# Essays on Corporate Risk and Transition Disclosures in the IFRS Era

**Antti Miihkinen**

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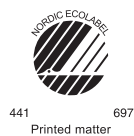
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**Abstract**

High-quality narrative communication in corporate financial reports is important to make company reporting more useful to investors. However, standard-setters face a taxing challenge in deciding how these sections in corporate financial reports could be regulated most effectively. The objective of this dissertation is to examine risk and transition disclosures by Finnish listed firms in the IFRS era. It will address whether corporate risk and transition disclosures can be improved by releasing a detailed risk disclosure standard and authoritative disclosure recommendations. Also, the economic consequences of high-quality risk disclosures on stock markets will be examined. Finally, this research examines the non-regulatory determinants of risk and transition disclosures.

This research uses positivist research methodology, which is the mainstream methodological avenue in financial accounting research. The main test methods are the standard mean test and the multivariate regression analysis. The sample firms in all essays consist of Finnish listed firms. The disclosure data were manually collected and coded. Data for the other variables were retrieved from the *Thomson One Banker Financial, IBES, Worldscope* and *Datastream* databases, or collected manually from the annual reports of the firms or from the register of *Euroclear Finland Oy*.

This dissertation documents that a detailed national risk disclosure standard increases the quality of overall risk reviews in several dimensions. The results also demonstrate that risk disclosure quality associates negatively with information asymmetry. Additionally, it was found that the usefulness of risk disclosures to investors depends on firm riskiness, investor interest and market conditions. Regarding corporate transition disclosure, the results indicate that recommended disclosure has more mandatory characteristics than voluntary disclosure. Moreover, this dissertation documents several significant non-regulatory determinants of risk and transition disclosures such as firm size, profitability, financial leverage, growth prospects, listing on the NYSE, and board independence.

The results benefit regulators, managers, investors, and analysts. This dissertation demonstrates for standard-setters such as the IASB, and the FASB, the SEC, and other national regulatory bodies that risk reporting under IFRS can be influenced through a detailed national disclosure standard. The findings suggest that a single legislative provision may not be effective enough to ensure transparent disclosure of abstract issues such as risks. Many managers may need detailed descriptions of the required disclosures with illustrative examples. We also demonstrate that managers react to the CESR (now ESMA) transition disclosure recommendation, which is actively promoted by the Finnish Financial Supervision Authority. Thus, in some cases (for example when urgent disclosure improvements are needed) authoritative disclosure recommendations may be a faster and more cost-efficient way to achieve disclosure improvements than laws or standards.

**Tiivistelmä**

Laadukas tekstimuotoinen raportointi on tärkeä keino, kun halutaan lisätä yrityksen tiedottamisen hyödyllisyyttä sijoittajille. Tekstimuotoisen raportoinnin tehokas sääntely on kuitenkin haastavaa. Tämän väitöskirjan tavoitteena on tarkastella suomalaisten listayhtiöiden riski- ja siirtymätiedottamista IFRS-aikakaudella. Työssä tarkastellaan voiko raportointia parantaa yksityiskohtaisen riskitiedottamisstandardin ja autoritaarisen tiedottamissuosituksen avulla. Väitöskirjassa analysoidaan myös laadukkaan riskitiedottamisen taloudellisia vaikutuksia osakemarkkinoilla sekä riski- ja siirtymätiedottamista selittäviä ei-lainsäädännöllisiä tekijöitä.

Työssä käytetään positivistista tutkimusmetodologiaa, joka on vallitseva lähestymistapa rahoittajien laskentatoimen tutkimuksessa. Väitöskirjan tärkeimmät testimenetelmät ovat keskiarvotesti ja monimuuttujaregressioanalyysi. Otosyritykset koostuvat suomalaisista listayrityksistä. Tiedottamisaineisto on käsin kerättyä ja koodattua. Muiden muuttujien data on hankittu *Thomson One Banker Financial, IBES, Worldscope* ja *Datastream* tietokannoista sekä kerätty käsin vuosikertomuksista ja *Euroclear Finland Oy:n* rekisteristä.

Väitöskirjassa osoitetaan, että yksityiskohtainen kansallinen riskitiedottamisstandardi lisäsi yritysten riskikatsausten laatua useassa eri laatudimensiossa. Tulokset myös paljastavat, että riskitiedottamisen laadulla ja sijoittajien osakemarkkinoilla kohtaamalla informaation epäsymmetrialla on negatiivinen korrelaatio. Lisäksi työssä osoitetaan, että riskitiedottamisen hyödyllisyys sijoittajille riippuu seuraavista kontingenssitekijöistä: yrityksen riskisyys, sijoittajien osoittama kiinnostus yritystä kohtaan ja markkinatilanne. Väitöskirjan siirtymätiedottamiseen liittyvät tulokset paljastavat, että yritysjohto tulkitsi siirtymätiedottamissuosituksen hyvin pakottavaksi, mikä lisäsi sen vaikutusta ja differoi suosituksen noudattamisen vapaaehtoisesta tiedottamisesta. Työssä löydetään myös todisteita siitä, että riski- ja siirtymätiedottamisen laatua voidaan selittää useilla ei-lainsäädännöllisillä tekijöillä kuten yrityskoko, kannattavuus, velkaantuneisuus, kasvunäkymät, listaus New Yorkin pörssissä ja hallituksen riippumattomien jäsenten lukumäärä.

Tulokset ovat hyödyllisiä lainsäätäjille, johdolle, sijoittajille ja analyytikoille. Väitöskirja osoittaa standardien säätäjille (IASB ja FASB, SEC sekä muut kansalliset lainsäätäjät), kuinka riskiraportointiin voidaan vaikuttaa yksityiskohtaisella kansallisella tiedottamisstandardilla. Yleisellä tasolla annetut tiedottamisvaatimukset eivät välttämättä olekaan tarpeeksi tehokkaita takaamaan laadukasta tiedottamista abstrakteista asioista, kuten esimerkiksi riskeistä. Väitöskirjassa myös osoitetaan, että yritysjohto reagoi hyvin CESR:n (nykyinen ESMA) siirtymätiedottamissuositukseen, jonka noudattamisen puolesta Rahoitustarkastus (nykyinen Finanssivalvonta) aktiivisesti puhui. Joissain tilanteissa (esim. kun tarvitaan nopeata parannusta yritysten tiedottamiseen) autoritaariset tiedottamissuositukset voivatkin olla nopeampi ja kustannustehokkaampi tapa parantaa tiedottamista kuin lait ja standardit.

*To all who taught me perseverance and*

*encouraged me to study*

# ACKNOWLEDGEMENTS

Preparing a dissertation demands lot of concentration. For me it was also quite a physical task. Therefore, I want to thank all those wonderful people who gave me tools to take care of my body during the whole project. Furthermore, I am grateful to my pedagogic research group and pedagogic supervisors for all that time we spent together on the homestretch of my project. With you I really learned a lot about doing research in a large group and across disciplines. Your peer group support was valuable and gave me an extra boost to finalize my dissertation. Travelling with you to Shanghai was absolutely one of the highlights of my life.

Finally, my dissertation project would have never been possible without the love and care I got from my parents Leena and Jouko. You have always believed in my talents and supported me in life and my studies. More important, you have always been interested in me and given me the needed confidence to survive. Dad, you literally remembered to call every evening and ask how it was going and what I would do tomorrow. Mom, thank you for your care. It was a little less than three years ago when we were shopping in Helsinki, visited Botta, and made the mental Karonkka-booking. I am so happy that you will see the completion of this dissertation.

Espoo, February 8, 2013

*Antti*

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# PART I

# DISSERTATION OVERVIEW

# 1      INTRODUCTION

## 1.1          Background and Research Context

This doctoral dissertation examines risk and transition disclosures by Finnish listed firms in the IFRS era. The adoption of IFRS was one of the biggest steps in the history of accounting towards harmonized and comparable financial statements between firms across countries and continents. The European Parliament and Council stipulated in 2002 that firms the securities of which are admitted to trading on a regulated market of any Member State of the European Union, shall prepare their consolidated financial statements in conformity with the International Financial Reporting Standards for each financial year starting on or after January 1, 2005. This transition was challenging for many firms and stakeholders because they were not used to the principles-based accounting approach applied in the IFRS. Hence high-quality financial reporting was vital in particular at the beginning of the IFRS era when managers, investors, and national regulatory bodies tried to adapt to new reporting requirements.

The research problem of this dissertation is linked to corporate disclosure literature. From the existing research we know that in perfect markets there would not be any information asymmetry and need to regulate corporate financial reporting because firms would have unconditional incentives to disclose all private information to investors (e.g., Milgrom, 1981; Admati & Pfleiderer, 2000). However, we are living in imperfect market settings in which market frictions (e.g., agency and information problems) generate direct and indirect costs for firms. The discretionary disclosure model suggests that the production and dissemination of private information is the major source of direct costs (e.g., Verrecchia, 1983; Dye, 1986). Discretion on the part of managers is harmful to society because it increases the potential for opportunistic behavior and the extent of informational externalities (Bassen et al., 2010; Beyer et al.,

2010). Reducing the adverse effects of managerial discretion is the primary motive for disclosure regulation.

There are alternative ways to control corporate reporting practices such as standards and recommendations. It is important to obtain more information on different ways to influence the quality of corporate reporting because disclosure regulation may also result in significant costs for some firms (e.g., Bushee & Leuz, 2005). Consequently, in the IFRS era it is not advisable to require firms to report on issues which are not useful to their stakeholders, especially to investors, which are the main end-users of IFRS reports. At the moment, there is considerable room for additional research regarding the effectiveness and efficiency of disclosure laws, standards, guidance, and recommendations in improving the quality of financial reporting.

High-quality narrative communication in the non-financial statement sections of annual reports is important to make company reporting more useful to investors (e.g., AICPA, 1994a; FASB, 2001; CICA, 2009). However, standard-setters face a taxing challenge in deciding how these sections could be regulated most effectively. Standard-setting is very much concerned with making correct decisions about the right level of detail in disclosure standards (Schipper, 2003). If standard-setters set out disclosure requirements that are too restrictive, they receive highly comparable information which includes mostly boilerplate discussion that lacks relevance to investors. In contrast, if standard-setters do not require disclosure on a specific issue, some firms will not voluntarily disclose anything.

Risk disclosure is one example of an information item which includes a great deal of narrative descriptions, and which is usually provided outside corporate financial statements in the management discussion and analyses section. Accounting literature demonstrates that there is a significant gap in risk information between firms and their stakeholders (Roulstone, 1999; Kajüter, 2001; Linsley & Shrives, 2006). However, there is to date little if any research evidence concerning the impact of risk disclosure regulation on quality (see, Beretta & Bozzolan, 2004). Studies examining this issue are needed because it is otherwise difficult to evaluate the effectiveness of detailed risk guidance in an environment in which managers have several disclosure motives. Although the extant research documents the importance of reporting incentives as a

determinant of accounting quality (e.g., Ball et al., 2003; Leuz, 2003; Ball & Shivakumar, 2005; Dobler, 2008; Dobler et al., 2011), we do not have evidence that a detailed national risk disclosure standard can improve the quality of corporate overall risk reviews.

Starting with Amir and Lev (1996), many scholars have documented that narrative disclosures are useful to investors (e.g., Abrahamson & Amir, 1996; Kothari et al., 2009; Demers & Vega, 2010). Jorgensen & Kirschenheiter (2003) model managerial equilibrium strategies for voluntarily disclosing information about firm risks and show that a disclosing firm benefits from risk reporting. However, there is only meager evidence on the usefulness of firms' overall risk reviews to investors. Although recent academic work has shown increased attention in corporate risk reporting, research has focused mostly on examining the regulatory and non-regulatory determinants of risk disclosure (e.g., Elmy et al., 1998; Roulstone, 1999; Beretta & Bozzolan, 2004; Linsley & Shrives, 2006, Dobler et al., 2011) or the value relevance of disclosures on market risks (e.g., Rajgopal, 1999; Linsmeier et al., 2002; Jorion, 2002; Lim & Tan, 2007). Concurrent studies on overall risk disclosures in the US have provided evidence that these disclosures are informative to investors despite the reporting deficiencies (Huang, 2011; Kravet & Muslu, 2013; Campbell et al., 2013). However, in spite of the rules-based accounting environment there is not any comprehensive guidance on overall corporate risk disclosures in the US. Hence, additional evidence on the usefulness of overall risk reviews in countries with different levels of risk disclosure regulation will be needed.

Another area of corporate disclosure literature that needs further evidence is the relation between voluntary, recommended, and mandatory disclosure. Previously, many studies have concentrated on voluntary disclosure (e.g., Cooke, 1989; Lang & Lundholm, 1993; Cahan et al., 2005). Others have examined compliance with mandatory disclosure requirements (e.g., Inchausti, 1997; Gray & Street, 2002), and more specifically, the impact of corporate-governance quality on disclosures on the transition to IFRS (Kent & Stewart, 2008). In the light of prior consolidated evidence on voluntary and mandatory disclosure and on their differences (e.g., Kanto & Schadewitz, 1997; Al-Razeen & Karbahari, 2004), it seems evident that the quality of mandatory disclosure

associates with the level of reporting and disclosure requirements, whereas voluntary disclosure is driven by the disclosure incentives of managers such as the reduction of agency costs and asymmetric information. However, only a few of the existing studies have provided evidence on the compliance of firms with disclosure recommendations (cf., Mangena & Tauringana, 2007).

From the perspective of the society, regulators' attempts to control corporate disclosure should increase its usefulness to investors and other stakeholders. This means that disclosure requirements should increase the quality of financial reporting (e.g., increased relevance and comparability) and also, that the benefits of disclosure standards should exceed the costs of setting and complying with them. Previous literature describes various disclosure-measurement frameworks as an attempt to more effectively measure differences in the quality of financial reporting (e.g., Beattie et al., 2004; Beretta & Bozzolan, 2004; Beretta & Bozzolan, 2008; Beck et al., 2010). While recognizing the inherent conceptual difficulties of measuring disclosure quality in a complete, valid, and reliable manner (see, Botosan, 2004), it is important to understand that certain quality indicators developed in the existing related literature may provide useful approximations of some important aspects of the quality of risk disclosure. However, the accounting literature needs further testing of new empirical quality measures of disclosure to progress in that area.

To summarize, the existing literature provides only meager evidence of the impact of regulation on the quality of risk disclosure, or of the impact of authoritative disclosure recommendations on reporting by firms. Furthermore, we do not have evidence of the consequences of corporate overall risk reviews on stock markets in different regulatory environments. Also, the non-regulatory determinants of risk and transition disclosures need additional research. Finally, although the existing accounting literature documents some methods to examine the quality of disclosure, we are only beginning to understand these issues more deeply.

## 1.2      Objectives and Scope

The research problem of this doctoral dissertation is to examine how Finnish listed firms disclose their risks and IFRS transition in the IFRS era. Overall, the objective of the dissertation is to answer the following research questions:

> *RQ1: Can a detailed national risk disclosure standard improve the quality of firms' overall risk reviews under IFRS?*

> *RQ2: Does the quality of risk disclosure provided by firms in their annual reports affect information asymmetry between the management and investors?*

> *RQ3: Do certain contingency factors such as firm riskiness, investor interest, and market condition affect the usefulness of annual risk disclosures to investors?*

> *RQ4: In relation to the transition disclosure recommendation of the Committee of European Securities Regulators (CESR), is the behavior of firms more similar to voluntary or to mandatory disclosure?*

> *RQ5: What are the non-regulatory determinants of risk and transition disclosures?*

Each research question is answered in the following essays. The contributions of these essays are combined in this dissertation summary. Each essay examines disclosure by Finnish listed firms. Finland is part of the Scandinavian institutional setting, where investor protection is lower than in the Anglo-Saxon countries (e.g., US and UK) but higher than in southern Europe (e.g., Greece and Italy) (La Porta et al., 1997; La Porta et al., 2000).

Finland has a rules-based accounting tradition like the US and several continental European countries. In recent years, IFRS adopters have been forced to adjust themselves to the principles-based accounting schema which emphasizes firms' own judgment. With regard to overall risk disclosures, the IASB has published voluntary guidance for management commentary which also provides general level guidance for

corporate risk disclosures. However, firms and their auditors have substantial responsibility for the quality of their overall risk reviews in the IFRS world. Similarly, although the US accounting standards are strictly rules-based and FRR No. 48 stipulates market risk disclosures, the SEC provides only general level guidance for overall risk reviews. By examining risk disclosures which are mainly given in a narrative format, this dissertation deepens our understanding of reporting by firms in an area which may be guided ambiguously under both reporting approaches.

This dissertation analyses the research questions in a unique setting in which the regulator attempts to impact risk and transition disclosures of firms. This is so because the detailed Finnish risk disclosure requirements are advanced in international comparison, and because transitions between old and new reporting systems are always challenging from the perspective of investor communication. Also the active role of the Finnish regulatory bodies and the specific characteristics of the Finnish stock market make the setting distinctive.

In December 2003, the Committee of European Securities Regulators (CESR) published *Recommendation for Additional Guidance Regarding the Transition to IFRS* where it specified how the listed firms are recommended to manage their disclosure on the adoption of IFRS. CESR considered it essential that the transition is carefully monitored by regulators to ensure that every company continues to meet its reporting requirements and that investors are able to understand the effect of the new reporting standards on the financial position of listed companies (CESR, 2003). After the CESR had released its recommendation, the Finnish Financial Supervision Authority (FIN-FSA) recommended that Finnish listed firms follow the recommendation.

With regard to risk disclosure guidance, in 2006 the Finnish Accounting Practice Board published a new detailed risk disclosure standard which describes how firms should assess significant risks in their operating and financial reviews (FAPB, 2006). It provides a comprehensive view on the expected quality of risk reporting and also includes illustrative disclosure examples. The standard specifies the risk disclosure requirements of the Finnish Accounting Act, which are provided on a very general level without any guidance for implementation. Nevertheless, the act is still principles-based because it allows firms latitude in deciding on their risk disclosure policies.

The features of the Helsinki Stock Exchange are also interesting. The Finnish stock market has evolved considerably during the last few decades. The general internationalization and deregulation of the financial markets started in the early 1980s - a few years later than in the other Nordic countries. The process proceeded gradually from liberalization of the money market to abolishment of all restrictions on capital movements to and from Finland. Finally, in 1993 the restrictions on foreign ownership of Finnish stocks were removed. For international investors, small markets are interesting because they may provide considerable diversification benefits although the co-movements between Finnish and global market may have increased in the latter half of the 1990s (Kallunki et al., 1997).

Share trading in Finland concentrates on the largest companies. Thin markets increase volatility and reduce liquidity, especially among smaller firms. The low number of trades also typically results in a larger spread between the two quotes. Despite the low trading volume, Finnish stock market research suggests that several fundamentals such as earnings, macroeconomic factors, and financial leverage are important determinants of stock prices in Finland (Kallunki et al., 1997).

The relation of each essay to the research questions above and to each other is illustrated in figure 1. Essay 1 answers research question 1 and 5. It focuses on the regulatory and non-regulatory determinants of risk disclosure, that is, on the supply side of financial information production. Essay 2 continues in the area of risk disclosures by answering research questions 2 and 3. This study focuses on the usefulness of risk disclosures to investors, that is, on the demand side of financial information production. Finally, essay 3 examines transition disclosure by Finnish listed firms and answers research questions 4 and 5. Compliance with disclosure guidance and/or recommendations relates to both essays 1 and 3. Essay 1 focuses on a detailed disclosure standard which specifies the law. Essay 3 examines the efficiency of authoritative disclosure recommendation in an environment in which the regulator pursues fast disclosure improvements. All essays analyze disclosure in the IFRS era, in other words, in conjunction with the adoption of IFRS (essay 3) or immediately after it (essays 1 and 2).

**Figure 1: The Structure of the Dissertation: Relation between the Research Questions and the Essays**

| | |
|---|---|
| **Risk disclosure** | **Transition disclosure** |

**Detailed standard**

**Authoritative recommendation**

**Determinants**

**Essay 1**
**RQ 1,5**

**Compliance**

**Essay 3**
**RQ 4,5**

**Risk and transition disclosure in the IFRS era**

**Economic consequences**
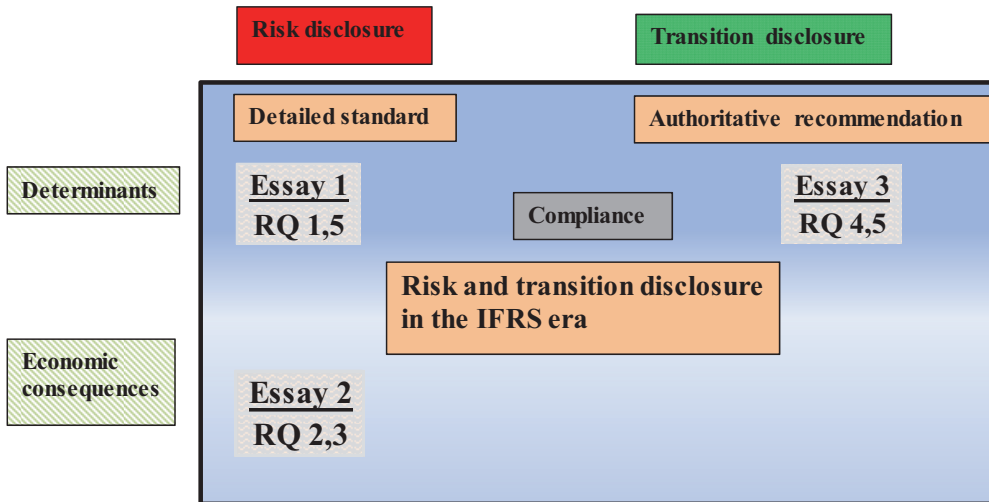
**Essay 2**
**RQ 2,3**

In this dissertation two essays focus on risk disclosure and one on transition disclosure. There are several interconnections between the essays. First, all of them relate to financial reporting by firms after attempts by regulators to improve its quality. Second, both forms of disclosure are essential for valuation of firms. Investors need high-quality risk disclosure continuously. Transition disclosure is important for understanding the impact of a unique information shock on firms' accounting numbers and risks. The accounting policies adopted by firms should not affect their security prices, as long as these policies have no differential cash flow effects, the applied policies are disclosed, and sufficient information on the various transition policies is available (Beaver, 1973). Third, in recent decades the risk disclosure requirements have undergone constant change, which makes the entire information item very transitory in nature. Finally, monitoring of the quality of investor information has a central role in the activities of both regulatory bodies (CESR/ESMA, FIN-FSA) which were interested in Finnish listed firms' transition disclosure. High-quality risk disclosure is at the core of investor information in stock markets.

## 1.3      Concepts and Definitions

The essays of this dissertation intertwine around corporate and information risk. Risks are at the core of business. On the one hand, it is impossible to be successful without taking any risks. Perceiving the relevant risks makes it easier to plan and implement winning strategies in organizations. On the other hand, sensible risk management is important for every firm. Investors want to be aware of corporate risks, disclosures of which provide information on the uncertainties of future cash flows. This justifies the need for high-quality risk disclosures. In practice managers have a better understanding than investors of the risks of their firms and hence investors have to take information risk into account in their decision-making. Information risk increases around the adoption of new financial reporting practices which highlights the need for high-quality risk and transition disclosures.

In this research *risk disclosure* means all information that firms provide in the risk reviews of their annual reports. Risk disclosure is information which describes the major risks of firms and the expected economic impact of these risks on future performance. This information also includes forward-looking information that helps external investors to build up a point estimate of future cash flows, information on the sources of uncertainty surrounding forecasts of the firm's future cash flows, and information on the sources of non-diversifiable risk that should be included in the cost of capital. In addition, historical information about the actions taken to face risks and forward-looking information on programs planned for facing risks are taken into account. This research focuses on firms' *overall* risk disclosures which by definition means firms' reporting on several risk topics (e.g., strategic risks, operations risks, financial risks, damage risks, risk management, and other risks) in the same report.

The concept *transition disclosure* refers to firms' disclosure of the effects of the transition to IFRS. Transition disclosure clarifies the impact of technical changes on accounting numbers and hence is an important tool for investors who interpret the IFRS-based financial statements and corporate information risk. *Recommended disclosure* means compliance by firms with the disclosure recommendations, and more specifically, with the CESR transition disclosure recommendation. *Mandatory disclosure* denotes

compliance by firms with the mandatory disclosure requirements and *voluntary disclosure* reporting of voluntary issues that are not specified in any guidance or recommendation. By the concept *regulatory determinants* of disclosure, we mean disclosure improvements which derive from the pressures caused by the efforts of regulators to impact reporting. *Non-regulatory determinants* of disclosure denote disclosure factors which influence the quality of disclosure but do no stem from regulatory pressures. They include disclosure incentives and corporate governance factors. *Quality of disclosure* refers to information which is reliable and relevant to investors. *Effectiveness* refers to the desired impact of the disclosure guidance or recommendation. *Efficiency* denotes the cost-efficiency of the implementation phase of the guidance or recommendation.[1]

Lastly, the main regulatory bodies of this doctoral dissertation are discussed. *The Finnish Accounting Practice Board* (FAPB) provides guidance on the application of the Finnish Accounting Act. Its purpose is to promote appropriate compliance with the Generally Accepted Accounting Principles (GAAP). The guidance of the FAPB is mandatory because it specifies the law. Although Finnish listed firms follow the IFRS, they are obliged to publish an operating and financial review in their parent company financial statements according to the Finnish Accounting Act. Consequently, the new disclosure standard also influences the risk reporting of those Finnish listed firms that prepare their financial statements according to IFRS.

*The Committee of the European Securities Regulators* (CESR) was established to deepen the cooperation between national securities regulators and for harmonizing supervision of the European financial markets. CESR had a subcommittee in every member state of the European Union. The Finnish subcommittee of the CESR was CESR-Fin. Together, the subcommittees of the CESR formulated various recommendations to increase harmonization in the European financial markets. CESR did not have the authority to impose sanctions if a firm failed to comply with its recommendations. In 2011 the CESR was replaced by the European Securities Markets Authority (ESMA), which is part of the European System of Financial Supervision.

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[1] For instance, in essay 3 the CESR disclosure recommendation brought about improvements in disclosure (effectiveness) but was also enforced cost-efficiently (efficiency).

Similarly to the SEC in the US, *the Finnish Financial Supervision Authority* (FIN-FSA) supervises financial markets in Finland. If the FIN-FSA notices that a listed firm does not meet the disclosure requirements of the securities market, it investigates the matter and requests an explanation. Such cases are usually resolved after the firm has responded, although stricter sanctions are sometimes needed. Moreover, the FIN-FSA publishes binding and non-binding local standards and informs firms about international recommendations such as the CESR disclosure recommendation. The FIN-FSA cannot impose any direct sanctions on firms which do not follow disclosure recommendations. However, it may attempt to improve recommended disclosure by firms by actively providing information on disclosure recommendations. Moreover, the FIN-FSA sometimes sends private letters to firms and thereby encourages them to make the recommended disclosures. It should also be taken into account that if a disclosure item recommended by the CESR must also be disclosed on the basis of the existing disclosure requirements of the Securities Market Act, FIN-FSA can impose sanctions on firms which fail to comply. The FIN-FSA has been in charge of supervising the IFRS reporting of Finnish listed firms from 2005 onward, and in this work it can also impose direct sanctions on firms which do not follow the standards.

## 1.4    Research process

This research falls within the scope of well-established traditions in financial accounting research. Kakkuri-Knuuttila & Heinlahti (2006) argue that when research follows well-known traditions in a field, it is not necessary to explain the underlying philosophical assumptions in great detail. Hence, the ontological and epistemological foundations of the dissertation are discussed rather briefly. Ontologically, this dissertation builds on the position that reality is objective and it is a natural phenomenon. Hence, information on a phenomenon can be obtained by observing. Considering this view against the historical development of financial accounting research, it can be said that this dissertation follows the dominant methodological point of view, which is strongly positivist. It follows a

weak form of realism which suggests that theories are utilitarian entities which have value only if they generate empirical generalizations which can be subjected to real and decisive empirical tests (Ryan et al., 2002, 112).

In each essay the main research method is multivariate regression analysis. Also, descriptive statistics, mean and median tests, correlation analysis, and canonical correlation analysis are used in the empirical tests. In essays 1 and 3, the empirical measures of disclosure are regressed on several explanatory factors. In essay 2, the empirical measure of disclosure is one of the explanatory factors. Empirical measures of disclosure are computed by constructing a disclosure framework/index and by using hand-collected data. The sample firms in every essay are Finnish listed firms.

In essay 1, which examines the determinants of the quality of risk disclosure, the study sample consists of the 2005 and 2006 annual report risk disclosures by 99 firms. In the empirical analyses the observations are pooled across 2005 and 2006; thus there are 198 firm-year observations in the final sample. The matched paired sample design (i.e., disclosure of each sample firm before and after the new standard) makes it possible to effectively control for that the results are not driven by potentially omitted factors such as the effects of the economic environment, which are not attributable to the financial reporting system. The approach is similar to that employed by Barth et al. (2008). In this essay the empirical indicators of the quality of risk disclosure are quantity of disclosure (cf., Abraham & Cox, 2007), coverage of disclosure (cf., Beattie et al., 2004), and the semantic properties of disclosure (cf., Beretta & Bozzolan, 2004; Cerbioni & Parbonetti, 2007; Beretta & Bozzolan, 2008). The overall validity and reliability of disclosure quality measurement is ensured by using factor analysis to summarize the quality indicators into a composite measure of quality. The risk disclosure data are collated from two sources of 2005 and 2006 annual reports. The first source is the operating and financial review sections of the firms. The second is the overall risk reviews of the annual reports published in separate risk sections, notes to the financial statements, and corporate governance sections. The reliability of coding was assured by coding a pilot sample and by analyzing the inter-rater reliability of coding. The values for the accounting variables and stock market data were retrieved from the *Thomson One*

*Banker Financial* database. The foreign ownership data were collected manually from the register of *Euroclear Finland Oy*.

In essay 2, which examines the economic consequences of quality of risk disclosure, we analyze the risk reporting of more than 300 firm-year observations in a four year panel covering the fiscal years 2006-2009. The study period encompasses different market conditions because the 2005 and 2006 annual reports were published during rising stock markets, the 2007 annual reports during falling stock markets, and the 2008 annual reports during recovering stock markets after a crash. The impact of risk disclosure is analyzed along two dimensions, quantity and coverage (cf., Beattie et al., 2004; Abraham & Cox, 2007). Principal component analysis is used to construct a measure for the composite quality of risk disclosure. The risk disclosure data are collated from the same sources as in essay 1. Also, the reliability check of the coding is similar. Other data were retrieved from the *Thomson One Banker Financial* and *IBES* databases and from the register of *Euroclear Finland Oy*. Congruent with the existing literature, bid-ask spread and trading volume were used as empirical indicators for information asymmetry (see, Leutz & Verrecchia, 2000; Leutz, 2003).

In essay 3, which examines the determinants of IFRS transition disclosure, we analyze the transition disclosures of 85 firms in 2004 and 88 firms in 2005. In total, 173 firm-year observations remain in the final sample for the empirical tests. We examine transition disclosure that was published in 2004 and 2005 *before* first-time adoption of IFRS by the firms. The disclosure data for 2004 were collected from financial statement releases, financial statements, and annual reports for 2003, which were published in 2004. Similarly, the disclosure data for 2005 include financial statement releases, financial statements, and annual reports for 2004, but also separate IFRS stock exchange releases published in 2005 before the first interim reports. On the basis of the transition disclosure scores of the firms, two disclosure indices were created; one for recommended disclosure and one for voluntary disclosure. Regarding the explanatory variables, the values for the disclosure incentives were retrieved from the *Thomson One Banker Worldscope, IBES History,* and *Datastream* databases. The data for the corporate governance variables were collected manually from the annual reports of the firms.

The remainder of this doctoral dissertation is organized as follows. Part I discusses the research overview in which the theoretical foundations are described in section 2, followed by the results in section 3, and discussion in section 4. Part II comprises the essays.

# 2      THEORETICAL FOUNDATION

This section discusses the various aspects of corporate disclosure theory and the existing empirical evidence. The corporate information environment is a very complex issue in which several tensions may influence managers' reporting choices and voluntary disclosure motives. Corporate disclosures may be beneficial for several stakeholders for several purposes. The valuation and stewardship roles of accounting information are the most commonly discussed purposes in the literature. The existing literature considers various reasons for unwillingness on the part of managers to disclose all their private information to investors and other stakeholders. For example, the harm caused by information asymmetry and externalities justify regulation of disclosure. There is empirical evidence on both voluntary and mandatory disclosures. Nevertheless, the existing literature has not yet found the most proper way to measure the quality of disclosure. The issues discussed above will be examined next. We then present the theoretical framework of the dissertation.

## 2.1      The Corporate Information Environment

Scott (2009, 68) defines information as evidence that will potentially impact an individual's decision. Beyer et al. (2010) point out two important roles of accounting information in market-based economies: The valuation (ex-ante) and stewardship (ex-post) roles. The valuation role helps shareholders and creditors to evaluate the return potential of investment targets whereas the stewardship role makes it possible to monitor how effectively managers use the invested capital. Gjesdal (1981) and Scott (2009, 14) emphasize that the fundamental problem of financial accounting theory is that the best way to measure net income depends on whether we try to control adverse selection or moral hazard. Consequently, the corporate information environment is largely

endogenously developed as a consequence of information asymmetries and agency problems between management and investors (Beyer et al., 2010, 297). The valuation role of accounting information is also called the decision-usefulness approach and it has been adopted (instead of the stewardship role) by major accounting standard-setting bodies such as the IASB and the FASB. This can be seen from the conceptual frameworks, which emphasize the role of financial reporting in providing relevant and reliable information to investors (Scott, 2009).[2]

The *adverse selection* problem may arise if someone (e.g., management) has an information advantage over someone else (e.g., investors) (Scott, 2009, 13). The problem was first presented by Akerlof (1970), who analyzed the market mechanism in the car market.[3] Typically, it is caused by managerial unwillingness and/or failures to disclose all relevant information to stakeholders. The primary disadvantage of adverse selection is that under asymmetric information investors value both good and bad business ideas at an average level. This may lead to the misvaluation of firms in stock markets because investors are prone to undervalue good firms and overvalue bad ones. Consequently, the gap between the market value and the fundamental value of firms increases and the capital markets do not function optimally. Information imbalance is one cause of market frictions which will be discussed later in this review.

*Moral hazard* is another symptom of the information problems in capital markets (Lambert, 2001). Scott (2009, 14) defines it as a type of information asymmetry whereby certain people can observe their efforts in fulfilling business transactions but other people cannot. In other words, the separation of ownership and control makes it difficult for shareholders (principal) to monitor the efforts of managers (agent) (Lambert, 2001). This increases the incentives of managers to reduce their effort and may also adversely affect the efficiency of the economy as a whole.

Fama (1970) suggests that in an efficient (semi-strong efficiency) securities market, security prices always reflect all publicly known information on the firms. Scott (2009, 98) highlights the concept full disclosure in the context of securities market

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[2] The decision problems of financial statement users are at the core of the decision-usefulness approach. Single-person decision theory, portfolio investment decision theory, and the theory of investment provide explanations for factors that influence investors' decision problems (Scott, 2009).
[3] Akerlof used the term 'lemons problem' to describe the information asymmetry problem in the car markets.

efficiency. Accordingly, investors value the information content of disclosure but do not care whether the information is provided in financial statements or supplementary disclosures. In other words, as Beaver (1973) states, corporate accounting policies should not influence the value of the firms if they have the same cash flow effects, the applied policies are disclosed, and sufficient transition information is provided on the policy differences (Beaver, 1973). From the perspective of the topic of this doctoral dissertation, the concept full disclosure is important because it provides justification for studying supplementary disclosures by firms on their risks and the IFRS transition effects. Because of information asymmetry problems, such as adverse selection and inside information, investors will include an information risk premium in their required return which decreases firms' market values. By improving financial reporting (for example through risk disclosures) firms can reduce adverse selection and information risk and thereby, narrow the gap between the efficient market price and the fundamental value of a firm (Scott, 2009, 116-117). A good example of a 'full-disclosure accounting standard' is the requirement to provide management discussion and analysis to assist investors in interpreting corporate financial statements.[4]

Gibbins et al. (1990) use the grounded theory approach and develop a framework for managers' financial disclosures in the corporate information environment. They show how the management of corporate financial disclosure is a function of opportunism, ritualism, policies, and processes. Gibbins et al. (1990) argue that firms have a stable two-dimensional internal preference for managing disclosures. The first dimension covers an obviously uncritical acceptance of rules and norms, whereas the second dimension refers to the propensity of managers to achieve firm-specific advantage via their disclosure policies. The authors suggest that both market and firm-specific factors (e.g., internal politics) influence managers' preferences. Managers may manage information itself but can also influence its timing and interpretation. The final disclosure decision is influenced by the perceived opportunities and norms of that

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[4] The Finnish Accounting Act stipulates that all listed firms shall incorporate an operating and financial review section (OFR) into their financial statements. Conceptually, this is similar to the management discussion and analysis section (MD&A) regulated by the SEC in the United States, and the management commentary (MC) section suggested by the IASB. However, the OFR is issued by the board of directors, whereas the MD&A and MC are issued by the management. Both disclosure standards require firms to provide a narrative explanation of their performance, financial condition, and future prospects. The purpose is to guide investors in interpreting the firm's financial statements (Scott, 2009, 119).

moment. Also, several other factors such as organizational structure, external demand for information, external mediators, and consultants impact the manager's disclosure choice.

## 2.2    The Link between Contracting and Financial Accounting Policies

The investor decision-based and efficient market-oriented theories have been questioned since the 1970s (e.g., Zeff, 1978; Watts & Zimmerman, 1978; Watts & Zimmerman, 1986, Watts & Zimmerman, 1990). Zeff (1978) argues that accounting policies can impact managers' real decisions and thus have economic consequences which affect firm value although differences between the policies do not have any cash flow effect. He supports his arguments with examples which describe how business, industry associations, and government have tried to influence standard-setters. Because the right way to measure net income depends on the purpose of the end-user (cf., the fundamental problem of financial accounting theory), accounting literature lacks a theory that provides assistance in the selection of accounting policy. We know, however, that a tradeoff between relevance and reliability will be needed when switching between policies. Accounting policy preferences differ between interest groups and hence standard-setting bodies also have to take political issues into account in their decision-making. In practice, standard-setters have tried to simplify their decision-making by bringing different interest groups onto their boards and by publishing exposure drafts for comments before release of the final standards (Scott, 2009, 276).

*Positive accounting theory (PAT)* is one way to describe why accounting policies matter. PAT tries to predict how the managers of the firms choose accounting policies and how they respond to new proposals by standard-setters (Watts & Zimmerman, 1978; Watts & Zimmerman, 1986). Healy & Palepu (2001) sum up that the PAT literature concentrates on examination of contracting in explaining managers' accounting choices when there are agency problems caused by information asymmetry. Compensation contracts are made between management and shareholders, and debt contracts between

shareholders and creditors. In addition, PAT also takes into account managers' political considerations such as avoidance of taxes and harmful regulatory interventions.

Watts & Zimmerman (1978) introduced PAT and suggested that its precondition is the understanding of managers' incentives. They proposed that individuals want to maximize their own utility and hence managers lobby for accounting standards that serve their interests. The predictions of PAT can be summed up through three hypotheses. Usually these hypotheses are given in their opportunistic form, which takes into account the possibility of conflict between managers' own interests and the best interest of the firm (Watts & Zimmerman, 1986; Watts & Zimmerman, 1990). The *bonus plan hypothesis* suggests that managers of firms with bonus plans have an incentive to adopt accounting policies that move reported earnings from future periods to the current period. The *debt covenant hypothesis* states that if the probability of violation of firms' accounting-based debt covenants is high, it is more probable that the firms' managers will adopt accounting policies that increase current earnings at the expense of future earnings. The *political cost hypothesis* proposes that if a firm has high political costs, it is more probable that it will adopt accounting policies that defer reported earnings from current to future periods.

Agency theory relates to PAT because agency costs are one element of contracting costs (Scott, 2009, 323). Armstrong et al. (2010) suggest that information imbalance before and/or during the contracting relationship is the reason for numerous forms of agency conflicts. Moreover, in conditions where there is no information imbalance, the efficiency of contracting can be improved by decreasing uncertainty relating to firms' current state and future prospects.

Jensen & Meckling (1976) define the agency relationship as a contract model where a principal (shareholders) hire an agent (manager) to run the business on their behalf by delegating some decision-making authority to the agent. However, taking into account the utility maximization objective of both parties, it is probable that the agent will not always act in the principal's best interest. Optimal compensation and debt contracts can be used to alleviate this agency problem (Healy & Palepu, 2001).[5] Frequent and high-quality disclosure provided by the agent to the principal is vital for

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[5] The moral hazard problem may also occur in contracts between lenders and managers (Scott, 2009, 332).

optimal contracts. Otherwise, the principal is unable to monitor the agent's compliance with the contract and to evaluate her/his performance as a manager. Also, proper working of the board of directors may reduce agency problems because its duty is to monitor and discipline the manager. Finally, information intermediaries may reduce agency problems because they follow the firms carefully and may thus reveal managers' misuse of firms' resources (Healy & Palepu, 2001).

Agency problems generate costs. Jensen & Meckling (1976) suggest that agency costs consist of the monitoring costs of the principal, the bonding costs of the agent, and the residual loss. Principals bear the monitoring costs of their efforts to align the incentives of contracting parties via properly formed contracts. They can for example include budget restrictions, compensation policies, and operating rules in the contracts. Bonding costs are borne by agents when they promise to avoid actions which are harmful to the principal and/or when they are responsible for compensating the principal for such actions. Finally, residual loss describes the principal's reduction in welfare (in dollars) caused by the difference between the agent's decisions and those that would be optimal from the viewpoint of the principal.

Jensen & Meckling (1976) show that shareholders are able to forecast the misalignment of the agent's and principal's interest in competitive market settings and can hence take this expected cost into consideration in executive compensation contracts. Because this reduces the compensation paid to managers, they bear the expected cost of their wealth transfer from shareholders. Congruently, potential creditors anticipate that shareholders may have a motive to take self-serving actions at their expense. Creditors therefore raise the prices of the bonds and the shareholders carry the costs of their expected wealth transfers from creditors.

## 2.3　　　　The Voluntary Disclosure Theory and Empirical Evidence

### 2.3.1　　　The Unraveling Result Theorem and Its Assumptions

Voluntary disclosure literature examines managers' disclosure incentives in the stock markets (see, Healy & Palepu, 2001; Beyer et al., 2010). Hence, it complements positive accounting literature and assists in obtaining a detailed view of the role of information in the capital markets.

　　　The theoretical models of the early corporate disclosure literature rest on the *unraveling result theorem*. It proposes that investors will follow a minimum principle of valuation if managers decide to withhold their private information (Grossman & Hart, 1980; Grossman, 1981; Milgrom, 1981; Jovanovic, 1982; Milgrom & Roberts, 1986; Wagenhofer, 1990). Consequently, investors will value firms at the lowest possible level, taking into account the voluntary disclosures. In this situation managers are willing to disclose all relevant positive and negative information and full disclosure of private information is an equilibrium strategy. Thus, there is no need for disclosure regulation. However, the existing literature questions the predictions of the unraveling result theorem in imperfect corporate information environments (e.g., Dye, 1985; Dye, 1986; Einhorn & Ziv, 2008). It provides a rationale for why managers do not disclose everything and why they are prone to prefer positive news to negative news. Beyer et al. (2010, 301-304) review the following six factors which influence managers' willingness to withhold some of their private information: disclosure costs, probabilistic information endowment, uncertain investor response, uncertain disclosure incentives, non-verifiable disclosure, and ex-ante commitment to disclosure strategies.

　　　*Disclosure costs.* The unraveling result theorem does not work if disclosure generates costs for the firm. The first condition of the unraveling result theorem is the costless disclosure. If disclosure is costly (e.g., costs of releasing an annual report), the manager of a firm trying to maximize firm market value will disclose information only if it is sufficiently positive (e.g., Jovanovic, 1982, Verrecchia, 1983; Verrecchia, 1990;

Dye, 1986, Lanen & Verrecchia, 1987).[6] Managers' unwillingness to disclose is a signal to rational investors of low and risky asset values. However, managers' disclosure equilibrium may be less than full disclosure because by withholding information they can avoid the costs of incremental disclosures and thus the firm's overall payoff may be higher.

Disclosure may also have indirect costs resulting from the release of proprietary information. Scott (2009, 445) suggests that proprietary information will have a direct impact on a firm's future cash flows (e.g., information on intangible assets such as patents, disclosure on forthcoming strategic initiatives). Non-proprietary information includes disclosure that does not have a direct impact on firms' cash flows. It contains, for instance, financial statements and earnings forecasts. However, also this kind of information may become proprietary in nature if it encourages new entrants to the industry. Beyer et al. (2010, 301) underline that proprietary information is costly because of its informativeness. They suggest that because non-disclosure may also be informative, the costs of disclosure are dependent on third parties' reactions to managers' decisions to provide or withhold information. Recent proprietary information models discuss partial disclosure equilibrium (Fischer & Verrecchia, 2004; Arya et al., 2010) or consider different types of disclosure costs simultaneously (Suijs, 2005). Interestingly, Suijs (2005) examines the partial disclosure equilibrium of firms in a voluntary disclosure environment that includes both a fixed disclosure cost and a variable proprietary cost. He shows that in this setting, firms may voluntarily reveal bad private information to the public.

*Probabilistic information endowment.* The unraveling result theorem does not hold if investors are unaware that the manager has private information. If managers recognize unawareness on the part of investors, they are prone to withhold negative news (e.g., Dye, 1985; Jung & Kwon, 1988; Penno, 1997, Pae, 2002). Moreover, managers can time their disclosures strategically by providing good news earlier than bad news and by clustering their disclosures in time (Dye & Sridhar, 1995; Einhorn & Ziv, 2008; Acharya et al., 2011).

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[6] According to Jorgensen & Kirschenheiter (2003) positive information gives investors favorable signals on the values and riskiness of firms' assets.

*Uncertain investor response*. To be valid, the unraveling result theorem requires that every investor has a uniform interpretation and reaction to managers' disclosure/non-disclosure and that managers can predict the behavior of investors. The existing theoretical models demonstrate that investors have a significant role in a firm's disclosure strategies because their characteristics mainly determine disclosure decisions (e.g., Fishman & Hagerty, 2003; Suijs, 2007). Moreover, Dye & Sridhar (2002) show that investors' reactions to managers' disclosures may help management itself to gain new information from investors. Thus, corporate disclosures may also be used to acquire new information from stock markets.

*Uncertain disclosure incentives*. The unraveling result theorem also requires that managers aim at maximizing the firm's market capitalization and investors are aware of this target. However, Aboody & Kasznik (2000) demonstrate that in reality, managers may sometimes also have a motive to minimize stock prices, for example when they are rewarded with stock options. Hence, if investors are uncertain about managers' reporting objectives, they may price the firm at some weighted average of good and bad news and full disclosure equilibrium will not be achieved (Einhorn, 2007).

*Non-verifiable disclosure.* The full disclosure of firms predicted by the unraveling result theorem will not be achieved if firms disclose untruthfully. Beyer et al. (2010, 303) point out that firms may also share information via informal communication channels where they do not necessarily have to tell the whole truth. The existing literature suggests that investors' interpretations of (possibly untruthful) voluntary disclosures and managers' disclosure strategies depend largely on the costs of misrepresentation.[7]

Cheap-talk models demonstrate managers' propensity to disclose opportunistically according to their objectives if misreporting does not result in any direct costs. Stocken (2000) argues that this kind of boilerplate disclosure is irrelevant to investors because it does not reflect the private information of managers. However, the incentives of managers and investors (or other stakeholders) may sometimes be only partially misaligned, which may increase the informativeness of managers' disclosures

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[7] Boilerplate disclosure and impression management are other terms which have been used in the existing literature to describe and/or discuss non-verifiable disclosures.

(Crawford & Sobel, 1982; Gigler, 1994). The cheap-talk models demonstrate the complexity of the corporate information environment. Managers' disclosure decisions are endogenously determined by the threat of competitors and forthcoming communication possibilities (Beyer et al., 2010, 303). Gigler (1994) shows that in some cases, the proprietary nature of managers' private information may even increase the probability of voluntary disclosure. With respect to the topic of this doctoral dissertation, it is also important to note that cheap-talk models can also be applied to mandatory disclosure settings (Fischer & Stocken, 2001).

Costly state falsification models propose that managers have incentives for disclosure because cheap talk is costly to managers. More specifically, the costs of untruthful disclosure are usually considered to be related to the extent of the difference between the true and reported value of managers' private information. However, due to the complexity of the corporate information environment, managers sometimes withhold their private information despite the costs of reporting distortions (see, Korn, 2004; Beyer & Guttman, 2012; Einhorn & Ziv, 2012).

*Ex-ante commitment to disclosure strategies.* The last condition of the unraveling result theorem is that managers cannot commit their disclosure policy ex-ante, that is, before they obtain private information (Beyer et al., 2010, 304). Verrecchia (2001) provides a good example of this by demonstrating a Cournot duopoly in which one firm knows the demand, others are totally unaware of it, and the selling price of the equilibrium is positive. In this situation those managers who make an ex-ante commitment to disclosure strategy decide not to disclose, whereas those who do not make such a commitment disclose all their private information. If managers can make an ex-ante commitment to disclosure it may reduce welfare in society because of reduced risk sharing opportunities. Overall, the existing models help us to understand how the costs and benefits of disclosure determine managers' ex-ante disclosures. They show that ex-ante and ex-post optimal disclosures may differ and hence different mechanisms will be needed to ensure that managers commit to the ex-ante optimal disclosure policies. Corporate governance structures and regulation can be used in this work (Beyer et al., 2010, 304).

## 2.3.2    Managers' Voluntary Disclosure Motives

Healy & Palepu (2001) and Beyer et al. (2010) review several motives that have been provided in the existing literature as incentives for voluntary disclosure. Next we examine these factors more in detail.

Capital market transactions. Managers may have an incentive to improve disclosure if they consider raising money from the equity or debt markets in the near future. This is so because additional disclosures alleviate the adverse selection problem and hence the information risk component of the firm's cost of capital lowers (cf., Akerlof, 1970; Myers & Majluf, 1984; Barry & Brown, 1985; Barry & Brown, 1986). This has a positive impact on the market value of the firm and helps managers to issue new equity and debt at favorable rates (Healy and Palepu, 1993).[8] The positive association between disclosure quality and capital market transactions is documented in several empirical studies (e.g., Ruland et al., 1990; Lang & Lundholm, 1993; Marquardt & Wiedman, 1998; Healy et al., 1999; Lang & Lundholm 2000). However, the manager who considers raising private debt is not necessarily highly motivated for public voluntary disclosure. Gibbins et al. (1992) suggest that high proprietary costs provide incentives to use private debt or internal financing and thus to avoid public disclosure.

Corporate control contest and stock-based compensation. Managers may use voluntary disclosure to prevent the undervaluation of the firm and to explain low earnings. Prior literature shows that poor stock performance increases the threat of job loss (Warner et al., 1988; Weisbach 1988). Another consequence of low stock prices is the increased probability of hostile takeovers, which usually lead to replacement of the existing CEO (Palepu, 1986; Morck et al., 1990). The stock compensation hypothesis suggests that when the manager's reward is tied to some stock-based compensation plan, managers who consider trading their stock holdings have an incentive to disclose private

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[8] Generally speaking, managers may have various incentives for influencing the market valuation of the firm in addition to those discussed in this review. The inadequacy and incompleteness of information are reflected in the cost of capital as a premium above the risk-free rate of return and the economic risk premium (Elliott & Jacobson, 1994). Because of the information asymmetry component of the firm's cost of capital, its market value is always lower than its fundamental value in imperfect market settings (Scott, 2009). However, misvaluation exists when the market value is higher/lower than its true value (Lev, 1992). Firms may become overvalued for example if a manager lies and provides overly positive information on the future prospects of the firm; this hinders efforts by investors to assess the economic risk premium of the firm correctly and increases the litigation risk of the manager.

information to comply with insider trading rules, to increase liquidity, and to correct undervaluation of the firm. The existing managers are also motivated to correct the misvaluation of the firm by providing voluntary information to decrease the contracting costs with the new managers, and thus to increase the efficiency of contracting (Healy & Palepu, 2001). There is empirical evidence that the disclosure strategies of the managers are influenced by their intent to sell/buy their companies' securities (Noe, 1999) and to time their disclosures opportunistically to maximize stock option awards (Aboody & Kasznik, 2000). Interestingly, Nagar et al. (2003) demonstrate that equity-based incentives may also increase managers' motives to release bad news.

*Proprietary costs*. Manager's disclosures may generate proprietary costs to the firm if such disclosures are harmful to its competitive position in the product markets (Verrecchia, 1983; Verrecchia, 2001; Dye, 2001).[9] Proprietary costs are a good example of negative externalities from high-quality disclosures. The proprietary costs theory assumes that managers and shareholders have the same interests and hence voluntary disclosures will always be credible. The impact of proprietary costs on managers' disclosure strategies depend on whether their inside information may be utilized by the existing competitors or possible new entrants and whether firms' competitive edge rests on price or long-run capacity decisions (Healy & Palepu, 2001). Proprietary information usually has a direct impact on a firm's cash flows but may also have an indirect influence if it encourages new entrants to markets (Scott, 2009).[10] The disadvantages of proprietary information may vary across disclosed items. For instance, segment information reveals a firm's most profitable businesses and hence a manager in a firm with varying business segments may be motivated to withhold detailed information from competitors (Hayes & Lundholm, 1996). Empirical evidence on the impact of

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[9] Verrecchia's (1983) discretionary disclosure model helps us to understand managers' voluntary disclosure strategies when investors have rational expectations from their reporting incentives. He demonstrates that managers reflect their disclosure choices against a point (the threshold level of disclosure) which determines whether or not they disclose some inside information to investors. Verrecchia's model demonstrates that the greater the proprietary costs associated with the disclosure of information, the less negatively investors react to the managers' decision to withhold that information.

[10] For example, Elliot & Jacobson (1994) suggest that proprietary information includes evidence of technological and managerial innovations (e.g., production processes, more effective quality-improvement techniques, marketing approaches), strategies, plans, and tactics (e.g., planned product development, new market targeting), and operations (e.g., segment sales and production cost figures, workforce statistics).

proprietary costs on managers' disclosure strategies is mixed and there is no clear evidence whether proprietary costs decrease managers' disclosure incentives (cf., Bamber & Cheon, 1998; Eng & Mak, 2003; Botosan & Stanford, 2005; Verrecchia & Weber, 2006; Berger & Hann, 2007; Troberg et al., 2010). Healy & Palepu (2001) point out that the proprietary cost hypothesis can also be used to explain managers' reactions to other externalities from information disclosure such as the political and contracting costs.

*Liquidity*. Information asymmetry reduces liquidity because investors are aware that some firms which do not make voluntary disclosures are potential lemons (cf., Akerlof, 1970). Liquidity consists of market depth and bid-ask spread components. When a firm withholds information, investors protect themselves by increasing the spread of the firm's share. Moreover, high information asymmetry may also reduce the number of shares that investors want to buy or sell on the market (Scott, 2009, 480). Several theoretical papers predict a positive association between voluntary disclosure and stock liquidity (e.g., Copeland & Galai, 1983; Glosten & Milgrom, 1985; Diamond & Verrecchia, 1991; Kim & Verrecchia, 1994; Easley & O'Hara, 2004). Improved disclosure quality and liquidity also increase institutional investors' interest in the firm, which further enhances liquidity (Diamond & Verrecchia, 1991; Kim & Verrecchia, 1994). The existing empirical literature provides evidence which is consistent with the liquidity hypothesis. For example bid-ask spread and trading volume have been used as measures of information asymmetry in these papers (Amihud & Mendelson, 1986; Welker, 1995; Healy et al., 1999; Leuz & Verrecchia, 2000).

*Cost of capital*. Increased levels of voluntary disclosure are expected to reduce the information asymmetry component of the firm's cost of capital. This has a positive impact on the firm's value and hence additional disclosures may be a strategic tool for a value maximizing manager. Easley & O'Hara (2004) argue that the precision and quantity of the accounting information is negatively related to a firm's cost of capital. They argue that private information influences the risk faced by uninformed investors, whereas better informed investors can adapt to new information and make the needed changes to their investment portfolios. On the contrary, Hughes et al. (2007) suggests that in large economies the information risk related to idiosyncratic factors can be

entirely diversified and should not have any systematic impact on the cost of capital. Also, Lambert et al. (2007) contend that the information risk of the Easley & O'Hara (2004) model can be diversified when there are a large number of investors on the stock market. Lambert et al. (2012) suggest that information precision and information asymmetry are the components of information quality. They state that better corporate disclosure decreases the cost of capital because the average precision of investors' information increases, not because information asymmetry decreases. Christensen et al. (2010) and Bertomeu et al. (2011) have also brought their contribution to this discussion. Several empirical papers examine the predictions of the existing theoretical models (e.g., Botosan, 1997; Sengupta, 1998; Botosan & Plumlee, 2002; Francis et al., 2005; Leone et al., 2007; Francis et al., 2008) and find some support which is in line with the hypothesis. However, the pricing effect of information asymmetry remains controversial (see, Botosan, 2006; Artiach & Clarkson, 2011) and recent literature suggests that earlier research evidence may be driven by imperfect research design choices, inaccurate measures of cost of capital, and important omitted variables (Aboody et al., 2005; Easton & Monahan, 2005; Hou & Robinson, 2006; Easton & Sommers, 2007; Cohen, 2008).

*Litigation costs*. Healy & Palepu (2001) propose that the litigation risk can increase or decrease managers' financial disclosures. On the one hand, the threat of shareholder litigation because of inadequate and/or untimely disclosures may increase managers' motives to disclosure voluntarily. In line with this statement, Skinner (1994) suggests that managers have an incentive to disclose bad earnings news early to reduce litigation costs. On the other hand, the risk of litigation may also have a negative effect on managers' disclosure decisions relating to forward-looking information. This is so because in some institutional settings managers do not trust the legal system to make a distinction between their unexpected forecast error and deliberate bias, and are hence worried about the litigation costs of inaccurate forecasts made in good faith (Healy & Palepu, 2001). Skinner's (1994, 1997) empirical findings demonstrate that firms with negative earnings news are more like to be sued, are more willing to pre-disclose bad earnings news, and have lower litigation costs. On the contrary, Francis et al. (1994) finds that early disclosures do not prevent litigation costs. There is also some evidence

that managers are more willing to disclose earnings forecasts in less litigious institutional settings (Baginski et al., 2002). The most recent literature has discussed the limitations of earlier papers and provided some evidence that litigation costs influence managers' decision-making (Field et al., 2005, Rogers & Van Buskirk, 2009; Lowry, 2009).

*Signaling*. Signaling models describe managers' incentives to reveal inside information on firms' quality differences, and hence to mitigate the problems of information asymmetry.[11] Signaling theory presumes that giving signals is cheaper for successful than unsuccessful managers; this makes signals a credible proxy for a manager's performance and increase their value in the managerial labor markets (Scott, 2009, 457). Fama (1980) suggests that the managerial labor markets can control the moral hazard problem. If managers succeed in building a good reputation on the market, their future compensation is likely to increase. In line with these arguments, Trueman (1986) states that talented managers have an incentive to provide voluntary earnings forecasts to signal their type. Both direct and indirect signals are considered in the existing literature (Leland & Pyle, 1977; Hughes, 1986; Titman & Trueman, 1986; Datar et al., 1991, Healy & Palepu, 1993) such as direct disclosure, audit quality, forecast quality, capital structure, dividend policy, and accounting policy. Both direct and indirect signals can be used to reduce the risk of adverse selection, although as Healy & Palepu (1995) demonstrate, the impact of indirect signals can be very slow. From the standard-setting perspective it is important to note that for signals to be applicable, managers must have a choice. Accordingly, reducing the latitude to choose disclosure policy may reduce its signaling content (Scott, 2009, 458).

*Corporate governance*. Decisions by managers to disclose information voluntarily to outside investors may also be motivated by the corporate governance mechanisms of the firm. The existing literature provides evidence of the relationship between several corporate governance factors and the quality of corporate financial

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[11] Spence (1973) developed the signaling theory to describe managers' decision-making in the labor market. He stated that high-productivity people want to have a higher education than low-productivity people. Thus employers may take employees' education as a signal of their productivity and pay a higher salary to more educated employees. Spence also showed that there is an equilibrium at which employers can rely on the job applicant's education as a credible signal of their capabilities.

disclosures. The factors examined include ownership structure, outside directors' reputation, and board independence (e.g., Healy et al., 1999; Fan & Wong, 2002; Eng & Mak, 2003; Bushman et al., 2004; Ajinkya et al., 2005; García-Meca & Sánchez-Ballesta, 2010; Florence & Thomas, 2012). The evidence is somehow mixed but shows that certain governance factors are associated with managers' disclosure policies. For example, the meta-analysis of García-Meca & Sánchez-Ballesta (2010) documents that board independence and voluntary disclosure are positively associated only in countries with high investor protection rights. Bens (2002) also finds that voluntary disclosures and shareholders' efforts to monitor managers are positively associated, which suggests that monitoring and voluntary disclosure complement each other. Finally, Hope & Thomas (2008) demonstrate that financial disclosures can be used to ensure that the manager's actions are congruent with the preferences of the shareholders. Overall, because of the endogenous nature of the corporate information environment, it is difficult to solve the issue of causality and endogeneity in the papers discussed above (Beyer et al., 2010).

*Public interest*. Lang and Lundholm (1996) suggest that managers may increase information intermediation via voluntary disclosures. If the mandatory disclosure requirements of the GAAP are inadequate for revealing managers' inside information, they can lower the information acquisition costs of the analysts through voluntary disclosures. On the one hand, extended disclosures may arouse the interest of financial analysts and hence increase their dissemination of information on the firm in the investment markets and media. On the other hand, improved voluntary disclosures may also reduce the need of sophisticated investors for the services of analysts.

*Other empirical evidence*. The previous voluntary disclosure literature provides empirical evidence on several determinants of managers' voluntary disclosures. Many of them reflect managers' disclosure motives discussed above. Consequently, they are somehow related to the need of managers of certain types of firms to reduce the adverse effect of the consequences of information asymmetry. The positive impact of firm size on the level of voluntary disclosure has been documented since the earliest disclosure studies (e.g., Cerf, 1961; Buzby, 1975; Chow & Wong-Boren, 1987; Cooke, 1989; Lang & Lundholm, 1993; Hossain et al., 1995). Cooke (1989) and Hossain et al. (1995)

demonstrate that listing status explains greater voluntary disclosure, whereas Cerf (1961) does not find any difference between the disclosures of firms traded on the New York or American Stock Exchanges and those traded on the OTC market. Also, the impact of profitability (Lang & Lundholm, 1993; Leuz, 2000; Prencipe, 2004), capital structure (Meek et al., 1995; Eng & Mak, 2003), prospects for growth (Kanto & Schadewitz, 1997), and globalization (Cahan et al., 2005) on voluntary disclosures has been demonstrated in the existing literature. There is also cross-country evidence on the effect of legal origin, national culture, and reporting incentives on the functioning of capital markets and on the quality of firms' financial reporting (e.g., La Porta et al., 1997; La Porta et al., 2000; Ball et al., 2003; Hope, 2003a; Rahman et al., 2010).

### 2.3.3 Justification for Regulation

Healy & Palepu (2001) assert that perfectly working auditing and accounting regulations force managers to disclose changes on the performance and prospects of their firms to outside investors. However, accounting regulations and auditing are usually imperfect. This encourages managers to consider carefully whether or not to reveal their inside information to equity and debt investors because additional disclosures may reduce their ability to manage reported performance for contracting, political, or corporate governance reasons.

The unraveling result theorem discussed in the preceding section suggests that in perfect markets managers have unconditional incentives to disclose all private information to outside investors. Otherwise they might not be able to raise scarce capital from the markets. In this kind of perfect environment there is no need for disclosure regulation (e.g., Milgrom, 1981; Admati & Pfleiderer, 2000). The view is consistent with the first fundamental theorem of welfare economics provided in the microeconomics literature, which suggests that equilibrium allocations are Pareto optimal or efficient, and that optimal allocations can be sustained at equilibrium for some distribution of endowments. It suggests that competitive markets have a tendency to allocate resources efficiently, in other words, Adam Smith's 'invisible hand' is at work.

Although corporate disclosures are regulated via several laws and there is also some empirical evidence that disclosure regulation reduces information asymmetry (e.g., Bushee & Leuz, 2005; McLaughlin & Safieddine, 2008), there is no unifying theory of mandatory disclosure (Dye, 2001; Verrecchia, 2001). One probable reason is that the benefits and costs of regulation depend on how we value the preferences of different constituents (Beyer et al., 2010, 315). Several market frictions that exist in imperfect settings may influence managers' disclosure decision (e.g., Verrecchia, 1983; Dye, 1986). Market frictions are caused for example by transaction costs, taxes, regulation, and agency and information problems (DeGennaro & Robotti, 2007). Information problems relate to various types of misrepresentations and failures to disclose relevant information to investors. Market frictions are harmful to firms because they may generate direct and indirect costs. The production and dissemination of private information is the major source of direct costs whereas indirect costs arise from proprietary or legal costs (Bassen et al., 2010).

