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RISK REPORTING: DO COUNTRY-LEVEL INSTITUTIONAL FORCES REALLY MATTER?

ABSTRACT

Purpose: This study intends to address two main issues: to what extent the country-level institutional forces compel (directly) firm's risk reporting behaviour and in which way these country-level institutional forces moderate the relationship between risk reporting and firm-level characteristics.

Design/methodology/approach: The annual reports of the non-financial European firms listed at the Euro Stoxx-50 index over the period of 2007 and 2011 were content analysed.

Findings: Main findings indicate that, during this period the European listed companies disclosed more risk information on a voluntary basis (such as operational and strategic risks) and with better informative content (more forward-looking and focused on positive news). Consistent with institutional theory, findings confirm that the country-level institutional forces explain variations on risk reporting. Additionally, it also indicates that the relationship between risk reporting and leveraged firms is weaker among countries with stronger institutional forces. These findings have several implications for investors and regulators in Europe basically in helping achieve efficiency in investment decisions and to stimulate further efforts to improve risk reporting regulations.

Originality: This study makes two major contributions. First, it extends Elshandidy's et al. (2015) work by using other country-level institutional forces that capture the efficacy of corporate boards, the protection of minority shareholders' interests, country's level of democracy, law enforcement mechanisms, and press freedom. Second, it uses firms that are considered as a Blue-chip representation of super-sector leaders in the Eurozone (but from different institutional contexts). This research setting can be more insightful in shedding some light towards our understanding on how these leading firms can promote innovative and high quality level of RR and how country-level driving forces influence these variables.

Keywords: Risk reporting; disclosures; risk management; country-level institutional forces

1. Introduction

The present study addresses a particular aspect of risk reporting (RR): how country specific features affect pan-European firm's RR practices. We motivate this research on three main aspects. First, the literature demonstrates that RR has relevant economic consequences: it reduces information asymmetry (Elshandidy and Neri, 2015; Miihkinen, 2013), it is reflected in systematic risk, idiosyncratic risk, and firm value (Campbell et al., 2014), it is associated positively with stock return volatility, trading volume, dispersed forecast revisions (Kravet and Muslu, 2013) and predictability of future earnings change (Moumen et al., 2015, 2016). Miihkinen (2013) demonstrates that these economic incentives are more pronounced during periods of economic downturns, increasing investor's information needs, and more relevant among strongly governed firms (Elshandidy and Neri, 2015). However, another set of RR literature, has acknowledged serious inadequacies in RR, before or after periods of economic downturns (Solomon et al., 2000; Magnan and Markarian, 2011). They were found difficult to read and understand (Linsley and Lawrence, 2007), vague, qualitative, backward-looking, and ineffective in communicating risks to users (Beretta and Bozzolan, 2004; Linsley and Shrives, 2006; Mohoboot, 2005; Greco, 2012). Even after the regulatory reforms implemented after the 2007/2008 global financial crisis, RR continues to be treated in a non-homogeneous way (Lombardi et al., 2016) and present the same information inadequacies (Ntim et al., 2013; Oliveira et al., 2018). Consequently, it is needed a greater reflection on the RR practices of larger firms in order to assess potentially leading reporting practices.

Second, prior literature on RR shows that some firm-level characteristics such as size (Linsley and Shrives, 2006; Abraham and Cox, 2007), profitability (Elshandidy et al., 2015; Oliveira et al., 2018), leverage (Buckby et al., 2015; Ntim et al., 2013),

corporate governance (Abraham and Cox, 2007; Ntim et al., 2013; Elshandidy and Neri, 2015), growth (Deumes and Knechel, 2008), or even business risk (Ntim et al., 2013; Miihkinen, 2012) impact on RR. Consistently, the RR literature has evidenced that larger firms present higher levels of RR either to manage agency/litigation costs or even for legitimacy purposes (Beretta and Bozzolan, 2004; Ntim et al., 2013; Oliveira et al., 2018). However, any study has examined how or why these relationships exist and under what circumstances they will hold.

Third, another important aspect is that prior literature has found variations on the economic incentives of risk reporting, most likely due to country-specific characteristics (Elshandidy et al., 2018b). In fact, literature on the determinants of RR indicates that countries' legal systems (Code-law versus Common-law) and cultural values (assessed by Holfstede's (1991; 2001) cultural dimensions) determine RR (Elshandidy et al., 2015). Thus, Khlif and Hussainey (2016) emphasize the need to explicitly consider the institutional factors (such as, legal system, financial system and cultural values) when analysing the relationship between RR and firm characteristics. Prior cross-country research on RR has only examined: a) the disclosure differences between countries (Elshandidy and Neri, 2015; Elshandidy et al., 2015; Dobler et al., 2011; Savvides and Savvidou, 2012; Abdallah et al., 2015); and b) the country's effect (Probohudono et al., 2013; Abdallah et al., 2015), the countries' legal systems/cultural values (Elshandidy et al., 2015), and the country-level institutional characteristics (Oliveira et al., 2018) as determinants of RR. But, any study has assessed both the direct effect of the country-level institutional forces on RR and the moderating role the country-level institutional forces have on the relationship between firm's level characteristics and RR, hitherto.

The present study addresses this research gap by answering the following research questions: To what extent the country-level institutional forces (directly)

compel firm's RR behaviour? In which way these country-level institutional forces moderate the relationship between between RR and firm-level characteristics of non-financial pan-European firms listed at the Euro Stoxx-50 index over the period of 2007 and 2011?

Consistent with recent literature on accounting research (De Villiers and Marques, 2016; Cahan et al., 2016; Oliveira et al., 2019) the present study extends Elshandidy et al. (2015) in three different ways. First, Elshandidy et al. (2015) used two country-level measures to assess country's legal system and cultural values: a "code-law/common-law" indicator variable (La Porta et al., 1998) and Hofstede's cultural indices (Hofstede, 1980, 1991, 2001). But these two indicators have been severely critised in the accounting literature (Baskerville, 2003; Lindahl and Schadéwitz, 2013). The "code law/common law" variable is broad in nature (De Villiers and Marques, 2016) and is closely intertwined with country's corporate governance models: stakeholder-oriented versus shareholder-oriented (Ball et al., 2000; Meek and Thomas, 2004). Additionally, Hofstede's cultural indices are intrinsically linked to country's socio-economic factors, rather than culture (Baskerville, 2003) and do not provide strong authority as a basis for international accounting research (Nobes and Parker, 1998). The present study uses more appropriate country-level measures that capture the efficacy of corporate boards, the protection of minority shareholders' interests, country's level of democracy, law enforcement mechanisms, and press freedom. These institutional factors can provide more insightful knowledge on the main drivers of RR in a context of financial distress.

Second, Elshandidy et al. (2015) analyses RR among US, UK and Germany firms. Thus a study using a set of firms considered as a Blue-chip representation of super-sector leaders in the Eurozone (but from different institutional contexts) can be

more insightful in shedding some light towards our understanding on how these leading firms can promote innovative and high quality level of RR and how country-level driving forces influence these variables.

Third, Elshandidy et al. (2015) only assessed if the countries' legal systems/cultural values explain variations in mandatory and voluntary RR. The present study focuses on the direct country-level institutional forces effect on RR and on the moderating role that country-level institutional forces have on the relationship between RR and firm-level characteristics. More specifically, it tries to explore why firms disclose risk information (after controlling for other firm-level characteristics) and under what institutional circumstances the relationship between RR and firm-level characteristics will hold (the moderating role). These particular aspects have never been studied in RR literature.

Main findings indicate that during the period of analysis the quantity of RR increased, but not its quality. Overall, RR is devoided of impact and time orientation. The disclosures that include an impact and time-orientation are mainly backward-looking, focused on negative news and with low informative content. Consistent with prior literature, during the period of analysis, the pan-European listed companies disclosed more RR on a voluntary basis (such as operational and strategic risks) and with better informative content (more forward-looking and focused on positive news). Findings also confirm that firms in more democratic countries, with stronger legal systems, better enforcement mechanisms, and with higher levels of freedom of expression disclose more risk information. Additionally, the country-level institutional forces moderate the relationship between RR and firm-level characteristics. The positive relationship between leveraged firms and RR is weaker among countries with stronger institutional forces.

These findings are relevant to the current debate on the quality of RR evidenced in the recent regulatory efforts such as: a) the ongoing overhaul of the Management Commentary Practice Statement from the International Accounting Standards Board; b) the revision of the European Union's (EU) Non-Financial Reporting Directive; c) the current revision of the Integrate Reporting Framework by the International Integrated Reporting Council; and d) the second project of the European Corporate Reporting Lab from the European Financial Reporting Advisory Board regarding non-financial risks and opportunities and linkage to the business model.

These regulatory institutions have acknowledged that the underlying drivers of the quality of RR continue to rely on regulatory and market failures to ensure that firms report the information users need (European Commission, 2020). Therefore, we believe that our findings will contribute to the debate in the European Union regarding the review of its Non-Financial Reporting Directive (Directive 2014/95/EU), mainly the second project on non-financial risks and opportunities and linkage to the business model of the European Corporate Reporting Lab from European Financial Reporting Advisory Board.

In the next sections we present the literature review and the hypothesis. Then we describe the research design, present the main results and finalize with main conclusions.

2. Literature review

Prior literature (Table 1) indicates that during periods of financial distress, firms disclose more voluntary risk information (Elshandidy and Neri, 2015), regarding basically operational and strategic risks (Ntim et al., 2013) and comply more with risk

regulation (Elshandidy et al. 2015). Moreover, Miihkinen (2013) argues that the economic incentives of RR are more evident during periods of financial distress.

(insert Table 1 here)

Probohudono (2013) and Elshandidy et al. (2018a) find opposite results. Over periods of financial distress, manufacturing listed firms from Indonesia, Malaysia, Singapore, and Australia present low levels of RR (Probohudono, 2013). Elshandidy et al. (2018a) found that over the period of the global financial crisis 2007/8, Chinese firms are likely to provide non-relevant risk information to the market. These results indicate that the economic incentives of RR may be country-specific and that perhaps country institutional factors may influence RR practices in periods of financial distress. Table 2 shows that cross-country research on risk reporting include a wide range of countries, but research continues to be scant and ignore the potential direct and moderating effects of country's institutional context.

(insert Table 2 here)

As far as we know, Elshandidy et al. (2015) is the only study that has tried to assess this issue. They found that country's legal system and cultural values impact on RR. More specifically, they found that these two variables are crucial drivers of RR. However, they ignore the direct effect of country-level institutional forces on RR and the moderating role these institutional forces might have on the relationship between firm characteristics and RR. The present study answers Elshandidy's et al. (2018b) and Khlif and Hussainey's (2016) call for research on the direct effects and on the moderating role of country's institutional context on the relationship between firms characteristics and RR using different cross-country research settings.

Moreover, Elshandidy's et al. (2015) findings might be influenced by some outlier country-level measures: a) they used two country-level measures that only

measures the country's legal system and cultural values – a "code-law/common-law" indicator variable (La Porta et al., 1998) and Hofstede's cultural indices (Hofstede, 1980, 1991, 2001); and b) present different findings for US, UK and German firms. Therefore, a study using a set of firms that are: a) equally considered the representation of super-sector leaders in the Eurozone; b) belong to countries that are similar in terms of economic development; but c) are different in terms of institutional context, could be helpful to enlighten our understandings on the country-level driving forces behind RR.

3. Hypothesis development

There is been a wide literature addressing the influence of country-level institutional drivers on financial/non-financial reporting diversity (La Porta et al., 1997, 1998; Leuz et al., 2003; Ding et al., 2007; Campbell, 2007; Simnet et al., 2009; Dhaliwall et al., 2012; Isidro et al., 2020). In the field of financial reporting, prior literature found that the differences between domestic and international accounting standards are significantly influenced by legal systems and that culture is relevant to accounting harmonization (Ding et al., 2007; Isidro et al., 2020).

In the context of non-financial reporting, Campbell (2007) theorized in which way the relationship between the organizational economic conditions and socially responsible behaviour is mediated by several institutional factors. Chih et al. (2010) and Oliveira et al. (2019) have concluded on the validity of Campbell's theoretical arguments. Several studies confirm that non-financial reporting depends on the nation-level institutions of the country in which firms operate (Ioannou and Serafeim, 2012; Cahan et al., 2016; de Villiers and Marques, 2016).

