

Spillovers of Risk Disclosures by Cross-Listed firms on NYSE to home markets: the Role of Audit Quality and Home Market Investor Protection Regimes

Ine Danckaert
Katholieke Universiteit Leuven
Faculty of Business and Economics
Department of Accountancy, Finance & Insurance
ine.danckaert@econ.kuleuven.be

Ann Gaeremynck
Katholieke Universiteit Leuven
Faculty of Business and Economics
Department of Accountancy, Finance & Insurance
ann.gaeremynck@econ.kuleuven.be

Donald Stokes
Monash University
Faculty of Business and Economics
Department of Accounting and Finance
donald.stokes@monash.edu

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ABSTRACT: In this study the industrial organization theory of knowledge spillovers in multinational corporations is applied to audit knowledge transfers in global audit firm networks. For firms cross-listed on the NYSE we examine (1) how the characteristics of the global audit firm network affect early disclosures made in their home market and (2) whether the impact of the global audit network on the disclosures made in the home market depends on the investor protection regime in the home-country. Using the annual report of 311 firm-year observations over the period 2007-2008, we find that cross-listed firms audited by a home-country auditor who belong to a global audit firm network where the U.S. auditor is industry specialist, are more likely to have spillovers of business and industry risk disclosures to the annual report in the home market. Furthermore, we find that the knowledge flows are weaker to audit firms with stronger knowledge bases, which shows that home-country auditor industry specialist earns less in terms of knowledge transfers from the global audit network. Finally, results show that knowledge spillover effects are smaller to low than high quality investor protection regimes except if the home-country auditor is also an industry specialist. This shows that in weak investor protection regimes, the U.S. and the home-country specialist are complements in improving early and voluntary business and industry risk disclosures in the annual report.

Keywords: *risk disclosure; auditor specialization; cross-listing; stock market regulation; investor protection regime.*

Data Availability: *The risk disclosure data are available from the authors upon request. Other data used in this study are publicly available from the sources indicated in the paper.*

INTRODUCTION

In the environment of increasing international financial reporting obligations for multinational companies audited by international audit firms, there is strong interest in how cross-listed firms on U.S. regulated exchanges manage their reporting strategy across home markets and the U.S. market (Amir et al. 1993; Harris and Muller 1999; Pownall and Schipper, 1999; Lang et al. 2003; Lang et al. 2006) and how international audit firms share audit knowledge across their global firm network (De Beelde 1997; Francis et. al. 2003; Kwon et al. 2007; Francis and Wang 2008; Carson 2009). In this study, we examine (1) how the characteristics of global audit firm networks affect disclosures made by cross-listed companies on the NYSE in their home markets and (2) whether the impact of the global audit firm network on the disclosures made in the home market depends on the investor protection regime in the home-country.

The setting of cross-listed firms is interesting to examine the effect of the global audit network on the disclosure in the home-country for two reasons. First, cross-listed firms have to disclose risk information about the same reporting period twice, i.e. first in the annual report and later on in Form 20-F. The SEC requirement to prepare a Form 20-F in addition to their annual report also substantially increases the required disclosures on various types of risks (Coffee 1999; Stulz 1999), in particular, business and industry risks disclosures. Although the risk information required by the accounting standards in the annual report is less extensive, firms can either voluntarily include the business and industry risk information in the annual report or postpone the disclosure until it becomes mandatory in Form 20-F. In the setting where the home-country auditor audits both the Form 20-F and the annual report, knowledge about Form 20-F specific risk disclosures demanded by the SEC is expected to be shared around the global audit network. As Form 20-F business and industry risk disclosure requirements are specific to the U.S. institutional environment, the U.S. audit

firm belonging to the audit network is expected to have better knowledge about those requirements than the home-country audit firm.

To investigate how the global audit firm network influences business and industry risk disclosures in the home market, we draw on industrial organization literature that has extensively investigated R&D knowledge spillovers in multinational corporations (MNCs). This literature shows that knowledge spillovers are more likely when: (1) the MNC has well-established internal networks to transfer the knowledge and; (2) the MNC is a technological advanced leader in their industry with substantial experience and knowledge bases (Penner-Hahn and Shaver 2005; Singh 2007; Song and Shin 2008). R&D knowledge flows through the knowledge-sharing networks in MNCs can be extrapolated to knowledge flows of business and industry risk and disclosures thereof through the global audit firm network and by considering U.S. industry specialist auditors as leaders with substantial experience and knowledge bases about disclosure quality. Previous evidence has found a positive effect of auditor industry specialization on disclosure quality (Dunn and Mayhew, 2004) as well as showing higher auditor quality is also linked with timely disclosure (Ashton et al. 1989). Drawing on this theory, we examine whether the global audit firm network (Carson 2009) is the efficient mechanism via which specific U.S. business and industry risk disclosure knowledge gained by U.S. auditors can be transferred within the global network to the home-country auditor. Our theory predicts that U.S. specialists spillover their industry specific knowledge about the specific business and industry risk requirements to the home market auditor, which result in the early and voluntary disclosure of business and industry risks in the annual report.

Industrial organization theory has also shown that knowledge transfers from headquarters depend on the absorptive and technological capacities of the subsidiaries in the home-country, although two conflicting views exist. On the one hand, firms with strong

knowledge bases and technological capabilities are superior in assimilating, extending and absorbing knowledge sourced from the network than those with weaker knowledge bases (Cohen and Levinthal 1989; Penner-Hahn and Shaver 2005; Song and Singh 2008). On the other hand, knowledge flows could be stronger to firms with weaker knowledge bases as they are more motivated to learn, whereas in well advanced firms, there is little to gain in terms of knowledge from MNCs (Song and Shin 2008). Applying this rationale to the global audit network, we investigate whether the absorptive and technological capabilities of the home-country auditor, proxied by the industry specialization in the home-country, determines the knowledge spillovers within the global audit network.

Finally, we examine the impact of the investor protection regime in the home-country. Although it is extensively shown that financial transparency is greater in countries with stronger investor protection regimes (Bhattacharya et al. 2003; Bushman et al. 2004), little is known whether knowledge spillovers in a global audit network depend on the investor protection regime in the home-country. The industrial organization theory also has two contrasting views on the conditions under which the asymmetry of knowledge flows are likely to be most pronounced in a cross-country comparison. A number of studies have shown positive effects of knowledge spillovers from MNCs to developed countries (Singh 2007; Haskel et al. 2007) and have provided less support for spillovers in developing countries (Javorcik 2004; Görg and Strobl 2001). More specifically, firms in countries that lag far behind might not even have the minimum knowledge needed to absorb further knowledge (Cohen and Levinthal 1989; Cantwell 1989). In contrast, knowledge flows could be stronger in countries that are less advanced as they are more motivated to learn, whereas in well advanced countries, there is little to gain in terms of knowledge from MNCs (Findlay 1978; Sjöholm 1999; Haskel et al. 2007; Singh 2007). In the auditing literature there is also no convincing evidence that better investor protection regimes increase or

decrease auditors' roles in enhancing financial reporting quality (Choi and Wong 2007; Kwon et al. 2007; Francis and Wang 2008; Choi et al. 2009; Stokes and Webster 2010). Therefore, we investigate whether the home-country investor protection regime influences the knowledge spillovers, proxied by the early and voluntary disclosure in the annual report, within the global audit network without assuming any direction.