The discretionary disclosure model (e.g., Verrecchia, 1983; Dye, 1986) can be used to understand the need for regulation in imperfect market settings. Accordingly, managers decide whether to disclose or withhold information solely on the basis of the costs and benefits of disclosure.[12] *Discretion* in disclosure may be problematic because it easily increases the opportunistic behavior of managers. Another disadvantage of discretion is that it may lead to financial (informational) externalities.[13]

*Financial externalities*. Financial (informational) externalities occur when managers' disclosures reveal indirect information on other firms' performance and prospects (Beyer et al., 2010, 315). Consequently, they influence investors' perceptions on the relations between firms in the market by helping them to use one firm's disclosures as an indirect signal of other firms' values (Foster, 1981; Detemple, 2002). For example, intra-industry information transfer may lead to informational externalities. Withholding information because of informational externality may have a negative

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[12] One assumption of this trade-off theorem is that managers' objective is to maximize the firm's stock price. Consequently, this theory is valid only when agency problems do not hinder realization of this maximization objective (cf., Jensen & Meckling, 1976).

[13] An externality is an action taken by a firm that generates benefits or costs to other firms and from which the firm responsible for the action does not receive revenue or is not charged. Firms which benefit from an externality are free-riders (Scott, 2009, 462).

impact on social welfare at the aggregate level. This problem can be alleviated through mandatory disclosure requirements (e.g., Dye, 1990; Easterbrook & Fischel, 1991; Admati & Pfleiderer, 2000). In addition to financial externalities, Beyer et al. (2010, 315-316) review the following three justifications for disclosure regulation in prior literature: real externalities, agency costs, and economies of scale.

*Real externalities*. A manager's disclosures may also impact other managers' real decisions, hence creating real externalities. This is closely linked to the proprietary costs of the firm discussed in the preceding section. For example, a manager's prospective disclosures may attract new entrants to the market or impact other managers' strategic decisions (Vives, 1984; Darrough, 1993; Pae, 2000; Kanodia et al., 2000; Pae, 2002; Hughes et al., 2002). This may affect the firm's future cash flows and hence the manager has an incentive to withhold that information. Regulation will be needed to ascertain that managers disclose the optimal level of information from the social welfare perspective.

*Agency costs*. Several papers argue that the reduction of information asymmetry via improved disclosures reduces agency costs (Shleifer & Wolfenzon, 2002). This is so because higher quality and level of information facilitates better contracts and easier monitoring of agents (e.g., Jensen & Meckling, 1976; Holmström, 1979, Armstrong et al., 2010). However, the agency costs do not necessarily reduce welfare at the aggregate level in society because from the society's point of view, non-optimal decisions by managers mean wealth transfer, but not a loss for society as a whole. Moreover, the competitors will take advantage of the firm's lost investment opportunities and hence society's utility does not decrease. Consequently, if we want to justify disclosure regulation through reduced agency costs, we have to make the assumption that regulators can demand information that principals cannot and that mitigated agency problems increase wealth in society (Beyer et al., 2010, 316).[14]

*Economies of scale*. Regulation can increase the efficiency of the dissemination of information in society for example by reducing investors' need to separately seek the same information, and by increasing the comparability of firms' disclosures. This improves the accuracy of firm valuation and may also provide cost savings and

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[14] Regulation can influence an agent's disclosure motives more effectively than private contracting because regulators can penalize firms in a way that is not possible in private contracting (Beyer et al., 2010, 316).

efficiency gains in society at the aggregate level (Mahoney, 1995; Dye & Sunder, 2001; Dye & Sridhar, 2008).

Beyer et al. (2010, 316) point out that the above-mentioned justifications for disclosure regulation are still insufficient arguments on behalf of regulation for the following reasons. First, standards do not take into account the individual differences between the firms (Admati & Pfleiderer, 2000). Second, increased transparency does not always lead to positive consequences. Obligatory disclosures may have a negative effect on risk-sharing (Hirshleifer, 1971; Diamond, 1985) and they may also generate unnecessary costs to the society (Verrecchia, 1983). Reduced overall informativeness of stock prices (Fischer & Stocken, 2010; Guttman, 2010) and reduced cooperation between the agent and the principal (e.g., Christensen & Feltham, 2000; Allen et al., 2006) are other potential negative effects of improved disclosures.

Scott (2009, 470) adds to the justifications described above by emphasizing that the direct and indirect costs of disclosures may sometimes be larger than the benefits of disclosure.[15] Direct costs include the enforcement costs of the regulator and the compliance costs of the firms. Indirect costs refer to the costs to society that arise because the regulator demands too much information. However, considering standard-setting purely from the perspective of economic theory would be an overly limited approach. Also, the political tensions behind regulators' decisions should be taken into account. As the economic theory perspective rests on the public interest theory, regulation will probably be needed because of public demand for correction of market failures. Decisions on the right amount of information are very difficult from this viewpoint because information is such a complex commodity (Scott, 2009, 484). Consequently, some scholars consider this view superficial and naïve (Stigler, 1971; Posner, 1974; Peltzman, 1976).

The interest group theory is another theoretical standpoint on regulation. It suggests that regulators have to cooperate with several interest groups that have conflicting objectives and aspirations. In addition to those interest groups to whom the

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[15] For example, Bushee & Leuz (2005) examine the economic consequences of SEC disclosure regulation and provide evidence on both the costs and benefits of increased mandatory disclosure requirements. They depend on the characteristics of the firms. For instance, for smaller firms the new requirements are too costly, which forces them to delist from the OTCBB.

(disclosure) requirements are primarily targeted, the political authority is also an interest group and wants to retain its power. Regulators are the object of considerable lobbying and try to balance the conflicting incentives of the interest groups. The interest group theory suggests that in their decision-making regulators are likely to follow those interest groups that are most convincing about the importance of their preferences. The recognition of conflicting interest groups underlines that this theoretical view may predict standard-setting better than the public interest theory (Scott, 2009; 485-486). Furthermore, Scott (2009, 485) brings into discussion an important issue which has not received much attention in the existing accounting literature: the moral hazard problem of the regulator. It is often impossible for a legislature to monitor the work of regulators. This increases the likelihood that they will act on their own behalf or not make the full effort in doing their work.

Accounting theories and empirical accounting research can at best help standard setters in their inferences. Positivistic accounting research describes how things are but cannot say what the regulator should do. Interpretivist accounting research digs deeper into the observed phenomena but is also incapable of providing direct guidance to regulators. May & Sundem's (1976, 748) description of the differences between accounting theory and accounting policy is still valid (italics added):

> "Before proceeding to a detailed discussion of policy decisions, it is necessary to distinguish between accounting theories and accounting policy [Ijiri, 1975. pp. 9–11]. An accounting theory is a descriptive or predictive model whose validity is independent of the acceptance of any goal structure. Though assumed goals may be part of such a model, research relating to a theory or model of accounting does not require acceptance of the assumed goals as necessarily desirable or undesirable. On the other hand, **accounting policy requires a commitment to goals and, therefore, requires a policy maker to make value judgments** (emphasis added). Policy decisions presumably are based on both an understanding of accounting theories and acceptance of a set of goals. Research relating to accounting policy decisions must recognize and discern the aspect of the policy-making process at issue."

Consequently, political issues are often so complex and subject to the influence of so many conflicting incentives that it would be naïve to examine issues only from the economic theory perspective. For example, there are conflicting assertions on whether the value relevance literature can help in standard setting. Barth et al. (2001) suggest that this part of the literature is useful for regulators whereas Holthausen & Watts (2001) take a more critical view. However, it can be concluded that academic research provides important evidence to regulators which can be used in planning effective and efficient standards. Much more knowledge on the benefits and costs of financial reporting will be needed before making any decisions on the optimal amount of disclosure regulation (Scott, 2009, 466). Recent empirical evidence on the economic consequences of disclosure regulation is mixed (Bushee & Leuz, 2005; Beyer et al., 2010, 319-321).

Scott (2009, 493-495) states four criteria that standard setters are expected to consider in their decision making. First, a new standard should be decision-useful, in other words it should provide relevant information to investors and other stakeholders. Second, it should also reduce information asymmetry in capital and managerial labor markets. Third, the overall costs of the new standards should not exceed the benefits. For example, in addition to the direct enforcement and compliance costs of the new standards, it should be borne in mind that increased regulation decreases the ability of managers to signal through voluntary disclosures. Moreover, the results of the cost-benefit analysis may vary significantly because of firm and industry differences. Fourth, high quality due processes are important in securing that all interest groups commit to compliance with the new standards.

**2.3.4     Evidence on Firms' Compliance with Laws and Recommendations**

Firms have several reasons to comply with disclosure laws and recommendations. First, because disclosure laws are mandatory, firms are obligated to follow them. Non-compliance with standards may cause significant costs to firms such as penalties from the regulator, increased political costs, and/or a bad reputation with the public. Empirical research on compliance with laws and recommendations has not been as common as voluntary disclosure research although some evidence can be documented. In addition, it should be taken into account that in several voluntary disclosure papers the researchers have been unable to exclude mandatory disclosures from the analysis (Beyer et al., 2010).

Larger firms are expected to suffer more from political costs (Watts & Zimmerman, 1978), which may increase their responsiveness to new disclosure standards. Although there is some evidence on the positive size effect (e.g., Wallace & Naser, 1995; Inchausti, 1997), the association is ambiguous (e.g., Glaum & Street 2003). The positive impact of the global accounting firm on compliance is demonstrated in several mandatory disclosure studies (e.g., Wallace & Naser, 1995; Inchausti, 1997; Gray & Street, 2002).

Gray & Street (2002) examine globally firms' compliance with the International Accounting Standards and found significant non-compliance with IAS disclosure requirements. On the one hand, there is significant positive association between compliance and being domiciled in China or Switzerland. On the other hand, there is significant negative association between compliance and being domiciled in Africa, France, or Germany. In addition to the country differences, IAS-required disclosure is significantly greater for firms that are in the transportation, communication and electronics industry, or have an international listing.

Furthermore, there is also evidence on the interplay between mandatory and voluntary disclosures. Inchausti (1997) demonstrates that regulatory pressures impact on mandatory disclosures but voluntary disclosures are immune to them. Also, Kanto & Schadewitz (1997) provide evidence on the differences between these two disclosure categories. Al-Razeen & Karbhari (2004) study the interaction between mandatory

disclosures, voluntary disclosures that relate closely to mandatory disclosures, and purely voluntary disclosures. The results reveal that there is a significant positive correlation between mandatory disclosure and voluntary disclosure that relates to mandatory disclosure. However, purely voluntary disclosure does not correlate with other disclosure categories. The authors conclude that no clear pattern exists between mandatory and voluntary disclosures. Thus, investors are advised not to assume that firms that are better in mandatory disclosures also report more voluntarily. The authors suggest that one reason for the independence of voluntary and mandatory disclosures may be low coordination between the board of directors and the management in the preparation of the annual reports.

Moreover, Pope (2003) argues that two primary dimensions of accounting systems impact earnings predictability: the degree of disclosure and the accruals measurement rules. The earlier theoretical models do not predict any interaction between accounting policy choice and voluntary disclosure (e.g., Dye & Verrecchia, 1995; Gigler & Hemmer, 1998). On the contrary, Gietzmann & Trombetta (2003) demonstrate in their theoretical model that cost of capital is jointly determined by accounting policy choice and voluntary disclosure. Gietzmann & Ireland (2005), Espinosa & Trombetta (2007), and Dargenidou et al. (2011) find empirical support for this prediction by documenting that accounting policy choice influences the relationship between cost of capital and disclosure. In addition, the motives of managers for voluntarily increasing the informativeness of earnings via voluntary disclosures are empirically documented. Some of these studies have demonstrated that earnings quality and voluntary disclosure are positively associated (Lennox & Park, 2006; Francis et al., 2008); others have provided evidence of a negative relationship (Chen et al., 2002; Lougee & Marquard, 2004). These findings suggest that the disclosure choices are endogenously determined by earnings quality. Hence, the association between earnings quality and market consequences should not be examined without considering the endogenously determined availability of qualitative accounting information (see, Dechow et al., 2010).

Finally, Mangena & Tauringana (2007) examine compliance with recommended disclosures by analyzing the ASB Statements on interim reports among firms listed on the London Stock Exchange. They demonstrate that full compliance is not achieved

through the voluntary best practice guidance. However, their results suggest that firms react to disclosure recommendations, and give reason to presume that there are differences between purely voluntary disclosure and recommended disclosure. However, much more research will be needed before we can understand the interconnections between different forms of corporate disclosures (Beyer et al., 2010).

## 2.3.5 Financial Reporting Quality and its Measurement

Accounting literature lacks a sensible economic definition of disclosure quality and direct derivation of measures from that definition (see, Beyer et al., 2010, 311). Botosan, (2004, 290) states that the IASB and FASB conceptual frameworks provide good guidance regarding generally accepted views of information quality.[16] However, it is very difficult to apply these requirements in the analyses of corporate disclosures without any subjective decision-making by the researcher. Beretta & Bozzolan (2008, 341) point out that a valid definition for financial reporting quality requires consensus on the significant information items and how they are disclosed. However, such consensus is difficult to achieve because multiple stakeholders with conflicting interests use financial reports. Therefore, it is almost impossible to measure disclosure quality objectively. In this dissertation, we examine quality of corporate risk and transition disclosures in the IFRS era and hence investors' role as end-users of information is emphasized in the analysis of quality.

The high-quality of corporate disclosures is an important issue for transparent and well-functioning capital markets. Previous studies report various disclosure-measurement frameworks as an attempt to best capture differences in the quality of corporate disclosures (see, Marston & Shrives, 1991; Bushee, 2004). First, quantitative indices (e.g., CIFAR scores, Standard & Poor's T&D scores) which are given by external organizations can be used to explicitly measure the quantity of disclosure (e.g.,

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[16] For example, the fundamental qualitative characteristics of financial reporting information provided in the IASB conceptual framework (see, IASB, 2008) for financial reporting are relevance and faithful presentation. Enhancing qualitative characteristics are comparability, verifiability, timeliness, and understandability. They are complementary to the fundamental qualitative characteristics, and distinguish more useful information from less useful information.

Hope, 2003b; Khanna et al., 2004; Bushman et al., 2004). Second, survey rankings (e.g., analysts' AIMR rankings) which contain both quantitative and qualitative examination of corporate disclosures have been utilized in previous studies (e.g., Lang & Lundholm, 1993; Healy et al, 1999). Third, different content analysis techniques (e.g., simple calculation of disclosure words and self-constructed one-dimensional or multi-dimensional disclosures indices) are widely used (e.g., Cerf, 1961; Singhvi & Desai, 1971; Cooke, 1989; Botosan, 1997; Beretta & Bozzolan, 2004; Francis et al., 2008; Shalev, 2009; Beck et al., 2010; Cheung et al., 2010; Miihkinen, 2012). They make it possible for scholars to develop their own detailed and accurate measures of firm disclosures for specific settings. Fourth, studies applying the natural language processing techniques have been conducted increasingly in recent years (e.g., Tetlock, 2007; Tetlock, 2008; Kothari et al., 2009; Demers & Vega, 2010). These methods enable larger sample sizes but may also result in less detailed proxies of disclosure. Finally, different earnings quality measures can also be used if the analysis of the quality of reporting is more focused on the recognition of net income and accruals in the financial statements of the firms (see, Dechow et al., 2010).

Furthermore, prior literature suggests that the quality of (risk) disclosure should be analyzed along several dimensions. New empirical measures for corporate disclosures have been constructed to reflect various dimensions of financial reporting quality (e.g., Beattie et al., 2004; Beretta & Bozzolan, 2004; Beretta & Bozzolan, 2008; Bozzolan et al., 2009). Beattie et al. (2004) suggest that one quality dimension is the concentration of corporate disclosures across different topics and that a balanced description of these topics implicates higher quality. Beretta & Bozzolan (2004) argue that the semantic properties of corporate disclosure define its quality. They highlight that the focus should not be on the quantity of firms' disclosures but on the content. Their indicators measure how much qualitative and quantitative information is provided by managers about the expected economic impact of the identified risk on future performance and how much they report on actions taken or programs planned to face corporate risks. Bozzolan et al. (2009) hypothesize that verifiable disclosures are more useful than unverifiable disclosures to analysts and provide empirical support for their prediction. Moreover, although the extant literature has tried to distinguish between the quantity and quality of

corporate disclosures, Botosan (2004) argues that all of the new disclosure frameworks implicitly maintain the hypothesis that quantity and quality are positively related. Botosan's (2004) arguments demonstrate that there is some dissonance between scholars on the right way to measure information quality.

This doctoral dissertation suggests that discussion between quantity and quality is partly rhetorical. We should not use the inherent conceptual difficulties of measuring disclosure quality in a complete, valid, and reliable manner as an excuse not to develop new avenues for measuring different aspects of corporate disclosure quality. New measures may provide useful approximations of some important aspects of quality and help further research to develop even better indicators of quality. Recent accounting literature has discussed at least the coverage and semantic properties of disclosure as alternative measurement approaches (e.g., Beattie et al., 2004; Beretta & Bozzolan, 2004; Miihkinen, 2012). Self-constructed disclosure indices have been criticized because they demand hand-collected information from corporate financial reports and are thus very labor-intensive. This also makes it more difficult to replicate and generalize the findings. However, self-constructed disclosure indices also facilitate very detailed analyses of specific research problems.

Another common problem in corporate disclosure research is the impossibility of controlling the entire corporate information environment. If we apply the full disclosure principle (Beaver, 1973) and assume that sophisticated investors can find the relevant and disclosed information everywhere, all this other information should be controlled. This is usually impossible. Both Core (2001) and Beyer et al. (2010) consider natural language processing techniques the most promising way to examine disclosure in future studies and some empirical papers already apply these techniques (e.g., Tetlock, 2007; Tetlock, 2008; Kothari et al., 2009; Demers & Vega, 2010). On the one hand, this approach enables larger sample sizes and more objective approach to data collection. On the other hand, at the moment the information collected with computerized methods is a relatively coarse measure of the quality of corporate disclosures. Hence, it does not allow the detailed and focused analyses often provided by hand-collected data.

## 2.4        Theoretical Framework of the Dissertation:
          The Dissemination and Use of Information in the IFRS Era

Figure 2 provides the theoretical framework of the doctoral dissertation. It describes the role of the main actors of the corporate information environment in the IFRS era. It builds on the assumption that markets are imperfect (e.g., there are information asymmetry and externalities in the market as described in section 2.3.3) and hence there is justification for regulation to ensure that the utility will be maximized at the aggregate level in society.

There are three main actors in the framework: regulatory body, reporting entity, and investors. The regulator releases new reporting initiatives (disclosure laws, standards, guidance, and recommendations).[17] The process of formulating and issuing a law usually takes a long time. Similarly, the issuance of new standards by independent standard-setters is time consuming because of due processes which ensure that all interest groups will be heard before the final version. Disclosure laws and standards may be effective but lack efficiency in cases in which fast and/or transitory disclosure improvements are needed (e.g., transition disclosure). Sometimes the standard-setter may also clarify the disclosure requirements of the existing law by issuing a guideline on its application. This may be an efficient way to increase the impact of the law because the guideline does not require any long lasting due processes (cf., the risk disclosure guidance of the Finnish Accounting Practice Board).

This dissertation suggests that the quality of the process of formulating new reporting initiatives may suffer from the adverse effect of several contradictory political views and the aspects of different interest groups. Moreover, if nobody is responsible for

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[17] The relation between laws and standards depends on the institutional setting. In the US the SEC has mandated the FASB to issue standards. The FASB is a private national standard-setting body. However, the SEC may also issue its own standards. In the US, the Congress could in principle issue disclosure laws but this is unusual. With regard to IFRS the IASB is a private international standard-setting body which issues standards. On the European level, the Council of the European Union and the European Parliament may decide on new disclosure directives or regulations proposed by the Commission. For example, Regulation (EC) No 1606/2002 of the European Parliament and Council stipulated adoption of IFRS from 2005 (European Parliament and Council, 2002). In Finland, the Parliament issues disclosure laws on the basis of drafts proposed by ministerial expert task force. The Finnish Accounting Practice Board works under the Ministry of Labor and Economy. It can clarify and interpret the Finnish Accounting Act (released by the Parliament) by issuing its own guidance on application of the law.

the process itself, poor coordination of the project leads to ineffective and inefficiently implemented standards, which may decrease the overall wellbeing of society.

We argue that the implementation phase of the new reporting initiatives is very important. The moral hazard problem may also exist on the regulators' side, as described earlier in the literature review. If regulators are lax and do not ensure that managers interpret the new mandatory disclosure requirements correctly, the standard will probably have an effect on most managers' behavior but the quality of disclosures may remain low, especially that of narrative disclosures in corporate financial reports. Similarly, disclosure recommendations may not be effective if the enforcement body is not active and does not encourage managers to follow them. 'Regulation Enforcement' and 'Communication' arrows illustrate this in figure 2. Communication between the regulatory body and the reporting entity reduces information asymmetry in relation to regulation enforcement (Information asymmetry A).

Moreover, it is important to control the impact of the new reporting initiatives on managers' behavior and make adjustments if needed. A good example is the corrective action taken by the Finnish Accounting Practice Board (examined in essay 1) after they noticed that the general risk disclosure requirements of the Finnish Accounting Act were ineffective in improving firms' risk disclosures. Finally, in the IFRS era it is essential to find the right form of cooperation between the local and global regulatory bodies and authorities. A good example is the cooperation between the CESR and the FIN-FSA regarding the IFRS transition disclosure (examined in essay 3).

Managers of reporting entities interpret the reporting initiatives issued by the regulator. They also make a decision on the degree and form of compliance with the initiative based on their threshold level of disclosure (e.g., Verrecchia, 1983). Because of the mandatory nature of laws and standards, all firms are obligated to follow them. Otherwise they may be penalized by the regulator, suffer from increased political costs, and/or obtain a bad reputation with the public (regulatory determinants).

The significance of the non-regulatory determinants of disclosure behind managers' reporting decisions cannot be underestimated. For example, larger firms may be willing to decrease agency costs and political costs by increasing disclosures, or leveraged firms may want to conceal their financial condition and the increased threat of

covenant violations by reducing disclosure. Managers' disclosure incentives and corporate governance factors (non-regulatory determinants) affect their disclosure decisions in both mandatory and recommend disclosures. For example, regarding disclosure on narrative issues such as risks, there is substantial room for variation in firms' disclosure practices. A manager may choose a strategy to comply superficially with the risk disclosure standards by providing information on a very general level and repeating the same information year after year. In this case, full disclosure of the required information will not be the disclosure equilibrium.

Investors interpret the information provided by firms. Based on the content of the information they make new assessments of predicted future cash flows. They also consider whether the information risk of the firms has increased or decreased (Information asymmetry B).[18] The level of information risk has a direct impact on firm value. If it increases, it also raises the discount factor that will be used in valuation of the firm. Consequently, the market value of the firm decreases (cf., Akerlof, 1970). The lower the information risk of the firm, the narrower is the gap between its market value and intrinsic value.

In addition to the main actors of the model, there are other factors which influence interpretation by managers and investors of the information provided. The auditor and the internal control functions of the firm help the manager to interpret what the regulatory body wants them to disclose and hence, have a role in reducing information asymmetry A. Auditors supervise reporting but also help firms to understand the content of the reporting requirements, which may improve the quality of disclosure. The internal control function supervises the quality and integrity of corporate reporting internally, and also increase the pressure for corrective actions in cases of low disclosure quality. Moreover, analysts may be beneficial in the reduction of information asymmetry B if they help investors to interpret the manager's disclosures correctly. Analysts make their own interpretations of the information provided by firms. Although

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[18] It is also worth mentioning that sometimes firms also obtain new information from investors (as described earlier in the literature review).

this may simplify interpretation by investors, additional opinions may also increase confusion on the future prospects of the firms (cf., Healy & Palepu, 2001).[19]

The theoretical framework of the dissertation adds to the existing literature by seeing the role of information asymmetry in the capital markets from a wider perspective. Previous literature has focused more on *information asymmetry B* whereas we also include *information asymmetry A* in the analyses. It is important to understand that communication problems may exist at all levels in the corporate information environment. Sometimes the coercive effect of disclosure standards or recommendations may not have an optimal impact on managers' reporting choices if the reporting requirements are poorly formulated and/or ineffectively implemented.

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[19] The framework of the dissertation assumes that information risk cannot be diversified because in imperfect markets all firms have information risk and its effect on firm value is always negative. In this sense the model differs from the recent theoretical models of perfect market settings which argue that information risk is not priced because it is diversifiable when the number of traders becomes large (e.g., Hughes et al., 2007; Lambert et al., 2007).

**Figure 2: The Interaction between the Regulatory Body, Reporting Entity and Investors in the IFRS Era**
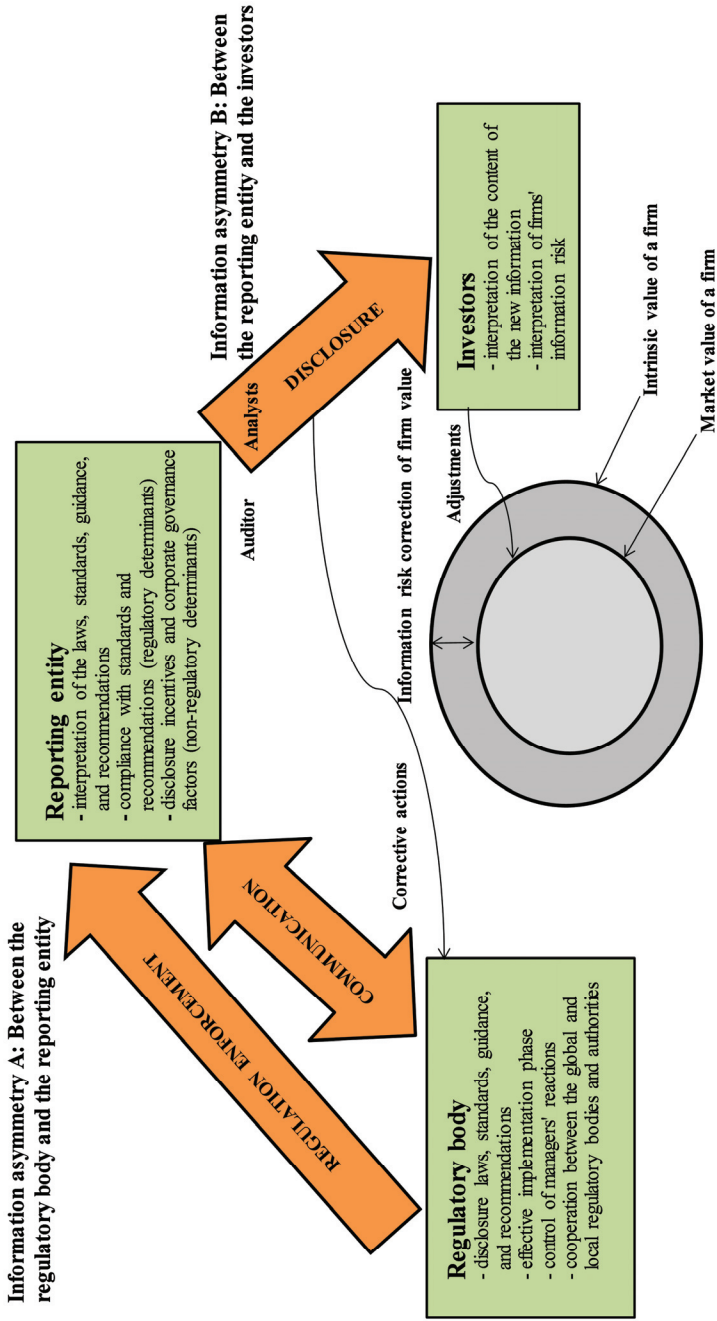
# 3    RISK AND TRANSITION DISCLOSURES: EVIDENCE AND IMPLICATIONS

Both risk and transition disclosures are new research areas in corporate disclosure literature. Literature on corporate risk disclosures has evolved in the last ten years. In addition, there is only meager direct evidence on transition disclosures. This section provides a detailed review of studies examining corporate risk disclosures, and also some prior evidence on transition disclosures. The characteristics and unique features of the Finnish risk disclosure environment are also discussed. Lastly, we summarize sections two and three and present the research gap in the literature that is relevant from the perspective of this doctoral dissertation.

## 3.1       Risk Disclosure Regulation and Quality of Risk Disclosure

Risk management is critical for the maximization of shareholder wealth because its purpose is to maximize profitability and minimize the probability of financial failure at the same time (Solomon et al., 2000). Therefore, investors need high-quality risk information. Moreover, employees, customers and other stakeholders may follow managers' risk disclosures. Financial reporting has often been criticized for not providing a detailed description of risks and uncertainties (e.g., ICAEW, 1997). Academics, practitioners, and standard-setters have observed this problem and discussed whether regulatory bodies should plan more specific risk disclosure standards (cf., Schipper, 2003).

Although accounting researchers have become increasingly interested in risk disclosure in recent years (e.g., Elmy et al., 1998; Roulstone, 1999; Solomon et al.,

2000; Beretta & Bozzolan, 2004; Lajili & Zéghal 2005; Linsley & Shrives, 2006; Abraham & Cox, 2007; Dobler, 2008; Dobler et al., 2011, Miihkinen, 2012), it is still one of the most ambiguous and unexplored areas of disclosure research. In particular, there is only meager evidence on risk disclosure quality. The importance of high-quality risk reporting has been also emphasized in several surveys, guidance, and standards of professional and regulatory bodies in the recent two decades (e.g., AICPA, 1994a, AICPA, 1994b; FASB, 2001; IASB, 2010; ICAEW, 1997, 1999a; 2006; 2011a, 2011b; IFAC, 2002; CICA, 2008, 2009, 2010; KPMG, 2008; SEC, 1997, 2005; FSA, 2005, 2006; EFRAG, 2010; BCBS, 1998, 2013). These documents provide several frameworks and approaches for risk reporting. The unifying theme is the objective of enhancing the quality of corporate risk reports as the following examples demonstrate.

First, risk information is defined to be one content element of a decision-useful management commentary in IFRS Practice Statement on Management Commentary (IASB, 2010). One objective of the statement is to harmonize risk reporting, which is a challenging task, taking into account the variety of institutional corporate disclosure environments (cf., Hope, 2003a; Haller et al., 2009; Adelopo, 2011). Second, the SEC requires overall risk reviews in annual and quarterly reports from 2005 onwards (SEC, 2005). Third, the ICAEW (2011a) provides a timely and extensive survey on the current stage and future challenges of risk reporting. Fourth, the BCBS's (2013) brand new guidance presents principles to improve banks' risk reporting practices. Furthermore, professional and regulatory bodies have also widely discussed the importance of first-class corporate governance practices in recent years (ICAEW, 1999b; SEC, 2002; FRC, 2004, 2005, 2011; COSO, 2004; IIA, 2008). Effective risk management and internal control are at the core of corporate governance and they are closely related to risk reporting. This is so because the identification and management of risks normally precedes their disclosures to stakeholders.

Risk information asymmetry may cause several problems in capital markets such as high transaction costs, thin markets, low liquidity, lower gains from trade, and unprofitable investments for defenseless minority investors (Lev, 1988). Considering the valuation and stewardship role of accounting information (see, Beyer et al., 2010), risk

disclosure provides useful information for both purposes. It facilitates more accurate valuation but can also be used as a coarse proxy for management's sense of direction.

Previous literature demonstrates that managers react to new disclosure requirements and recommendations (Inchausti, 1997; Roulstone, 1999; Miihkinen, 2008). Roulstone (1999) documents that FRR No. 48 is effective in improving the market-risk disclosures of US listed firms.[20] However, prior literature has not provided evidence about the effectiveness of regulation in improving the overall quality of risk disclosure within a single country. For this reason, Beretta & Bozzolan (2004) suggest that future research should examine whether the quality of risk disclosure can be influenced through regulation.

The lack of evidence about the impact of risk disclosures in stock markets is one reason for delay in the development of risk standards and guidance (Schrand & Elliot, 1998). Nowadays we have some evidence that risk disclosures provide decision-useful information to analysts and investors (Rajgopal, 1999, Jorion, 2002; Thornton & Welker, 2004; Huang, 2011; Kravet & Muslu, 2013; Campbell et al., 2013). However, behavioral accounting studies demonstrate that risk reporting seldom helps investors to form risk judgments (Koonce et al., 2005a, 2005b). The deficiencies of managers' risk disclosures are supported by several prior studies (Beretta & Bozzolan, 2004; Lajili & Zéghal, 2005; Linsley & Shrives, 2006; Linsley & Lawrence, 2007, and Dobler et al., 2011).

Beretta & Bozzolan (2004) demonstrate that although Italian firms disclose some risk information voluntarily, the quality of risk reports is low. In the Canadian institutional setting, Lajili & Zéghal (2005) find that firms' risk disclosures lack uniformity, clarity, and quantification, which reduces their decision-usefulness. Linsley & Shrives (2006) examine risk reporting in the UK and document that managers are reluctant to make many quantitative risk disclosures. Moreover, there is a lack of coherence in risk narratives, which is evidence of the existing risk information gap. This

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[20] FRR No. 48 was issued by the Securities and Exchange Commission (SEC) in 1997 to improve market-risk disclosures that were encouraged, but not required, under SFAS No. 119. One of the guiding principles followed by the SEC in planning the standard was that it should be flexible enough to take into account different types of registrants, different degrees of market-risk exposure, and alternative ways of measuring market risk (Linsmeier & Pearson, 1997). Consequently, the standard was principles-based and allowed managers considerable latitude in market risk disclosures.

hampers stakeholders' assessment of corporate risk profiles. Linsley & Lawrence (2007) continue their analyses in the UK setting and show that corporate risk disclosures lack readability. Finally, Dobler et al. (2011) examine the international attributes of corporate risk disclosures. They demonstrate that risk disclosures are most common in management reports, concentrate on financial risk categories, and include little quantitative and forward-looking disclosure across sample countries (US, Canada, UK, Germany). They conclude that domestic regulation can only partly explain cross-country variation in the determinants of disclosure, which suggests that disclosure incentives play an important role in risk reporting.

## 3.2 Risk Disclosure, Managers' Disclosure Incentives and Firms' Corporate Governance Structures

Managers' disclosure motives influence corporate risk-reporting even under mandatory risk-disclosure requirements (Dye, 1990; Marshall & Weetman, 2007; Dobler, 2008; Dobler et al., 2011). Marshall & Weetman (2007) document that managers know much more about their foreign exchange risk management than they report to investors mandatorily. Their disclosure choices, and thereby their risk disclosures as well, are likely to be influenced by several motives and factors examined in section two of this literature review. For example, managers are motivated to reduce the adverse selection problems and agency costs via improved disclosures (e.g., Akerlof, 1970; Jensen & Meckling, 1976). In addition, many factors demonstrated in voluntary disclosure literature are probable indicators of high-quality risk disclosure. These include for instance firm size (Cooke, 1989; Robb et al., 2001; Eng & Mak, 2003; Cahan et al., 2005; Brammer & Pavelin, 2006), profitability (Lang & Lundholm, 1993; Leuz, 2000; Prencipe, 2004), prospects for growth (Kanto & Schadewitz, 1997; Miihkinen, 2008), the need for external financing (Lang & Lundholm, 1993), and listing status (Cooke, 1989; Hossain et al., 1995; Saudagaran & Meek, 1997; Robb et al., 2001).

Moreover, the type of financial system (bank versus market orientation) may also influence managers' incentives to disclose risks in corporate financial statements and

annual reports (cf., La Porta et al., 1997; Ongena & Smith, 2000). On the one hand, in bank-oriented financial systems (e.g., Germany, Italy, and Spain) direct communication with banks is important which may reduce incentives for public disclosures of relevant information. On the other hand, in market-oriented financial systems the pressures for high-quality investor communication are high. Traditionally, Finland has been a bank-oriented country but in the recent decades the pressures for transparency in risk reporting have increased because of the liberalization and internationalization of the capital market (see section 3.5 for a more detailed description of the evolvement of the Finnish risk disclosure environment).

Furthermore, some firms may have more potential risk information to disclose to the investors because of their higher exposure to risks (Lin et al., 2010). Firm with high leverage have increased bankruptcy risk, which makes them more vulnerable to risks (cf., Dobler et al., 2011). Also, business risk (e.g., volatility of the yearly cash-flows and globalization) may influence managers' risk disclosure behavior (Jorgensen & Kirschenheiter, 2003; Cahan et al., 2005). Moreover, high sensitivity to systematic risk in the capital markets may motivate managers to improve risk disclosures (Linsley & Shrives, 2006).

Finally, corporate governance structures may also influence their risk-reporting (Abraham & Cox, 2007). High ownership concentration probably decreases willingness to provide detailed risk information. In addition, the ratio of foreign owners to domestic owners may impact managers' risk disclosure choices.

## 3.3      Evidence on the Economic Consequences of Risk Disclosure

We discussed the mixed views on the relationship between corporate disclosure and cost of capital in recent years in section two (e.g., Easley & O'Hara, 2004; Hughes et al., 2007; Lambert et al., 2007; Beyer et al., 2010). Jorgensen & Kirschenheiter (2003) model managerial equilibrium strategies for voluntarily disclosing information about firm risks and show that a disclosing firm has a lower risk premium and beta ex post than a non-disclosing firm.

Starting with Amir & Lev (1996), many scholars have begun to explore empirically whether soft accounting information provides incremental information to investors (e.g., Abrahamson & Amir, 1996; Kothari et al., 2009; Demers & Vega, 2010). The findings of these studies have demonstrated that soft accounting information is indeed useful to investors. However, the accounting literature provides only meager empirical evidence on the economic consequences of narrative risk disclosures.

The existing evidence is mainly limited to the analyses of the value relevance of risk disclosures provided in line with the Securities and Exchange Commission's requirement FRR No.48. It requires firms to provide quantitative and qualitative disclosures about exposure to market risk and to disclose how they account for derivatives (see, Rajgopal, 1999; Linsmeier, 2002; Jorion, 2002; Liu et al., 2004; Lim & Tan, 2007; Pérignon & Smith, 2010). Rajgopal (1999) demonstrates that market-risk disclosures by oil and gas producers affect their stock return sensitivities to oil and gas price movements. Lim & Tan (2007) document that a higher quantitative value-at-risk estimate is associated with a weaker return-earnings relation and a higher future stock-return volatility.

Recently, concurrent studies on mandatory corporate *overall risk reviews* in the US have provided evidence that these disclosures are informative to investors despite the reporting deficiencies (Huang, 2011; Kravet & Muslu, 2013; Campbell et al., 2013). Campbell et al. (2013) demonstrate that risk disclosures associate negatively with information asymmetry. Kravet & Muslu (2013) analyze 10-K filings and show that increases in qualitative risk factors in corporate annual reports are correlated with increases in stock-return volatility and trading volume around and after the filings.

## 3.4    Transition Disclosure on the Impact of the Adoption of IFRS

All firms listed in a stock exchange of any Member State of the European Union have been required to follow IFRS (International Financial Reporting Standards) in their consolidated financial statements since 2005. For this reason, at the end of 2003, the CESR (Committee of European Securities Regulators) published a *Recommendation for Additional Guidance Regarding the Transition to IFRS,* which provided guidance on how managers should disclose the transition effects of the adoption of IFRS.

All transitions from one financial accounting system to another are always unique and may influence decision-making by investors if they do not know what is behind the reported numbers. Hence transition disclosure is closely linked to risk disclosure. The adoption of IFRS had a significant influence on financial reporting by listed firms. Without appropriate transition disclosure, it would have been more difficult to investors to assess corporate risk profiles. Consequently, high-quality transition disclosure also enabled more accurate valuation of the firms.

Excluding the third essay of this dissertation (Miihkinen, 2008), only Kent and Stewart (2008) provide evidence on the determinants of transition disclosure to IFRS in the existing literature. They examine the association between the level of disclosure and corporate governance quality. They document that the quantity of disclosure is positively associated with some aspects of superior corporate governance, such as the frequency of board and audit committee meetings and the choice of auditor.

The non-scientific studies of the Finnish Financial Supervision Authority (FIN-FSA) provide insights into the Finnish listed firms' transition disclosure on the adoption of IFRS standards in 2004 and 2005. FIN-FSA demonstrates that in 2004 transition disclosures were insufficient although 70 percent of the firms gave some IFRS disclosure (FIN-FSA, 2004). However, less than half of the firms had a moderate or good level of disclosure. The results demonstrate that eight percent of the firms did not mention IFRS in their financial statements, 24 percent mentioned only the transition date, 45 percent described the transition process, and 54 percent described differences in the preparation of financial statements between the Finnish Accounting Act and IFRS.

As regards disclosures in 2005, FIN-FSA states that about 80 per cent of 125 listed firms had disclosed on the transition to IFRS at the latest in conjuncture with the first interim report (FIN-FSA, 2005). FIN-FSA notes that the Finnish listed firms disclosed more actively with regard to the IFRS transition than the firms of other EU Member States. The quality of transition disclosure was on average good, although big differences also existed. The study suggests that bigger firms disclosed better on average. However, FIN-FSA states that transition disclosures were partly difficult to understand. 30 per cent of the firms informed that the impact of IFRS on shareholder's equity was minor. For other firms, the effect seemed to be moderate or significant. The greatest adjustments derived from the recognition of subordinated loans, the company's own shares, minority interest, financial instruments, and tax liabilities. 60 per cent of the firms reported that IFRS increased their net income. The biggest changes were due to recognition of goodwill, real estates, pensions, and matching between earnings and expenses. Most firms also reported increases in assets mainly because of the new fair value-based recognition principles and the recognition of finance leases in the balance sheet. FIN-FSA concluded that the adoption of IFRS had significant influence on financial reporting by Finnish listed firms and, it was thus challenging to investors to understand the changes. FIN-FSA recommended that Finnish listed firms complement and clarify their forthcoming disclosures and continue their efforts to provide high-quality IFRS-reports.

## 3.5      The Finnish Risk Disclosure Environment

The Finnish stock market has evolved considerably over the last few decades. The general internationalization and deregulation of the financial markets started in the early 1980s - a few years later than in the other Nordic countries. The process proceeded gradually from the liberalization of the money market to the abolishment of all restrictions on capital movements to and from Finland. Finally, the restrictions on foreign ownership of Finnish stocks were removed in 1993. For international investors small markets are interesting because they may provide considerable diversification

benefits although the co-movements between Finnish and global market may have increased in recent years (see, Kallunki et al., 1997).

The trading of shares in Finland is concentrated in the largest companies (e.g., Nokia Plc, Stora Enso Plc, Nordea Plc). Markets are thin, which increases volatility and reduces liquidity especially among the smaller firms. The low number of trades also typically results in larger spread between the two quotes. Despite the low trading volume, the Finnish stock market research suggests that there are several fundamentals, such as earnings, macroeconomic factors, and financial leverage that are important determinants of stock prices in Finland (see, Kallunki et al., 1997).

The existing corporate disclosure literature provides some evidence from Finland. Ikäheimo's (1996) dissertation is an extensive analysis of the factors behind communication in stock markets. Kanto & Schadewitz (1997) provide important insight into the differences between the determinants of mandatory and voluntary disclosure. The need for this type of research was also highlighted in Beyer et al.'s (2010) review article. They demonstrate that both disclosure categories can be explained by a capital structure and growth-related factors, although firm size impacts only managers' voluntary disclosures. Moreover, the economic significance of the capital structure and growth-related factors is much higher in the voluntary disclosure model.[21]

Voluntary disclosure theory suggests that managers who intend to raise external financing have an incentive to reduce the firm's cost of capital through voluntary disclosure. In his dissertation, Seppänen (1999) examines whether external financing arrangements are associated with managers' discretionary disclosures in the Finnish institutional setting. The results provide some evidence that disclosure frequency of forward-looking information and timely disclosure of material information increase with security offering frequency. Seppänen also demonstrates that private long-term debt financing is negatively associated with the timeliness of annual earnings announcements.

Finnish disclosure literature provides also evidence on the usefulness of voluntary reconciliation statements to investors. Niskanen et al. (2000) examine the value relevance of earnings recognized under the Finnish Accounting Act and their

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[21] Schadewitz (1997) provides additional evidence on the determinants of managers' interim report disclosures in his dissertation.

voluntarily disclosed reconciliations to the International Accounting Standards. They suggest that local earnings have significant value relevance to both domestic and foreign investors. However, the aggregate reconciliation of local earnings to IAS earnings does not provide significant value relevance to domestic or foreign investors. The results for the value relevance of individual reconciling items suggest that adjustments relating to differences in untaxed reserves and consolidations have significant value relevance to both investor groups.

## 3.6        Summary and Research Gaps

The corporate information environment is very complex in nature and influenced by several often contradicting forces. In this setting financial accounting should be able to perform its valuation and stewardship roles. The unraveling result theory will not hold in imperfect market settings for several reasons, which increases the likelihood of managerial discretion. Prior literature documents several incentives for voluntary disclosure such as achievement of positive capital market consequences, reduction of agency costs and avoidance of proprietary costs. However, regulation can be justified for several reasons such as the reduction of the adverse effects of externalities and agency costs and increased economies of scale in society. Via regulation we can improve the optimal allocation of scarce capital resources in society and hence increase the welfare of society at the aggregate level. However, it is often difficult to decide on what is the right amount of regulation. Moreover, standard-setting demands careful cooperation with different interest groups.

Prior empirical literature provides more evidence on voluntary disclosure than on mandatory disclosure. More research will be needed on the interconnections between these two categories. Moreover, although we have found new ways to measure corporate disclosure quality in recent years, we are still in the beginning of that process.

The theoretical framework of this doctoral dissertation describes the dissemination and use of information in the IFRS era. It illustrates interaction between the regulatory body, reporting entity, and investors, and shows the importance of high-

quality communication from the perspective of all actors. Especially, it contributes to prior literature by taking into account the role of effective communication in regulation enforcement. The existing literature has focused more on disclosure between the firm and investors, whereas we also underline the significance of effective communication between the regulatory body and the manager of the firm. It is essential to understand that communication problems may exist at both levels. For example, the regulatory body may be lax or there may be some other explanation for high information asymmetry between the manager and the regulatory body. Thus, the coercive effect of disclosure laws, standards, guidance, and recommendations cannot always influence optimally if the reporting requirements are poorly formulated and/or implemented.

Risk disclosures are important to investors because they provide evidence on the uncertainties relating to firms' future prospects. Prior literature provides only meager evidence on the impact of regulation on risk disclosure quality, or on the association between managers' disclosure motives and corporate governance structures with high-quality risk disclosures. Moreover, evidence on the economic consequences of risk disclosures is mainly limited to market-risk disclosures, and hence we do not know how decision-useful the overall risk reviews made by managers are to investors. Lastly, taking into account the importance of effective transition between different accounting policies, there is surprisingly little evidence on the regulatory and non-regulatory determinants of corporate transition disclosures.

To summarize, the existing literature provides only meager evidence of the impact of regulation on the quality of risk disclosure or the impact of authoritative disclosure recommendations on corporate reporting. Furthermore, we need more evidence of the consequences of risk disclosure on stock markets in a highly regulated setting. Also, the non-regulatory determinants of risk and transition disclosures need additional research. Finally, although the existing accounting literature documents some methods for examining the quality of disclosure, we are only beginning to understand these issues more deeply.

# 4      RESULTS

## 4.1     Research Question 1 Results

The first essay (Miihkinen, 2012) answers the research question 1: *Can a detailed national risk disclosure standard improve the quality of firms' overall risk reviews under IFRS.*

The results of a regression analysis point to the following main findings. First, the risk disclosure standard increases the quality of corporate risk disclosure on several dimensions. After the release of the standard, the risk reviews of the firms are more extensive and also provide more evenly distributed information across risk topics. Moreover, firms give more detailed qualitative descriptions of the economic impact of the identified risk on future performance and provide more information on actions taken and programs planned to face their risks. The first essay also documents an increase in willingness on the part of firms to provide quantitative risk information although the effect of the standard is weaker compared with other quality dimensions.

Second, the study finds that the *coercive effect* of the standard drives increases in the overall quality of risk disclosure. In addition, some evidence is also found that the impact of the standard on quality is more pronounced among less profitable firms, which may suggest that the coercive effect of the standard forces these firms to reconsider their threshold level of disclosure. Third, the results demonstrate that the risk disclosure standard has a strong impact on the location of the risk information provided. After the release of the standard, 81.9 percent of risk disclosure is provided in the operating and financial reviews. In the previous year the comparable number was 57.5 percent. An additional finding is that the quality improvements are permanent in the subsequent years.

## 4.2    Research Questions 2 Results

The second essay answers the research question 2: *Does the quality of risk disclosure provided by firms in their annual reports affect information asymmetry between the management and investors?*

The results demonstrate that quality of risk disclosure associates negatively with information asymmetry. Firms that provide high-quality risk information also have lower levels of information asymmetry. The results are robust with respect to the alternative measures of information asymmetry used in the previous literature.

## 4.3    Research Question 3 Results

The second essay also answers research question 3: *Do certain contingency factors such as firm riskiness, investor interest, and market condition affect the usefulness of annual risk disclosures to investors?*

It is documented that firm riskiness influences the usefulness of risk disclosures. The results show that risk disclosure is more useful to investors if it is provided by small firms and high tech firms. Furthermore, this study demonstrates that investor interest also has an effect on the results. High-quality risk information is more useful to investors when it is provided by firms with low analyst coverage. Last but not least, the third essay shows that risk disclosure is useful to investors under all market conditions. However, it was also found that it is even more useful in falling and recovering stock markets than during rising stock markets.

## 4.4 Research Question 4 Results

The third essay (Miihkinen, 2008) answers research question 4: *In relation to the transition disclosure recommendation of the Committee of European Securities Regulators (CESR), is the behavior of firms more similar to voluntary or to mandatory disclosure?*

The results indicate that recommended disclosure has more mandatory characteristics than voluntary disclosure. First, the mean is higher for recommended disclosure than for voluntary disclosure. This suggests that recommended disclosure has been on average better than voluntary disclosure. Second, the overall impact of control factors, disclosure incentives, and corporate governance factors is smaller on recommended disclosure than on voluntary disclosure. The finding implies that the mandatory characteristics of the authoritative disclosure recommendation decrease variation in firms' recommended disclosures and hence the explanatory power of the recommended disclosure model is lower.

In addition, the empirical results demonstrate that firm size has a smaller impact on recommended disclosure than on voluntary disclosure. The existing literature is almost unanimous that firm size is a significant determinant of voluntary corporate disclosures (e.g., Cooke, 1989; Lang & Lundholm, 1993; Brammer & Pavelin, 2006). Hence, the finding is consistent with the view that the mandatory characteristics of the CESR transition disclosure recommendation decrease the impact of size on disclosure. The results provide evidence that recommended and voluntary transition disclosures can be placed in different disclosure categories. Although some firm characteristics influence firms' responses to a change in disclosure regulation (the issuance of the CESR transition disclosure recommendation), they do not impact recommended disclosures as strongly as voluntary disclosures.

## 4.5　Research Question 5 Results

The first and third essays answer research question 5: *What are the non-regulatory determinants of risk and transition disclosures?*

The first essay demonstrates that in addition to the impact of the detailed national risk disclosure standard, other important drivers of quality are firm size, profitability, and listing on the NYSE. Larger firms have higher disclosure quality. Also, listing on the NYSE has a positive effect on quality. On the contrary, it is documented that more profitable firms report lower quality risk information. It was also found that a less profitable firm discloses more on its risks if it has a high business risk. Moreover, we found evidence of the impact of growth prospects and financial leverage on risk disclosure levels. Finally, this essay demonstrates that larger firms and firms reporting under the requirements of the SEC disclose more quantitative risk information.

The third essay demonstrates three significant disclosure incentives for transition disclosure: firm size, financial leverage, and growth prospects. After controlling for other relevant factors, firm size associates positively with transition disclosure and financial leverage negatively. It is also documented that the growth prospects of firms are a significant positive determinant of transition disclosure.

The third essay also demonstrates a significant corporate governance factor that associates with the quality of transition disclosure. The proportion of independent board members on corporate boards relates positively to disclosure of the effects of the IFRS adoption. Interestingly, the impact of a global accounting firm on transition disclosure remains insignificant.

## 4.6    Results over and above the Individual Essays

This research examines the determinants of corporate disclosure in essays 1 and 3. The overall results of the doctoral dissertation provide evidence that both common and disclosure-item-specific determinants of disclosure exist. Firm size is demonstrated to be a significant determinant of both risk and transition disclosures. There is also evidence on the positive impact of growth prospects and the negative effect of financial leverage on disclosure. The impact of profitability on disclosure remains ambiguous. One interesting finding combining the studies of this dissertation is that the disclosure improvements in risk and transition disclosures also continue after the initial introduction of the guidance and recommendation.

## 4.7    Results summary

The objective of this dissertation is to examine risk and transition disclosures by Finnish listed firms in the IFRS era. The following research questions are examined:

1. *Can a detailed national risk disclosure standard improve the quality of firms' overall risk reviews under IFRS?*

2. *Does the quality of risk disclosure provided by firms in their annual reports affect information asymmetry between the management and investors?*

3. *Do certain contingency factors such as firm riskiness, investor interest, and market condition affect the usefulness of annual risk disclosures to investors?*

4. *In relation to the transition disclosure recommendation of the Committee of European Securities Regulators (CESR), is the behavior of firms more similar to voluntary or to mandatory disclosure?*

5. *What are the non-regulatory determinants of risk and transition disclosures?*

The research demonstrates that the regulatory attempts to influence risk and transition disclosures have been successful (RQ 1 and RQ 4). In addition, it is documented that the quality of risk disclosure associates negatively with information asymmetry in the stock markets (RQ 2), and that the usefulness of risk disclosure to investors depend on firm riskiness, investor interest, and market condition (RQ 3). Finally, this research reports several significant non-regulatory determinants of risk and transition disclosures (RQ 5). The relations of the research questions, essays, research methods, and main results are summarized in table 1.

**Table 1. Summary of the Research Questions, Essays, Research Methods, and Main Results**

| Research question | Essay 1 | Essay 2 | Essay 3 | Research method | Main results |
|---|---|---|---|---|---|
| 1. Can a detailed national risk disclosure standard improve the quality of firms' overall risk reviews under IFRS? | X | | | Firms' risk disclosure before and after the detailed standard (2005 and 2006 annual reports). Matched paired sample design. The standard mean test and the multivariate regression analysis are the main test methods. STANDARD is an indicator variable for the reporting year. | STANDARD is positively associated with the quality of risk disclosure. |
| 2. Does the quality of risk disclosure provided by firms in their annual reports affect information asymmetry between the management and investors? | | X | | Four-year panel data (years 2006-2009). The multivariate regression analysis is the main test method. SPREAD and VOLUME are empirical measures for information asymmetry. RDISC is an empirical measure of disclosure quality. | RDISC is negatively associated with SPREAD. RDISC is positively associated with VOLUME. |
| 3. Do certain contingency factors such as firm riskiness, investor interest, and market condition affect the usefulness of annual risk disclosures to investors? | | X | | Interaction variables between RDISC and the contingency factors. MCAP and HTECH (firm riskiness), ANALYSTS (investors interest), and FALLING/RECOVERING/RISING (market condition) are proxies for the contingency factors. | In the SPREAD model, the regression coefficient of RDISC*MCAP positive and significant, RDISC*HTECH negative and significant, RDISC*ANALYSTS positive and significant, and RDISC*FALLING/RECOVERING negative and significant. |
| 4. In relation to the transition disclosure recommendation of the Committee of European Securities Regulators (CESR), is the behavior of firms more similar to voluntary or to mandatory disclosure? | | | X | Firms' transition disclosure in 2004 and 2005. Separate disclosure indices for recommended (Index 1) and voluntary disclosure (Index 2). The standard mean test and the multivariate regression analysis are the main test methods. | Index 1 has a significantly higher mean value than Index 2. The adjusted R-square of the recommended disclosure model is about 18 percentage points lower than that of the voluntary disclosure model. Firm size has a smaller impact on recommended disclosure than on voluntary disclosure. |
| 5. What are the non-regulatory determinants of risk and transition disclosures? | X | | X | Several proxies for the non-regulatory determinants of risk and transition disclosure. The multivariate regression analysis is the main test method. | Firm size is positively associated with both risk and transition disclosure. Listing on the NYSE (profitability) is positively (negatively) associated with risk disclosure. Growth prospects and the proportion of independent board members in corporate boards is positively associated with transition disclosure. Financial leverage is negatively associated with transition disclosure. |

# 5    DISCUSSION

## 5.1       Contribution of the Study

This doctoral dissertation contributes to the existing corporate disclosure literature in several ways. First, it examines the impact of regulation on the quality of risk disclosure, and the influence of authoritative disclosure recommendations on reporting by firms. Second, it analyzes the consequences of risk disclosure on the stock market in a highly regulated setting. Third, this dissertation sheds light on the non-regulatory determinants of risk and transition disclosures. Fourth, it provides new insights on measurement of the quality of risk disclosure. In addition, the theoretical framework of the dissertation illustrates the importance of communication and disclosure in the corporate information environment. These issues are elaborated next in more detail.

As discussed in the literature review, the unraveling result theorem holds in a perfect corporate information environment and managers will voluntarily release all their private information (e.g., Grossman, 1981; Milgrom, 1981). However, interventions by regulators can be justified on the basis of several imperfections in the market such as informational externalities (e.g., Beyer et al., 2010) and also by some direct empirical evidence on the role of regulation in reducing information asymmetry (e.g., Bushee & Leuz, 2005; McLaughlin & Safieddine, 2008). However, more research will be needed if we want to understand these issues more deeply and also someday get closer to a unifying theory of mandatory disclosure (Dye, 2001; Verrecchia, 2001). This dissertation provides evidence on two types of attempts to regulate corporate reporting: disclosure guidance which specifies the risk disclosure requirements of the Finnish Accounting Act, and the CESR transition disclosure recommendation which specifies how firms should give information on their IFRS transition.

Earlier research (see, Beretta & Bozzolan, 2004) points out that to date, there is little if any, research evidence concerning the impact of risk disclosure regulation on quality. The extant research documents the importance of reporting incentives as a determinant of accounting quality (e.g., Ball et al., 2003; Leuz, 2003; Ball & Shivakumar, 2005; Dobler, 2008; Dobler et al., 2011) but provides only meager evidence on whether the regulatory body can increase the overall quality of risk disclosure within a single country. Our findings contribute to the accounting literature by demonstrating that detailed risk disclosure guidance can be used to improve the overall quality of risk disclosure. However, although we document an increase in managers' willingness to provide quantitative risk information, the effect of the guidance on that quality dimension is weaker compared with other quality dimensions. Managers' reluctance to provide quantitative assessments of firm risks is consistent with the findings of Beretta & Bozzolan (2004), Linsley & Shrives (2006), and Dobler et al. (2011). Moreover, we find some evidence that the effect of the standard on quality is more pronounced among less profitable firms, which may suggest that the coercive effect of the standard forces the managers of these firms to reconsider their threshold level of disclosure. This finding provides new evidence on the possible interplay between disclosure regulation and managers' disclosure incentives (cf., Dobler, 2008).

This research also contributes to the discussion on the relation between mandatory and voluntary disclosure. Previously, many studies have concentrated on voluntary disclosure (e.g., Cooke, 1989; Lang & Lundholm, 1993; Cahan et al., 2005). Others have examined compliance with mandatory disclosure requirements (e.g., Inchausti, 1997; Gray & Street, 2002). In the light of prior consolidated evidence on voluntary and mandatory disclosure, and on their differences (e.g., Kanto & Schadewitz, 1997; Al-Razeen & Karbahari, 2004), it is obvious that the quality of mandatory disclosure associates with the level of reporting and disclosure requirements whereas voluntary disclosure is driven by managers' disclosure incentives such as the reduction of agency costs and asymmetric information and the avoidance of proprietary costs (Beyer et al., 2010). This research contributes to that discussion by demonstrating the mandatory characteristics of recommended disclosure. Managers apparently consider that the costs of compliance with the recommendation are lower than those of non-

compliance. However, their freedom and will to choose is more evident when it comes to voluntary transition disclosures such as those which relate to corporate segment reporting. Segment reporting may reveal something valuable to competitors and hence, managers may have an incentive to withhold that information. Beyer et al. (2010) emphasize that we need more evidence on the interconnections between mandatory and voluntary disclosure. This dissertation shows that managers probably treat recommended and voluntary disclosures as separate disclosure categories.

The analysis of recommended disclosures is useful to the existing literature because only a few prior studies provide evidence on compliance by managers with disclosure recommendations. Basically, compliance with recommended disclosures is voluntary for firms but can also be expected to exhibit characteristics of mandatory disclosure because disclosure recommendations are usually published by influential organizations. Prior literature focuses on compliance with voluntary disclosure recommendations but does not analyze the mandatory characteristics of those recommendations. Also, the existing research does not examine the effectiveness and efficiency of disclosure recommendations in those situations in which regulators have an urgent need to achieve fast changes in corporate disclosure practices (cf., Mangena & Tauringana, 2007). Consequently, by demonstrating the mandatory characteristics of the CESR transition disclosure recommendation, we show how disclosure recommendations issued by authoritative supervisory bodies can be used to reduce information asymmetry between management and stakeholders. Moreover, we show that recommended disclosures may be particularly applicable in cases in which the regulator pursues fast disclosure enhancements.

Previous literature provides evidence that managers react to new disclosure requirements and recommendations (e.g., Inchausti, 1997; Roulstone, 1999) which is in line with our findings in risk and transition disclosure context. One unique feature of this doctoral dissertation is that it provides evidence on the role of effective communication in regulation enforcement, an issue which is also emphasized in the theoretical framework of the dissertation, but seldom referred to in the extant literature. The Finnish Accounting Practice Board (FAPB) has been active and sought to clarify to managers what is meant by high-quality risk disclosure. Similarly, the Finnish Financial

Supervision Authority (FIN-FSA) actively promoted the CESR disclosure recommendation and insistently urged Finnish managers to make transition disclosure improvements accordant with it after its publication. Consequently, the FAPB and the FIN-FSA aimed at boosting the impact of the regulator's attempt to influence managers' disclosures. Their role can be seen as that of an intermediary which 'translates' the will of the regulator to more understandable form and underlines the importance of the specific disclosure item. It is impossible to state the exact influence of the efforts of these national regulatory bodies on corporate disclosure improvements. We can only demonstrate that Finnish listed firms have improved their risk and transition disclosures under the existing regulatory pressures.

It is also important to obtain evidence on the usefulness of different disclosure items to investors because disclosure regulation may also generate significant costs for some firms (e.g., Bushee & Leuz, 2005; Beyer et al., 2010) and hence it is unreasonable to require firms to provide information on irrelevant items. Prior evidence on the impact of the quality of mandatory overall risk reviews on stock markets is very scarce and limited to recent studies in the US institutional setting (Huang, 2011; Kravet & Muslu, 2013; Campbell et al., 2013). Hence, there is not much evidence on whether mandatory risk disclosures lower information asymmetry in a highly regulated risk disclosure environment. This is so because recent academic work has mostly focused on examining the regulatory and non-regulatory determinants of risk disclosure (e.g., Roulstone, 1999; Beretta & Bozzolan, 2004; Linsley & Shrives, 2006, Dobler et al., 2011) or the value relevance of market risk disclosures (e.g., Rajgopal, 1999; Linsmeier, 2002; Jorion, 2002; Lim & Tan, 2007). This dissertation contributes to that discussion by examining the usefulness of corporate overall risk reviews in Finland, which is a highly regulated risk disclosure environment. Finnish risk disclosure requirements are advanced in terms of the clarity, specificity, and versatility of the guidance. We demonstrate that the quality of risk disclosure associates negatively with information asymmetry, which suggests that annual report risk disclosures are informative to investors. Consequently, our results are in line with those of the recent studies (Huang, 2011; Kravet & Muslu, 2013; Campbell et al., 2013) and provide reinforcing evidence on the relevance of mandatory risk disclosures to investors.

Furthermore, this research contributes to prior literature by including several relevant contingency factors such as firm riskiness, investor interest, and market condition into the analyses of the usefulness of risk disclosures. We demonstrate that risk disclosures are more useful to investors if they are provided by small firms and high tech firms, which may imply that investors require more risk information from risky firms (cf., Fama & French, 1992; Easley & O'Hara, 2004; Lin et al., 2010). We also show that the risk disclosures of firms that are followed less extensively are more useful to investors. The finding suggests that the risk profiles of the less extensively followed firms are vague to investors, which increases the reactions of investors to their risk disclosures. The result is also consistent with the view that the information environment of the more extensively followed firms differs from that of other firms. The result is in line with those of Botosan (1997) and Hope (2003b). Botosan (1997) documents that high-quality annual report disclosure reduces the cost of equity capital among firms with low analyst coverage. Hope (2003b) demonstrates that the level of annual report disclosure is more important to the following analysts when the analyst coverage of the firm is low. Finally, it was found that risk disclosures are most useful during difficult economic conditions (cf., Bowen et al., 1989). This finding is consistent with the view that during an economic downturn investors become more cautious, which increases their risk information needs.

In addition, this research adds to prior literature by providing evidence on the importance of several non-regulatory determinants in explaining managers' mandatory risk disclosures and recommended transition disclosures. Hence the research extends the existing risk disclosure literature (e.g., Roulstone, 1999; Beretta & Bozzolan, 2004; Linsley & Shrives, 2006; Dobler, 2008; Dobler et al., 2011) and provides totally new evidence on the (dis)similarities between the determinants of recommended and purely voluntary transition disclosure (cf., Kent & Stewart, 2008).