Among the RR literature, findings seem to confirm that country's characteristics determine corporate reporting diversity. Woods et al. (2008) concluded that French,

Italian and Spanish banks had lower levels of disclosure but with great disparities. Höring and Gründl (2011) analyzed RR practices in the European insurance industry and concluded that Latin countries tend to demonstrate lower levels of risk disclosures, confirming Woods's et al. (2008) findings. In a cross-country research, involving firms based in Canada, US, UK and Germany, Dobler et al. (2011) found that among manufacturing firms from Canada, US, UK, and Germany RR differences were due to different domestic disclosure regulation. More recently, Elshandidy et al. (2015) concluded that the country's legal system (Common-Law/Code-Law) and cultural values (Hofstede's (1980) cultural indices) determine RR.

However, Oliveira et al. (2019) measured the country-level institutional drivers through the legal environment of each country (assessed by the average of 4 indicators: rule of law, control of corruption, judicial independence, and efficiency of legal framework, retrieved from the Worldwide Governance Indicators and from the Global Competitiveness Index Historical Database). They found that country-level institutional characteristics drive RR.

These findings seem to be consistent with predictions from institutional theory (Scott, 1995). This theory argues that social systems and individuals not only compete for resources but for legitimacy too (Suchman, 1995). For Scott (1995), countries are social systems comprising several institutional forces (such as, societal institutions and menus; institutional governance structures; and actors) that interact with each other and form the institutional environment. Institutions consist of the "cognitive, normative and regulative structures and activities that provide stability and meaning to social behavior" (Scott, 1995, p. 33). Judge et al. (2008, p. 770) contend that "when a nation has a well-established legal system that functions fairly and predictably, the regulative structures and activities [such as rule of law] regulate social systems and standardize social

behaviors". Consequently, transactions at the organizational field level are more efficient, because the institutional governance structures (such as the corporate governance systems) are viewed as being legitimate. To sum up, institutional forces at the country-level appears to influence firms' behaviors. Consistent with this theoretical reasoning, we expect that to achieve legitimacy, firm's RR behavior and motivation is compelled by country-level institutional characteristics.

H1. The country-level institutional forces influence (directly) the level of RR.

Prior literature has explained RR motivations through the eyes of both agency theory and legitimacy theory arguments. Consistent with agency theory, RR has the ability of reducing information asymmetries and adverse selection costs (Jensen and Meckling, 1976). But, even so, managers can make disclosure choices to maximize their own utility and use RR to boost short-term positive impacts on financial markets (Healy and Palepu, 2011).

In the same vein, based on legitimacy theory, firms use RR to conform to social norms, and satisfy the expectations of their relevant stakeholders that provide resources vital to their survival (Suchman, 1995). However, these disclosures often embody attempts to manage stakeholders' perceptions, as long as they portray the image of the firm as being legitimate.

Consistent with both theoretical arguments, if RR is credible it reduces agency costs (information asymmetries and adverse selection) and improves legitimacy (enhanced reputation) with relevant stakeholders. But, if RR is considered as opportunistic or as window-dressing investors will suspect that firms are trying to hide adverse risk information and the relevant stakeholders will consider them as decoupling disclosure strategies (Abraham and Shrives, 2014).

Consistent with institutional theory, stronger laws affect the protection of a minority of shareholders and the legal structures of the firm's corporate governance (La Porta et al., 1997; Leuz et al., 2003). Stronger legal systems with high quality enforcement mechanisms reduce managers' incentives to act in socially irresponsible ways (such as manipulation/obfuscation/concealment of risk information associated with a self-serving opportunistic agenda), allow investors to discipline insiders and limit private information (through the design of specific contracts), and assure the proper flow of reliable risk information to support their investment decisions (Leuz et al., 2003). Consequently, based on De Villiers and Marques (2016) and Cahan et al. (2016), it is expected that firms operating in more democratic countries, with a higher level of freedom of expression, and with more reliable political systems disclose more risk information, mainly to reduce agency costs

However, Oliveira et al. (2018) found that firms operating in countries with a weaker legal environment and during periods of financial distress disclose more discretionary RR to manage strategic legitimacy. This finding suggests another opposing argument. On the one hand, in countries with stronger institutional forces (more democratic, with higher freedom of expression, and reliable political systems) since firms are closely scrutinized by investors and stakeholders these audiences are already expecting credible risk information. Therefore, RR is less informative. On the other hand, in countries with weaker institutional forces, firms with specific characteristics (more risky, leveraged, and complex) are expected to present more opaque risk information. Thus, firms bet on more credible risk information to achieve legitimacy because they know credible RR is more valuable and informative to investors and stakeholders.

H2. The relationship between firm characteristics and the level of RR is significantly stronger or weaker according to the country-level institutional characteristics to which firms belong.

4. Research design

4.1. Sample

The sample comprises the firms that belong to the Euro Stoxx-50 index in February 2013 and covers the years 2007 and 2011. We focus on this specific period of analysis (2007 and 2011) for two main reasons. First, according to the World Bank, the period of analysis (2007 and 2011) corresponds to two starting points in which began two periods of financial distress and economic downturns with particular characteristics that fit our research objectives. The year of 2007 was characterized by the breakdown of trust that occurred between banks the year before the 2008/2009 financial crisis. It was caused by the subprime mortgage crisis, which itself was caused by the unregulated use of derivatives. The year of 2007 includes the early warning signs, causes, and signs of the breakdown. The Black Monday 2011, occurred in August 8, 2011, when United States of America (US) and global stock markets crashed following the Friday night credit rating downgrade by Standard and Poor's of the US sovereign debt from AAA to AA+. The debt crisis in the Eurozone that has started in 2010 worsened with this stock market crash of August 2011, basically due to a contagion effect among the main European stock markets (such as, Germany – DAX30 index and France – CAC40 index) (Jayech, 2016). The main effects of this contagion effect were deterioration of investment, harmful economic downturn, political instability, and the bankruptcy of some financial institutions. Jayech (2016) also concluded that the soundness of European economies

worsened, with deep implications on the country-level institutional forces. The years ahead were characterized by the sovereign debt crisis in the Eurozone.

Second, consistent with Miihkinen (2013), investors' needs for RR are more pronounced during periods of economic downturns. We contend that this demand for more risk information and close scrutiny of firms by investors and relevant stakeholders start at the very beginning of these periods, which are characterized by the early warnings, causes, and signs of potential breakdowns. The present study does not intend to study the effect of these financial crises on RR. In turn, consistent with the above arguments we believe that these two periods of analysis can elucidate us about how country-level institutional forces influence firms' motivations for RR in periods of financial distress: to manage legitimacy strategically or even to reduce agency costs.

We choose the Euro Stoxx-50 index firms because of its relevance in the context of the European capital markets. The Euro Stoxx-50 index is considered Europe's leading Blue-chip index for the Eurozone (Brida et al., 2016) and is the major barometer of financial markets in the Eurozone serving as an underlying for a wide range of investment products such as Exchange Traded funds, Future and Options and Structured Products worldwide (Brechmann and Czado, 2013). The Stoxx-50 index is made up of the main firms in different sectors of activity covering 12 Eurozone countries, namely Germany, Austria, Belgium, Spain, Finland, France, Greece, Holland, Ireland, Italy, Luxembourg and Portugal. Prior literature indicates that the usefulness of RR is statistically and economically more pronounced among internationally-oriented firms than domestic-oriented ones (Tan et al., 2017). Thus, if this index provides a Blue-chip representation of super-sector leaders in the Eurozone, then theoretically it is expected that they present innovative and high quality level risk information. Second, the index

offers exposure of fifty firms from twelve European countries with different institutional contexts that may drive RR differently.

We downloaded the annual reports directly from the firm's websites for the fiscal years ended on 31 December 2007 and 31 December 2011. Only the English version of the annual report was downloaded to avoid content analysis bias associated with different languages (Campbell et al., 2005; Dobler et al., 2011). Consistent with prior literature we excluded financial firms (Beretta and Bozzolan, 2004; Mohobbot, 2005; Linsley and Shrives, 2005; Linsley and Shrives, 2006; Abraham and Cox, 2007), because they have a different business model, are subject to different regulations, and face different risks. We also excluded one firm from Ireland, to avoid any bias related to firms' reporting practices in Common-law countries (Meeck and Thomas, 2004). After their exclusion, the sample remained with 37 non-financial firms. Table 3 shows the characterization of the sample, in which we can see the representativeness of the sample across countries, industry, and cross-listing profile.

(insert Table 3)

Table 4 presents the country-level institutional characteristics for 2007 and 2011. The One-way ANOVA tests indicate that these institutional forces are significantly different across countries in each year.

(insert Table 4)

4.2. Econometric model

We acknowledge that RR policy is endogenously determined and that variations in RR can be attributed to unobserved firm-specific and/or time-invariant heterogeneities. In panel data, the fixed effects approach is frequently used to limit selection bias problems (Brown et al., 2011; Mummolo and Peterson, 2018) and controls for correlated omitted

variable bias associated with unobserved firm characteristics (whether constant or time-variant). Consistently with prior literature (Ntim et al., 2013; Elshandidy et al., 2015), given the panel nature of our data we conduct our analysis using panel data fixed-effect regression techniques. Additionally, endogeneity can also be associated with simultaneity or "reverse causality", due to significant associations between explanatory variables and RR. Consistent with prior literature (Larcker and Rusticus, 2010; Dhaliwal et al., 2011; Ntim et al., 2013; Elshandidy et al., 2015) we follow a lead-lag approach to ameliorate this endogeneity concern. Consequently, to test hypothesis H1 we estimate the following regression model:

$$RR_{k,t} = \alpha_0 + \alpha_1 Country\ Institutional\ Variables_{k,t-1} + \sum_{i=2}^{8} \alpha_i\ Firm\ Characteristics_{ik,t-1} + \sum_{i=9}^{12} \alpha_i\ Control\ Variables_{ik,t-1} + \gamma_{k,t} + \varepsilon_{k,t-1} \quad (1)$$

RR_{kt} is the number of RR sentences for the kth firm in the year t. To compute RR we performed a manual content analysis of four sections of the annual reports: "Outlook" section and "Risk Factors" section of the Management Report, the "Corporate Governance" report, and the "Notes". We used sentences as the unit of analysis because it can guarantee more reliable data (Hackston and Milne 1996; Milne and Adler 1999), and it was adopted in a substantial part of prior RR literature (Beretta and Bozzolan, 2004; Mohobbot, 2005; Linsley and Shrives, 2006; Oliveira et al., 2011).

Consistent with Dobler et al (2011, p. 8) a sentence contains risk information if "the reader is informed of any opportunity or any danger, threat or exposure, which has already had or may have an impact on the firm or the management of any opportunity, hazard, threat or exposure."

The coding tool adopted is based on Linsley and Shrives (2006) for risk typologies. We added two new dimensions (type and location of RR) and one new semantic characteristic (informative content of RR). Figure 1 summarizes the coding tool.

(Insert Figure 1)

The coding of the reports was carried out by two coders, both with previous coding experience in the subject. Given the implicit subjectivity of content analysis, it is imperative to ensure adequate levels of data reliability to validate conclusions (Hackston and Milne, 1996; Krippendorff, 2004). Consistently, after establishing a set of decision rules, a pilot group of two reports were coded by each of the coders, which served to review and refine the decision rules. Then, an inter-coder reliability test was performed on the coding results of another pilot group of four reports. Scott's π exhibit a result of 0.89. Reliability levels above 0.75 or 0.8 are considered acceptable (Hackston and Milne 1996). Finally, all the reports were then coded. After coding the reports, we constructed an RR score for the kth firm in the year t:

$$RRk,t = \sum_{i=0}^{sa} RF\ ijk,t + \sum_{i=0}^{sa} RM\ ijk,t + \sum_{i=0}^{sa} CRMS\ ijk,t \qquad (2)$$

where:

$RR_{k,t}$ = Risk reporting score for the kth firm in the year t, that comprises the risk factor (RF), risk management (RM), and the compliance of risk management systems (CRMS) disclosures

i = sentence attributes of RR associated with the 3 semantic characteristics of nature, impact, and time-orientation (i = 18 different combinations);

j = sentence attributes of RR associated with the 6 risk categories (j = 6 categories);

sa = sentence attributes of RR that combine risk categories with semantic characteristics (*sa* = 108);

t = years considered (*t* = {2007, 2011}).

The independent variables assess the country-level institutional measures in the year *t-1*. Prior literature on RR (Elshandidy et al., 2015) uses country's legal origin (Common/Code-law) and national culture based on Hofstede (1980). Even knowing, that the country's legal origin can shed some light on country's legal systems, mainly regarding investor protection regime (La Porta et al., 1998) the truth is that, because of its broader nature, it does not allow the identification of differences between countries, and therefore it does neither indicate how stronger is the legal system within a specific country nor even proxy other country-level characteristics that may equally influence corporate reporting diversity (such as accounting regulation, enforcement mechanisms, level of corruption, or even the level of freedom of expression). Moreover, Hofstede's cultural indices are intrinsically linked to the country's socio-economic factors rather than culture (Baskerville, 2003). Therefore, they do not provide a strong authority to support international accounting research (Nobes and Parker, 1998).