Using a unique hand-collected sample of 311 firm-year observations of 156 firms from 36 countries that are cross-listed on NYSE during 2007-2008, we find that cross-listed firms audited by a home-country auditor who belong to a global audit firm network where the U.S. auditor is industry specialist are more likely to have spillovers of business and industry risk disclosures to the annual report. Furthermore, we find that the knowledge flows are weaker to audit firms with stronger knowledge bases, which shows that home-country auditor specialists earn less in terms of knowledge transfers from the global audit network. Finally, results show that knowledge spillover effects are smaller to weak than strong investor protection regimes, except if the home-country auditor also is an industry specialist. This shows that in weak investor protection regimes, the home-country and the U.S. specialists are complements in improving business and industry risk disclosures. Sensitivity analyses show that results are robust to using alternative measures for risk disclosures and auditor specialization, and to employing other sample selection criteria.

Our study makes the following contributions. First, using industrial organization theoretical insights on knowledge flows from MNCs headquarters to MNC subsidiaries we provide further evidence on the functioning of a global audit network. While Carson (2009) investigates the impact of the global audit firm network on audit fees, we examine how the characteristics of the global audit network, i.e. the relationship between the home-country and the U.S. auditor, affects the financial reporting quality of cross listed firms in the home market. Second, we offer insights into how cross-listed firms make voluntary disclosures

across markets through the impact of spillovers of auditor industry specialist knowledge across their global audit firm network which adds to a large body of literature on capital market consequences of mandatory reporting requirements of cross-listed firms (e.g. Amir et al. 1993; Lang et al. 2003; Lang et al. 2006). While properties of mandatory disclosure reporting are important, a firm's information environment is also significantly impacted by its voluntary disclosure policy through which information is transmitted to capital markets (Verrechia 1983; Healy and Palepu 2001). We show that this is impacted by spillovers of auditor industry specialist expertise across an audit firm's global network. Furthermore, while prior literature has extensively investigated the effect of auditor industry specialization on earnings quality (e.g. Gramling et al. 2001) and audit fees (e.g. Palmrose 1986), little empirical evidence exists on the association of industry specialization and voluntary disclosure quality (Dunn and Mayhew 2004), and especially on the association with the timing of voluntary disclosures.

Finally, by showing that the impact of auditor industry specialization on risk disclosure quality by cross-listed firms is likely dependent on the investor protection regime, we contribute to prior studies (Francis and Wang 2008, Stokes and Webster 2010). We do not only investigate the investor protection regime itself but also examine how the institutional environment determines the knowledge transfers from the U.S. to the home market.

The balance of this paper is structured as follows. Section II discusses the institutional setting. Section III presents the hypotheses and section IV describes the empirical model. Section V discusses the sample selection process while section VI reports the results. Section VII discusses the sensitivity checks and section VIII concludes.

INSTITUTIONAL SETTING

Firms cross-listed in the U.S. subject themselves to U.S. securities regulation. In addition to their domestic annual report, which is filed under local stock market regulation, firms cross-listed on NYSE are required by the SEC to prepare a Form 20-F for the U.S. market. As a result, cross-listed firms have to report twice about the same reporting period,¹ and thus there is a sequence of reporting, where first the annual report is filed and then Form 20-F.² Although, the annual report and Form 20-F are not always disclosed simultaneously, they are both audited by the same home-country audit firm. The home-country Big 4 auditor belongs to global audit firm network, where the U.S. specialist auditor from the global audit firm network has specific experience and knowledge with regard to SEC requirements.

Risk disclosure requirements in the annual report are not the same for all firms and are different from the requirements imposed by the SEC in Form 20-F. The level of risk disclosure in the annual report is determined by the home-country accounting standards (i.e. U.S. GAAP, IFRS or other GAAP³), which only demand disclosures on financial risks;⁴ all other types of risk disclosures are thus voluntary in the annual report. In Form 20-F, the SEC *additionally* requires disclosures on business and industry risks.⁵ As a result, disclosures on business and industry risks required by the SEC could be made early and voluntarily in the annual report or could be postponed until mandatory in Form 20-F. More

¹ While the maximum time lag to publish the annual report after the fiscal year-end differs across countries, the SEC imposes that Form 20-F should be published within six months after the fiscal year-end. For all countries in our sample, the annual report should be issued within six months after the fiscal year-end.

² Only six firms file their annual report after Form 20-F. These firms are removed from our sample.

³ Examples of other GAAP are Brazilian GAAP, Mexican FRS, ROC GAAP, Korean GAAP, etc.

⁴ A detailed overview of the differences in risk disclosure between U.S. GAAP, IFRS, and other GAAP is beyond the scope of this paper. However, plenty of evidence exists showing that U.S. GAAP and IFRS standards demand extra disclosures compared to other GAAP (Ashbaugh and Pincus 2001, Nobes 2001). The comparison of U.S. GAAP and IFRS further reveals that a firm reporting under U.S. GAAP should at least disclose its credit risk (SFAS No. 107 and SFAS No. 133). IFRS is more demanding than U.S. GAAP, as IFRS 7 requires disclosures on credit risk, liquidity risk, and market risk.

⁵ Some examples of business and industry risks include: operating risk (e.g., strikes, slowdowns, failure of IT systems), supplier risk (e.g., changes in supplier terms), legal risk (e.g., unexpected outcomes in legal proceedings), and country risk (e.g., civil unrest in a country, occurrence of one or more natural disasters in a country).

specifically, Form 20-F (Item 3.D., 11) states:⁶

“The document shall prominently disclose risk factors that are specific to the company or to its industry and make an offering speculative or one of high risk, in a section headed Risk Factors.”

Appendix A presents an overview of the 22 business and industry risks as required by the SEC in Form 20-F. Given that the annual report and Form 20-F usually are not disclosed simultaneously and the disclosure of business and industry risks is not compulsory in the annual report, firms can decide to either voluntarily include the risk information in the annual report or postpone the disclosure until it becomes mandatory in Form 20-F. Taken together, there is a timing issue related to the disclosure of business and industry risks.