Firm size was demonstrated to be an important driver of managers' risk and transition disclosures, which is in line with the existing corporate disclosure literature in general (e.g., Cooke, 1989; Lang & Lundholm, 1993; Cahan et al., 2005) and the risk disclosure literature in particular (e.g., Linsley & Shrives, 2006; Dobler et al., 2011). Moreover, Kent & Stewart (2008) document that larger firms provide more transition

disclosure on the adoption of IFRS in the Australian setting. However, the result contradicts with some of the earlier mandatory disclosure studies (Kanto & Schadewitz, 1997; Glaum & Street, 2003), which do not find the size effect. There are several reasons for the documented size effect: they include higher agency costs (Jensen & Meckling, 1976), lower proprietary costs (e.g., Prencipe, 2004), and lower unit costs of disclosure (e.g., Lang & Lundholm, 1993). Larger firms are also expected to suffer more from political and litigation costs and intensive pressure from analysts, which may increase their responsiveness to disclosure guidance and recommendations (Watts & Zimmerman, 1978; Cooke, 1989; Lang & Lundholm, 1993; Inchausti, 1997).

Poorly performing firms are documented to outperform more profitable firms in risk disclosure. Previous literature provides contradictory interpretations for the impact of profitability on corporate disclosure (e.g., Leuz, 2000; Prencipe, 2004; Troberg et al., 2010). This research is the first to provide evidence on this relationship in a risk disclosure context. The result may imply that managers of firms with low profitability want to convince investors by increasing the quality of their risk disclosures because otherwise investors might think that the future prospects of the firm are even worse.

Listing on the NYSE has a strong positive impact on corporate risk disclosure quality. For instance Cooke (1989) and Hossain et al. (1995) have shown that listing status influences corporate disclosure levels. Our findings suggest that firms listed on the NYSE outperform firms listed on the Finnish stock exchange with regard to the substance of the information provided. This could be explained by higher capital market pressures for high quality disclosures by firms that have been forced to provide disclosures under the reporting requirements of the SEC.

Financial leverage relates negatively to managers' risk and transition disclosure levels, which is in line with prior corporate disclosure literature (e.g., Meek et al., 1995; Eng & Mak, 2003). It may imply that debt financing is used to avoid succumbing to pressure to disclose proprietary information (Verrecchia, 1983; Healy & Palepu, 1993) or to reduce the agency costs of free cash flow and thus the need for disclosure (Jensen, 1986). We also document that corporate growth prospects associate positively with risk and transition disclosures, which is consistent with the suggestions and findings of the existing literature (e.g., Gibbins et al., 1992; Kanto & Schadewitz, 1997; Lev &

Sougiannis, 1999). The finding supports the argument that the managers of growth firms have an incentive to reduce information asymmetry and thereby prevent adverse selection (e.g., Akerlof, 1970).

Finally, the proportion of independent board members in corporate boards relates positively to managers' recommended transition disclosures. The finding is consistent with the argument that an independent board member increases the monitoring power of the board (Fama & Jensen, 1983), thereby improving disclosure quality. Similar empirical results have also been documented previously (e.g., Ajinkya, 2005; Patelli & Prencipe, 2007; García-Meca & Sánchez-Ballesta, 2010). Interestingly, use of the services of a global accounting firm does not increase managers' recommended transition disclosures. Prior literature has shown that this variable has a positive effect on mandatory disclosure (e.g., Wallace & Naser, 1995; Glaum & Street, 2003) but an insignificant effect on voluntary disclosure (e.g., Hossain et al., 1995; Eng & Mak, 2003).

Regarding the similarities and differences between the determinants of managers' risk and transition disclosures, this doctoral dissertation contributes to prior literature by demonstrating how certain disclosure incentives are important drivers of disclosure regardless of the topic. This finding suggests that both disclosure items are relevant to managers and hence are also taken into account in decision-making concerning the disclosure policies of their firms. Interestingly, attempts by the regulator to influence managers' disclosures on risks and the effects of transition also impact reporting after initial introduction of the guidance and recommendation. This may imply that compliance with the new regulatory attempts is a learning process for managers. In some dimensions, quality improvements in risk disclosures also continue in the subsequent years. Also, transition disclosures were more extensive in 2005 than in 2004, which can be partly explained by the imminent adoption of IFRS, but also by increasing understanding of the regulators' will.

Lastly, this dissertation contributes to the accounting literature by testing new measures for corporate disclosure quality. The previous literature recognizes the inherent conceptual difficulties of measuring disclosure quality in a complete, valid, and reliable manner (e.g., Botosan, 2004). However, certain quality indicators developed in the

existing related literature may provide useful approximations of some important aspects of risk disclosure quality (see, Beattie et al., 2004; Beretta & Bozzolan, 2004). Earlier research has not applied all these measures at the same time in a single study and compared the determinants of different quality dimensions in a highly regulated risk disclosure environment. This dissertation partly fills this research gap and provides new insights for continuing work on developing better ways to measure disclosure quality. Table 2 summarizes the contribution of this doctoral dissertation.

**Table 2. Description of the Contribution of the Doctoral Dissertation**

| Research gap | Contribution | Contributing essay |
|---|---|---|
| The impact of regulation on the quality of risk disclosure? | The quality of risk disclosure can be improved by specifying the risk disclosure requirements of the law via guidance. | Essay 1 |
| The impact of authoritative disclosure recommendations on firms' reporting? | Authoritative disclosure recommendations are an efficient way to improve firms' transition disclosure. Recommended disclosure has more mandatory characteristics than voluntary disclosure. | Essay 3 |
| The role of communication in regulation enforcement? | The theoretical framework of the dissertation suggests that the effective communication in regulation enforcement may reduce information asymmetry between the regulatory body and the reporting entity. Essays 1 and 3 provide evidence on situations in which the regulator has taken an active role to ensure disclosure improvements. | Essay 1, Essay 3 |
| The consequences of risk disclosure in the stock market in a highly regulated setting? | High-quality risk disclosure reduces information asymmetry in the stock market. The usefulness of risk disclosure depends on several contingency factors. | Essay 2 |
| The non-regulatory determinants of risk and transition disclosure? | Both disclosure items (risks and IFRS transition) are significantly associated with several non-regulatory determinants of disclosure. | Essay 1, Essay 3 |
| The measurement of the quality of risk disclosure? | It extends prior literature by empirically applying and combining several disclosure quality indicators provided in the recent accounting literature. | Essay 1, Essay 2 |

## 5.2        Practical Implications

This doctoral dissertation also has several practical implications. First, the results benefit standard-setters such as the IASB, and the FASB, the SEC, and other national regulatory bodies by demonstrating how risk reporting under IFRS can be influenced through a detailed national disclosure standard which provides guidance on application of the law. This research provides an example of how the Finnish regulator has been able to improve the quality of risk reporting within a single country. In particular, the findings suggest that one clause of the law may not be effective enough to guarantee transparent disclosure about abstract issues such as risks. Many managers might need detailed descriptions of the required disclosures with illustrative examples. In addition to the coercive effect of detailed risk disclosure standards, they may also have the effect of guidance on corporate reporting. The greatest challenge is to motivate managers to report quantitative risk information. This is interesting because many firms report that they have in fact internally evaluated the impact of the risks and their probabilities.

This research also demonstrates that the CESR transition disclosure recommendation reduces information asymmetry by improving corporate disclosures. Although disclosure recommendations are voluntary, managers interpret them to have mandatory characteristics. This increases the average level of disclosure and therefore also makes disclosure recommendations useful for the purposes of regulatory bodies. In some cases, authoritative disclosure recommendations may be a faster and more cost-efficient way to achieve disclosure enhancements than regulation. This is valuable information for the regulatory bodies. Especially when there is an urgent need for improvements in disclosure, recommendations may be an efficient way to reduce information asymmetry between firms and their stakeholders. If the regulatory body wants to increase the impact of a disclosure recommendation, it is important to actively communicate its content to managers in the implementation phase, and hence increase pressure for compliance. A good example is the actions that the Finnish Financial Supervision Authority (FIN-FSA) took in the implementation phase of the CESR transition disclosure recommendation.

This research provides evidence on two various ways to improve reporting: detailed guidance which specifies the law and authoritative disclosure recommendations. The findings suggest that disclosure laws provided on a very general level may be inadequate to motivate managers to report on risks or other disclosure items that are given mainly in a narrative form. Consequently, if the regulatory bodies want to improve disclosures on these issues it is important to provide some guidance on the expected disclosure level. Otherwise, many firms are prone to report on the required items on a very general level year after year. Such 'boilerplate' disclosures may not be useful to investors because they seldom give a good picture of firms' risk profiles and hence do not help investors in valuing them. The use of illustrative disclosure examples is one possible strategy for regulatory bodies to demonstrate the expected quality of reporting to managers. Furthermore, this research shows that in some cases authoritative disclosure recommendations may be a fast and cost-efficient way to ensure reporting of the needed information.

The findings regarding the usefulness of risk disclosures have implications for regulators, managers, investors, and analysts. First, it is important for regulators to note that the usefulness of risk reporting to investors has been documented in an institutional setting where risk reporting is regulated through a detailed risk disclosure guidance augmented with illustrative examples. A similar approach can also provide a promising solution for increasing the relevance of risk disclosures to investors in other countries. Our results demonstrate that the differences between the Finnish and US institutional settings do not alter the conjecture that high-quality overall risk reviews are useful to investors (cf., Huang, 2011; Kravet & Muslu, 2013; Campbell et al., 2013). We do not argue that financial reporting should shift towards the rules-based accounting tradition. Instead, we argue that reporting on certain important (narrative) items such as risks may be ambiguously guided under both reporting approaches and hence improved guidance may serve the needs of investors and other stakeholders under both regimes. Second, managers can utilize the results by improving their risk disclosure quality to reduce the information asymmetry component of the cost of capital. Finally, investors and analysts benefit from the findings through an increased awareness of the association between

information asymmetry and risk disclosure. Thus, the results may help investors to develop more effective trading strategies and analysts to issue better recommendations.

The findings regarding the non-regulatory determinants of risk and transition disclosures demonstrate that smaller firms tend to report less than larger firms. The result suggests that from the regulatory perspective it might be useful to make special efforts to increase the awareness of managers of smaller firms of required disclosures and their willingness to follow them. This suggestion relates to Beyer et al.'s (2010, 319) argument in which they state that uniform disclosure standards do not take into account firm diversity, which makes it difficult to plan optimal disclosure regulation. In this dissertation we include several firm characteristics in the analyses of the effect of disclosure regulation and thus, provide evidence for the regulatory bodies on the interconnections between firm diversity and compliance with disclosure requirements. Because it is difficult to plan different standards for different firms, we propose that firm diversity could be taken into account in the enforcement phase of the standard. Targeted communication to some special groups of firms and marketing of the laws, standards, guidance or recommendations in general might be a good starting point for designing and implementing optimal disclosure regulation.

To summarize, the dissertation considers at least the following practical viewpoints for the purposes of regulatory bodies, managers, investors, and analysts:

**Regulator:**  - *Disclosure laws provided on a very general level may not be adequate to ensure high-quality reporting on narrative items such as risks. More detailed guidance on the expected disclosures may be needed.*

- *Disclosure recommendations may be a fast and efficient way to influence reporting by managers. It is important to actively promote the recommendation in the implementation phase.*

- *Be aware of the impact of firm diversity on disclosure. For example, the reporting of smaller firms is on average lower-quality than that*

*of larger firms. The managers of these firms may require more promotion of the laws, standards, guidance, or recommendations.*

**Manager:**     *- Investors consider overall risk disclosures to be useful. Increasing the quality of the firm's risk disclosures may decrease the information risk of the firm and hence reduce the information asymmetry component of the cost of capital. Reduced information risk narrows the gap between the market value and fundamental value of the firm.*

    *- Risk disclosures may be particularly useful if they are provided by small firms, high tech firms, firms with low investor interest, and during difficult economic conditions.*

    *- If your firm is small, it is at higher risk of disclosing inadequately to investors.*

**Investor/**

**Analyst:**     *- Be aware of and alert to the risk disclosure differences between firms.*

    *- Small firms that report low-quality risk disclosures and are not extensively followed by investors may have a higher information risk. In this case the return expectations are higher, which should associate with higher realized returns. Take this into account when you are balancing your stock portfolio or releasing new buy/hold/sell recommendations.*

## 5.3 Reliability and Validity

The results obtained in the study are internally valid if they are true. In this dissertation the potential validity threats relate to the validity and reliability of the variables. One possible validity threat is that the choice of the disclosure topics of the examined disclosure items is subjective. An attempt was made to prevent this by deriving the disclosure topics from the detailed risk disclosure standard and the CESR transition disclosure recommendation. In addition, because the risk disclosure standard does not give an exhaustive description of all subtopics in the risk categories, the risk disclosure framework applied in this research has been made more comprehensive by adopting some of the risk disclosure subtopics found in the existing literature. Finally, a subsample of financial publications has been pre-tested in order to identify missing subtopics from the examined risk categories, and also to decide on the disclosure items that should be included in the transition disclosure score sheet over and above the recommended disclosures.

Another possible validity threat is the subjective composition of the disclosure indices and the subjective weighting of the disclosure items of the indices. In this dissertation the applied disclosure indices have been derived from the guidance and recommendation. We have also avoided weighting disclosure items; this means that the sample firms could earn a maximum of one point from each disclosure item. Furthermore, the separation of recommended and purely voluntary disclosure may have been difficult for some firms.[22] However, because the CESR transition disclosure recommendation defines the recommended disclosure items very clearly, the managers should have been able to assess whether they were complying with the recommendation or providing purely voluntary disclosure. Selection of the empirical measures for the other examined variables may also cause a validity threat. However, in this research the empirical measures of firm and industry fundamentals, disclosure incentives, and corporate governance factors should be valid because they are derived from the existing

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[22] Also, Beyer et al. (2010) point out that it is challenging to separate mandatory and voluntary disclosures effectively.

literature. To summarize, based on the arguments above, the applied variables should not pose a threat to the internal validity of the results.

The reliability threat of the dissertation relates to the stability of the empirical measures. The scoring of corporate risk and transition disclosures should be stable across firm observations because the same criteria are used consistently throughout the evaluation. However, the transition disclosures are coded by one coder, which may increase the random error of the coding. Random error weakens associations in statistical tests and hence makes it more difficult to find significant results. The several significant associations demonstrated in the examination of the recommended and voluntary transition disclosures provide indirect evidence on the reliability of the coding. In the analyses of corporate risk disclosures two coders were used, which is expected to decrease the random error of coding. Two measures of inter-coder reliability are calculated: the first is the simple coefficient of agreement and the second the alpha coefficient of agreement proposed by Krippendorf (1980). Taken together the coding of the subsamples, the simple coefficient of agreement is 0.90, and the alpha coefficient of agreement is 0.87. The extant literature suggests a threshold level of 0.75 for the alpha coefficient of agreement (Milne & Adler, 1999). Consequently, the inter-coder reliability should be high enough.

Most of the variables of the regression models were collected from the *Thomson One Banker Financial, IBES, and Worldscope* databases. Several double checks were made to control for that the values of the databases were consistent with the values announced in the financial publications. The board composition, accounting firm, and institutional ownership data were collected manually from the firms' annual reports and the foreign ownership data from the register of *Euroclear Finland Oy*. Some of the manually collected items were checked occasionally to minimize the risk of mistakes in the coding phase. Accordingly, the reliability threat of the variables should be minimized, which should increase the internal validity of the results.

The external validity threat relates to the generalizability of the results. The results are based on observations in Finland, which has a rules-based accounting tradition. Hence the results should be generalizable to other countries with similar legal roots. However, because the extant literature reports high compliance and disclosure

ratios for Finnish firms (King, 1999; Dargenidou et al., 2006), the results may not be generalizable to countries with low compliance and disclosure ratios. Moreover, Finland is part of the Scandinavian institutional setting, where investor protection is lower than in the Anglo-Saxon countries (e.g., US and UK) but higher than in southern Europe (e.g., Greece and Italy) (e.g., La Porta et al., 1997; La Porta et al., 2000). Differences in the level of investor protection may also have some influence on the generalizability of the results to other settings.

## 5.4        Recommendations for Further Research

This doctoral dissertation shows that a detailed national risk disclosure standard can improve the quality of overall risk reviews under IFRS. However, it also found that the guidance of the standard does not impact as strongly as the willingness of managers to report quantitative risk disclosures. The reluctance of managers to disclose quantitative assessments of risks is consistent with the findings of prior literature (e.g., Beretta & Bozzolan, 2004; Linsley & Shrives, 2006; Dobler et al., 2011). Some determinants of quantitative risk disclosures are demonstrated in this research. However, this issue could be elaborated further in the upcoming studies. Moreover, additional research evidence on the interplay between reporting standards and managers' disclosure incentives would be very welcome.

One challenge relating to narrative disclosures in annual reports is that it is difficult to document their usefulness to investors. This dissertation has examined the impact of high-quality annual report risk disclosures on information asymmetry in stock markets. However, future research could try to examine more comprehensively the economic consequences of risk information from the perspective of equity and debt investors. For example, the association between the quality of risk disclosure and returns could be examined. This type of research would provide evidence of whether investors pay less for firms which do not provide adequate risk reports.

In addition, the results of the dissertation suggest that investors need transparent risk information in a country of semi-strong investor protection (cf., La Porta et al.,

1997; La Porta et al., 2000). The information needs of investors may be even higher in countries of low investor protection and hence replicating this study in those countries is a promising avenue for future research.

One part of this doctoral dissertation concentrated on the transition disclosures of Finnish listed firms relating to first-time adoption of IFRS. Prior research has indicated that region may have an impact on disclosures (e.g., Troberg et al., 2010). Potential explanations for that phenomenon are differences in the legal origin and national culture (cf., La Porta et al., 1997; La Porta et al., 2000; Hope, 2003a; Rahman et al., 2010). Future research could potentially widen the transition disclosure sample to include firms from other countries and to examine whether the same explanatory variables as in Finland also explain transition disclosures in those countries.

Finally, this research provides evidence on the efficiency of the CESR transition disclosure recommendation in improving firms' disclosures. The concept of 'recommended disclosure' should be taken more precisely into account in corporate disclosure research. There are a number of avenues for future research to increase the understanding of the differences between mandatory disclosure, recommended disclosure, and purely voluntary disclosure. Further information on the common and dissimilar features of these disclosure categories and their determinants would be useful to the academy which tries to find more comprehensive theory of mandatory disclosure (see, Beyer et al., 2010, 315). Also, the regulatory bodies might consider that kind of information beneficial in their efforts to design optimal disclosure regulation. Starting with the Sarbanes-Oxley Act in the US, many countries have experienced an unprecedented amount of governmental and institutional intervention and are now in the process of restructuring their current laws, regulations, and enforcement capabilities within the framework of the best corporate governance practices (Aksu & Kosedag, 2006).

To conclude, by providing evidence on corporate risk and transition disclosures in the IFRS era, this dissertation opens various new avenues for additional studies. We also encourage scholars to deepen our knowledge on these intriguing research topics in the future.

# References for Part I

Aboody, D., & Kasznik, R. (2000). CEO Stock Option Awards and the Timing of Voluntary Disclosures. *Journal of Accounting and Economics*, 29 (1), 73–100.

Aboody, D., Hughes, J., & Liu, J. (2005). Earnings Quality, Insider Trading, and Cost of Capital. *Journal of Accounting Research*, 43 (5), 651–673.

Abraham, S., & Cox, P. (2007). Analysing the Determinants of Narrative Risk Information in UK FTSE 100 Annual Reports. *The British Accounting Review, 39* (3), 227–248.

Abrahamson, E., & Amir, E. (1996). The Information Content of the President's Letter to Shareholders. *Journal of Business Finance & Accounting*, 23 (8), 1157–1182.

Acharya, V.V., DeMarzo, P.M., & Kremer, I. (2011). *Endogenous Information Flows and the Clustering of Announcements*. Working Paper (CEPR Discussion Paper No. DP8680). Electronic Copy Available at http://ssrn.com/abstract=1976022
Accessed 03.02.2013.

Adelopo, I. (2011). Voluntary Disclosure Practices amongst Listed Companies in Nigeria. *Advances in Accounting, incorporating Advances in International Accounting*, 27 (2), 338–345.

Admati, A., & Pfleiderer, P. (2000). Forcing Firms to Talk: Financial Disclosure Regulation and Externalities. *Review of Financial Studies*, 13 (3), 479–519.

AICPA. (1994a*). Improving Business Reporting – A Customer Focus: Meeting the Information Needs of Investors and Creditors*. New York, NY: American Institute of Certified Public Accountants (Comprehensive Report of the Special Committee on Financial Reporting: The Jenkins Report).
Electronic Copy Available at
http://www.aicpa.org/interestareas/frc/accountingfinancialreporting/
downloadabledocuments/jenkins%20committee%20report.pdf. Accessed 27.01.2013.

AICPA. (1994b). *Disclosure of Certain Significant Risks and Uncertainties*. New York, NY: American Institute of Certified Public Accountants (Accounting Standards Executive Committee's Statement of Position (SOP) 94-6).
Electronic Copy Available at
http://clio.lib.olemiss.edu/cdm/ref/collection/aicpa/id/1828. Accessed 27.01.2013.

Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The Association between Outside Directors, Institutional Investors and the Properties of Management Earnings Forecasts. *Journal of Accounting Research*, 43 (3), 343–376.

Akerlof, G. (1970). The Market for Lemons: Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, 84 (3), 488–500.

Aksu, M., & Kosedag, A. (2006). Transparency and Disclosure Scores and their Determinants in the Istanbul Stock Exchange. *Corporate Governance: An International Review*, 14 (4), 277–296.

Allen, F., Morris, S., & Shin, H.S. (2006). Beauty Contests and Iterated Expectations in Asset Markets. *The Review of Financial Studies*, 19 (3), 719–752.

Al-Razeen, A., & Karbhari, Y. (2004). Interaction between Compulsory and Voluntary Disclosure in Saudi Arabian Corporate Annual Reports. *Managerial Auditing Journal*, 19 (3), 351–360.

Amihud, Y., & Mendelson, H. (1986). The Effects of Beta, Bid-Ask Spread, Residual Risk and Size on Stock Returns. *The Journal of Finance*, 44 (2), 479–486.

Amir, E., & Lev, B. (1996). Value-Relevance of Nonfinancial Information: The Wireless Communications Industry. *Journal of Accounting and Economics*, 22 (1-3), 3–30.

Armstrong, C.S., Guay, W.R., & Weber, J.P. (2010). The Role of Information and Financial Reporting in Corporate Governance and Debt Contracting. *Journal of Accounting and Economics*, 50 (2-3), 179–234.

Artiach, T.C., & Clarkson, P.M. (2011). Disclosure, Conservatism and the Cost of Equity Capital: A Review of the Foundation Literature. *Accounting and Finance*, 51 (1), 2–49.

Arya, A., Frimor, H., & Mittendorf, B. (2010). Discretionary Disclosure of Proprietary Information in a Multisegment Firm. *Management Science*, 56 (4), 645–658.

Baginski, S.P., Hassell, J.M., & Kimbrough, M.D. (2002). The Effect of Legal Environment on Voluntary Disclosure: Evidence from Management Earnings Forecasts Issued in U.S. and Canadian Markets. *The Accounting Review*, 77 (1), 25–50.

Ball, R., Robin, A., & Wu, J.S. (2003). Incentives versus Standards: Properties of Accounting Income in Four East Asian Countries. *Journal of Accounting and Economics*, 36 (1-3), 235–270.

Ball, R., & Shivakumar, L. (2005). Earnings Quality in UK Private Firms: Comparative Loss Recognition Timeliness. *Journal of Accounting and Economics*, 39 (1), 83–128.

Bamber, L.S., & Cheon, Y.S. (1998). Discretionary Management Earnings Forecast Disclosures: Antecedents and Outcomes Associated with Forecast Venue and Forecast Specificity Choices. *Journal of Accounting Research*, 36 (2), 167–190.

Barry, C., & Brown, S. (1985). Differential Information and Security Market Equilibrium. *Journal of Financial and Quantitative Analysis*, 20 (4), 407–422.

Barry, C., & Brown, S. (1986). Limited Information as a Source of Risk. *The Journal of Portfolio Management*, 12 (2), 66–72.

Barth, M.E., Beaver, W.H., & Landsman, W.R. (2001). The Relevance of the Value Relevance Literature for Financial Accounting Standard Setting: Another View. *Journal of Accounting and Economics*, 31 (1-3), 77–104.

Barth, M.E., Landsman, W.R., & Lang, M.H. (2008). International Accounting Standards and Accounting Quality. *Journal of Accounting Research*, 46 (3), 467–498.

Bassen, A., Basse Mama, H., and Ramaj, H. (2010) Investor Relations: A Comprehensive Overview. *Journal für Betriebswirtschaft*, 60 (1), 49–79.

Beattie, V., McInnes, B., & Fearnley, S. (2004). A Methodology for Analysing and Evaluating Narratives in Annual Reports: A Comprehensive Descriptive Profile and Metrics for Disclosure Quality Attributes. *Accounting Forum*, 28 (3), 205–236.

Beaver, W.H. (1973). What Should be the FASB's Objectives. *The Journal of Accountancy*, 136 (2), 49–56.

Beck, A.C., Campbell, D., & Shrives, P.J. (2010). Content Analysis in Environmental Reporting Research: Enrichment and Rehearsal of the Method in a British-German context. *The British Accounting Review*, 42 (3), 207–222.

Bens, D.A. (2002). The Determinants of the Amount of Information Disclosed About Corporate Restructurings. *Journal of Accounting Research*, 40 (1), 1–20.

Beretta, S., & Bozzolan, S. (2004). A Framework for the Analysis of Firm Risk Communication. *The International Journal of Accounting*, 39 (3), 265–288.

Beretta, S., & Bozzolan, S. (2008). Quality versus Quantity: The Case of Forward-Looking Disclosure. *Journal of Accounting, Auditing and Finance, 23* (3), 333–375.

Berger, P., & Hann, R. (2007). Segment Profitability and the Proprietary and Agency Costs of Disclosure. *The Accounting Review*, 82 (4), 869–906.

Bertomeu, J., Beyer, A., & Dye, R.A. (2011). Capital Structure, Cost of Capital, and Voluntary Disclosures. *The Accounting Review*, 86 (3), 857–886.

Beyer, A., Cohen, D.A., Lys, T.Z., & Walther, B. R. (2010). The Financial Reporting Environment: Review of the Recent Literature. *Journal of Accounting and Economics*, 50 (2-3), 296–343.

Beyer, A., & Guttman, I. (2012). Voluntary Disclosure, Manipulation and Real Effects. *Journal of Accounting Research*, 50 (5), 1141–1177.

Botosan, C.A. (1997). Disclosure Level and the Cost of Equity Capital. *The Accounting Review*, 72 (3), 323–350.

Botosan, C.A., & Plumlee, M.A. (2002). A Re-Examination of Disclosure Level and the Expected Cost of Equity Capital. *Journal of Accounting Research*, 40 (1), 21–40.

Botosan, C.A. (2004). Discussion of a Framework for the Analysis of Firm Risk Communication. *The International Journal of Accounting*, 39 (3), 289–295.

Botosan, C.A., & Stanford, M. (2005). Managers' Motives to Withhold Segment Disclosures and the Effect of SFAS No. 131 on Analysts' Information Environment. *The Accounting Review*, 80 (3), 751–771.

Botosan, C.A. (2006). Disclosure and the Cost of Capital: What Do We Know? *Accounting and Business Research*, 36 (Special Issue), 31–40.

Bowen, R., Johnson, M., & Shevlin, T. (1989). Informational Efficiency and the Information Content of Earnings during the Market Crash of October 1987. *Journal of Accounting and Economics*, 11 (2-3), 225–254.

Bozzolan, S., Trombetta, M., & Beretta, S. (2009). Forward-Looking Disclosures, Financial Verifiability and Analysts' Forecasts: A Study of Cross-Listed European Firms. *European Accounting Review,* 18 (3), 435–473.

Brammer, S., & Pavelin S. (2006). Voluntary Environmental Disclosures by Large UK Companies. *Journal of Business Finance & Accounting*, 33 (7-8), 1168–1188.

BCBS. (1998). *Enhancing Bank Transparency. Public Disclosure and Supervisory Information that Promote Safety and Soundness in Banking Systems*. The Basel Committee on Banking Supervision. Electronic Copy Available at http://www.bis.org/publ/bcbs41.pdf. Accessed 27.01.2013.

BCBS. (2013). *Principles for Effective Risk Data Aggregation and Risk Reporting*. The Basel Committee on Banking Supervision. Electronic Copy Available at http://www.bis.org/publ/bcbs239.pdf. Accessed 27.01.2013.

Bushee, B.J. (2004). Discussion of Disclosure Practices of Foreign Companies Interacting with U.S. Markets. *Journal of Accounting Research*, 42 (2), 509–525.

Bushee, B.J., & Leuz, C. (2005). Economic Consequences of SEC Disclosure Regulation: Evidence from the OTC Bulletin Board. *Journal of Accounting and Economics*, 39 (2), 233–264.

Bushman, R.M., Piotroski, J.D., & Smith, A.J. (2004). What Determines Corporate Transparency? *Journal of Accounting Research*, 42 (2), 207–252.

Buzby, S.L. 1975. Company Size, Listed versus Unlisted Stocks, and the Extent of Financial Disclosure. *Journal of Accounting Research*, 13 (1), 16–37.

Cahan, S.F., Rahman, A., & Perera, H. (2005). Global Diversification and Corporate Disclosure. *Journal of International Accounting Research*, 4 (1), 73–93.

Campbell, J.L., Chen, H, Dhaliwal, D.S., Lu, H., & Steele, L.B. (2013). The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings. Forthcoming in *Review of Accounting Studies*. Electronic Copy Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1694279. Accessed 08.02.2013.

CESR. (2003). *European Regulation on the Application of IFRS in 2005. Recommendation for Additional Guidance Regarding the Transition to IFRS (CESR/03-323e)*. Electronic Copy Available at http://www.esma.europa.eu/system/files/03_323e.pdf. Accessed 18.07.2012.

Cerbioni, F., & Parbonetti, A. (2007). Exploring the Effects of Corporate Governance on Intellectual Capital Disclosure: An Analysis of European Biotechnology Companies. *European Accounting Review*, 16 (4), 791–826.

Cerf, A.R. (1961). *Corporate Reporting and Investment Decisions*. University of California, Berkley.

Chen, S., DeFond, M., & Park, C. (2002). Voluntary Disclosure of Balance Sheet Information in Quarterly Earnings Announcements. *Journal of Accounting and Economics*, 33 (2), 229–251.

Cheung, Y-L., Jiang, P., & Tan, W. (2010). A Transparency Disclosure Index Measuring Disclosures: Chinese Listed Companies. *Journal of Accounting and Public Policy*, 29 (3), 259–280.

Chow, C.W., & Wong-Boren, A. (1987). Voluntary Financial Disclosure by Mexican Corporations. *The Accounting Review*, 62 (3), 533–541.

Christensen, P.O., & Feltham, G.A. (2000). Market Performance Measures and Disclosure of Private Management Information in Capital Markets. *Review of Accounting Studies*, 5 (4), 301–329.

Christensen, P.O., De La Rosa, L.E., & Feltham G.A. (2010). Information and the Cost of Capital: An Ex Ante Perspective. *The Accounting Review*, 85 (3), 817–848.

CICA. (2008). *Building a Better MD&A: Risk Disclosure*. Toronto: The Canadian Institute of Chartered Accountants (A Publication of the Canadian Performance Reporting Board).
Electronic Copy Available at
http://www.cica.ca/focus-on-practice-areas/reporting-and-capital-markets/performance-reporting-resource-centre/item12822.pdf. Accessed 27.01.2013.

CICA. (2009). *Management's Discussion and Analysis: Guidance on Preparation and Disclosure. Comprehensive Revision.* Toronto: The Canadian Institute of Chartered Accountants (A Publication of the Canadian Performance Reporting Board). Electronic Copy Available at http://www.cica.ca/publications/list-of-publications/manual/item29637.pdf Accessed 27.01.2013.

CICA. (2010). *Guidance on Improved Strategy and Outlook Disclosures. A Review of Advanced Practices in 2009 Annual Reports*. Toronto: The Canadian Institute of Chartered Accountants (A Publication of the Canadian Performance Reporting Board). Electronic Copy Available at http://www.cica.ca/publications/list-of-publications/manual/item43909.pdf Accessed 27.01.2013.

Cohen, D. (2008). Does Information Risk Really Matter? An Analysis of the Determinants and Economics Consequences of Financial Reporting Quality. *Asia-Pacific Journal of Accounting and Economics*, 15 (2), 69–90.

Cooke, T.E. (1989). Voluntary Corporate Disclosure by Swedish Firms. *Journal of International Financial Management and Accounting*, 1 (2), 171–195.

Copeland, T., & Galai, D. (1983). Information Effects on the Bid-Ask Spread. *The Journal of Finance*, 38 (5), 1457–1469.

Core, J.E. (2001). A Review of the Empirical Disclosure Literature: Discussion. *Journal of Accounting and Economics*, 31 (1-3), 441–456.

Crawford, V., & Sobel, J. (1982). Strategic Information Transformation. *Econometrica*, 50 (6), 1431–1451.

COSO. (2004). *Enterprise Risk Management – Integrated Framework*. The Committee of Sponsoring Organizations of the Treadway Commission.

Darrough, M.N. (1993). Disclosure Policy and Competition: Cournot vs. Bertrand. *The Accounting Review*, 68 (3), 534–561.

Dargenidou, C., McLeay, S., & Raonic, I. (2006). Expected Earnings Growth and the Cost of Capital: An Analysis of Accounting Regime Change in the European Financial Market. *Abacus*, 42 (3-4), 388–414.

Dargenidou, C., McLeay, S., & Raonic, I. (2011). Accruals, Disclosure and the Pricing of Future Earnings in the European Market. *Journal of Business Finance & Accounting*, 38 (5-6), 473–504.

Datar, S.M., Feltham, G.A., & Hughes, J.S. (1991). The Role of Audits and Audit Quality in Valuing New Issue. *Journal of Accounting and Economics*, 14 (1), 3–49.

Dechow, P., Ge, W., & Schrand, C. (2010). Understanding Earnings Quality: A Review of the Proxies, their Determinants and their Consequences. *Journal of Accounting and Economics*, 50 (2-3), 344–401.

DeGennaro, R., & Robotti, C. (2007). Financial Market Frictions. *Economic Review* (Federal Reserve Bank of Atlanta), 92 (3), 1–16.

Demers, E.A., & Vega, C. (2010). *Soft Information in Earnings Announcements: News or Noise?* Faculty & Research Working Paper at INSEAD. Electronic Copy Available at http://www.insead.fr/facultyresearch/research/doc.cfm?did=44292 Accessed 03.08.2012.

Detemple, J. (2002). Asset Pricing in an Intertemporal Partially-Revealing Rational Expectations Equilibrium. *Journal of Mathematical Economics*, 38 (1-2), 219–248.

Diamond, D. (1985). Optimal Release of Information by Firms. *The Journal of Finance*, 40 (4), 1071–1094.

Diamond, D.W., & Verrecchia, R.E. (1991). Disclosure, Liquidity, and the Cost of Capital. *The Journal of Finance*, 46 (4), 1325–1359.

Dobler, M. (2008). Incentives for Risk Reporting – A Discretionary Disclosure and Cheap Talk Approach. *The International Journal of Accounting*, 43(2), 184–206.

Dobler, M., Lajili, K., & Zéghal, D. (2011). Attributes of Corporate Risk Disclosure: An International Investigation in the Manufacturing Sector. *Journal of International Accounting Research*, 10 (2), 1–22.

Dye, R.A. (1985). Disclosure of Nonproprietary Information. *Journal of Accounting Research*, 23 (1), 123–145.

Dye, R.A. (1986). Proprietary and Nonproprietary Disclosures. *Journal of Business*, 59 (2), 331–366.

Dye, R.A. (1990). Mandatory versus Voluntary Disclosures: The Cases of Financial and Real Externalities. *The Accounting Review*, 65 (1), 1–24.

Dye, R.A., & Sridhar, S.S. (1995). Industry-Wide Disclosure Dynamics. *Journal of Accounting Research*, 33 (1), 157–174.

Dye, R.A., & Verrecchia, R.E. (1995). Discretion vs. Uniformity: Choices among GAAP. The Accounting Review, 70 (3), 389–415.

Dye, R.A. (2001). An Evaluation of ''Essays on Disclosure'' and the Disclosure Literature in Accounting. *Journal of Accounting and Economics*, 32 (1-3), 181–235.

Dye, R.A., & Sunder, S.S. (2001). Why Not Allow FASB and IASB Standards to Compete in the U.S.? *Accounting Horizons*, 15 (3), 257–271.

Dye, R.A., & Sridhar, S.S. (2002). Resource Allocation Effects of the Price Reactions to Disclosures. *Contemporary Accounting Research*, 19 (3), 385–410.

Dye, R.A., & Sridhar, S.S. (2008). A Positive Theory of Flexibility in Accounting Standards. *Journal of Accounting and Economics*, 46 (2-3), 312–333.

Easley, D., & O'Hara, M. (2004). Information and the Cost of Capital. *The Journal of Finance*, 59 (4), 1553–1583.

Easterbrook, F.H., & Fischel, D.R. (1991). *The Economic Structure of Corporate Law*. Cambridge, MA: Harvard University Press.

Easton, P.D., & Monahan, S.J. (2005). An Evaluation of Accounting-Based Measures of Expected Returns. *The Accounting Review*, 80 (2), 501–538.

Easton, P.D., & Sommers, G.A. (2007). Effects of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts. *Journal of Accounting Research*, 45 (5), 983–1015.

EFRAG. (2010). *Endorsement of the Amendments to IFRS 7 Financial Instruments: Disclosures – Transfers of Financial Assets. Introduction, Background and Conclusions*.
Brussels: European Financial Reporting Advisory Group. Electronic Copy Available at http://ec.europa.eu/internal_market/accounting/docs/ifrs/20110316-effect-study_en.pdf. Accessed 28.01.2013.

Einhorn, E. (2007). Voluntary Disclosure under Uncertainty about the Reporting Objective. *Journal of Accounting and Economics*, 43 (2-3), 245–274.

Einhorn, E., & Ziv, A. (2008). Intertemporal Dynamics of Corporate Voluntary Disclosures. *Journal of Accounting Research*, 46 (3), 567–589.

Einhorn, E., & Ziv, A. (2012). Biased Voluntary Disclosure. *Review of Accounting Studies*, 17 (2), 420-442.

Elliott, K., & Jacobson, P. (1994). Costs and Benefits of Business Information Disclosure. *Accounting Horizons*, 8 (4), 80–96.

Elmy, F.J., LeGuyader, L.P., & Linsmeier, T.J. (1998). A Review of Initial Filings Under the SEC's New Market Risk Disclosure Rules. *Journal of Corporate Accounting and Finance*, 9 (4), 33–45.

Eng, L., & Mak, Y. (2003). Corporate Governance and Voluntary Disclosure. *Journal of Accounting and Public Policy*, 22 (4), 325–345.

Espinosa, M., & Trombetta, M. (2007). Disclosure Interactions and the Cost of Equity Capital: Evidence from the Spanish Continuous Market. *Journal of Business Finance & Accounting*, 34 (9-10), 1371–1392.

European Parliament and Council. (2002). Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the Application of International Accounting Standards. *Official Journal of the European Communities*. Electronic Copy Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ. do?uri=OJ:L:2002:243:0001:0004:EN:PDF. Accessed 20.08.2012.

FAPB. (2006). *Yleisohje toimintakertomuksen laatimisesta* (Kirjanpitolautakunta). Translation: *Guidance on the Preparation of Operating and Financial Review*. Electronic Copy Available at http://ktm.elinar.fi/ktm/fin/kirjanpi.nsf/all/F656564842BC1755C22571ED0047A0B1 Accessed 03.08.2012.

FASB. (2001). *Improving Business Reporting: Insights into Enhancing Voluntary Disclosures*. Norwalk, CT: The Financial Accounting Standards Board (Steering Committee Report, Business Reporting Research Project).
Electronic Copy Available at
http://www.fasb.org/cs/BlobServer?blobkey=id&blobwhere=1175819611134&blobh eader=application%2Fpdf&blobcol=urldata&blobtable=MungoBlobs
Accessed  27.01.2013.

Fama, E.F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, 25 (2), 383–417.

Fama, E.F. (1980). Agency Problems and the Theory of the Firm. *Journal of Political Economy*, 88 (2), 288–307.

Fama, E.F., & Jensen, M.C. (1983). Separation of Ownership and Control. *Journal of Law and Economics*, 26 (2), 301–325.

Fama, E.F., & French, K.R. (1992). The Cross-Section of Expected Stock Returns. *The Journal of Finance*, 47 (2), 427–465.

Fan, J.P., & Wong, T.J. (2002). Corporate Ownership Structure and the Informativeness of Accounting Earnings in East Asia. *Journal of Accounting and Economics*, 33 (3), 401–425.

Field, L., Lowry, M., & Shu, S. (2005). Does Disclosure Deter or Trigger Litigation? *Journal of Accounting and Economics*, 39 (3), 487–507.

FIN-FSA. (2004). *Electronic Publishing of FIN-FSA 5/2004*. Electronic Copy Available at http://www.finanssivalvonta.fi/fi/Tiedotteet/Arkisto/Rata_tiedottaa/ Documents/5_04_kooste.pdf. Accessed 14.08.2012.

FIN-FSA. (2005). *Electronic Publishing of FIN-FSA 3/2005*. Electronic Copy Available at http://www.finanssivalvonta.fi/fi/Tiedotteet/Arkisto/Rata_tiedottaa/ Documents/Rata_tiedottaa_032005.pdf. Accessed 03.08.2012.

Fischer, P.E., & Stocken, P.C. (2001). Imperfect Information and Credible Communication. *Journal of Accounting Research*, 39 (1), 119–134.

Fischer, P.E., & Verrecchia, R.E. (2004). Disclosure Bias. *Journal of Accounting and Economics*, 38 (Conference Issue), 223–250.

Fischer, P.E., & Stocken, P.C. (2010). Analyst Information Acquisition and Communication. *The Accounting Review*, 85 (6), 1985–2009.

Fishman, M.J., & Hagerty, K.M. (2003). Mandatory Versus Voluntary Disclosure in Markets with Informed and Uninformed Customers. *The Journal of Law, Economics, and Organization*, 19 (1), 45–63.

Florence, D., & Thomas, J. (2012). Determinants of Quantitative Information Withholding in Annual Reports. *European Accounting Review*, 21 (1), 115–151.

Foster, G. (1981). Intra-Industry Information Transfers Associated with Earnings Releases. *Journal of Accounting and Economics*, 3 (3), 201–232.

Francis, J., Philbrick, D., & Schipper, K. (1994). Shareholder Litigation and Corporate Disclosures. *Journal of Accounting Research*, 32 (2), 137–164.

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The Market Pricing of Accruals Quality. *Journal of Accounting and Economics*, 39 (2), 295–327.

Francis, J., Nanda, D., & Olsson, P. (2008). Voluntary Disclosure, Earnings Quality, and Cost of Capital. *Journal of Accounting Research*, 46 (1), 53–99.

FRC. (2004). *The Turnbull Guidance as an Evaluation Framework for the Purposes of Section 404(a) of the Sarbanes-Oxley Act.* London: Financial Reporting Council. Electronic Copy Available at http://www.frc.org.uk/getattachment/9e3ea3c6-6fa0-45e5-aae5-db4f1be84300/Guide-on-use-of-Turnbull-for-section-404.aspx Accessed 28.01.2013.

FRC. (2005). *Internal Control: Revised Guidance for Directors on the Combined Code.* London: Financial Reporting Council (The Updated Turnbull Guidance). Electronic Copy Available at http://frc.org.uk/getattachment/5e4d12e4-a94f-4186-9d6f-19e17aeb5351/Turnbull-guidance-October-2005.aspx. Accessed 28.01.2013.

FRC. (2011). *Boards and Risk. A Summary of Discussions with Companies, Investors, and Advisers.* London: Financial Reporting Council. Electronic Copy Available at http://frc.org.uk/getattachment/0aa7cd16-8d37-4c27-999c-63cc09268c43/Boards-and-Risk-A-Summary-of-Discussions-with-Companies,-Investors-and-Advisers.aspx Accessed 28.01.2013.

FSA. (2005). *Strengthening Capital Standards* (Including Feedback on CP189).
   London: The Financial Services Authority. Electronic Copy Available at
   http://www.fsa.gov.uk/pubs/cp/cp05_03.pdf. Accessed 27.01.2013.

FSA. (2006). *Strengthening Capital Standards 2*.
   London: The Financial Services Authority. Electronic Copy Available at
   http://www.fsa.gov.uk/pubs/cp/cp06_03.pdf. Accessed 27.01.2013.

García-Meca, E., & Sánchez-Ballesta, J.P. (2010). The Association of Board
   Independence and Ownership Concentration with Voluntary Disclosure: A Meta-
   Analysis. *European Accounting Review*, 19 (3), 603–627.

Gibbins, M., Richardson, A., & Waterhouse, J. (1990). The Management of Corporate
   Financial Disclosure: Opportunism, Ritualism, Policies, and Processes. *Journal of
   Accounting Research*, 28 (1), 121–143.

Gibbins, M., Richardson, A., & Waterhouse, J. (1992). *The Management of Financial
   Disclosure: Theory and Perspectives*. Research Monograph (No.20). The Canadian
   Certified General Accountants' Research Foundation.

Gietzmann, M.B., & Trombetta, M. (2003). Disclosure Interactions: Accounting Policy
   Choice and Voluntary Disclosure Effects on the Cost of Raising Outside Capital.
   *Accounting and Business Research*, 33 (3), 187–205.

Gietzmann, M., & Ireland, J. (2005). Cost of Capital, Strategic Disclosures and
   Accounting Choice, *Journal of Business Finance & Accounting*, 32 (3-4), 599–634.

Gigler, F.B. (1994). Self-Enforcing Voluntary Disclosures. *Journal of Accounting
   Research*, 32 (2), 224–240.

Gigler, F., & Hemmer, T. (1998). On the Frequency, Quality, and Information Role of
   Mandatory Financial Reports. *Journal of Accounting Research*, 36 (3), 117–147.

Gjesdal, F. (1981). Accounting for Stewardship. *Journal of Accounting Research*, 19 (1),
   208–231.

Glaum, M., & Street, D.L. (2003). Compliance with the Disclosure Requirements of
   Germany's New Market: IAS versus US GAAP. *Journal of International Financial
   Management and Accounting*, 14 (1), 64–100.

Glosten, L., & Milgrom, P. (1985). Bid, Ask, and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders. *Journal of Financial Economics*, 14 (1), 71–100.

Gray, S.J., & Street, D.L. (2002). Factors Influencing the Extent of Corporate Compliance with International Accounting Standards: Summary of Research Monograph. *Journal of International Accounting, Auditing & Taxation*, 11 (1), 51–76.

Grossman, S.J., & Hart, O. (1980). Disclosure Laws and Takeover Bids. *The Journal of Finance*, 35 (2), 323–334.

Grossman, S.J. (1981). The Informational Role of Warranties and Private Disclosure about Product Quality. *Journal of Law and Economics*, 24 (3), 461–483.

Guttman, I. (2010). The Timing of Analysts' Earnings Forecasts. *The Accounting Review*, 85 (2), 513–545.

Haller, A., Ernstberger, J., & Froschhammer, M. (2009). Implications of the Mandatory Transition from National GAAP to IFRS – Empirical Evidence from Germany. *Advances in Accounting, incorporating Advances in International Accounting*, 25 (2), 226–236.

Hayes, R., & Lundholm, R. (1996). Segment Reporting to the Capital Market in the Presence of a Competitor. *Journal of Accounting Research*, 34 (2), 261–279.

Healy, P.M., & Palepu, K.G. (1993). The Effect of Firm's Financial Disclosure Strategies on Stock Prices. *Accounting Horizons*, 7 (1), 1–11.

Healey, P.M., & Palepu, K.G. (1995). The Challenges of Investor Communication. The Case of CUC Internationl, Inc. *Journal of Financial Economics*, 38 (2), 111–140.

Healy, P., Hutton, A., & Palepu, K. (1999). Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure. *Contemporary Accounting Research*, 16 (3), 485–520.

Healy, P.M., & Palepu, K.G. (2001). Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature. *Journal of Accounting and Economics*, 31 (1-3), 405–440.

Hirshleifer, J. (1971). The Private and Social Value of Information and the Reward to Inventive Activity. *The American Economic Review*, 61 (4), 561–574.

Holmström, B. (1979). Moral Hazard and Observability. *The Bell Journal of Economics*, 10 (1), 74–91.

Holthausen, R.W., & Watts, R.L. (2001). The Relevance of the Value-Relevance Literature for Financial Accounting Standard Setting. *Journal of Accounting and Economics*, 31 (1-3), 3–75.

Hope, O-K. (2003a). Firm-Level Disclosures and the Relative Roles of Culture and Legal Origin. *Journal of International Financial Management and Accounting*, 14 (3), 218–248.

Hope, O-K. (2003b). Disclosure Practices, Enforcement of Accounting Standards, and Analysts' Forecast Accuracy: An International Study. *Journal of Accounting Research*, 41 (2), 235–272.

Hope, O-K., & Thomas, W.B. (2008). Managerial Empire Building and Firm Disclosure. *Journal of Accounting Research*, 46 (3), 591–626.

Hossain, M., Perera, M.H.B., & Rahman, A.R. (1995). Voluntary Disclosure in the Annual Reports of New Zealand Firms. *Journal of International Financial Management and Accounting*, 6 (1), 69–87.

Hou, K., & Robinson, D.T. (2006). Industry Concentration and Average Stock Returns. *The Journal of Finance*, 61 (4), 1927–1956.

Huang, K. (2011). *Exploring the Information Contents of Risk Factors in SEC Form 10-K: a Multi-Label Text Classification Application.* Working Paper. Electronic Copy Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1784527 Accessed 16.09.2012.

Hughes, P.J. (1986). Signalling by Direct Disclosure under Asymmetric Information. *Journal of Accounting and Economics*, 8 (2), 119–142.

Hughes, J.S., Kao, J.L., & Williams, M. (2002). Public Disclosure of Forward Contracts and Revelation of Proprietary Information. *Review of Accounting Studies*, 7 (4), 459–478.

Hughes, J.S., Liu, J., & Liu, J. (2007). Information Asymmetry, Diversification, and Cost of Capital. *The Accounting Review*, 82 (3), 705–729.

IASB. (2008). *Exposure Draft of an Improved Conceptual Framework for Financial Reporting*. London: The International Accounting Standards Board. Electronic Copy Available at http://www.ifrs.org/Current-Projects/IASB-Projects/Conceptual-Framework/EDMay08/ Documents/conceptual_framework_exposure_draft.pdf Accessed 03.08.2012.

IASB. (2010). *Management Commentary – A Framework for Presentation*. London: The International Accounting Standards Board (IFRS Practice Statement). Electronic Copy Available at http://www.ifrs.org/Current-Projects/IASB-Projects/Management-Commentary/ IFRS-Practice-Statement/Documents/Managementcommentarypracticestatement8 December.pdf. Accessed 16.09.2012.

ICAEW. (1997). *Financial Reporting of Risk – Proposals for a Statement of Business Risk*. London: The Institute of Chartered Accountants in England and Wales (Financial Reporting Committee: Steering Group).

ICAEW. (1999a). *No Surprises: The Case for Better Risk Reporting*. London: The Institute of Chartered Accountants in England and Wales (Financial Reporting Committee: Steering Group).

ICAEW. (1999b). *Internal Control: Guidance for Directors on the Combined Code*. London: The Institute of Chartered Accountants in England and Wales (The Turnbull Guidance). Electronic Copy Available at http://www.ecgi.org/codes/documents/turnbul.pdf. Accessed 28.01.2013.

ICAEW. (2006). *No Surprises: Working for Better Risk Reporting*. London: The Institute of Chartered Accountants in England and Wales (Center for Business Performance).

ICAEW. (2011a). *Reporting Business Risks: Meeting Expectations. Information for Better Markets Initiative*. London: The Institute of Chartered Accountants in England and Wales. Electronic Copy Available at http://www.icaew.com/~/media/Files/Technical/Financial-reporting/Information %20for%20better%20markets/IFBM/rbr-final.pdf. Accessed 27.01.2013.

ICAEW. (2011b). *Risk Reporting: The Story so Far*. London: The Institute of Chartered Accountants in England and Wales (P. Linsley).

IFAC. (2002). *Managing Risk to Enhance Stakeholder Value*. New York, NY:
    International Federation of Accountants (The Financial Management Accounting
    Committee). Electronic Copy Available
    at http://www.cimaglobal.com/Documents/ImportedDocuments/
    mgrisk_techguide_2002.pdf. Accessed 27.01.2013.

IIA. (2008). *Sarbanes-Oxley Section 404: A Guide for Management by Internal Controls
    Practitioners*. Altamonte Springs, FL: The Institute of Internal Auditors. Electronic
    Copy Available at http://www.sox-expert.com/uploads/files/Sarbanes-Oxley%20
    Section%20404%20-%20A%20Guide%20for%20Management%202nd_edition%
    201_08.pdf. Accessed 28.01.2013.

Ijiri, Y. (1975). *Theory of Accounting Measurement*. Sarasota, FL: American
    Accounting Association.

Ikäheimo, S. (1996). *Communication in the Share Markets*. Doctoral Dissertation. Turku
    School of Economics and Business Administration.

Inchausti, B.G. (1997). The Influence of Company Characteristics and Accounting
    Regulation on Information Disclosed by Spanish Firms. *European Accounting
    Review*, 6 (1), 45–68.

Jensen, M., & Meckling, W. (1976). Theory of the Firm: Managerial Behaviour, Agency
    Costs and Ownership Structure. *Journal of Financial Economics*, 3 (4), 305–360.

Jensen, M. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers.
    *American Economic Review*, 76 (2), 323–329.

Jorgensen, B.N., & Kirschenheiter, M.T. (2003). Discretionary Risk Disclosures. *The
    Accounting Review*, 78 (2), 449–469.

Jorion, P. (2002). How Informative are Value-at-Risk Disclosures. *The Accounting
    Review*. 77 (4), 911–931.

Jovanovic, B. (1982). Truthful Disclosure of Information. *The Bell Journal of
    Economics*, 13 (1), 36– 44.

Jung, W.O., & Kwon, Y.K. (1988). Disclosure When the Market is Unsure of
    Information Endowment of Managers. *Journal of Accounting Research*, 26 (1), 146–
    153.

Kajüter, P. (2001). Risikoberichterstattung: Empirische Befunde und der Entwurf des DRS 5. *Der Betrieb*, 54 (3), 105–111. Translation: Risk Reporting: Empirical Findings and Draft of DRS 5.

Kakkuri-Knuuttila, M-L., & Heinlahti, K. (2006). *Mitä on tutkimus? Argumentaatio ja tieteenfilosofia*. Helsinki: Gaudeamus. Translation: *What is Research? Argumentation and Philosophy of Science*.

Kallunki, J., Martikainen, M., Martikainen, T., & Yli-Olli, P. (1997). The Finnish Stock Market: A Survey of Some Empirical Evidence and Its Practical Relevance. *The Finnish Journal of Business Economics*, 1 (4), 474–495.

Kanodia, C., Mukherji, A., Sapra, H., & Venugopalan, R. (2000). Hedge Disclosures, Future Prices and Production Distortions. *Journal of Accounting Research*, 38 (3), 53–82.

Kanto, A., & Schadewitz, H. J. (1997). A Multidimensional Model for the Disclosure Policy of a Firm. *Scandinavian Journal of Management*, 13 (3), 229–249.

Kent, P., & Stewart, J. (2008). Corporate Governance and Disclosures on the Transition to International Financial Reporting Standards. *Accounting and Finance*, 48 (4), 649–671.

Khanna, T., Palepu, K.G., & Srinivasan, S. (2004). Disclosure Practices of Foreign Companies Interacting with U.S. Markets. *Journal of Accounting Research*, 42 (2), 475–508.

Kim, O., & Verrecchia, R. (1994). Market Liquidity and Volume around Earnings Announcements. *Journal of Accounting and Economics*, 17 (1-2), 41–67.

King, C.G. (1999). The Measurements of Harmonization in the Form and Content of the Auditor's Report in the European Union. *Journal of International Accounting, Auditing and Taxation*, 8 (1), 23–42.

Koonce, L., McAnally, M.L., & Mercer, M. (2005a). How Do Investors Judge the Risk of Financial Items. *The Accounting Review*, 80 (1), 221–241.

Koonce, L., Lipe, M.G., & McAnally, M.L. (2005b). Judging the Risk of Financial Instruments: Problems and Potential Remedies. *The Accounting Review*, 80 (3), 871–895.

Korn, E. (2004). Voluntary Disclosure of Partially Verifiable Information. *Schmalenbach Business Review*, 56 (2), 139–163.

Kothari, S.P., Li, X., & Short, J.E. (2009). The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analysis. *The Accounting Review*, 84 (5), 1639–1670.

KPMG. (2008). *Disclosure of Significant Risks and Uncertainties in the Current Economic Environment*. A Reminder of Existing Requirements.
Electronic copy available at
http://us.kpmg.com/microsite/attachments/us_accounting_bulletin_2008/07_
DisclosureofSignificantRisksandUncertaintiesintheCurrentMarketEnvironment.pdf
Accessed 28.01.2013.

Kravet, T., & Muslu, V. (2013). Textual Risk Disclosures and Investors' Risk Perceptions. Forthcoming in *Review of Accounting Studies*. Electronic copy available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1736228
Accessed 06.01.2013.

Krippendorf, K. (1980). *Content Analysis: An Introduction to Its Methodology*. Beverly Hills, CA: Sage Publications.

Lajili, K., & Zéghal, D. (2005). A Content Analysis of Risk Management Disclosures in Canadian Annual Reports. *Canadian Journal of Administrative Sciences,* 22 (2), 125–142.

Lambert, R. (2001). Contracting Theory and Accounting. *Journal of Accounting and Economics*, 32 (1-3), 3–87.

Lambert, R.A., Leuz, C., & Verrecchia, R.E. (2007). Accounting Information, Disclosure, and the Cost of Capital. *Journal of Accounting Research*, 45 (2), 385–420.

Lambert, R.A., Leuz, C., & Verrecchia, R.E. (2012). Information Asymmetry, Information Precision, and the Cost of Capital. *Review of Finance*, 16 (1), 1–29.

Lanen, W.N., & Verrecchia, R.E. (1987). Operating Decisions and the Disclosure of Management Accounting Information. *Journal of Accounting Research*, 25 (3), 165–189.

Lang, M.H., & Lundholm, R.J. (1993). Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures. *Journal of Accounting Research*, 31 (2), 246–271.

Lang, M.H., & Lundholm, R.J. (1996). Corporate Disclosure Policy and Analyst Behavior. *The Accounting Review*, 71 (4), 467–492.

Lang, M.H., & Lundholm, R.J. (2000). Voluntary Disclosure and Equity Offerings: Reducing Information Asymmetry or Hyping the Stock? *Contemporary Accounting Research*, 17 (4), 623–662.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (1997). Legal Determinants of External Finance, *The Journal of Finance*, 52 (3), 1131–1150.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor Protection and Corporate Governance. *Journal of Financial Economics*, 58 (1-2), 3–27.

Leland, H.E., & Pyle, D.H. (1977). Information Asymmetries, Financial Structure, and Financial Intermediation. *The Journal of Finance*, 32 (2), 371–387.

Lennox, C., & Park, C. (2006). The Informativeness of Earnings and Management's Issuance of Earnings Forecasts. *Journal of Accounting and Economics*, 42 (3), 439–458.

Leone, A., Rock, S., & Willenborg, M. (2007). Disclosure of Intended Use of Proceeds and Underpricing in Initial Public Offerings. *Journal of Accounting Research*, 45 (1), 111–153.

Leuz, C. (2000). The Development of the Voluntary Cash Flow Statements in Germany and the Influence of International Reporting Standards. *Schmalenbach Business Review*, 52 (2), 182–207.

Leuz, C., & Verrecchia, R.E. (2000). The Economic Consequences of Increased Disclosure. *Journal of Accounting Research*, 38 (3), 91–124.

Leuz, C. (2003). IAS versus U.S. GAAP: Information Asymmetry-Based Evidence from Germany's New Market. *Journal of Accounting Research*, 41 (3), 445–472.

Lev, B. (1988). Towards a Theory of Equitable and Efficient Accounting Policy. *The Accounting Review*, 63 (1), 1–22.

Lev, B. (1992). Information Disclosure Strategy. *California Management Review*, 34 (4), 9–32.

Lev, B., & Sougiannis, T. (1999). Penetrating the Book-to-Market Black Box: The R&D Effect. *Journal of Business Finance & Accounting*, 26 (3), 419–449.

Lim, C. Y., & Tan, P. M. (2007). Value Relevance of Value-at-Risk Disclosure. *Review of Quantitative Finance and Accounting*, 29 (4), 353–370.

Lin, C., Owens, W. L., & Owers, J. E. (2010). The Association between –Market Risk Disclosure Reporting and Firm Risk: The Impact of SEC FRR No. 48. *Journal of Applied Business Research*, 26 (4), 35–46.

Linsley, P.M., & Shrives, P.J. (2006). Risk Reporting: A Study of Risk Disclosures in the Annual Reports of UK Companies. *The British Accounting Review*, 38 (4), 387–404.

Linsley, P.M., & Lawrence, M.J. (2007). Risk Reporting by the Largest UK Companies: Readability and Lack of Obfuscation. *Accounting, Auditing & Accountability Journal*, 20 (4), 620–627.

Linsmeier, T.J., & Pearson, N.D. (1997). Quantitative Disclosures of Market Risk in the SEC Release. *Accounting Horizons*, 11 (1), 107–135.

Linsmeier, 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 Movements. *The Accounting Review*, 77 (2), 343–377.

Liu, C., Ryan, S. G., & Tan, H. (2004). How Banks' Value-at-Risk Disclosures Predict their Total and Priced Risk: Effects of Bank Technical Sophistication and Learning over Time. *Review of Accounting Studies*, 9 (2-3), 265–294.

Lougee, B., & Marquardt, C. (2004). Earnings Informativeness and Strategic Disclosure: An Empirical Examination of "Pro Forma" Earnings. *The Accounting Review*, 79 (3), 769–795.

Lowry, M. (2009). Discussion of 'Shareholder Litigation and Changes in Disclosure Behavior'. *Journal of Accounting and Economics*, 47 (1-2), 157–159.

Mahoney, P.G. (1995). Mandatory Disclosure as a Solution to Agency Problems. *The University of Chicago Law Review*, 62 (3), 1047–1112.

Mangena, M., & Tauringana, V. (2007). Corporate Compliance with Non-Mandatory Statements of Best Practice: The Case of ASB Statement on Interim Reports. *European Accounting Review*, 16 (2), 399–427.

Marquardt, C., & Wiedman, C. (1998). Voluntary Disclosure, Information Asymmetry, and Insider Selling Through Secondary Equity Offerings. *Contemporary Accounting Research*, 15 (4), 505–537.

Marshall, A., & Weetman, P. (2007). Modelling Transparency in Disclosure: The Case of Foreign Exchange Risk Management. *Journal of Business Finance & Accounting*, 34 (5-6), 705–739.

Marston, C.L., & Shrives, P.J. (1991). The Use of Disclosure Indices in Accounting Research: A Review Article. *The British Accounting Review*, 23 (3), 195–210.

May, R.G., & Sundem, G.L. (1976). Research for Accounting Policy: An Overview. *The Accounting Review*, 51 (4), 747–763.

McLaughlin, R., & Safieddine, A. (2008). Regulation and Information Asymmetry: Evidence from the Performance of Industrial and Utility Firms Issuing Seasoned Equity in the USA. *Journal of Financial Regulation and Compliance*, 16 (1), 59–76.

Meek, G.K., Roberts, C.B., & Gray, S.J. (1995). Factors Influencing Voluntary Annual Report Disclosures by U.S., U.K. and Continental European Multinational Corporations. *Journal of International Business Studies*, 26 (3), 555–572.

Miihkinen, A. (2008). Efficiency of Authoritative Disclosure Recommendations: Evidence from IFRS Transition Disclosure in Finland. *Journal of Financial Regulation and Compliance*, 16 (4), 384–413.

Miihkinen, A. (2012). What Drives Quality of Firm Risk Disclosure? The Impact of a National Disclosure Standard and Reporting Incentives under IFRS. *The International Journal of Accounting*, 47 (4), 437–468.

Milgrom, P. (1981). Good News and Bad News: Representation Theorems and Applications. *The Bell Journal of Economics*, 12 (2), 380–391.

Milgrom, P., & Roberts, J. (1986). Relying on the Information of Interested Parties. *Rand Journal of Economics*, 17 (1), 18–32.

Milne, M., & Adler, R. (1999). Exploring the Reliability of Social and Environmental Disclosures Content Analysis. *Accounting, Auditing and Accountability Journal*, 12 (2), 237–56.