Consequently, we divided the country-level institutional measures into two groups (De Villiers and Marques, 2016; Cahan et al., 2016). The first one comprises five measures that represent the level of enforcement mechanisms and freedom of expression. Four of them are from the Worldwide Governance Indicators, provided by the World Bank, and include the variables "Voice and Accountability" (perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media), "Regulatory Quality" (perceptions of the ability of the government to formulate

and implement sound policies and regulations), "Rule of Law" (perceptions of the extent to which agents have confidence in and abide by the rules of society, such as contract enforcement, property rights, and the courts), and "Control of Corruption" (perceptions of the extent to which public power is exercised for private gain). The fifth variable is "Press Freedom" extracted from the Reporters Without Borders and captures the degree of freedom of the media.

The second group of measures include two variables extracted from the Global Competitiveness Index, provided by the World Economic Forum, and reflect the level of investor protection: "Efficacy of Corporate Boards" and "Protection of Minority Shareholders' Interests".

These country-level institutional measures are highly correlated. To control potential collinearity problems we applied a Principal Component Analysis. Only one component, with an Eigenvalue > 1, explains 81 per cent of the total variance. The KMO measure of sampling adequacy is 0.776 and Bartlett's test of sphericity is statistically significant (χ^2 = 833.717; p-value < 0.01) which validates the analysis. Consequently, using the loadings from the component matrix we generated a new variable that represents a unidimensional construct called "Law & Democracy":

$$\text{Law \& Democracy}_{t-1} = 0.947 \times \text{Voice_and_Accountability}_{t-1} + 0.921 \times \text{Regulatory_Quality}_{t-1} + 0.901 \times \text{Rule_Law}_{t-1} + 0.931 \times \text{Control_Corruption}_{t-1} - 0.789 \times \text{Press_Freedom}_{t-1} + 0.906 \times \text{Efficacy_Corporate_Boards}_{t-1} + 0.888 \times \text{Protection_Minority_Shareholders'_Interests}_{t-1} \quad (3)$$

Consistent with prior literature the firm characteristics include the following variables:

Size = measured by total assets. Larger firms are more complex and therefore more risky. Consequently, to reduce agency costs related to information asymmetries (Jensen and Meckling, 1976), to reduce political costs and avoid pressures from regulators (Watts and Zimmerman, 1978) or even to satisfy the stakeholders' expectations on corporate reputation (Freeman, 1984) managers have incentives to disclose more. Prior literature documents a consistent positive association between RR and size (Mohobbot, 2005; Linsley and Shrives, 2006; Abraham and Cox, 2007; Amran et al., 2009; Dobler et al., 2011; Oliveira et al., 2011).

Profitability = measured by the return on assets ratio (ROA = earnings before tax to total assets). Consistent with signalling theory, profitable firms disclose more information (mainly good news) to signal best practices and avoid undervaluation of their shares (Spence, 2000). From an agency theory perspective, disclosure can be helpful to assess managerial efforts. Thus, managers of profitable firms have incentives to disclose more information to maintain their positions and compensation agreements (Jensen and Meckling, 1976). However, prior literature on RR is inconclusive about the relationship between RR and profitability (Ahmed and Courtis, 1999; Lajili andZéghal, 2005; Mohobbot, 2005).

Leverage = measured by debt ratio (total debt to total assets). Leveraged firms are more prone to disclose information to reduce agency costs derived from the relationship between managers and debtholders (Linsley and Shrives, 2000). On the other hand, firms with lower levels of leverage may also face incentives to disclose more in order to signal their management skills in dealing with risks (Linsley and Shrives, 2006). Finally, Leuz et al. (2004) argue that risk information may be captured by other documents beyond annual reports. Prior research on RR has been inconclusive on the

relationship between RR and risk (Buckby et al., 2015; Ntim et al., 2013; Allini et al., 2016).

Governance Performance = measured by the ESG Governance Pillar Scores extracted from ASSET4. This score measures the weighted average relative rating of a firm based on the reported governance information and the resulting governance scores. Several studies examined the influence of corporate governance mechanisms on RR: ownership structure (Elshandidy and Neri, 2015), independent directors (Abraham and Cox, 2007), auditing committees (Elzahar and Hussainey, 2012), board meetings and gender diversity (Oliveira et al. 2018), institutional investors (Abraham and Cox, 2007). Main conclusions indicate that firms with stronger corporate governance structures report more risk information (Elshandidy and Neri, 2015).

Complexity = business complexity is measured by the number of segments the firm has (Kravet and Muslu, 2013). Theoretically, complex firms are more risky and therefore to reduce agency costs managers have incentives to disclose more risk information. Business complexity has been found to be positively associated with disclosures (Li, 2008; Richards and Van Staden, 2011; Wang et al., 2018).

Growth = is measured by the mean of sales growth rate in the last five years (Azevedo et al., 2022; Deumes and Knechel, 2008; Ntim et al., 2013; Fukukawa and Kim, 2017). Fast-growing firms might have more complicated issues related to risk exposures that need to be discussed in their risk disclosures (Li, 2008; Wang et al., 2018). They may outgrow their internal controls, promoting new investments in internal controls (Deumes and Knechel, 2008). This creates incentives to increase risk reporting related to internal controls that can avoid adverse selection (Kanto and Schadewitz, 1997). On the other hand, fast-growing firms are riskier. If their internal controls are weakened by

this growing opportunities managers may have opportunistic incentives to avoid risk disclosures (Fukukawa and Kim, 2017).

Business Risk = is measured by the five-year standard deviation of EBIT (earnings before interest and taxes) (Azevedo et al., 2022; Ntim et al., 2013; Miihkinen, 2012; Graham et al., 2015). Business risk is the risk associated with firm's assets and the nature of the products it produces and sells. High-risk companies disclose more risk information as a way to explain better the risk exposures and the risk management efforts to mitigate them (Elshandidy and Neri, 2015). However, another theoretical argument states that high-risk companies may be reluctant to properly inform on their risk exposure, mainly to manage their own reputation in the short-term, because of the public visibility this high-risk profile brings. Moreover, low-risk firms may have incentives to disclose more information to signal the soundness of their risk management systems and therefore legitimize themselves to their relevant stakeholders (Linsley and Shrives, 2006). Sound risk management structures are associated with proper risk management skills that boost RR and firm's reputation in dealing with risks. This reduces potential solvency risks (Nahar et al., 2016) and improves firm's performance (Rasid et al., 2014).

To control our results we included the following control variables:

Auditing firm = is measured by a dummy variable that assumes "1" if the auditing firm is a Big4 and "0" otherwise. This dummy variable will capture the high quality auditing firms (Oliveira et al., 2011) with international affiliations (Mokhatar and Mellet, 2013). Consistent with agency arguments firms contract Big4 auditing firms to reduce agency costs (Jensen and Meckling, 1976). To maintain their high quality as auditing firms it is expected that they encourage firms to disclose more risk information (Chalmers and

Godfrey, 2004). Additionally, greater efforts towards high-quality auditing processes reduce industry-specific risk and systemic risk exposure (Li et al., 2018).

Industry = a dummy variable that assumes "1" if the kth firm is a manufacturing firm, and "0" otherwise. Prior literature indicates that risk is industry-specific. However, Dobler et al. (2011) argue that in certain circumstances if a minimum number of firms disclose information, others tend to imitate them. According to institutional theory (Meyer and Rowan, 1977) and signalling theory (Spence, 2000) firms in the same industry working in the same socio-political environment tends to adopt similar disclosure strategies. They are subject to the same institutional pressures. Therefore, they adopt certain disclosure practices, not for the informative effectiveness of these practices, but to imitate other firms in the same industry. This will enable them to signal that they adopt the best practices (Hassan, 2009).

Cross-listing = a dummy variable that assumes "1" if the firm is also listed in a US stock exchange securities regulated market, and "0" otherwise. The literature points out to the evidence of the influence of firm's listing profiles on RR (Ahmed and Courtis, 1999; Abraham and Cox, 2007; Deumes and Knechel, 2008; Hassan, 2009; Rajab and Handley-Schachler, 2009). Firms listed in different stock exchange markets present different levels of RR. This is particularly evident in the US market, where RR requirements are considered more restrictive, notably following the entry into force of the Sarbanes-Oxley Act in 2002 (Höring and Gründl 2011). Consistent with agency theory, firms listed in different stock exchange markets are subject to greater information asymmetries and monitoring costs. Consequently, they have incentives to disclose more (Jensen and Meckling 1976).

To control for year effects we included a dummy variable that assumes "1" for the year 2007, and "0" otherwise. The γ term refers to the firm-specific fixed effect and

the ε term refers to the residuals. Data on the firm's characteristics were extracted from the Eikon database.

In Equation (1), the significance of the coefficient α_1 denotes that the country-level institutional forces directly affect RR (Hypothesis 1). To test whether the country-level institutional forces determine a significantly stronger/weaker relationship between firm characteristics and RR (Hypothesis 2), we improve Equation (1) as follows:

$$RR_{k,t} = \alpha_0 + \alpha_1 \, High\ Law\ \&\ Democracy_{k,t-1} + \sum_{i=1}^{7} \alpha_i \, Firm\ Characteristics_{ik,t-1} + \sum_{i=8}^{14} \alpha_i \, High\ Law\ \&\ Democracy * Firm\ Characteristics_{ik,t-1} + \sum_{i=15}^{18} \alpha_i \, Control\ Variables_{ik,t-1} + \gamma_{k,t} + \varepsilon_{k,t-1} \quad (4)$$

Equation 4 differs from Equation 1 by the presence of a dummy variable (High Law & Democracy = "1" if observations are higher than the mean value of the variable Law & Democracy, and "0" otherwise) and by the presence of seven slope dummies that measure the moderating effect that country-level institutional forces have on the relationship between RR and firm characteristics. These seven dummies describe the interaction between the variable High Law & Democracy and each of the seven firm characteristics. The validity of our H2 depends on the coefficients $\sum_{i=2}^{8} \alpha i$. When they are found to be statistically significant, we may conclude that the country-level institutional forces interact on the relationship between RR and firm characteristics.

5. Results

5.1. Categories of risk, type of disclosure, and semantic features

Table 5 (Panel A) identifies 8,885 sentences (year 2007) and 12,390 sentences (year 2011) containing RR. The risks more often disclosed in both years are: financial risks (2007=3,716; 2011=4,564); operational risks (2007=2,216; 2011=3,244); strategic risks

(2007=1,819; 2011=2,339); and integrity risks (2007=1,004; 2011=1,977). Between 2007 and 2011 RR have increased considerably (Δ=3,505) and this result is consistent almost throughout the several categories. However, the categories with higher year variation are operational risk (Δ=1,028), integrity risk (Δ=973), compared to financial risk (Δ=848).

(insert Table 5)

Table 5 (Panel B) documents that in 2007 (F-statistic=76) and in 2011 (F-statistic=54.7) disclosures per type of RR are significantly different (p-value<0.001). The disclosures in all the three types of RR increased from 2007 to 2011. But, this year variation is only significant in "risk factors" (Δ=63.7; p-value<0.05) and in "compliance of risk management systems" (Δ=23.3; p-value<0.001).

Table 5 (Panel B) also shows that in 2007 and in 2011 disclosures per category of RR are different. From 2007 to 2011, RR has increased in all categories. But comparing the year variation between financial and non-financial risks, the largest variation occurred in non-financial risks, which is consistent with Linsley and Shrives (2006) and Dobler et al. (2011). Although disclosures of financial risks are subject to greater emphasis and detail by regulation, the results seem to indicate that the legislation adopted in Europe has led firms to furthermore disclose non-financial risks.

It is interesting to notice that the most salient increases are related to "risk factors" (Δ financial risk=17.2; Δ operational risk=24.7; strategic risk=13.9) and "compliance of risk management systems" (Δ integrity risk=19.2). Operational risks are related to circumstances over which firms have greater control. They are more widespread than strategic risks, for which firms have less capacity to intervene. The content analysis revealed that operational risk disclosures were related to litigation issues, but strategic risk disclosures were related to the possibility of adverse market

behaviour, competition, the possibility of natural disasters and the adverse functioning of the economy in general.

