-side risk emphasis, which is also apparent in the financial instrument value risk source (loss in value rather than gain, or both). Again, hedging seems to be the answer to managing this risk. Overall, the risk disclosures concerning financial risk, as reported by the TSE 300 study sample, are generally consistent with the Canadian regulations for risk disclosure presented earlier

in the paper. However, even if such information might be useful to stakeholders, it is not clear to what extent financial instrument use and hedging are effective in controlling for such risks and the related costs involved (overhead and other). Also, it is not clear from the inventory of risk disclosures found in the current study whether derivatives are used to reduce or increase risk exposure (see for example Venkatachalam, 1996).

Another important component of financial risk that is frequently disclosed is credit risk. It is interesting to note that some agency/contractual costs (see, for example, Jensen & Meckling, 1976) appear to be reported here. For instance, defaults by counterparties to honour commitments set forth in the contract represent an integral part of credit risk, and monitoring (an agency cost) seems to be the most frequently cited risk management strategy adopted by firms facing this type of risk. Again, the information is purely qualitative and no indication of the monetary values involved is found.

The second most commonly disclosed risk types, market and commodity risks, are usually defined by the high degree of competition (i.e., market structure) which may result in the loss of a big customer to a rival and/or the advent of new entrants in the local service market. The variation of the product mix and quantity sold by the customer is also part of market risk. The common responses to this type of risk include cost reduction and control, developing customer loyalty and product innovation, and developing skills to manage change.

Commodity risk usually refers to the variation in the price of a commodity (input) used by companies in their production process (i.e., price risk). Commodity and market risks could be lumped together to refer to business risk. Some ways to manage commodity price risk, as disclosed by sample companies, include hedging using futures or forward contracts. Further, we note that financial and market risk definitions sometimes overlap. For instance, the SEC defines market risk as the risk associated with adverse changes in market rates or prices (e.g., SEC, 1997).

Finally, other risk information disclosed includes environmental risks and ways to manage them such as defining procedures to manage materials containing environmentally sensitive substances and monitoring staff. Similarly, government regulations may pose increasing risks to businesses in the form of adverse changes in government control, laws and regulations, and taxation, which companies will have to deal with and manage on a continuous basis. One interesting finding in this analysis is the small amount of risk information concerning technology. One might expect such risks to be increasing in importance, especially with the advent of e-business and e-commerce, but apparently the phenomenon is relatively new and it will take more time

Table 6
Risk Analysis and Assessment

	Financials														Pol Num	%				
	Cur	Int	Cre	Fin	Liq	Com	Sea	Cyc	Wea	Mar	Tech	Eco	Gov	Op			Env	Sup	Nat	
LIKELIHOOD																				
Almost Certain	5	0	1	0	0	5	7	16	2	22	6	4	3	2	1	0	0	1	75	8.87%
Likely	124	50	9	3	1	58	0	0	6	64	6	20	24	11	4	2	4	9	395	46.69%
Possible	37	55	53	34	10	33	1	2	6	8	2	6	32	26	34	3	1	8	351	41.49%
Unlikely	0	0	8	0	1	0	0	1	0	0	0	0	0	4	7	1	0	0	22	2.60%
Rare	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0.35%
Total	166	105	72	37	12	96	8	19	14	94	14	30	59	44	47	6	5	18	846	100.00%
%	19.62%	12.41%	8.51%	4.37%	1.42%	11.35%	0.95%	2.25%	1.65%	11.11%	1.65%	3.55%	6.97%	5.20%	5.56%	0.71%	0.59%	2.13%	100.00%	
CONSEQUENCE																				
Insignificant	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0.47%
Minor	6	16	31	24	7	7	2	8	0	1	0	1	11	9	6	3	0	2	134	15.84%
Moderate	152	87	39	13	5	76	6	11	4	86	12	26	41	33	38	2	3	5	639	75.53%
Major	7	2	0	0	0	13	0	0	9	7	2	3	7	2	2	1	2	11	68	8.04%
Catastrophic	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.12%
Total	166	105	72	37	12	96	8	19	14	94	14	30	59	44	47	6	5	18	846	100.00%
%	19.62%	12.41%	8.51%	4.37%	1.42%	11.35%	0.95%	2.25%	1.65%	11.11%	1.65%	3.55%	6.97%	5.20%	5.56%	0.71%	0.59%	2.13%	100.00%	