Morck, R., Shleifer, A., & Vishny, R. (1990). Do Managerial Objectives Drive Bad Acquisitions? *The Journal of Finance*, 45 (1), 31–48.

Myers, S., & Majluf, N.S. (1984). Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have. *Journal of Financial Economics*, 13 (2), 187–221.

Nagar, V., Nanda, D., & Wysocki, P. (2003). Discretionary Disclosure and Stock-Based Incentives. *Journal of Accounting and Economics*, 34 (1-3), 283–309.

Niskanen, J., Kinnunen, J., & Kasanen, E. (2000). The Value Relevance of IAS Reconciliation Components: Empirical Evidence from Finland. *Journal of Accounting and Public Policy*, 19 (2), 119–137.

Noe, C. (1999). Voluntary Disclosures and Insider Transactions. *Journal of Accounting and Economics*, 27 (3), 305–326.

Ongena, S., & Smith, D.C. (2000). What Determines the Number of Bank Relationships? Cross-Country Evidence. *Journal of Financial Intermediation*, 9 (1), 26-56.

Pae, S. (2000). Information Sharing in the Presence of Preemptive Incentives: Economic Consequences of Mandatory Disclosure. *Review of Accounting Studies*, 5 (4), 331–350.

Pae, S. (2002). Discretionary Disclosure, Efficiency, and Signal Informativeness. *Journal of Accounting and Economics*, 33 (3), 279–311.

Palepu, K. (1986) Predicting Takeover Targets: A Methodological and Empirical Analysis. *Journal of Accounting and Economics*, 8 (1), 3–35.

Patelli, L., & Prencipe, A. (2007). The Relationship between Voluntary Disclosure and Independent Directors in the Presence of a Dominant Shareholder. *European Accounting Review*, 16 (1), 5–33.

Peltzman, S. (1976). Toward a More General Theory of Regulation. *The Journal of Law and Economics*, 19 (2), 211–240.

Penno, M.C. (1997). Information Quality and Voluntary Disclosure. *The Accounting Review*, 72 (2), 275–284.

Pérignon, C., & Smith, D. R. (2010). The Level and Quality of Value-at-Risk Disclosure by Commercial Banks. *Journal of Banking and Finance*, 34 (2), 362–377.

Pope, P. (2003). Discussion of Disclosure Practices, Enforcement of Accounting Standards, and Analysts' Forecast Accuracy: An International Study. *Journal of Accounting Research*, 41 (2), 273–283.

Posner, R.A. (1974). Theories of Economic Regulation. *The Bell Journal of Economics and Management Science*, 5 (2), 335–358.

Prencipe, A. (2004). Proprietary Costs and Determinants of Voluntary Segment Disclosure: Evidence from Italian Listed Companies. *European Accounting Review*, 13 (2), 319–340.

Rahman, A., Yammeesri, J., & Perera, H. (2010). Financial Reporting Quality in International Settings: A Comparative Study of the USA, Japan, Thailand, France, and Germany. *The International Journal of Accounting*, 45 (1), 1–34.

Rajgopal, S. (1999). Early Evidence on the Informativeness of the SEC's Market Risk Disclosures: The Case of Commodity Price Risk Exposure of Oil and Gas Producers. *The Accounting Review*, 74 (3), 251–280.

Robb, S.W.G., Single, L.E., & Zarzeski, M.T. (2001). Nonfinancial Disclosures across Anglo-American Countries. *Journal of International Accounting, Auditing and Taxation*, 10 (1), 71–83.

Rogers, J.L., & Van Buskirk, A. (2009). Shareholder Litigation and Changes in Disclosure Behavior. *Journal of Accounting and Economics*, 47 (1-2), 136–156.

Roulstone, D.T. (1999). Effect of SEC Financial Reporting Release No.48 on Derivative and Market Risk Disclosure. *Accounting Horizons*, 13(4), 343–363.

Ruland, W., Tung, S., & George, N.E. (1990). Factors Associated with the Disclosure of Managers' Forecasts. *The Accounting Review*, 65 (3), 710–721.

Ryan, B., Scapens, R.W., & Theobald, M. (2002). *Research Method and Methodology in Finance and Accounting*. Second Edition. London: Thomson.

Saudagaran, S.M., & Meek, G.K. (1997). A Review of Research on the Relationship between International Capital Markets and Financial Reporting by Multinational Firms. *Journal of Accounting Literature*, 16 (1), 127–159.

Schadewitz, H. (1997). *Financial and Nonfinancial Information in Interim Reports: Determinants and Implications*. Doctoral Dissertation. Helsinki School of Economics.

Schipper, K. (2003). Principles-Based Accounting Standards. *Accounting Horizons*, 17 (1), 61–72.

Schrand, C.M., & Elliott, J.A. (1998). Risk and Financial Reporting: A Summary of the Discussion at the 1997 AAA/FASB Conference. *Accounting Horizons*, 12 (3), 271–282.

Scott, W.R. (2009). *Financial Accounting Theory*. Fifth Edition. Ontario: Prentice Hall (Pearson).

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*. Washington, DC: The Securities and Exchange Commission.
Electronic Copy Available at http://www.sec.gov/rules/final/33-7386.txt
Accessed 27.01.2013.

SEC. (2002). *Sarbanes-Oxley Act of 2002.* Washington, DC: The Securities and Exchange Commission. Electronic Copy Available at http://www.sec.gov/about/laws/soa2002.pdf. Accessed 28.01.2013.

SEC. (2005). *Securities and Exchange Commission Final Rule, Release No. 33-8591 (FR-75)*. Washington, DC: The Securities and Exchange Commission. Electronic Copy Available at http://www.sec.gov/rules/final/33-8591.pdf. Accessed 27.01.2013.

Sengupta, P. (1998). Corporate Disclosure Quality and the Cost of Debt. *The Accounting Review*, 73 (4), 459–474.

Seppänen, H.J. (1999). *Discretionary Disclosure and External Financing: Evidence from a Relationship Financing Environment*. Doctoral Dissertation. Helsinki School of Economics.

Shalev, R. (2009). The Information Content of Business Combination Disclosure Level. *The Accounting Review*, 84 (1), 239–270.

Shleifer, A., & Wolfenzon, D. (2002). Investor Protection and Equity Markets. *Journal of Financial Economics*, 66 (1), 3–27.

Singhvi, S.S., & Desai, H.B. (1971). An Empirical Analysis of the Quality of Corporate Financial  Disclosure. *The Accounting Review*, 46 (1), 129–138.

Skinner, D. (1994). Why Firms Voluntarily Disclose Bad News. *Journal of Accounting Research*, 32 (1), 38–60.

Skinner, D. (1997). Earnings Disclosures and Stockholder Lawsuits. *Journal of Accounting and Economics*, 23 (3), 249–282.

Solomon, J.F., Solomon, A., & Norton, S.D. (2000). A Conceptual Framework for Corporate Risk Disclosure Emerging from the Agenda for Corporate Governance Reform. *The British Accounting Review*, 32 (4), 447–478.

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*. 87 (3), 355–374.

Stigler, G.J. (1971). The Theory of Economic Regulation. *The Bell Journal of Economics and Management Science*, 2 (1), 3–21.

Stocken, P.C. (2000). Credibility of Voluntary Disclosure. *The RAND Journal of Economics*, 31 (2), 359–374.

Suijs, J. (2005) Voluntary Disclosure of Bad News. *Journal of Business Finance & Accounting*, 32 (7-8), 1423–1435.

Suijs, J. (2007). Voluntary Disclosure of Information When Firms are Uncertain of Investor Response. *Journal of Accounting and Economics*, 43 (2-3), 391–410.

Tetlock, P. (2007). Giving Content to Investor Sentiment: The Role of Media in the Stock Markets. *The Journal of Finance*, 62 (3), 1139–1168.

Tetlock, P. (2008). More than Words: Quantifying Language to Measure Firms' Fundamentals, *The Journal of Finance*, 63 (3), 1437–1467.

Thornton, D.B., & Welker, M. (2004). The Effect of Oil and Gas Producers' FRR No.48 Disclosures on Investors' Risk Assessments. *Journal of Accounting, Auditing and Finance*, 19 (1), 85–114.

Titman, S., & Trueman, B. (1986). Information Quality and the Valuation of New Issues. *Journal of Accounting and Economics*, 8 (2), 159–172.

Troberg, P., Kinnunen, J., & Seppänen, H.J. (2010). What Drives Cross-Segment Diversity in Returns and Risks? Evidence from Japanese and U.S. Firms. *The International Journal of Accounting*, 45 (1), 44–76.

Trueman, B. (1986). Why Do Managers Voluntarily Release Earnings Forecasts? *Journal of Accounting and Economics* 8 (1), 53–71.

Verrecchia, R. (1983). Discretionary Disclosure. *Journal of Accounting and Economics*, 5 (3), 179–194.

Verrecchia, R. (1990). Information Quality and Discretionary Disclosure. *Journal of Accounting and Economics*, 12 (4), 365–380.

Verrecchia, R.E. (2001). Essays on Disclosure. *Journal of Accounting and Economics*, 32 (1-3), 97–180.

Verrecchia, R.E., & Weber, J. (2006). Redacted Disclosure. *Journal of Accounting Research*, 44 (4), 791–814.

Vives, X. (1984). Duopoly Information Equilibrium: Cournot and Bertrand. *Journal of Economic Theory*, 34 (1), 71–94.

Wagenhofer, J. (1990). Voluntary Disclosure with a Strategic Opponent. *Journal of Accounting and Economics*, 12 (4), 341–363.

Wallace, R.S., & Naser, K. (1995). Firm-Specific Determinants of the Comprehensiveness of Mandatory Disclosure in the Corporate Annual Reports of Firms Listed on the Stock exchange of Hong Kong. *Journal of Accounting and Public Policy*, 14 (4), 311–368.

Warner, J., Watts, R., & Wruck, K. (1988). Stock Prices and Top Management Changes. *Journal of Financial Economics*, 20 (January-March), 461–492.

Watts, R.L., & Zimmerman, J.L. (1978). Towards a Positive Theory of the Determination of Accounting Standards. *The Accounting Review*, 53 (1), 112–134.

Watts, R.L., & Zimmerman, J.L. (1986). *Positive Accounting Theory*. New Jersey: Prentice Hall (Englewood Cliffs).

Watts, R.L., & Zimmerman, J.L. (1990). Positive Accounting Theory: A Ten Year Perspective. *The Accounting Review*, 65 (1), 131–156.

Weisbach, M. (1988). Outside Directors and CEO Turnover. *Journal of Financial Economics*, 20 (January-March), 431–460.

Welker, M. (1995). Disclosure Policy, Information Asymmetry, and Liquidity in Equity Markets. *Contemporary Accounting Research*, 11 (2), 801–827.

Zeff, S.A. (1978). The Rise of Economic Consequences. The Journal of Accountancy, 146 (6), 56–63.

# PART II

# THE ORIGINAL ESSAYS

# ESSAY 1

## What Drives Quality of Firm Risk Disclosure?

### The Impact of a National Disclosure Standard and Reporting Incentives under IFRS

by

**Antti Miihkinen**

# What Drives Quality of Firm Risk Disclosure? The Impact of a National Disclosure Standard and Reporting Incentives under IFRS☆

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## Abstract

This paper examines the impact of a detailed national disclosure standard on the quality of firms' overall risk reviews under IFRS. We use data from a sample of listed Finnish firms around the introduction of the standard and find that national regulatory bodies have been able to raise the quality of risk disclosure on several dimensions even under IFRS. We find increases in the quantity of risk disclosure with more extensive and more comprehensive information. We do not, however, find a corresponding increase in quantitative disclosures and therefore there is some question regarding the influence of the standard on the substance of the risk information provided. In addition to the coercive effect of the standard, several important reporting incentives, such as firm size, profitability, and foreign listing status are documented. We also find some evidence that the impact of the standard on quality is more pronounced among less profitable firms. Additional findings are that larger firms and firms reporting under the requirements of the SEC disclose more quantitative risk information, and that the quality improvements are permanent in the subsequent years. The findings have implications for standard-setters evaluating different strategies with the aim to increase the quality of the narratives in annual reports.

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☆ Established in 2010, the Aalto University is a new university with centuries of experience. The Aalto University was created from the merger of three Finnish universities: The Helsinki School of Economics, Helsinki University of Technology, and The University of Art and Design Helsinki.

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## 1. Introduction

High-quality narrative communication in the non-financial statement sections of annual reports is important to making company reporting more useful to investors. However, standard-setters face a taxing challenge in deciding on how these sections can most effectively be regulated. Standard-setting is much concerned with making the best decisions about the level of detail in the disclosure standards (Schipper, 2003). If standard-setters give overly directive disclosure requirements, they receive highly comparable information that includes mostly boilerplate discussion that lacks relevance to investors. In contrast, if standard-setters do not require disclosure on a specific issue, some firms will not voluntarily disclose anything.

Accounting literature demonstrates that there is a significant risk information gap between firms and their stakeholders (Kajüter, 2001; Linsley & Shrives, 2006; Roulstone, 1999). However, there is little if any research evidence to date concerning the impact of risk disclosure regulation on quality (see Beretta & Bozzolan, 2004). The literature needs studies examining this issue. Otherwise, it is difficult to evaluate detailed risk guidance in an environment where firms have several disclosure motives. The extant research documents the importance of reporting incentives to determine accounting quality (e.g., Ball, Robin, & Wu, 2003; Ball & Shivakumar, 2005; Dobler, 2008; Dobler, Lajili, & Zéghal, 2011; Leuz, 2003). Given this background, this paper examines whether a detailed national risk disclosure standard can improve the quality of firms' overall risk reviews under IFRS.

In order to examine this question, we exploit the unique regulatory change in Finland. In 2006, the Finnish Accounting Practice Board published a new detailed risk disclosure standard that described how firms should assess their significant risks in their operating and financial reviews. It provides a comprehensive view on the expected quality of risk reporting and also includes illustrative disclosure examples. The standard specifies the risk disclosure requirements of the Finnish Accounting Act, which are given generally and without implementation guidance. However, it is still principles-based because it gives firms latitude in deciding on their risk disclosure policies. Finnish listed firms follow IFRS but are obliged to publish an operating and financial review according to the Finnish Accounting Act. Consequently, the new disclosure standard also influences the risk reporting of those Finnish listed firms that prepare their financial statements according to IFRS. Miihkinen (2011) documents that the quality of Finnish listed firms' risk disclosure is negatively associated with information asymmetry around the introduction of the standard.

Roulstone (1999) demonstrates that firms' market risk disclosures improved after the introduction of FRR No. 48 in the U.S. The Finnish standard differs from FRR No. 48 because it stipulates the *overall* risk reviews of firms, i.e. disclosures on strategic risks, operational risks, financial risks, damage risks, and risk management. The Finnish standard is six pages long, whereas FRR No. 48 is in excess of 100 pages. Furthermore, FRR No. 48 lacks the illustrative risk disclosure examples that have an essential role in the Finnish standard.

Starting in December 2005, the SEC requires overall risk reviews in annual and quarterly reports. However, compared to Finland's standards, this standard is shorter, vaguer, and lacks disclosure examples. It is not surprising that after the first wave of the global financial crisis in 2010, the SEC warned companies about overly broad or generic risk disclosures. SEC Chairman Mary Schapiro said that the commission is working on revising risk disclosure requirements (CFO.com, 2010). Concurrent working papers on risk

disclosures in the U.S. have provided evidence that the mandatory risk disclosures are informative to investors despite the reporting deficiencies (Campbell, Chen, Dhaliwal, Lu, & Steele, 2011; Huang, 2011; Kravet & Muslu, 2011).

Another reason that has motivated us to examine how effective Finland's standards are is that empirical literature finds high compliance and disclosure ratios for Finnish firms (Dargenidou, McLeay, & Raonic, 2006; King, 1999). Therefore, if we are unable to document improvements in quality of risk disclosure in this setting, regulatory bodies will likely encounter similar problems in other countries. This information is relevant for standard-setters when they consider how to mandate narrative risk reporting in the non-financial statements of firms' annual reports.

Our empirical indicators of quality of risk disclosure are quantity of disclosure (cf., Abraham & Cox, 2007), coverage of disclosure (cf., Beattie, McInnes, & Fearnley, 2004), and the semantic properties of disclosure (cf., Beretta & Bozzolan, 2004; Beretta & Bozzolan, 2008; Cerbioni & Parbonetti, 2007). We ensure the overall validity and reliability of disclosure quality measurement by using factor analysis to summarize the quality indicators into a composite measure of quality.

The results of a regression analysis point to the following main findings. First, the risk disclosure standard increases firms' quality of risk disclosure in several dimensions. After the release of the standard, the risk reviews of the firms become more extensive and also provide more evenly distributed information across risk topics. Moreover, firms give more detailed qualitative descriptions of the economic impact of the identified risk on future performance. Firms also provide more information on the actions they have taken and programs they have planned to face risks. We also document an increase in firms' willingness to provide quantitative risk information although the effect of the standard is weaker compared to other quality dimensions. The reluctance of firms to provide monetary assessments of risk information is consistent with the findings of Beretta and Bozzolan (2004), Linsley and Shrives (2006), and Dobler et al. (2011).

Second, we find that the *coercive effect* of the standard drives increases in the overall quality of risk disclosure. Other important drivers of quality are firm size, profitability, and listing on NYSE. We also find some evidence that the impact of the standard on quality is more pronounced among less profitable firms. This impact suggests that the coercive effect of the standard forces these firms to reconsider their threshold level of disclosure. It is also found that a less profitable firm discloses more on its risks if it has a high business risk. Third, the results demonstrate that the risk disclosure standard has a strong impact on the location of the risk information provided. After the release of the standard, 81.9% of risk disclosure is provided in the operating and financial reviews. In the previous year, the comparable number was 57.5%. Additional findings are that larger firms and firms reporting under the requirements of the SEC disclose more quantitative risk information, and that the quality improvements are permanent in the subsequent years.

This study contributes to the accounting literature by demonstrating that detailed risk disclosure guidance can be used to improve the quality of firms' overall risk reviews. In addition, we add to prior literature by providing evidence on the importance of several reporting incentives to determine risk disclosure quality. The results benefit the FASB, the IASB, the SEC, and national regulatory bodies by demonstrating how a detailed national disclosure standard can influence risk reporting under IFRS.

The remainder of the paper is organized as follows: Section 2 describes the literature review and development of hypotheses, followed by the research design in Section 3. Section 4 discusses sample, data, and descriptive statistics, and Section 5 reports empirical results. Section 6 provides detail of robustness checks and Section 7 provides a summary and conclusion.

## 2. Literature review and hypothesis development

### 2.1. Risk disclosure regulation and quality of risk disclosure

In recent years, scholars have showed increasing interest in risk disclosure (e.g., Abraham & Cox, 2007; Beretta & Bozzolan, 2004; Dobler, 2008; Dobler et al., 2011; Lajili & Zéghal, 2005; Linsley & Shrives, 2006; Roulstone, 1999; Solomon, Solomon, & Norton, 2000). However, risk disclosure is still one of the most ambiguous and unexplored areas of corporate disclosure. In particular, we know too little about quality of risk disclosure.

Risk management simultaneously maximizes profitability and minimizes the probability of financial failure, thus it is needed to maximize shareholders' wealth (Solomon et al., 2000). In addition, employees, customers and other stakeholders benefit from risk disclosure. One common criticism of financial reporting is that it does not provide a detailed description of risks and uncertainties. Academics, practitioners, and standard-setters have noticed this problem and asked whether regulatory bodies should develop specific standards for the disclosure of risk in annual reports.

Previous literature reports that firms react to new disclosure requirements and recommendations (Inchausti, 1997; Miihkinen, 2008; Roulstone, 1999). Roulstone (1999) demonstrates that FRR No. 48 is effective at improving market risk disclosures of U.S. listed firms.[1] However, academic research has provided no evidence about the effectiveness of regulation in improving the overall quality of risk disclosure within a single country. For this reason, Beretta and Bozzolan (2004) suggest that future research should examine whether the quality of risk disclosure can be explained by the extent of regulation in the operating environment of the firms.

One of the problems of developing disclosure standards has been that direct empirical evidence about the effects of risk disclosures has been nonexistent (Schrand & Elliott, 1998). Nowadays we have some evidence on the information content of risk disclosures to analysts and investors (Campbell et al., 2011, Huang, 2011; Jorion, 2002; Kravet & Muslu, 2011; Miihkinen, 2011; Rajgopal, 1999; Thornton & Welker, 2004). However, behavioral accounting studies demonstrate that risk information is often not effective in helping investors to form risk judgments (Koonce, Lipe, & McAnally, 2005; Koonce, McAnally, & Mercer, 2005). These arguments are supported by the empirical findings of Beretta and

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[1] FRR No. 48 was issued by the Securities and Exchange Commission (SEC) in 1997 to improve market risk disclosures encouraged, but not required, under SFAS No. 119. One of the guiding principles the SEC followed in formulating the proposed standard was that disclosure requirements about market risk should be flexible enough to take into consideration various registrants, different degrees of market risk exposure, and alternative ways of measuring market risk (Linsmeier & Pearson, 1997). Consequently, the standard was principles-based and allowed managers considerable latitude in the presentation of disclosure.

Bozzolan (2004), Lajili and Zéghal (2005), Linsley and Shrives (2006), Linsley and Lawrence (2007), and Dobler et al. (2011).

Beretta and Bozzolan (2004) suggest that although Italian firms voluntarily disclose some risk information, they tend to be oriented towards a policy of 'formal disclosure but substantial nondisclosure' of the anticipated influence of risks on the future of the firms. In the Canadian institutional setting, Lajili and Zéghal (2005) show that risk disclosures lack uniformity, clarity, and quantification, which decrease their usefulness to stakeholders. Linsley and Shrives (2006) examine risk disclosure in the U.K. and report that few firms give quantitative risk information, and that risk narratives lack coherence. This argument indicates a gap in risk information; consequently, stakeholders cannot assess accurately the risk profiles of the firms. Linsley and Lawrence (2007) analyze the writing style of risk disclosures by U.K. companies and demonstrate that these disclosures lack readability. Finally, Dobler et al. (2011) examine the attributes of corporate risk disclosures internationally. They document that managers typically disclose risks in management reports, concentrate on financial risk categories, and give little quantitative and forward-looking risk information across sample countries (US, Canada, UK, Germany). The authors conclude that domestic disclosure regulation only partly explains the cross-country differences in disclosure, which implies that risk disclosure motives have an essential impact on managers' reporting decisions.

### 2.2. Managers' disclosure incentives and firms' corporate governance structures

Risk reporting incentives also influence risk disclosure in regulated environments (Dobler, 2008; Dobler et al., 2011; Dye, 1990; Marshall & Weetman, 2007). Marshall and Weetman (2007) demonstrate that managers provide significantly less mandatory information on foreign exchange risk management than they know about the issue. Firm disclosure decisions, and thereby also firm risk disclosures, are likely to be influenced by a number of factors that related literatures have examined. These include firm size (Brammer & Pavelin, 2006; Cahan, Rahman, & Perera, 2005; Cooke, 1989; Eng & Mak, 2003), profitability (Lang & Lundholm, 1993; Leuz, 2000; Prencipe, 2004), prospects for growth (Kanto & Schadewitz, 1997; Miihkinen, 2008), the need for external financing (Lang & Lundholm, 1993), and listing status (Cooke, 1989).[2]

Moreover, some firms have higher exposure to risks and consequently have more potential risk information to disclose to the capital markets. High leverage increases firms' bankruptcy risk and makes these firms more vulnerable to risks (cf., Dobler et al., 2011). Business risk (volatility of the yearly cash-flows and globalization) is another factor that may influence managers' risk disclosure behavior (Cahan et al., 2005; Jorgensen & Kirschenheiter, 2003). In addition, high sensitivity to systematic risk in the stock markets may motivate managers to disclose risks (Linsley & Shrives, 2006).

Finally, the corporate governance structures of firms may also influence their risk disclosures (Abraham & Cox, 2007). High ownership concentration probably decreases firms' willingness to provide high quality risk disclosure. In addition, the ratio of foreign owners to domestic owners may influence managers' risk reporting decisions.

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[2] Analytical research suggests that the reduction of adverse selection problems and agency costs are the primary motives for voluntary disclosure (e.g., Akerlof, 1970; Jensen & Meckling, 1976; Spence, 1973).

*2.3. Hypothesis: the quality impact of the standard*

Roulstone (1999) provides evidence on the coercive effect of FRR No. 48 on the reporting of firms' market risks. FRR No. 48 is extensive, which is typical for the rules-based accounting tradition in the U.S. Roulstone documents that market risk disclosures, recommended but not required under FAS No. 119, expanded significantly under FRR No. 48 but varied greatly in detail and clarity. This finding supports the notion that the comprehensive standard had a significant coercive effect on firms' reporting.

The Finnish standard has characteristics of FRR No. 48 because it is detailed. In addition, the Finnish standard is supplemented with illustrative disclosure examples that should increase its coercive effect. Through these examples, the standard provides a versatile view of the characteristics of high-quality risk reporting such as the importance of qualitative and quantitative risk descriptions, and disclosure on all risk topics. The Finnish Accounting Practice Board emphasizes in the guidance that one of its main objectives is wide coverage of the provided risk information. From December 2005 onwards, the SEC requires overall risk reviews in annual and quarterly reports. However, compared to Finnish standards, this standard is shorter, vaguer, and lacks disclosure examples, which likely reduces its coercive effect. Unsurprisingly, in 2010, the SEC warned firms about low-quality overall risk reviews.

We propose that before the publication of the new standard, Finnish firms may have been unwilling to report their risks in fear of proprietary costs and/or litigation costs (Verrecchia, 1983). In addition, bad news firms may have been willing to withdraw from risk disclosures because of the negative impact on valuation (Akerlof, 1970). We argue that the coercive effect of the standard is strong enough to influence firms' risk disclosure choices (cf., FRR No. 48), and we test the following hypothesis:

**H1.** The coercive effect of the risk disclosure standard leads to improved quality of firms' risk reporting.

## 3. Research design

*3.1. Definition of risk disclosure and risk disclosure framework*

We define risk disclosure as all information that firms provide in the risk reviews they present in their annual reports. Risk disclosure is information that describes firms' major risks and their expected economic impact on future performance. This includes forward-looking information that helps external investors build up a point estimate of future cash flows, information on the sources of uncertainty surrounding forecasts of the firm's future cash flows, and information on the sources of non-diversifiable risk that should be included in cost of capital. In addition, historical information about the actions taken to face risks, and forward-looking information on programs planned to face risks are taken into account.

The risk disclosure standard of the Finnish Accounting Practice Board forms the basis of the applied risk disclosure framework. This standard defines the following risk categories typical of all firms: strategic risks, operational risks, financial risks, damage

risks, and risk management. Several examples of the risk items belonging to the defined categories are offered in the standard. In addition, it provides exemplary risk disclosure formats. Because the standard does not give an exhaustive description of all subtopics in the risk categories, the risk disclosure framework applied in this study has been made more comprehensive by adopting some of the risk disclosure subtopics from Linsley & Shrives' (2006) risk disclosure framework.[3] Finally, a subsample of annual reports has been pre-tested to identify missing subtopics from the examined risk categories. Appendix A describes the detailed risk disclosure framework.

### 3.2. Empirical indicators of quality of risk disclosure

Previous literature reports various disclosure-measurement frameworks as an attempt to best capture differences in the quality of financial reporting. Botosan (2004) contends that these frameworks imply a positive correlation between quantity and quality. She states that the IASB's and FASB's conceptual frameworks provide good guidance concerning generally accepted views of information quality (Botosan, 2004: 290). However, it is difficult to apply these requirements in the analyses of accounting narratives without researcher's subjective assessment.

While this study recognizes the inherent conceptual difficulties of measuring disclosure quality in a complete, valid, and reliable manner, we contend that certain quality indicators developed in the existing literature may provide useful approximations of important aspects of quality of risk disclosure (see Beattie et al., 2004; Beretta & Bozzolan, 2004). As discussed below, these indicators relate to the quantity and coverage of risk disclosure, as well as to certain semantic properties of the risk information disclosed.[4]

#### 3.2.1. Risk disclosure quantity
The number of risk disclosure words provided by the firm measures the first proxy for quality of risk disclosure. Consequently, the empirical indicator of risk disclosure quantity is as follows:

$$QUANTITY = \ln(\text{total number of risk disclosure words}) \tag{1}$$

#### 3.2.2. Risk disclosure coverage
Investors need a balanced description of the major risks of the firm in order to understand a firm's value.[5] This study applies the disclosure metric described by Beattie et al. (2004) to measure the coverage of the risk information provided. In this metric, the

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[3] Linsley and Shrives (2006) use a risk disclosure categorisation that was developed by a professional accountancy firm and subsequently used by Kajüter (2001) within a risk disclosure study.

[4] The measures presented below are crude proxies for the qualitative characteristics of financial reporting information provided in the IASB conceptual framework (see the IASB exposure draft of an improved conceptual framework for financial reporting, 2008). In this framework, relevance and faithful presentation align with the fundamental qualitative characteristics of financial reporting information. Enhancing qualitative characteristics (comparability, verifiability, timeliness, and understandability) are complementary to the fundamental qualitative characteristics. They distinguish more useful information from less useful information.

[5] This objective was also made explicit in the Finnish risk disclosure standard.

Herfindahl index is used to measure the concentration of corporate disclosures across risk topics. The coverage of information is calculated at the main topic level of the risk disclosure framework. The empirical indicator for risk disclosure coverage is as follows:

$$\text{COVERAGE} = [(1/H)/\text{the number of main risk topics}], \qquad (2)$$

where H represents Herfindahl measure of concentration across risk topics calculated as $H = \sum_{i=1}^{n} P_i^2$, where $p_i$ is the proportion of risk disclosure words on topic $i$. The inverse of H will be used to make a greater Herfindahl index value reflect more extensive disclosure coverage. This value has been scaled by dividing it with the number of main risk topics.

### 3.2.3. The semantic properties of risk disclosure

Recently, scholars have been increasingly interested in the semantic properties of the information provided in corporate communications (Beretta & Bozzolan, 2004; Beretta & Bozzolan, 2008; Cerbioni & Parbonetti, 2007). Analyses of the semantic properties of text focus on what is disclosed and how it is disclosed. Texts that include semantic quality properties allow external users to look at firms 'through the eyes of management' (Cerbioni & Parbonetti, 2007). Similar to Beretta and Bozzolan (2004), this study considers the semantic properties of *depth* and *outlook profile*.

Depth concerns the content of information disclosed with regard to the expected economic impact of identified risks on future performance. The depth dimension consists of two components that are the qualitative and quantitative description of the economic impact of the risk. The empirical indicators for these components are as follows:

$$\text{DEPTH\_QUALITATIVE} = \ln \sum_{j=1}^{k_j} \text{qualitative} \qquad (3)$$

where $k_j$ = the number of risk information sentences disclosed by the firm; qualitative$_j$ = 1 if the risk information sentence j of the firm contains qualitative information about the expected economic impact of the identified risk on future performance, otherwise qualitative$_j$ = 0.[6]

$$\text{DEPTH\_QUANTITATIVE} = \ln \sum_{j=1}^{k_j} \text{quantitative}_j \qquad (4)$$

where $k_j$ = the number of risk information sentences disclosed by the firm; quantitative$_j$ = 1 if the risk information sentence $j$ of the firm contains quantitative information about the expected economic impact of the identified risk on future performance, otherwise quantitative$_j$ = 0.[7,8]

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[6] Observations with zero sentences were awarded 0 points. Consequently, observations with zero or one risk disclosure sentence have the same disclosure scores on this dimension.

[7] This study interprets broadly the sentences that contain quantitative information relating to the expected economic impact of identified risk on future performance. Because very few firms provided any direct values for risks, all risk disclosure sentences that contained some quantitative information were accepted. A stricter approach has been applied in the robustness checks section of this study by awarding only sentences that provide sensitivity analyses about the impact of the identified risk on net income.

[8] For observations with zero sentences, see footnote 6.

Outlook profile concerns the way management communicates the approach adopted to face the identified risks (Beretta & Bozzolan, 2004). The empirical measure for this dimension is as follows:

$$\text{OUTLOOK\_PROFILE} = \ln \sum_{j=1}^{kj} \text{acp}_j \tag{5}$$

where $k_j$ = the number of risk information sentences disclosed by the firm; $\text{acp}_j = 1$ if the risk information sentence $j$ of the firm contains information about actions taken or programs planned to face identified risk, otherwise $\text{acp}_j = 0$.[9]

### 3.2.4. Composite quality of risk disclosure

Factor analysis can be utilized to examine the underlying patterns or relationships of a number of variables and to determine whether the data can be condensed into a smaller set of factors or components (Hair, Anderson, Tatham, & Black, 1995). The method is used to summarize the quality indicators considered above and to form a composite measure of quality of risk disclosure.[10] The following composite measure of individual quality indicators is expected to improve the overall validity and reliability of the measurement of quality of disclosure:

$$\text{COMPOSITE} = \text{the score of the principal component with the highest eigenvalue.} \tag{6}$$

Appendix B gives case examples illustrating the use of individual quality indicators in this study.

### 3.3. Reliability and validity of the risk disclosure quality indicators

In this study, the reliability of coding is assured by coding a pilot sample in order to create clear decision rules. At this juncture, discussions with other scholars determine the most effective and reliable rules for risk disclosure coding. The main data set are coded after the coding decisions relating to a pilot sample reach an acceptable level of reliability. Finally, we analyze the inter-rater reliability of coding by dual coding two subsamples, and demonstrate that the reliability of the coding is sufficiently high.[11]

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[9] For observations with zero sentences, see footnote 6.

[10] Factor analysis is a generic name given to common factor analysis and principal component analysis. A factor score is a composite measure created for each observation on each factor extracted in the factor analysis. The factor weights are used in conjunction with the original variable values to calculate each observation's score. The factor score can then be used to represent the factor(s) in subsequent analyses (Hair et al., 1995). The analysis method used in this study is principal component analysis and consequently, all prior communality estimates are set to one.

[11] Two measures of inter-coder reliability are calculated: the first is the simple coefficient of agreement, and the second the alpha coefficient of agreement proposed by Krippendorf (1980). Taken together the coding of the subsamples, the simple coefficient of agreement is 0.90, and the alpha coefficient of agreement is 0.87. The extant literature suggests a threshold level of 0.75 for the alpha coefficient of agreement (Milne & Adler, 1999).

## 3.4. Independent variables and regression models

The main test variable in the study is an indicator variable for the year 2006, which is an empirical measure for the risk disclosure standard. Moreover, the impact of the relevant reporting incentives (e.g., profitability and risk sensitivity), corporate governance structures (e.g., ownership concentration), and industry are controlled in the regression models. The main tests in the study involve the estimation of the following multivariate regressions for different disclosure quality indicators (in Eq. (7), $\beta$ represent the regression parameters to be estimated, [12] $e$ represents the regression residual, subscripts $i$ and $t$ refer to the firm and year, respectively):

$$\text{Quality indicator}_{it} = b_0 + b_s \text{Risk disclosure standard}_{it} + \sum_r b_r \text{Reporting incentives}_{it} + \sum_g \beta_g \text{Corporate governance structures}_{it} + \sum_c \beta_c \text{Industry controls}_{it} + e_{it}.$$

$$(7)$$

Table 1 presents a more detailed description of the variable definitions.

## 4. Sample, data, and descriptive statistics

The target population is comprised of 129 firms listed at the OMX Helsinki during the research period. The firms follow IFRS but are obliged to publish operating and financial review according to the Finnish Accounting Act. [13] Some firms are excluded from the analysis. 13 firms that are part of the financial services industry are excluded from the target population because their accounting practices, financial statements, and related disclosure requirements differ from the rest of the population. Ten firms that were initially listed or restructured between 2005 and 2006 are omitted. Three firms are omitted because of their differing fiscal periods. Finally, four firms are discounted due to the lack of data for some variables. After these eliminations, the study sample consists of 99 firms. In the empirical analyses, the observations are pooled across 2005 and 2006, thus there are 198 firm-year observations in the final sample. The matched paired sample design (i.e., disclosure of the 99 sample firms before and after the new standard) makes it possible to effectively control that the results are not driven by potentially omitted factors that are not attributable to the financial reporting system, such as the effects of the economic environment. [14] The approach is similar to that employed by Barth, Landsman, and Lang (2008).

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[12] P-values of parameter estimates are computed from the heteroskedasticity robust standard errors clustered at the firm level (see Petersen, 2009).

[13] The Finnish Accounting Act stipulates that all listed firms shall incorporate an operating and financial review section (OFR) into their financial statements. Conceptually, this is similar to the management discussion and analysis section (MD&A) regulated by the SEC in the United States, and the management commentary (MC) section suggested by the IASB. However, the OFR is given by the board of directors whereas the MD&A and MC are given by the management. Both disclosure standards require firms to provide a narrative explanation of company performance, financial condition, and future prospects. The intent is to assist investors to interpret the firm's financial statements (Scott, 2009).

[14] The economic environment includes volatility of economic activity and the information environment.

Table 1
Variable definitions.

| | |
|---|---|
| Quantity | Ln (total number of risk disclosure words) |
| Coverage | The inverse of the Herfindahl index value divided by the number of main risk topics. |
| Depth_qualitative | Ln (number of risk information sentences containing qualitative information about the expected economic impact of identified risk on future performance) |
| Depth_quantitative | Ln (number of risk information sentences containing quantitative information about the expected economic impact of identified risk on future performance) |
| Outlook_profile | Ln (number of sentences containing information about actions taken or programs planned to face identified risk) |
| Composite | It is the score of the principal component with the highest eigenvalue computed from Quantity, Coverage, Depth_qualitative, Depth _quantitative and Outlook_profile. |
| Standard | Indicator variable=1, if the disclosure index value describes risk disclosure published under the standard (i.e. in 2006 annual reports), otherwise 0. |
| Size | The natural logarithm of the net sales in million euros. |
| ROA | The return on assets ratio. |
| P/B | The ratio of year-end market capitalization to total common equity. |
| Exfin | The net cash flow from financing deflated by net sales. |
| F_listing | Indicator variable=1, if the firm is listed on the New York Stock Exchange, otherwise 0. |
| Leverage | The financial leverage of the firm computed as follows: $1 -$ (common equity / total assets). |
| Dev(Cf.) | The standard deviation of operating cash flow to assets ratio computed across five years. |
| Globa | The percentage of foreign sales. |
| Beta | The beta of the firm. It is computed from the share and market index returns of the preceding 12 months before the publication of the risk disclosure. MSCI Europe has been used as the market index. |
| Clshs | The percentage of shares owned by firm insiders. |
| ForOwn | The percentage of foreign owners. |

The risk disclosure data are collated from two sources of 2005 and 2006 annual reports.[15] The first source is the operating and financial review sections of the firms (subscript *ofr* in the tables). The second is the overall risk reviews of the annual reports that are published in separate risk sections, the notes to the financial statements, and the corporate governance sections (subscript *other* in the tables). Annual report risk disclosure (subscript *tot* in the tables) includes risk disclosures collated from both sources. The values for the accounting variables and stock market data are retrieved from the *Thomson One Banker Financial* database.

Table 2 reports the descriptive statistics of the variables for fiscal years 2005 and 2006. The mean and median statistics of QUANTITY and COVERAGE are fairly close to each other in both years, which suggest that these variables are distributed symmetrically. The

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[15] The new disclosure standard was published on September 2006. Consequently, its impact on reporting can be seen first time in 2006 annual reports that were published until May 2007.

Table 2
Descriptive statistics of the variables (n=99).

| | Mean | | | Median | | |
|---|---|---|---|---|---|---|
| | 2005 | 2006 | *t*-test (sig.) | 2005 | 2006 | Wilcoxon (sig.) |
| Disclosure quality indicators: | | | | | | |
| Quantity_tot | 5.441 | 6.037 | **0.000** | 5.677 | 6.221 | **0.000** |
| *Quantity_ofr* | 3.130 | 4.945 | **0.000** | 3.989 | 5.231 | **0.000** |
| *Quantity_other* | 4.766 | 4.787 | 0.902 | 5.176 | 5.088 | 0.061 |
| Coverage_tot | 0.493 | 0.610 | **0.000** | 0.534 | 0.613 | **0.000** |
| *Coverage_ofr* | 0.273 | 0.519 | **0.000** | 0.300 | 0.574 | **0.000** |
| *Coverage_other* | 0.387 | 0.375 | 0.550 | 0.366 | 0.331 | 0.632 |
| Depth_qualitative_tot | 0.741 | 0.995 | **0.001** | 0.000 | 1.099 | **0.001** |
| *Depth_qualitative_ofr* | 0.218 | 0.531 | **0.000** | 0.000 | 0.000 | **0.000** |
| *Depth_qualitative_other* | 0.526 | 0.482 | 0.579 | 0.000 | 0.000 | 0.568 |
| Depth_quantitative_tot | 0.429 | 0.547 | 0.054 | 0.000 | 0.000 | **0.022** |
| *Depth_quantitative_ofr* | 0.106 | 0.219 | 0.056 | 0.000 | 0.000 | **0.007** |
| *Depth_quantitative_other* | 0.326 | 0.362 | 0.555 | 0.000 | 0.000 | 0.586 |
| Outlook_profile_tot | 1.602 | 2.085 | **0.000** | 1.792 | 2.079 | **0.000** |
| *Outlook_profile_ofr* | 0.503 | 1.299 | **0.000** | 0.000 | 1.386 | **0.000** |
| *Outlook_profile_other* | 1.283 | 1.199 | 0.383 | 1.099 | 0.000 | 0.856 |
| Composite_tot | 0.785 | 0.970 | **0.000** | 0.654 | 0.943 | **0.000** |
| *Composite_ofr* | 0.532 | 1.059 | **0.000** | 0.417 | 1.059 | **0.000** |
| *Composite_other* | 0.770 | 0.753 | 0.734 | 0.575 | 0.495 | 0.809 |
| Reporting incentives: | | | | | | |
| Size | 5.481 | 5.585 | **0.000** | 5.278 | 5.397 | **0.000** |
| ROA | 0.082 | 0.071 | 0.426 | 0.081 | 0.080 | 0.914 |
| P/B | 2.571 | 2.743 | 0.235 | 2.237 | 2.478 | **0.008** |
| Exfin | 0.155 | 0.003 | 0.398 | −0.023 | −0.015 | 0.194 |
| F_listing | 0.040 | 0.040 | – | 0.000 | 0.000 | – |
| Leverage | 0.554 | 0.538 | 0.447 | 0.549 | 0.537 | 0.584 |
| Dev(Cf.) | 0.069 | 0.064 | 0.183 | 0.050 | 0.044 | 0.286 |
| Globa | 0.476 | 0.491 | 0.262 | 0.478 | 0.486 | 0.098 |
| Beta | 1.089 | 1.193 | 0.459 | 1.063 | 1.077 | 0.693 |
| Clshs | 28.593 | 28.778 | 0.836 | 27.759 | 26.379 | **0.005** |
| ForOwn | 22.027 | 23.677 | **0.009** | 14.966 | 15.386 | **0.002** |

This table provides the mean, median, standard deviation, and minimum and maximum values of the variables. Moreover, p-values for the *t*-test and Wilcoxon test for paired samples are reported. Subscript *ofr* refers to risk information provided in the operating and financial review section of the firm. Subscript *other* refers to risk information provided outside the operating and financial review of the firm. Subscript *tot* refers to all overall risk reviews that are provided in the annual report of the firm. For variable definitions, see Table 1. Disclosure data is collected from the 2005 and 2006 annual reports of the firms. Other variable values are measured at the end of the fiscal year unless otherwise defined. The number of observations is 99 for both years. P-values significant at 5% or better (two-tailed test) are shown in **boldface**.

distributions of DEPTH_QUALITATIVE and DEPTH_QUANTITATIVE are skewed in 2005, which implies that during the pre-standard period some firms have used several sentences to describe the expected economic impact of identified risk on future performance, whereas the median firms have not provided this kind of information at all.

| Std. deviation | | Min | | Max | |
| --- | --- | --- | --- | --- | --- |
| 2005 | 2006 | 2005 | 2006 | 2005 | 2006 |
| 1.526 | 1.080 | 0.000 | 0.000 | 7.824 | 8.137 |
| 2.230 | 1.412 | 0.000 | 0.000 | 7.564 | 6.966 |
| 2.097 | 2.143 | 0.000 | 0.000 | 7.703 | 8.039 |
| 0.224 | 0.183 | 0.000 | 0.000 | 0.952 | 0.976 |
| 0.243 | 0.221 | 0.000 | 0.000 | 0.906 | 0.929 |
| 0.253 | 0.248 | 0.000 | 0.000 | 0.906 | 0.972 |
| 0.966 | 0.984 | 0.000 | 0.000 | 3.367 | 4.159 |
| 0.517 | 0.748 | 0.000 | 0.000 | 2.639 | 2.996 |
| 0.913 | 0.895 | 0.000 | 0.000 | 3.258 | 4.111 |
| 0.854 | 0.924 | 0.000 | 0.000 | 3.738 | 3.761 |
| 0.467 | 0.502 | 0.000 | 0.000 | 3.738 | 2.079 |
| 0.727 | 0.827 | 0.000 | 0.000 | 2.996 | 3.761 |
| 1.352 | 1.160 | 0.000 | 0.000 | 4.394 | 4.543 |
| 0.841 | 0.963 | 0.000 | 0.000 | 3.367 | 3.555 |
| 1.363 | 1.401 | 0.000 | 0.000 | 4.304 | 4.489 |
| 0.501 | 0.443 | 0.000 | 0.000 | 1.975 | 2.242 |
| 0.554 | 0.543 | 0.000 | 0.000 | 3.325 | 2.411 |
| 0.641 | 0.662 | 0.000 | 0.000 | 2.421 | 2.796 |
| 1.955 | 1.978 | 0.205 | 0.112 | 10.440 | 10.624 |
| 0.166 | 0.114 | −0.759 | −0.387 | 1.250 | 0.334 |
| 2.007 | 2.161 | −9.901 | −9.686 | 8.727 | 7.742 |
| 1.791 | 0.115 | −0.742 | −0.351 | 17.760 | 0.576 |
| 0.198 | 0.198 | 0.000 | 0.000 | 1.000 | 1.000 |
| 0.314 | 0.198 | 0.117 | 0.147 | 3.193 | 1.403 |
| 0.082 | 0.061 | 0.009 | 0.010 | 0.709 | 0.454 |
| 0.279 | 0.283 | 0.000 | 0.000 | 0.991 | 0.994 |
| 0.839 | 1.150 | −1.140 | −1.003 | 3.736 | 8.396 |
| 17.710 | 18.920 | 0.024 | 0.000 | 71.237 | 82.237 |
| 22.053 | 23.041 | 0.026 | 0.016 | 90.982 | 90.785 |

The release of the new standard makes DEPTH_QUALITATIVE more normally distributed. DEPTH_QUANTITATIVE remains skewed.

Interestingly, the mean values of QUANTITY_ofr (3.130 and 4.945 in 2005 and 2006, respectively) and QUANTITY_tot (5.441 and 6.037 in 2005 and 2006, respectively) demonstrate that before the publication of the standard, 57.5% of the risk information was provided in the operating and financial reviews of the firms. The new standard increases this ratio to 81.9%.[16]

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[16] Entwistle (1999) uses content analysis to examine the location of the R&D disclosures contained in 113 Toronto Stock Exchange-listed firms' annual reports. He documents that 22.7% of total R&D disclosure is located in the management discussion and analysis section.

Overall, in line with the hypothesis, we demonstrate that there has been a significant improvement in firms' disclosure quality indicators in 2006 compared to 2005. [17] The results consistently show that improvement in the indicators derives from the quality increases in firms' operating and financial reviews. In contrast, quality has remained invariable in the other sections of the annual reports. [18] The values for every indicator of risk disclosure quality in firms' operating and financial reviews are higher after the release of the standard. For example, the mean (median) value of the composite measure of quality of risk disclosure in the operating and financial reviews of the firms has increased from 0.532 (0.417) to 1.059 (1.059) in 2006 (see COMPOSITE_ofr in Table 2). [19]

For comparison, we also code the illustrative risk disclosure examples that are given in the disclosure standard. The index values for QUANTITY, COVERAGE, DEPTH_QUALITATIVE, DEPTH_QUANTITATIVE, and OUTLOOK_PROFILE are 6.967, 0.676, 2.944, 2.303, and 3.045, respectively. Index values for the best discloser of the sample after the release of the standard are 6.966, 0.929, 2.996, 2.079, and 3.555, respectively. Hence, the risk disclosure example ranks high in the quality comparison against the best risk reports. This finding provides evidence that our indicators of quality capture those issues that are emphasized in the standard.

## 5. Empirical results

### 5.1. Correlation analysis

The correlation coefficients between the quality indicators (computed from all risk reviews) and STANDARD are provided in Table 3. The results demonstrate that QUANTITY correlates positively and significantly with the other empirical indicators of risk disclosure quality. This finding is consistent with the view that quality of risk disclosure is at least partly a function of risk disclosure quantity. QUANTITY and COVERAGE are highly correlated, which suggests that firms that provide more risk

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[17] One should note that while the median values of some variables (e.g., DEPTH_QUANTITATIVE_tot) are zero for both years 2005 and 2006, the Wilcoxon test between the years nevertheless suggests that the pairwise differences are not symmetrically distributed. The reason for these apparently contradictory results is that observations with zero differences between the years are eliminated from the Wilcoxon test.

[18] There are altogether four firms that do not provide any risk information in 2005 annual reports. One of these does not give any risk information in the 2006 annual report either. More interestingly, there are altogether 30 firms that do not provide any risk information in their 2005 operating and financial reviews (OFR) but 26 of them begin to report their risks in OFR after the release of the new rule. The (untabulated) results of the logistic regression analysis (dependent variable: a firm discloses risks in OFR=1, a firm does not disclose risks in OFR=0) demonstrate that the most significant driver behind this policy change is STANDARD. P/B, GLOBA, and BETA also increase the probability of risk disclosure in OFR whereas FOROWN decreases it.

[19] The level of the reporting incentives has remained relatively stable during the sample period. However, the results suggest that the sample firms are significantly larger, more highly valued, and more extensively owned by foreign owners in 2006.

Table 3
Correlation matrix.

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1. Quantity | | 0.550∗ | 0.698∗ | 0.548∗ | 0.875∗ | 0.894∗ | 0.219∗ |
| 2. Coverage | 0.637∗ | | 0.480∗ | 0.289∗ | 0.594∗ | 0.686∗ | 0.264∗ |
| 3. Depth_qualitative | 0.585∗ | 0.448∗ | | 0.496∗ | 0.606∗ | 0.829∗ | 0.148∗ |
| 4. Depth_quantitative | 0.475∗ | 0.254∗ | 0.522∗ | | 0.564∗ | 0.705∗ | 0.083 |
| 5. Outlook_profile | 0.758∗ | 0.609∗ | 0.595∗ | 0.557∗ | | 0.891∗ | 0.177∗ |
| 6. Composite | 0.800∗ | 0.658∗ | 0.833∗ | 0.775∗ | 0.868∗ | | 0.227∗ |
| 7. Standard | 0.221∗ | 0.276∗ | 0.130 | 0.067 | 0.189∗ | 0.194∗ | |

Correlation coefficients between the disclosure quality indicators and standard (n=198). Quality indicators are computed from all overall risk reviews which are provided in the annual report of the firm. The Pearson correlation estimates are presented below the diagonal and the Spearman rank correlation coefficients found above the diagonal. For variable definitions, see Table 1.

∗ Denotes correlation coefficients significant at 5% or better.

information also discuss several risk topics. With reference to the semantic properties of risk disclosure, QUANTITY is most strongly correlated with OUTLOOK_PROFILE. This implies that a firm disclosing a high level of risk information releases more information on its actions to reduce the risks than it does on the economic impact that the identified risk could have on future performance.

COMPOSITE has a high positive correlation with the quality indicators. This is consistent with the results of the factor analysis, which showed that all disclosure quality indicators have relatively high positive factor loadings.[20] Evidently, if we aim to analyze quality of risk disclosure comprehensively, we should take all indicators into consideration. STANDARD correlates positively and significantly with most disclosure quality indicators. However, DEPTH_QUALITATIVE and DEPTH_QUANTITATIVE have non-significant positive Pearson correlation coefficients.[21]

## 5.2. Impact of the standard on quality of risk disclosure

Table 4 depicts the regression results for the determinants of different quality dimensions in the annual reports of the firms. In terms of F-values, the overall findings

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[20] The factor loadings for QUANTITY, COVERAGE, OUTLOOK_PROFILE, DEPTH_QUALITATIVE, and DEPTH_QUANTITATIVE are 0.942, 0.932, 0.958, 0.881, and 0.748, respectively. The first factor explains 80.2% of the total variance of the individual disclosure quality indicators.

[21] The (untabulated) correlation analysis of the independent variables of the regression equations reveals that the highest Pearson correlation coefficient is between EXFIN and LEVERAGE (0.734). Although the corresponding Spearman rank correlation is much lower (0.310), the result suggests a possible multicollinearity problem. Hence, we conduct a multicollinearity analysis and document the highest variance inflation factors (VIF) for LEVERAGE, DEV(CF.), and EXFIN (3.041, 2.925 and 2.801, respectively). Other variables have clearly lower VIF-values. Hence, multicollinearity cannot be expected to be a serious problem in the reported regressions.

Table 4
Regression results for the different quality dimensions of risk disclosure (n=198).

| | Predicted | Quantity | | Coverage | | Depth_qualitative | | Depth_quantitative | | Outlook_profile | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Coeff | P-value | Coeff | P-value | Coeff | P-value | Coeff | P-value | Coeff | P-value |
| Intercept | ? | **4.479** | 0.000 | **0.449** | 0.000 | −0.168 | 0.659 | −0.600 | 0.135 | 0.270 | 0.678 |
| Regulation: | | | | | | | | | | | |
| Standard | + | **0.518** | 0.000 | **0.111** | 0.000 | **0.231** | 0.001 | **0.095** | 0.057 | **0.422** | 0.000 |
| Reporting incentives: | | | | | | | | | | | |
| Size | + | **0.315** | 0.001 | **0.019** | 0.088 | **0.174** | 0.001 | **0.141** | 0.021 | **0.267** | 0.001 |
| ROA | ? | **−1.397** | 0.028 | **−0.160** | 0.059 | −0.267 | 0.483 | **−0.792** | 0.077 | **−1.371** | 0.046 |
| P/B | + | **0.130** | 0.040 | **0.021** | 0.023 | 0.031 | 0.226 | 0.018 | 0.334 | 0.077 | 0.123 |
| Exfin | + | 0.145 | 0.136 | 0.003 | 0.452 | 0.041 | 0.243 | −0.101 | 0.113 | −0.042 | 0.659 |
| F_listing | + | **0.967** | 0.041 | **0.119** | 0.080 | **2.178** | 0.000 | **1.438** | 0.023 | 0.873 | 0.130 |
| Leverage | − | −1.485 | 0.022 | 0.081 | 0.549 | −0.373 | 0.198 | 0.285 | 0.460 | −0.025 | 0.487 |
| Dev(Cf.) | + | 1.832 | 0.155 | 0.019 | 0.479 | 0.604 | 0.324 | 1.195 | 0.226 | 1.725 | 0.189 |
| Globa | + | 0.512 | 0.119 | **0.117** | 0.069 | 0.009 | 0.489 | 0.205 | 0.228 | 0.400 | 0.198 |
| Beta | + | **0.247** | 0.013 | 0.018 | 0.187 | **0.081** | 0.087 | −0.018 | 0.740 | **0.164** | 0.038 |
| Clshs | − | −0.004 | 0.235 | 0.000 | 0.434 | 0.005 | 0.246 | 0.001 | 0.788 | 0.005 | 0.391 |
| ForOwn | ? | −0.010 | 0.321 | −0.002 | 0.150 | −0.006 | 0.179 | −0.005 | 0.225 | −0.010 | 0.118 |
| Industry fixed effects | | Included | | Included | | Included | | Included | | Included | |
| Model F-value (prob) | | 6.140 (.000) | | 2.490 (.002) | | 7.100 (.000) | | 3.640 (.000) | | 3.100 (.000) | |
| Adj.R-square | | 0.295 | | 0.108 | | 0.331 | | 0.177 | | 0.146 | |
| No. of obs | | 198 | | 198 | | 198 | | 198 | | 198 | |

For variable definitions, see Table 1. Quality indicators are computed from all overall risk reviews which are provided in the annual report of the firm. Regression coefficients significant at 10% or better are shown in **boldface**. One-tailed test is applied if there is a predicted direction and two-tailed test otherwise. P-values of parameter estimates are computed from the heteroskedasticity robust standard errors clustered at the firm level (see Petersen, 2009).

indicate that all five regressions are statistically highly significant. The adjusted R-squares range from 10.8% to 33.1%.[22]

Consistent with the hypothesis, the results demonstrate that the new risk disclosure standard has increased firms' quality of disclosure. STANDARD has a positive and significant regression coefficient in every regression model. However, in the DEPTH_QUANTITATIVE model, the coefficient is less significant than it is in the other models. The results provide evidence that firms' risk reviews have been more extensive and also have provided more evenly distributed information across risk categories during the post-standard period. Furthermore, firms have disclosed more qualitative and quantitative information on the economic impact of the identified risk on future performance. Firms have also provided more information about their actions and the programs they plan to face risks. The current literature reports that many firms are reluctant to provide monetary assessments of risk information (Beretta & Bozzolan, 2004; Dobler et al., 2011; Linsley & Shrives, 2006). We find that the impact of the standard on firms' disclosure quality is weaker when it comes to the reporting of quantitative information on risks.

## 5.3. Managers' reporting incentives and risk disclosure

Dobler (2008) and Dobler et al. (2011) suggest that disclosure motives have a significant role even in regulated risk disclosure environments. Table 4 shows several significant reporting incentives for risk disclosure. SIZE is significantly and positively associated with every disclosure quality dimension. This finding provides evidence that larger firms not only focus on providing a high level of risk information but also consider its substance in regard to investors. The positive association between size and disclosure is consistent with prior corporate disclosure literature in general (e.g., Brammer & Pavelin, 2006; Cooke, 1989; Lang & Lundholm, 1993), and the risk disclosure literature in particular (Dobler et al., 2011; Linsley & Shrives, 2006).[23] Larger firms are expected to suffer more from political costs (Watts & Zimmerman, 1978), which may increase their responsiveness to new disclosure standards.

We document that poorly performing firms (ROA) outperform more profitable firms in risk disclosure. They provide much information on actions taken and programs planned to face their identified risks (OUTLOOK_PROFILE model). In addition, the coverage of information is better and risk reports include more information provided in monetary terms (COVERAGE and DEPTH_QUANTITATIVE models). Previous literature provides contradictory interpretations for the impact of profitability on corporate disclosure (e.g., Leuz, 2000; Prencipe, 2004; Troberg, Kinnunen, & Seppänen, 2010). This study is the first to provide evidence on this relationship in a risk disclosure context.

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[22] In Beretta and Bozzolan (2004), the adjusted R-square of the quality model is 14.4%. In Abraham and Cox (2007), the adjusted R-square of the overall risk disclosure model is 42.0%.
[23] Beretta and Bozzolan (2004) document a non-significant regression coefficient for firm size in their risk-disclosure quality study. One explanation for this result may be that the Italian institutional setting differs from the Finnish one.

Firms with high growth prospects (P/B) provide a high level of risk information, which is evenly distributed across different risk categories.[24] Our conjecture is that investors have high future growth expectations for firms with high price-to-book ratios. This increases pressures to meet these expectations and motivates firms to avoid adverse selection problems through high quality risk reports (cf., Kanto & Schadewitz, 1997).

Interestingly, listing on the NYSE (F_LISTING) has a strong positive impact on firms' descriptions of the economic impact of the identified risks on future performance (DEPTH_QUALITATIVE and DEPTH_QUANTITATIVE). Cooke (1989) has shown that listing status influences corporate disclosure levels. Our findings suggest that firms listed on the NYSE outperform domestically listed firms in regard to the substance of the information they provide. This may be explained by higher capital market pressures for high quality disclosures by firms that have been forced to provide disclosures under the reporting requirements of the SEC.

Capital structure (LEVERAGE) relates negatively to risk disclosure quantity. One interpretation for why highly leveraged firms are reluctant to be risk transparent is that leverage increases risk of bankruptcy. By providing little risk information to investors and lenders, the manager of the highly leveraged firm may well be trying to conceal the vulnerability of the firm to the realization of strategic, operational, financial, or damage risks. Another explanation is that highly leveraged firms do not want to reveal their proprietary information. The negative association between corporate disclosure and financial leverage aligns with the prior literature (e.g., Dobler et al., 2011; Eng & Mak, 2003; Meek, Roberts, & Gray, 1995; Healy & Palepu, 1993; Troberg et al., 2010; Verrecchia, 1983).

The positive and significant regression coefficient of BETA in three of the five models demonstrates that firms with higher systematic risk provide more risk information. They also transparently disclose the actions they take and the programs they plan to face their risks. These firms also provide qualitative information on the impact of these risks.[25]

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[24]  P/B becomes slightly non-significant in the QUANTITY model after we replace the four negative observations of the variable with 0. In the COVERAGE model the variable remains positive and significant.

[25]  Following Linsley and Shrives (2006), the analysis computes beta from the returns of the preceding 12 months before the publication of the risk information. The risk-free return has been subtracted from the share return and market index return. The risk-free return is the monthly return computed from the three month Euribor rate taking into account the effects of compound interest. The MSCI Europe Index has been used as the market index. Morgan Stanley Capital International Europe Index is a weighted benchmark index made up of equities from 15 European countries. We obtain qualitatively similar results when OMXH Cap is used as the market index. OMXH Cap is a benchmark index made up of equities listed at the OMXH Helsinki in which the highest weight for a share is 10%. However, the time series applied in the computation of BETA influences the results. The positive sign of the variable is no longer significant if it is computed starting from the beginning of 2002. The beginning of 2002 has been selected as the starting point because the stock markets were very volatile in 2000–2001 after the crash of the information technology bubble. Consequently, the results provide some evidence that firms react to increases in their short-term systematic risk. If systematic risk increases, managers may be motivated to pacify their shareholders by providing additional risk information in the capital markets. The results supplement the findings of Linsley and Shrives (2006) who do not find any relation between market beta and risk disclosure.

5.4. Comparison between the standard, managers' reporting incentives, and firms' corporate governance structures as a determinant of risk disclosure quality

In Table 5, we reduce our disclosure quality indicators to a composite measure that reflect firms' overall quality of risk disclosure. The adjusted R-square of the model is 27.7%. STANDARD, SIZE, ROA, and F_LISTING are the most significant variables in this model. The standardized regression coefficients for these variables are 0.173, 0.423, −0.135, and 0.332, respectively.[26] This finding provides evidence that firm size and listing on NYSE are the most significant determinants of the quality of risk disclosure.[27] Interestingly, the results for the (untabulated) yearly samples demonstrate that ROA becomes highly significant in 2006, which suggests that the impact of the new disclosure standard on firms' reporting may be partly determined by firms' profitability.[28]

To obtain further insight on the interaction between the reporting standard, incentives, and corporate governance factors, we augment our COMPOSITE model with several interaction variables. The results demonstrate that the regression coefficient of ROA * STANDARD is negative and significant. Other interaction variables are non-significant.

Finally, we conduct a subsample analysis to examine in more detail whether the relation between the quality of risk disclosure and standard varies linearly with profitability. Table 6 shows regression results for two subsamples: firms with high profitability and with low profitability.[29] The adjusted R-squares of the models are 14.9% and 43.6%, respectively. STANDARD is positive and significant among both subsamples, which is consistent with the view that the regressions results concerning the impact of the standard on quality are robust across firms' profitability. However, the high significance of STANDARD among the less profitable firms suggests that the impact of the standard on

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[26] ForOwn has a relatively high negative standardized regression coefficient that is significant at the 10% significance level. This finding may imply that firms with high percentage of foreign owners prefer having mutual meetings with their shareholders to providing risk disclosure in annual reports.

[27] The (untabulated) results document that SIZE and F_LISTING are also the most important drivers of the reporting of quantitative risk information as measured by their standardized regression coefficients (see Table 4).

[28] The F-value of the Chow test is 0.30 (sig. 0.997). Consequently, there is no structural change in the relationship between quality of risk disclosure and reporting incentives between the sample years. In 2005, the unstandardized (standardized) regression coefficient and its significance for ROA are −0.160(−0.053) and 0.514, respectively. In 2006 they are −1.218(−0.315) and 0.002, respectively. The sign and significance of the other variables remains qualitatively similar in both years. SIZE and F_LISTING are the most important drivers of the overall quality of risk disclosure also in the yearly samples. In addition, we augment our pooled regression with a continuous variable for percentage change in profitability (ChROA) between 2005 and 2006, and document that the regression coefficient of the variable is negative and non-significant (coef. −0.017, two-tail sig. 0.199). The main results remain unchanged. The result suggests that the level of profitability (ROA) is a more significant determinant of quality than change in profitability (ChROA).

[29] The subsamples are formed based on firms' profitability at the end of 2005. This makes it possible to use paired data in the pooled regressions and hence, effectively control the impact of potentially omitted variables. High(low) profitability subsample consists of 49(50) firms that have highest(lowest) profitability in 2005. In the high-profitability subsample, the descriptive statistics for ROA are as follows: mean=0.144, median=0.125, standard deviation=0.132, minimum=−0.181, maximum=1.250. In the low-profitability subsample, the descriptive statistics for ROA are as follows: mean=0.011, median=0.048, standard deviation=0.121, minimum=−0.759, maximum=0.184.