HYPOTHESES DEVELOPMENT

In this section we develop hypotheses on whether the timing of disclosures of business and industry risks via a home-country annual report or through a later mandatory U.S. Form 20-F disclosure is dependent upon knowledge spillovers through the global audit firm network of Big 4 audit firms auditing cross-listed companies and investor protection regimes in home-countries. We draw on the industrial organization literature that has extensively investigated R&D knowledge spillovers in multinational corporations (MNCs). In global strategy research, MNCs are considered to be a geographically distributed network, with the capacity to assimilate, generate, transfer and integrate knowledge on a worldwide basis (Hymer 1976; Hedlund 1986; Bartlett and Ghoshal 1989). Moreover, cross-border flow of complex knowledge is easier within a MNC than between independent

⁶ Item 3.D *Key information – Risk factors* (11) and Item 11 *Quantitative and Qualitative Disclosures about Market Risk* (30–43) of Form 20-F (<http://www.sec.gov/about/forms/form20-f.pdf>) and SEC Financial Reporting Release No. 48 *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* (SEC 1997 – FRR 48).

organizations (Almeida 1996; Birkinshaw 1997; Nohria and Ghoshal 1997; Zander 1999; Frost 2001; Frost et al. 2002; Feinberg and Gupta 2004).

Several theoretical mechanisms have been proposed for this. The knowledge-based view argues that firms facilitate internal networks that enable transmission of tacit knowledge over large distances (Hedlund 1986; Bartlett and Ghoshal 1989; Nohria and Ghoshal 1997; Frost 2001). The transaction cost literature argues that knowledge transfer is also facilitated through decreased opportunism within a firm, as the MNCs' interest is central (Williamson 1985; Ethier 1986). As a result, MNCs might be a vehicle that facilitates global diffusion of knowledge from the headquarters to subsidiaries in different parts of the world through intra-firm mechanisms (Singh 2007). As knowledge spillovers are hard to measure, R&D spillovers are implicitly traced through citations between patents in the industrial organization literature (Almeida 1996; Frost 2001; Jaffe et al. 1993). This approach exploits the notion that existing innovations provide ideas and inspiration for further innovation, such that patent citations are likely to capture part of the knowledge flows across organizations.

Furthermore, the industrial organization theory shows that knowledge spillovers between MNCs are more likely when the firm is the leader in his industry and possess substantial experience and knowledge bases (Penner-Hahn and Shaver 2005; Song and Shin 2008). In particular, patents are more intensively cited when the company is more technological advanced, has more capabilities and/or has specialized personnel than other companies in the same country or sector (Singh 2007).

We apply the industrial organization theory of knowledge spillovers to the specific context of spillovers of U.S. business and industry risk disclosures required by the SEC in Form 20-F, to the annual report in the home market. The literature reviewed above suggests that the two following conditions are necessary to have such knowledge spillovers: (1) the

existence of a mechanism of well-established internal networks to transfer the knowledge and; (2) the mechanism being a technological advanced leader in their industry with substantial experience and knowledge bases (Penner-Hahn and Shaver 2005; Singh 2007; Song and Shin 2008).

Big 4 audit firms structure their operations as global networks of audit firms with the intention of improving audit quality (Francis and Wang 2008; Carson 2009). Francis et al. (2003) argue that the Big 4 develop international expertise in local markets and the global audit firm network is organized as country-specific partnerships with a global structure on top of these country-specific partnerships. The audit firm network, managed at a global level in the U.S., is the mechanism by which existing knowledge is dispersed and new knowledge is captured. The global audit firm network can contribute in generating economies of scope by sharing know-how input across international borders throughout the global audit firm network. As a result, in the global audit firm, knowledge spillovers could occur between offices throughout the global network.

A recent stream of literature attributes higher quality auditing to industry specialization. Auditors with industry specialization have superior knowledge and performance⁷ relative to non-specialists (e.g. Solomon et al. 1999; Hogan and Jeter 1999; Owosho et al. 2002). Industry expertise comes from serving other clients in the same industry and learning and sharing best practices across the industry (Simunic and Stein 1987). The industry specialist can also influence business and industry risk reporting by making better recommendations to management by drawing on this deeper knowledge of industry best practice not held by the non-specialists. Dunn and Mayhew (2004) also show that industry specialists provide

⁷ The performance of industry specialist auditors could be higher than that of non-specialists, as there could be a knowledge externality associated with the provision of business and industry risk disclosures at the same time to the audit client. More specific, as business and industry risks need to be reported anyhow later on in Form 20-F, economies of scopes across both reports are generated. This is the case if the cost of joint provision of annual report and Form 20-F business and industry risk reporting is less than the cost of providing different risk disclosures in both reports.

more services beyond the basic audit than non-specialists. In support of this view, Behn et al. (1997) show that industry specialization is a key determinant of client satisfaction and that clients highly value auditor advice beyond basic GAAP. From a demand side perspective, clients select specialized auditors as part of their overall disclosure strategy which could serve as a credible signal of an intention to provide high quality disclosures, but only when the benefits outweigh the costs⁸ (Dunn and Mayhew 2004). Furthermore, Carson (2009) shows that U.S. specialists have also an influence outside the U.S., as they are perceived to be an expert by the local clients in the respective countries.

By considering Big 4 industry specialist auditors as leaders with substantial experience and knowledge bases that can be shared across global audit firm networks, knowledge of business and industry risk disclosure requirements of the SEC held by a U.S. industry specialist auditor can flow through the global audit firm network and as such spillover to the home market auditor. This will result in an improvement of business and industry risk disclosures in the annual report filed in the home-country, and suggests the following hypothesis:

H1: Spillovers, measured by early business and industry risk disclosures in the annual report to the home market, are more likely when the home-country auditor belongs to a global audit firm network where the U.S. auditor has greater industry expertise.

The relationship between a U.S. industry specialist auditor and spillovers of business and industry risk disclosures to the annual report in the home market could also depend on the industry expertise of the home-country auditor. Effective knowledge transfers require a sufficient absorptive capacity to understand, assimilate and utilize the knowhow of

⁸ Potential costs are for example the cost of selecting an audit firm that also audits significant competitors (Kwon 1996); and higher audit fees charged by industry specialists (Francis et al. 1995; Ferguson and Stokes 2002; Mayhew and Wilkens 2003).

headquarters (Cohen and Levinthal 1989; Penner-Hahn and Shaver 2005; Song and Singh 2008). More specifically, the source and recipient must have the capabilities to transfer successfully the knowledge across units (Szulanski 1996; Hansen 1999, Frost and Zhou 2005). A firm's prior knowledge base and cumulative investment in learning capabilities affect its absorptive capacity. Therefore, firms with strong knowledge bases and technological capabilities are superior in assimilating, extending and absorbing knowledge sourced from the network, than those with weaker knowledge bases (Cohen and Levinthal 1989; Leonard-Barton 1995; Song and Shin 2008). Moreover, they are motivated to learn from others because they have relatively little to learn in their home countries (Song and Shin 2008). On the other hand, knowledge flows could be stronger to firms with weaker knowledge bases as they are more motivated to learn, whereas in well advanced firms, there is little to gain in terms of knowledge from MNCs (Song and Shin 2008). In sum, the degree of firms' absorbing knowledge from the MNC depends on both firms' absorptive capacities and their motivations to absorb knowledge. Firms' technological capabilities could enhance firms' absorptive capacities, and are thus positively related to the extent a firm absorbs knowledge and levels of technological capabilities could also influence firms' motivations to source knowledge from the MNC.