Notes:

Cur: Currency; Int: Interest rate; Cre: Credit; Fin: Financial Instrument; Liq: Liquidity; Com: Commodity; Sea: Seasonality; Cyc: Cyclical; Wea: Weather; Mar: Market; Tech: Technology; Eco: Economy; Gov: Government; Op: Operations; Env: Environment; Sup: Supplier; Nat: Natural Resources; Pol: Political



and experimenting with the new technology before we see a good assessment of the involved risks and benefits.

Risk Analysis and Assessment

Risk is usually assessed analytically through a careful examination of the likelihood of the event describing the risk and the consequences or expected outcomes if that event actually occurred. Likelihood and consequence are essentially contingency-related and thus denote the uncertainty component in risk management. A "risk map" (e.g., AICPA/CICA, 1999) concept might be useful for that purpose; it would simply show the likelihood of occurrence (e.g., rare, unlikely, possible, likely, almost certain) of an event versus its consequences (e.g., high, moderate, and low effects). Despite its simplicity, a risk map communicated to outside information users might be of little analytical use for assessing firms' exposure to certain risks since it overlooks important details about how the risk probabilities and consequence assessments have been determined and quantified by management. A more formal framework for linking the levels of probability to the risk distributions and their consequences (e.g., probabilistic measurement) such as the one outlined in Thornton (1983), or the one presently used by SEC-mandated disclosures on market risks, might be desirable in the future.

Our final analysis of the risk disclosure information in Canadian annual reports focuses on risk assessment and analysis of different risk categories identified by the disclosing companies. Table 6 gives the likelihood of each risk category identified for all the firms in the sample, based on qualitative information. The likelihood of a risk occurring varies from "almost certain" to "rare". The effects of the likelihood of an identified risk range from "insignificant" to "catastrophic". At this level of analysis, one would hope to finally capture some quantitative indicators of the magnitude of the risk faced by disclosing firms. Unfortunately, the disclosure persists in being general, scattered, and sometimes ambiguous. This ambiguity might signal that the firm is unwilling to publicly disclose detailed risk information although it might have it internally for fear of suffering competitive disadvantages.

Some interesting observations and interpretations could be drawn from Table 6. Consistent with the previous risk content and volume analysis, financial risk followed by commodity and market risks appear to be the most likely to affect firms' operations. For instance, 22 companies in the sample report that market risk is "almost certain" while 124 companies perceive currency risk to be "likely". For all risk categories combined, the most reported qualitative information is "likely" with

46.75%, followed by "possible" with 41.44%, and to a lesser extent "almost certain" with about 9%.

In terms of consequence or outcome of each risk category, and following the likelihood assessment associated with each risk factor, the most frequently reported risk outcome qualification is "moderate" with 75.56% of the firms judging the potential effect of all risk categories combined to be only moderate. When taken individually, the predominance of financial risk, market risk, and commodity risks resurface with the added information that firms assess the consequence of those risks as moderate or minor most of the time. This finding is most likely due to an established and reasonably successful way to manage those risks, especially if the firm has gained experience in dealing with such risks.

Concluding Remarks

The current research paper explores and synthesizes risk information disclosures by Canadian companies as shown on their annual reports in 1999. It thus represents a primary and necessary step towards more comprehensive and systematic risk disclosure studies. The purpose of this paper is to examine the state, nature, and volume of risk and risk management disclosures by Canadian companies. Risk exposure assessment and analysis are also presented based on the disclosed information. This analysis should prove useful to managers, board directors, and various firm stakeholders who focus their efforts on responding to potential shortcomings of the current disclosure environment especially in the turbulent new knowledge-based economy where risk has even greater dimension and scope.