Regarding risk management disclosures Table 5 (Panel B) documents that firms disclose more financial risk mitigation strategies than non-financial risks, which may be related to the fact that they develop specific risk management initiatives more frequently for this type of risk and comply with the more specific requirements proposed by regulation. However, when we examine the year variation (Table 5, Panel B) we can see that firms from 2007 to 2011, start to give more attention to non-financial risk management mitigation strategies. They improved significantly (p-value<0.05) operational (Δ=3.1) and integrity (Δ=1.9) risk mitigation strategies.

Finally, disclosure on "risk factors" and "risk management" are higher than those on "compliance of risk management systems". This finding contradicts Linsley and Shrives (2006) that observed a greater dominance of disclosures of the latter type among UK firms. However, disclosures on "compliance of risk management systems" have increased significantly (p-value<0.01) from 2007 to 2011, basically due to integrity risk (Δ=19.2). These findings can be explained on the light of after the recent global financial crisis European listed firms have to fulfil the corporate governance codes requirements regarding the disclosure on the existence and effectiveness of proper internal control and risk management systems.

Table 5 (Panel C) shows that, in both years, quantified RR (2007=1,204; 2011=1,505) are lower than non-quantified RR (2007=7,681; 2011=10,885).

Data from year variation confirm that the variation of non-quantified RR is more salient in financial risk (Δ=17.3; p-value<0.05), operational risk (Δ=25.2; p-value<0.05), strategic risk (Δ=14.5; p-value<0.05), and integrity risk (Δ=25.9; p-value <0.001). These findings reflect that RR is generally difficult to quantify. This is less evident among

financial risks, compared to non-financial risk, basically because regulation requires the quantification of financial risk exposures. However, there is prevalence on non-quantified RR and this may be indicative that managers, even if they can quantify the information, choose not to do so in order to avoid disclosing proprietary information (Jorgensen and Kirschenheiter, 2003; Dobler, 2008; Dobler, et al., 2011).

Table 5 (Panel D) shows that, in both years, RR without an impact (2007=4,995; 2011=6,860) are higher than RR with an impact (2007=3,890; 2011=5,530).

The difference between RR with a negative and positive impact is only statistically significant (p-value<0.05) in the year 2011. Moreover, the difference between RR with and without an impact is only statistically significant (p-value<0.05) in the year 2007.

Overall, firms choose to disclose risk information without an impact, basically financial risks (2007=-6.5; 2011=-6.2) and integrity risks (2007=-7.5; 2011=-5.9). However, when they disclose risk information with an impact they opt to emphasize bad news. This is more salient in 2011 regarding non-financial risks (IPTR=-3.4; IR=-2.1; SR=-3). These results contradict those obtained by Beretta and Bozzolan (2004), in which the good news predominated over the bad ones and are more in agreement with the results from Oliveira et al. (2011), where there were no significant differences between the disclosure of good and bad news. The results of 2011, in the disclosure of non-financial risks, may favour the thesis of reputational incentives for managers to disclose bad news during periods of financial distress.

Table 5 (Panel E) shows that, in both years, backward-looking RR (2007=2,683; 2011=3,750) are higher than forward-looking RR (2007=1,584; 2011=1,868). The differences are statistically significant (p-value<0.01), basically in financial risks (mean value in 2007=-11.9; mean value in 2011= -10.9).

In both years, the financial risks (2007=-3.5; 2011=-4.7) and integrity risks (2007=-6.7; 2011=-6) are more often disclosed without time orientation. On the other hand, the operational risks (2007=4.2; 2011=2.6) and strategic risks (2007=3.6; 2011=2.3) are more often disclosed with time orientation.

Data from year variation corroborate these findings (Table 5, Panel E). From 2007 to 2011, firms opt to disclose RR without time orientation (mean value=58.2; p-value< 0.001). When risk information is disclosed with time orientation, firms opt to disclose backward-looking RR (mean-value=28.8; p-value<0.05). Because forward-looking RR are more commercially sensitive, findings seem to indicate that managers avoid this kind of disclosures to reduce potential costs associated with future litigations.

Table 5 (Panel F) documents that in both years the differences of RR among the four categories of informative content are statistically significant (p-value<0.001) in all risk categories.

In both years RR are mainly of low informative content (2007=105.5; 2011=144.7). However, when we analyse each risk category we conclude that financial risks (2007=59.2; 2011=68.4) and integrity risks (2007=23.3; 2011=44.6) are those that present higher levels of RR with low informative content. They include disclosures regarding how risks are mitigated and those related to the compliance of internal control and risk management systems. Among non-financial risks, the only exceptions are operational risks (2007=28; 2011=38) and strategic risks (2007=23.4; 2011=28.5). They are often of good informative content.

The year variation was statistically significant in the following categories: good (Δ=21.9; p-value<0.05), moderate (Δ=28; p-value<0.01), and low (Δ=39.1; p-value<0.001).

These results seem to support the criticisms reported in prior literature regarding the low quality of RR (Solomon et al., 2000; Beretta and Bozzolan, 2004; Lajili and Zéghal, 2005; Linsley and Shrives, 2006). However, it is clear that in the sample firms, the salience of RR with low informative content is due to a substantial prevalence of disclosures on compliance internal control and risk management systems. They are reported without quantification, impact and time orientation.

Table 5 (Panel G) indicates that in both years the level of RR at each location of the annual report is significantly (p-value<0.001) different. Results are consistent in all risk categories.

Overall, risk is disclosed in the risk sections of the Management Report (2007=114.3; 2011=171.4). Financial risks (2007=36.1; 2011=41.6), operational risks (2007=31.2; 2011=52.9), integrity risks (2007=12.7; 2011=28.5), and strategic risks (2007=30.4; 2011=41.7) are those more often disclosed in the risk sections of the Management Report. This corroborates Dobler et al. (2011), who analyzed only the disclosures made in the management report and the notes, and concluded that, with the exception of UK firms, most disclosures were made in the management report. The second location of the annual report with more risk information is the Notes to Financial Statements (2007=67.8; 2011=92.8). Predominantly, financial risks are often disclosed in the Notes to Financial Statements (2007=57.7; 2011=75). On the other hand, integrity risks are also disclosed in the Corporate Governance report (2007=13.7; 2011=22.9).

5.2. Regression tests

Table 6 presents the descriptive statistics for the dependent, independent and control variables. On average, firms disclose 287.50 RR sentences. They disclose more non-financial risk information (mean value = 175.61) than financial risk information (mean

value = 111.89). Table 6 also indicates that firms tend to inform more about their risk factors and exposures (mean value = 186.01) than risk management activities (mean value = 50.45) and information about compliance of risk management systems (mean value = 51.04).

(insert Table 6)

Table 7 shows the correlation matrix. The low values of the correlation coefficients among independent/control variables and the Value Inflated Factors (VIF<10) indicate that collinearity problems are minimal.

(insert Table 7)

Table 8 reports the results on hypothesis H1 (model 1-9) and H2 (model 10), testing in which way country-level institutional influences RR practices.

(insert Table 8)

The assumptions underlying the regression models were tested for autocorrelation, multicollinearity, heteroscedasticity, outliers and influential observations, and the normality of residuals. Standard errors are heteroskedasticity-adjusted and clustered at the firm level. The Kolmogorov-Smirnov Lilliefors test suggested that the raw dependent variables and the continuous independent/control variables were not distributed normally. Therefore, before running the regression models, the dependent variables and continuous independent/control variables were transformed to normal scores using Blom's transformation (Cooke, 1998).

Results indicate that all regression models for RR (model 1-9) are statistically significant (p-value<0.01). In model 1 we only measure the relationship between firm characteristics and RR. In the other models (model 2-8) we assessed the direct effect of each country-level institutional force on RR. In these models the explanatory powers (adjusted-R^2 varies between 41.1% and 46.7%) are higher than the adjusted-R^2 in model

1 (39%). RR is associated positively with each country-level institutional force (p-value<0.01). In model 9 we re-run the regression using the variable "Law & Democracy". Findings remained unchanged and RR is associated positively with "Law & Democracy" (p-value<0.01). Hypothesis H1 is supported. The country-level institutional forces influence RR. Firms operating in more democratic countries, with stronger legal systems, better enforcement systems and higher levels of press freedom of expression disclose more RR.

Results also indicate that RR is associated positively (p-value<0.01) with size, which confirms prior literature (Beretta and Bozzolan, 2004; Lajili and Zéghal, 2005; Mohobbot, 2005; Linsley and Shrives, 2006; Abraham and Cox, 2007; Amran et al., 2009). Larger firms disclose more RR to reduce agency costs (Jensen and Meckling, 1976) or even political costs associated with their higher public visibility (Watts and Zimmerman 1978).

Findings reveal that RR is associated negatively with growth (p-value<0.01). This corroborates Fukukawa and Kim (2017) arguments that states that fast-growing firms are riskier. If their internal controls are weakened by these growing opportunities, in periods of financial distress, managers may have opportunistic incentives to avoid risk disclosures to retain their jobs and incentive pay (Healy and Palepu, 2001).

However, the variables leverage, profitability, governance performance, complexity, business risk, cross-listing, auditing firm and industry are not statistically significant.

Consistent with institutional theory, the stronger are the regulative structures and the institutional governance structures within a country (Scott, 1995), the greater is the perceived legitimacy of its governance (Judge et al., 2008). Investors and relevant stakeholders are attracted by this perceived legitimacy, mainly at the beginning of

periods of economic downturns characterized by the early signs of potential breakdowns. In these periods investor's needs are more pronounced (Miihkinen, 2013) and they know that countries with stronger institutional forces will function as a safe harbour, because they know that these legitimate country-level institutional forces compel firms' RR behaviour, and will provide the appropriate flow of information they need. More precisely, social actors (firms) operating in social systems (countries) with greater perceived legitimacy of their governance are motivated to report more risk information to both reduce agency costs and manage their legitimacy, because they are compelled by the institutional forces within a country to behave that way.

Table 8 (model 10) reports the results on hypothesis H2, testing in which way country-level institutional forces moderate the relationship between RR and firm characteristics.

Results indicate that the regression model for RR is statistically significant (p-value<0.01). Findings also indicate that firms operating in countries with stronger Law & Democracy report more risk information than those operating in countries with weaker Law & Democracy (p-value<0.01). Table 8 shows that larger, leveraged and less complex firms disclose more risk information (p-value<0.05).

However, to test the moderating effect of the country-level institutional forces on the relationship between RR and firm characteristics our variables of interest are the interaction effects between country-level institutional forces and firm characteristics. Findings show that RR is only associated negatively with the interaction effect of country-level institutional forces and leverage (p-value<0.05). Hypothesis H2 is supported. The country-level institutional forces moderate the relationship between RR and firm characteristics. More specifically, even knowing that leveraged firms disclose more RR, this relationship is significantly weaker in countries with stronger institutional

forces (more democratic, with stronger legal systems, better enforcement systems and higher levels of freedom of expression) when compared to countries with weaker institutional forces. Leveraged firms operating in these countries disclose less risk information compared to those operating in countries with weaker institutional forces. Consistent with institutional theory, in countries with stronger institutional forces, investors and relevant stakeholders know that they have access to institutional mechanisms that allow them assess risk information by other means beyond annual reports (Leuz et al., 2004). On the other hand, in countries with weaker institutional forces, the positive relationship between leveraged firms and RR seems to be stronger. In these countries, the relevant audiences (investors and stakeholders) are expecting more opaque RR (Dhaliwal et al., 2012). At the beginning of periods of financial distress with preliminary warnings of potential breakdowns, these audiences privilege credible RR because they are more valuable and informative. Consequently, leveraged firms bet on more credible RR to improve their legitimacy through enhanced reputation.

5.3. Additional analysis: the direct/moderating effects per risk category

Additionally, we reran our models per risk category: financial risk, non-financial risk, risk factors, risk management, and compliance of risk management systems. Table 9 shows the results of the direct effect of the country-level institutional forces on RR. It indicates that these direct effects (regarding the variable Law & Democracy) only occur in the disclosure of financial risk (p-value<0.01), non-financial risk (p-value<0.01), risk factors (p-value<0.01), and risk management (p-value<0.05).

(insert Table 9)

Table 10 shows the results of the moderating effect of the country-level institutional forces on the relationship between RR and firm characteristics. It indicates

that this moderating effects (observed among leveraged firms) only occurs in the disclosure of financial risk (p-value<0.01), risk factors (p-value<0.05), and compliance of risk management systems (p-value<0.01).