Knowledge transfers can only lead to improved disclosure quality if the home-country auditor is able to absorb relevant and useful knowledge from the audit firm network. This suggests that home-country industry specialist auditors have the background knowledge to acquire and leverage on the knowledge spillovers from the audit firm network to perform a more effective audit. As a result, home-country industry specialist auditors could contribute to a higher quality of risk reporting in the annual report. More specifically, the global audit firm network is the efficient mechanism via which U.S. risk disclosure specific knowledge

gained by U.S. auditors can be transferred within the global network and absorbed by national industry specialist audit firms. Hence, we hypothesize that:

H2: Spillovers, measured by early business and industry risk disclosures in the annual report to the home market, when the home-country auditor belongs to a global audit firm network where the U.S. auditor has greater industry expertise, are associated with the home-country auditor industry expertise.

The relationship between a U.S. industry specialist auditor and spillovers of business and industry risk disclosures to the annual report in the home market could also depend on the investor protection regime of the home-country. Prior literature documents cross-country differences in legal institutions (e.g. La Porta et al. 1998, 2006) and find that country-level institutional factors matter in explaining disclosure levels (Jaggi and Low 2000; Hope 2003; Francis et al. 2005). Furthermore, audit quality is not uniform around the world, as auditor incentives vary systematically in different institutional environments. While auditor specialization is likely to improve disclosure quality in both strong and weak environments, it is not obvious whether U.S. specialists matter more or less in a weak investor protection regime.

One line of argument is that auditor incentives change as investor protection regimes become stricter (Francis and Wang 2008). The conjecture is that high quality auditors are more sensitive to the cost of client misreporting and its effect on auditor reputation as investor protection regimes become stronger, including the ability of investors to sue auditors for negligence and the power of regulators to sanction auditors for misconduct. Furthermore, high quality auditors enforce compliance with the SEC better in jurisdictions where they are valued more. In contrast, low quality auditors have less reputation capital at

risk and are less likely to risk client dismissal. It follows that when investor protection is very low, the incentives for both groups of auditors are similar, in which case there could be no observable differences in financial reporting quality. On the demand side, in countries with weaker investor protection regimes, investors generally demand lower quality audits (Defond et al. 1999; Francis et al. 2003) and are powerless to improve the investor protection as they are constrained by country-level legal provisions (Kwon et al. 2007). As a result, the benefits arising from the employment of specialist auditors could be more significant in the strong investor protection regime where both auditors and firms are subject to severe legal punishments.

An alternative line of argument is that high quality auditors can fulfil a strong governance function in weak investor protection regimes, because they serve as a governance substitute for legal protection of outside shareholders (Choi and Wong 2007; Kwon et al. 2007; Choi et al. 2009). On the demand side, firms in weak investor protection regimes may even be more likely to hire a high quality auditor when they have incentives to improve their reporting quality (Choi and Wong 2007). Under this view, the improvement of disclosure quality as a result of employing specialist auditors is likely to be greater for firms in a weak investor protection regime due to the potentially higher agency costs.

Similarly, industrial organization theory has also two contrasting views on the conditions under which the asymmetry of knowledge flows are likely to be most pronounced in a cross-country comparison. A number of studies have shown positive effects of knowledge spillovers from MNCs to developed countries (Singh 2007; Haskel et al. 2007) and have provided less support for spillovers in developing countries (Javorcik 2004; Görg and Strobl 2001). More specifically, firms in countries that lag far behind might not even have the minimum knowledge needed to absorb further knowledge (Cohen and Levinthal 1989; Cantwell 1989). In contrast, knowledge flows could be stronger in countries

that are less advanced as they are more motivated to learn, whereas in well advanced countries, there is little to gain in terms of knowledge from MNCs (Findlay 1978; Sjöholm 1999; Haskel et al. 2007; Singh 2007).

Because of these contrasting views on whether better investor protection regimes increase or decrease auditors' roles on early business and industry risk disclosures in the annual report, we investigate an empirical question by stating the following non-directional hypothesis in the null form:

H3: Spillovers, measured by early business and industry risk disclosures in the annual report to the home market, when the home-country auditor belongs to a global audit firm network where the U.S. auditor has greater industry expertise, are associated with the home-country investor protection regime.

RESEARCH DESIGN

The dependent variable used to test all three hypotheses is: the number of business and industry risk items disclosed voluntarily, and thus early, in the annual report (*RDAR*), which proxies for the spillover effects from the global audit network. Equation 1 is used to test the first and second hypotheses and Equation 2 is used for the third hypothesis.

$$\begin{aligned}
 RDAR = & \alpha_0 + \alpha_1 USSPEC + \alpha_2 HCSPEC + \alpha_3 USSPEC * HCSPEC + \alpha_4 LEGAL + \alpha_5 GOV \\
 & + \alpha_6 USGAAP + \alpha_7 LNTA + \alpha_8 ROA + \alpha_9 LEVERAGE + \alpha_{10} FREEFLOAT \\
 & + \alpha_{11} ANALYST + \alpha_{12} OFFER + \alpha_{13} DAYS + \alpha_{14} YEAR + \alpha_{15} Industry\ Controls + \varepsilon_1 \quad (1)
 \end{aligned}$$

$$\begin{aligned}
 RDAR = & \alpha_0 + \alpha_1 USSPEC + \alpha_2 HCSPEC + \alpha_3 USSPEC * HCSPEC + \alpha_4 USSPEC * LEGAL \\
 & + \alpha_5 HCSPEC * LEGAL + \alpha_6 USSPEC * HCSPEC * LEGAL + \sum_{i=7}^{18} \alpha_i Controls + \varepsilon_2 \quad (2)
 \end{aligned}$$

where:

<i>RDAR</i>	number of business and industry risk items disclosed in the annual report;
<i>USSPEC</i>	U.S. industry specialist audit firm continuous portfolio share;
<i>HCSPEC</i>	home-country industry specialist audit firm continuous portfolio share;
<i>LEGAL</i>	indicator variable equal to 1 for the weak and 0 for the strong legal enforcement group;
<i>GOV</i>	aggregated governance score;
<i>USGAAP</i>	indicator variable equal to 1 if company reports under U.S. GAAP, and 0 otherwise;
<i>LNTA</i>	natural logarithm of total assets;
<i>ROA</i>	return on assets;
<i>LEVERAGE</i>	total liabilities divided by total assets;
<i>FREEFLOAT</i>	1 minus percentage of shares closely held;
<i>ANALYST</i>	number of analysts following the firm;
<i>OFFER</i>	indicator variable equal to 1 if firm files debt or equity in current year or next 2 years;
<i>DAYS</i>	number of days between the AR and 20-F filing date;
<i>YEAR</i>	indicator variable equal to 1 for 2008, and 0 for 2007;
<i>Industry Controls</i>	industry indicator variables, based upon two-digit U.S. SIC codes.