The main findings of this research paper are:

1. Risk information disclosed by Canadian companies is almost exclusively qualitative in nature and is located in the notes to the financial statements and/or in the "management discussion and analysis" section following Canadian risk disclosure regulations;
2. Given the qualitative nature of risk disclosure in this study, we performed a content analysis focusing on the volume and intensity of disclosure using the number of words and sentences with reference to different risk categories and sub-categories. The most frequently cited risk categories were financial risk, commodity and market risk (business risk);
3. A content analysis of risk sources and risk management techniques as disclosed by the sample of firms in this study offers interesting insights into the nature of risks that firms face and remedial actions taken by management to mitigate the potentially negative effects of those risks. An emphasis on down-side risks is noted and potential up-side effects and value-creating opportunities

are largely absent from the current disclosure; and

4. Risk assessment and analysis as reported by disclosing companies in this sample is quite limited and lacks valuable and perhaps quantitative insights such as sensitivity or simulation analysis showing the effects of potential changes on the financial statements following an increase of risk in one or more categories. Given the voluntary nature of most risk disclosures, this is probably intentional since the competitive pressures and proprietary information costs associated with such disclosure could be substantial.

The controversial question of whether it would be more beneficial to make risk disclosure for non-financial risks mandatory by the accounting standards setting institution in Canada and elsewhere remains open. In addition to the difficulty in measuring and objectively assessing risks (such as operational risks) that differ from firm to firm and industry to industry, auditing such mandatory risk disclosure may pose challenges. The effort could be reinforced by closely coordinating with the international standards setters in the IAS/GAAP accounting debates. Future research studies could examine the validity or reliability of current risk disclosures in Canada by possibly linking identifiable risk measures to subsequent market performance (see Linsmeir et al., 2002). Furthermore, a risk management disclosure index could be built (see for example Botosan, 1997) based on the content analysis presented in the current paper using a combination of word and sentence coding to measure the volume of disclosure in each risk category. Another related avenue of future research could focus on the market relevance of derivatives and other hedging instruments in the Canadian context in comparison to the U.S. setting (e.g., FASB, 1998) in order to investigate whether the accounting and exchange rules in the future should follow the level of detail and enforcement prevalent in United States standards.

Notes

1. The URL www.riskreports.com/standards.html is a useful source of information for an overview of risk management standards and guidelines in Canada and in other countries (editor: Felix Kloman).
2. See *CICA Handbook*, section 3860 (Financial Instruments: Disclosure and Presentation) and other related sections such sections 1650, 3280, 1701, and 1508.
3. The information on the TSE requirements for risk disclosure can be found on the OSC webpage at www.osc.gov.ca/en/Regulations/Rulemaking/Rules.
4. "Other instruments" are instruments that may be settled by the delivery of non-financial assets such as a commodity futures contract.

5. See for example SEC Item 305 "Quantitative and Qualitative Disclosures about Market Risk"
6. SEDAR database can be found at www.sedar.com.
7. Since we examine the entire TSE 300 sample, problems of heteroscedasticity might be present in Table 2 and thus the mean test comparison results should be interpreted with some caution.