(insert Table 10)

5.4. Robustness tests

We acknowledge that the small sample used in the present study is the major caveat for two main reasons: a) it may be overrepresented by certain countries[i]; and b) a small sample may not be enough to capture variations in country-level institutional forces. Regarding the first issue, our sample is composed mainly by firms operating in France and Germany. In order to see if our findings are not driven by a country effect we reran our regression models after dropping those firms operating in each of these two countries. Untabulated results[ii] confirm that Table 8 results remain unchanged for the direct effects and the moderating effects. After dropping the French and the German firms, results indicate that in more democratic countries, with stronger legal systems, better enforcement mechanisms, with higher levels of freedom of expression firms disclose more risk information. It also shows that in countries with stronger institutional forces (more democratic, with stronger legal systems, better enforcement systems and higher levels of freedom of expression) the positive relationship between leveraged firms and RR is weaker.

To address the second issue we used another sample of 50 non-finance European firms, randomly selected from the constituents list of the Standards & Poors Europe 350[iii] and choose another major event around which we analyse risk reporting practices: the year before (2018) and the year during (2020) the COVID-19 pandemic. Risk disclosures were extracted from the “Outlook” section and “Risk factors” sections of the Management report, the “Corporate Governance” report, and the “Notes”. We used the

number of words[iv] as the unit of analysis delivered automatically by the DICTION software. Then we reran Eq. 1 and Eq.4 to see whether under a different research setting and a different coding instrument (word count) our findings will be held. Untabulated findings[v] indicate that around this major distressful event (Covid-19 pandemic) RR is associated positively with "Law&Democracy" (p-value<0.05). This confirms that firms operating in countries with stronger institutional forces present higher levels of RR. Additionally, it also shows that leveraged firms disclose significantly more risk information (p-value<0.01) and RR is associated negatively with the variable of interest "High Law & Democracy*Leverage" (p-value<0.01). More specifically, the positive relationship between leveraged firms and RR is significantly weaker in countries with stronger institutional forces (more democratic, with stronger legal systems, better enforcement systems and higher levels of freedom of expression). This corroborates that among European firms and around another major event the country-level institutional forces continue to play a moderating role on the relationship between RR and firm characteristics.

6. Conclusions

This paper examines to what extent the country-level institutional forces influence (directly) RR and in which way these country-level institutional forces moderate the relationship between RR and firm-level characteristics. Through the lens of institutional theory, our findings corroborate the argument that variations in RR are explained by country-level institutional forces. Firms operating in more democratic countries, with stronger legal systems, better enforcement mechanisms, with higher levels of freedom of expression or even with specific accounting regulation characteristics disclose more RR. Investors and relevant stakeholders are attracted by the perceived legitimacy of

strong corporate governance structures within a country. In these countries, investors can more easily amplify their concerns, rely on investor protection regulations, and influence regulations to ensure the proper flow of risk information to support their investment decisions. They know that firms (social actors) operating in these countries (social systems) will behave to conform to societal norms in order to prosper (De Villiers and Van Staden, 2006). These regulative structures and institutional governance structures within each social system compel social actors to behave according to the perceived legitimacy of countries' corporate governance (Judge et al., 2008).

Additionally, findings also show that the relationship between RR and firm's characteristics (mainly among leveraged firms) is weaker among countries with stronger institutional forces. In these countries, investors through the use of more effective monitoring mechanisms can assess risk information by other means beyond annual reports (Leuz et al., 2004).

We also find that between 2007 and 2011, operational, integrity and financial risk disclosures increased. We also found that in both years firms disclosed more risk factors than risk management or compliance disclosures. However, in terms of year variation, firms disclosed more risk factors (basically financial, operational and strategic risks). It seems that during the period of analysis firms created awareness for the more impactful risks and therefore more often disclosed. The reinforcement of Corporate Governance codes also had an impact on RR, because the compliance of risk management disclosures (associated with integrity risks) have also increased.

The patterns of RR continue to be similar to those found in prior literature. Overall, findings indicate that RR are devoided of impact and time-orientation. Those with an impact and time-orientation are mainly backward-looking, focused on negative news and contain low information content. However, there are some exceptions.

Consistent with Ntim et al. (2013), firms disclosed more operational and strategic risk that are mainly forward-looking, focused on positive news, and with a moderate and good informative content. These risks are mainly located on the risk sections of the Management Reports and are disclosed on a voluntary basis (Elshandidy and Neri, 2015). Financial risk are mainly disclosed on the Notes to financial statements, have a mandatory nature, and findings indicate that they are presented with low informative content, consistent with a ticking-box approach.

These findings have several implications for investors and regulators in Europe. For investors, findings provide evidence that despite the quality of RR did not improve during the period of analysis more informed investment decisions can be determined by country-level institutional forces in which firms operate. For regulators, such as The European Securities and Markets Authority (ESMA) findings are crucial to stimulate further efforts to improve RR regulations.

The present study presents some limitations regarding the coding instrument and research setting. Further studies can adopt automated content analysis, which is less labour-intensive, less time-consuming and more objective. Future studies should also incorporate a wider range of European firms, countries and time-frame of analysis. Other independent and control variables related to corporate governance issues should also be considered.

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Table 1. Research on the impact of periods of financial distress on risk reporting

Authors	**Sample**	**Findings**
Elshandidy and Shrives (2016)	143 German non-financial listed firms. Period: 2005-2009	Before the GFC (Global Financial Crisis 2007/8) firms tend disclose less. During and after they provide less good news and more bad news.
Ntim et al. (2013)	50 South African non-financial listed firms. Period: 2002-2011	During the GFC firms disclose more operational and strategic risks. RR is lower before the GFC compared to during and after.
Elshandidy and Neri (2015)	290 UK and 88 Italian non-financial listed firms. Period: 2005-2010	UK firms reveal more voluntary RR during and after the GFC. Italian firms comply significantly more with risk regulation and reveal more voluntary RR during and after the GFC
Martikainen et al. (2015)	25 non-financial Finnish listed companies. Period: 2005-2008	RR of high quality and associated with board characteristics.
Miihkinen (2013)	386 Finnish listed firm-year observations. Period: 2006-2009	RR is useful to investors.
Sempér and Beltrán (2016)	30 Spanish non-financial listed firms. Period: 2006-2011	The degree of RR is higher for a crisis period than for a non-crisis period. No differences found among quality of risk information
Elshandidy et al. (2015)	219 German, 339 UK, and 320 US non-financial listed firms. Period: 2005-2010	Firms tend to comply more (less) with risk regulation post (pre)-crisis relative to during
Grecco (2012)	20 Italian non-financial listed firms. Period: 2003,2005, 2008	The number of RR improve significantly between 2004-2008
Probohudono (2013)	60 manufacturing listed firms from Indonesia, Malaysia, Singapore and Australia. Period: 2007-2009	Low level of RR over the entire GFC
Elshandidy et al. (2018)	100 Chinese non-financial listed firms. Period: 2013-2015	Chinese firms, over the period of the GFC, are likely to provide non-relevant risk information to the market.

Table 2. Risk reporting studies using cross-country research settings

Authors	Sample	Period	Country
Dobler et al. (2011)	160 manufacturing listed firms	2005	United States of America, Canada, United Kingdom, and Germany
Savvides and Savvidou (2012)	30 banks	2008	United States of America, Canada, United Kingdom, Germany, Japan, Italy, Netherlands, France, Greece, and Cyprus
Probohudono et al. (2013)	60 manufacturing listed firms	2007-2009	Indonesia, Malaysia, Singapore and Australia
Barakat and Hussainey (2013)	85 banks	2008-2010	European countries
Abdallah et al. (2015)	424 financial/non-financial listed firms	2008	Gulf Cooperation Council countries
Elshandidy and Neri (2015)	378 non-financial listed firms	2005-2010	United Kingdom and Italy
Elshandidy et al. (2015)	878 non-financial listed firms	2005-2010	Germany, United Kingdom, and United States of America
Moumen et al. (2015)	809 non-financial listed firms	2007-2009	Middle East and North African countries
Moumen et al. (2016)	320 non-financial listed firms	2007-2009	Middle East and North African countries
Oliveira et al. (2018)	60 non-financial listed firms	2011	Portugal and Spain

Table 3. Sample characteristics

Panel A: Sample Selection	2007	2010	Firm-year observations
Firms included in the Euro Stoxx-50 index at February 2013	50	50	100
- Firms that belong to banking industry	-7	-7	-14
- Firms that belong to insurance industry	-5	-5	-10
- Firms that belong to countries with a Common-law legal system	-1	-1	-2
Sample	37	37	74

Panel B: Firms per country	Euro Stoxx-50	%	N	%
Belgium	1	2.0	1	2.7
Finland	1	2.0	1	2.7
France	18	36.0	15	40.5
Germany	13	26.0	10	27.0
Italy	5	10.0	2	5.4
Irland	1	2.0	0	0.0
Luxembourg	1	2.0	1	2.7
Netherlands	4	8.0	3	8.1
Spain	6	12.0	4	10.8
Total	50	100.0	37	100.0

Panel C: Industries	N	%
Basice Materials	4	10.8
Consumer Goods	8	21.6
Consumer Services	3	8.1
Healthcare	2	5.4
Industrials	6	16.2
Oil&Gas	3	8.1
Technology	3	8.1
Telecommunications	3	8.1
Utilities	5	13.5
	37	100.0

Panel C: Cross-listing (at a U.S. stock exchange securities market)	N	%
Yes	14	37.8
No	23	62.2
	37	100.0

Table 4. Country institutional characteristics

	Voice and Accountability	Regulation Quality	Rule of Law	Control of Corruption	Press Freedom	Efficacy of Corporate Boards	Protection of Minority Interests
Panel A: 2007							
Belgium	93.75	91.26	89.00	89.81	1.50	5.41	5.61
Finland	96.63	93.20	98.56	92.23	1.50	5.67	5.88
France	91.35	86.89	90.43	99.51	9.75	5.37	5.10
Germany	93.27	94.66	95.22	91.75	5.75	5.69	6.14
Italy	86.06	78.64	64.11	67.48	11.25	4.32	3.97
Luxembourg	99.52	97.09	94.74	94.17	1.50	5.26	5.04
Netherlands	99.04	97.57	95.69	97.09	3.50	5.62	5.58
Spain	87.02	86.41	86.12	83.98	10.25	5.00	4.61
One-way ANOVA - F statistic	503.25 ***	63.30 ***	359.45 ***	165.46 ***	84.33 ***	175.63 ***	54.67 ***
Panel B: 2011							
Belgium	92.96	86.73	89.67	91.94	-2.00	5.78	5.05
Finland	96.24	97.63	100.00	99.05	-10.00	6.07	6.07
France	88.73	84.83	90.14	90.52	9.50	5.58	4.54
Germany	93.43	92.89	91.55	93.36	-3.00	5.65	4.71
Italy	75.12	75.36	63.38	63.51	19.67	3.98	3.48
Luxembourg	99.06	98.58	97.65	98.10	-7.00	6.08	5.50
Netherlands	96.71	97.16	97.18	97.16	-9.00	5.93	5.33
Spain	83.10	81.52	85.92	82.46	9.75	4.89	3.72
One-way ANOVA - F statistic	206.86 ***	88.00 ***	4,059.61 ***	1,131.65 ***	65.15 ***	7,007.94 ***	1,617.48 ***

These measures of the country-level institutional forces were extracted from: Worldwide Governance Indicator, provided by the World Bank (Voice and Accountability, Regulatory Quality, Rule of Law, and Control of Corruption), Reporters Without Borders (Press Freedom), Global Competitiveness Index, provided by the World Economic Forum (Efficacy of Corporate Boards, Protection of Minority Sharedolders' Interests).