To test the first hypothesis, we introduce the *USSPEC* in both equations. The U.S. industry specialist is considered as the leader with substantial experience and knowledge bases about disclosure quality. Previous evidence also has found a positive effect of auditor industry specialization on disclosure quality (Dunn and Mayhew, 2004) as well as showing higher auditor quality is also linked with timely disclosure (Ashton et al. 1989). Our theory predicts that U.S. specialists spillover their industry specific knowledge about the specific business and industry risk requirements to the home market auditor, which result in the early and voluntary disclosure of business and industry risks in the annual report, and therefore we hypothesize a positive sign.

To determine which auditors are specialists (*SPEC*), we apply the portfolio share approach.⁹ This captures the within-audit firm differentiation across industries and is based on the proportion of the auditor's sales earned from the industry relative to the auditor's total sales from all industries (Yardley et al. 1992; Kwon 1996; Krishnan 2003; Neal and Riley 2004). This assumes that a significant portfolio share reflects investments in industry-

⁹ We select the portfolio share approach for auditor industry expertise above the industry market share approach. This is consistent with Krishnan's (2001) argument that portfolio share captures the efforts of auditors to differentiate their products better than industry market share. Later in section VII, we report sensitivity results on alternative industry specialization proxies and find strong consistency of findings across the proxies.

specific audit methodologies (Neal and Riley 2004). We use continuous measures of specialization and client sales¹⁰ to estimate portfolio shares for the Big 4 auditors in a given industry for a particular year. The classification of industry is based upon two-digit U.S. SIC codes. We measure industry specialization at an U.S. level [industry specialization is based on auditor's portfolio share in the U.S. market (*USSPEC*)] and a home-country level [industry specialization is based on the auditor's portfolio share in the respective home-country (*HCSPEC*)].

To test our second hypothesis, we include an interaction between the U.S. and home-country industry specialist (*HCSPEC*USSPEC*). We do not hypothesize any direction for this interaction variable as we do not know whether the absorptive or the incentive to learn dominates the size of the spillovers.

Finally, to examine the third hypothesis, we test Equation 2, where we include interactions between both industry specialization measures and *LEGAL*. Consistent with our reasoning in section III, we have no expectations a priori on the coefficient for *LEGAL* and associated interactions.

In all models, we introduce a number of control variables. First, we include *LEGAL*, we expect that disclosure quality is higher when investor protection regimes are strong (Jaggi and Low 2000; Hope 2003). Following prior studies (Leuz et al. 2003; Burgstahler et al. 2006; Li 2010), the legal regime is proxied by the average score for the efficiency of the judicial system, the rule of law, and corruption from La Porta et al. (1998). This enforcement variable ranges from 0 to 10, with a higher value indicating stronger law

¹⁰ We do not use the actual audit fees to compute market share of each auditor because of insufficient audit fee data across home-country jurisdictions. Nevertheless, prior research shows a correlation between audit fees and client size measured by sales or assets (Simunic, 1980; Palmrose, 1986).

enforcement. We transform this measure into a binary variable that equals one (zero) when the country-specific value is below (above) the country median in the sample.¹¹

Second, prior research (Ball et al. 2003; Bushman et al. 2004; Khana et al. 2004; Beekes and Brown 2006) documents that better corporate governance is related to higher quality disclosure. We measure the strength of corporate governance (*GOV*) by creating an index of seven corporate governance characteristics that captures the functioning and structure of the audit committee and the board of directors (Defond et al. 2005; Davilla and Penalva 2006; Krishnan and Visvanathan 2008).¹² We assign a value of 1 to audit committee size if the ratio of the firm's audit committee size to its board size is greater than the sample median and 0 otherwise. We assign a 1 for audit committee independence if the audit committee is 100 percent constituted of independent directors and 0 otherwise. We assign audit committee meetings a 1 if the number of meetings is greater than the sample median and 0 otherwise. We code firms 1 if the appointing firm's board size is less than the sample median and 0 otherwise. We code firms 1 if 60% or more of the directors of the board are independent and 0 otherwise. We assign board committee meetings a 1 if the number of meetings is greater than the sample median and 0 otherwise. We assign a value of 1 if the chairman of the board is not an executive director and 0 otherwise. Finally, we combine these measures in an index of corporate governance by counting the number of individual components of audit committee size, independence, meetings, and board size, independence, meetings and duality that are coded 1.

¹¹ In unreported sensitivity tests, we include the continuous value of the enforcement variable and also use a more recent version of this measure, i.e. the rule of law variable from Kaufmann et al. (2007). Both alternatives do not affect results. Moreover, using different institutional measures (e.g., legal origin, investor rights, and disclosure requirements) as defined in La Porta et al. (1998, 2006) does not alter results either.

¹² Prior research (e.g. De Zoort et al. 2002; Gompers et al. 2003; Cohen et al. 2004; Defond et al. 2005; Davilla and Penalva 2006; Krishnan and Visvanathan 2008) indicates that the overall governance strength is best captured when several components of audit committee and board of directors governance are considered collectively.

Third, we include the indicator variable *USGAAP* that equals one when the company reports under U.S. GAAP, and zero otherwise.

Fourth, larger companies are more closely watched by investors and therefore under greater pressure to release more information (Buzby 1975; Chow and Wong-Boren 1987) and this on a timely basis (Dyer and McHugh 1975; Givoly and Palmon 1982; Chambers and Penman 1984; Atiase 1989; Alford et al. 1994). The natural log of total assets at fiscal year-end is used as a surrogate for firm size (*SIZE*). While prior literature (Lang and Lundholm 1993) has been inconclusive on the effect of the variability of firm performance on disclosure, we add return on assets (*ROA*) to our model to control for possible performance related effects. The ratio of debt to total assets (*LEVERAGE*) is used to control for the degree of equity financing. Chow and Wong-Boren (1987) find that high leveraged firms disclose more.