Table 5
Regression results for the overall quality of risk disclosure (n = 198).

| Dependent variable = Composite | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Unstand. | Stand. | | | Unstand. | Stand. | |
| | Predicted | coeff | coeff | P-value | coeff | coeff | P-value |
| Intercept | ? | 0.245 | | 0.228 | 0.336 | | 0.115 |
| Regulation: | | | | | | | |
| Standard | + | **0.166** | **0.173** | 0.000 | **0.282** | **0.294** | 0.072 |
| Reporting incentives: | | | | | | | |
| Size | + | **0.104** | **0.423** | 0.001 | **0.112** | **0.457** | 0.002 |
| ROA | ? | **−0.455** | **−0.135** | 0.014 | −0.183 | −0.054 | 0.416 |
| P/B | + | **0.030** | **0.131** | 0.096 | 0.034 | 0.149 | 0.105 |
| Exfin | + | −0.009 | −0.024 | 0.776 | 0.032 | 0.084 | 0.212 |
| F_listing | + | **0.809** | **0.332** | 0.001 | **0.815** | **0.335** | 0.003 |
| Leverage | − | −0.040 | −0.022 | 0.431 | −0.218 | −0.119 | 0.224 |
| Dev(Cf.) | + | 0.586 | 0.088 | 0.201 | 0.683 | 0.102 | 0.210 |
| Globa | + | 0.148 | 0.086 | 0.192 | 0.157 | 0.092 | 0.221 |
| Beta | + | **0.045** | **0.094** | 0.086 | 0.061 | 0.128 | 0.143 |
| Clshs | − | 0.001 | 0.050 | 0.494 | 0.002 | 0.069 | 0.432 |
| ForOwn | ? | **−0.004** | **−0.198** | 0.098 | −0.005 | −0.218 | 0.124 |
| Size * Standard | ? | – | | – | −0.011 | −0.073 | 0.688 |
| ROA * Standard | ? | – | | – | **−0.946** | **−0.174** | 0.026 |
| P/B * Standard | ? | – | | – | −0.006 | −0.027 | 0.731 |
| Exfin * Standard | ? | – | | – | −0.308 | −0.052 | 0.282 |
| F_listing * Standard | ? | – | | – | −0.027 | −0.008 | 0.835 |
| Leverage * Standard | ? | – | | – | 0.130 | 0.082 | 0.605 |
| Dev(Cf.) * Standard | ? | – | | – | −0.476 | −0.053 | 0.592 |
| Globa * Standard | ? | – | | – | 0.043 | 0.028 | 0.778 |
| Beta * Standard | ? | – | | – | −0.020 | −0.042 | 0.742 |
| Clshs * Standard | ? | – | | – | −0.001 | −0.026 | 0.756 |
| ForOwn * Standard | ? | – | | – | 0.001 | 0.034 | 0.697 |
| Industry fixed effects | | Included | | | Included | | |
| Model F-value (prob) | | 5.710 (.000) | | | 3.410 (.000) | | |
| Adj.R-square | | 0.277 | | | 0.248 | | |
| No. of obs | | 198 | | | 198 | | |

For variable definitions, see Table 1. Composite is computed from all overall risk reviews, which are provided in the annual report of the firm. The unstandardized and standardized regression coefficients are reported. Regression coefficients significant at 10% or better are shown in **boldface**. One-tailed test is applied if there is a predicted direction and two-tailed test otherwise. P-values of parameter estimates are computed from the heteroskedasticity robust standard errors clustered at the firm level (see Petersen, 2009).

quality may be more pronounced among these firms.[30] Furthermore, the results suggest that the negative relation between profitability and the quality of risk disclosure may not be linear. This can be inferred from the negative and significant (non-significant) regression

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[30] We also run the subsample regressions augmented with a continuous variable for percentage change in profitability (ChROA) between 2005 and 2006. The main results remain unchanged. The unstandardized regression coefficient of ChROA and its p-value for the high profitability subsample in 2005 are −0.105 and 0.225 (two-tail), respectively. In the low profitability subsample the corresponding values are −0.017 and 0.126 (two-tail), respectively. The result is consistent with the view that the level of profitability (ROA) is a more significant determinant of quality than change in profitability (ChROA).

Table 6
Regression results for the firms with high and low profitability (n=98 and 100, respectively).

| Dependent variable=Composite | | High profitability | | | Low profitability | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | Unstand. | Stand. | | Unstand. | Stand. | |
| | Predicted | coeff | coeff | P-value | coeff | coeff | P-value |
| Intercept | ? | −0.002 | | 0.993 | 0.860 | | 0.294 |
| Regulation: | | | | | | | |
| Standard | + | **0.106** | **0.117** | 0.023 | **0.206** | **0.205** | 0.000 |
| Reporting incentives: | | | | | | | |
| Size | + | **0.143** | **0.548** | 0.002 | **0.114** | **0.485** | 0.002 |
| ROA | ? | **−0.530** | **−0.153** | 0.006 | −0.156 | −0.037 | 0.707 |
| P/B | + | 0.029 | 0.100 | 0.239 | 0.036 | 0.148 | 0.166 |
| Exfin | + | −0.212 | −0.049 | 0.529 | −0.002 | −0.009 | 0.956 |
| F_listing | + | −0.134 | −0.042 | 0.633 | **1.063** | **0.503** | 0.000 |
| Leverage | − | 0.269 | 0.084 | 0.485 | −0.269 | −0.168 | 0.159 |
| Dev(Cf.) | + | 0.006 | 0.001 | 0.498 | **1.921** | **0.345** | 0.015 |
| Globa | + | 0.038 | 0.022 | 0.436 | **0.422** | **0.244** | 0.042 |
| Beta | + | 0.055 | 0.102 | 0.168 | 0.037 | 0.083 | 0.175 |
| Clshs | − | 0.001 | 0.034 | 0.792 | 0.003 | 0.104 | 0.343 |
| ForOwn | ? | −0.006 | −0.281 | 0.158 | −0.003 | −0.156 | 0.224 |
| Industry fixed effects | | Included | | | Included | | |
| Model F-value (prob) | | 2.060 (.018) | | | 5.780 (.000) | | |
| Adj.R-square | | 0.149 | | | 0.436 | | |
| No. of obs | | 98 | | | 100 | | |

For variable definitions, see Table 1. Composite is computed from all overall risk reviews, which are provided in the annual report of the firm. The unstandardized and standardized regression coefficients are reported. Regression coefficients significant at 10% or better are shown in **boldface**. One-tailed test is applied if there is a predicted direction and two-tailed test otherwise. P-values of parameter estimates are computed from the heteroskedasticity robust standard errors clustered at the firm level (see Petersen, 2009). The subsamples are formed based on firms' profitability at the end of 2005. High(low) profitability subsample consists of 49(50) firms that have highest(lowest) profitability in 2005.

coefficient of ROA in the high (low) profitability subsample. Interestingly, the empirical measures of business risk (DEV(CF.) and GLOBA) are positively and significantly associated with the quality of risk disclosure only among the less profitable firms. This result suggests that high business risk may increase pressures for high-quality risk reporting, if the profitability of the firm is low (cf., Cahan et al., 2005; Jorgensen & Kirschenheiter, 2003).[31]

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[31] We also conduct a subsample analysis for larger and smaller firms by using median as the cut-off point. The (untabulated) results show that the regression coefficient of SIZE is positive and significant in both models. In addition, STANDARD is positively and very significantly associated with the quality of risk disclosure in both subgroups. These findings are robust to those reported in Tables 4 and 5. The positive relation between firm size and the quality of risk disclosure is linear, and the impact of the standard on quality is not dependent on firm size.

*5.5. Impact of the standard on the location of risk disclosure*

To obtain further evidence on the quality impact of the new standard, we compare the determinants of different quality dimensions in the operating and financial reviews (OFR) and other sections (OTHER) of the annual reports. After the new standard was released, the percent of risk information in OFR increased from 57.5 to 81.9 (see Table 2). If we consider this increase, we can conclude that it became the main medium for risk disclosure. The (untabulated) results reinforce that STANDARD is a highly significant determinant of the quality of risk disclosure in every OFR model. In contrast, the variable is non-significant in all OTHER models. This result suggests that the increase in firms' quality of risk disclosure is driven by the quality changes in their operating and financial reviews.[32]

In particular, the new standard has been effective at increasing smaller firms' risk disclosure in OFR. This can be inferred from the non-significant regression coefficients of SIZE in the OFR models. SIZE is positive and significant in every OTHER model, which suggests that the higher overall quality of risk disclosure of larger firms found in this study derives from the risk information provided outside the firms' operating and financial reviews. In contrast, smaller firms have disclosed their risks primarily in their operating and financial reviews.[33]

To conclude, the results provide evidence that the new disclosure standard improves the quality of risk disclosure on several dimensions. Previous literature reports that the SEC was able to improve the quality of firms' market risk disclosures through a detailed and extensive disclosure standard FRR No. 48 (Roulstone, 1999). On the contrary, the SEC was not satisfied with firms' willingness to respond to its requirement to give overall risk reviews from 2005 onwards. We demonstrate that the Finnish Accounting Practice Board succeeded in influencing the quality of firms' overall risk reviews by releasing a detailed standard supplemented with illustrative disclosure examples. Our results contribute the extant accounting literature by providing answers that narrow the research gap documented by Beretta and Bozzolan (2004): What is the impact of risk disclosure regulation on quality?

## 6. Robustness checks

After conducting the primary tests reported above, we performed some additional tests. At the end of 2004, the Finnish Accounting Act was amended to include a requirement to

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[32] Interestingly, the adjusted R-square of DEPTH_QUANTITATIVE model is higher for disclosures released in OTHER than in OFR (cf., 14.80 vs. 9.70). This finding coupled with the significant regression coefficients of SIZE and F_LISTING in the OTHER model imply that larger firms and firms reporting under the requirements of the SEC prefer to provide quantitative risk information outside the operating and financial reviews.

[33] An interesting case is a Finnish pulp industry company that provides in depth risk information for both years. In 2005, this information is provided in its operating and financial reviews. In 2006, however, after the release of the standard, the company changed the location of the information to the other sections of its annual report. The behavior of the firm is contrary to what would be expected. The reason for this behavior was sought later from their investor relations manager. She replied that the firm wanted to increase the readability of its operating and financial review by removing a long risk disclosure section from it. Consequently, the firm provided different operating and financial review for the investors and authorities. The one sent to authorities included risk disclosures as required by the Finnish Accounting Act. However, next year, the auditor of the firm required it to discontinue this policy.

give an extensive and balanced description of firms' significant risks in their operating and financial reviews (OFR). The requirement was one sentence and hence did not provide any implementation guidance to firms. The new risk disclosure standard (examined in this paper) gave the needed guidance. It was published on September 2006. Any further version of the new standard was not released before the actual date and hence, firms were unable to adopt it early. Some chief financial officers and auditors were aware of its preparation but they did not know its content.

The amendment of the Accounting Act probably influenced some firms' risk reporting in 2005 OFR. Hence, we compare risk disclosures in 2004 and 2005 and find that in 2004 (2005) three (69) firms provide some risk information in OFR. The (untabulated) results of the logistic regression analysis (dependent variable: a firm discloses risks in OFR = 1, a firm does not disclose risks in OFR = 0) reinforce the finding that firms have significantly increased risk disclosures in the 2005 OFR compared to 2004. This finding suggests that many firms react to the new but ambiguous risk disclosure requirement of the Accounting Act. Next, we examine whether the quality of OFR risk disclosure of these 69 firms improves from 2005 to 2006. The (untabulated) results of the regression analysis show that STANDARD is positively and significantly associated with all quality dimensions examined in the main tests. This finding provides evidence that the new risk disclosure requirement of the Accounting Act do not improve the quality of firms' risk reports. On the contrary, the new risk disclosure standard is effective in increasing reporting quality.

In accordance with the approach applied by Abraham and Cox (2007), we check that our results are not driven by any sample selectivity biases.[34] We compute the Tobit model by using COMPOSITE as the endogenous variable. The lower bound is set at zero because altogether five observations obtain zero disclosure points. The results demonstrate that the positive impact of the standard on risk reporting is significant, as was documented in the main analyses. In addition, the significance of the other explanatory factors is qualitatively similar to the main tests.

This study conducts detailed analyses (untabulated) to account for the impact of possible outlier variables on the results. First, all continuous independent variables are winsorized at the 1% level at each tail of the distribution. Second, firm-years falling outside three standard deviations from the mean of any variable are eliminated. In both robustness models, the economic significance of STANDARD increases from the results reported in Table 5. ROA becomes slightly non-significant but ROA * STANDARD is negative and significant in both cases.

In addition, we examine the robustness of the applied disclosure quality indicators (untabulated). First, we use absolute values of risk disclosure words and sentences instead of using the logarithms.[35] STANDARD is a positive and significant determinant of risk

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[34] In the majority of corporate disclosure studies the empirical indicator for corporate disclosure is regressed on independent variables by applying ordinary least squares (OLS) estimations (e.g., Cooke, 1989; Botosan, 1997; Prencipe, 2004; Cahan, Rahman, & Perera, 2005; Zechman, 2010). The drawback of the approach is that the propensity to disclose is a censored variable in the sense that it cannot take a negative value (see Abraham & Cox, 2007, p. 238). In this situation ordinary least squares (OLS) estimations would introduce sample selectivity biases and therefore the use of a truncated regression technique is necessitated to avoid the biased and inconsistent parameter estimates that can be associated with OLS estimation. A common solution to the problem is to use a Tobit model.

[35] This has been done for QUANTITY, DEPTH_QUANTITATIVE, DEPTH_QUALITATIVE, and OUTLOOK_PROFILE (see Table 4).

disclosure in each of the four models. Second, we scale the disclosure scores of the firms by dividing them with the maximum absolute value of the examined disclosure quality indicator.[36] In this case, STANDARD is positive and significant in all models except the QUANTITY model.

Third, we examine whether the risk disclosure standard has increased the frequency of sentences that contain sensitivity analysis about the impact of risks on net income.[37] In this model, STANDARD is positive and weakly significant (coef. 0.023, one-tail sig. 0.072). Consistent with the results reported in Table 4 for DEPTH_QUANTITATIVE, firm size and listing on the NYSE are the most important determinants of the number of sensitivity analyses. These findings support the interpretation that highly relevant risk information for investors is more likely to be determined by firm size and capital market pressures than the risk disclosure standard. However, the results of this paper suggest that the standard has had some role in improving the extent of quantitative risk information provided to investors.

Finally, risk disclosure quantity on strategic risks is used as an additional empirical indicator of quality of risk disclosure.[38] Strategic risks are interesting for investors because strategic issues largely determine the future potential of the firm. In addition, strategic risks differ from financial risks because they cannot be hedged. Table 7 reports regression results for the determinants of disclosure on strategic risks. The results support the previous findings by showing that the risk disclosure standard has had a positive impact on firms' disclosure behavior. The standard has increased disclosure on strategic risks in firms' operating and financial reviews, as can be seen from the significant regression coefficient of STANDARD in the OFR model. It is likely that in addition to the coercive effect of the standard, the standard's examples and detailed descriptions of strategic risk disclosures have helped firms to understand better the nature of this important disclosure topic. Moreover, F_LISTING is a significant variable in the regressions, which suggests that the reporting requirements of the SEC (20-F reports) have a positive influence on firms' reporting on strategic risks. Other significant variables are SIZE, DEV(CF.), and FOROWN.

Lastly, we examine whether the quality improvements in risk disclosures around the introduction of the standard are permanent (results untabulated). We analyze risk disclosures in firms' 2007 and 2008 annual reports, and we compute two empirical indicators for quality, QUANTITY and COVERAGE. The results of the *t*-tests for paired samples demonstrate that increases in the quantity of risk disclosure are significant in 2007 and 2008. On the contrary, the coverage of information is not significantly higher in 2007 and 2008 than it was in 2006.[39] We also test whether top 10% of firms in disclosure

[36] We have done this for all variables reported in Table 4.
[37] Every sentence and row in a table in which a firm provides some sensitivity analyses about the impact of the identified risk on net income is awarded 1 point. The natural logarithm of the number of disclosure points is used as the dependent variable in the OLS regression tests.
[38] Strategic risks are one of the five main risk topics analyzed in this study. Hence, reporting on strategic risks also influences the disclosure indicators examined in the main analyses.
[39] The standard deviation of firms' yearly disclosures decreases from 2005 onwards but clear saturation point can be observed around 2007 and 2008. Yearly (2005, 2006, 2007, and 2008) values of standard deviation for QUANTITY are 1.526, 1.080, 1.018, and 1.015, respectively. For COVERAGE, they are 0.224, 0.183, 0.146, and 0.159, respectively.

Table 7
Regression results for the determinants of disclosure about strategic risks (n = 198).

| | Predicted | Strategic ofr | | Strategic other | | Strategic total | |
|---|---|---|---|---|---|---|---|
| | | Coeff | P-value | Coeff | P-value | Coeff | P-value |
| Intercept | ? | **3.568** | 0.001 | **−2.369** | 0.023 | 1.698 | 0.131 |
| Regulation: | | | | | | | |
| Standard | ofr/total:+ other:? | **1.506** | 0.000 | 0.089 | 0.674 | **1.165** | 0.000 |
| Reporting incentives: | | | | | | | |
| Size | + | 0.009 | 0.472 | **0.754** | 0.000 | **0.488** | 0.00 |
| ROA | ? | −0.180 | 0.881 | −0.552 | 0.589 | −0.334 | 0.835 |
| P/B | + | −0.002 | 0.978 | 0.067 | 0.261 | 0.000 | 0.999 |
| Exfin | + | −0.015 | 0.929 | −0.203 | 0.212 | −0.160 | 0.360 |
| F_listing | + | **2.366** | 0.001 | **1.738** | 0.076 | **2.728** | 0.000 |
| Leverage | − | −0.862 | 0.205 | 0.501 | 0.642 | −0.676 | 0.292 |
| Dev(Cf.) | + | 1.463 | 0.356 | **5.204** | 0.077 | **5.911** | 0.069 |
| Globa | + | 0.500 | 0.241 | 0.142 | 0.430 | 0.435 | 0.287 |
| Beta | + | −0.026 | 0.859 | 0.113 | 0.252 | 0.061 | 0.338 |
| Clshs | − | −0.009 | 0.126 | 0.005 | 0.617 | −0.007 | 0.193 |
| ForOwn | ? | −0.017 | 0.128 | **−0.022** | 0.045 | **−0.028** | 0.010 |
| Industry fixed effects | | Included | | Included | | Included | |
| Model F-value (prob) | | 3.100 (.000) | | 3.540 (.000) | | 4.510 (.000) | |
| Adj.R-square | | 0.146 | | 0.171 | | 0.222 | |
| No. of obs | | 198 | | 198 | | 198 | |

*Strategic_ofr* is the natural logarithm of the total number of risk disclosure words about strategic risks in the operating and financial review of the firm. *Strategic_other* is the natural logarithm of the total number of risk disclosure words about strategic risks outside the operating and financial review of the firm. *Strategic_tot* is the natural logarithm of the total number of risk disclosure words about strategic risks in the annual report of the firm. Other variables are defined in Table 1. Regression coefficients significant at 10% or better are shown in **boldface**. One-tailed test is applied if there is a predicted direction and two-tailed test otherwise. P-values of parameter estimates are computed from the heteroskedasticity robust standard errors clustered at the firm level (see Petersen, 2009).

change in 2006 (separately for both indicators) remain at the same disclosure level in 2007 and 2008. The results document that these firms continue improvements in QUANTITY but COVERAGE remains at the same level in the subsequent years. The findings reported above suggest that compliance with the new standard is a learning process for the firms. Changes in quality are permanent but in some dimensions quality improvements continue after the initial introduction of the standard.

## 7. Summary and conclusions

This study examines whether a detailed national disclosure standard improves the quality of firms' overall risk reviews under IFRS. We examine quality of risk disclosure along several dimensions by applying the disclosure quality indicators provided in Beattie et al. (2004) and Beretta and Bozzolan (2004). Finland offers a unique institutional setting for the study because in 2006 the Finnish Accounting Practice Board published a new detailed risk disclosure standard that describes how firms should assess their significant risks in their operating and financial reviews.

The empirical results demonstrate that the risk disclosure standard improves Finnish listed firms' quality of risk disclosure across several dimensions. During the post-standard period, firms' risk reviews are more extensive and provide more evenly distributed information across risk categories. Firms also give more detailed qualitative descriptions of the economic impact of the identified risk on future performance and provide more information on actions taken and the programs planned to face their risks. Furthermore, the standard also increases firms' willingness to provide quantitative risk information albeit the effect is weaker than in the other quality dimensions.

Moreover, we construct a composite model for the overall quality of risk disclosure and find that the *coercive effect* of the standard drives the increases in quality. Other important determinants of quality are firm size, profitability, and listing on NYSE. Interestingly, we find some evidence that the impact of the standard on quality is more pronounced among less profitable firms. We also find that business risk significantly determines reporting quality among these firms. Finally, we demonstrate that the risk disclosure standard has a strong impact on the location of the risk information provided. After the release of the standard, 81.9% of risk disclosure is provided in the operating and financial reviews. In the previous year, the comparable number was 57.5%. Additional findings show that larger firms and firms reporting under the requirements of the SEC disclose more quantitative risk information, and that the quality improvements are permanent in the subsequent years.

This study contributes to the accounting literature by demonstrating that detailed risk disclosure guidance can be used to improve the quality of firms' overall risk reviews. In addition, we add to prior literature by providing evidence of the importance of several reporting incentives as a determinant of risk disclosure quality. The results have useful practical implications for standard-setters such as the FASB and the IASB, the SEC, and national regulatory bodies. They provide an example how the Finnish regulator has been able to increase the quality of risk reporting within a single country. In particular, the findings suggest that one clause of the law may not be effective enough to ensure transparent disclosure about abstract issues such as risks. Many firms need detailed descriptions of the required disclosures with illustrative examples. In addition to the coercive effect of detailed risk disclosure standards, they may also guide firms' reporting. The biggest challenge is to influence firms' willingness to report quantitative risk information, although many firms explicitly report that they have internally evaluated the impact of the risks and their probabilities.

The analyses and results reported here are based on observations in Finland, which has a rules-based accounting tradition. Consequently, the results should be generalizable to other countries with similar legal roots. However, because existing research reports high compliance and disclosure ratios for Finnish firms, the results may not be generalizable to countries with low compliance and disclosure ratios. One challenge for narrative disclosures in annual reports is that it is difficult to document their usefulness to investors. However, future research could try to examine more comprehensively the economic consequences of risk information from equity and debt investors' perspective.

## Acknowledgments

## Appendix A. Risk disclosure framework

This appendix summarizes the main topics and subtopics examined for risk disclosure. The basis for the classification of every subtopic derives from the Finnish risk disclosure standard. The risk disclosure framework applied has been made more comprehensive by adding a number of risk disclosure subtopics from the risk disclosure framework presented by Linsley and Shrives (2006). Finally, a subsample of annual reports has been pre-tested to uncover any missing subtopics for the examined risk categories.

1. Strategic risks
    a. Market competition
    b. Market areas
    c. Position in the production chain
    d. Dependence on customers
    e. Dependence on suppliers
    f. Changes in customer preferences
    g. Technological development (e.g. threat of competing commodities)
    h. Regulatory changes
    i. Political changes
    j. Economical changes
    k. Mergers and acquisitions
    l. Pricing
    m. Industry specific changes
    n. Launch of new products
    o. Business portfolio
    p. Life cycle (growth and profitability)
    q. Management
    r. Research and development

2. Operational risks
    a. Dependence on the know-how of the personnel
    b. Uncommon business fluctuations in demand

    c. Interruptions in the delivery chain
    d. Price fluctuations of the factors of production (e.g. raw materials)
    e. Patents and other industrial property rights
    f. Customer satisfaction
    g. Information technology risks
    h. Reputation and brand name development
    i. Stock obsolescence and shrinkage
    j. Product and service failure
    k. Environmental
    l. Health and safety
    m. Project deliveries
    n. Quality controls

3. Financial risks
    a. Interest rate
    b. Exchange rate
    c. Liquidity
    d. Credit
    e. Commodity

4. Damage risks
    a. Insurances
    b. Significant legal actions

5. Risk management
    a. Risk management policy
    b. Risk management organization

## Appendix B. Risk disclosure examples

This appendix demonstrates the scoring of the risk disclosure quality indicators. More detailed scoring principles are available from the authors upon request.

1) Quantity=ln (total number of risk disclosure words)
    A firm provides 500 words risk information

$$\rightarrow \text{Disclosure score} = \text{Quantity} = \ln(500) = 6.21.$$

2) Coverage=[(1/H)/the number of main risk topics]
    The risk information provided by Nokia Corporation in its 2006 operating and financial review can be divided across risk topics as follows:
    Strategic risks: 415 words
    Operational risks: 398 words
    Financial risks: 51 words

Damage risks: 68 words
Risk management: 0 words
(Total 932 words)

$$\rightarrow \text{Herfindahl index} = H = (415/932)^2 + (398/932)^2 + (51/932)^2 \\ + (68/932)^2 + (0/932)^2 = 0.389$$

$$\rightarrow \text{Disclosure score} = \text{Coverage} = (1/0.389)/5 = 0.51.$$

3) The semantic properties of risk disclosure
A) DEPTH_QUALITATIVE=ln (number of risk information sentences containing qualitative information about the expected economic impact of identified risk on future performance)
B) DEPTH_QUANTITATIVE=ln (number of risk information sentences containing quantitative information about the expected economic impact of identified risk on future performance)
C) OUTLOOK_PROFILE=ln (number of sentences containing information about actions taken or programs planned to face identified risk)

Ponsse Plc provides the following risk information in its 2006 operating and financial review: "Ponsse faces *substantial risks* relating to raw materials, components, and supplier network. To control these risks, the company has begun in 2005 a *supplier network development program*."

The expression "substantial risks" provides qualitative information about the expected economic impact of risks relating to raw material, components, and supplier network on future performance. Consequently, the firm is awarded 1 point in the scoring of DEPTH_QUALITATIVE indicator.

The expression "supplier network development program" provides information about actions taken to face identified risk. Consequently, the firm is awarded 1 point in the scoring of OUTLOOK_PROFILE indicator.

Scanfil Plc discloses the following risk information in its 2006 operating and financial review: "About *80% of the revenues* come from the sales to the six biggest customers from which *the share of the biggest customer is significant*."

The expressions "80% of the revenues" and "six biggest customers" provide quantitative information about the expected economic impact of the risk (high dependence on customers) on future performance. Consequently, the firm is awarded 1 point in the scoring of DEPTH_QUANTITATIVE indicator.

The expression "the share of the biggest customer is significant" gives qualitative information on the expected economic impact of the risk on future performance.

Consequently, the firm is awarded 1 point in the scoring of DEPTH_QUANTITATIVE indicator.

Stora Enso Corporation is awarded scores based on the quality of its overall risk reviews in 2006, as follows:

DEPTH_QUALITATIVE = 14 sentences

→ Disclosure score $= \ln(14) = 2.64$.

DEPTH_QUANTITATIVE = 42 sentences

→ Disclosure score $= \ln(42) = 3.74$

OUTLOOK_PROFILE = 29 sentences

→ Disclosure score $= \ln(29) = 3.37$.

# References

Abraham, S., & Cox, P. (2007). Analysing the determinants of narrative risk information in UK FTSE 100 annual reports. *The British Accounting Review*, *39*, 227–248.

Akerlof, G. (1970). The market for lemons: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, *84*, 488–500.

Ball, R., Robin, A., & Wu, J. S. (2003). Incentives versus standards: Properties of accounting income in four East Asian countries. *Journal of Accounting and Economics*, *36*(1–3), 235–270.

Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics*, *39*(1), 83–128.

Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*(3), 467–498.

Beattie, V., McInnes, B., & Fearnley, S. (2004). A methodology for analysing and evaluating narratives in annual reports: A comprehensive descriptive profile and metrics for disclosure quality attributes. *Accounting Forum*, *28*, 205–236.

Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting*, *39*(3), 265–288.

Beretta, S., & Bozzolan, S. (2008). Quality versus quantity: The case of forward-looking disclosure. *Journal of Accounting, Auditing and Finance*, *23*(3), 333–375.

Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, *72*(3), 323–349.

Botosan, C. A. (2004). Discussion of a framework for the analysis of firm risk communication. *The International Journal of Accounting*, *39*(3), 289–295.

Brammer, S., & Pavelin, S. (2006). Voluntary environmental disclosures by large UK companies. *Journal of Business Finance & Accounting*, *33*(7–8), 1168–1188.

Cahan, S. F., Rahman, A., & Perera, H. (2005). Global diversification and corporate disclosure. *Journal of International Accounting Research*, *4*(1), 73–93.

Campbell, J.L., Chen, H, Dhaliwal, D.S., Lu, H., & Steele, L.B. (2011). *The information content of mandatory risk factor disclosures in corporate filings*. Unpublished manuscript. [WWW page]. URL, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1694279

Cerbioni, F., & Parbonetti, A. (2007). Exploring the effects of corporate governance on intellectual capital disclosure: An analysis of European biotechnology companies. *The European Accounting Review*, *16*(4), 791–826.

CFO.com. (2010). SEC pushes companies for more risk information. ([WWW page]. URL), http://www.cfo.com/article.cfm/14513695?f=search

Cooke, T. E. (1989). Voluntary corporate disclosure by Swedish firms. *Journal of International Financial Management and Accounting*, *1*(2), 171–195.

Dargenidou, C., McLeay, S., & Raonic, I. (2006). Expected earnings growth and the cost of capital: An analysis of accounting regime change in the European financial market. *Abacus*, *42*(3/4), 388–414.

Dobler, M. (2008). Incentives for risk reporting — A discretionary disclosure and cheap talk approach. *The International Journal of Accounting*, *43*(2), 184–206.

Dobler, M., Lajili, K., & Zéghal, D. (2011). Attributes of corporate risk disclosure: An international investigation in the manufacturing sector. *Journal of International Accounting Research*, *10*(2), 1–22.

Dye, R. A. (1990). Mandatory versus voluntary disclosures: The cases of financial and real externalities. *The Accounting Review*, *65*(1), 1–24.

Eng, L., & Mak, Y. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, *22*(4), 325–345.

Entwistle, G. M. (1999). Exploring the R&D disclosure environment. *Accounting Horizons*, *13*(4), 323–341.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis with readings.* New Jersey: Prentice-Hall.

Healy, P. M., & Palepu, K. G. (1993). The effect of firm's financial disclosure strategies on stock prices. *Accounting Horizons*, *7*(1), 1–11.

Huang, K. (2011). *Exploring the information contents of risk factors in SEC form 10-K: a multi-label text classification application*. Unpublished manuscript. [WWW page]. URL, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1784527

IASB (2008). Exposure draft of an improved conceptual framework for financial reporting. ([WWW page]. URL), http://www.ifrs.org/Current-Projects/IASB-Projects/Conceptual-Framework/EDMay08/Documents/conceptual_framework_exposure_draft.pdf

Inchausti, B. G. (1997). The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *The European Accounting Review*, *6*(1), 45–68.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.

Jorgensen, B. N., & Kirschenheiter, M. T. (2003). Discretionary risk disclosures. *The Accounting Review*, *78*(2), 449–469.

Jorion, P. (2002). How informative are value-at-risk disclosure. *The Accounting Review*, *77*(4), 911–931.

Kajüter, P. (2001). Risikoberichterstattung: Empirische Befunde und der Entwurf des DRS 5. *Der Betrieb*, *54*(3), 105–111 (translation: riskreporting: empirical findings and draft of DRS 5).

Kanto, A., & Schadewitz, H. J. (1997). A multidimensional model for the disclosure policy of a firm. *Scandinavian Journal of Management*, *13*(3), 229–249.

King, C. G. (1999). The measurements of harmonization in the form and content of the auditor's report in the European Union. *Journal of International Accounting, Auditing and Taxation*, *8*(1), 23–42.

Koonce, L., Lipe, M. G., & McAnally, M. L. (2005). Judging the risk of financial instruments: Problems and potential remedies. *The Accounting Review*, *80*(3), 871–895.

Koonce, L., McAnally, M. L., & Mercer, M. (2005). How do investors judge the risk of financial items. *The Accounting Review*, *80*(1), 221–241.

Kravet, T., & Muslu, V. (2011). *Informativeness of risk disclosures in corporate annual reports*. Unpublished manuscript. [WWW page]. URL, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1736228

Krippendorf, K. (1980). *Content analysis: An introduction to its methodology.* Beverly Hills, CA: Sage Publications.

Lajili, K., & Zéghal, D. (2005). A content analysis of risk management disclosures in Canadian annual reports. *Canadian Journal of Administrative Sciences*, *22*(2), 125–142.

Lang, M., & Lundholm, R. (Autumn). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, *31*, 246–271.

Leuz, C. (2000). The development of the voluntary cash flow statements in Germany and the influence of international reporting standards. *Schmalenbach Business Review*, *52*(2), 182–207.

Leuz, C. (2003). IAS versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market. *Journal of Accounting Research*, *41*(3), 445–472.

Linsley, P. M., & Lawrence, M. J. (2007). Risk reporting by the largest UK companies: Readability and lack of obfuscation. *Accounting, Auditing & Accountability Journal*, *20*(4), 620–627.

Linsley, P. M., & Shrives, P. J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *The British Accounting Review*, *38*, 387–404.

Linsmeier, T. J., & Pearson, N. D. (1997). Quantitative disclosures of market risk in the SEC release. *Accounting Horizons*, *11*(1), 107–135.

Marshall, A., & Weetman, P. (2007). Modelling transparency in disclosure: The case of foreign exchange risk management. *Journal of Business Finance & Accounting*, *34*(5–6), 705–739.

Meek, G. K., Roberts, C. B., & Gray, S. J. (1995). Factors Influencing Voluntary Annual Report Disclosures by U.S., U.K. and Continental European Multinational Corporations. *Journal of International Business Studies*, *26*(3), 555–572.

Miihkinen, A. (2008). Efficiency of authoritative disclosure recommendations: Evidence from IFRS transition disclosure in Finland. *Journal of Financial Regulation and Compliance*, *16*(4), 384–413.

Miihkinen, A. (2011). *The usefulness of firm risk disclosures under different firm riskiness, investor interest, and market conditions. Evidence from Finland*. Unpublished manuscript. Paper presented at the Annual Meeting of the American Accounting Association in Denver, 6.-10.8.2011.

Milne, M., & Adler, R. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing and Accountability Journal*, *12*(2), 237–256.

Petersen, M. A. (2009). Estimating standard errors in financial panel data sets: Comparing approaches. *Review of Financial Studies*, *22*, 435–480.

Prencipe, A. (2004). Proprietary costs and determinants of voluntary segment disclosure: Evidence from Italian listed companies. *The European Accounting Review*, *13*(2), 319–340.

Rajgopal, S. (1999). Early evidence on the informativeness of the SEC's market risk disclosures: The case of commodity price risk exposure of oil and gas producers. *The Accounting Review*, *74*(3), 251–280.

Roulstone, D. T. (1999). Effect of SEC financial reporting release No.48 on derivative and market risk disclosure. *Accounting Horizons*, *13*(4), 343–363.

Schipper, K. (2003). Principles-based accounting standards. *Accounting Horizons*, *17*(1), 61–72.

Schrand, C. M., & Elliott, J. A. (1998). Risk and financial reporting: a summary of the discussion at the 1997 AAA/FASB Conference. *Accounting Horizons*, *12*(3), 271–282.

Scott, W. R. (2009). *Financial accounting theory.* Toronto: Prentice-Hall.

Solomon, J. F., Solomon, A., & Norton, S. D. (2000). A conceptual framework for corporate risk disclosure emerging from the agenda for corporate governance reform. *The British Accounting Review*, *32*, 447–478.

Spence, M. (1973). Job market signalling. *Quarterly Journal of Economics*, *87*(3), 355–374.

Thornton, D. B., & Welker, M. (2004). The effect of oil and gas producers' FRR No.48 disclosures on investors' risk assessments. *Journal of Accounting, Auditing and Finance*, *19*(1), 85–114.

Troberg, P., Kinnunen, J., & Seppänen, H. J. (2010). What drives cross-segment diversity in returns and risks? Evidence from Japanese and U.S. firms. *The International Journal of Accounting*, *45*(1), 44–76.

Verrecchia, R. (1983). Discretionary disclosure. *Journal of Accounting and Economics*, *5*, 179–194.

Watts, R. L., & Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *The Accounting Review*, *53*(1), 112–134.

Zechman, S. L. (2010). The relation between voluntary disclosure and financial reporting: Evidence from synthetic leases. *Journal of Accounting Research*, *48*(3), 725–765.

# ESSAY 2

## The Usefulness of Firm Risk Disclosures under Different Firm-Riskiness, Investor-Interest, and Market Conditions

### New Evidence from Finland

**by**

**Antti Miihkinen**

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### Acknowledgements

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## New Evidence from Finland

**Abstract**

To date, there is only meager research evidence on the usefulness of mandatory annual report risk disclosures to investors. Although it has been argued that corporate disclosure decreases information asymmetry between management and shareholders, we do not know whether investors benefit from high-quality risk reporting in a highly regulated risk disclosure environment. In this paper, we performed association tests to examine whether the quality of firms' mandatory risk disclosures relate to information asymmetry in the Finnish stock markets. In addition, we analyzed whether the usefulness of risk disclosures depends on contingency factors such as firm riskiness, investor interest, and market condition. We demonstrate that the quality of risk disclosure has a direct negative influence on information asymmetry. We also document that risk disclosures are more useful if they are provided by small firms, high tech firms, and firms with low analyst coverage. We also found that momentum in stock markets affects the relevance of firms' risk reports.

## 1. Introduction

Starting with Amir and Lev (1996), many scholars have begun to explore whether soft accounting information provides incremental information to investors (e.g., Abrahamson & Amir, 1996; Kothari, Li, & Short, 2009; Demers & Vega, 2010). The findings of these studies have demonstrated that soft accounting information is indeed useful to investors. However, at the moment there is only meager evidence on the usefulness of risk disclosures to investors.

Prior research has mostly focused on examining the regulatory and non-regulatory determinants of risk disclosure (e.g., Elmy, LeGuyader, & Linsmeier, 1998; Roulstone, 1999; Beretta & Bozzolan, 2004; Linsley & Shrives, 2006; Dobler, Lajili, & Zéghal, 2011) or the value relevance of market risk disclosures (e.g., Rajgopal, 1999; Linsmeier, 2002; Jorion, 2002; Lim & Tan, 2007). Concurrent

studies on firms' *overall risk disclosures*[1] in the US have provided evidence that mandatory risk disclosures are informative to investors despite the reporting deficiencies (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013). However, the US regulation on firms' overall risk disclosures leaves much room for interpretation. Hence more evidence on the usefulness of overall risk reviews in a highly regulated risk disclosure environment will be needed. To fill the gap, this paper examines the following questions:

1. *Does the quality of risk disclosure provided by firms in their annual reports affect information asymmetry between the management and investors?*

2. *Do certain contingency factors such as firm riskiness, investor interest, and market condition affect the usefulness of annual risk disclosures to investors?*

Finland provides an intriguing institutional setting for the examination of these questions because of recent changes in Finnish risk reporting practices attributable to the new detailed risk disclosure standard issued by the Finnish Accounting Practice Board in 2006. The standard provides an extensive description of expected risk reporting and also provides some examples of good risk disclosure. Final decisions on the form of disclosure are left to firms. Hence the regulator encourages firms to develop the best reporting practices. Since the levels of risk disclosure by firms still vary considerably, examination of the research questions is feasible. In addition, compared with firms reporting under US reporting standards, Finland offers a less rich disclosure environment, and therefore makes any economic benefits from increased risk disclosure easier to detect (cf., Leuz & Verrecchia, 2000).[2]

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[1] In this paper the term *overall risk disclosures* refers to reporting by firms on several risk topics (e.g., strategic risks, operations risks, financial risks, damage risks, risk management, and other risks).

[2] In Finland, the disclosure of overall risk reviews is highly regulated and guided. However, firms reporting under US reporting standards face stricter disclosure requirements if we consider all corporate disclosures. Dissemination of all that information to investors makes it more difficult to empirically demonstrate measurable economic benefits for single information items such as risk disclosures in the US institutional setting.

The new guidance may have both coercive and advisory effect on firms' overall risk reviews and its impact on quality has been confirmed in earlier research (Miihkinen, 2012). Kaufmann, Kraay, & Mastruzzi (2009) rank Finland among the top countries in the world on the basis of the quality of its governance. This supports the notion that Finnish risk disclosure regulation is effective.[3] Jorgensen & Kirschenheiter's (2003) seminal theoretical analysis of risk disclosures suggests that the expected risk premium of firms is higher under a mandatory risk disclosure regime. The advanced Finnish requirements on overall risk reviews compared with those of other countries (see, section 2.1.) and the documented effect of the new standard justify an examination of the impact of the quality of risk disclosures by Finnish listed firms on information asymmetry.

We analyze the risk reporting of more than 300 firm-year observations in a four year panel covering the fiscal years 2006-2009. The study period encompasses a variety of market conditions because annual reports for 2005 and 2006 were published under bull market conditions, those for 2007 under bear market conditions, and those for 2008 while stock markets were recovering from the crash (see, figure 2). This allows us to examine whether the usefulness of risk disclosure to investors depends on the general trends in the stock markets. In particular, the recent global financial crisis makes it possible to analyze whether a shock in investor confidence affected the usefulness of provided risk information.

The impact of risk disclosure was analyzed along two dimensions, quantity and coverage. Principal component analysis was used to construct a measure for the composite quality of risk disclosure. Other data were retrieved from the *Thomson One Banker Financial* and *IBES* databases and from the register of *Euroclear Finland Oy*. Congruent with the existing literature, the bid-ask spread and trading volume were used as empirical indicators for information asymmetry (see, Leutz & Verrecchia, 2000; Leutz, 2003).

We performed several association tests to analyze the research questions. First, we examined whether those firms which were ranked higher according to their risk disclosure scores exhibited lower levels of information asymmetry than firms with lower disclosure scores. Second, we considered what contingency factors

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[3] For example, in 2007 Finland's governance scores for regulatory quality, rule of law, and control of corruption were 1.67, 1.89, and 2.58, respectively. For the US the scores were 1.45, 1.56, and 1.40, respectively. A higher score means higher governance quality in Kaufmann, Kraay, & Mastruzzi's ranking (2009).

affected the usefulness of annual report risk disclosure to investors. The contingency factors examined include measures of firm riskiness, investor interest, and market conditions.

The study points to the following three main findings. First, firms that provide high-quality risk information also have lower levels of information asymmetry. The finding suggests that annual report risk disclosure provides useful information to investors.

Second, it documents that firm riskiness affects results. We show that risk disclosure is more useful to investors if it is provided by small firms and high tech firms. This result implies that investors require more risk information from risky firms.

Third, we demonstrate that investor interest also has an effect on results. High-quality risk information is more useful to investors when it is provided by firms with low analyst coverage. The finding suggests that the risk profiles of less extensively followed firms are vague to investors and that this increases investors' reactions to risk disclosures by these firms. This result is in line with the results of Botosan (1997) and Hope (2003). Botosan (1997) documents that high-quality annual report disclosure reduces the cost of equity capital in firms with low analyst coverage. Hope (2003) demonstrates that the level of annual report disclosure is more useful to the following analysts when the analyst coverage of the firm is low.

Last but not least, we show that risk disclosure is useful to investors under all market conditions. However, we found that it is even more useful in bearish and recovering stock markets than in bullish stock markets. This finding is consistent with the view that during an economic downturn, investors become more cautious, thereby increasing their risk information needs.

Our results are congruent with those of the recent studies which demonstrate that risk disclosures are informative in the US institutional setting (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013). Consequently, the unique features of the Finnish stock market (see, section 2.1) do not deteriorate the results. One probable reason for this is the high degree of detail required by the Finnish risk disclosure regulation.

This study contributes to prior risk disclosure literature by examining the role of mandatory risk disclosures in lowering information asymmetry in Finland, which is a highly regulated risk disclosure environment. We also add to the concurrent risk

disclosure literature in the US setting (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013) by including several relevant contingency factors in the analyses. Our methodological perspective differs from that of current studies on the area (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013) because we collate our data from annual reports and manually code every firm's disclosure. This makes it possible to categorize risk information on the basis of its topics, which should increase the accuracy of our disclosure proxy. Moreover, since OMX Helsinki is a small stock exchange, we were able to analyze a target sample that covers all Finnish listed firms with the exception of those in financial services.

The remainder of this paper is organized as follows. Section two reviews relevant prior literature and section three provides the research hypotheses. Sample selection, variables and methods are reported in section four. Section five reports the empirical results and is followed by the results of additional analyses in section six. Section seven concludes the paper.

## 2.    Literature review

2.1. Risk reporting requirements in different institutional settings

In the IFRS era (from 2005 onwards) risk disclosure regulation is most advanced in the US, Canada, the UK, Germany, and Finland (cf., Dobler, Lajili, & Zéghal, 2011, Miihkinen, 2012).[4] All five countries demand risk disclosures in both the notes to the financial statements and the management report sections.[5] Note disclosure requirements are very similar across the countries. They emphasize reporting on

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[4] Beretta & Bozzolan (2004) examine risk disclosure quality in the Italian institutional setting, which is voluntary. However, discretion is an inherent part of risk reporting due to its subjective and partly nonverifiable nature. Hence risk disclosures by firms can be assumed to be (quasi-)voluntary and depend on reporting incentives even under the mandatory risk disclosure requirements (Dobler, 2008; Dobler, Lajili, & Zéghal, 2011).

[5] Dobler (2008) compares risk reporting requirements in the United States of America and according to IFRS, with those in Germany. He demonstrates that USA and IFRS have adopted a piecemeal regulatory approach on risk reporting. This means that risk disclosure is regulated by risk categories as opposed to regulating on overall risk reviews as opposed to Germany, where GAS 5 requires information on several risks. Also, Finland takes a comprehensive approach to risk reporting. Both Finland and Germany are typical code law countries.

financial risks and financial risk management (e.g., SFAS 107, IAS 32, IFRS 7) and stipulate relatively broadly on the reporting of estimation uncertainties in valuation (e.g., SFAS 5, IAS 1). There are more differences between countries in risk disclosure requirements regarding management reports. Domestic standards have the greatest impact on risk disclosure in these sections (Dobler, Lajili, & Zéghal, 2011, Miihkinen, 2012).[6]

The Finnish risk disclosure regulation is illustrated in figure 1. The standard of the Finnish Accounting Practice Board requires the most advanced risk disclosures. At the end of 2004 the Finnish Accounting Act was amended with a requirement to provide a fair and extensive description of significant risks in the operating and financial review (conceptually similar to a management report). This requirement was provided on a general level and left considerable room for interpretation. In 2006, the Finnish Accounting Practice Board clarified the risk requirements of the Finnish Accounting Act by issuing a detailed and comprehensive standard on firms' overall risk reviews.[7] Also, other laws and rules may have had an impact on risk disclosures by Finnish listed firms in their annual reports for 2005-2008. For example, the general requirement to provide a true and fair view of the firm's history and prospects has been included in several laws and rules since 1989.

(Figure 1 about here)

Germany has adopted a comprehensive approach to risk reporting in GAS 5. It requires firms to provide information on all risk categories, risk management, and forecasts. There are similarities between the Finnish risk disclosure standard and GAS 5. However, the Finnish standard is more detailed in the sense that it provides precise information on the expected risk reporting levels by including disclosure examples in the standard. It also differs from GAS 5 by providing a more explicit

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[6] *IFRS Practice Statement: Management Commentary* was issued in 2010 to provide guidance to IFRS reporters. It provides a framework for the form of management report. It is voluntary and gives only general level guidance for risk reporting in this section. Finnish listed firms follow IFRS, but have to prepare their parent company financial statements according to the Finnish Accounting Act. Hence, Finnish requirements also affect the reporting of firms that report under the IFRS.

[7] Hence, the requirement to provide overall risk reviews in the operating and financial reviews has affected reporting since the 2004 annual reports. As reported in Miihkinen (2012), the new detailed risk disclosure standard, which affected reporting since the 2006 annual reports, increased the quality of the risk disclosures of Finnish listed firms.

framework for different risk topics and by underlining the importance of a balance between disclosures on each topic.

Comparison between the US and the Finnish risk disclosure requirements with respect to firms' overall risk reviews reveals significant differences. The Finnish standard on overall risk reviews focuses on guiding firms to provide a balanced description of their major risks. It is six pages long, devotes equal space to each risk topic, and offers illustrative disclosure examples. In the US, the SEC has required corporate overall risk reviews in annual and quarterly reports since 2005.[8] However, these requirements are short, vague, and lack disclosure examples, thereby leaving substantial room for interpretation by managers. It is not surprising that in 2010 the SEC warned companies about risk disclosures that are too broad and generic.[9] The SEC has in fact provided a detailed standard for disclosure on market risks (FRR 48). It is over 100 pages long, in keeping with the rules-based accounting tradition. This causes an imbalance between regulation of disclosure on market risks and other risk topics in the US. Thus, compared with the US, the Finnish requirements on firms' overall risk reviews are more detailed and require more balanced disclosure on different risk topics.

### 2.2. Unique features of the Helsinki Stock Exchange (OMX Helsinki)

In addition to the detailed risk disclosure guidance, there are also other unique features in Finland which make OMX Helsinki an interesting test setting for the research questions. The Finnish stock markets have evolved considerably during the last few decades. The general internationalization and deregulation of the financial markets started in the early 1980s - a few years later than in the rest of the Nordic countries. The process proceeded gradually from liberalization of the money market to the abolishment of all restrictions on capital movements to and from Finland. Finally, in 1993 the restrictions on foreign ownership of Finnish stocks were removed. For international investors small markets are interesting because they may

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[8] The SEC requires firms to disclose all identifiable risk factors in the first pages of 10-K filings (Section 1A). These factors have to be reported as described in Item 503(c) of Regulation S-K provided under the Securities Exchange Act of 1934.
[9] The US SEC reviews disclosures for adequacy. Similarly, in Finland the Finnish Accounting Practice Board issued more detailed guidance on risk disclosures in the overall risk reviews because it was not satisfied with the willingness and ability of firms to report their risks based on the requirements of the Finnish Accounting Act.

provide considerable diversification benefits although the co-movements between the Finnish and global markets may have increased in recent years (see, Kallunki, Martikainen, Martikainen, & Yli-Olli, 1997).

The trading of shares in Finland is concentrated in the largest companies (e.g., Nokia Plc, Stora Enso Plc, Nordea Plc). Thin markets increase volatility and reduce liquidity, especially among smaller firms. The low number of trades also typically results in larger spreads between the two quotes (see, Kallunki, Martikainen, Martikainen, & Yli-Olli, 1997).

## 2.3.    Review of prior risk disclosure literature

Risk information asymmetry may cause several problems in capital markets such as high transaction costs, thin markets, low liquidity, lower gains from trade, and unprofitable investments for defenseless minority investors (Lev, 1988). Considering the valuation and stewardship role of accounting information (see, Beyer, Cohen, Lys, & Walther, 2010), risk disclosure provides useful information for both purposes. It facilitates more accurate valuation but can also be used as a coarse proxy for management's sense of direction.[10] Recently standard-setters have also emphasized the importance of risk reporting as can be seen from the IFRS Practice Statement on Management Commentary in which risk information is one content element of a decision-useful management commentary (see note 6). One objective of the statement is to harmonize risk reporting, which is a challenging task in view of the variety of different institutional corporate disclosure environments (cf., Haller, Ernstberger, & Froschhammer, 2009; Adelopo, 2011).

Prior risk disclosure literature has mainly focused on analyzing the regulatory and non-regulatory determinants of risk disclosure (e.g., Elmy, LeGuyader, & Linsmeier, 1998; Roulstone, 1999; Marshall & Weetman, 2002; Beretta & Bozzolan, 2004; Lajili & Zeghal, 2005; Linsley & Shrives, 2006; Abraham & Cox, 2007). These papers demonstrate that several firm-specific motives and corporate governance factors affect the quality of risk reporting. In addition, some studies have analyzed the risk disclosures provided in firms' prospectuses (Deumes, 2008; Hill &

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[10] Dobler, Lajili, & Zéghal (2012) found that environmental performance and environmental risk are negatively associated. They examine environmental risk by content analyzing firms' environmental risk disclosures in 10-K filings. Consequently, high quality environmental risk disclosure probably helps investors in the valuation of firms and in the assessment of management's work.

Short, 2009; Taylor, Tower, & Neilson, 2010) or in different institutional settings (Amran, Bin, & Hassan, 2009; Hassan, 2009). These papers have demonstrated several deficiencies in the quality of risk disclosure. Prior literature suggests that the quality of risk disclosure should be analyzed along several dimensions (Beretta & Bozzolan, 2004; Beretta & Bozzolan, 2008). This is an important issue for transparent and well-functioning capital markets. High quality of disclosure has been documented to provide useful information to analysts (Bozzolan, Trombetta, & Beretta, 2009).

Accounting literature provides only meager empirical evidence on the economic consequences of narrative risk disclosures. The existing evidence is mainly limited to the analyses of the value relevance of risk disclosures provided in line with the Securities and Exchange Commission's requirement FRR No.48. It requires firms to provide quantitative and qualitative disclosures about exposure to market risk and to disclose how they account for derivatives (see, Rajgopal, 1999; Linsmeier, 2002; Jorion, 2002; Liu, Ryan, & Tan, 2004; Lim & Tan, 2007; Pérignon & Smith, 2010). Rajgopal (1999) demonstrates that the market risk disclosures of oil and gas producers affect their stock return sensitivities to oil and gas price movements. Lim & Tan (2007) document that higher quantitative value-at-risk estimates are associated with weaker return-earnings relation and higher future stock return volatility.

Recent studies on firms' mandatory *overall risk reviews* in US have provided evidence that these disclosures are informative to investors despite the reporting deficiencies (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013). Campbell at al. (2013) demonstrates that risk disclosures associate negatively with information asymmetry. Kravet & Muslu (2013) analyze 10-K filings and show that increases in qualitative risk factors in corporate annual reports are associated with increases in stock return volatility and trading volume around and after the filings.

## 2.4. Risk disclosure, information risk, and the cost of capital

There has been considerable discussion on the relationship between corporate disclosure and the cost of capital in recent years (see, Beyer, Cohen, Lys, & Walther, 2010). The earlier theoretical models suggest that asymmetric information increases adverse selection, thereby leading to higher bid-ask spreads (e.g., Copeland & Galai, 1983; Glosten & Milgrom, 1985). Researchers have presented mixed views since then.

Easley & O'Hara (2004) argue that differences in the composition of information between public and private information affect the cost of capital, with investors demanding a higher return to hold stocks with greater private information. Jorgensen and Kirschenheiter (2003) model the equilibrium strategies of managers for voluntary disclosure of information about firm risks and show that a disclosing firm has a lower risk premium and beta ex post than a non-disclosing firm. Hughes, Liu, & Liu (2007) argue that in large economies the information risk associated with idiosyncratic factors is fully diversifiable. Also, Lambert, Leuz, & Verrecchia (2007) argue that the information effect developed in Easley & O'Hara (2004) is diversifiable when the number of traders becomes large.

Lambert, Leuz, & Verrecchia (2012) suggest that information precision and information asymmetry are components of information quality. They state that better corporate disclosure decreases the cost of capital because the average precision of investors' information increases, not because information asymmetry decreases. Christensen, De La Rosa, & Feltham (2010) and Bertomeu, Beyer, & Dye (2011) have also brought their contribution to this discussion. Beyer, Cohen, Lys, & Walther (2010) urge empirical researchers to analyze the relationship between information quality, information risk, and cost of capital. The theoretical models should not be interpreted as suggesting that information asymmetry cannot play a role in imperfect competition settings.

Finally, it is important to take into account the peculiar characteristics of risk disclosure compared with other forms of disclosures. Risk disclosure influences both the numerator and denominator of the simple discounted cash flow model and hence there are several avenues for opportunistic behavior on the part of managers. For example, a manager may be motivated to provide lower-quality risk disclosures if the market currently perceives the firm to be less risky than it actually is. This is so

because increased disclosure might result in a higher cost of equity capital and lower stock price. Moreover, some risk information may be so sensitive that withholding it is prudent because disclosing it might have a negative effect on the future cash flows of the firm. For instance, a manager may be unwilling to give away proprietary information or information which makes the firm vulnerable to legal action.

## 3. Hypotheses development

### 3.1. The impact of risk disclosure on information asymmetry

The majority of risk reports consist of qualitative descriptions of risk exposures (see, Schipper, 2007). Qualitative annual report risk disclosure may be difficult to take into account in firm valuation because it does not provide any direct currency units. Sribunnak & Wong (2006) demonstrate that qualitative information increases the usefulness of quantitative risk information on foreign exchange risk. However, the existing behavioral accounting literature demonstrates the complexity of investors' risk judgments (e.g., Hodder, Koonce, & McAnally, 2001; Daniel, Hirshleifer, & Teoh, 2002; Koonce, McAnally, & Mercer, 2005; Koonce, Lipe, & McAnally, 2005).

Risk disclosure is one of the most interesting information items to investors for two main reasons. First, it provides direct information on the risk-profile of a firm, which affects the applied discount rate in the valuation models. Second, risk transparency decreases the information risk of investors because the risk of adverse selection becomes lower when a firm provides high-quality risk information (Akerlof, 1970; Scott 2009). Lower information risk decreases the applied discount rate, which in turn increases the market value of a firm. Consequently, from an investor's point of view information risk cannot be diversified because it always has a negative effect on firm value. Welker (1995), Leuz & Verrecchia (2000), and Campbell, Chen, Dhaliwal, Lu, & Steele (2013) provide empirical evidence that asymmetric information leads to higher bid-ask spreads. We predict that investors will benefit from the high-quality risk disclosure provided in firms' annual reports because it alleviates information asymmetry problems in capital markets and thus

leads to lower bid-ask spreads and higher trading volumes. We test the following hypothesis:

*H1: There is a negative association between information asymmetry and the quality of firm risk disclosure.*

3.2.    Firm riskiness and the usefulness of risk disclosure

The three factor model of Fama & French (1992) suggests that small firms tend to do better than the market as a whole. From the perspective of efficient market theory (see, Fama, 1970, Fama 1991), this finding suggests that smaller firms are more risky for investors. Because it is expected that investors require more risk information from risky firms, we predict that the association between the quality of risk disclosure and information asymmetry is higher among small firms than large firms.

Lin, Owens, & Owers (2010) demonstrate that firms' exposure to risk affects their choice of risk disclosure format. Because some industries are more risky than others, investors have different information needs. High tech firms are usually difficult to value because much of their value is determined by intangible assets. It is difficult to value operating assets (e.g., property, plant, and equipment) because they have a primary purpose of supporting and enhancing within-the-firm activities, and have only limited and peripheral value as independent, freestanding, and marketable stores of value (see, Dichev, 2008: 467). Synergies between operating assets and intangible assets determine firms' future cash flows. Some firms, such as those operating in high tech industries, have a higher level of intangible assets; this makes it difficult to value them correctly because intangible assets are inherently more risky and perishable than operating assets. We predict that risk disclosures of the high tech firms are especially useful to investors. Considering the above mentioned predictions, we hypothesize as follows:

*H2: The negative association between information asymmetry and the quality of risk disclosure is higher among firms with high inherent risk.*

3.3. Investors interest and the usefulness of risk disclosure

Also, the information environment affects information asymmetry between firms and management. Investor interest is lower towards firms with low analyst coverage. Investors are not entirely dependent on the information provided by firms; they also receive information from financial analysts who in turn collect it from public and private sources, evaluate the current performance of the firms that they follow, make forecasts about their future prospects, and recommend that investors buy, hold, or sell the stock (Healy & Palepu, 2001). Easley & O'Hara (2004) suggest that firms can impact their cost of capital by increasing the precision and quantity of information available to investors. This can be accomplished for example by attracting active analysts to follow a company. Because of the cost of information acquisition, analysts tend to follow those firms that provide a lot of information in capital markets. The positive association between analyst coverage and corporate disclosure has been empirically demonstrated (Lang & Lundholm, 1993; Francis, Hanna, & Philbrick, 1997; Healy, Hutton, & Palepu, 1999).

In particular, the less extensively followed firms should benefit from high-quality corporate disclosure. Botosan (1997) demonstrates that greater overall disclosure is associated with a lower cost of equity capital for firms that attract a low analyst following. However, she does not find this relation for firms with a high analyst following. She suggests that one explanation may be that her disclosure measure is limited to the annual report and accordingly may not provide a powerful proxy for overall disclosure level when analysts play a significant role in the communication process. Moreover, Hope (2003) shows that the level of annual report disclosure is more important to the following analysts when the analyst coverage of the firm is low.

There are many firms in Finland that are followed by only a few analysts or none at all. It is much more difficult for investors to evaluate the future potential of these firms. Since investors cannot benchmark their views to analysts' forecasts, their information risk increases. Consequently, to decrease the risk of adverse selection investors are responsive to the risk information provided by less extensively followed firms in their annual reports. We predict that this should increase the usefulness of risk disclosure among those firms. We hypothesize as follows:

*H3: The negative association between information asymmetry and the quality of risk disclosure is higher among firms with low investor interest.*

3.4.    Market condition and the usefulness of risk disclosure

General market condition, i.e., whether stock markets are rising, falling, or recovering, is one element that may influence the usefulness of risk disclosure to investors. First, during rising stock markets investors tend to forget the real risks of their investments. Asset price bubbles - periods in which prices rise and then fall by significant amounts - are much easier to spot from hindsight than they are to predict (Ball, 2009). After many years of rising stock prices, investors easily become risk-neutral or even risk-taking. They may ignore the existing and potential risks of their investments, which decreases their demand for the risk information provided by the firms. This lowers risk information asymmetry in the stock markets without any economic reason and leads to overvalued stock markets because investors do not incorporate relevant risk information into their discount rates.

In contrast, during an economic downturn investors easily become risk averse and begin to analyze the risks of their investments. At the extreme, a global crash in the stock markets may lead to a total loss in investor confidence. When investors fear and encounter substantial uncertainty in the stock markets, their demand for information on the risks of the firms is likely to increase. Hence, in falling and recovering stock markets investors should value high-quality risk disclosure more than in rising stock markets. On the basis of these arguments, we hypothesize as follows:

*H4: The negative association between information asymmetry and the quality of risk disclosure is higher during an economic downturn with falling or recovering stock markets.*

## 4.     Research design

### 4.1.    Sample selection

We retrieved the target sample of firms and data on variables from the Thomson One Banker Financial and IBES databases and from the register of Euroclear Finland Oy. The risk disclosure data were hand-collected. The research population consists of 504 firm-year observations of the firms quoted on OMX Helsinki in 2006-2009. However, we excluded some firms from the analysis to ensure a consistent sample. First, 13 firms from the financial services industry were excluded from the population because their accounting practices, financial statements, and related disclosure requirements differed from those of the rest of the population. Second, we lost 32 firm-year observations due to initial listing, delisting, or restructuring between 2005 and 2009. Third, three firms were deleted because of their differing fiscal periods. At this point the data included 408 observations on firms that had released their annual reports for content analysis purposes. Finally, in our main regressions we lose some observations because of missing data for some variables. Hence the final sample includes 386 (302) firm-year observations in the Spread (Volume) model.[11] Table 1 describes the sample selection.

(Table 1 about here)

### 4.2.    Description of the market conditions

We hypothesized that the usefulness of risk disclosure may also depend on the general economic conditions in the stock markets. Annual reports for 2005 and 2006 were published during a period of high investor confidence (in 2006 and 2007). On the contrary, investor confidence started to decrease in 2008, when the annual reports for 2007 were issued. In the latter part of 2008 the capital markets collapsed. Consequently, the 2008 annual reports (published in 2009) provided risk information for existing and potential investors who had lost their confidence because of the slump. Figure 2 illustrates trends in the OMXH index from 2005 to 2009. It

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[11] These models will be described later in this section.

demonstrates that annual reports for 2005 and 2006 were published during years of rising stock markets, annual reports for 2007 during a year of falling stock markets, and annual reports for 2008 during a year of recovering stock markets.

(Figure 2 about here)

4.3.  Estimation of information asymmetry

The extant accounting and finance literature has used various measures of asymmetric information such as stock return volatility, analysts' earnings forecast dispersion, proportion of intangible assets, debt rating, stock bid-ask spread, and accounting information quality (see, Lee & Masulis, 2009). In this paper we apply an approach similar to Leuz & Verrecchia (2000) and Leuz (2003) and use the following two alternative proxies for information asymmetry: relative bid-ask spread and trading volume. Previously, for example Venkatesh & Chiang (1986), Welker (1995), Leutz (2003), and Campbell, Chen, Dhaliwal, Lu, & Steele (2013) have used bid-ask spread as a measure of information asymmetry. It is expected that lower information asymmetry reduces spread. The formula for the daily relative bid-ask spread is as follows:

$$Spread = \frac{AskPrice - BidPrice}{(AskPrice + BidPrice)/2} * 100 \qquad (1)$$

*where AskPrice = closing ask price, and BidPrice = closing bid price*

Trading volume is our second empirical measure for information asymmetry (cf., Leuz & Verrecchia, 2000; Leuz, 2003). The intuition behind the measure is that lower information asymmetry increases trading volume. The formula for the variable is the following:

$$Volume = \frac{DailyTradingVolume}{NbrShares} * 100 \qquad (2)$$

*where DailyTradingVolume = number of shares traded in a day$_i$,*
*and NbrShares = number of shares outstanding*

We examined information asymmetry in a three-month window starting from May and ending to July. This is so because the annual reports of the sample firms are available to investors from May onwards. The three-month window is in line with the extant literature (see, Leutz, 2003). Consequently, in the empirical tests we used three-month mean values computed from the daily values of the information asymmetry indicators.