Table 5. Risk reporting categories

	Total score	RR	FR	Non-financial risk				
				OR	ER	IPTR	IR	SR
Panel A: Total score of RR (number of sentences)								
Year 2007		8,885	3,716	2,216	16	114	1,004	1,819
Year 2011		12,390	4,564	3,244	14	252	1,977	2,339
Year variation (2011-2007)		3,505	848	1,028	-2	138	973	520
Panel B: Type of RR (total score and mean values per risk category)								
Year 2007:	*8,885*	*240.2*	*100.5*	*59.9*	*0.4*	*3.1*	*27.2*	*49.2*
Risk factors	5,704	154.2	50.8	52.3	0.2	2.1	4.5	44.4
Risk management	1,725	46.6	31.9	7.6	0.2	1.0	1.1	4.8
Compliance	1,456	39.4	17.8	0.0	0.0	0.0	21.6	0.0
ANOVA (GLM) - F statistic		76.0 ***	23.4 ***	51.4 ***	0.7	13.0 ***	48.3 ***	50.8 ***
Year 2011:	*12,390*	*334.9*	*123.4*	*87.7*	*0.4*	*6.8*	*53.4*	*63.2*
Risk factors	8,061	217.9	68.0	77.0	0.4	4.4	9.7	58.3
Risk management	2,008	54.3	33.4	10.7	0.0	2.4	3.0	4.9
Compliance	2,321	62.7	21.9	0.0	0.0	0.0	40.8	0.0
ANOVA (GLM) - F statistic		54.7 ***	58.2 ***	33.7 ***	2.6	12.9 ***	26.0 ***	50.5 ***
Year variation (2011-2007):	*3,505*	*94.7 ******	*22.9 ***	*27.8 ***	*0.0*	*3.7 ***	*26.2 ******	*14.0 ***
Δ Risk factors	2,357	63.7 **	17.2 ***	24.7 *	0.2	2.3 *	5.2 *	13.9 *
Δ Risk management	283	7.7	1.5	3.1 *	-0.2	1.4 *	1.9 *	0.1
Δ Compliance	865	23.3 ***	4.1 *	0.0	0.0	0.0	19.2 **	0.0
Panel C: Nature of RR (total score and mean values per risk category)								
Year 2007:								
Quantitative	1,204	32.5	20.8	7.8	0.0	0.0	0.5	3.4
Qualitative	7,681	207.6	79.6	52.1	0.4	3.1	26.7	45.7
T-test		-9.5 ***	-6.4 ***	-7.0 ***	-1.7	-5.1 ***	-7.9 ***	-7.2 ***
Year 2011:								
Quantitative	1,505	40.7	26.5	10.4	0.0	0.0	0.8	3.0
Qualitative	10,885	294.2	96.9	77.3	0.4	6.8	52.6	60.2
T-test		-10.9 ***	-10.0 ***	-7.2 ***	-1.6	-4.2 ***	-7.7 ***	-7.9 ***
Year variation (2011-2007):								
Δ Quantitative	301	8.1 *	5.6 *	2.6	0.0	0.0	0.4	-0.4
Δ Qualitative	3,204	86.6 ***	17.3 *	25.2 *	-0.1	3.7 *	25.9 ***	14.5 *

F statistic (Greenhouse-Geisser correction) and T-test for paired samples significant ***0.001, **0.01, and *0.05 level (two-tailed).
Definitions: RR - risk reporting; FR - financial risk (interest rate, exchange rate, commodities, liquidity and credit); OR - operational risk (efficiency and performance, product developement, supply, inventory breaks and obsolescence, health and safety at work, environmental, brand eroson, and customer satisfaction); ER - empowerment risk (outsourcing, communication, performance incentives and management and leadership); IPTR - Information processing and technology risk (integrity of systems, access, availability, and infrastructure); IR - integrity risk (fraud of employees and managers, illicit acts, and reputation); SR - strategic risk (trends of the external environment, industry, business portfolio, price, competition, company value, performance, regulation, sovereignty, and politicians).

Table 5. Risk reporting categories (*to be continued*)

	Total score	RR	FR	Non-financial risk				
				OR	ER	IPTR	IR	SR
Panel D: Impact of RR (total score and mean values per risk category)								
Year 2007:								
With impact (positive and negative)	3,890	105.1	25.7	43.5	0.1	1.6	2.8	31.4
Positive impact	1,775	48.0	13.6	19.2	0.1	0.4	0.6	14.0
Negative impact	2,115	57.2	12.1	24.3	0.0	1.2	2.3	17.4
Without impact (Neutral)	4,995	135.0	74.7	16.4	0.3	1.5	24.3	17.8
T-test (Positive - Negative)		-1.1	1.1	-0.8	1.0	-2.7 *	-2.1 *	-1.0
T-test (Impact - No impact)		-2.3 *	-6.5 ***	4.0 ***	-0.6	0.3	-7.5 ***	2.7 *
Year 2011:								
With impact (positive and negative)	5,530	149.5	36.1	60.7	0.2	3.0	6.2	43.3
Positive impact	2,128	57.5	17.7	24.2	0.1	0.5	1.2	13.9
Negative impact	3,402	92.0	18.5	36.4	0.2	2.5	5.0	29.4
Without impact (Neutral)	6,860	185.4	87.2	27.0	0.2	3.8	47.3	19.9
T-test (Positive - Negative)		-2.4 *	-0.4	-1.5	-1.3	-3.4 **	-2.1 *	-3.0 *
T-test (Impact - No impact)		-1.6	-6.2 ***	3.4 **	0.2	-0.7	-5.9 ***	3.3 **
Year variation (2011-2007):								
Δ With impact (positive and negative)	1,640	44 **	10 ***	17	0	1 *	3	12 *
Δ Positive impact	353	10	4 **	5	0	0	1	0
Δ Negative impact	1,287	35 *	6 **	12	0	1 *	3	12 *
Δ Without no impact (Neutral)	1,865	50 ***	12	11 **	0	2	23 ***	2
Panel E: Time orientation of RR (total score and mean values per risk category)								
Year 2007:								
With time orientation (Future and Past)	4,267	115.3	38.5	39.1	0.2	0.9	3.4	33.4
Future	1,584	42.8	4.6	19.1	0.1	0.3	0.7	18.1
Past	2,683	72.5	33.8	20.0	0.1	0.6	2.7	15.3
Without time orientation	4,618	124.8	62.0	20.8	0.3	2.2	23.8	15.8
T-test (Future-Past)		-3.3 **	-11.9 ***	-0.2	-0.6	-1.5	-1.8	0.6
T-test (Time orientation -No time orientation)		-1.0	-3.5 **	4.2 ***	-0.4	-3.5 **	-6.7 ***	3.6 **
Year 2011:								
With time orientation (Future and Past)	5,618	151.8	48.1	55.1	0.2	2.0	7.0	39.5
Future	1,868	50.5	4.5	22.4	0.0	0.2	1.6	21.7
Past	3,750	101.4	43.5	32.7	0.2	1.8	5.4	17.8
Without time orientation	6,772	183.0	75.3	32.5	0.1	4.8	46.5	23.8
T-test (Future-Past)		-3.5 **	-10.9 ***	-1.1	-1.2	-2.2 *	-2.3 *	0.9
T-test (Time orientation -No time orientation)		-2.1 *	-4.7 ***	2.6 *	0.8	-3.0 **	-6.0 ***	2.3 *
Year variation (2011-2007):								
Δ With time orientation (Future and Past)	1,351	36.52 *	9.59 *	16.06	0.08	1.11	3.57 *	6.11
Δ Future	284	7.68	-0.08	3.35	0	0	0.89 *	3.63
Δ Past	1,067	28.84 *	9.67	12.7	0.11	1.19	2.68	2.48
Δ Without time orientation	2,154	58.22 ***	13.33 *	11.73 **	0	2.62 **	22.73 ***	7.95 *

F statistic (Greenhouse-Geisser correction) and T-test for paired samples significant ***0.001, **0.01, and *0.05 level (two-tailed).
Definitions: RR - risk reporting; FR - financial risk (interest rate, exchange rate, commodities, liquidity and credit); OR - operational risk (efficiency and performance, product developement, supply, inventory breaks and obsolescence, health and safety at work, environmental, brand eroson, and customer satisfaction); ER - empowerment risk (outsourcing, communication, performance incentives and management and leadership); IPTR - Information processing and technology risk (integrity of systems, access, availability, and infrastructure); IR - integrity risk (fraud of employees and managers, illicit acts, and reputation); SR - strategic risk (trends of the external environment, industry, business portfolio, price, competition, company value, performance, regulation, sovereignty, and politicians).

Table 5. Risk reporting categories (*to be continued*)

	Total score	RR	FR	Non-financial risk				
				OR	ER	IPTR	IR	SR
Panel F: Informative content of RR (total score and mean values per risk category)								
Year 2007:								
High	816	22.1	11.8	7.1	0.0	0.0	0.5	2.7
Good	2,749	74.3	20.1	28.0	0.1	0.8	1.9	23.4
Moderate	1,415	38.2	9.3	13.1	0.1	1.0	1.5	13.3
Low	3,905	105.5	59.2	11.7	0.2	1.4	23.3	9.8
ANOVA (GLM) - F statistic		42.2 ***	38.2 ***	14.7 ***	0.6 ***	7.4 ***	55.8 ***	17.6 ***
Year 2011:								
High	1,028	27.8	15.7	9.2	0.0	0.0	0.5	2.4
Good	3,560	96.2	24.3	38.0	0.1	1.1	4.2	28.5
Moderate	2,449	66.2	15.0	22.7	0.2	2.7	4.1	21.5
Low	5,353	144.7	68.4	17.9	0.0	3.0	44.6	10.8
ANOVA (GLM) - F statistic		32.4 ***	58.8 ***	11.8 ***	2.6	8.9 ***	39.3 ***	13.4 ***
Year variation (2011-2007):								
Δ High	212	5.73	3.89	2.05	0	0.03	-0.03	-0.22
Δ Good	811	21.92 *	4.13	10	0	0.38	2.36	5.06
Δ Moderate	1,034	27.95 **	5.7 *	9.6 *	0.16	1.71 *	2.63 *	8.17 *
Δ Low	1,448	39.14 ***	9.19	6.13 **	-0.21	1.62 *	21.35 ***	1.05
Panel G: Location of RR (total score and mean values per risk category)								
Year 2007:								
MD&A	5,527	149.4	38.4	50.3	0.4	2.7	12.7	45.0
Risk sections	4,230	114.3	36.1	31.2	0.3	2.7	12.7	30.4
Outlook section	1,297	35.1	2.3	18.1	0.1	0.0	0.0	14.6
Corporate Governance Report	850	23.0	4.4	1.2	0.1	0.4	13.7	3.4
Notes to Financial Statements	2,508	67.8	57.7	8.4	0.0	0.0	0.8	0.9
ANOVA (GLM) - F statistic		34.8 ***	22.5 ***	48.2 ***	1.8	14.5 ***	10.9 ***	47.1 ***
Year 2011:								
MD&A	7,779	210.2	44.0	71.0	0.4	6.3	28.5	60.0
Risk sections	6,341	171.4	41.6	52.9	0.4	6.3	28.5	41.7
Outlook section	1,438	38.9	2.4	18.1	0.0	0.1	0.0	18.3
Corporate Governance Report	1,177	31.8	4.4	1.5	0.0	0.5	22.9	2.6
Notes to Financial Statements	3,434	92.8	75.0	15.2	0.0	0.0	2.0	0.6
ANOVA (GLM) - F statistic		45.9 ***	56.1 ***	39.2 ***	2.6	13.3 **	11.2 ***	57.9 ***
Year variation (2011-2007):								
Δ MD&A	2,252	60.86 ***	5.56	20.76 **	0	3.62 *	15.86 ***	15.05 *
Δ Risk sections	2,111	57.06 ***	5.51	21.7 ***	0.06	3.57 *	15.86 ***	11.35 *
Δ Outlook section	141	3.81	0.06	0.06	-0.05	0.05	0	3.71
Δ Corporate Governance Report	327	8.84	0	0.27	-0.05	0.11	9.27 *	-0.76
Δ Notes to Financial Statements	926	25.03 *	17.35 *	6.76	0	0	1.16	-0.24

F statistic (Greenhouse-Geisser correction) and T-test for paired samples significant ***0.001, **0.01, and *0.05 level (two-tailed).

Definitions: RR - risk reporting; FR - financial risk (interest rate, exchange rate, commodities, liquidity and credit); OR - operational risk (efficiency and performance, product developement, supply, inventory breaks and obsolescence, health and safety at work, environmental, brand eroson, and customer satisfaction); ER - empowerment risk (outsourcing, communication, performance incentives and management and leadership); IPTR - Information processing and technology risk (integrity of systems, access, availability, and infrastructure); IR - integrity risk (fraud of employees and managers, illicit acts, and reputation); SR - strategic risk (trends of the external environment, industry, business portfolio, price, competition, company value, performance, regulation, sovereignty, and politicians).