We also include the firm's free float as an inverse proxy for the presence of insiders (*FREEFLOAT*). The more dispersed than concentrated is ownership, the more disclosure is needed (Leuz and Verrechia 2000; Leuz 2003). Furthermore, we add the number of financial analysts following the firm (*ANALYST*) to account for the degree of pressure on a firm's management to file financial statements with high disclosure quality (Kasznik and Lev 1995). Next, managers will disclose more information prior to equity offerings (Myers and Majluf 1984; Leland and Pyle 1977) and we therefore add *OFFER*, an indicator variable equal to 1 if the firm files debt or equity in current year or next 2 years. We also include the number of days between the annual report and the Form 20-F filing date (*DAYS*). We expect the larger the gap, the less voluntary disclosure. Finally, we add a dummy for the year 2008 (*YEAR*) and industry dummies, based upon two-digit U.S. SIC codes.

SAMPLE SELECTION

We initially started with a sample of 532 firm-year observations of 266 foreign private issuers¹³ from 36 different countries, cross-listed on NYSE between January 1, 2007 and December 31, 2008.¹⁴ All these firms file a Form 20-F with the SEC¹⁵ and an annual report in their home-country. We removed 112 firm-year observations from the financial and insurance industry,¹⁶ as these firms are subject to specific regulation regarding risk disclosure, i.e. Basel II. We further eliminated 86 firm-year observations with a fiscal year-end other than December, to exclude time-specific market effects (Greenstein and Sami 1994). Moreover, we deleted six firm-year observations, where the annual report is filed after Form 20-F.¹⁷ Furthermore, we deleted twelve firm-year observations, where there is less risk disclosure in Form 20-F than in the annual report. Finally, we removed five observations, due to non-availability of other firm-level data. This procedure results in a sample of 311 firm-year observations. Table 1 presents an overview of the sample selection procedure.

[Insert Table 1 here]

We hand-collected using two coders¹⁸ the risk information and the corporate governance data disclosed in the 311 annual reports as well as in the 311 Form 20-Fs for those 153 firms. Although time consuming, an advantage of this manual approach over a computer-

¹³ The term ‘foreign private issuer’ is defined in Exchange Act Rule 3b-4(c) [17 CFR 240.3b-4(c)]. A foreign private issuer is any foreign issuer other than a foreign government, except one meeting the following conditions: (1) more than 50 percent of its outstanding voting securities are directly or indirectly held by residents of the U.S.; and (2) any of the following: (i) the majority of executive officers or directors are U.S. citizens or residents; (ii) more than 50 percent of the issuer’s assets are located in the U.S.; or (iii) the business of the issuer is administered principally in the U.S. (<http://www.sec.gov/rules/final/2007/33-8879.pdf>).

¹⁴ We exclude Canadian firms, as they could qualify for the Multi-Jurisdictional Disclosure System and may be exempted from filing a Form 20-F.

¹⁵ All sample firms are registered under the 1934 Act and their sponsored Level II or III depository receipts trade on NYSE.

¹⁶ SIC codes 6000–6999.

¹⁷ In these cases, there are no early risk disclosures in the annual report.

¹⁸ The reliability of the coding procedure has been verified by a Cohen's kappa coefficient of 0.86, which indicates almost perfect agreement between the two coders.

aided coding procedure is that the meaning of words and phrases within a context can be judged better. Financial data were obtained from Datastream. We winsorize all continuous variables at the one percent tails.

RESULTS

Descriptive Statistics

Table 2 provides descriptive statistics for the variables used in the empirical tests. The average firm reports on 5.9 business and industry risk items in the home-country annual report. While 25 percent of firms disclose only one item in the annual report, almost 25 percent of the cross-listed firms disclose more than ten items voluntary in their annual report.

The average U.S. and home-country industry specialist audit firm continuous portfolio share is about 5.3 percent and 18 percent, respectively. Only 35 percent of sample firms are located in country with a strong enforcement regime. The mean of the aggregated governance score equals 3.058 and 30 percent of the sample firms report under U.S. GAAP. The average cross-listed firm has a total asset of 23 million dollars, corresponding to an average *SIZE* of 15.728 million dollars. The average firm has a return on assets of 0.105, a leverage ratio of 0.491, a free float of 0.671 and is followed by 21 financial analysts. On average, 49 percent of the cross-listed firms file a debt or equity in the current or the next two years. Form 20-F is filed with the SEC within on average 52 days after the annual report filing date.

[Insert Table 2 here]

Table 3 reports the Pearson correlation coefficients. The U.S. industry specialist (0.08, $p = 0.001$) is significantly positively associated with voluntary business and industry risk disclosures in the annual report, indicating that U.S. specialist auditors encourage spillovers of business and industry risk disclosures to the annual report. Voluntary business and industry risk disclosures are also more likely for firms that have a stronger governance function, report under U.S. GAAP, are larger, have a higher return on assets, have more dispersed ownership, have more financial analysts following the firm and have a smaller reporting lag between the annual report and Form 20-F. Overall, multi-collinearity does not appear to pose a problem in our study.

[Insert Table 3 here]

Multivariate Results

Table 4 presents the results of the multivariate regression analysis. We use OLS to estimate the models, accounting for clustering of standard errors by firms, to correct for unobserved within-firm correlation patterns (Peterson 2009).

[Insert Table 4 here]

Model 1 in Table 4 shows that a U.S. industry specialist is significantly positively associated with the early disclosure of business and industry risk items in the annual report (23.956, $p = 0.004$), thereby supporting the first hypothesis. Consequently, the spillovers of U.S. risk disclosure requirements to the home market are more likely when the cross-listed firm is audited by a home-country auditor that belongs to a global audit firm network where the U.S. audit firm is an industry specialist.

Model 2 shows the additional benefit of a U.S. industry specialist is smaller when the home-country auditor is also an industry specialist ($HCSPEC*USSPEC$: -12.213, $p = 0.035$). This shows that a home country specialist benefits less from the global audit network than a non-specialist.

To test the third hypothesis, Model 3 of Table 4 adds interaction variables with the dummy variable *LAW*. Results show that the interaction of *LEGAL* with *USSPEC* (-19.161, $p = 0.007$) as well as with *HCSPEC* (-5.808, $p < 0.0001$) have both a significant negative coefficient while the interaction variable with the interaction variable ($HCSPEC*USSPEC*LAW$, +78.122, $p = 0.008$). This result shows that knowledge spillover effects are smaller to low than high quality investor protection regimes except if the home-country auditor is also an industry specialist. This shows that in weak investor protection regimes, the U.S. and the home-country specialist are complements in improving early and voluntary business and industry risk disclosures in the annual report.