4.4.    Analysis of risk disclosure

Risk disclosure data are manually collected from the following sections of annual reports: operating and financial review, separate risk disclosure section, notes to the financial statements, and corporate governance section. All Finnish listed firms are required to disclose a risk section in their operating and financial reviews as suggested by the Finnish Accounting Act and the 2006 standard of the Finnish Accounting Practice Board (see, figure 1). However, it is expected that the location of information provided in the annual reports does not affect its usefulness to investors (cf., Al Jifri & Citron, 2009) and hence also other risk sections are taken into account in the analyses. The detailed risk disclosure standard published by the Finnish Accounting Practice Board in 2006 is the foundation of our risk disclosure framework. The standard provides examples of different risk disclosure topics and subtopics. It suggests that the following risk categories are typical of all firms: strategic risks, operations risks, financial risks, damage risks, and risk management. However, because the standard is only principles-based and hence does not describe all the subtopics of different risk categories, some subtopics have been adopted from the risk disclosure framework of Linsley & Shrives (2006).[12] Finally, a subsample of annual reports has been pre-tested to determine whether some of the subtopics for the risk categories examined are missing. Risk disclosure framework is provided in Appendix B.

The annual report risk information was examined along two quality dimensions, quantity and coverage. The reliability of the applied indicators of disclosure quality was assured by following a rigorous approach in coding. The measurement of disclosure quantity was very objective in nature. For that reason, the

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[12] Linsley & Shrives (2006) use a risk disclosure categorization developed by a professional accountancy firm and subsequently used by Kajüter (2001) in a risk disclosure study.

only decision to be made relating to the quality dimension was to determine what is meant by risk disclosure. We decided to collect risk disclosures from the overall risk reviews published in annual reports. The coding of the coverage of the risk information provided contained more subjective elements. Assignment of the risk information sentences to the various risk disclosure topics (categories) examined required clear decisions. First, the applicability of the constructed risk disclosure framework was evaluated by coding a pilot sample of annual reports. The purpose was to create clear decision rules for coding. At this point, prior literature and other scholars were consulted to make the final decisions on coding practices. The risk disclosure sentences were coded by two scholars; one coded the annual reports for 2005 and 2006, and the other those for 2007 and 2008.

The reliability of coding can be evaluated from several perspectives, two of which are discussed here (Krippendorf, 1980). First, stability measures the capability of the researcher to code similarly over time. The coding was conducted during two different periods so that the annual reports for 2005 and 2006 were coded about nine months earlier than the latter sample of annual reports. Internal checks documented that the coding remained consistent across these time intervals.

Second, reproducibility is another component of the reliability of the coding and should be controlled for when there are multiple coders. The purpose is to assess coding errors between individuals. Clear decision rules are expected to decrease controversies between coders. In addition to clear decision rules, we addressed the reproducibility ex post by cross-coding a subsample of annual reports and comparing the results with the original ones.[13] Two measures of inter-coder reliability were calculated: the first was the simple coefficient of agreement and the other the alpha coefficient of agreement proposed by Krippendorf (1980). The first subsample was very consistently coded. The simple coefficient of agreement was 0.93 and the alpha coefficient of agreement 0.90. The second subsample included more internal inconsistencies. The coefficient values were 0.85 and 0.81, respectively. The major reason for these differences was a disagreement concerning the coding of strategic and operations risks. The simple coefficient of agreement was 0.90 and the alpha coefficient of agreement was 0.87 for all the coded subsamples. The extant literature suggests a threshold level of 0.75 for the alpha coefficient of agreement (Milne &

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[13] Both scholars cross-coded two subsamples that consisted of three randomly selected annual reports. The selected firms represented different industries.

Adler, 1999). Consequently, the reliability of the coding is expected to be sufficiently high in this study.

4.5.    Empirical indicators for quality of risk disclosure

Table 2 describes the results of the content analysis. The number of reported risk disclosure words is categorized across five topics (strategic, operations, financial, damage, and risk management). Adding up the yearly disclosures of each topic gives the total number of risk disclosure words. The results show that the number of disclosers has increased in every disclosure topic during the sample years. However, the unpaired t-test statistics are significant only in the risk management category. This finding implies that the increased pressures for improved risk disclosures in Finland during the sample period have influenced most managers' descriptions of their risk management practices. In 2006, the mean value of words on risk management was 109.2 whereas in 2009 it was 202.9. Several prior studies implicitly assume that disclosure quantity is a valid proxy for disclosure quality (see, Botosan, 2004: 290). Hence we use the natural logarithm of the total number of risk disclosure words as our first empirical indicator for the quality of risk disclosure.

*QUANTITY= ln (total number of risk disclosure words)*                    (3)

Coverage of the provided risk information is our second quality dimension (see, Beattie, McInnes, & Fearnley, 2004). A balanced description of a firm's major risks is important to investors because it reduces their information risk and adverse selection problems. Risk disclosure is more useful for existing and potential owners if they understand the overall risk profile of a firm. We used the Herfindahl index to measure the concentration of corporate disclosures across risk topics. It is computed as follows:

$$COVERAGE = [(1/H)/the\ number\ of\ main\ risk\ topics], \qquad (4)$$

*where H represents the Herfindahl measure of concentration across risk topics calculated as*

$$H = \sum_{i=1}^{n} p_i^2$$

*, where $p_i$ is the proportion of risk disclosures in topic i. The inverse of H will be used to make a greater Herfindahl index value reflect more extensive disclosure coverage. This value has been scaled by dividing it with the number of main risk topics. The main risk topics are strategic risks, operations risks, financial risks, damage risks, and risk management.*

Table 2 shows that there has been a significant improvement in the coverage of risk reviews between 2006 and 2007. After that there has not been any significant improvement in the mean values of that quality dimension.

Finally, we used factor analysis to condense our empirical measures of quality dimensions into one factor.[14] We estimated the factor loadings for each year based on the yearly Quantity and Coverage ratios. Every year two factors are generated. The first factor has the highest eigenvalue and accounts for most of the variance of the quality indicators in all yearly analyses.[15] Finally, the regression-based factor score is computed for each observation by using the loadings of the factor with the highest eigenvalue (factor 1). SAS statistical software package is used in the computation of the score (cf., DiStefano, Zhu, & Mindrila, 2009).

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[14] Term factor analysis covers both common factors analysis and principal component analysis (Hair, Anderson, Tatham, & Black, 1995). We use principal component analysis and hence set all prior communality estimates to one.
[15] In 2006-2009 the variance in quality indicators explained by the first factor is 97.735, 98.379, 98.902, and 98.763, respectively. Moreover, in 2006-2009 the eigenvalue of the first factor varies between 1.955 and 1.978 whereas the eigenvalue of the second factor varies between 0.022 and 0.045.

Consequently, the following composite measure of individual quality indicators was expected to improve the overall validity and reliability of the measurement of quality of risk disclosure:

> *RDISC = the score of the principal component with the highest*
> *eigenvalue computed from the firm-specific risk disclosure*
> *quantity and coverage ratios* (5)

The scoring of the risk disclosure quality indicators is demonstrated in Appendix C.


(Table 2 about here)


4.6.    Regression models


We regressed our empirical indicators of information asymmetry on risk disclosure and several contingency factors. The contingency factors measure firm riskiness, investor interest, and market condition. The control factors measure volatility, earnings quality, ownership structure, media coverage, and the extent of annual report disclosure. The following multivariate regressions will be estimated:


$$y_{it} = \beta_0 + \beta_1 Rdisc_{it} + \sum_{h=1}^{3} \beta_{2h} X_{hit} + \sum_{h=1}^{3} \beta_{3h} X_{hit} \times Rdisc_{it}$$
$$+ Control\ variables + e_{it}$$

(6)

where $y_{it}$ = {Spread$_{it}$ ; Volume$_{it}$} and $X_{hit}$ = Contingency factors


In the equation, $\beta$ represent the regression parameters to be estimated, $e$ represents the regression residual, subscript h refers to the contingency factors, and subscripts i and t refer to the firm and year, respectively. We controlled for the impact of industry-fixed effects in every regression. The impact of year-fixed effects was largely controlled for by including the indicator variables for market condition in the regressions. The P-values of parameter estimates were computed from the

heteroskedasticity-robust standard errors clustered at firm level (see, Petersen, 2009).[16]

The dependent variables are *Spread* and *Volume*, which are our empirical indicators of information asymmetry. They describe three-month average values computed from the daily values for May, June, and July. Volume was also used as a control variable in the models in which Spread is the dependent variable. *Rdisc* is an empirical measure of the quality of risk disclosure. We expected a negative regression coefficient for the variable in the Spread models and a positive regression coefficient in the Volume models.[17]

The empirical measures of firm riskiness are Mcap and Htech. *Mcap* is a three-month average market value of a firm. We expect that the variable associates negatively with Spread and positively with Volume. The variable is also a robust proxy for the quality of forms of corporate disclosure other than risk disclosure. The extant literature documents that larger firms disclose better (e.g., Cooke, 1989; Lang & Lundholm, 1993; Cahan, Rahman, & Perera, 2005). *Htech* is an indicator variable for high tech firms and it obtains a value of 1 if the firm is a high tech firm. High tech firms are selected on the basis of their three-digit SIC codes as suggested by Francis & Schipper (1999).

*Analysts* is the measure of investor interest. It describes the analyst coverage of a firm. The extant literature demonstrates that analysts' interest associates positively with quality of corporate disclosure (see, Healy & Palepu, 2001). In addition, it has also been documented that high-quality annual report disclosures have economic consequences if they are provided by the less extensively followed firms (Botosan, 1997; Hope, 2003).

Falling and Recovering are empirical indicators of market conditions. *Falling* (*Recovering*) obtains a value of 1 if risk disclosures are published during a year of falling (recovering) stock markets in 2008 (2009). Accordingly, the rising stock markets during 2006 and 2007 are used as a benchmark.

We predicted that the contingency factors described above influence the usefulness of annual risk disclosures. Contingency factors were interacted with Rdisc

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[16] The Hausman test provided evidence that fixed effects regressions should be used in both the Spread and the Volume models.
[17] More detailed definition for these variables is provided on pages 16-21.

in the main tests. We expect that the interaction variables are statistically significant determinants of information asymmetry.

*Control variables.* In the Spread model we controlled for the impact of volatility and volume which were expected to be associated with information asymmetry (see, Stoll, 1978; Venkatesh & Chiang, 1986; Leuz & Verrecchia, 2000; Leutz, 2003). Moreover, we controlled for earnings quality, foreign ownership, media coverage, and overall annual report disclosure. In the Volume model we also controlled for the impact of ownership concentration.

*Volatility* is a three-month average standard deviation of daily stock returns multiplied by 100. It is expected that higher volatility associates positively with Spread and Volume (cf., Leuz, 2003: 459).

*ErnQual* describes the earnings quality of a firm.[18] It is the score of the principal component with the highest eigenvalue computed from two alternative measures of earnings quality (AQ and ErnVar). The absolute values of the principle component scores are multiplied by -1 to adjust higher scores to reflect higher earnings quality.

AQ is the first proxy for earnings quality. Following Francis, Lafond, Olsson, & Schipper (2007) and Francis, Nanda, & Olsson (2008) it is computed by regressing working capital accruals on cash from operations in the current period, prior period, and future period, as well as the change in revenues and property, plant, and equipment. AQ is the standard deviation of the residual, with larger standard deviations indicating worse accruals quality. This proxy for accruals quality is based on McNichols (2002) modification of Dechow & Dichev's (2002) model. The regression equation is as follows:

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[18] Empirical evidence documents that earnings quality should be taken into account when analyzing the association between voluntary disclosure and cost of capital. Francis, Nanda, & Olsson (2008) investigate the relations among voluntary disclosure, earnings quality, and cost of capital and document that firms with good earnings quality have more expansive voluntary disclosures than firms with poor earnings quality. They also find that more voluntary disclosure is associated with a lower cost of capital. However, they show that the disclosure effect on cost of capital is substantially reduced or disappears completely (depending on the cost of capital proxy) once they control for the influence of earnings quality on the results.

$$[TCA_{j,t}/Assets_{j,t}] = \beta_{0,j} + \beta_{1,j}[CFO_{j,t-1}/Assets_{j,t}] + \beta_{2,j}[CFO_{j,t}/Assets_{j,t}]$$
$$+ \beta_{3,j}[CFO_{j,t+1}/Assets_{j,t}] + \beta_{4,j}[\Delta Rev_{j,t}/Assets_{j,t}] + \beta_{5,j}[PPE_{j,t}/Assets_{j,t}] + e_{j,t} \qquad (7)$$

where:

$TCA_{j,t}$ = firm j's total current accruals in year t = $(\Delta CA_{j,t} - \Delta CL_{j,t} -$
$\Delta Cash_{j,t} + \Delta STDEBT_{j,t})$

$Assets_{j,t}$ = firm j's average total assets in year t and t−1

$CFO_{j,t}$ = firm j's cash flow from operations in year t,
measured as $CFO_{j,t} = NIBE_{j,t} - TA_{j,t}$

$TA_{j,t}$ = firm j's total accruals in year t, measured as $(\Delta CA_{j,t} - \Delta CL_{j,t} -$
$\Delta Cash_{j,t} + \Delta STDEBT_{j,t} - DEBN_{j,t})$

$\Delta CA_{j,t}$ = firm j's change in current assets between year t−1 and year t

$\Delta CL_{j,t}$ = firm j's change in current liabilities between year t−1 and year t

$\Delta Cash_{j,t}$ = firm j's change in cash between year t−1 and year t

$\Delta STDEBT_{j,t}$ = firm j's change in short-term debt in current liabilities between
year t−1 and year t

$DEPN_{j,t}$ = firm j's depreciation and amortization expense in year t

$NIBE_{j,t}$ = firm j's net income before extraordinary items in year t

$\Delta REV_{j,t}$ = firm j's change in revenues between year t−1 and year t

$PPE_{j,t}$ = firm j's book value of property, plant and equipment in year t

*ErnVar* is the second proxy for earnings quality. It is the standard deviation of the firm's earnings over 2003-2009. Earnings is defined before extraordinary items and scaled by total assets as in Francis, Nanda, & Olsson (2008). Larger standard deviations indicate lower earnings quality.

In addition, we controlled for the impact of information environment on the results. *ForOwn* describes the percentage of shares owned by foreign owners (cf., Cormier, Magnan, & Van Velthoven, 2005). The impact of institutional ownership on information asymmetry is an empirical issue because institutions are heterogeneous in nature and use various trading strategies that offset each other's trades (see, Lakonishok, Shleifer, & Vishny, 1992; Kini & Mian, 1995). The majority of foreign owners that invest in Finnish firms are institutional investors. *Clshs* depicts the percentage of shares owned by firm insiders (cf., Leutz, 2003). It is expected that higher ownership concentration (lower free cash flow) increases information asymmetry between the management and owners. This variable has been included in the Volume models because free cash flow has a significant impact on

trading volumes. It has been omitted from the Spread models because the variable has an adverse effect on the sample size.

Our firm size variable partly captured the impact of other reporting on the results. However, we also used more specific indicators. The purpose of these measures is to ascertain that the predicted association between Rdisc and information asymmetry is not driven by any omitted forms of information. *MedCov* describes how widely a firm is cited in the media. We did not have direct access to databases that would provide us with information on how extensively the firm was discussed in the press. Hence, we used the number of Google hits relating to a firm as a coarse proxy for its media coverage (cf., Fang & Peress, 2009). We used the search word 'firm name plc announcement' to limit our Google hits to relevant firm announcements. *PageCount* measures the extent of overall disclosure in the annual report of a firm. The variable is line with that used by Zechman (2010). Table 3 presents a more detailed description of the variable definitions.

(Table 3 about here)

## 5.     Empirical results

5.1.     Summary statistics

Panel A of table 4 provides the descriptive statistics for the information asymmetry indicators and quality of risk disclosure. As the mean and median values of Rdisc are close to each other, they provide evidence that the variable is distributed fairly symmetrically. Rdisc has a lower standard deviation in 2007 (0.203) than in 2006 (0.319). Moreover, the F-test reveals that the difference in the standard deviations is significant (not reported in detail). One reason may be that the Finnish risk disclosure standard has harmonized risk reporting in Finland.[19] In 2008 and in 2009 the standard deviation of Rdisc does not decrease anymore (0.170 and 0.174).

Regarding our empirical measures for information asymmetry, the results provide evidence that information asymmetry was lower between the firms and

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[19] Miihkinen (2012) provides evidence that the Finnish detailed risk disclosure standard increased the quality of Finnish listed firms' overall risk reviews.

investors in 2007 than in other sample years. This can be seen from the lower mean value for Spread (1.210) and the higher mean value for Volume (0.321). On the contrary, in 2009, during the months of recovery after the global stock markets slump, Spread obtained a higher mean value (2.362) and Volume a lower mean value (0.223) than in other sample years.

We conducted a paired t-test and compared information asymmetry between 2006 and 2007. The results (not reported in detail) show that Spread is significantly higher in 2006 than in 2007. Volume is demonstrated to be significantly lower in 2006. Similarly, we compare information asymmetry between 2008 and 2009 and report that Spread is significantly lower in 2008 than in 2009. Volume is higher in 2008 but the difference is only weakly significant.

The results suggest that information asymmetry has been lower when there was a positive momentum in the stock markets. We provide two explanations for this finding. One interpretation is that investors have been more aware of the risks of the firms during the rising stock markets, which has decreased their information risk and reduced information asymmetry. Another interpretation is that investors have been blind to the real risks of the firms during years of rising stock markets, which has improved market liquidity and trading volume without any fundamental reason.

Panel B reports descriptive statistics for other variables. The mean and median values of the continuous variables are close to each other; this suggests that these variables are fairly symmetrically distributed. The untabulated yearly statistics of Mcap and Volatility show that Mcap obtains lower values and Volatility higher values in 2008 and 2009 than in 2006 and 2007.[20]

(Table 4 about here)

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[20] The untabulated statistics for the absolute number of analysts following a firm are as follows: mean = 5.9, median = 7.0, std.dev. = 2.5, min = 0.0, max = 53.0. Not surprisingly, Nokia Corporation has the highest investor interest in the dataset.

5.2.     Correlation analysis

Table 5 reports the correlation matrix for the variables. As expected, the empirical indicators of information asymmetry (Spread and Volume) correlate negatively and significantly with each other. This finding is in line with our prediction that information asymmetry associates positively with bid-ask spread and negatively with trading volume. Similarly, the quality of risk disclosure (Rdisc) correlates negatively and significantly with Spread and positively and significantly with Volume. The finding is in line with hypothesis 1 and provides preliminary evidence that annual risk disclosures are useful information to investors.

Spread and Volume are also significantly correlated with most of the contingency factors (firm riskiness, investor interest, and market condition) with expected signs. This finding is consistent with our prediction that information asymmetry may be higher among small firms, high tech firms, and firms followed by few analysts. In addition, difficult market conditions may increase information problems in the stock markets.[21]

Mcap correlates positively and significantly with every proxy for the information environment, i.e., Rdisc, MedCov, and PageCount. On one hand, this finding supports our view that these variables are good measures of the information environment of the firms. On the other, the relatively low mutual correlations between the variables suggest that they should capture differences in firms' information environment effectively without severe multicollinearity problems.

Interestingly, the correlation coefficient between ErnQual and Rdisc is positive and significant (Pearson correlation coefficient). This finding suggests that the quality of earnings and risk disclosure are positively associated. Firms having higher earnings quality also disclose their risks better. In the extant literature some studies have demonstrated a positive association between earnings quality and voluntary disclosure (Lennox & Park, 2006; Francis, Nanda, & Olsson, 2008), whereas others have provided evidence on a negative relationship (Lougee & Marquard, 2004; Chen, DeFond, & Park, 2002).

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[21] The Pearson (Spearman) correlation coefficient between Spread and Recovering is significant at the five (ten) percent significance level. The Spearman correlation coefficients between Volume and Falling, and Volume and Recovering are significant at the five percent significance level.

Mcap correlates strongly with Analysts as expected. Other correlation coefficients suggest that serious multicollinearity problems cannot be suspected in the main regressions.[22]

(Table 5 about here)

5.3. Association between the quality of risk disclosure and information asymmetry: multivariate analyses

Spread model

Panel A of table 6 reports the determinants of Spread in the pooled sample. The number of observations is 386 in all models and the adjusted $R^2$ varies between 69.10-72.70 percent. Rdisc has a negative and significant regression coefficient which provides evidence that high-quality annual report risk disclosure lowers bid-ask spread in the stock markets. This finding is consistent with the results of Welker (1995) and Leuz & Verrecchia (2000) in general, and Campbell, Chen, Dhaliwal, Lu, & Steele (2013) in particular. Mcap is negatively associated with Spread as expected. Other contingency factors do not have direct influence on information asymmetry.

The contingency factors become more significant determinants of information asymmetry after taking into account risk disclosure's indirect effect on Spread via contingency factors.[23] The interaction variables between Rdisc and contingency factors (Mcap, Htech, Analysts, Falling, and Recovering) are all significant with expected signs. This finding suggests that the negative impact of risk disclosure on information asymmetry is stronger if the disclosing firm is small, operates in a high tech industry, and is followed by only a few analysts. In addition, risk information which is provided during the falling and recovering stock markets is more useful than information which is reported during the rising stock markets.

With regard to the control variables, Volatility and Volume are the most significant determinants of information asymmetry. Volatility is positively associated

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[22] Our sensitivity tests document that the regressions are free from multicollinearity problems. In the Spread model Mcap has the highest VIF-value (4.729) and the VIF-value of Rdisc is 1.181 (no interaction variables included). Also in the Volume model Mcap has the highest VIF-value (4.475). The VIF-value of Rdisc is 1.187 (no interaction variables included).

[23] We included only one interaction variable between Rdisc and contingency factors at a time in the regressions because otherwise they would suffer from multicollinearity problems.

with Spread and Volume negatively. Interestingly, ErnQual is positive and weakly significant in some of the regressions. This finding suggests that higher earnings quality does not necessarily reduce information asymmetry problems in the stock markets. The negative and significant regression coefficient of MedCov demonstrates that firms which have higher media coverage exhibit lower levels of information asymmetry.

<u>Volume model</u>

Panel B reports the determinants of Volume in the pooled sample. The number of observations is 302 in every model and the adjusted $R^2$ varies between 0.576-0.581. Main results support those provided in panel A. Rdisc is positively associated with Volume which provides evidence on the direct influence of risk disclosure on information asymmetry. On the contrary, compared with the Spread model, we did not find equally strong evidence of the indirect influence of risk disclosure on information asymmetry via contingency factors. The positive and significant regression coefficient of Rdisc*Falling suggests that investors have considered firms' risk disclosures more useful in falling stock markets than in rising stock markets. Other interaction variables have a non-significant regression coefficient. One explanation may be a type two error due to a weak sample. Volatility, ForOwn, Clshs, and PageCount are significant control variables.[24] [25]

(Table 6 about here)

<u>Impact of quality dimensions</u>

Our indicator for the overall quality of risk disclosure takes into account two quality dimensions, quantity and coverage. The extant literature suggests that disclosure quantity correlates positively with the quality of disclosure (see, Botosan, 2004).

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[24] We also run the Volume model regressions for 'high volume' and 'low volume' firms by using median as the cut-off point. The untabulated results suggest that Rdisc is non-significant in both models. This finding is consistent with the view that the association between risk disclosure and trading volume is linear and thus not driven by the most liquid firms.

[25] Also the standardized regression coefficients are computed (untabulated) for the independent variables of the Spread and Volume models (interaction variables not included). In the Spread model Rdisc has the third highest coefficient (-0.146) after Volatility (0.520) and Mcap ( -0.337). In the Volume model Rdisc has the seventh highest coefficient (0.101) after ForOwn (0.299), Volatility (0.231), PageCount (0.206), Analysts (0.202), Mcap (0.195), and Recovering (-0.126).

Coverage measures firms' ability to give a balanced description of certain information item (see, Beattie, McInnes, & Fearnley, 2004). For example, high coverage affects the usefulness of risk information because risk information that is scattered evenly across risk disclosure topics is easier for investors to interpret. Nowadays, there is so much information available to investors that shorter summaries on key factors would be highly appreciated. In addition, balanced risk disclosure facilitates effective longitudinal comparison not only between the fiscal years of a firm but also between the competitors in the same industry, or against other possible target investments acting in other industries. Because increased comparability should serve the needs of investors, empirical evidence on the relationship between coverage of risk information and information asymmetry offers valuable information for regulators.

A comparison between Quantity and Coverage as a determinant of information asymmetry is provided in Appendix A. The results demonstrate that both quality dimensions are significantly associated with information asymmetry in the Spread and Volume models. The results are in line with the existing literature (e.g., Beretta & Bozzolan, 2004; Beattie, McInnes, & Fearnley, 2004) which suggests that the quality of corporate disclosure should be examined from several perspectives. For a reporting firm this finding may provide valuable insights on the possible avenues to increase the relevance of its risk reporting.

5.4.    Association between the quality of risk disclosure and information asymmetry: subsample analyses

Table 7 reports the results of the subsample analyses regarding the contingency factors.[26] Panel A shows the results of the comparison between large and small firms. Large (small) firms subsample consists of firms that belong to the highest (lowest) tercile on the basis of firm size (Mcap). Rdisc is a significant determinant of Spread and Volume among small firms but a non-significant determinant among large firms. This finding implies that smaller firms are more risky to investors, which increases the relevance of their risk disclosures.

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[26] We report only the regression coefficient of Rdisc. Other variables are included in the regressions although not reported. Inferences relating to contingency factors and control variables remain qualitatively similar to those stated for the results of table 6. Regressions do not include interactions between Rdisc and contingency factors.

Panel B shows the comparison between high tech and non-high tech firms. High tech firms were selected on the basis of their three-digit SIC codes as suggested by Francis & Schipper (1999). We report a negative and highly significant regression coefficient for Rdisc among high tech firms in the Spread model. However, we did not find any relationship in the Volume model. For non-high tech firms the results are much weaker in the Spread model although the sample size is much larger. In the Volume model Rdisc has a positive and weakly significant regression coefficient. Our inference is that high tech firms benefit more from risk disclosures than non-high tech firms. The finding is consistent with the results that we provided for small firms in panel A. Because high tech firms are risky, investors require and value high-quality risk information.

The impact of investor interest on the usefulness of risk disclosure has been demonstrated in panel C. High (low) analyst coverage subsample consist of firms that belong to the highest (lowest) tercile on the basis of the number of analysts following a firm (Analysts). We found that Rdisc is significantly associated with Spread (p-value 0.035) and Volume (p-value 0.077) in the least covered firms. However, we did not find this relation among the firms that were followed more extensively. This finding is in line with those of Botosan (1997) and Hope (2003) and suggests that investors are more dependent on the annual report risk disclosures of the less extensively followed firms.[27]

Panel D demonstrates the influence of market conditions on the relevance of annual risk disclosures. Interestingly, in the Spread models we document a negative and significant regression coefficient for Rdisc in rising, falling, and recovering stock markets. The results are weakly significant or non-significant in the Volume models. However, the small sample size probably makes the results vulnerable to type-two errors. The results imply that risk disclosures provide useful information to investors in every market condition. This finding coupled with those reported in table 6 provides evidence that investors require high-quality risk information regardless of the momentum of the stock markets.

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[27] This analysis has been complemented by analyzing a subsample which consists of firms followed by two or more analysts. There are altogether 312 observations in the subsample and altogether 297 observations are used in the regression (Spread model). Interestingly, the regression coefficients of Rdisc, Analysts and Rdisc*Analysts have the expected signs but they are all non-significant. This may be due to the lost degrees of freedom. However, a more probable explanation is that those firms which are followed by a single analyst or which are not followed at all benefit most from high quality risk disclosure. The finding is in line with those of Botosan (1997) and Hope (2003).

(Table 7 about here)

To summarize, the results provided in tables 6 and 7 suggest that annual report risk disclosures have a direct negative influence on information asymmetry as suggested in the hypothesis 1. In addition, we demonstrate that the usefulness of risk disclosure depends on several contingency factors as predicted in hypotheses 2, 3, and 4. High firm riskiness and low investor interest increase the relevance of risk disclosures. In addition, risk disclosures provided during falling and recovering stock markets are more useful to investors than those provided during rising stock markets.

## 6. Additional analyses

6.1. Alternative measures of information asymmetry and risk disclosure quality

None of the empirical measures for information asymmetry that have been used in the extant literature are perfect measures for the information gap between the management and investors (see, Lee & Masulis, 2009). The measures may include noise which decreases the significance of the regression results. In addition, they may be affected by other economic effects beyond asymmetric information.

The measurement of bid-ask spread has been widely discussed in the accounting and finance literature. One of the first approaches to measure the bid-ask spread is to use the implicit measure of the effective bid-ask spread in an efficient market (Roll, 1984). The advantage of this approach is its cost-effectiveness. Bid-ask spread is directly inferred from a time series as an autocovariance of percentage returns. We measured the covariance of present and one day lagged percentage returns and used that variable as our dependent variable in the regression analysis. The results show (not reported in detail) that Rdisc has a positive and significant regression coefficient. This implies that firms which have higher quality risk disclosure exhibit lower information asymmetry as measured by the autocovariance of returns.

We also tested whether our results are robust if we replaced relative bid-ask spread with effective spread in the regression analyses. Effective spread was computed as the difference between the trade price and the average of bid and ask

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price.[28] The untabulated results remained qualitatively the same. Rdisc is demonstrated to be negatively associated with this alternative measure of information asymmetry.

This paper also analyses the usefulness of annual report risk disclosure from the viewpoint of analysts by examining whether risk information asymmetry increases dispersion in analysts' forecasts (cf., Leutz, 2003). We include those firms in the sample which are followed by two or more analysts. There are altogether 312 observations in this 'analysts' subsample. We compute analysts' forecast deviation as a three (ten) months average deviation measured from May, June, and July (May-December). However, the regression coefficient of Rdisc is non-significant in both models. One reason for this finding may be that the analysts have specialized in the firms that they follow. They may also have some private sources of information. Because they have a lot of prior information, it is a challenge to the firms to fulfill the analysts' information needs with relevant risk disclosures. This coupled with the fact that the annual reports examined lacked risk descriptions in monetary terms may explain why we cannot find the expected relationship. The finding suggests that annual risk disclosures are more useful to investors than to analysts.[29]

Finally, comparability of information is one quality criterion in the FASB's 2010 conceptual framework. Botosan (2004) urges empirical research to invent new measures to capture that quality dimension. Hence, we constructed a new indicator for quality of risk disclosure which attempts to measure the consistency of reporting across time.[30] We examined the absolute value of yearly percent changes in Quantity

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[28] The difference has been multiplied by two and the absolute value has been used (see, Boehmer, Broussard, & Kallunki, 2002: 129).

[29] We also tested the impact of potential outlier observations on the results in the pooled sample. Firm-years falling outside three standard deviations from the mean of any variable were eliminated. The results remain qualitatively the same (not reported in detail). We can also demonstrate a negative association between the quality of risk disclosure and information asymmetry by using this reduced sample. Moreover, we ran winsorized regressions and computed the top one percent and bottom 99 percent percentiles for Spread and Volume. After that we tested how many firms have a higher or lower value for the corresponding variables. Five (five) firms have a higher (lower) value for bid-ask spread than the top one (bottom 99) percent percentile. Five (five) firms have a higher (lower) value for trading volume than the top one (bottom 99) percent percentile. Although the number of outlier firms is the same in both models, the outliers differ between the models. Next, the variable values of these outlier firms were replaced with the percentile values. We ran the main regressions by using these outlier corrected values for information asymmetry and document qualitatively similar results with the main tests. The regression coefficient of Rdisc is -1.235 (sig. 0.021) in the Spread model (no interaction effects included) and 0.130 (sig. 0.024) in the Volume model (no interaction effects included).

[30] It does not make sense to measure the comparability of information between 2005 and 2006 disclosures (annual reports for 2004 and 2005) because only a few firms provided overall risk reviews

and Coverage between 2006 and 2009 disclosures (Abs.Change). Next, we took the natural logarithm of the inverse ratio of Abs.Change. Higher variable values mean lower yearly increases or decreases in Quantity or Coverage and hence reflect higher quality with respect to comparability. First, we used the original Rdisc measure to run a regression for this three-year subsample (the fiscal years 2007-2009). Rdisc is significant with expected signs in both Spread and Volume models (interaction terms not included) and the statistical significance is even higher than in the four-years-sample. Second, we constructed a new composite measure for quality by using the factor analysis to combine Quantity, Coverage and Comparability. However, including this dimension in the analysis makes the composite measure for quality of risk disclosure non-significant regardless of whether we measure comparability of Quantity, Coverage, or both quality indicators at the same time (results untabulated).[31] [32]

6.2.    Additional risk factors

Next we extend our subsample analyses by examining the impact of three additional contingency factors on the usefulness of risk disclosure. These factors reflect firm riskiness and they are book-to-price ratio, beta, and financial leverage (results not reported in detail). All subsamples consist of firms in the highest (lowest) tercile of the measured variable.

     *Book-to-price ratio* is one component of the Fama & French (1992) three factor model. Fama & French (1992) show that firms with a high book-to-price ratio have tended to do better than the market as a whole. From the perspective of the efficient market theory (see, Fama, 1970; Fama, 1991), this finding implies that these firms are more risky to investors. Interestingly, we demonstrate that Rdisc is negatively and highly significantly associated with Spread in the low 'book-to-price' subsample. In the high 'book-to-price' subsample the corresponding relationship is non-significant. Rdisc is non-significant in both Volume models. We interpret that

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in their 2004 annual reports and hence improvements in the 2005 annual report disclosures would signal bad quality regarding comparability (cf., Miihkinen, 2012).
[31] Also, regressions which incorporate only the Comparability dimension in the analysis are non-significant.
[32] We also test the robustness of Rdisc by using industry-mean-adjusted Quantity and Coverage ratios in the computation of the composite indicator. The regression results are qualitatively similar to those reported in table 6.

many investors consider firms with low book-to-price ratio risky because of their high growth prospects, which increases the relevance of their annual risk disclosures.

*Beta* describes the systematic risk of the firm which is undiversifiable. Some firms have higher systematic and/or idiosyncratic risks which may affect the usefulness of risk disclosures provided to investors. Idiosyncratic risks should not have any pricing implications because they are diversifiable (e.g., Lintner, 1965). However, information risk affects investors' decision making regardless of the type of the reported risk. It cannot be diversified because its impact on firm value is always negative (see, Akerlof, 1970).

Interestingly, Rdisc has a negative and moderately significant regression coefficient (p-value 0.054) in the Spread model among the firms with high beta.[33] On the contrary, the regression coefficient is negative and highly significant (p-value 0.016) among the firms with low beta. In the Volume model we documented a positive and non-significant regression coefficient for Rdisc in both subsamples.

Our findings provide weak evidence that annual report risk disclosures are more useful to investors if the systematic risk is lower. We interpret that firms with low beta may provide more information on their idiosyncratic risks, which increases the uniqueness of their risk reporting compared with other firms. Hence, the relevance of these firms' risk disclosures is higher.

*Financial leverage* is one risk factor because it reflects the capital structure of firms. On one hand, prior research documents a negative association between financial leverage and corporate disclosure (e.g., Meek, Roberts, & Gray, 1995; Eng & Mak, 2003; Troberg, Kinnunen, & Seppänen, 2010). In addition to the motive of hiding the risk of bankruptcy, one potential explanation for the negative association is that highly leveraged firms use private financing to protect their proprietary information and consequently have less incentive for providing public financial information (e.g., Verrecchia, 1983; Healy & Palepu, 1993). On the other hand, Marshall & Weetman (2007) document that the information gap between management and investors is lower among firms with greater leverage.

We tested whether financial leverage affects the usefulness of the annual risk disclosures of firms. We demonstrate that Rdisc is significantly associated with

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[33] Beta is computed from the share and market index returns of the 36 months preceding publication of risk disclosures. OMXH was used as the market index. OMXH is a benchmark index made up of equities listed on OMX Helsinki.

information asymmetry in both models (Spread and Volume) among firms with high financial leverage. The results for firms with low financial leverage show that Rdisc associates negatively and significantly with Spread and non-significantly with Volume. Thus, we found some evidence that higher leverage increases the relevance of firms' risk reports.[34]

6.3.    Instrumental variable method: two-stage regressions

It is possible that omitted factors affect both risk disclosure and information asymmetry (i.e., correlated omitted variables bias). To control for this endogeneity problem we applied the instrumental variable method (cf., Leuz and Verrecchia, 2000; Hail, 2002; Barton & Waymire, 2004). We argue that firms' risk disclosures may be driven by firm riskiness, and that firm riskiness may also affect information asymmetry. The following instruments of firm riskiness are used: Leverage, Beta, EP, and Idio_risk. *Leverage* is the financial leverage of the firm computed as follows: 1-(common equity/total assets). It proxies the bankruptcy risk of the firm. High bankruptcy risk increases firms' vulnerability to risks and may decrease managers' willingness to provide risk information (Dobler, Lajili, & Zéghal, 2011; Miihkinen, 2012). *Beta* is the beta of the firm. It is computed from the share and market index returns of the 12 months preceding publication of the risk disclosure. OMXH Cap was used as the market index.[35] Beta is an empirical measure of the firm's market risk. High market risk may motivate managers to improve their risk disclosures (cf., Linsley & Shrives, 2006; Dobler, Lajili, & Zéghal, 2011; Miihkinen, 2012). *EP* is the earnings-to-price ratio of the firm. It describes the firm's growth prospects and risks. Higher growth prospects may increase managers' motives to disclose risks (Kanto & Schadewitz, 1997; Miihkinen, 2008, Miihkinen, 2012). *Idio_risk* measures the idiosyncratic risk of the firm. It is the standard deviation of the firm's abnormal returns of the 12 months (t-1) preceding the risk disclosure. It is expected that this measure correlates positively with the level of potential

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[34] In panel D of table 7 we document that risk disclosure is useful to investors under all market conditions. In additional tests we found that after the slump analyst coverage no longer affected the usefulness of risk disclosure. This finding provides evidence that under abnormal market conditions, the loss of confidence increases investors' information needs. Hence, they demand higher quality risk disclosures and all firms appear to be equally risky investments to them regardless of analysts' interests.
[35] OMXH Cap index consists of equities listed on OMXH Helsinki. In this index the highest weight for a share is ten percent.

information to disclose firm-specific risks (cf., Campbell, Chen, Dhaliwal, Lu, & Steele, 2013). We used a 12-month beta estimated from the share and market index (OMXH Cap) returns two years (t-2) before the risk disclosure in the computation of abnormal returns. Depending on the manager's disclosure incentives, the impact of firm-specific risk on risk disclosure can be positive or negative (see, Beyer, Cohen, Lys, & Walther, 2010).

First, we regressed Rdisc on all other explanatory variables of the main tests and the four instruments and computed the OLS estimates. Table 8 demonstrates that three (four) instruments out of four are significant at the five percent significance level in the Spread (Volume) model.[36] Second, we regressed the measures of information asymmetry (Spread and Volume) on the explanatory variables of the main tests (see, table 6) and an additional regressor that describes the fitted values of the error term of the first-stage regression. The OLS estimates show that the error term is significant in both models (Hausman test), which implies that the null hypothesis on the exogeneity of Rdisc can be rejected. Consequently, we ran second-stage regressions which are otherwise identical to those presented in table 6 but Rdisc variable is now replaced with its predicted values from the first-stage regression. It is expected that the predicted values of Rdisc are purged of correlation with omitted factors.

The results of the 2SLS regressions are reported in table 8. They corroborate the primary findings by demonstrating that Rdisc is still significantly associated with information asymmetry in both models. The sign and significance of the control variables are qualitatively similar to those reported in table 6. We also ran the regressions which examine the interaction effect between the contingency factors and the predicted values of Rdisc. The untabulated results are robust for the primary findings with some minor differences. In the Spread model the interaction effect between high tech firms and risk disclosure is no longer significant. Recent accounting literature discusses the problems of the use of instrumental variables and selection models in accounting research (Larcker & Rusticus, 2010; Lennox, Francis, & Wang, 2012). In this paper the instrumental variable method was used to

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[36] The untabulated Pearson correlation coefficients between the instruments (Leverage, Beta, EP, Idio_risk) and measures of information asymmetry (Spread and Volume) are as follows (significance provided in parentheses): Spread-Leverage 0.430 (0.000), Spread-Beta -0.357 (0.000), Spread-Idio_risk 0.660 (0.000), Spread-EP -0.357 (0.000), Volume-Leverage -0.082 (0.099), Volume-Beta 0.626 (0.000), Volume-Idio_risk -0.135 (0.008), and Volume-EP 0.062 (0.219).

demonstrate that the endogeneity problem should not drive the results. The 2SLS regressions provide evidence on the robustness of the results of the primary tests. Thus, problem of correlated omitted variables does not appear to be severe. This conclusion builds on the assumption of high-quality instruments and our understanding of managers' risk disclosure choices.

(Table 8 about here)

## 7.    Discussion, summary and conclusions

7.1.    Discussion

The results obtained within the framework of this paper provide evidence that high-quality risk disclosure reduces information asymmetry in the stock markets. The existing literature documents that there are significant deficiencies in the reporting of firms' quantitative risk disclosures across countries (e.g., Beretta & Bozzolan, 2004; Dobler, Lajili, & Zéghal, 2011, Miihkinen, 2012). Consequently, firms' emphasis on the narrative risk disclosures may be one reason why few studies have examined the economic consequences of firms' overall risk reviews. It is difficult to find a setting in which the potential relevance of firms' overall risk reviews can be documented. Our results are in line with those of Campbell, Chen, Dhaliwal, Lu, & Steele (2013), who demonstrate a negative association between information asymmetry and corporate risk disclosures in the US.[37] Thus, although risk disclosures are partly inadequate even in the most advanced risk reporting settings it seems evident that the overall risk reviews provided in the US and Finland reflect at least some of firms' risks and are hence useful to investors.

It is expected that these results could be also generalized to Canada, the UK, and Germany which have more pronounced risk standards than average countries (Dobler, Lajili, & Zéghal, 2011). This is so because more comprehensive risk reporting requirements are expected to increase investors' trust in the overall reliability of firms' risk disclosures and hence they are more willing to use that

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[37] Huang  (2011) and Kravet & Muslu (2013) also provide evidence that mandatory overall risk reviews are informative to investors although these papers do not address the effect of risk disclosures on information asymmetry.

information in their decision making. On the contrary, generalizing the results to the South-European countries (e.g., Greece and Italy) is not so obvious. Beretta & Bozzolan (2004) demonstrate that larger firms do not provide high-quality risk information in the Italian voluntary risk disclosure environment which may hint that the quality of risk disclosure is not that high in these countries. Lower quality disclosures may reduce the information value of firms' risk reviews across South-European reporting environments.

Finally, it must be taken into account that the impact of firms' risk disclosures on information asymmetry depends on several contingency factors. Riskier firms are expected to benefit more from high-quality overall risk reviews in all advanced risk reporting environments. Similarly, the risk reviews of less extensively followed firms are probably more useful to investors in these countries. In difficult economic conditions the need for risk transparency increases and this finding should be generalizable to all countries with stock markets.

## 7.2.    Summary and conclusions

This paper examines whether the mandatory risk disclosures provided in firms' annual reports contain useful information to investors and whether the usefulness of this type of information depends on contingency factors related to firm riskiness, investor interest, and general market conditions. Risk disclosure provides critical information to investors because information asymmetry regarding firm risks effectively hampers firm valuation. Hence, investors should benefit from high-quality risk disclosures. So far, the extant accounting literature has focused on examining the regulatory and non-regulatory determinants of risk disclosure (e.g., Roulstone, 1999; Beretta & Bozzolan, 2004; Linsley & Shrives, 2006) or the value relevance of market risk disclosures (e.g., Rajgopal, 1999; Linsmeier, 2002; Jorion, 2002; Lim & Tan, 2007). Recently, concurrent studies on firms' mandatory overall risk disclosures in the US have provided evidence that these disclosures are informative to investors despite the reporting deficiencies (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013). However, we do not have evidence on the usefulness of overall risk reviews in a highly regulated risk disclosure environment. Filling this gap is the purpose of this paper.

Finland is the test-setting of the study. In Finland, firms' risk disclosures are guided by a specific standard issued in 2006. The standard provides firms with an extensive description of expected risk reporting and also gives some disclosure examples.

Using a sample of risk disclosures by Finnish firms listed in the OMX Helsinki during 2006-2009 we demonstrate that information asymmetry decreases with the quality of firms risk disclosure. This result is robust for alternative indicators of asymmetric information. In addition, we document that risk disclosures are more useful if they are provided by small firms and high tech firms. Also, low investor interest and the severe economic downturn during the research period increase the usefulness of firms' risk reports. Overall, the findings provide evidence that annual report risk disclosures provide useful information to investors.

This paper contributes prior risk disclosure literature by examining the role of mandatory risk disclosures in lowering information asymmetry in a highly regulated risk disclosure environment, Finland. In general, the results are in line with the extant literature which documents that soft accounting information is useful to investors (e.g., Abrahamson & Amir, 1996; Kothari, Li, & Short, 2009; Demers & Vega, 2010). In specific, the results are consistent with the current US evidence (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013).

We also add to the concurrent risk disclosure literature in the US setting (Huang, 2011; Kravet & Muslu, 2013; Campbell, Chen, Dhaliwal, Lu, & Steele, 2013) by including several relevant contingency factors into the analyses. Our results show how different firm riskiness, investor interest, and market conditions influence the relevance of firms' risk reports. The finding that the riskiness of the firms and stock markets affects the relevance of risk disclosures is consistent with the efficient market theory (see, Fama, 1970; Fama & French, 1992). The results are also interesting from the perspective of the studies that suggest that analyst coverage and corporate disclosure are positively associated (Lang & Lundholm, 1993; Francis, Hanna, & Philbrick, 1997; Healy, Hutton, & Palepu, 1999). We demonstrate that there are differences in the economic consequences of risk disclosures provided by firms with high and low investor interest (cf., Botosan, 1997; Hope, 2003; Easley & O'Hara, 2004). The finding suggests that the risk profiles of the less extensively followed firms are vague to investors, which increases the reactions of investors to

their risk disclosures. The result is also consistent with the view that the information environment of the more extensively followed firms differs from that of other firms.

The findings of the study have implications for regulators, firms, and investors. First, it is important for regulators to note that the usefulness of risk reporting to investors has been documented in an institutional setting where risk reporting is regulated through detailed risk disclosure guidance augmented with illustrative examples. A similar approach can provide a promising solution for increasing the relevance of risk disclosure to investors also in other countries. Our results demonstrate that the significant differences in the Finnish and US institutional settings do not alter the conjecture that high-quality overall risk reviews are useful to investors. Second, firms can utilize the results when they want to reduce the information asymmetry component of their cost of capital. Finally, investors benefit from the study through an increased awareness of the association between information asymmetry and risk disclosure. Thus, the results may help them to develop more effective trading strategies.

One limitation of the analysis of risk disclosures is that it is difficult verify their validity. Disclosures relating to financial risks can be more easily verified (cf., Dobler, 2008) but it is more difficult to give verifiable information on strategic risks. Managerial discretion is an inherent part of risk reporting due to its subjective and partly nonverifiable nature and may decrease some investors trust on certain risk disclosures. This means that the documented statistically significant relation between information asymmetry and quality of risk disclosure would be actually even stronger if we assume that every firm would give credible information and all investors would trust that information.

Finland belongs to the Scandinavian institutional setting where investor protection is lower than in the Anglo-Saxon countries (e.g., US and UK) but higher than in southern Europe (e.g., Greece and Italy) (La Porta et al., 1997; La Porta et al., 2000). The results of this study suggest that investors need transparent risk information in a country of semi-strong investor protection. The information needs can be expected to be even higher in countries of low investor protection. Analyzing the impact of high-quality risk disclosures on information asymmetry in countries of low investor protection is a promising avenue for future research.

# References

Abraham, S., & Cox, P. (2007). Analysing the determinants of narrative risk information in UK FTSE 100 annual reports. *British Accounting Review, 39* (3), 227–248.

Abrahamson, E., & Amir, E. (1996). The information content of the president's letter to shareholders. *Journal of Business Finance & Accounting*, 23 (8), 1157–1182.

Adelopo, I. (2011) Voluntary disclosure practices amongst listed companies in Nigeria. *Advances in Accounting, incorporating Advances in International Accounting*, 27 (2), 338–345.

Akerlof, G. (1970). The market for lemons: quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84 (3), 488–500.

Al Jifri, K., & Citron, D. (2009). The value-relevance of financial statement recognition versus note disclosure: evidence from goodwill accounting. *European Accounting Review, 18* (1), 123–140.

Amir, E., & Lev, B. (1996). Value-relevance of nonfinancial information: the wireless communication industry. *Journal of Accounting and Economics*, 22 (1-3), 3–30.

Amran, A., Bin, A.M.R, & Hassan, B.C.H.M. (2009). Risk reporting: an exploratory study on risk management disclosure in Malaysian annual reports. *Managerial Auditing Journal, 24* (1), 39–57.

Ball, R. (2009). The global financial crisis and the efficient market hypothesis: what have we learned. *Journal of Applied Corporate Finance*, 21 (4), 8–16.

Barton, J., & Waymire, G. (2004). Investor protection under unregulated financial reporting. *Journal of Accounting and Economics*, 38 (1), 65-116.

Beattie, V., McInnes, B, & Fearnley, S. (2004). A methodology for analysing and evaluating narratives in annual reports: a comprehensive descriptive profile and metrics for disclosure quality attributes. *Accounting Forum*, 28 (3), 205–236.

Beretta, S., & Bozzolan, S. (2008). Quality versus quantity: the case of forward-looking disclosure. *Journal of Accounting, Auditing and Finance, 23* (3), 333–375.

Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting*, 39 (3), 265–288.

Bertomeu, J., Beyer, A., & Dye, R.A. (2011). Capital structure, cost of capital, and voluntary disclosures. *The Accounting Review*, 86 (3), 857–886.

Beyer, A., Cohen, D.A., Lys, T.Z., & Walther, B. R. (2010). The financial reporting environment: review of the recent literature. *Journal of Accounting and Economics,* 50 (2-3), 296–343.

Boehmer, E., Broussard, J., & Kallunki, J. (2002). *Using SAS in financial research*. Cary,NC:SAS Institute Inc.

Botosan, C.A. (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, 72 (3), 323–349.

Botosan, C.A. (2004). Discussion of a framework for the analysis of firm risk communication. *The International Journal of Accounting*, 39 (3), 289–295.

Bozzolan, S., Trombetta, M., & Beretta, S. (2009). Forward-looking disclosures, financial verifiability and analysts' forecasts: a study of cross-listed European firms. *European Accounting Review, 18* (3), 435–473.

Cahan, S.F., Rahman, A., & Perera, H. (2005). Global diversification and corporate disclosure. *Journal of International Accounting Research*, 4 (1), 73–93.

Campbell, J.L., Chen, H, Dhaliwal, D.S., Lu, H., & Steele, L.B. (2013). The information content of mandatory risk factor disclosures in corporate filings. Forthcoming in *Review of Accounting Studies*. Electronic copy available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1694279 Accessed 08.02.2013.

Chen, S., DeFond, M.L., & Park, C.W. (2002). Voluntary disclosure of balance sheet information in quarterly earnings announcements. *Journal of Accounting and Economics*, 33 (2), 229–251.

Christensen, P.O., De La Rosa, L.E., & Feltham G.A. (2010). Information and the cost of capital: an ex ante perspective. *The Accounting Review*, 85 (3), 817–848.

Cooke, T.E. (1989). Voluntary corporate disclosure by Swedish firms. *Journal of International Financial Management and Accounting*, 1 (2), 171–195.

Copeland, T., & Galai, D. (1983). Information effects on the bid-ask spread. *The Journal of Finance*, 38 (5), 1457–1469.

Cormier, D., Magnan, M, & Van Velthoven, B. (2005). Environmental disclosure quality in large German companies: economic incentives, public pressures or institutional conditions. *European Accounting Review*, 14 (1), 3–39.

Daniel, K., Hirshleifer, D., & Teoh, S. H. (2002). Investor psychology in capital markets: evidence and policy implications. *Journal of Monetary Economics, 49* (1), 139–209.

Dechow, P., & Dichev, I. (2002). The quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review*, 77 (Supplement), 35–59.

Demers, E.A., & Vega, C. (2010). *Soft information in earnings announcements: news or noise*. Working paper at INSEAD. Electronic copy available at http://www.insead.fr/facultyresearch/research/doc.cfm?did=44292 Accessed 16.09.2012.

Deumes, R. (2008). Corporate risk reporting: a content analysis of narrative risk disclosures in prospectuses. *Journal of Business Communication, 45* (2), 120–157.

Dichev, I.D. (2008). On the balance sheet-based model of financial reporting. *Accounting Horizons*, 22 (4), 453–470.

DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and using factor scores: considerations for the applied researcher. *Practical assessment, research & evaluation*, 14 (20), 1–11.

Dobler, M., Lajili, K., & Zéghal, D. (2012). Environmental performance, environmental risk and risk management. *Business Strategy and the Environment*, Published online in Wiley Online Library.

Dobler, M., Lajili, K., & Zéghal, D. (2011). Attributes of corporate risk disclosure: an international investigation in the manufacturing sector. *Journal of International Accounting Research*, 10 (2), 1–22.

Dobler, M. (2008). Incentives for risk reporting – a discretionary disclosure and cheap talk approach. *The International Journal of Accounting*, 43(2), 184–206.

Easley, D., & O'Hara, M. (2004). Information and the cost of capital. *The Journal of Finance*, 59 (4), 1553–1583.

Elmy, F.J., LeGuyader, L.P., & Linsmeier, T.J. (1998). A review of initial filings under the SEC's new market risk disclosure rules. *Journal of Corporate Accounting and Finance*, 9 (4), 33–45.

Eng, L., & Mak, Y. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, 22 (4), 325–345.

Fama, E.F., & French, K.R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47 (2), 427–465.

Fama, E. (1991). Efficient markets: II. *Journal of Finance*, 46 (5), 1575–1617.

Fama, E.F. (1970). Efficient capital markets: a review of theory and empirical work. *The Journal of Finance*, 25 (2), 383–417.

Fang, L., & Peress, J. (2009). Media coverage and the cross-section of stock returns. *The Journal of Finance*, 64 (5), 2023–2052.

Financial Accounting Standards Board. (2010). Statement of Financial Accounting Concepts No. 8, Conceptual Framework for Financial Reporting Chapter 3, Qualitative Characteristics of Useful Financial Information. Electronic copy available at
http://www.fasb.org/cs/BlobServer?blobkey=id&blobwhere=1175822892635&blobheader=application%2Fpdf&blobcol=urldata&blobtable=MungoBlobs
Accessed 11.11.2012.

Francis, J., Hanna, J., & Philbrick, D. (1997). Management communications with securities analysts. *Journal of Accounting and Economics*, 24 (3), 363–394.

Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance. *Journal of Accounting Research*, 37 (2), 319–352.

Francis, J., Lafond, R., Olsson, P., & Schipper, K. (2007). Information uncertainty and post-earnings-announcement-drift. *Journal of Business Finance & Accounting*, 34 (3-4), 403–433.

Francis, J., Nanda, D., & Olsson, P. (2008). Voluntary disclosure, earnings quality, and cost of capital. *Journal of Accounting Research*, 46 (1), 53–99.

Glosten, L., & Milgrom, P. (1985). Bid, ask, and transaction prices in a specialist market with hetergeneously informed traders. *Journal of Financial Economics*, 14 (1), 71–100.

Hail, L. (2002). The impact of voluntary corporate disclosures on the ex-ante cost of capital for Swiss firms. *The European Accounting Review*, 11 (4), 741–773.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). Multivariate data analysis with readings. New Jersey: Prentice-Hall.

Haller, A., Ernstberger, J., & Froschhammer, M. (2009). Implications of the mandatory transition from national GAAP to IFRS – Empirical evidence from Germany. *Advances in Accounting, incorporating Advances in International Accounting*, 25 (2), 226–236.

Hassan, M. K. (2009). UAE corporations-specific characteristics and level of risk disclosure. *Managerial Auditing Journal, 24* (7), 668–687.

Healy, P.M., & Palepu, K.G. (2001). Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31(1-3), 405–440.

Healy, P., Hutton, A., & Palepu, K. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research*, 16 (3), 485–520.

Healy, P.M., & Palepu, K.G. (1993). The effect of firm's financial disclosure strategies on stock prices. *Accounting Horizons*, 7 (1), 1–11.

Hill, P., & Short, H. (2009). Risk disclosures on the second tier markets of the London stock exchange. *Accounting and Finance, 49* (4), 753–780.

Hodder, L., Koonce, L., & McAnally, M. L. (2001). SEC market risk disclosures: implications for judgment and decision making. *Accounting Horizons, 15* (1), 49–70.

Hope, O-K. (2003). Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: an international study. *Journal of Accounting Research*, 41 (2), 235–272.

Huang, K. (2011). Exploring the information contents of risk factors in SEC form 10-K: a multi-label text classification application. Working paper. Electronic copy available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1784527 Accessed 16.09.2012.

Hughes, J.S., Liu, J., & Liu, J. (2007). Information asymmetry, diversification, and cost of capital. *The Accounting Review*, 82 (3), 705–729.

IFRS practice statement. (2010). *Management commentary – A framework for presentation*.
Electronic copy available at http://www.ifrs.org/Current-Projects/IASB-Projects/Management-Commentary/IFRS-Practice-Statement/Documents/Managementcommentarypracticestatement8December.pdf Accessed 16.09.2012.

Jorgensen, B. N., & Kirschenheiter, M. T. (2003). Discretionary risk disclosures. *The Accounting Review, 78* (2), 449–469.

Jorion, P. (2002). How informative are value-at-risk disclosures. *The Accounting Review, 77* (4), 911–931.

Kajüter, P. (2001). Risikoberichterstattung: Empirische Befunde und der Entwurf des DRS 5. *Der Betrieb*, 54 (3), 105–111 (translation: riskreporting: empirical findings and draft of DRS 5).

Kallunki, J., Martikainen, M., Martikainen, T., & Yli-Olli, P. (1997) The Finnish stock market: a survey of some empirical evidence and its practical relevance. *The Finnish Journal of Business Economics*, 1 (4), 474–495.

Kanto, A., & Schadewitz, H. J. (1997). A multidimensional model for the disclosure policy of a firm. *Scandinavian Journal of Management*, 13 (3), 229–249.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). Governance matters VIII. Aggregate and individual governance indicators 1996-2008. World Bank Policy Research working paper. Electronic copy available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1424591 Accessed 23.09.2012.

Kini, O, & Mian, S. (1995). Bid-ask spread and ownership structure. *The Journal of Financial Research*, 18 (4), 401–414.

Koonce, L., McAnally, M.L., & Mercer, M. (2005). How do investors judge the risk of financial items. *The Accounting Review*, 80 (1), 221–241.

Koonce, L., Lipe, M.G., & McAnally, M.L. (2005). Judging the risk of financial instruments: problems and potential remedies. *The Accounting Review*, 80 (3), 871–895.

Kothari, S.P., Li, X., & Short, J.E. (2009). The effect of disclosures by management, analysts, and business press on cost of capital, return volatility, and analyst forecasts: a study using content analysis. *The Accounting Review*, 84 (5), 1639–1670.

Kravet, T., & Muslu, V. (2013). Textual risk disclosures and investors' risk perceptions. Forthcoming in *Review of Accounting Studies*. Electronic copy available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1736228 Accessed 06.01.2013.

Krippendorf, K. (1980). *Content analysis: an introduction to its methodology*. Beverly Hills, CA: Sage Publications.

Lajili, K., & Zéghal, D. (2005). A content analysis of risk management disclosures in Canadian annual reports. *Canadian Journal of Administrative Sciences, 22* (2), 125–142.

Lakonishok, J., Shleifer, A, & Vishny R.W. (1992). The impact of institutional trading on stock prices. *Journal of Financial economics*, 32 (1), 23–43.

Lambert, R.A., Leuz, C., & Verrecchia, R.E. (2012). Information asymmetry, information precision, and the cost of capital. *Review of Finance*, 16 (1), 1–29.

Lambert, R.A., Leuz, C., & Verrecchia R.E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45 (2), 385–420.

Lang, M., & Lundholm, R. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, 31 (2), 246–271.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor Protection and Corporate Governance. *Journal of Financial Economics*, 58 (1-2), 3–27.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (1997). Legal Determinants of External Finance, *The Journal of Finance*, 52 (3), 1131–1150.

Larcker, D.F., & Rusticus, T.O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, 49 (3), 186–205.

Lee, G., & Masulis, R.W. (2009). Seasoned equity offerings: quality of accounting information and expected flotation costs. *Journal of Financial Economics*, 92 (3), 443–469.

Lennox, C.S., Francis, J.R, & Wang, Z. (2012). Selection models in accounting research. *The Accounting Review*, 87 (2), 589–616.

Lennox, C.S., & Park, C.W. (2006). The informativeness of earnings and management's issuance of earnings forecasts. *Journal of Accounting and Economics*, 42 (3), 439–458.

Leuz, C. (2003). IAS versus U.S.GAAP: information asymmetry-based evidence from Germany's New Market. *Journal of Accounting Research*, 41 (3), 445–472.

Leuz, C., & Verrecchia, R.E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, 38 (Supplement), 91–124.

Lev, B. (1988). Towards a theory of equitable and efficient accounting policy. *The Accounting Review*, 63 (1), 1–22.

Lim, C. Y., & Tan, P. M. (2007). Value relevance of value-at-risk disclosure. *Review of Quantitative Finance and Accounting, 29* (4), 353–370.

Lin, C., Owens, W. L., & Owers, J. E. (2010). The association between - market risk disclosure reporting and firm risk: The impact of SEC FRR no. 48. *Journal of Applied Business Research, 26* (4), 35–46.

Linsley, P.M., & Shrives, P.J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *The British Accounting Review*, 38 (4), 387–404.

Linsmeier, 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 movements. *The Accounting Review, 77* (2), 343–377.

Lintner, J. (1965). The valuation of risky assets and the selection of risky investments in stock portfolios and capital budgets. *Review of Economics and Statistics*, 47 (1), 13–37.

Liu, C., Ryan, S. G., & Tan, H. (2004). How banks' value-at-risk disclosures predict their total and priced risk: effects of bank technical sophistication and learning over time. *Review of Accounting Studies, 9* (2-3), 265–294.

Lougee, B., & Marquardt, C. (2004). Earnings informativeness and strategic disclosure: an empirical examination of "pro forma" earnings, *The Accounting Review*, 79 (3), 769–795.

Marshall, A., & Weetman, P. (2007). Modelling transparency in disclosure: the case of foreign exchange risk management. *Journal of Business Finance and Accounting, 34* (5-6), 705–739.

Marshall, A. P., & Weetman, P. (2002). Information asymmetry in disclosure of foreign exchange risk management: can regulation be effective. *Journal of Economics and Business, 54* (1), 31–53.

McNichols, M. (2002). Discussion of 'the quality of accruals and earnings: the role of accrual estimation errors'. *The Accounting Review*, 77 (Supplement), 61–69.

Meek, G.K., Roberts, C.B., & Gray, S.J. (1995). Factors influencing voluntary annual report disclosures by U.S., U.K. and continental European multinational corporations. *Journal of International Business Studies*, 26 (3), 555–572.

Miihkinen, A. (2012). What drives quality of firm risk disclosure? The impact of a national disclosure standard and reporting incentives under IFRS. *The International Journal of Accounting*, 47 (4), 437–468.

Miihkinen, A. (2008). Efficiency of authoritative disclosure recommendations: evidence from IFRS transition disclosure in Finland. *Journal of Financial Regulation and Compliance*, 16 (4), 384–413.

Milne, M., & Adler, R. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing and Accountability Journal*, 12 (2), 237–56.

Pérignon, C., & Smith, D. R. (2010). The level and quality of value-at-risk disclosure by commercial banks. *Journal of Banking and Finance*, *34* (2), 362–377.

Petersen, M. A. (2009). Estimating standard errors in financial panel data sets: comparing approaches. *The Review of Financial Studies*, 22 (1), 435–480.

Rajgopal, S. (1999). Early evidence on the informativeness of the SEC's market risk disclosures: the case of commodity price risk exposure of oil and gas producers. *The Accounting Review*, 74 (3), 251–280.

Roll, R. (1984). A simple implicit measure of the effective bid-ask spread in an efficient market. *The Journal of Finance*, 39 (4), 1127–1139.

Roulstone, D.T. (1999). Effect of SEC financial reporting release No.48 on derivative and market risk disclosure. *Accounting Horizons*, 13 (4), 343–363.

Schipper, K. (2007). Required disclosures in financial reports. *The Accounting Review, 82* (2), 301–326.