Table 6. Descriptive statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Risk disclosure categories:					
Risk reporting	74	68.00	743.00	287.50	149.69
Financial risk	74	25.00	304.00	111.89	55.49
Non-financial risk	74	0.00	569.00	175.61	112.48
Type of risk disclosures:					
Risk factors	74	28.00	687.00	186.01	112.88
Risk management	74	9.00	203.00	50.45	32.70
Compliance of risk management systems	74	0.00	285.00	51.04	41.60
Voice and Accountability	74	75.83	99.52	91.21	4.36
Regulation Quality	74	77.99	99.04	89.37	5.09
Rule of Law	74	62.20	100.00	90.33	7.28
Control of Corruption	74	64.29	99.51	90.44	6.41
Press Freedom	74	0.00	15.00	7.95	4.42
Efficacy of Corporate Boards	74	3.91	5.72	5.15	0.44
Protection of minority interests	74	3.39	6.07	5.06	0.63
Law & Democracy	74	255.43	374.49	337.16	23.63
Size	74	3,088.87	195,145.00	62,782.62	46,630.66
Leverage	74	0.28	57.02	25.83	13.06
Profitability	74	0.01	0.20	0.06	0.05
Governance Performance	74	14.55	99.25	66.78	19.59
Complexity	74	1.00	10.00	4.74	2.24
Growth	74	-18.96	226.86	9.32	26.72
Business Risk	74	62.48	13,023.09	1,901.82	2,508.29
			N	Percentage	
Auditing Firm	Dummy = 1		68	92%	
	Dummy = 0		6	8%	
Cross-Listing	Dummy = 1		28	38%	
	Dummy = 0		46	62%	
Industry	Dummy = 1		46	62%	
	Dummy = 0		28	38%	

Definitions: Law & Democracy (Principal Component Analysis of "Voice & Accountability", "Reporting Quality", "Rule of Law", "Control of Corruption", "Press Freedom", "Efficacy of Corporate Boards", and "Protection of Minority Shareholder's interests"); size (total assets); leverage (total debt to total assets); profitability (return on assets = earnings before tax to total assets); Governance Performance (ESG Governance Pillar Scores extracted from ASSET4); Complexity (number of segments the firm); Growth (mean of sales growth rate in the last five years); Business risk (five-year standard deviation of EBIT); Auditing firm (=1 if the firm is audited by a Big4 auditing firm, =0 otherwise); Cross-listing (=1 if the firm is listed in a US stock exchange securities regulated market, =0 otherwise); Industry (=1 if the firm is a manufacturing firm, =0 otherwise).

Table 7. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Panel A: Pearson correlations for continuous variables																			
(1) Risk Reporting	1.00																		
(2) Voice & Accountability	0.11	1.00																	
(3) Regulatory Quality	0.29 *	0.85 **	1.00																
(4) Rule of Law	0.17	0.84 **	0.80 **	1.00															
(5) Control of Corruption	0.15	0.92 **	0.81 **	0.97 **	1.00														
(6) Press Freedom	-0.13	-0.75 **	-0.85 **	-0.53 **	-0.59 **	1.00													
(7) Efficacy of Corporate Boards	0.09	0.84 **	0.74 **	0.75 **	0.80 **	-0.64 **	1.00												
(8) Protection of Minority Interests	0.16	0.75 **	0.75 **	0.75 **	0.75 **	-0.65 **	0.93 **	1.00											
(9) Law & Democracy	0.19	0.95 **	0.93 **	0.94 **	0.96 **	-0.77 **	0.84 **	0.81 **	1.00										
(10) Total Assets	0.51 **	-0.19	0.05	-0.16	-0.21	-0.03	-0.12	-0.02	-0.12	1.00									
(11) Leverage	0.25 *	-0.17	-0.11	-0.07	-0.12	0.12	-0.10	-0.06	-0.12	0.44 **	1.00								
(12) ROA	-0.30 **	0.05	-0.01	0.02	0.05	-0.08	0.00	-0.01	0.04	-0.52 **	-0.56 **	1.00							
(13) Governance	0.03	0.09	0.19	0.01	0.02	-0.31 **	0.09	0.12	0.11	-0.02	-0.06	0.03	1.00						
(14) Number of Segments	0.11	-0.30 **	-0.13	-0.26 *	-0.31 **	0.14	-0.37 **	-0.34 **	-0.27 *	,254*	0.04	-0.25 *	0.13	1.00					
(15) 5Y Sales Annual Growth rate	-0.19	0.16	0.09	-0.01	0.00	-0.12	-0.03	-0.21	0.05	0.03	-0.03	0.01	-0.05	0.06	1.00				
(16) 5Y STD EBIT	0.17	-0.03	-0.01	-0.06	-0.08	-0.05	0.05	0.04	-0.04	0.45 **	0.22	-0.16	0.12	-0.03	0.02	1.00			
Panel B: Spearman correlations for categorical variables																			
(17) Auditing Firm	-0.14	-0.22	-0.09	-0.03	-0.07	0.29 *	-0.03	-0.22	-0.16	-0.21	-0.11	0.22	0.04	-0.05	-0.03	-0.02	1.00		
(18) US Listing	0.34 **	0.17	0.21	0.19	0.22	-0.24 *	0.07	0.09	0.20	0.21	-0.16	0.15	0.21	-0.07	-0.28 *	0.31 **	0.13	1.00	
(19) Industry	0.02	0.10	0.07	0.04	0.05	-0.01	0.09	0.04	0.07	-0.02	0.01	0.06	-0.07	-0.01	-0.06	0.07	0.18	-0.08	1.00

Correlation is significant at the **0.01 and *0.05 level (two-tailed).

Definitions:

- Dependent variable: Risk reporting.
- Independent and control variables: Law & Democracy (Principal Component of "Voice & Accountability", "Reporting Quality", "Rule of Law", "Control of Corruption", "Press Freedom", "Efficacy of Corporate Boards", and "Protection of Minority Shareholder's interests"); size (total assets); leverage (total debt to total assets); profitability (return on assets = earnings before tax to total assets); Governance Performance (ESG Governance Pillar Scores extracted from ASSET4); Complexity (number of segments the firm); Growth (mean of sales growth rate in the last five years); Business risk (five-year standard deviation of EBIT); Auditing firm (=1 if the firm is audited by a Big4 auditing firm, =0 otherwise); Cross-listing (=1 if the firm is listed in a US stock exchange securities regulated market, =0 otherwise); Industry (=1 if the firm is a manufacturing firm, =0 otherwise).

Table 8. Direct and moderating effects of country-level institutional forces

Independent and control variables	Predicted sign	Model 1 N=74	Model 2 N=74	Model 3 N=74	Model 4 N=74	Model 5 N=74	Model 6 N=74	Model 7 N=74	Model 8 N=74	Model 9 N=74	Model 10 N=74
Intercept		190.795 **	-763.004 **	-547.366 **	-272.322	-386.677 **	229.800 **	-518.715 ***	-230.591	-410.504 **	-0.997 ***
		(2,068)	(-2,451)	(-2,314)	(-1,539)	(-2,115)	(2,498)	(-2,899)	(-1,542)	(-2,051)	(-3,087)
Voice and Accountability	?		9.744 ***								
			(3,233)								
Regulation Quality	?			8.014 ***							
				(3,517)							
Rule of Law	?				4.656 ***						
					(3,243)						
Control of Corruption	?					5.789 ***					
						(3,767)					
Press Freedom	?						-6.139 **				
							(-2,005)				
Efficacy of Corporate Boards	?							120.876 ***			
								(4,367)			
Protection of minority interests	?								70.768 ***		
									(3,381)		
Law & Democracy	?									1.645 ***	
										(3,499)	
High Law & Democracy											0.507 ***
											(2,825)
Size	+	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.476 **
		(3,388)	(4,541)	(3,550)	(4,177)	(4,494)	(3,493)	(4,178)	(3,365)	(4,188)	(2,087)
High Law & Democracy*Size											0.220
											(0,756)
Leverage	?	0.602	1.157	1.109	0.772	0.883	0.755	1.276	1.098	0.966	0.315 **
		(0,467)	(1,012)	(0,953)	(0,635)	(0,737)	(0,624)	(1,085)	(0,917)	(0,823)	(2,215)
High Law & Democracy*Leverage											-0.634 **
											(-2,538)
Profitability	?	-239.927	-31.848	-94.654	-105.660	-82.185	-235.500	22.165	-99.236	-87.670	0.176
		(-0,547)	(-0,073)	(-0,213)	(-0,237)	(-0,185)	(-0,520)	(0,051)	(-0,225)	(-0,197)	(0,669)
High Law & Democracy*Profitability											-0.337
											(-0,890)
Governance Performance	?	0.310	0.059	-0.113	0.224	0.212	-0.081	0.070	0.030	0.045	0.007
		(0,550)	(0,107)	(-0,215)	(0,402)	(0,379)	(-0,162)	(0,123)	(0,056)	(0,083)	(0,082)
High Law & Democracy*Governance Performance											-0.095
											(-0,465)
Complexity	?	-7.647	-1.991	-3.527	-2.928	-2.188	-6.212	-2.358	-3.210	-2.558	-0.207 **
		(-1,427)	(-0,382)	(-0,710)	(-0,578)	(-0,431)	(-1,195)	(-0,501)	(-0,661)	(-0,504)	(-2,033)
High Law & Democracy*Complexity											0.035
											(0,196)
Growth	?	-0.817 ***	-1.127 ***	-1.037 ***	-0.864 ***	-0.882 ***	-0.984 ***	-0.726 ***	-0.454 **	-0.967 ***	-0.071
		(-6,311)	(-7,448)	(-7,193)	(-6,757)	(-6,461)	(-7,798)	(-4,767)	(-2,454)	(-7,232)	(-0,710)
High Law & Democracy*Growth											0.057
											(0,213)
Business risk	?	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.210
		(-0,477)	(-0,669)	(-0,235)	(-0,508)	(-0,547)	(-0,377)	(-0,556)	(-0,342)	(-0,465)	(-0,958)
High Law & Democracy*Business Risk											-0.125
											(-0,366)
Auditing firm	?	-24.249	9.684	-0.942	-9.625	-5.295	8.306	4.122	5.262	3.085	0.202
		(-0,391)	(0,168)	(-0,018)	(-0,174)	(-0,099)	(0,137)	(0,078)	(0,093)	(0,056)	(0,627)
Cross-listing	?	55.993	41.192	35.464	47.938	45.886	39.407	50.071 *	52.068 *	40.853	0.422 ***
		(1,814)	(1,390)	(1,210)	(1,633)	(1,561)	(1,222)	(1,806)	(1,861)	(1,388)	(3,225)
Industry	?	8.024	-7.285	3.937	3.422	-0.316	3.461	-7.337	0.314	-0.179	0.155
		(0,199)	(-0,184)	(0,099)	(0,085)	(-0,008)	(0,086)	(-0,185)	(0,008)	(-0,004)	(0,739)
Year 2007	?	77.786 **	80.574 **	75.000 **	70.227 **	70.817 **	88.063 **	124.861 ***	114.545 ***	76.965 **	0.630 ***
		(2,299)	(2,622)	(2,466)	(2,260)	(2,279)	(2,530)	(3,538)	(3,247)	(2,498)	(3,003)
Model fit:											
R Square		0.390	0.449	0.450	0.434	0.440	0.411	0.467	0.446	0.445	0.516
Adjusted R2		0.281	0.340	0.342	0.323	0.330	0.296	0.362	0.337	0.335	0.346
F statistic		33.027 ***	53.633 ***	40.091 ***	61.133 ***	63.453 ***	42.532 ***	66.992 ***	47.390 ***	55.884 ***	30.108 ***

Significance at ***0.01, **0.05, and *0.1 level (two-tailed). Standard errors are heteroskedasticity-adjusted and clustered at the firm level. The t-values are given in parenthesis.

Definitions:

- Dependent variable: Risk reporting.

- Independent and control variables: Law & Democracy (Principal Component of "Voice & Accountability", "Reporting Quality", "Rule of Law", "Control of Corruption", "Press Freedom", "Efficacy of Corporate Boards", and "Protection of Minority Shareholder's interests"); High Law & Democracy (=1 if the kth observation is higher than the mean value of the variable Law & Democracy, and 0 otherwise); size (total assets); leverage (total debt to total assets); profitability (return on assets = earnings before tax to total assets); Governance Performance (ESG Governance Pillar Scores extracted from ASSET4); Complexity (number of segments the firm); Growth (mean of sales growth rate in the last five years); Business risk (five-year standard deviation of EBIT); Auditing firm (=1 if the firm is audited by a Big4 auditing firm, =0 otherwise); Cross-listing (=1 if the firm is listed in a US stock exchange securities regulated market, =0 otherwise); Industry (=1 if the firm is a manufacturing firm, =0 otherwise).