Taken together, we find that the investor protection regime has indeed an effect on the relationship between U.S. auditor specialization and spillovers of business and industry risk disclosures to the home market. However, the effect also depends on having an industry specialist home-country auditor.¹⁹

SENSITIVITY ANALYSES

Alternative measurement of the dependent variable

We investigate the robustness of our results to alternative proxies to measure spillovers of business and industry risk disclosure requirements imposed by the SEC by using (1) a dummy variable if the business and industry risk disclosure in the annual report is the same

¹⁹ In untabulated results, the Wald test shows that the coefficients on U.S. industry specialist and home-country industry specialist are not equal ($p < 0.0001$). Moreover, the coefficient on U.S. industry specialist and home-country industry specialist are both significantly different from zero ($p < 0.0001$). As a result, deleting the variables *USSPEC* or *HCSPEC* creates a significant loss of fit.

as in the Form 20-F (2) total number of lines on business and industry risk items disclosed (3) qualitative risk disclosure measures on business and industry risk, i.e. bad news and precise risk disclosures. All results from the main model are confirmed.

Furthermore, we split the 22 business and industry risks into their underlying categories and look at the effect of each individual category. Our results are confirmed, when only considering the following risk classes: industry risks, country risks, competitor risks, customer risks and legal risks.

Alternative measurement of the test variables

We use three alternative dichotomous portfolio based measures of audit specialization as a robustness check: (1) we define an auditor as industry specialist if the industry accounts for $1/N_{\text{industries}}$ or more of its portfolio (Krishnan 2001; Neal and Riley 2004; Cenker and Nagy 2008); (2) we code an auditor's top-three portfolio shares as the auditor's speciality and the remaining industries as non-speciality (Krishnan 2003; Knechel et al. 2007); (3) we code an auditor's top-five portfolio shares as the auditor's speciality and the remaining industries as non-speciality (Kwon et al. 2007). We obtain similar results as our main analyses.

Finally, untabulated results show similar findings for all industry specialist proxies when using total assets or the square root of total assets instead of total sales to estimate portfolio shares for the Big 4 auditors.

Alternative sample selection criteria

First, we split the sample in firms with a home-country industry specialist and firms without a home-country industry specialist. For the subsample of firms with a home country specialist, we find that the coefficient on *USSPEC* (24.251, $p= 0.005$) remains significant.

Second, we also ran the analyses on split samples based on whether the firm is located in a strong versus low investor protection regime. Effects are mainly found for the low investor protection sample with the coefficient on *USSPEC* (25.351, $p = 0.006$) remaining significant. Finally, by implementing year-by-year analysis, we detect spillover effects in 2007 (91.359, $p = 0.0168$) and 2008 (178.571, $p < .0001$).

CONCLUSIONS

In this study the industrial organization theory of knowledge spillovers in multinational corporations is applied to audit knowledge transfers in global audit firm networks. For firms cross-listed on the NYSE we examine (1) how the characteristics of the global audit firm network affect early disclosures made in their home market and (2) whether the impact of the global audit network on the disclosures made in the home market depends on the investor protection regime in the home-country.

Using the annual report of 311 firm-year observations over the period 2007-2008, we find that cross-listed firms audited by a home-country auditor who belong to a global audit firm network where the U.S. auditor is industry specialist, are more likely to have spillovers of business and industry risk disclosures to the annual report in the home market. Furthermore, we find that the knowledge flows are weaker to audit firms with stronger knowledge bases, which shows that home-country auditor industry specialist earns less in terms of knowledge transfers from the global audit network. Finally, results show that knowledge spillover effects are smaller to low than high quality investor protection regimes except if the home-country auditor is also an industry specialist. This shows that in weak investor protection regimes, the U.S. and the home-country specialist are complements in improving early and voluntary business and industry risk disclosures in the annual report.

The study is subject to several caveats. Cross-listing studies are inherently subject to self-selection bias, which could limit the generalizability of our findings, as addressed in

Bradshaw and Miller (2008). Second, as hand-collecting risk disclosure and corporate governance data is very time consuming, the current study covers only two years. Third, there appears to be a lack of consensus in the literature in how auditor industry specialization is to be measured. This is further aggravated in an international sample. We minimize this measurement problem by using different proxies for the industry specialisation.

Future research would be useful to provide additional evidence on the role of the auditor for other accounting quality proxies in a cross country setting. Despite these caveats, the outcomes of this study have potential policy implications for accountants and regulators around the world. This study will inform them in also considering the additional business and industry disclosure requirements imposed by the SEC that are not required by the accounting standards. Second, this study could inform accountants and regulators on the role of the profession's industry expertise in promoting disclosure quality and auditor quality and how it varies with the investor protection regimes across countries. Third, as audit firm networks and their clients span multiple jurisdictions, the current system of regulation and enforcement of audit firm networks, which predominately occurs at a national level, is likely to be inadequate. Fourth, our evidence suggests the existence of economies of scope benefits from knowledge spillover for clients audited by an industry specialist auditor. This raises regulatory solutions aimed at joint supply of the annual report and Form 20-F.

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TABLE 1
Sample Firms Used in the Study

	<u>2007</u> ^b	<u>2008</u> ^c	<u>Total</u> ^d	<u>Total</u> ^e
Initial sample ^a	266	266	266	532
Less: Financial and insurance firms	56	56	56	112
Less: Firms with no fiscal year-end in December	43	43	43	86
Less: Firms with AR filing date after Form 20-F filing date	3	3	3	6
Less: Firms with more AR than Form 20-F disclosures	6	6	6	12
Less: Firms with missing financial statement data	2	3	5	5
Final sample	156	155	153	<u>311</u>

^a Cross-listed firms on NYSE without Canadian firms.

^b Cross-listed firms on NYSE with December 31, 2007 year-ends.

^c Cross-listed firms on NYSE with December 31, 2008 year-ends.

^d Cross-listed firms on NYSE with December 31, 2007 or December 31, 2008 year-ends.

^e Cross-listed firms on NYSE with December 31, 2007 and December 31, 2008 year-ends.

TABLE 2
Descriptive Statistics

	<u>Mean</u>	<u>StDev</u>	<u>Min</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>	<u>Max</u>
<i>RDAR</i>	5.929	5.002	0	1	5	10	17
<i>USSPEC</i>	0.053	0.039	0	0.016	0.049	0.079	0.165
<i>HCSPEC</i>	0.181	0.177	0	0.057	0.129	0.254	0.679
<i>LEGAL</i>	0.654	0.476	0	0	1	1	1
<i>GOV</i>	3.058	1.213	0	2	3	4	7
<i>USGAAP</i>	0.315	0.315	0	0	0	1	1
<i>LNTA</i>	15.728	1.689	11.781	14.497	15.856	16.717	19.328
<i>ROA</i>	0.105	0.120	-0.287	0.064	0.109	0.162	0.355
<i>LEVERAGE</i>	0.491	0.207	0.027	0.364	0.508	0.633	0.827
<i>FREEFLOAT</i>	0.671	0.368	0.012	0.393	0.791	1	1
<i>ANALYST</i>	21.071	10.781	1	16	20	23	84
<i>OFFER</i>	0.492	0.501	0	0	0	1	1
<i>DAYS</i>	51.862	46.795	0	0	51	85	158