Scott, W.R. (2009). *Financial Accounting Theory.* Toronto: Prentice-Hall.

Sribunnak, V., & Wong, M. H. F. (2006). The impact of excluding nonfinancial exposure on the usefulness of foreign exchange sensitivity-analysis risk disclosures. *Journal of Accounting, Auditing and Finance, 21* (1), 1–25.

Stoll, H. (1978). The pricing of security dealer services: an empirical study of NASDAQ stocks. *Journal of Finance*, 33 (4), 1153–1172.

Taylor, G., Tower, G., & Neilson, J. (2010). Corporate communication of financial risk. *Accounting and Finance, 50* (2), 417–446.

Troberg, P., Kinnunen, J., & Seppänen, H.J. (2010). What drives cross-segment diversity in returns and risks? Evidence from Japanese and U.S. firms. *The International Journal of Accounting*, 45 (1), 44–76.

Venkatesh, P.C., & Chiang, R. (1986). Information asymmetry and the dealer's bid-ask spread: a case study of earnings and dividend announcements. *The Journal of Finance*, 41 (5), 1089–1102.

Verrecchia, R. (1983). Discretionary disclosure. *Journal of Accounting and Economics*, 5, 179–194.

Welker, M. (1995). Disclosure policy, information asymmetry, and liquidity in equity markets. *Contemporary Accounting Research*, 11 (2), 801–827.

Zechman, S.L. (2010). The relation between voluntary disclosure and financial reporting: evidence from synthetic leases. *Journal of Accounting Research*, 48 (3), 725–765.

**Figure 1.** Risk disclosure regulation in Finland since 1989 (sources: the documents published by the respective authorities)

| | Information that assures a true and fair view of a firm's history and prospects must be provided. | The released information has to be extensive enough to make it possible to assess its impact on the value of the firm. | A fair and extensive description of significant risks must be provided in the operating and financial review. | Significant risks must be disclosed in the interim report. A risk review must be provided in the IPO prospectus. | Information on internal control, risk management and internal auditing must be provided or reliable governance arranged. | A balanced description of a firm's risks (strategic, operations, financial, damage, and risk management) must be provided in the operating and financial review. |
|---|---|---|---|---|---|---|
| The Finnish Accounting Act (1997, revised 2004) | X | | X | | | |
| The standard of the Finnish Accounting Practice Board (2006) | | | | | | X |
| The Finnish Securities Markets Act (1989, revised 2007) | X | | | X | X | |
| The rules of the OMX Helsinki (1989, revised several times) | X | X | | | | |
| Corporate governance code (2003, revised 2009) | | | | | X | |
| Financial Supervisory Authority (2007) | | | | | X | |

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**Figure 2.** The behavior of the OMX Helsinki stock index in 2005-2009
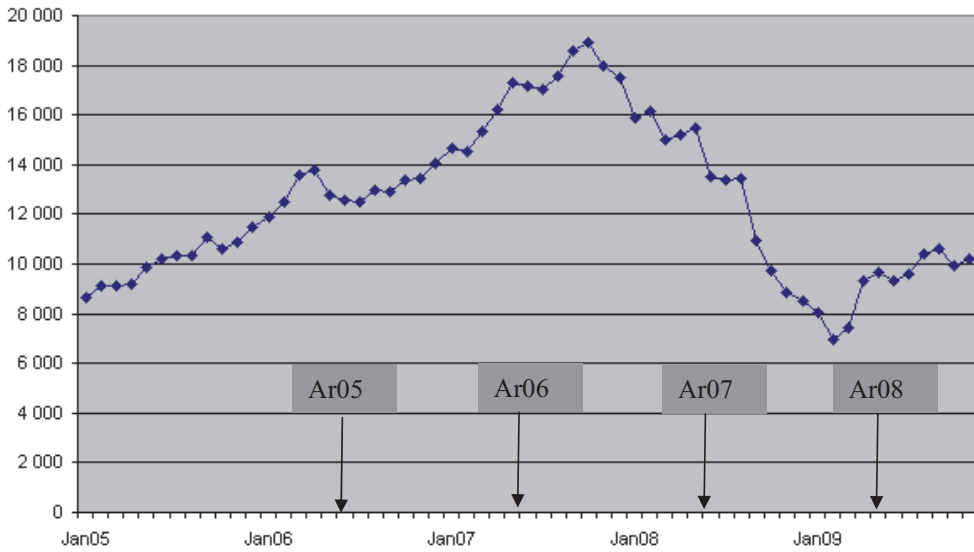


*Ar05- Ar08* denote the average publication dates for annual reports from 2005 through 2008.

**Table 1.** Sample selection[a]

| Selection criteria | Spread model | Volume model |
|---|---|---|
| 1. The research population consists of firms quoted on OMX Helsinki in 2006-2009. | 504 | 504 |
| 2. Members of the financial services industry are excluded. | 52 | 52 |
| 3. Lost firm-year observations due to initial listing, delisting or restructuring of the firm between 2005 and 2009. | 32 | 32 |
| 4. Firms with differing fiscal periods are excluded. | 12 | 12 |
| -------------------------------------------------------------------------- | | |
| *Number of observations with released annual reports* | 408 | 408 |
| -------------------------------------------------------------------------- | | |
| 5. Firms with missing data are excluded | 22 | 106 |
| -------------------------------------------------------------------------- | | |
| *Number of observations in the main tests* | 386 | 302 |

[a] This table describes the data selection steps. In the first step, we identify firms quoted on OMX Helsinki in 2006-2009. Second, we deleted firms that are members of financial services industry to increase the homogeneity of the sample. Third, we excluded firms that were initially listed or restructured between 2005 and 2009. Fourth, we omitted firms that did not have calendar year as their fiscal year to control for the timing of the released risk disclosures. After these exclusions the target sample comprised 408 firm-year observations which had released annual reports available for content analysis. Finally, in the main regressions we excluded observations for which we could not retrieve all the values of the examined variables.

**Table 2.** Content analysis results for each year[a]

| | 2006 (n=99) | 2007 (n=99) | 2008 (n=105) | 2009 (n=105) | *T-tests for equal means* | | | |
| | | | | | 06 vs. 07 (sig.) | 07 vs. 08 (sig.) | 08 vs. 09 (sig.) | 06 vs. 09 (sig.) |
|---|---|---|---|---|---|---|---|---|
| *Strategic risks* | | | | | | | | |
| # Firms disclosing | 36 | 85 | 102 | 103 | | | | |
| Quantity (words) | | | | | | | | |
|   Mean | 196.0 | 180.2 | 205.5 | 230.0 | *(0.694)* | *(0.392)* | *(0.376)* | *(0.372)* |
|   Maximum | 785 | 1095 | 820 | 1040 | | | | |
|   Minimum | 15 | 12 | 3 | 11 | | | | |
| *Operations risks* | | | | | | | | |
| # Firms disclosing | 47 | 86 | 98 | 95 | | | | |
| Quantity (words) | | | | | | | | |
|   Mean | 144.4 | 150.4 | 155.4 | 178.8 | *(0.834)* | *(0.836)* | *(0.371)* | *(0.242)* |
|   Maximum | 646 | 885 | 857 | 974 | | | | |
|   Minimum | 9 | 9 | 6 | 3 | | | | |
| *Financial risks* | | | | | | | | |
| # Firms disclosing | 45 | 79 | 87 | 91 | | | | |
| Quantity (words) | | | | | | | | |
|   Mean | 147.7 | 139.1 | 119.2 | 155.7 | *(0.824)* | *(0.480)* | *(0.132)* | *(0.812)* |
|   Maximum | 797 | 1359 | 659 | 778 | | | | |
|   Minimum | 11 | 9 | 5 | 3 | | | | |

[a] This panel provides yearly values for the mean, maximum, and minimum number of words for each main topic of the risk disclosure framework (strategic, operations, financial, damage, and risk management). *# Firms disclosing* describes the number of firms that provided some information on a specific risk topic. For example, in 2006 there were altogether 36 firms out of 99 which provided information on strategic risks. *All risks* describes yearly statistics for firms which reported each of the five risk topics in their risk reviews. The yearly statistics for Coverage are also provided. *Coverage* is the inverse of the Herfindahl index value divided by the number of main risk topics. *No disclosure* depicts the number of firms which do not give any risk information on a specific year. The panel also reports the results of the unpaired t-tests (two-tailed significance).

Table 2 (continued)

|  | 2006 (n=99) | 2007 (n=99) | 2008 (n=105) | 2009 (n=105) | 06 vs. 07 (sig.) | 07 vs. 08 (sig.) | 08 vs. 09 (sig.) | 06 vs. 09 (sig.) |
|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  | *T-tests for equal means* |  |  |  |
| *Damage risks* |  |  |  |  |  |  |  |  |
| # Firms disclosing | 52 | 77 | 82 | 82 |  |  |  |  |
| Quantity (words) |  |  |  |  |  |  |  |  |
| Mean | 46.2 | 59.0 | 55.2 | 56.3 | *(0.175)* | *(0.667)* | *(0.891)* | *(0.241)* |
| Maximum | 173 | 320 | 266 | 268 |  |  |  |  |
| Minimum | 4 | 4 | 5 | 5 |  |  |  |  |
| *Risk management* |  |  |  |  |  |  |  |  |
| # Firms disclosing | 81 | 92 | 98 | 98 |  |  |  |  |
| Quantity (words) |  |  |  |  |  |  |  |  |
| Mean | 109.2 | 159.4 | 163.0 | 202.9 | *(0.007)* | *(0.864)* | *(0.084)* | *(0.000)* |
| Maximum | 440 | 721 | 702 | 809 |  |  |  |  |
| Minimum | 10 | 9 | 5 | 13 |  |  |  |  |
| *All risks* |  |  |  |  |  |  |  |  |
| # Firms disclosing | 24 | 55 | 67 | 70 |  |  |  |  |
| Quantity (words) |  |  |  |  |  |  |  |  |
| Mean | 759.0 | 793.9 | 782.8 | 926.0 | *(0.821)* | *(0.922)* | *(0.151)* | *(0.231)* |
| Maximum | 2207 | 3281 | 2435 | 2715 |  |  |  |  |
| Minimum | 212 | 132 | 154 | 140 |  |  |  |  |
| *Coverage* |  |  |  |  |  |  |  |  |
| Mean | 0.493 | 0.610 | 0.633 | 0.628 | *(0.000)* | *(0.344)* | *(0.816)* | *(0.000)* |
| Maximum | 0.952 | 0.976 | 0.930 | 0.962 |  |  |  |  |
| Minimum | 0.000 | 0.000 | 0.000 | 0.000 |  |  |  |  |
| *No disclosure* |  |  |  |  |  |  |  |  |
| # Firms disclosing | 4 | 1 | 1 | 1 |  |  |  |  |

**Table 3.** Variable definitions

**Dependent variables**

Spread
An empirical measure for information asymmetry in the stock markets. It is the three-month average relative spread of a firm. Relative spread is computed as follows: [(ask price - bid price)/((ask price + bid price)/2)]*100. Ask price and bid price are closing prices.

Volume
An empirical measure for information asymmetry in the stock markets. It is a three-month average daily share turnover. Share turnover is computed as follows: (daily trading volume/number of shares outstanding)*100.

**Independent variables**

Rdisc
An empirical measure for the quality of annual report risk disclosure. It is the score of the principal component with the highest eigenvalue computed from the firm-specific risk disclosure quantity and coverage ratios.

Quantity
The first dimension of risk disclosure quality. It is the natural logarithm of the total number of risk disclosure words.

Coverage
The second dimension of quality of risk disclosure. It is the inverse of the Herfindahl index value divided by the number of main risk topics. The main risk topics are strategic risks, operations risks, financial risks, damage risks, and risk management.

Mcap
An empirical measure for firm size capturing the impact of riskiness and overall quality of corporate disclosure on information asymmetry. It is the natural logarithm of the market value of a firm. The three-month average of the daily value is used.

Htech
Indicator variable = 1, if the firm is a high tech firm, otherwise 0. High tech firms are selected on the basis of their three-digit SIC codes as suggested by Francis and Schipper (1999).

Analysts
An empirical measure for investor interest. It is computed as follows: ln(1 + number of analysts following a firm).

Falling
Indicator variable = 1, if firms' risk disclosures are published during the falling stock markets of 2008, otherwise 0.

Recovering
Indicator variable = 1, if firms' risk disclosures are published during the recovering stock markets of 2009, otherwise 0.

| | |
|---|---|
| Volatility | An empirical measure for the total market risk of a firm. It is a three-month average standard deviation of daily stock returns multiplied by 100. |
| ErnQual | An empirical measure for the earnings quality of a firm. It is the score of the principal component with the highest eigenvalue computed from two alternative measures of earnings quality (AQ and ErnVar). The absolute values of the principle component scores are multiplied by -1 to adjust higher scores to reflect higher earnings quality. |
| AQ | The first proxy for earnings quality. It is computed by regressing working capital accruals on cash from operations in the current period, prior period, and future period, as well as the change in revenues and property, plant, and equipment. AQ is the standard deviation of the residual, with larger standard deviations indicating poorer accruals quality (cf., McNichols, 2002; Francis et al., 2007; Francis et al., 2008). |
| ErnVar | The second proxy for earnings quality. It is the standard deviation of the firm's earnings over 2003-2009. Earnings are computed before extraordinary items and scaled by total assets as in Francis et al. (2008). |
| ForOwn | An empirical measure for foreign ownership and institutional ownership. It provides the percentage of shares owned by foreign owners. |
| Clshs | This measure describes ownership concentration. It is the percentage of shares owned by firm insiders. |
| MedCov | An empirical measure for the media coverage of a firm. It is the natural logarithm of the number of Google hits relating to the firm. The search word 'firm name plc announcement' is used in the Google inquiries. |
| PageCount | An empirical measure for the extent of overall disclosure in the annual report of a firm. It is the natural logarithm of the number of pages in a firm's annual report. |

**Table 4.** Descriptive statistics of the variables

**Panel A:** Indicators of information asymmetry and risk disclosure quality[a]

|  | Mean | | | | | | Median | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Nobs | Pooled | 2006 | 2007 | 2008 | 2009 | Pooled | 2006 | 2007 | 2008 | 2009 |
| Spread | 386 | 1.901 | 1.896 | 1.210 | 2.160 | 2.362 | 1.233 | 1.282 | 0.873 | 1.436 | 1.505 |
| Volume | 302 | 0.268 | 0.258 | 0.321 | 0.270 | 0.223 | 0.160 | 0.178 | 0.227 | 0.100 | 0.101 |
| Rdisc | 408 | 0.975 | 0.948 | 0.979 | 0.986 | 0.985 | 1.005 | 0.993 | 1.015 | 0.998 | 1.011 |

|  | Std.Dev. | | | | | Min | | | | | Max | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Pooled | 2006 | 2007 | 2008 | 2009 | Pooled | 2006 | 2007 | 2008 | 2009 | Pooled | 2006 | 2007 | 2008 | 2009 |
| Spread | 2.524 | 2.194 | 1.443 | 2.890 | 3.141 | 0.055 | 0.065 | 0.055 | 0.064 | 0.096 | 22.222 | 15.741 | 11.941 | 20.080 | 22.222 |
| Volume | 0.278 | 0.240 | 0.289 | 0.335 | 0.237 | 0.005 | 0.011 | 0.027 | 0.007 | 0.005 | 1.741 | 1.138 | 1.499 | 1.741 | 0.844 |
| Rdisc | 0.223 | 0.319 | 0.203 | 0.170 | 0.174 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.522 | 1.522 | 1.382 | 1.308 | 1.292 |

[a] This panel provides the mean, median, standard deviation, and minimum and maximum values of the variables in the pooled and yearly samples. The number of observations is reported for the pooled sample. *Spread* is a three months average relative spread of a firm computed as follows: [(ask price - bid price)/((ask price + bid price)/2)]*100. *Volume* describes a three months average share turnover which is computed as follows: (daily trading volume/number of shares outstanding)*100. For Spread and Volume, the yearly period of examination starts from 1st of May and ends 31st of July. *Rdisc* is the score of the principal component with the highest eigenvalue computed from the firm-specific risk disclosure quantity and coverage ratios. It is derived from the newest annual reports that are published before May. For example, 2005 annual reports are published in 2006. Table 1 gives a more detailed description of the sample selection for these variables.

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**Table 4.** (continued)

**Panel B:** Other variables[b]

|  | Nobs | Mean | Median | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|
| Mcap | 386 | 19.171 | 18.992 | 1.933 | 15.094 | 25.110 |
| Htech | 386 | 0.337 | 0.000 | 0.473 | 0.000 | 1.000 |
| Analysts | 386 | 1.781 | 1.946 | 0.916 | 0.000 | 3.970 |
| Falling | 386 | 0.249 | 0.000 | 0.433 | 0.000 | 1.000 |
| Recovering | 386 | 0.244 | 0.000 | 0.430 | 0.000 | 1.000 |
| Volatility | 386 | 2.464 | 2.249 | 1.249 | 0.697 | 14.685 |
| Volume | 386 | 0.236 | 0.122 | 0.260 | 0.003 | 1.741 |
| ErnQual | 386 | 0.093 | 0.331 | 0.677 | -2.401 | 0.956 |
| ForOwn | 386 | 22.790 | 15.140 | 22.451 | 0.016 | 91.100 |
| Clshs | 302 | 30.628 | 31.053 | 21.689 | 0.000 | 99.259 |
| MedCov | 386 | 10.133 | 10.236 | 1.322 | 6.472 | 12.983 |
| PageCount | 386 | 4.434 | 4.431 | 0.347 | 3.401 | 5.380 |

[b] This panel provides the number of observations, mean, median, standard deviation, and minimum and maximum values of other variables in the pooled sample. *Mcap* is a three-month average market value of a firm. *Htech* is an indicator variable for high tech firms. High tech firms are selected on the basis of their three-digit SIC codes as suggested by Francis and Schipper (1999). *Analysts* is computed as follows: ln (1+ number of analysts following a firm). *Falling* is an indicator variable for the falling stock markets. *Recovering* is an indicator variable for the recovering stock markets. *Volatility* is a three-month average standard deviation of daily stock returns multiplied by 100. *Volume* is a three months average share turnover which is computed as follows: (daily trading volume/number of shares outstanding)*100. The three months of examination are May, June, and July. *ErnQual* is an empirical measure for the earnings quality of the firm (for more detailed definition, see table 3). *ForOwn* describes how many percent of the shares are owned by foreign owners. *Clshs* is the percentage of shares owned by firm insiders. *Please note that the number of observations for this variable is lower than for other variables, which also lowers the degrees of freedom in the Volume model.* *MedCov* is computed as follows: ln (number of Google hits relating to a firm). *PageCount* is computed as follows: ln (number of pages in the annual report of a firm).

**Table 5.** Correlation matrix of the variables[a]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. *Spread* | | **-0.692** | **-0.271** | **-0.899** | **0.223** | **-0.809** | 0.055 | 0.097 | **0.217** | **-0.284** | **-0.635** | **0.265** | **-0.303** | **-0.661** |
| 2. *Volume* | **-0.355** | | **0.260** | **0.555** | -0.067 | **0.611** | -0.119 | -0.106 | 0.120 | 0.022 | **0.537** | **-0.241** | **0.149** | **0.466** |
| 3. *Rdisc* | **-0.394** | **0.236** | | **0.248** | -0.125 | **0.256** | 0.001 | 0.020 | 0.113 | 0.099 | **0.226** | -0.031 | **0.202** | **0.294** |
| 4. *Mcap* | **-0.633** | **0.572** | **0.266** | | **-0.279** | **0.840** | 0.010 | -0.094 | **-0.157** | **0.322** | **0.678** | **-0.187** | **0.299** | **0.725** |
| 5. *Htech* | **0.163** | -0.076 | -0.102 | **-0.246** | | -0.091 | -0.017 | -0.008 | 0.131 | **-0.396** | -0.064 | -0.021 | -0.082 | **-0.290** |
| 6. *Analysts* | **-0.529** | **0.542** | **0.235** | **0.815** | -0.047 | | 0.000 | 0.017 | -0.012 | **0.230** | **0.654** | **-0.258** | **0.284** | **0.681** |
| 7. *Falling* | 0.059 | -0.019 | 0.033 | 0.010 | -0.017 | 0.002 | | **-0.326** | 0.073 | 0.014 | 0.022 | -0.018 | 0.006 | 0.006 |
| 8. *Recovering* | 0.104 | -0.082 | 0.035 | -0.094 | -0.008 | 0.021 | **-0.326** | | **0.290** | 0.018 | -0.039 | 0.036 | 0.024 | 0.016 |
| 9. *Volatility* | **0.612** | 0.089 | **-0.202** | **-0.246** | **0.160** | -0.120 | 0.034 | **0.230** | | **-0.253** | 0.036 | 0.132 | 0.013 | -0.069 |
| 10. *ErnQual* | **-0.212** | 0.043 | **0.146** | **0.254** | **-0.361** | **0.203** | 0.016 | 0.021 | **-0.315** | | **0.195** | -0.121 | 0.075 | **0.175** |
| 11. *ForOwn* | **-0.339** | **0.590** | **0.183** | **0.636** | -0.084 | **0.562** | 0.020 | -0.034 | -0.036 | **0.170** | | **-0.162** | **0.153** | **0.541** |
| 12. *Clshs* | **0.185** | **-0.268** | -0.084 | **-0.205** | -0.015 | **-0.281** | -0.017 | 0.043 | **0.151** | **-0.195** | **-0.173** | | -0.114 | **-0.260** |
| 13. *MedCov* | **-0.343** | **0.197** | **0.192** | **0.307** | -0.109 | **0.330** | 0.011 | 0.027 | **-0.146** | **0.131** | **0.179** | -0.109 | | **0.333** |
| 14. *PageCount* | **-0.509** | **0.492** | **0.301** | **0.675** | **-0.253** | **0.621** | 0.013 | 0.019 | **-0.170** | **0.138** | **0.462** | **-0.199** | **0.333** | |

[a] This table provides correlations coefficients between the variables in the pooled sample. The number of observations is 386 for correlations between variables 1-11 and 13-14. The correlation coefficients between Clshs and other variables are retrieved from 302 observations. The Pearson correlation estimates are presented below the diagonal and the Spearman rank correlation estimates can be found above the diagonal. Correlation coefficients significant at one percent or higher are shown in boldface. For variable definitions, see table 3.

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**Table 6.** Determinants of information asymmetry in the stock markets: pooled sample

**Panel A:** Dependent variable = Spread[a]

| Ind.Variables | Pred | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Intercept* | | **13.600** | 0.000 | **37.850** | 0.000 | **13.060** | 0.000 | **17.600** | 0.000 | **13.680** | 0.000 |
| **Test variables** | | | | | | | | | | | |
| *Rdisc* | - | **-1.636** | 0.010 | **-24.660** | 0.000 | -0.589 | 0.136 | **-5.205** | 0.001 | -0.888 | 0.110 |
| *Mcap* | - | **-0.440** | 0.000 | **-1.738** | 0.000 | **-0.487** | 0.000 | **-0.479** | 0.000 | **-0.507** | 0.000 |
| *Htech* | + | 0.051 | 0.814 | 0.117 | 0.592 | **3.297** | 0.016 | 0.116 | 0.605 | -0.003 | 0.991 |
| *Analysts* | - | -0.222 | 0.290 | -0.122 | 0.552 | -0.226 | 0.296 | **-2.345** | 0.001 | -0.140 | 0.502 |
| *Falling* | + | 0.185 | 0.243 | **0.300** | 0.041 | 0.197 | 0.199 | 0.222 | 0.135 | **3.712** | 0.000 |
| *Recovering* | + | -0.228 | 0.289 | -0.043 | 0.792 | -0.184 | 0.304 | -0.162 | 0.359 | **2.461** | 0.011 |
| *Rdisc*Mcap* | + | ----- | ----- | **1.230** | 0.000 | ----- | ----- | ----- | ----- | ----- | ----- |
| *Rdisc*Htech* | - | ----- | ----- | ----- | ----- | **-3.334** | 0.012 | ----- | ----- | ----- | ----- |
| *Rdisc*Analysts* | + | ----- | ----- | ----- | ----- | ----- | ----- | **2.223** | 0.001 | ----- | ----- |
| *Rdisc*Falling* | - | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | **-3.582** | 0.000 |
| *Rdisc*Recovering* | - | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | **-2.728** | 0.002 |
| **Control variables** | | | | | | | | | | | |
| *Volatility* | | **1.051** | 0.000 | **0.817** | 0.000 | **0.934** | 0.000 | **0.911** | 0.000 | **0.999** | 0.000 |
| *Volume* | | **-1.404** | 0.020 | **-1.303** | 0.016 | **-1.291** | 0.021 | **-1.458** | 0.013 | **-1.266** | 0.023 |
| *ErnQual* | | 0.217 | 0.059 | 0.147 | 0.207 | 0.227 | 0.066 | 0.127 | 0.309 | 0.214 | 0.061 |
| *ForOwn* | | 0.011 | 0.061 | 0.010 | 0.067 | **0.011** | 0.048 | 0.010 | 0.062 | **0.013** | 0.028 |
| *MedCov* | | **-0.161** | 0.039 | -0.143 | 0.062 | -0.135 | 0.079 | -0.127 | 0.101 | -0.149 | 0.051 |
| *PageCount* | | -0.561 | 0.240 | -0.566 | 0.194 | -0.498 | 0.297 | -0.574 | 0.207 | -0.509 | 0.278 |
| Model F-value (prob) | | 54.690 (.000) | | 61.260 (.000) | | 55.490 (.000) | | 57.840 (.000) | | 51.980 (.000) | |
| Adjusted $R^2$ | | 0.691 | | 0.727 | | 0.706 | | 0.715 | | 0.704 | |
| Nobs | | 386 | | 386 | | 386 | | 386 | | 386 | |

[a] This panel provides regression results for the determinants of Spread in the pooled sample. *Spread* is a three-month average relative spread of a firm computed as follows: [(ask price - bid price)/((ask price + bid price)/2)]*100. *Rdisc* is the score of the principal component with the highest eigenvalue computed from the firm-specific risk disclosure quantity and coverage ratios. It is derived from the newest annual reports that are published before May. For example, 2005 annual reports are published in 2006. *Mcap* is a three-month average market value of a firm. *Htech* is an indicator variable for high tech firms. High tech firms are selected on the basis of their three-digit SIC codes as suggested by Francis and Schipper (1999). *Analysts* is computed as follows: ln (1+number of analysts following a firm). *Falling* is an indicator variable for the falling stock markets. *Recovering* is an indicator variable for the recovering stock markets (for both of these indicator variables rising stock markets during 2006 and 2007 serve as a benchmark). *Volatility* is a three-month average standard deviation of daily stock returns multiplied by 100. *Volume* is a three months average share turnover which is computed as follows: (daily trading volume/number of shares outstanding)*100.The three months of examination are May, June, and July. *ErnQual* is an empirical measure for the earnings quality of the firm (for more detailed definition, see table 3). *ForOwn* describes how many percent of the shares are owned by foreign owners. *MedCov* is computed as follows: ln (number of Google hits relating to a firm). *PageCount* is computed as follows: ln (number of pages in the annual report of a firm). Industry-fixed effects are controlled for although not reported. The panel reports two-tailed significance levels and regression coefficients significant at five percent or higher are shown in **boldface**. P-values of parameter estimates are computed from the heteroskedasticity-robust standard errors clustered at the firm level (see, Petersen, 2009).

**Table 6** (continued)

**Panel B:** Dependent variable = Volume[b]

| Ind.Variables | Pred | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Intercept* | | **-1.562** | 0.000 | **-2.600** | 0.001 | **-1.563** | 0.000 | **-1.743** | 0.000 | **-1.554** | 0.000 |
| **Test variables** | | | | | | | | | | | |
| *Rdisc* | + | **0.123** | 0.042 | 1.091 | 0.068 | 0.125 | 0.074 | **0.298** | 0.034 | 0.090 | 0.115 |
| *Mcap* | + | 0.030 | 0.123 | **0.085** | 0.024 | 0.030 | 0.126 | 0.031 | 0.103 | 0.033 | 0.100 |
| *Htech* | - | 0.039 | 0.440 | 0.038 | 0.440 | 0.045 | 0.703 | 0.037 | 0.459 | 0.041 | 0.418 |
| *Analysts* | + | 0.072 | 0.058 | 0.066 | 0.073 | 0.072 | 0.059 | 0.169 | 0.065 | 0.068 | 0.075 |
| *Falling* | - | **-0.041** | 0.049 | **-0.046** | 0.032 | -0.041 | 0.054 | **-0.043** | 0.042 | **-0.221** | 0.010 |
| *Recovering* | - | **-0.080** | 0.004 | **-0.087** | 0.003 | **-0.080** | 0.005 | **-0.084** | 0.004 | -0.182 | 0.121 |
| *Rdisc*Mcap* | - | ----- | ----- | -0.051 | 0.111 | ----- | ----- | ----- | ----- | ----- | ----- |
| *Rdisc*Htech* | + | ----- | ----- | ----- | ----- | -0.006 | 0.956 | ----- | ----- | ----- | ----- |
| *Rdisc*Analysts* | - | ----- | ----- | ----- | ----- | ----- | ----- | -0.095 | 0.210 | ----- | ----- |
| *Rdisc*Falling* | + | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | **0.178** | 0.035 |
| *Rdisc*Recovering* | + | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 0.102 | 0.372 |
| **Control variables** | | | | | | | | | | | |
| *Volatility* | | **0.049** | 0.001 | **0.061** | 0.000 | **0.049** | 0.001 | **0.057** | 0.000 | **0.052** | 0.000 |
| *ErnQual* | | -0.034 | 0.258 | -0.032 | 0.283 | -0.034 | 0.258 | -0.032 | 0.287 | -0.033 | 0.275 |
| *ForOwn* | | **0.004** | 0.001 | **0.004** | 0.001 | **0.004** | 0.001 | **0.004** | 0.001 | **0.003** | 0.002 |
| *Clshs* | | **-0.001** | 0.039 | **-0.001** | 0.041 | **-0.001** | 0.038 | **-0.001** | 0.039 | **-0.001** | 0.040 |
| *MedCov* | | 0.002 | 0.897 | 0.001 | 0.962 | 0.002 | 0.895 | 0.001 | 0.957 | 0.001 | 0.929 |
| *PageCount* | | **0.179** | 0.024 | **0.176** | 0.025 | **0.179** | 0.023 | **0.174** | 0.026 | **0.175** | 0.027 |
| Model F-value (prob) | | 26.680 (.000) | | 25.500 (.000) | | 25.020 (.000) | | 25.300 (.000) | | 23.810 (.000) | |
| Adjusted R[2] | | 0.577 | | 0.581 | | 0.576 | | 0.579 | | 0.577 | |
| Nobs | | 302 | | 302 | | 302 | | 302 | | 302 | |

[b] This panel provides regression results for the determinants of Volume in the pooled sample. *Volume* is a three-month average share turnover which is computed as follows: (daily trading volume/number of shares outstanding)*100. *Rdisc* is the score of the principal component with the highest eigenvalue computed from the firm-specific risk disclosure quantity and coverage ratios. It is derived from the latest annual reports that are published before May. For example, annual reports for 2005 are published in 2006. *Mcap* is a three-month average market value of a firm. *Htech* is an indicator variable for high tech firms. High tech firms are selected based on their three-digit SIC codes as suggested by Francis and Schipper (1999). *Analysts* is computed as follows: ln (1+number of analysts following a firm). *Falling* is an indicator variable for the falling stock markets. *Recovering* is an indicator variable for the recovering stock markets (for both of these indicator variables rising stock markets during 2006 and 2007 serve as a benchmark). *Volatility* is a three-month average standard deviation of daily stock returns multiplied by 100. The three months of examination are May, June, and July. *ErnQual* is an empirical measure for the earnings quality of the firm (for more detailed definition, see table 3). *ForOwn* describes how many percent of the shares are owned by foreign owners. *Clshs* is the percentage of shares owned by firm insiders. *MedCov* is computed as follows: ln (number of Google hits relating to a firm). *PageCount* is computed as follows: ln (number of pages in the annual report of a firm). Industry-fixed effects are controlled for although not reported. The panel reports two-tailed significance levels and regression coefficients significant at five percent or higher are shown in **boldface**. P-values of parameter estimates are computed from the heteroskedasticity-robust standard errors clustered at the firm level (see, Petersen, 2009).

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**Table 7.** Contingency factors and the usefulness of annual report risk disclosure
(Dependent variable = Spread or Volume)[a]

**Panel A:** Large firms vs. Small firms

| | Large firms | | | | Small firms | | | |
|---|---|---|---|---|---|---|---|---|
| | *Spread* | | *Volume* | | *Spread* | | *Volume* | |
| **Ind.Variables** | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
| *Intercept* | **3.878** | 0.000 | -1.498 | 0.054 | **32.010** | 0.000 | -0.253 | 0.668 |
| *Rdisc* | 0.078 | 0.305 | -0.089 | 0.508 | **-2.617** | 0.016 | **0.134** | 0.024 |
| *Other variables included* | | | | | | | | |
| Model F-value (prob) | 18.060 (.000) | | 13.310 (.000) | | 22.260 (.000) | | 1.720 (.0626) | |
| Adjusted $R^2$ | 0.664 | | 0.572 | | 0.740 | | 0.083 | |
| Nobs | 139 | | 139 | | 113 | | 113 | |

[a] This table provides regression results for the subsamples based on the following contingency factors: large vs. small firms, high tech vs. non-high tech firms, high vs. low analyst coverage firms, and rising, falling, and recovering stock markets. The 'large (small) firms' subsample consists of firms in the highest (lowest) tercile on the basis of firm size (Mcap). High tech firms are selected on the basis of their three-digit SIC codes as suggested by Francis & Schipper (1999). The 'high (low) analyst coverage' subsample consists of firms in the highest (lowest) tercile on the basis of the number of analysts following a firm. *Spread* is a three-month average relative spread of a firm computed as follows: [(ask price - bid price)/((ask price + bid price)/2)]*100. *Volume* is a three-month average share turnover, which is computed as follows: (daily trading volume/number of shares outstanding)*100. *Rdisc* is the score of the principal component with the highest eigenvalue computed from the firm-specific risk disclosure quantity and coverage ratios. It is derived from the latest annual reports, which are published before May. For example, the annual reports for 2005 were published in 2006. Other variables are included in the regressions (cf., table 6) but not reported. Regressions do not include interactions between Rdisc and contingency factors. Industry-fixed effects are controlled for although not reported. The panels report two-tailed significance levels and regression coefficients significant at five percent or higher are shown in **boldface**. P-values of parameter estimates are computed from the heteroskedasticity-robust standard errors clustered at the firm level (see, Petersen, 2009).

**Panel B:** High tech vs. Non-high tech firms

| | High tech firms | | | | Non-high tech firms | | | |
| | Spread | | Volume | | Spread | | Volume | |
| **Ind.Variables** | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Intercept* | **7.610** | 0.016 | -0.037 | 0.958 | **16.340** | 0.000 | **-1.217** | 0.004 |
| *Rdisc* | **-2.685** | 0.000 | 0.003 | 0.971 | -0.249 | 0.446 | 0.100 | 0.082 |
| *Other variables included* | | | | | | | | |
| Model F-value (prob) | 88.660 (.000) | | 13.370 (.000) | | 28.410 (.000) | | 34.470 (.000) | |
| Adjusted $R^2$ | 0.882 | | 0.490 | | 0.542 | | 0.568 | |
| Nobs | 130 | | 130 | | 256 | | 256 | |

**Panel C:** High vs. Low analyst coverage firms

| | High analyst coverage | | | | Low analyst coverage | | | |
| | Spread | | Volume | | Spread | | Volume | |
| **Ind.Variables** | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Intercept* | **5.190** | 0.001 | -1.774 | 0.067 | **25.070** | 0.000 | -0.034 | 0.931 |
| *Rdisc* | 0.211 | 0.307 | -0.149 | 0.263 | **-2.170** | 0.035 | 0.126 | 0.077 |
| *Other variables included* | | | | | | | | |
| Model F-value (prob) | 10.500 (.000) | | 11.580 (.000) | | 22.220 (.000) | | 5.040 (.000) | |
| Adjusted $R^2$ | 0.499 | | 0.509 | | 0.739 | | 0.334 | |
| Nobs | 144 | | 144 | | 106 | | 106 | |

**Panel D:** Rising, falling and recovering stock markets

| Ind.Variables | Rising stock markets | | | | Falling stock markets | | | |
|---|---|---|---|---|---|---|---|---|
| | *Spread* | | *Volume* | | *Spread* | | *Volume* | |
| | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
| *Intercept* | **10.296** | 0.000 | **-1.043** | 0.003 | **23.690** | 0.000 | **-1.467** | 0.007 |
| *Rdisc* | **-1.471** | 0.034 | 0.106 | 0.091 | **-3.447** | 0.002 | 0.236 | 0.114 |
| *Other variables included* | | | | | | | | |
| Model F-value (prob) | 21.170 (.000) | | 14.600 (.000) | | 20.760 (.000) | | 7.850 (.000) | |
| Adjusted $R^2$ | 0.592 | | 0.476 | | 0.744 | | 0.484 | |
| Nobs | 196 | | 196 | | 96 | | 96 | |

| Ind.Variables | Recovering stock markets | | | |
|---|---|---|---|---|
| | *Spread* | | *Volume* | |
| | Coef. | P-value | Coef. | P-value |
| *Intercept* | **15.873** | 0.000 | **-1.023** | 0.018 |
| *Rdisc* | **-1.651** | 0.045 | 0.121 | 0.211 |
| *Other variables included* | | | | |
| Model F-value (prob) | 31.090 (.000) | | 7.270 (.000) | |
| Adjusted $R^2$ | 0.819 | | 0.467 | |
| Nobs | 94 | | 94 | |

**Table 8.** Determinants of information asymmetry: 2SLS regressions[a]

| Ind.Variables | 2SLS: Spread | | | | 2SLS: Volume | | | |
|---|---|---|---|---|---|---|---|---|
| | *First-stage* | | *Second-stage* | | *First-stage* | | *Second-stage* | |
| | Coef. | P-value | Coef. | P-value | Coef. | P-value | Coef. | P-value |
| *Intercept* | **0.609** | 0.032 | **15.591** | 0.000 | **0.766** | 0.028 | **-1.719** | 0.000 |
| *Rdisc* | | | **-7.958** | 0.038 | | | 0.407 | 0.053 |
| **Instruments** | | | | | | | | |
| *Leverage* | **-0.002** | 0.021 | ----- | ----- | **-0.003** | 0.001 | ----- | ----- |
| *Beta* | **0.095** | 0.019 | ----- | ----- | **0.145** | 0.001 | ----- | ----- |
| *EP* | **-0.098** | 0.015 | ----- | ----- | **-0.088** | 0.031 | ----- | ----- |
| *Idio_risk* | -2.592 | 0.091 | ----- | ----- | **-3.997** | 0.024 | ----- | ----- |
| **Control variables** | | | | | | | | |
| *Mcap* | -0.014 | 0.332 | **-0.471** | 0.000 | -0.026 | 0.118 | 0.032 | 0.158 |
| *Htech* | 0.005 | 0.857 | 0.253 | 0.279 | -0.025 | 0.455 | 0.041 | 0.414 |
| *Analysts* | -0.019 | 0.470 | -0.205 | 0.449 | -0.033 | 0.335 | 0.074 | 0.102 |
| *Falling* | 0.042 | 0.117 | **0.339** | 0.049 | 0.029 | 0.328 | **-0.053** | 0.021 |
| *Recovering* | **0.081** | 0.011 | 0.087 | 0.738 | **0.060** | 0.078 | **-0.097** | 0.001 |
| *Volatility* | -0.017 | 0.212 | **0.811** | 0.000 | -0.002 | 0.889 | **0.061** | 0.000 |
| *Volume* | 0.090 | 0.142 | -0.531 | 0.450 | ----- | ----- | ----- | ----- |
| *ErnQual* | 0.027 | 0.183 | **0.358** | 0.012 | 0.046 | 0.059 | -0.043 | 0.188 |
| *ForOwn* | 0.000 | 0.568 | **0.012** | 0.020 | 0.000 | **0.467** | **0.003** | 0.003 |
| *Clshs* | ----- | ----- | ----- | ----- | 0.000 | 0.567 | -0.001 | 0.054 |
| *MedCov* | 0.009 | 0.332 | -0.099 | 0.257 | 0.005 | 0.615 | 0.001 | 0.975 |
| *PageCount* | **0.130** | 0.007 | 0.415 | 0.501 | **0.168** | 0.002 | 0.138 | 0.166 |
| Model F-value (prob) | 5.410 (.000) | | 56.150 (.000) | | 6.050 (.000) | | 26.860 (.000) | |
| Adjusted $R^2$ | 0.186 | | 0.706 | | 0.246 | | 0.585 | |
| Nobs | 368 | | 368 | | 295 | | 295 | |

[a] This table provides 2SLS regressions for the determinants of Spread and Volume. Rdisc is treated as an endogenous variable and at the first stage it is regressed on all other explanatory variables of the main tests and four additional instrument variables. Next the Hausman test was conducted and the results demonstrate that the empirical measure of information asymmetry may be endogenous in both models. Hence two-stage regressions are computed by replacing the values of Rdisc with its predicted values from the first-stage regression. The instrument variables are empirical measures of firm riskiness and hence are expected to affect firms' propensity to disclose risks. *Leverage* is the financial leverage of the firm computed as follows: 1-(common equity/total assets). *Beta* is the beta of the firm. It is computed from the share and market index returns of the preceding 12 months before the publication of the risk disclosure. OMXH Cap has been used as the market index. *EP* is the earnings-to-price ratio of the firm. *Idio_risk* measures the firm's idiosyncratic risk. It is the standard deviation of the firm's abnormal returns for the 12 months (t-1) preceding the risk disclosure. In the computation of abnormal returns the 12-month beta estimated from the share and market index

(OMXH Cap) returns two years (t-2) before the risk disclosure was used. The table reports two-tailed significance levels and regression coefficients significant at five percent or higher are shown in **boldface**. First-stage regression is an OLS regression in which industry has been controlled for but not reported. Second-stage regression is a fixed effects regression in which the p-values of parameter estimates are computed from the heteroskedasticity-robust standard errors clustered at the firm level (see, Petersen, 2009). For the definition of other variables, see the preceding tables. *Please note that the number of observations in this table differs slightly from that of table 6. This is so because the values of the instrument variables could not be computed for all observations examined in table 6.*

**Appendix A.** Comparison between Quantity and Coverage as a determinant of information asymmetry[a]

**Panel A:** Risk disclosure dimension = Quantity

| Ind.Variables | Spread | | Volume | |
|---|---|---|---|---|
| | Coef. | P-value | Coef. | P-value |
| *Intercept* | **13.110** | 0.000 | **-1.480** | 0.000 |
| *Rdisc = Quantity* | **-0.311** | 0.038 | **0.033** | 0.004 |
| *Other variables included* | | | | |
| Model F-value (prob) | 53.840 (.000) | | 27.380 (.000) | |
| Adjusted $R^2$ | 0.687 | | 0.584 | |
| Nobs | 386 | | 302 | |

**Panel B:** Risk disclosure dimension = Coverage

| Ind.Variables | Spread | | Volume | |
|---|---|---|---|---|
| | Coef. | P-value | Coef. | P-value |
| *Intercept* | **13.790** | 0.000 | **-1.606** | 0.000 |
| *Rdisc = Coverage* | **-1.707** | 0.006 | **0.155** | 0.028 |
| *Other variables included* | | | | |
| Model F-value (prob) | 53.770 (.000) | | 26.770 (.000) | |
| Adjusted $R^2$ | 0.687 | | 0.578 | |
| Nobs | 386 | | 302 | |

[a] This appendix provides regression results for the determinants of Spread and Volume in the pooled sample by using the risk disclosure quality dimensions as proxies of Rdisc. *Spread* is a three-month average relative spread of a firm computed as follows: [(ask price - bid price)/((ask price + bid price)/2)]*100. *Volume* is a three-month average share turnover which is computed as follows: (daily trading volume/number of shares outstanding)*100. *Quantity* is the natural logarithm of the total number of risk disclosure words. *Coverage* is the inverse of the Herfindahl index value divided by the number of main risk topics. The scores for both quality dimensions are derived from the latest annual reports, which are published before May. For example, the annual reports for 2005 were published in 2006. Other variables (cf., table 6) are included in the regressions but not reported. Regressions do not include interactions between Rdisc and contingency factors. Industry-fixed effects were controlled for although not reported. The panel reports two-tailed significance levels and regression coefficients significant at five percent or higher are shown in **boldface**. P-values of parameter estimates were computed from the heteroskedasticity-robust standard errors clustered at firm level (see, Petersen, 2009).

APPENDIX B

**Risk Disclosure Framework**

This appendix summarizes the main topics and subtopics examined for risk disclosure. The basis for the classification of the main topics and subtopics derives from the Finnish detailed risk disclosure standard issued in 2006. The risk disclosure framework applied was made more comprehensive by adding a number of risk disclosure subtopics from the risk disclosure framework presented by Linsley & Shrives (2006). Finally, a subsample of annual reports was pre-tested to uncover any missing subtopics for the risk categories examined. Those subtopics mentioned explicitly in the Finnish standard or provided unambiguously in its disclosure examples are marked with an asterisk.

1. Strategic risks
   a. Market competition*
   b. Market areas*
   c. Position in the production chain*
   d. Dependence on customers*
   e. Dependence on suppliers*
   f. Changes in customer preferences*
   g. Technological development (e.g., threat of competing commodities)*
   h. Regulatory changes*
   i. Political changes*
   j. Mergers and acquisitions*
   k. Economical changes
   l. Pricing
   m. Industry specific changes
   n. Launch of new products
   o. Business portfolio
   p. Life cycle (growth and profitability)
   q. Management
   r. Research and development

2. Operations risks
   a. Dependence on the know-how of the personnel*
   b. Uncommon business fluctuations in demand*
   c. Interruptions in the delivery chain*
   d. Price fluctuations of the factors of production (e.g., raw materials)*
   e. Patents and other industrial property rights*
   f. Information technology risks*
   g. Customer satisfaction
   h. Reputation and brand name development
   i. Stock obsolescence and shrinkage
   j. Product and service failure
   k. Environmental
   l. Health and safety
   m. Project deliveries
   n. Quality controls

3. Financial risks
    a.  Interest rate*
    b.  Exchange rate*
    c.  Liquidity*
    d.  Credit*
    e.  Commodity

4. Damage risks
    a.  Insurances*
    b.  Significant legal actions*

5. Risk management
    a.  Risk management policy*
    b.  Risk management organization*

APPENDIX C

## Risk Disclosure Examples

This appendix demonstrates the scoring of the risk disclosure quality indicators. More detailed scoring principles are available from the authors upon request.


1) Quantity = ln (total number of risk disclosure words)

Nokia Corporation provides 932 words risk information in its 2006 operating and financial review.

$\rightarrow$ *Disclosure score = Quantity = ln (932) = 6.84*

2) Coverage = [(1/H)/the number of main risk topics]

The risk information provided by Nokia Corporation in its 2006 operating and financial review can be divided across risk topics as follows:

Strategic risks: 415 words
Operations risks: 398 words
Financial risks: 51 words
Damage risks: 68 words
Risk management: 0 words
(Total 932 words)

$\rightarrow$ Herfindahl index = H = $(415/932)^2 + (398/932)^2 + (51/932)^2 +$
$(68/932)^2 + (0/932)^2 = 0.389$

$\rightarrow$ *Disclosure score = Coverage = (1/0.389)/5 = 0.51*

# ESSAY 3


## Efficiency of Authoritative Disclosure Recommendations

### Evidence from IFRS Transition Disclosure in Finland

### by

### Antti Miihkinen

# Efficiency of Authoritative Disclosure Recommendations

## Evidence from IFRS Transition Disclosure in Finland

**Abstract**

**Purpose** – This paper explores the potential for disclosure recommendations given by authoritative supervisory bodies to reduce information asymmetry between the management and shareholders.

**Design/methodology/approach** – There is only meagre existing evidence concerning firms' responses to disclosure recommendations. This paper uses descriptive statistics and OLS regression analysis to test if firms behave more similarly to voluntary or to mandatory disclosure when they follow the CESR (Committee of European Securities Regulators) disclosure recommendation for IFRS transition. Second, it analyses the determinants of and incentives for recommended transition disclosure.

**Findings** – Recommended disclosure is documented to have more mandatory characteristics than purely voluntary disclosure. Moreover, the certain disclosure incentives for managers and corporate governance factors prove to have an impact on recommended disclosure. Firm size, growth prospects, and independent board members associate positively with recommended disclosure whereas there is a negative relationship between financial leverage and recommended disclosure.

**Research limitations/implications** – The paper does not provide evidence on the cost differences between disclosure laws and authoritative disclosure recommendations. This could be examined by future research.

**Practical implications** – Authoritative disclosure recommendations reduce information asymmetry. In some cases they may be a faster and more cost-efficient way to achieve disclosure enhancements than regulation.

**Originality/value** – This paper is the first to explore the efficiency of authoritative disclosure recommendations in situations where urgent disclosure improvements are needed. The results have implications for regulatory bodies evaluating different strategies to reduce asymmetric information in these situations.

**Keywords**  Disclosure, Regulation, Corporate governance

**Paper type**  Research paper

## 1. Introduction

Since January 1$^{st}$ 2005 all firms issuing securities admitted to trading on a regulated market of any Member State of the European Union have been required to prepare their consolidated financial statements in conformity with the IFRS (International Financial Reporting Standards). Relating to that regulation, at the end of 2003, the CESR (Committee of European Securities Regulators) published a *Recommendation*

*for Additional Guidance Regarding the Transition to IFRS* which provided guidelines on how listed firms should manage their disclosure on the adoption of IFRS. Given this background and the lack of prior empirical evidence, this paper examines the compliance of firms with the CESR transition disclosure recommendation.

Disclosure regulation is one way to reduce information asymmetry (McLaughlin and Safieddine, 2008). However, it is important to get more information on alternative ways to affect firms' transparency because disclosure regulation may also cause significant costs for some firms (Bushee and Leuz, 2005). The aim of the present study is to provide new insights into compliance with disclosure recommendations given by authoritative supervisory bodies. Based on prior consolidated evidence on voluntary and mandatory disclosure, and on the differences between them, the specific objective of the paper is to answer the following research questions:

1. *In relation to the CESR transition disclosure recommendation, is the behaviour of firms more similar to voluntary or to mandatory disclosure?*

2. *What are the firm incentives for and corporate governance-related determinants of compliance with the CESR transition disclosure recommendation?*

Recent decades have witnessed wide research interest in corporate disclosure issues. Previously, many studies have concentrated on voluntary disclosure (Cooke, 1989; Lang and Lundholm, 1993; Cahan et al., 2005). Others have examined compliance with mandatory disclosure requirements (Inchausti, 1997; Gray and Street, 2002). In the light of prior consolidated evidence on voluntary and mandatory disclosure, and on their differences (Kanto and Schadewitz, 1997; Al-Razeen and Karbahari, 2004), it seems evident that the quality of mandatory disclosure associates with the level of reporting and disclosure requirements whereas voluntary disclosure is driven by the disclosure incentives for managers such as the reduction of agency costs and asymmetric information. Moreover, previous analytical research has also linked disclosure quality to corporate governance (Williamson, 1985). Some

empirical studies (Chen and Jaggi, 2000; Glaum and Street, 2003) have documented a positive association between certain corporate governance mechanisms and mandatory disclosure. Also voluntary disclosure is demonstrated to associate positively with some corporate governance mechanisms (Ajinkya et al., 2005; Patelli and Prencipe, 2007) although some studies (Hossain et al., 1995; Eng and Mak, 2003) have not found any relationship between corporate governance and voluntary disclosure.

Empirical evidence suggests that regulation reduces information asymmetry (McLaughlin and Safieddine, 2008). However, in spite of many previous corporate disclosure studies, only few of them provide evidence on *the compliance of firms with disclosure recommendations*. Mangena and Tauringana (2007) examine compliance with the ASB Statement on interim reports among firms listed on the London Stock Exchange. However, they do not focus on the mandatory characteristics of recommended disclosure. Moreover, ASB Statement provides voluntary best practice guidance. It is not driven by regulators' urgent need to achieve fast changes. Thus, Mangena and Tauringana evaluate disclosures which are released at least four years after the publication of the disclosure recommendation.

This study sheds light on whether disclosure recommendations given by authoritative supervisory bodies reduce information asymmetry by increasing corporate disclosure. The study contributes to the existing corporate disclosure and financial regulation literature in several ways. First, the paper focuses on examining recommended disclosure in a setting where the purpose of the disclosure recommendation is to achieve fast disclosure enhancements. Hence, firms are insistently urged to make transition disclosure improvements accordant with the CESR disclosure recommendation after its publication. Second, this study contributes prior literature by analysing the mandatory characteristics of authoritative disclosure recommendations. Basically, compliance with disclosure recommendations is voluntary for firms but can also be expected to exhibit characteristics of mandatory disclosure because disclosure recommendations are usually published by influential organisations. Third, the current study is beneficial for scholars because in addition to analysing the determinants of and incentives for recommended disclosure, this paper also provides evidence on the (dis)similarities between the determinants of recommended and purely voluntary disclosure.

This paper has also practical implications. Further information on the factors

influencing compliance with disclosure recommendations would be very welcome for example to regulatory bodies which must decide whether to issue disclosure recommendations or rules. This information could be useful among other things in the development of firms' corporate governance practices. Starting with the Sarbanes-Oxley Act in the US, many countries have experienced an unprecedented amount of governmental and institutional intervention and are now in the process of restructuring their current laws, regulations and enforcement capabilities within the framework of the best corporate governance practices (Aksu and Kosedag, 2006).

Compliance by Finnish listed firms with the CESR transition disclosure recommendation is a suitable setting for analysing the determinants of and incentives for recommended disclosure. Early transition disclosure on the first-time adoption of IFRS is important because the users of financial statement information may not immediately observe the signals disclosed by firms concerning changes in their financial reporting (Healy and Palepu, 1995). For that purpose the CESR has published an official recommendation to ensure that listed firms in the European Union are sufficiently transparent regarding the adoption of new accounting principles.

Finland is a unique institutional setting because the disclosure regulation intensity of Finland is low compared to many other countries such as United States and United Kingdom (Roe, 2006). In Finland accounting standards are promulgated by professional accounting bodies within guidelines established by government legislation (King, 1999). Finnish managers tend to consider that compliance with applicable laws and the true and fair view requirement is important and also a matter of honour. The high compliance and disclosure ratios of Finnish firms have been also empirically documented (King, 1999; Dargenidou et al., 2006).

Another reason to test compliance with recommended disclosure in Finland is that Finnish listed firms have been properly informed of the CESR disclosure recommendation from the outset. The Finnish Financial Supervision Authority (FIN-FSA) has been active in providing information on the recommendation, and has also urged Finnish firms to follow it. Furthermore, the relatively small number of Finnish listed firms makes it possible to cover the majority of the population of listed firms in a single European country and still use hand-collected data.

In this study, the term *recommended disclosure* refers to disclosure that is specified in the CESR transition disclosure recommendation for first-time adoption

of IFRS whereas *voluntary disclosure* refers to disclosure over and above the recommendation. The study design involves examining the recommended and voluntary disclosure of Finnish listed firms published in 2004 and 2005. The pooled sample consists of 85 firms in 2004 and 88 firms in 2005. The transition disclosure data are hand-collected from financial statement releases, financial statements, annual reports, and separate IFRS stock exchange releases. The main estimation method is multivariate regression analysis. The data for disclosure incentives are retrieved mainly from the *Thomson One Banker Worldscope* database. Corporate governance variables are hand-collected.

The results indicate that recommended disclosure has more mandatory characteristics than voluntary disclosure. Relating to the incentives for recommended disclosure, the main regression demonstrates three significant disclosure incentives: firm size, financial leverage, and growth prospects. After controlling for other relevant factors, firm size associates positively with recommended disclosure. The positive effect of firm size supports the previous empirical findings of voluntary disclosure literature (Cooke, 1989; Lang and Lundholm, 1993; Cahan et al., 2005), but is contrary to some empirical mandatory disclosure studies (Glaum and Street, 2003). Financial leverage has a negative relation to recommended disclosure, which is in line with prior literature (Gary et al., 1995; Eng and Mak, 2003). It implies that debt financing is used to avoid pressures for disclosing proprietary information (Verrecchia, 1983). The current paper also documents the growth prospects of firms to be a significant positive determinant of recommended disclosure; this supports the argument that growth firms have an incentive to reduce information asymmetry and thus avoid the adverse consequences of poor disclosure (Akerlof, 1970).

This paper demonstrates one significant corporate governance factor that associates with the quality of recommended disclosure. The proportion of independent board members in corporate boards relates positively to recommended disclosure. The finding is consistent with the argument that an independent board member increases the monitoring power of the board (Fama and Jensen, 1983), thereby improving disclosure quality. Similar empirical results have also been documented previously (Ajinkya, 2005; Patelli and Prencipe, 2007). Interestingly, the impact of a global accounting firm remains insignificant. Prior literature has shown that this variable has a positive effect on mandatory disclosure (Wallace and Naser, 1995; Glaum and Street, 2003) but an insignificant effect on voluntary

disclosure (Hossain et al., 1995; Eng and Mak, 2003).

The remainder of this paper is organised as follows. The institutional setting is described in section 2, followed by the study hypotheses in section 3. Thereafter, data and methods are discussed in section 4 and empirical results reported in section 5. Section 6 summarises and concludes.

## 2. Institutional setting

### 2.1. Committee of European Securities Regulators (CESR)

The European Union is seeking to harmonise the supervision and regulation of the European financial markets. With respect to that objective, the European Parliament approved in 2002 the Lamfalussy model, which is a regulation structure consisting of four levels. The Committee of European Securities Regulators (CESR)[1] works at level 3 of the Lamfalussy model. It is responsible for deepening the cooperation between national securities regulators and for harmonising supervision of the European financial markets. CESR has a subcommittee in every member state of the European Union. The Finnish subcommittee of the CESR is CESR-Fin. Together, the subcommittees of the CESR formulate different recommendations to increase harmonisation in the European financial markets[2]. CESR does not have the authority to impose sanctions if a firm fails to comply with its recommendations.

Adoption of IFRS is one of the major events in the history of financial reporting and will make IFRS a widely accepted financial accounting model at least in the Member States of the European Union. The CESR wanted to harmonise disclosure by European listed firms during their transition to IFRS. Thus, on 30th December 2003, it published the Recommendation for Additional Guidance Regarding the Transition to IFRS (CESR/03-323e). The CESR considered it essential for the adoption of IFRS to be monitored carefully by regulators to ensure that every company continues to meet its reporting requirements. Moreover, CESR emphasised that investors should be able to understand the effect of the new reporting standards on the financial position of listed companies. The recommendation contained several proposals whereby publicly traded European firms were encouraged to provide markets with appropriate and useful information during the transition from the local accounting law or standards to IFRS. In its recommendation, the CESR provided a

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narrative transition disclosure format for the publication of 2003 financial statements and a quantified transition disclosure format for the publication of 2004 financial statements. CESR emphasised that quantified information should not be published without sufficient quality control and where applicable, audit checks.

*2.2. Finnish Financial Supervision Authority (FIN-FSA)*

Similarly to the SEC in the US, FIN-FSA supervises financial markets in Finland. If the FIN-FSA notices that a listed firm does not meet the disclosure requirements of the securities market, it investigates the matter and requests an explanation. Such cases are usually resolved after the firm has responded, although stricter sanctions are sometimes needed. Moreover, the FIN-FSA publishes binding and non-binding local standards and informs firms about international recommendations such as the CESR disclosure recommendation. The FIN-FSA cannot impose any direct sanctions on firms which do not follow disclosure recommendations. However, it may attempt to improve recommended disclosure by firms by actively providing information on disclosure recommendations. Moreover, the FIN-FSA sometimes sends private letters to firms and thereby encourages them to make the recommended disclosure. It should also be taken into account that if a recommended disclosure item should be disclosed on the grounds of the ongoing disclosure requirements of the Securities Market Act, FIN-FSA can impose sanctions on firms which do not meet the requirements.

*2.3. Disclosure requirements in Finland*

Several laws and rules stipulate disclosure requirements for Finnish firms. The Accounting Act is the local accounting law and it requires firms to provide financial information that gives a true and fair view of their performance and financial position. The disclosure requirements of the Accounting Act are specified in the Accounting Ordinance. However, since the beginning of 2005, Finnish listed firms have had to prepare consolidated financial statements by applying the IFRS. Moreover, the Act on the Financial Supervision Authority stipulates that from 2005 onward, the FIN-FSA will be responsible for the supervision of financial statements prepared in line with IFRS. The FIN-FSA had not previously been in charge of

financial statement supervision.

Disclosure by Finnish listed firms is also regulated in the Securities Market Act. Accordingly, dissemination of untruthful and misleading information is illegal and violations will be punished. The Securities Market Act stipulates that listed firms shall meet the regular and ongoing disclosure requirements. Regular disclosure requires interim reports, financial statement releases, and annual financial reports. Ongoing disclosure requirements call for publicly traded firms to disclose all the facts that will have material influence on the value of their securities. That kind of information is mainly provided through stock exchange releases.

The Helsinki Stock Exchange (currently a member of OMX Nordic Exchange) also regulates disclosure by listed firms in Finland. The purpose of the regulation is to assure that all market participants have contemporaneous access to true and fair information. The Rules of the Helsinki Stock Exchange require listed firms to promptly disclose any decisions taken by them and any facts and circumstances pertaining to them that may materially affect their market capitalisation. The Helsinki Stock Exchange oversees compliance by listed firms with its rules. All violations are reported to the Finnish Financial Supervision Authority (FIN-FSA), which also oversees compliance with the Securities Market Act by listed firms.

*2.4. CESR transition disclosure recommendation in the Finnish institutional setting*

Finland offers an interesting institutional setting to test compliance with the CESR disclosure recommendation. This is because the Finnish Financial Supervision Authority (FIN-FSA) took an active role in the IFRS transition process from the very beginning. After the CESR had published its draft recommendation for comments in October 2003, the FIN-FSA released a press release where it announced that the CESR was preparing a recommendation. The FIN-FSA recommended that Finnish listed firms should comment on the draft recommendation to the CESR.

After the final recommendation was confirmed in the end of December 2003, FIN-FSA invited managers of listed firms to briefings on efficient transition disclosure. Moreover, representatives of accounting firms were invited to ensure that these supervisory bodies would be informed of the CESR disclosure recommendation[3]. Altogether, two briefings were arranged and a representative of almost every listed firm attended one of them. In these sessions FIN-FSA

recommended that listed firms comply with the CESR transition disclosure recommendation. Moreover, FIN-FSA also stated that it would monitor the transition disclosure of firms on the IFRS although it would not supervise it. One important fact emphasised by the FIN-FSA in the briefings was that it would supervise the IFRS reporting of Finnish listed firms from 2005 onward. This surprised many of those attending the briefings because the FIN-FSA had never supervised compliance with the Finnish Accounting Act.

In the beginning of January 2004, FIN-FSA provided the same information once again via a press release. The FIN-FSA also showed continuous interest in the transition of listed firms to IFRS by sending letters in which it inquired how the adoption of the new accounting principles was proceeding. As different communication means were actively used from the beginning, Finnish listed firms should have been aware of the recommended disclosures. Moreover, they should have been very motivated to provide transparent and valid recommended disclosure because the FIN-FSA and the accounting firms followed the compliance of listed firms with the recommended disclosure items. Furthermore, from 2005 onward FIN-FSA would supervise compliance with IFRS, which should also increase the motivation of managers to ensure transparency in the transition phase. The arguments presented above underline that in the Finnish institutional setting the CESR disclosure recommendation should have plenty of mandatory characteristics although it is voluntary.

## 3. Hypotheses

This study develops a framework where recommended disclosure of the firms is expected to be influenced by three types of forces: regulatory pressures, firm-specific disclosure incentives, and monitoring forces. Regulatory pressures derive from the CESR disclosure recommendation. Authoritative disclosure recommendation increases firms' pressures for reducing information asymmetry. However, it is expected that observance of the CESR disclosure recommendation also has characteristics of voluntary disclosure because firms will not be subject to sanctions if they do not follow the recommendation. Hence, recommended disclosure should also reflect managers' attitudes towards agency costs, information asymmetry, and

proprietary costs. On the one hand, transparent financial disclosure reduces information asymmetry and agency conflicts between the management and shareholders. On the other hand, it is not always sensible to disclose proprietary information to the capital markets. Finally, recommended disclosure is also influenced by firms' own monitoring forces. Efficient corporate governance mechanisms are predicted to have a positive impact on compliance with the CESR disclosure recommendation.

## 3.1. The mandatory nature of the CESR disclosure recommendation

As noted in the introduction, prior literature on compliance by firms with disclosure recommendations is very scarce. Mangena and Tauringana (2007) demonstrate that full compliance is not achieved trough disclosure recommendation among the sample firms listed on the London Stock Exchange. However, their results suggest that firms react to disclosure recommendations, and give a reason to presume that there are differences between purely voluntary disclosure and recommended disclosure.