Table 9. Direct effects of country-level institutional forces per risk category

Independent and control variables	Predicted sign	FR N=74	NFR N=74	RF N=74	RM N=74	COMP N=74
Intercept		-133.883 **	-276.621 *	-313.238 *	-87.511	-9.755
		-(2.036)	-(1.691)	-(1.769)	-(1.501)	-(0.186)
Law & Democracy	?	0.485 ***	1.160 ***	1.291 ***	0.259 **	0.095
		(3.544)	(2.989)	(2.849)	(2.085)	(0.925)
Size	+	0.000 ***	0.000 ***	0.000 ***	0.000 **	0.000
		(2.851)	(2.900)	(4.745)	(2.222)	(0.333)
Leverage	?	1.002 **	-0.037	0.176	0.633 **	0.157
		(2.382)	-(0.040)	(0.192)	(2.178)	(0.373)
Profitability	?	116.825	-204.495	-126.542	122.621	-83.749
		(0.660)	-(0.566)	-(0.443)	(1.541)	-(0.511)
Governance Performance	?	0.256	-0.211	-0.231	0.193	0.083
		(1.372)	-(0.494)	-(0.716)	(1.155)	(0.376)
Complexity	?	3.013	-5.571	-4.313	-0.721	2.476
		(1.589)	-(1.395)	-(1.271)	-(0.465)	(1.161)
Growth	?	-0.388 ***	-0.579 ***	-0.505 ***	-0.246 ***	-0.216 ***
		-(7.336)	-(4.427)	-(3.673)	-(4.976)	-(3.979)
Business risk	?	0.000	0.000	0.000	0.000 ***	0.000
		-(1.287)	(0.265)	(0.460)	-(2.912)	-(1.712)
Auditing firm	?	-26.374	29.459	-7.456	-0.720	11.260
		-(1.515)	(0.671)	-(0.214)	-(0.050)	(0.656)
Cross-listing	?	26.283 ***	14.569	37.686	-5.201	8.368
		(3.135)	(0.550)	(1.339)	-(0.753)	(1.217)
Industry	?	12.251	-12.430	-3.542	10.421	-7.058
		(0.939)	-(0.405)	-(0.143)	(1.537)	-(0.501)
Year 2007	?	6.216	70.750 ***	58.633 **	3.313	15.020
		(0.527)	(2.842)	(2.443)	(0.398)	(1.483)
Model fit:						
R Square		0.465	0.364	0.479	0.296	0.158
Adjusted R2		0.360	0.239	0.376	0.158	-0.008
F statistic		18.908 ***	18.060 ***	26.098 ***	6.081 ***	4.969 ***

Significance at ***0.01, **0.05, and *0.1 level (two-tailed). Standard errors are heteroskedasticity-adjusted and clustered at the firm level. The t-values are given in parenthesis.

Definitions:

- Dependent variable: FR (financial risk disclosures); NFR (non-financial risk disclosures); RF (risk factors disclosures); RM (risk management disclosures); RF+RM (Risk factors and risk management disclosures); COMP (compliance of risk management systems).

- Independent and control variables: Law & Democracy (Principal Component of "Voice & Accountability", "Reporting Quality", "Rule of Law", "Control of Corruption", "Press Freedom", "Efficacy of Corporate Boards", and "Protection of Minority Shareholder's interests"); size (total assets); leverage (total debt to total assets); profitability (return on assets = earnings before tax to total assets); Governance Performance (ESG Governance Pillar Scores extracted from ASSET4); Complexity (number of segments the firm); Growth (mean of sales growth rate in the last five years); Business risk (five-year standard deviation of EBIT); Auditing firm (=1 if the firm is audited by a Big4 auditing firm, =0 otherwise); Cross-listing (=1 if the firm is listed in a US stock exchange securities regulated market, =0 otherwise); Industry (=1 if the firm is a manufacturing firm, =0 otherwise).

Table 10. Moderating effects of country-level institutional forces per risk category

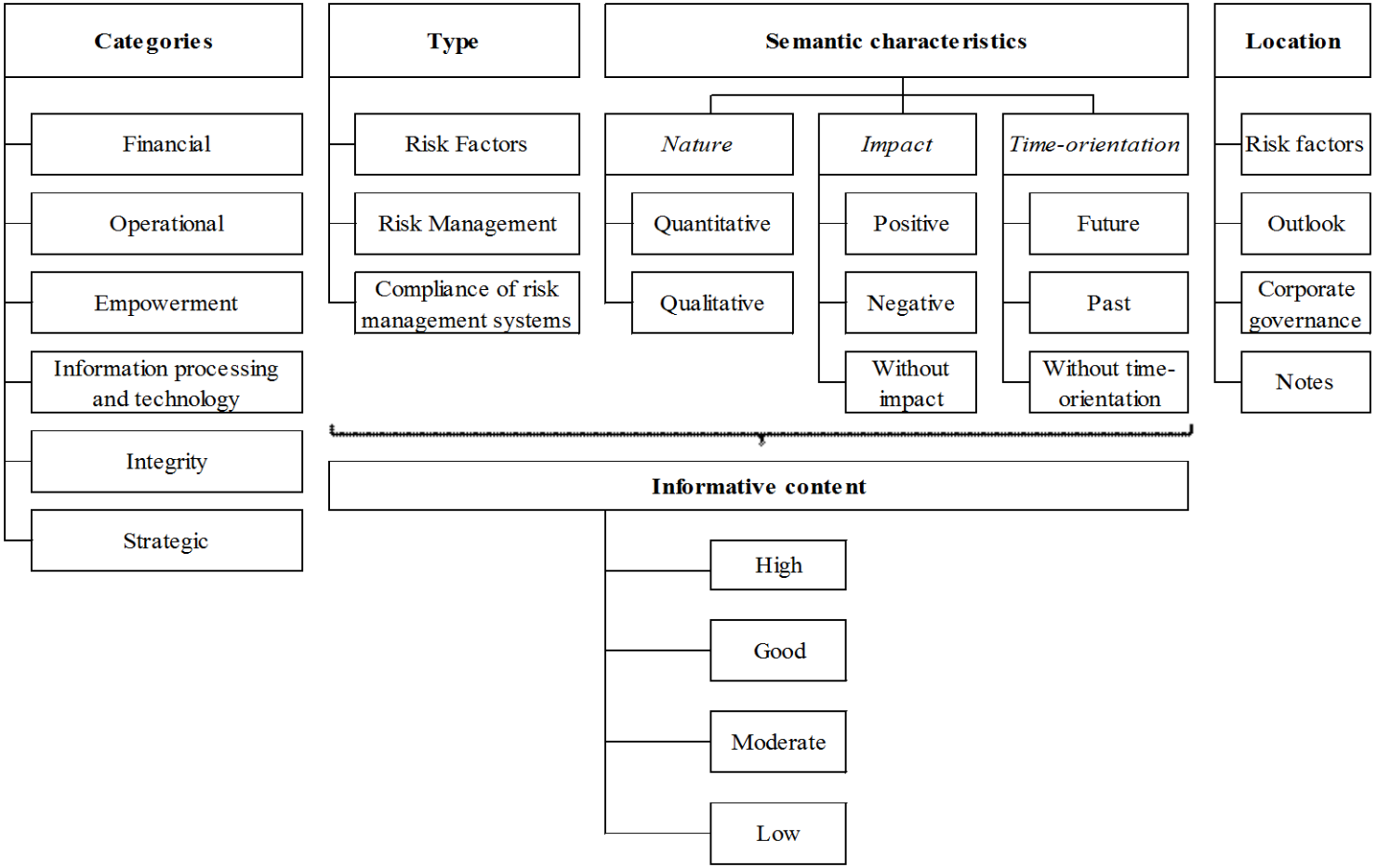
Independent and control variables	Predicted sign	FR N=74	NFR N=74	RF N=74	RM N=74	COMP N=74
Intercept		-0.385	-1.096 **	-0.804 **	30.659 **	-1.111 ***
		-(1.562)	-(2.482)	-(2.345)	(2.577)	-(3.215)
High Law & Democracy	?	0.242	0.571 ***	0.492 ***	13.049 **	0.419 *
		(1.442)	(2.840)	(2.820)	(2.126)	(1.967)
Size	?	0.485 **	0.416	0.384	-1.055	0.583 *
		(2.262)	(1.639)	(1.489)	-(0.162)	(1.710)
High Law & Democracy*Size	?	0.195	0.097	0.266	26.021	-0.136
		(0.646)	(0.282)	(0.805)	(1.601)	-(0.337)
Leverage	?	0.632 ***	0.090	0.270 **	4.070	0.419 **
		(4.935)	(0.669)	(2.295)	(0.882)	(2.214)
High Law & Democracy*Leverage	?	-1.011 ***	-0.277	-0.539 **	8.733	-0.918 ***
		-(5.857)	-(1.066)	-(2.432)	(1.157)	-(4.070)
Profitability	?	0.358 *	0.021	0.032	2.660	0.393
		(1.866)	(0.087)	(0.161)	(0.489)	(1.385)
High Law & Democracy*Profitability	?	-0.635 **	-0.112	-0.203	4.671	-0.300
		-(2.576)	-(0.278)	-(0.593)	(0.557)	-(0.967)
Governance Performance	?	0.003	-0.054	-0.035	0.668	0.030
		(0.036)	-(0.663)	-(0.492)	(0.171)	(0.246)
High Law & Democracy*Governance Performance	?	0.271	-0.243	-0.074	1.857	-0.225
		(1.658)	-(1.054)	-(0.386)	(0.179)	-(1.045)
Complexity	?	-0.074	-0.190 *	-0.221 **	3.271	0.000
		-(0.781)	-(1.716)	-(2.007)	(0.607)	(0.000)
High Law & Democracy*Complexity	?	-0.154	0.103	-0.020	-9.851	0.281
		-(0.927)	(0.564)	-(0.107)	-(1.082)	(1.281)
Growth	?	-0.107	-0.072	-0.139	2.155	-0.013
		-(1.165)	-(0.640)	-(1.133)	(0.810)	-(0.104)
High Law & Democracy*Growth	?	0.183	-0.033	0.218	-4.900	-0.398 *
		(1.023)	-(0.117)	(0.846)	-(0.754)	-(1.983)
Business Risk	?	-0.250	-0.131	-0.043	-8.281	-0.359 *
		-(1.084)	-(0.613)	-(0.175)	-(1.552)	-(1.778)
High Law & Democracy*Business Risk	?	-0.342	-0.017	-0.240	-6.799	-0.065
		-(1.059)	-(0.045)	-(0.662)	-(0.824)	-(0.195)
Auditing firm	?	-0.484 **	0.469	-0.014	0.966	0.676 *
		-(2.150)	(1.098)	-(0.045)	(0.080)	(1.794)
Cross-listing	?	0.408 ***	0.381 ***	0.545 ***	11.347	-0.070
		(2.704)	(2.700)	(3.542)	(1.043)	-(0.349)
Industry	?	0.438 **	-0.033	0.148	6.987	0.123
		(2.587)	-(0.142)	(0.713)	(1.224)	(0.482)
Year 2007	?	0.465 **	0.623 ***	0.628 ***	4.501	0.492 **
		(2.383)	(3.052)	(3.162)	(0.557)	(2.585)
Model fit:						
R Square		0.595	0.453	0.585	0.381	0.461
Adjusted R2		0.453	0.261	0.439	0.163	0.272
F statistic		13.322 ***	38.083 ***	21.908 ***	4.542 ***	12.223 ***

Significance at ***0.01, **0.05, and *0.1 level (two-tailed). Standard errors are heteroskedasticity-adjusted and clustered at the firm level. The t-values are given in

Definitions:

- Dependent variable: FR (financial risk disclosures); NFR (non-financial risk disclosures); RF (risk factors disclosures); RM (risk management disclosures); RF+RM (Risk factors and risk management disclosures); COMP (compliance of risk management systems).
- Independent and control variables: High Law & Democracy (=1 if the kth observation is higher than the mean value of the variable Law & Democracy, and "0" otherwise); size (total assets); leverage (total debt to total assets); profitability (return on assets = earnings before tax to total assets); Governance Performance (ESG Governance Pillar Scores extracted from ASSET4); Complexity (number of segments the firm); Growth (mean of sales growth rate in the last five years); Business risk (five-year standard deviation of EBIT); Auditing firm (=1 if the firm is audited by a Big4 auditing firm, =0 otherwise); Cross-listing (=1 if the firm is listed in a US stock exchange securities regulated market, =0 otherwise); Industry (=1 if the firm is a manufacturing firm, =0 otherwise).

Figure 1. Coding Instrument



Notes

[i] The current sample includes the following number of firms per country: Belgium=1; Finland=1; France=15; Germany=10; Italy=2; Luxembourg=1; Netherlands=3; Spain=4.
[ii] Untabulated results are available upon request to authors.
[iii] This sample includes a total of 100 firm-year observations.
[iv] We choose word count as the unit of analysis for several reasons: a) the number of words is used by previous studies to capture the quantity of risk disclosures (Lajili and Zéghal, 2005; Abraham and Cox, 2007); b) according to Milne and Adler (1999) words add precision in measurement and choosing words or sentences as units of analysis is unlikely to precipitate bias in results; and c) word and sentence counts are highly correlated (Kravet and Muslu, 2013).
[v] Untabulated results are available upon request to authors.