<i>RDAR</i>	number of business and industry risk items disclosed in the annual report;
<i>USSPEC</i>	U.S. industry specialist audit firm continuous portfolio share;
<i>HCSPEC</i>	home-country industry specialist audit firm continuous portfolio share;
<i>LEGAL</i>	indicator variable equal to 1 for the weak and 0 for the strong legal enforcement group;
<i>GOV</i>	aggregated governance score;
<i>USGAAP</i>	indicator variable equal to 1 if company reports under U.S. GAAP, and 0 otherwise;
<i>LNTA</i>	natural logarithm of total assets;
<i>ROA</i>	return on assets;
<i>LEVERAGE</i>	total liabilities divided by total assets;
<i>FREEFLOAT</i>	1 minus percentage of shares closely held;
<i>ANALYST</i>	number of analysts following the firm;
<i>OFFER</i>	indicator variable equal to 1 if firm files debt or equity in current year or next 2 years;
<i>DAYS</i>	number of days between the AR and 20-F filing date;
<i>YEAR</i>	indicator variable equal to 1 for 2008, and 0 for 2007;
<i>Industry Controls</i>	industry indicator variables, based upon 2-digit U.S. SIC codes.

TABLE 3
Correlation Matrix

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
1. <i>RDAR</i>	1													
2. <i>USSPEC</i>	0.08 *	1												
3. <i>HCSPEC</i>	0.16 *	0.22 *	1											
4. <i>LEGAL</i>	-0.23 *	0.02	0.08	1										
5. <i>GOV</i>	0.23 *	0.18 *	0.18 *	-0.08	1									
6. <i>USGAAP</i>	0.37 *	-0.06	-0.16 *	0.06	0.25 *	1								
7. <i>LNTA</i>	0.15 *	0.18 *	0.23 *	-0.30 *	0.27 *	0.28 *	1							
8. <i>ROA</i>	0.13 *	0.15	0.09 *	-0.11 *	0.02	0.03	0.13 *	1						
9. <i>LEVERAGE</i>	0.06	0.09 *	0.04	-0.24 *	-0.21 *	-0.18 *	0.35 *	0.09 *	1					
10. <i>FREEFLOAT</i>	0.23 *	-0.04	0.03	-0.15 *	0.02	-0.23 *	0.18 *	-0.21 *	0.15 *	1				
11. <i>ANALYST</i>	-0.08	0.19 *	0.13 *	-0.20 *	-0.11 *	-0.03	0.35 *	0.13 *	0.33 *	0.15 *	1			
12. <i>OFFER</i>	-0.06	0.06	0.19 *	-0.15 *	-0.05	-0.13 *	0.30 *	0.05	0.15 *	0.18 *	0.21 *	1		
13. <i>DAYS</i>	-0.33 *	-0.08	0.22 *	0.22 *	-0.06	-0.32 *	0.02	-0.11 *	-0.05 *	0.12 *	-0.08	0.09	1	
14. <i>YEAR</i>	0.05	-0.01	-0.02	-0.02	-0.01	-0.02	-0.01	-0.12 *	-0.01	-0.03	-0.01	0.02	0.01	1

* Indicates significant correlation at the 1 percent level. See Table 2 for variable definitions.

TABLE 4
Results of Multivariate Regressions on Number of Business and Industry Risk Items Disclosed in the Annual Report (RDAR)

	<u>Model 1</u>			<u>Model 2</u>			<u>Model 3</u>		
	<u>coeff.</u>	<u>p-value</u>		<u>coeff.</u>	<u>p-value</u>		<u>coeff.</u>	<u>p-value</u>	
<i>Intercept</i>	22.332	<.0001	***	23.262	<.0001	***	18.993	<.0001	***
<i>USSPEC</i>	23.956	0.004	***	48.819	0.004	***	130.659	<.0001	***
<i>HCSPEC</i>	4.242	0.028	**	7.701	0.047	**	30.957	<.0001	***
<i>USSPEC*HCSPE</i>				-					
<i>C</i>				12.213	0.035	**	-44.091	0.001	***
<i>USSPEC*LEGAL</i>							-19.161	0.007	***
<i>HCSPEC*LEGAL</i>							-5.808	<.0001	***
<i>USSPEC*HCSPEC*LEGAL</i>							78.122	0.008	***
<i>LEGAL</i>	-0.359	0.072	*	-0.362	0.068	*	0.896	0.038	**
<i>GOV</i>	0.374	0.052	*	0.289	0.023	**	0.176	0.045	**
<i>USGAAP</i>	1.246	0.016	**	1.156	0.019	**	1.035	0.021	**
<i>LNTA</i>	1.033	0.002	***	1.163	<.0001	***	-1.289	<.0001	***
<i>ROA</i>	2.523	0.213		2.461	0.217		2.363	0.233	
<i>LEVERAGE</i>	0.001	0.003	***	0.001	<.0001	***	0.001	<.0001	***
<i>FREEFLOAT</i>	1.396	0.035	**	1.003	0.023	**	0.822	0.029	**
<i>ANALYST</i>	0.056	0.043	**	0.053	0.054	*	0.056	0.044	**
<i>OFFER</i>	0.966	0.134		1.043	0.105		1.049	0.075	*
<i>DAYS</i>	-0.039	<.0001	***	-0.039	<.0001	***	-0.034	<.0001	***
<i>YEAR</i>	0.112	0.565		0.121	0.543		0.113	0.566	
<i>Industry Controls</i>	Included			Included			Included		
<i>n</i>	311			311			311		
<i>Adj. R²</i>	0.6286			0.6416			0.6671		

Standard errors are clustered per firm to correct for unobserved within-firm correlation patterns (Peterson 2009). Significance is indicated as follows: p < 0.10 (*); p < 0.05 (**); p < 0.01 (***). Coefficients on the industry dummies are not reported for brevity. For variable definitions please consult table 2.

Appendix A

Additional Business and Industry Risk Disclosure Demanded by SEC

1. Industry risk
 2. Country risk
 3. Operating risk
 4. Other financial risk than required by the accounting standards
 5. Risk related to the trading markets of company's securities
 6. Risk related to management's integrity
 7. Competitor risk
 8. Customer risk
 9. Supplier risk
 10. Risk related to the expiration of patents, trademarks or contracts
 11. Legal risk
 12. Cross-listing risk
 13. Tax risk
 14. Risk related to acquisitions and joint ventures
 15. Risk related to pension plans
 16. Reputation risk
 17. Risk related to real property, buildings, land, plant and equipment
 18. Risk related to insurance
 19. Risk related to accounting estimates
 20. Risk related to fraud
 21. Risk related to SOX regulation, audit and internal control
 22. Risk related to restructuring, renovations and converting plans
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