References

- American Institute of Certified Public Accountants and the Canadian Institute of Chartered Accountants. (1999). Risk is about putting the odds in your favor: Managing risk in the new economy. (30 pages). Toronto: CICA.
- Ball, R., Robin, A., & Wu, J. (1999). Properties of accounting earnings under the enforcement institutions of East Asian countries, and implications for acceptance of IAS. Working paper, University of Rochester, Rochester, NY.
- Botosan, C.A. (1997). Disclosure level and the cost of equity capital. *Accounting Review*, 72 (3), 323-349.
- Canadian Institute of Chartered Accountants (CICA) Handbook*. (1995). Section 1508, Measurement uncertainty, 215-221. Section 1650, Foreign currency translation, 401-500. Section 1701, Segment disclosures, 501-600. Section 3280, Contractual obligations, 1611-1650. Section 3860, Financial instruments: Disclosure and presentation, 2902-2952. Toronto: CICA.
- Carlin, W. & Mayer, C. (2003). Finance, investment, and growth. *Journal of Financial Economics*, 69, 191-226.
- Clarkson, P.M., Kao, J.L., & Richardson, G.D. (1999). Evidence that management discussion and analysis (MD&A) is a part of a firm's overall disclosure package. *Contemporary Accounting Research*, 16 (1), 111-134.
- Financial Accounting Standards Board (FASB). (1991). Disclosures about fair value of financial instruments. Statement of Financial Accounting Standards No. 107. Norwalk, CT: FASB.
- Financial Accounting Standards Board (FASB). (1994). Disclosures about fair value of financial instruments. Statement of Financial Accounting Standards No. 119. Norwalk, CT: FASB.
- Financial Accounting Standards Board (FASB). (1998). Accounting for derivative instruments and hedging activities. Statement of Financial Accounting Standards No. 133. Norwalk, CT: FASB.
- Guthrie, J. & Parker, L.D. (1990). Corporate social disclosure practice: A comparative international analysis. *Advances in Public Interest Accounting*, 3, 159-175.
- IFAC Financial and Management Accounting Committee / Price Waterhouse Coopers (1999). Enhancing shareholder wealth by better managing business risk. Issued by the International Federation of Accountants, study 9.
- Jensen, M. & Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305-360.
- Kajuter, P. (2001). Internal control and risk reporting: a comparative study of the regulations and disclosure practices

- in the US, UK and Germany. Paper presented at the 24th European Accounting Association annual conference, Athens, Greece.
- Leuz, C. (2003). IAS versus US GAAP: information asymmetry-based evidence from Germany's new market. *Journal of Accounting Research*, 41, 3, 445-472.
- Lev, B. (1974). On the association between operating leverage and risk. *Journal of Financial and Quantitative Analysis*, 9, 627-641.
- Linsley, P.M. & Shrives, P.J. (2000). Risk management and reporting risk in the UK. *Journal of Risk*, 3 (1), 115-129.
- Linsmeir, T.J., Thornton, D.B., Venkatachalam, M., & Welker, M. (2002). The effect of mandated market risk disclosures on trading volume sensitivity to interest rate, exchange rate, and commodity price movement. *Accounting Review*, 77 (2), 343-377.
- Milne, M.J. & Adler, R.W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing and Accountability Journal*, 12 (2), 237-256.
- Rajan, R.G. & Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88 (3), 559-586.
- Roulstone, D.T. (1999). Effect of SEC financial reporting release No. 48 on derivative and market risk disclosures. *Accounting Horizons*, 13 (4), 343-363.
- Securities and Exchange Commission (SEC). (1997). Disclosure of accounting policies for derivative financial instruments and derivative commodity instruments and disclosure of quantitative and qualitative information about market risk inherent in derivative financial instruments, other financial instruments and derivative commodity instruments. Final Rule (Amendment to section 210, 4-08 of Regulation S-X and to Item 310 of Regulation S-B). Release ns. 33-7386; 34-38223; IC-22487; FR-48; International Series No. 1047; File No. S7-35-95, January 31. Washington, DC: Government Printing Office.
- Shrives, P. & Linsley, P. (2003). Risk disclosures in UK and German annual reports: A comparative study. Paper presented at the European Accounting Association 26th Annual Conference, Seville, Spain, April.
- Thornton, D.B. (1983). The financial reporting of contingencies and uncertainties: Theory and practice. Canadian Certified General Accountants' Research Foundation, Research Monograph #5.
- Venkatachalam, M. (1996). Value-relevance of banks' derivative disclosures. *Journal of Accounting and Economics*, 22, 327-355.
- Zéghal, D. & Ahmed, S.A. (1990). Comparison of social responsibility information disclosure media by Canadian firms. *Accounting, Auditing, and Accountability Journal*, 3 (1), 38-53.