It is expected that regulatory pressures affect Finnish listed firms' transition disclosure decisions. This is because of the general importance and authoritative role of the CESR in the European institutional setting, and the FIN-FSA in the Finnish institutional setting. Moreover, after the publication of the recommendation the FIN-FSA insistently urged Finnish listed firms to disclose the recommended items. Prior empirical evidence has also documented high average percentage compliance for Finland (King, 1999). Hence, it is reasonable to presume that the CESR disclosure recommendation has more mandatory characteristics than purely voluntary disclosure. It therefore is expected that:

> H1: Recommended disclosure is more mandatory in nature
>     than voluntary disclosure.

## 3.2. The impact of the disclosure incentives of managers

Voluntary disclosure is expected to increase with firm size for several reasons. First, larger firms have higher agency costs compared with smaller firms because monitoring is inherently more difficult and expensive in larger organisations (Jensen

and Meckling, 1976). Second, the proprietary costs appear to be lower for larger firms because they have more resources to defend themselves against the adverse actions of competitors (Prencipe, 2004). Moreover, firm size is expected to increase disclosure if the disclosure has both fixed and variable components and hence the unit cost of disclosure decreases when the firm size grows (Lang and Lundholm, 1993). Other reasons such as higher political and litigation costs and intensive pressure from analysts (Cooke, 1989; Lang and Lundholm, 1993; Inchausti, 1997) have also been stated for the positive impact of size. Several empirical studies (Cerf, 1961; Buzby, 1975; Cooke, 1989, Lang and Lundholm, 1993; Eng and Mak, 2003; Cahan et al., 2005) document that firm size associates positively with voluntary disclosure. Given that the CESR recommendation is basically not binding, it can be expected that compliance increases with firm size. Accordingly, this paper hypothesises that:

*H2a: Recommended disclosure increases with firm size.*

Signalling theory suggests that more profitable firms have higher risks for adverse selection than less profitable firms because good firms have more to lose than bad firms (Akerlof, 1970; Spence, 1973). Furthermore, empirical evidence documents a positive relationship between firm performance and disclosure level (Lang and Lundholm, 1993). The CESR disclosure recommendation includes both narrative and numeric financial information relating to the differences between the present accounting policies and IFRS. Hence, managers of more profitable firms should be willing to reduce the information asymmetry caused by technical changes in the accounting practises through recommended disclosure. On the basis of the previous arguments, it is hypothesised that:

*H2b: Recommended disclosure increases with firm profitability.*

The managers of highly leveraged firms may use private financing to protect their proprietary information and consequently also have less incentive for providing public financial information (Verrechia, 1983; Healy and Palepu, 1993). Firms may also benefit from debt if it reduces the agency costs of free cash flows (Jensen, 1986)

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and thus the need for disclosure. Debt financing relies more on private communication with banks and debtors, and therefore the pressures for public disclosure are not so high. The negative impact of financial leverage on voluntary disclosure has also been documented empirically (Gary et al., 1995; Eng and Mak, 2003). Consequently, it is hypothesised that:

*H2c: Recommended disclosure is negatively associated with financial leverage.*

Firms in growth industries are expected to be more active disclosers (Gibbins et al., 1992). High growth prospects may increase voluntary disclosure if specific knowledge relating to growth can not be efficiently transferred through normal accounting information (Lev and Sougiannis, 1999). Hence, firms with high growth prospects should have an incentive for voluntary disclosure if they want to reduce information asymmetry and thereby prevent adverse selection. The positive impact of growth potential on voluntary disclosure has been also documented empirically (Kanto and Schadewitz, 1997). Hence, this paper hypothesises that:

*H2d: Recommended disclosure increases with the growth prospects of the firm.*

*3.3. The impact of corporate governance-related factors*

Larger accounting firms may have more to lose if they discover a breach in a client's records and fail to report it. Hence, the size of the accounting firm is a surrogate of better audit quality (De Angelo, 1981). Prior literature demonstrates an audit fee premium for larger accounting firms (Moizer, 1997; Niemi, 2004). Moreover, empirical mandatory disclosure studies (Wallace and Naser, 1995; Glaum and Street, 2003) document that the global accounting firm has a positive influence on mandatory disclosure. However, the positive impact of the global accounting firm on voluntary disclosure is not altogether clear (Hossain et al., 1995; Eng and Mak, 2003). Supposedly, larger accounting firms want to preserve their reputation advantage by monitoring their clients' recommended disclosure. For them client firms that follow recommendations transparently are the best guarantee for it. Thus,

there are sufficient grounds to expect that major accounting firms advise their clients to comply with the CESR disclosure recommendation. Consequently, it is hypothesised that:

> *H3a: Recommended disclosure is positively associated with the global accounting firm.*

The voluntary disclosure literature argues that informative disclosure increases institutional ownership because it decreases asymmetric information (Diamond and Verrecchia, 1991). The positive association between voluntary disclosure and institutional ownership has also been demonstrated empirically (Healy et al., 1999; Bushee and Noe, 2000). However, institutional investors also have a role after their initial investments in firms because institutions desire and demand more disclosure. Hence, they continue to demand further augmentation of disclosure from the firms (Ajinkya et al., 2005). This increases pressures for financial transparency and has a positive impact on information asymmetry reduction among firms with institutional owners. Empirical support for this argument has been provided for example by Ajinkya et al. (2005). Hence, this study hypothesises that:

> *H3b: Recommended disclosure increases with the institutional ownership of the firm.*

Board composition may also have influence on the recommended disclosures of firms. Fama and Jensen (1983) argue that a higher proportion of independent board members on corporate boards is likely to result in more efficient monitoring of boards and also limit managerial opportunism. The monitoring role of independent board members extends also to the financial reporting processes. Their positive impact on the comprehensiveness of financial disclosures by firms has been documented empirically (Chen and Jaggi, 2000; Ajinkya, 2005; Patelli and Prencipe, 2007). Hence, it is hypothesised that:

> *H3c: Recommended disclosure associates positively with the proportion of independent board members.*

The extent of board monitoring of the financial reporting process is not only a function of its composition. Also audit committees may have impact on the disclosure practices of the firms (Mangena and Tauringana, 2007). Audit committees are the core decision making bodies that are expected to monitor financial reporting practices (Karamanou and Vafeas, 2005). Agency theory suggests that setting up of audit committees as a means of reducing agency costs (Forker, 1992). Because audit committees supervise the quality of financial reporting, they are expected to associate positively with transparent disclosure. Karamanou and Vafeas (2005) have provided prior empirical evidence on the positive impact of audit committee structures on voluntary financial disclosure practices. Consequently, it is hypothesised that

> *H3d: Recommended disclosure associates positively with the existence of an audit committee.*

## 4. Data and methods

### 4.1. Sample

The target population of the study comprises all listed Finnish firms during the research period. Accordingly, 135 firms listed on the Helsinki Stock Exchange (currently a member of the OMX Nordic Exchange) during the study period are included in the target population. In this paper, recommended and voluntary disclosures are measured separately for 2004 and 2005, and the observations are pooled across these two years.

Firms that are members of financial services industry (*Worldscope* SIC starting with 6) are excluded from the primary population because their accounting practices, financial statements, and related disclosure requirements differ from the rest of the population. In addition, firms that have adopted IFRS before 2005 as well as firms delisted from the Helsinki Stock Exchange during the study period or shortly after it are deleted. Moreover, some observations are lost because of the lack of data for some explanatory variables. After these eliminations, the study sample consists of 177 firm-years. Finally, four outlier firms are eliminated from the sample because some of their variables are outside three standard deviations from the mean of the

measured variable. In total, 173 firm-year observations remain in the final sample for the empirical tests. The firm-year observations consist of 85 firms in 2004 and 88 firms in 2005.

## 4.2. Construction of recommended and voluntary disclosure indices

Recommended and voluntary disclosure indices are the dependent variables of the study. Because no database is available on transition disclosure of the sample firms, the data have to be hand-collected. This study examines transition disclosure that has been published in 2004 and 2005 *before* first-time adoption of IFRS by the firms. The disclosure data for 2004 is collected from financial statement releases, financial statements, and annual reports for 2003, which are published in 2004. Similarly, the disclosure data of 2005 include financial statement releases, financial statements, and annual reports of 2004, but also separate IFRS stock exchange releases published in 2005 before the first interim reports[4].

In the data collection process, all references to IFRS are first identified for each firm. Then a transition disclosure scoresheet is constructed. Criteria for the evaluation of recommended disclosures by the firms derive from the disclosure recommendation of the CESR. In 2004, the recommended disclosure items comprise narrative information and in 2005 numerical information. Criteria for voluntary disclosures are based on information over and above the recommended disclosures. They are indentified by pre-testing a subsample of financial statements.

Altogether, 46 items are identified and included in the transition disclosure scoresheet. Ten items measure recommended disclosure and 36 items voluntary disclosure. The complete transition disclosure scoresheet can be found in the Appendix. All disclosure items are considered to be equally valuable. However, the level of detail of disclosures has been weighted. The reason is that there are significant differences in the level of given information. Thus, in the scoresheet, a firm can be assigned a maximum of one point for each disclosure item. If a firm discloses information insufficiently, it is awarded 0.5 points. The index is similar to that in Kanto and Schadewitz (1997).

On the basis of the transition disclosure scores of the firms, two disclosure indices are created. Index 1 measures recommended disclosure and index 2 voluntary disclosure. The index value is the ratio of the actual points assigned to the firm to the

maximum points it can achieve[5]. The maximum points differ somewhat between sample firms because a couple of firms have only one business segment and therefore their maximum points are lower. This study awards the firm only once per disclosure item to avoid double measurement of disclosure.

*4.3. Independent variables*

The independent variables of the study consist of control variables, disclosure incentives, and corporate governance factors. Control variables are proxies for reporting year and industry. Disclosure incentives are empirical measures for firm size, profitability, financial leverage, and growth prospects. Corporate governance factors are empirical measures for the accounting firm, institutional ownership, board composition, and audit committee[6]. The values for the disclosure incentives are retrieved from the *Thomson One Banker Worldscope* database. The data for the corporate governance variables are hand-collected from annual reports of the firms. Table I presents the dependent and independent variables of the main tests in more detail.

Take in Table (No.I)

*4.4. Regression models*

The main tests of the present paper involve separate estimation of the following multivariate regressions for recommended disclosure (index 1) and for voluntary disclosure (index 2)  (in equation 1, *β* represent the regression parameters to be estimated, *e* represents the regression residual, subscripts i and t refer to the firm and year, respectively):

$$Disclosure\ index_{it} = \beta_0 + \sum_c \beta_c\ Control\ variables_{it} \qquad (1)$$
$$+ \sum_i \beta_i\ Managers'\ disclosure\ incentives_{it}$$
$$+ \sum_g \beta_g\ Corporate\ governance\ factors_{it} + e_{it}$$

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## 5. Empirical results

### 5.1. Descriptive statistics

Table II shows descriptive statistics of the test variables. The statistics demonstrate that the amount of recommended disclosure varies greatly among the sample firms; some firms have disclosed in exemplary fashion while others have not provided any information. As a first test to examine whether recommended disclosure is more mandatory in nature than voluntary disclosure, the mean and standard deviation of both forms of disclosure are examined. The mean and standard deviation are proper statistical measures for examining the differences between recommended and voluntary disclosure because the scale of the disclosure indices is between 0-1, and thus the indices do not include any outlier variables. It is expected that recommended disclosure should have a higher mean and lower standard deviation compared with voluntary disclosure if it has more mandatory characteristics. This is because purely mandatory disclosure should have a mean close to 1 and standard deviation close to 0.

<div align="center">Take in Table (No.II)</div>

Table II demonstrates that the mean is higher for recommended disclosure than for voluntary disclosure. The t-test also confirms that the difference is significant (not reported in detail). Moreover, recommended disclosure is demonstrated to have a clearly higher median, and lower and upper quartile values. The higher mean of index 1 is the first evidence of the hypothesised (H1) mandatory characteristics of recommended disclosure.

Unexpectedly, the standard deviation is similar for both forms of disclosure. One plausible reason for similar standard deviations may be the fact that some firms have followed the CESR disclosure recommendation in 2004 and/or in 2005 exactly whereas some firms have not disclosed any of the recommended items[7]. Poorly disclosing firms have supposedly interpreted the CESR disclosure recommendation to be purely voluntary in nature, and thus have not been motivated for recommended disclosure. Consequently, although recommended disclosure has been on average better than voluntary disclosure, the weak disclosure scores of some firms have increased the standard deviation of recommended disclosure. The mandatory

characteristics of recommended disclosure will be examined in more detail in section 5.3.3.

The statistics of independent variables demonstrate that firms in the manufacturing industry and firms audited by global accounting firms have large proportions in the studied sample whereas only minority of the firms have a separate audit committee. All the continuous empirical measures for the disclosure incentives by managers and corporate governance factors are fairly symmetrically distributed. This is because the mean and median of these variables are close to each other.

*5.2. Correlation matrix*

Table III provides the correlation matrix for the variables. Measured with Pearson correlation, recommended disclosure (index 1) and voluntary disclosure (index 2) are positively and significantly correlated with the reporting year (2005), net sales, institutional ownership, independent board members, and audit committee. The results are very similar when measured with the Spearman rank correlation. The reporting year, net sales, independent board members, and audit committee correlate positively with the disclosure indices. Moreover, price-to-book and institutional ownership correlate positively with index 1.

Not so surprisingly, the correlation between recommended disclosure and voluntary disclosure is positive and significant. That result indicates that recommended and voluntary disclosure by firms are at least partly determined by similar factors. As a preliminary diagnostic check, the Pearson (and Spearman) correlations between the independent variables are also estimated. The results demonstrate that the independent variables do not have high mutual correlations. Thus, serious multicollinearity problems cannot be suspected in the regression analysis.

Take in Table (No.III)

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*5.3. Regression results*

*5.3.1. The disclosure incentives for recommended disclosure*

Regression results for recommended disclosure are reported in Table IV. F-values are very significant for all estimated regressions. The adjusted R-square is 24.6 percent when the recommended disclosure is regressed only on the control variables. The disclosure incentives of managers increase the adjusted R-square to 37.5 percent and the corporate governance factors to 39.7 percent. In respect of control variables, the reporting year (2005) has a significant positive regression coefficient and transportation etc. a significant negative regression coefficient. The significant impact of the reporting year falls in line with the view that the sample firms have significantly improved their recommended disclosure in 2005 as the deadline for adoption of the new reporting principles has drawn closer. Perhaps managers have interpreted the CESR disclosure recommendation to be more mandatory in 2005.

Take in Table (No.IV)

With regard to the disclosure incentives of managers, net sales and price-to-book have significant positive regression coefficients whereas financial leverage has a significant negative regression coefficient. The positive impact of firm size on recommended disclosure is as hypothesised (H2a) and it is consistent with the prior findings of voluntary disclosure literature (Cerf, 1961; Buzby, 1975; Cooke, 1989; Lang and Lundholm, 1993; Eng and Mak, 2003; Cahan et al., 2005). The result may imply that bigger firms want to reduce agency costs by complying with recommended disclosures (Jensen and Meckling, 1976). Another explanation may be that bigger firms have lower proprietary costs (Prencipe, 2004) and/or unit costs of disclosure (Lang and Lundholm, 1993).

The sign of the regression coefficient of financial leverage is negative as hypothesised (H2c), and thus consistent with some prior empirical findings (Gary et al., 1995; Eng and Mak, 2003). The result suggests that highly leveraged firms may have high proprietary costs. Thus, managers may be reluctant to disclose the proprietary business information of firms and thereby their strategy is to use more private debt financing (Verrecchia, 1983; Healy and Palepu, 1993). Moreover, debt

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financing may reduce the agency costs of free cash flows (Jensen, 1986) and thus decrease the need for transparent disclosure in the capital markets. By relying more on private communication with banks and debt investors managers can avoid some public disclosure. The result supplements the previous study findings on the impact of financial leverage on corporate disclosure, which have been somewhat contradictory (Chow and Wong-Boren, 1987; Hossain et al., 1995; Gary et al., 1995; Eng and Mak, 2003; Prencipe, 2004).

As hypothesised (H2d), firms with higher growth prospects (price-to-book ratios) comply more precisely with recommended disclosures. The result is consistent with the arguments of signalling theory (Akerlof, 1970; Spence 1973). Accordingly, growth firms may have an incentive to reduce information asymmetry through recommended disclosure and thereby to prevent investors from misinterpreting the favourable growth prospects of these firms. Moreover, growth firms with volatile share prices may increase disclosure to reduce the incidence of large one-time stock price changes, thus avoiding the litigation risks based on the failure of managers to disclose required information in a timely manner (Lang and Lundholm, 1993). The present finding is consistent with some previous empirical studies (Kanto and Schadewitz, 1997).

Contrary to the hypothesis (H2b), firm profitability does not have a significant association with recommended disclosure. However, the result is in line with some prior empirical studies on voluntary disclosure (Prencipe, 2004; Cahan et al., 2005; Patelli and Prencipe, 2007). On the one hand, the result may indicate that a stable, well performing firm believes that a high return on assets is a sufficient indicator of the firm's present and future performance and thus may not see any need for providing additional information in the capital markets. On the other hand, prior literature on the signalling theory (Akerlof, 1970) and proprietary costs theory (Verrecchia, 1983) yields confounding conclusions concerning the effect of profitability on disclosure.

*5.3.2. The corporate governance-related determinants of recommended disclosure*

In line with the hypothesis (H3c), the results of corporate governance variables document a positive and significant regression coefficient for independent board members. This result is consistent with the argument that a higher proportion of

independent board members on corporate boards is likely to result in more efficient monitoring of boards (Fama and Jensen, 1983). This may limit managerial opportunism and thus increase pressures to comply with recommended disclosures. Similar results have also been documented previously (Chen and Jaggi, 2000; Ajinkya, 2005; Patelli and Prencipe, 2007) although some prior empirical studies have provided contrary results (Forker, 1992; Eng and Mak, 2003).

Unexpectedly, the sign of the regression coefficient of a global accounting firm is not significant (H3a). While this result is consistent with some previous empirical voluntary disclosure studies (Hossain et al., 1995; Eng and Mak, 2003), it differs from the prior mandatory disclosure findings (Wallace and Naser, 1995; Glaum and Street, 2003) which document a positive regression coefficient for the global accounting firm. The result implies that global accounting firms do not differ from local accounting firms in relation to encouragement for recommended disclosures and/or in relation to the impact of their advices.

In addition, the findings do not indicate a statistically significant effect for institutional ownership (H3b) and audit committee (H3d). Accordingly, after controlling for other relevant factors, increased institutional ownership does not seem to motivate firms to reduce information asymmetry through recommended disclosure. This finding is inconsistent with the argument of Diamond and Verrecchia (1991) and with the results of some previous empirical studies (Healy et al., 1999; Ajinkya et al., 2005). It may imply that Finnish listed firms are partly owned by passive foreign institutional investors. The insignificant coefficient of audit committee suggests that the audit committees of the firms have not functioned efficiently enough during the sample period. Hence, they have had only a minor positive impact on the quality of financial reporting. This result supports the finding of Forker (1992).

### 5.3.3. The mandatory characteristics of recommended disclosure

As already discussed, e.g. higher agency costs, lower proprietary costs, and lower unit costs are said to increase voluntary disclosure by larger firms (Jensen and Meckling, 1976; Verrecchia, 1983, Lang and Lundholm, 1993). The positive association has also been documented in numerous empirical studies (Cerf, 1961; Buzby, 1975; Cooke, 1989; Lang and Lundholm, 1993; Eng and Mak, 2003; Cahan

et al., 2005).

Firm size should not be as important an explanatory factor for mandatory disclosure. This is because the law requires firms to disclose mandatory disclosure items. Hence, all firms that want to avoid sanctions should disclose without discretion and the impact of size should decrease. In mandatory disclosure literature some empirical studies (Wallace and Naser, 1995; Inchausti, 1997) have demonstrated a positive and significant regression coefficient for firm size while others (Glaum and Street, 2003) do not find such an association. Moreover, Kanto and Schadewitz (1997) document that firm size and other disclosure incentives of managers have lower explanatory power for mandatory than for voluntary disclosure. Based on the above arguments, this paper examines whether:

(1) The overall impact of control factors, disclosure incentives, and corporate governance factors is smaller on recommended disclosure than on voluntary disclosure.

(2) Firm size has a smaller impact on recommended disclosure than on voluntary disclosure.

Table V presents regression results for voluntary disclosure. The results document almost the same significant explanatory variables for voluntary disclosure as for recommended disclosure. Net sales, financial leverage, and price-to-book have significant regression coefficients also in this model. The reporting year (2005) is now the only significant control variable. With regard to the corporate governance factors, independent board members is no longer a significant variable[8]. In terms of F-values, the overall findings indicate that all three regressions of voluntary disclosure are statistically very significant[9]. The adjusted R-square is 44.9 percent when the control variables alone are included in the regression model and it increases to 57.0 percent when the disclosure incentives of managers are added to the model. Finally, the inclusion of the corporate governance factors increases the adjusted R-square marginally to 57.4 percent.

Take in Table (No.V)

A comparison between the adjusted R-squares of the disclosure models reveals that the recommended disclosure model has an explanatory power that is about 18 percentage points lower than that of the voluntary disclosure model. Moreover, the F-value of the recommended disclosure model is clearly lower (9.7 versus 18.8). This finding is consistent with the hypothesis (H1) and it falls in line with the prior findings of Kanto and Schadewitz (1997). The result implies that the mandatory characteristics of recommended disclosure decrease the explanatory power of the recommended disclosure model.

The empirical results provide also evidence that firm size is a less significant variable in the recommended disclosure model than in the voluntary disclosure model. In the recommended disclosure model, the (non-tabulated) t-value of net sales is 2.5 whereas in the voluntary disclosure model the corresponding figure is 4.1.

Next, the voluntary disclosure model is augmented with index 1 to get further information on the impact of firm size variable on recommended disclosure (not reported in detail). Index 1, the reporting year, and net sales have significant positive regression coefficients in the augmented model. In contrast, the coefficients of financial leverage, price-to-book, and independent board members remain insignificant. This result suggests that only the reporting year and net sales have significant incremental impact on voluntary disclosure whereas the influence of financial leverage, price-to-book, and independent board members are included in recommended disclosure. This finding, coupled with the significant positive correlation between the two disclosure indices, falls in line with the view that recommended disclosure and voluntary disclosure are at least partly determined by similar factors, although the size impact is lower in the recommended disclosure model. The lower impact of firm size on recommended disclosure compared to voluntary disclosure is consistent with prior mandatory disclosure findings (Kanto and Schadewitz, 1997; Glaum and Street, 2003), and is additional evidence for the mandatory characteristics of recommended disclosure.

*5.4. Additional tests*

*5.4.1. Unweighted disclosure indices*

After the primary tests reported above, some additional tests are performed. First, recommended disclosure is examined more roughly by applying a disclosure index similar to that in Cooke (1989). This index has a scale where scores are not weighted according to the level of detail of disclosed information. Thus, firms can be awarded either 0 or 1 point. If a firm discloses an issue insufficiently but still discloses something, it gets 1 point and is thus equal to a firm that discloses the issue sufficiently. The results (not reported in detail) are qualitatively the same with the primary tests. The reporting year (2005), net sales, financial leverage, price-to-book, and independent board members have significant regression coefficients also in this model. However, the adjusted R-square is 12.7 percentage points lower when the unweighted disclosure index is applied. This result may indicate that the primary disclosure index captures the differences of recommended disclosure better.

*5.4.2. Additional regressors*

Furthermore, two additional independent variables potentially associated with recommended disclosure are considered. These variables are empirical measures for information intermediation and ownership concentration. Data of the proxies for these variables are retrieved from the *Thomson One Banker Worldscope, IBES History,* and *Datastream* databases.

The proxy for information intermediation is the number of analysts' earnings per share forecasts. The expectation is that greater public interest in firms creates pressures to mitigate political costs (Watts and Zimmerman, 1986) thereby increasing compliance by firms with recommended disclosure. The ownership concentration of the firm is measured by the percentage of closely held shares. Closely held shares represent the shares held by insiders. On the one hand, Healy and Palepu (2001) suggest that firms with a concentrated ownership structure may have an incentive to increase their disclosure to reduce information asymmetry and agency problems. On the other hand, some studies (Leuz et al., 2003) suggest that under concentrated ownership, insiders may be motivated to conceal detailed performance information from outsiders.

The overall results of the additional tests on these new independent variables do

not, however, lend support to the expectations, because augmenting the recommended disclosure regression with these variables one at a time does not prove to have material effect on recommended disclosure. While firm size, financial leverage, price-to-book, and the proportion of independent board members remain significant in the augmented regressions, the new independent variables have only an insignificant incremental explanatory power for recommended disclosure.

## 5.4.3. Canonical correlations

As a final additional test and robustness check, this study uses canonical correlation analysis to explore the differences of recommended and voluntary disclosure. Canonical correlation analysis is often a useful complement to a multivariate regression analysis (Rencher, 2002). It is a multivariate statistical model that facilitates the study of interrelationships among sets of multiple dependent variables and multiple independent variables. Hence, canonical correlation simultaneously predicts multiple dependent variables from multiple independent variables (Hair et al., 1995). In this study the purpose of canonical correlation analysis is to provide additional evidence on the magnitude of the relationships that exist between disclosure indices and independent variables. Canonical correlation analysis has been performed for the following two sets of variables.

$$CanCor(Set\ 1;\ Set\ 2) \tag{2}$$

where

Set 1  =  $v_1$ Index 1
           + $v_2$ Index 2

Set 2  =  $\sum_c w_c$ *Control variables*
           + $\sum_i w_i$ *Managers' disclosure incentives*
           + $\sum_g w_g$ *Corporate governance factors*

Canonical correlation analysis provides a correlation between two linear composites. It identifies the optimum structure of each variable set that maximizes the relationship between independent and dependent variable sets. Each canonical function has two separate linear composites, one for the set of dependent variables

and one for the set of independent variables[10]. The strength of the relationship is given by the canonical correlation (Hair et al., 1995). Using the canonical correlation technique, this study estimates the weights (v) for the measures of recommended and voluntary disclosure (Set 1), coupled with the weights (w) for control variables, managers' disclosure incentives, and corporate governance factors (Set 2) that maximize the simple pair-wise correlation between the linear composites of these two sets of variables. Moreover, considering recommended and voluntary disclosure indices simultaneously as dependent (Set 1) variables, the estimated standardized canonical coefficients enable us to make inferences about the relative importance of the independent (Set 2) variables.

Table VI provides the results from the canonical correlation analysis. For simplicity and to save space, only the first (highest) estimated canonical correlations are reported.

Take in Table (No.VI)

The overall findings confirm that managers' disclosure incentives and corporate governance -related factors, coupled with the control variables, have an important impact on recommended and voluntary disclosure. The adjusted canonical correlation coefficient is 0.672 when only the control variables are included in Set 2, and it increases to 0.757 when the disclosure incentives of managers are also considered. Finally, the inclusion of corporate governance factors increases the adjusted canonical correlation coefficient to 0.762. These canonical correlations are significant, as indicated by the Wilk's lambda statistics.

Further, regarding the standardized canonical coefficients, the findings demonstrate that the weight assigned to voluntary disclosure is much higher (0.897 - 1.058) than the corresponding weight of recommended disclosure (-0.076 - 0.128). This finding suggests that the independent variables are more closely related to voluntary disclosure than to recommended disclosure, which falls in line with the primary regression results. Similarly, consistent with the regression results, the reporting year (2005), firm size, price-to-book, and independent board members have positive and financial leverage negative standardized canonical coefficients among the Set 2 variables.

## 6. Summary and conclusions

This paper examines recommended IFRS transition disclosure by Finnish listed firms. *Recommended disclosure* is defined to mean disclosure that is specified in the CESR transition disclosure recommendation for the first-time adoption of IFRS whereas *voluntary disclosure* refers to disclosure over and above the recommendation. The specific objective of the paper is to examine whether in relation to the CESR disclosure recommendation for IFRS transition firms behave more similarly to voluntary or to mandatory disclosure. Moreover, the paper explores what are the firm incentives for and corporate governance-related determinants of recommended disclosure.

The study design involves examining recommended and voluntary disclosure of Finnish listed firms published in 2004 and 2005. The pooled target sample consists of 85 firms in 2004 and 88 firms in 2005. The disclosure data are hand-collected from financial statement releases, financial statements, annual reports, and separate IFRS stock exchange releases. Using the multivariate regression analysis as the main analysis method, recommended and voluntary disclosure indices are regressed on control factors, disclosure incentives of managers, and corporate governance factors.

The findings first provide evidence of the mandatory characteristics of recommended disclosure by documenting higher mean values for a recommended disclosure index compared to a voluntary disclosure index. In addition, the explanatory power of control factors, disclosure incentives of managers, and corporate governance factors is lower in the recommended disclosure model than in the voluntary disclosure model. Finally, firm size is documented to be a less important explanatory variable for recommended disclosure than for voluntary disclosure. The findings are consistent with the view that the CESR disclosure recommendation also has characteristics of a mandatory nature, thereby increasing disclosure by firms, lowering the explanatory power of the recommended disclosure model, and decreasing the importance of firm size. Previously similar empirical results have been documented for the differences between mandatory and voluntary disclosure (Kanto and Schadewitz, 1997).

With regard to the disclosure incentives of managers, firm size and growth prospects associate positively and financial leverage negatively with recommended

disclosure. The positive effect of firm size is consistent with the notion that larger firms have higher agency costs, lower proprietary costs, and lower unit costs of disclosure. The result falls in line with prior related voluntary disclosure literature. The negative impact of financial leverage provides evidence that highly leveraged firms may have an incentive to avoid public disclosure by relying more on debt financing. This finding is consistent with some prior empirical results (Gary et al., 1995; Eng and Mak, 2003). The positive relation between recommended disclosure and growth prospects is consistent with the view that growth firms have an incentive to reduce information asymmetry and thus avoid the adverse consequences of poor disclosure (Akerlof, 1970).

With regard to the corporate governance factors, this study demonstrates that the proportion of independent board members in corporate boards increases recommended disclosure. The finding provides additional evidence for the argument that independent board members increase the monitoring power of the board (Fama and Jensen, 1983) and is similar to some prior empirical studies. Interestingly, the sign of the regression coefficient of global accounting firm is insignificant. Previously, this variable has proved to have a positive effect on mandatory disclosure (Wallace and Naser, 1995; Glaum and Street, 2003) but an insignificant effect on voluntary disclosure (Hossain et al., 1995; Eng and Mak, 2003).

This study makes a contribution for the corporate disclosure and financial regulation literature by bringing into discussion a third category of corporate disclosure, which is recommended disclosure. The results provide important insights into the mandatory characteristics and determinants of recommended disclosure. Yet, to date, few studies have addressed these issues because the focus has previously been on mandatory and voluntary disclosure. The primary findings indicate that largely similar sets of explanatory factors have an impact on recommended disclosure and on voluntary disclosure. However, in spite of disclosure recommendations being voluntary, managers interpret them to have mandatory characteristics. This increases the average level of disclosure and makes therefore disclosure recommendations useful also for the purposes of regulatory bodies. The current study suggests that if regulatory bodies want to achieve full compliance with disclosure items, disclosure rules are needed. In cases where a lower level of compliance is sufficient, disclosure recommendations may be a faster and more cost-efficient way to ensure the disclosure of transparent financial information.

# Notes

1. More information on the Committee of European Securities Regulators can be found on the CESR's website; http://www.cesr-eu.org/.
2. Examples on recommendations published by CESR are for example (1) Recommendation for additional guidance regarding the implementation of International Financial Reporting Standards (examined in this study), (2) the CESR recommendation for the consistent implementation of the European Commission's Regulation on Prospectuses No 809/2004, and (3) the CESR recommendation on alternative performance measures.
3. Also, the Finnish Institute of Authorised Public Accountants focused attention on the CESR transition disclosure recommendation and encouraged authorised public accountants in Finland to recommend that their client firms comply with the CESR disclosure recommendation.
4. The section 26 of the CESR disclosure recommendation says as follows: "Where the company intends to present its 2005 interim information on the basis of IAS/IFRS as recommended hereunder, it is necessary that the quantitative information mentioned above is released at the latest before the publication of this interim information. This recommendation follows from the need to have a clear and valid starting point for the preparation and presentation of the interim IAS/IFRS figures."
5. If a firm for example is awarded 7 points when the maximum number of points is 10, the index value is computed as follows: $7/10 = 0.7$.
6. Prior literature has used many different empirical measures for audit committees (Forker, 1992; Karamanou and Vafeas, 2005). In this study the empirical measure for audit committee is an indicator variable coded 1 if the firm discloses the existence of an audit committee in its annual report. More detailed information on the structure of the audit committees was not easily available and hence it was difficult to observe. Previously, e.g. Forker (1992) has used a similar variable.
7. Further analyses indicate that none of the firms achieved full compliance in 2004 but a couple of firms did in 2005.
8. Overall disclosure index (including both recommended and voluntary disclosure) is also regressed on the independent variables. The results corroborate the findings of the primary tests. The reporting year, net sales, financial leverage, and price-to-book have statistically significant coefficients with the expected signs. Independent board members is significant at the five percent significance level if the one-sided test is applied. Audit committee has a positive and significant coefficient at the ten percent significance level if the one-sided test is applied.
9. The Variance Inflation Factors (VIF) among the independent variables of full-regressions (all variables included) are lower than 2.52 in the recommended and voluntary disclosure model, which indicates that there should not exist any multicollinearity problems. Correspondingly, the Durbin-Watsons are between 2.11 and 2.26, which implies that autocorrelation should not pose any threat to the reliability of the results.
10. The maximum number of canonical functions that can be extracted from the sets of variables equals the number of variables in the smallest data set, independent or dependent (Hair et al., 1995).

# References

Al-Razeen, A. and Karbhari, Y. (2004), "Interaction between compulsory and voluntary disclosure in Saudi Arabian corporate annual reports", *Managerial Auditing Journal*, Vol.19 No.3, pp. 351-360.

Akerlof, G. (1970), "The market for lemons: quality uncertainty and the market mechanism", *Quarterly Journal of Economics*, Vol.84 No.3, pp. 488-500.

Aksu, M. and Kosedag, A. (2006), "Transparency and disclosure scores and their determinants in the Istanbul Stock Exchange", *Corporate Governance: An International Review*, Vol.14 No.4, pp. 277-296.

Ajinkya, B., Bhojraj, S. and Sengupta, P. (2005), "The association between outside directors, institutional investors and the properties of management earnings forecasts", *Journal of Accounting Research*, Vol.43 No.3, pp. 343-376.

Bushee, B.J. and Leuz, C. (2005), "Economic consequences of SEC disclosure regulation: evidence from the OTC bulletin board", *Journal of Accounting and Economics*, Vol.39 No.2, pp. 233-264.

Bushee, B.J. and Noe, C.F. (2000), "Corporate disclosure practices, institutional investors, and stock return volatility", *Journal of Accounting Research*, Vol.38 No.3, pp. 171-202.

Buzby, S.L. (1975), "Firm size, listed versus unlisted stocks, and the extent of financial disclosure", *Journal of Accounting Research*, Vol.13 (Spring), pp. 16-37.

Cahan, S.F., Rahman, A. and Perera, H. (2005), "Global diversification and corporate disclosure", *Journal of International Accounting Research*, Vol.4 No.1, pp. 73-93.

Cerf, A.R. (1961), *Corporate reporting and investment decisions*, Berkeley: University of California Press.

Chen, C.J.P. and Jaggi, B. (2000), "Association between independent non-executive directors, family control and financial disclosure in Hong Kong", *Journal of Accounting and Public Policy*, Vol.19 Nos 4/5, pp. 285-310.

Chow, C.W. and Wong-Boren, A. (1987), "Voluntary financial disclosure by Mexican corporations", *The Accounting Review*, Vol.62 No.3, pp. 533-541.

Cooke, T.E. (1989), "Voluntary corporate disclosure by Swedish firms", *Journal of International Financial Management and Accounting*, Vol.1 No.2, pp. 171-195.

Dargenidou, C., McLeay, S. and Raonic, I. (2006), "Expected earnings growth and the cost of capital: an analysis of accounting regime change in the European financial market", *Abacus*, Vol.42 Nos 3/4, pp. 388-414.

De Angelo, L.E. (1981), "Auditor size and audit quality", *Journal of Accounting and Economics*, Vol.3 No.3, pp. 183-199.

Diamond, D.W. and Verrecchia, R.E. (1991), "Disclosure, liquidity, and the cost of capital", *The Journal of Finance*, Vol.46 (September), pp. 1325-1359.

Eng, L. and Mak, Y. (2003), "Corporate governance and voluntary disclosure", *Journal of Accounting and Public Policy*, Vol. 22 No.4, pp. 325-345.

Fama, E.F. and Jensen, M.C. (1983), "Separation of ownership and control", *Journal of Law and Economics*, Vol.26 No.2, pp. 301-325.

Forker, J.J. (1992), "Corporate governance and disclosure quality", *Accounting and Business Research*, Vol.22 Vol.86, pp. 111-124.

Gibbins, M., Richardson, A.J. and Waterhouse, J. (1992), "The management of financial disclosure: theory and perspectives", *The Canadian Certified General Accountants' Research Foundation: Research Monograph* No.20.

Glaum, M. and Street, D.L. (2003), "Compliance with the disclosure requirements of Germany's new market: IAS Versus US GAAP", *Journal of International Financial Management and Accounting*, Vol.14 No.1, pp. 64-101.

Gary, K.M., Clare, B.R. and Sidney, J.G. (1995), "Factors influencing voluntary annual report disclosures by U.S., U.K. and continental European multinational corporations", *Journal of International Business Studies*, Vol. 26 No.3, pp. 555-572.

Gray, S.J. and Street, D.L. (2002), "Factors influencing the extent of corporate compliance with International Accounting Standards: Summary of research monograph", *Journal of International Accounting, Auditing & Taxation*, Vol.11 No.1, pp. 51-76.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995), *Multivariate data analysis with readings*, 4th edn, Prentice-Hall, New Jersey.

Healy, P.M. and Palepu, K.G. (1993), "The effect of firm's financial disclosure strategies on stock prices", *Accounting Horizons*, Vol.7 No.1, pp. 1-11.

Healey, P.M. and Palepu, K.G. (1995), "The challenges of investor communication. The case of CUC International, Inc", *Journal of Financial Economics* Vol.38 No.2, pp. 111-140.

Healy, P.M., Hutton, A. and Palepu, K. (1999), "Stock performance and intermediation changes surrounding sustained increases in disclosure", *Contemporary Accounting Research* Vol.16 No.3, pp. 485-520.

Healy, P.M. and Palepu, K.G. (2001), "Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature", *Journal of Accounting and Economics* Vol.31 No.1-3, pp. 405-440.

Hossain, M., Perera, M.H.P. and Rahman, A.R. (1995), "Voluntary disclosure in the annual reports of New Zealand firms", *Journal of International Financial Management and Accounting*, Vol.6 No.1, pp. 69-87.

Inchausti, B.G. (1997), "The influence of company characteristics and accounting regulation on information disclosed by Spanish firms", *European Accounting Review* Vol.6 No.1, pp. 45-68.

Jensen, M. and Meckling, W. (1976), "Theory of the firm: Managerial behaviour, agency costs and ownership structure", *Journal of Financial Economics*, Vol.3 No.4, pp. 305-360.

Jensen, M. (1986), "Agency costs of free cash flow, corporate finance, and takeovers", *American Economic Review*, Vol.76 No.2, pp. 323-329.

Kanto, A. and Schadewitz, H.J. (1997), "A multidimensional model for the disclosure policy of a firm", *Scandinavian Journal of Management*, Vol.13 No.3, pp. 229-249.

Karamanou, I. and Vafeas, N. (2005), "The association between corporate boards, audit committees, and management earnings forecasts: an empirical analysis", *Journal of Accounting Research*, Vol.43 No.3, pp. 453-486.

King, C.G. (1999), "The measurements of harmonization in the form and content of the auditor's report in the European Union", *Journal of International Accounting, Auditing & Taxation*, Vol.8 No.1, pp. 23-42.

Lang, M. and Lundholm, R. (1993), "Cross-sectional determinants of analyst ratings of corporate disclosures", *Journal of Accounting Research*, Vol.31 (Autumn), pp. 246-271.

Leuz, C., Nanda, D. and Wysocki, P.D. (2003), "Earnings management and investor protection: An international comparison", *Journal of Financial Economics*, Vol. 69 No.3, pp. 505-527.

Lev, B. and Sougiannis, T. (1999), "Penetrating the book-to-market black box: The R&D effect", *Journal of Business Finance and Accounting*, Vol.26 No.3, pp. 419-449.

McLaughlin, R. and Safieddine, A. (2008), "Regulation and information asymmetry: Evidence from the performance of industrial and utility firms issuing seasoned equity in the USA", *Journal of Financial Regulation and Compliance*, Vol.16 No.1, pp. 59-76.

Mangena, M. and Tauringana, V. (2007), "Corporate compliance with non-mandatory statements of best practice: the case of ASB statement on interim reports", *European Accounting Review*, Vol.16 No.2, pp. 399-427.

Moizer, P. (1997), "Auditor reputation: The international empirical evidence", *International Journal of Auditing*, Vol.1 No.1, pp. 61-74.

Niemi, L. (2004), "Auditor size and audit pricing: Evidence from small audit firms", *European Accounting Review*, Vol.13 No.3, pp. 541-560.

Patelli, L. and Prencipe, A. (2007), "The relationship between voluntary disclosure and independent directors in the presence of a dominant shareholder", *European Accounting Review*, Vol.16 No.1, pp. 5-33.

Prencipe, A. (2004), "Proprietary costs and determinants of voluntary segment disclosure: Evidence from Italian listed companies", *European Accounting Review*, Vol.13 No.2, pp. 319-340.

Rencher, A.C. (2002), *Methods of multivariate analysis*, 2nd edn, Wiley, New York.

Roe, M.J. (2006), "Legal origins, politics and modern stock markets", *Harvard Law Review*, Vol.120 No.2, pp. 462-527.

Spence, M. (1973), "Job market signalling", *Quarterly Journal of Economics*, Vol.87 No.3, pp. 355-374.

Verrecchia, R. (1983), "Discretionary disclosure", *Journal of Accounting and Economics*, Vol.5 No.3, pp. 179-194.

Wallace, R.S. and Naser, K. (1995), "Firm-specific determinants of the comprehensiveness of mandatory disclosure in the corporate annual reports of firms listed on the stock exchange of Hong Kong", *Journal of Accounting and Public Policy*, Vol.14 No.4, pp. 311-368.

Watts, R.L., Zimmerman, J.L. (1986), *Positive accounting theory*, Prentice-Hall, New Jersey.

Williamson, O.E. (1981), "The modern corporation: Origins, evolution, attributes", *Journal of Economic Literature,* Vol.19 No.4, pp. 1537-1568.


**Further reading**


CESR/03-323e (2008), "Recommendation for additional guidance regarding the transition to IFRS", available at: www.cesr-eu.org/index.php?page=document_ details&from_title=Documents&id=213 (accessed 19 May).

**Table I.** Variable definitions

**Dependent variables**

| | |
|---|---|
| Index 1 | A measure of the firm's recommended IFRS transition disclosure. |
| Index 2 | A measure of the firm's voluntary IFRS transition disclosure. |

**Control variables**

| | |
|---|---|
| Reporting year | Indicator variable = 1, if the disclosure index value describes a transition disclosure published in 2005, otherwise 0. |
| Construction | Indicator variable = 1, if the firm's primary first-digit SIC is 1, otherwise 0. |
| Transportation etc. | Indicator variable = 1, if the firm's primary first-digit SIC is 4, otherwise 0. |
| Trade | Indicator variable = 1, if the firm's primary first-digit SIC is 5, otherwise 0. |
| Services | Indicator variable = 1, if the firm's primary first-digit SIC is 7 or 8, otherwise 0. |
| Manufacturing | Benchmark for industry (primary first-digit SIC is 2 or 3). |

**The disclosure incentives of managers**

| | |
|---|---|
| Net sales | Empirical measure for firm size measured by the natural logarithm of the five-year average net sales in million euros. |
| Return on assets | Empirical measure for firm profitability measured by the five-year average of return on assets ratio. |
| Financial leverage | Empirical measure for the financial leverage of the firm computed as follows: 1-(common equity/total assets). |
| Price-to-book | Empirical measure for the growth prospects of the firm measured by the ratio of year-end market capitalisation to total common equity. |

**Corporate governance factors**

| | |
|---|---|
| Big 4 | Indicator variable = 1, if the auditor of the firm is a global accounting firm, otherwise 0. |
| Institutional ownership | Empirical measure for the ownership structure of the firm calculated as follows: 1-(percentage owned by households/100). |
| Independent board members | Proportion of independent members in corporate boards. Board members are defined to be independent if they do not have a working relationship with the firm, or if they did not have a working relationship with the firm during the preceding three years before they started as board members. Moreover, if board members significantly cooperate with the firm they are defined as not independent. |
| Audit committee | Indicator variable = 1, if the firm disclosed the existence of an audit committee in its annual report, otherwise 0. |

**Table II.** Descriptive statistics of the variables (n=173)

| | N | Mean | Median | Lower quartile (25 %) | Upper quartile (75 %) | Std. Deviation | Min | Max |
|---|---|---|---|---|---|---|---|---|
| *Dependent variables:* | | | | | | | | |
| Index 1 | 173 | 0.479 | 0.500 | 0.167 | 0.750 | 0.299 | 0.000 | 1.000 |
| Index 2 | 173 | 0.251 | 0.203 | 0.000 | 0.500 | 0.280 | 0.000 | 0.906 |
| *Control variables:* | | | | | | | | |
| Reporting year | 173 | 0.509 | 1.000 | 0.000 | 1.000 | 0.501 | 0.000 | 1.000 |
| Construction | 173 | 0.035 | 0.000 | 0.000 | 0.000 | 0.184 | 0.000 | 1.000 |
| Manufacturing | 173 | 0.549 | 1.000 | 0.000 | 1.000 | 0.499 | 0.000 | 1.000 |
| Transportation etc. | 173 | 0.081 | 0.000 | 0.000 | 0.000 | 0.274 | 0.000 | 1.000 |
| Trade | 173 | 0.110 | 0.000 | 0.000 | 0.000 | 0.314 | 0.000 | 1.000 |
| Services | 173 | 0.225 | 0.000 | 0.000 | 0.000 | 0.419 | 0.000 | 1.000 |
| *The disclosure incentives of managers:* | | | | | | | | |
| Net sales | 173 | 5.013 | 4.599 | 3.816 | 6.350 | 1.666 | 1.735 | 9.317 |
| Return on assets | 173 | 0.053 | 0.055 | 0.023 | 0.092 | 0.112 | -0.438 | 0.829 |
| Financial leverage | 173 | 0.521 | 0.533 | 0.413 | 0.633 | 0.166 | 0.053 | 0.841 |
| Price-to-book | 173 | 2.495 | 2.014 | 1.309 | 3.071 | 1.791 | 0.476 | 12.744 |
| *Corporate governance factors:* | | | | | | | | |
| Big 4 | 173 | 0.798 | 1.000 | 1.000 | 1.000 | 0.403 | 0.000 | 1.000 |
| Institutional ownership | 173 | 0.570 | 0.583 | 0.295 | 0.838 | 0.295 | 0.024 | 0.999 |
| Independent board members | 173 | 0.769 | 0.833 | 0.667 | 1.000 | 0.268 | 0.000 | 1.000 |
| Audit committee | 173 | 0.197 | 0.000 | 0.000 | 0.000 | 0.299 | 0.000 | 1.000 |

**Notes:** This table provides the frequency (Nobs), mean, median, lower quartile (25 %), upper quartile (75 %), standard deviation, and minimum and maximum values of the variables. *Index 1* measures recommended transition disclosure. *Index 2* measures voluntary transition disclosure. *Reporting year* is an indicator variable for the reporting year 2005. *Construction*, *Manufacturing*, *Transportation etc.*, *Trade,* and *Services* are indicator variables for the industry. *Net sales* is the natural logarithm of five-year average net sales in million euros. Return on assets is the five-year average of return on assets ratio. *Financial leverage* is computed as follows: 1-(common equity/total assets). *Price-to-book* is the year-end price-to-book ratio of the firm. *Big 4* is an indicator variable for the global accounting firm. *Institutional ownership* is the percentage of institutional ownership calculated as follows: 1-(percentage owned by households/100). *Independent board members* is the proportion of independent board members in corporate boards. *Audit committee* is an indicator variable for the existence of an audit committee. Firm-years falling outside three standard deviations in the distribution of any variable have been eliminated. The number of remaining observations is 173 in the pooled sample and it consists of 85 observations in 2004 and 88 observations in 2005.

**Table III.** Correlation matrix of the variables (n=173)

| | IND1 | IND2 | YEAR | MAN | CON | TRA | SER | TRS | SIZE | ROA | FLE | PB | BIG4 | OWN | BOA | AUC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IND1** | | 0.821* | 0.545* | 0.018 | 0.030 | 0.023 | -0.010 | -0.065 | 0.214* | 0.012 | -0.102 | 0.189* | 0.102 | 0.171* | 0.224* | 0.283* |
| **IND2** | 0.783* | | 0.703* | 0.047 | 0.034 | 0.004 | -0.051 | -0.035 | 0.269* | 0.045 | -0.070 | 0.132 | 0.060 | 0.124 | 0.218* | 0.290* |
| **YEAR** | 0.513* | 0.677* | | -0.031 | -0.003 | 0.012 | 0.032 | -0.005 | 0.006 | -0.024 | -0.033 | 0.062 | -0.006 | -0.003 | 0.016 | 0.137 |
| **MAN** | 0.019 | 0.036 | -0.031 | | -0.209* | -0.388* | -0.595* | -0.327* | 0.177* | 0.096 | 0.102 | -0.160* | -0.080 | -0.007 | 0.029 | 0.010 |
| **CON** | 0.022 | 0.029 | -0.003 | -0.209* | | -0.067 | -0.102 | -0.056 | 0.231* | 0.099 | 0.237* | 0.025 | -0.062 | 0.078 | -0.056 | 0.065 |
| **TRA** | 0.020 | 0.000 | 0.012 | -0.388* | -0.067 | | -0.189* | -0.104 | 0.085 | -0.020 | 0.086 | -0.049 | 0.039 | -0.008 | -0.035 | -0.081 |
| **SER** | -0.010 | -0.053 | 0.032 | -0.595* | -0.102 | -0.189* | | -0.160* | -0.525* | -0.149 | -0.305* | 0.266* | 0.134 | -0.182* | -0.120 | -0.023 |
| **TRS** | -0.056 | -0.004 | -0.005 | -0.327* | -0.056 | -0.104 | -0.160* | | 0.230* | 0.009 | 0.025 | -0.077 | -0.062 | 0.247* | 0.206* | 0.067 |
| **SIZE** | 0.244* | 0.299* | -0.004 | 0.131 | 0.231* | 0.102 | -0.459* | 0.192* | | 0.091 | 0.274* | -0.195* | -0.008 | 0.564* | 0.351* | 0.457* |
| **ROA** | -0.033 | -0.011 | -0.076 | 0.150* | 0.034 | 0.038 | -0.229* | 0.013 | 0.120 | | -0.296* | 0.343* | -0.063 | -0.071 | -0.040 | -0.052 |
| **FLE** | -0.087 | -0.046 | -0.037 | 0.108 | 0.215* | 0.085 | -0.313* | 0.041 | 0.254* | -0.219* | | -0.068 | 0.099 | 0.198* | 0.008 | 0.112 |
| **PB** | 0.146 | 0.086 | 0.039 | -0.188* | -0.032 | -0.087 | 0.359* | -0.087 | -0.264* | -0.067 | 0.091 | | 0.227* | -0.076 | 0.158* | -0.061 |
| **BIG4** | 0.110 | 0.076 | -0.006 | -0.080 | -0.062 | 0.039 | 0.134 | -0.062 | 0.024 | -0.063 | 0.068 | 0.184* | | 0.076 | 0.218* | 0.249* |
| **OWN** | 0.169* | 0.153* | -0.001 | 0.002 | 0.061 | 0.004 | -0.186* | 0.236* | 0.528* | -0.022 | 0.188* | -0.106 | 0.056 | | 0.340* | 0.309* |
| **BOA** | 0.285* | 0.227* | 0.012 | 0.047 | 0.010 | -0.073 | -0.132 | 0.193* | 0.295* | -0.079 | 0.023 | 0.133 | 0.202* | 0.288* | | 0.320* |
| **AUC** | 0.291* | 0.327* | 0.137 | 0.010 | 0.065 | -0.081 | -0.023 | 0.067 | 0.510* | -0.025 | 0.100 | -0.112 | 0.249* | 0.288* | 0.299* | |

**Notes:** * Denotes correlation coefficients significant at five percent or better (two-sided test). The Pearson correlation estimates are below the diagonal and the Spearman rank correlation coefficients are above the diagonal. *IND1* measures recommended disclosure. IND2 measures voluntary disclosure. *YEAR* is an indicator variable for the reporting year 2005. MAN, *CON*, *TRA*, *SER*, and *TRS* are indicator variables for the industry. *SIZE* is the natural logarithm of five-year average net sales in million euros. *ROA* is the five-year average of return on assets ratio. Financial leverage *(FLE)* is computed as follows: 1-(common equity/total assets). *PB* is the year-end price-to-book ratio of the firm. *BIG4* is an indicator variable for the global accounting firm. *OWN* is the percentage of institutional ownership calculated as follows: 1-(percentage owned by households/100). *BOA* is the proportion of independent board members in corporate boards. *AUC* is an indicator variable for the existence of an audit committee. Firm-years falling outside three standard deviations in the distribution of any variable have been eliminated. The number of remaining observations is 173 in the pooled sample and it consists of 85 observations in 2004 and 88 observations in 2005.

**Table IV.** Regression results for CESR recommended disclosure about IFRS transition
(n=173)

| Independent Variables | Exp. sign | Coef. | P-value | Coef. | P-value | Coef. | P-value |
|---|---|---|---|---|---|---|---|
| (Intercept) | | 0.333 | 0.000 | 0.113 | 0.253 | 0.052 | 0.663 |
| *Control variables:* | | | | | | | |
| Reporting year | + | 0.306* | 0.000 | 0.293* | 0.000 | 0.287* | 0.000 |
| Construction | ? | 0.028 | 0.797 | -0.031 | 0.769 | -0.002 | 0.986 |
| Transportation etc. | ? | -0.063 | 0.396 | -0.113 | 0.101 | -0.137* | 0.049 |
| Trade | ? | 0.002 | 0.979 | -0.003 | 0.958 | 0.020 | 0.743 |
| Services | ? | -0.024 | 0.623 | -0.032 | 0.573 | -0.035 | 0.553 |
| *The disclosure incentives of managers:* | | | | | | | |
| Net sales | + | | | 0.068* | 0.000 | 0.042* | 0.013 |
| Return on assets | + | | | -0.210 | 0.235 | -0.125 | 0.481 |
| Financial leverage | - | | | -0.377* | 0.004 | -0.346* | 0.009 |
| Price-to-book | + | | | 0.041* | 0.000 | 0.034* | 0.005 |
| *Corporate governance factors:* | | | | | | | |
| Big 4 | + | | | | | 0.016 | 0.745 |
| Institutional ownership | + | | | | | 0.051 | 0.484 |
| Independent board members | + | | | | | 0.175* | 0.025 |
| Audit committee | + | | | | | 0.066 | 0.257 |
| Model F-value (prob) | | 12.230 (.000) | | 12.470 (.000) | | 9.700 (.000) | |
| Adj. R-square | | .246 | | .375 | | .397 | |

**Notes:** * Denotes regression coefficients significant at five percent or better (two-sided test). The dependent variable (*index 1*) measures firms' compliance with CESR recommended disclosure about IFRS transition, based on the sum of scores on items 1-10 in the Appendix. The independent variables are included in the regression in the following three blocks: (1) control variables, (2) the disclosure incentives of managers, and (3) corporate governance factors. *Reporting year* is an indicator variable for the reporting year 2005. *Construction*, *Transportation etc.*, *Trade*, and *Services* are indicator variables for the industry. *Net sales* is the natural logarithm of five-year average net sales in million euros. *Return on assets* is the five-year average of return on assets ratio. *Financial leverage* is computed as follows: 1-(common equity/total assets). *Price-to-book* is the year-end price-to-book ratio. *Big 4* is an indicator variable for the global accounting firm. *Institutional ownership* is the percentage of institutional ownership calculated as follows: 1-(percentage owned by households/100). *Independent board members* is the proportion of independent board members in corporate boards. *Audit committee* is an indicator variable for the existence of an audit committee. Firm-years falling outside three standard deviations in the distribution of any variable have been eliminated. Number of remaining observations is 173 in the pooled sample and it consists of 85 observations in 2004 and 88 observations in 2005.

**Table V.** Regression results for voluntary disclosure about IFRS transition (n=173)

| Independent Variables | Exp. sign | Coef. | P-value | Coef. | P-value | Coef. | P-value |
|---|---|---|---|---|---|---|---|
| (Intercept) | | 0.072 | 0.007 | -0.200 | 0.010 | -0.219 | 0.002 |
| *Control variables:* | | | | | | | |
| Reporting year | + | 0.380* | 0.000 | 0.372* | 0.000 | 0.366* | 0.000 |
| Construction | ? | 0.032 | 0.716 | -0.050 | 0.540 | -0.035 | 0.671 |
| Transportation etc. | ? | -0.015 | 0.807 | -0.066 | 0.215 | -0.072 | 0.186 |
| Trade | ? | -0.021 | 0.693 | -0.030 | 0.515 | -0.016 | 0.734 |
| Services | ? | -0.053 | 0.180 | -0.018 | 0.684 | -0.023 | 0.624 |
| *The disclosure incentives of managers:* | | | | | | | |
| Net sales | + | | | 0.067* | 0.000 | 0.054* | 0.000 |
| Return on assets | + | | | -0.076 | 0.581 | -0.034 | 0.808 |
| Financial leverage | - | | | -0.239* | 0.019 | -0.219* | 0.034 |
| Price-to-book | + | | | 0.028* | 0.002 | 0.024* | 0.011 |
| *Corporate governance factors:* | | | | | | | |
| Big 4 | + | | | | | 0.009 | 0.808 |
| Institutional ownership | + | | | | | -0.013 | 0.828 |
| Independent board members | + | | | | | 0.095 | 0.121 |
| Audit committee | + | | | | | 0.057 | 0.215 |
| Model F-value (prob) | | 29.060 (.000) | | 26.290 (.000) | | 18.810 (.000) | |
| Adj. R-square | | .449 | | .570 | | .574 | |

**Notes: *** Denotes regression coefficients significant at five percent or better (two-sided test). The dependent variable (*index 2*) measures firms' voluntary disclosure about IFRS transition, based on the sum of scores on items 11-46 in the Appendix. The independent variables are included in the regression in the following three blocks: (1) control variables, (2) the disclosure incentives of managers, and (3) corporate governance factors. *Reporting year* is an indicator variable for the reporting year 2005. *Construction*, *Transportation etc.*, *Trade,* and *Services* are indicator variables for the industry. *Net sales* is the natural logarithm of five-year average net sales in million euros. *Return on assets* is the five-year average of return on assets ratio. *Financial leverage* is computed as follows: 1-(common equity/total assets). *Price-to-book* is the year-end price-to-book ratio. *Big 4* is an indicator variable for the global accounting firm. *Institutional ownership* is the percentage of institutional ownership calculated as follows: 1-(percentage owned by households/100). *Independent board members* is the proportion of independent board members in corporate boards. *Audit committee* is an indicator variable for the existence of an audit committee. Firm-years falling outside three standard deviations in the distribution of any variable have been eliminated. The number of remaining observations is 173 in the pooled sample and it consists of 85 observations in 2004 and 88 observations in 2005.

**Table VI.** Results from canonical correlation analysis of recommended and voluntary IFRS transition disclosure

| Set 1 variables | Exp. sign | Standardized canonical coefficients (v) | | |
|---|---|---|---|---|
| Index 1 (recommended disclosure) | + | -0.076 | 0.080 | 0.128 |
| Index 2 (voluntary disclosure) | + | 1.058 | 0.940 | 0.897 |

| Set 2 variables | | Standardized canonical coefficients (w) | | |
|---|---|---|---|---|
| *Control variables:* | | | | |
| Reporting year | + | 0.997 | 0.859 | 0.832 |
| Construction | ? | 0.031 | -0.042 | -0.026 |
| Transportation etc. | ? | -0.016 | -0.090 | -0.102 |
| Trade | ? | -0.036 | -0.042 | -0.017 |
| Services | ? | -0.120 | -0.037 | -0.047 |
| *The disclosure incentives of managers:* | | | | |
| Net sales | + | | 0.524 | 0.406 |
| Return on assets | + | | -0.045 | -0.023 |
| Financial leverage | - | | -0.193 | -0.180 |
| Price-to-book | + | | 0.240 | 0.210 |
| *Corporate governance factors:* | | | | |
| Big 4 | + | | | 0.019 |
| Institutional ownership | + | | | -0.007 |
| Independent board members | + | | | 0.130 |
| Audit committee | + | | | 0.108 |
| Wilks's lambda (F-prob) | | .529 (.000) | .388 (.000) | .362 (.000) |
| Adj. canonical correlation | | .672 | .757 | .762 |
| Nobs | | 173 | 173 | 173 |

**Notes:** This table reports the results from canonical correlation analysis. Only the first (highest) canonical correlations are reported. Set 1 variables consist of recommended disclosure (*index 1*) and voluntary disclosure (*index 2)* indices. Set 2 variables include control variables, the disclosure incentives of managers, and corporate governance factors. For variables definitions, see Tables IV and V.

**Appendix:** IFRS transition disclosure scoresheet

This appendix summarises the construction of the IFRS transition disclosure scoresheet. Recommended disclosure (*index 1*) is based on the sum of scores on items 1-10. Voluntary disclosure (*index 2*) is based on the sum of scores on items 11-46. In the scoresheet, a firm can be assigned a maximum of one point for each disclosure item. If a firm discloses information insufficiently, it is awarded 0.5 points.

## RECOMMENDED DISCLOSURE

**I Financial statement release, financial statement, and annual report published in 2004**
     1 Firm's plans in its move towards IFRS
     2 Firm's degree of achievements in its move towards IFRS

*Major differences between present accounting policies and IFRS*
     3 Areas of change
     4 Affecting standards
     5 Recognition differences
     6 Narrative description of the direction of change

**II Financial statement release, financial statement, annual report, and separate IFRS stock exchange release published in 2005**
     7 A reconciliation of shareholders' equity 1.1.2004
     8 A reconciliation of shareholders' equity 31.12.2004
     9 A reconciliation of profit and loss account 31.12.2004
     10 A reconciliation of cash flow statement 31.12.2004

## VOLUNTARY DISCLOSURE

**III Financial statement release, financial statement, and annual report published in 2004**
     11 Background information
     12 Informs when quantified information will be given
     13 Segment information
     14 A reconciliation of shareholders' equity/
        other balance sheet items at the date of transition

**IV Financial statement release, financial statement, annual report, and separate IFRS stock exchange release published in 2005**
     15 Informs when quantified information has been given
     16 Informs when quantified information will be given
     17 Gives transition date
     18 Informs when first IFRS reports will be disclosed
     19 Informs whether or not the quantified information is audited
     20 Informs the quantified information to be audited
     21 Informs the application of IFRS 1 standard
     22 Segment information: First quarter of 2004
     23 Segment information: Second quarter of 2004
     24 Segment information: Third quarter of 2004
     25 Segment information: Fourth quarter of 2004
     26 Segment information: Fiscal year 2004
     27 Influence on ratios
     28 Gives calculation formulas of ratios
     29 A reconciliation of shareholders' equity 31.3.2004

30 A reconciliation of shareholders' equity 30.6.2004
31 A reconciliation of shareholders' equity 30.9.2004
32 A reconciliation of balance sheet 1.1.2004
33 A reconciliation of balance sheet 31.3.2004
34 A reconciliation of balance sheet 30.6.2004
35 A reconciliation of balance sheet 30.9.2004
36 A reconciliation of balance sheet 31.12.2004
37 A reconciliation of profit and loss account 31.3.2004
38 A reconciliation of profit and loss account 30.6.2004
39 A reconciliation of profit and loss account 30.9.2004
40 Gives profit and loss account for each quarter of 2004
41 A reconciliation of cash flow statement 31.3.2004
42 A reconciliation of cash flow statement 30.6.2004
43 A reconciliation of cash flow statement 30.9.2004
44 Informs why some of the reconciliations are not stated
45 A reconciliation of net profit
46 Extra information to reconciliation calculations

This dissertation addresses risk and
transition disclosures by Finnish listed
firms in the IFRS era. It examines whether
corporate risk and transition disclosures can
be improved by releasing a detailed risk
disclosure standard and authoritative
disclosure recommendations. Also, the
economic consequences of high-quality risk
disclosures on stock markets, and the non-
regulatory determinants of risk and
transition disclosures will be examined. The
research questions are examined in three
individual essays which are accompanied by
an introductory section that provides a
summary. The results benefit regulators,
managers, investors, and analysts by
bringing important issues on corporate
disclosures into discussion. The unique test
setting makes is possible to cover some of
the unexplored questions of the accounting
literature.

BUSINESS +
ECONOMY

ART +
DESIGN +
ARCHITECTURE

SCIENCE +
TECHNOLOGY

CROSSOVER

**DOCTORAL**
**DISSERTATIONS**