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# **ANALYSIS OF RISK DISCLOSURE IN SPANISH FIRMS**

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## **ABSTRACT**

Despite the advantages of reporting on business risks and the existence of a growing demand for information, risk reporting within firms is still reduced. The present work describes briefly the main aspects related to the problematic of risk reporting and analyses the relation between corporate variables and risks disclosed by firms. Information on risks has been collected from the annual reports of 27 Spanish firms for the years 2009 and 2010. After different regression analysis to contrast hypothesis stated before, significant relations have been found out between risks disclosure and corporate variables such as profitability or level of risk.

**KEYWORDS: risk, risk disclosure, risk reporting**

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# ANALYSIS OF RISK DISCLOSURE IN SPANISH FIRMS

## 1. - INTRODUCTION

The topic of risk disclosure in firms has been a growing object of study by different authors, accounting organizations and professional bodies in the last two decades. As a result, different risk disclosure regulations and academic works have been released on the topic of risk disclosure in the last years.

Information provided by firms is essential in the decision-making process of investors. Cabedo and Tirado (2004) defend that investors interpret information disclosed by firms so as to set an image of the risk they are facing and take investment decisions in consonance with the values of the binomial 'expected return and risk'. In the same vein, the Institute of Chartered Accountants in England and Wales (ICAEW, 2002) states the importance of an adequate understanding of the risks investors undertake when investing in a company in order to interpret potential future cash flows.

Nevertheless, as Cabedo and Tirado (2004) remark, there exists a lack of information on business risks reported by companies. Because of this, numerous accounting organisations and regulatory bodies, such as the International Accounting Standards Board (IASB) or the German Accounting Standards Committee (GASC), have discussed the optionality or obligation of reporting on these risks according to Cabedo and Tirado (2007).

In the academic field different authors, such as Linsley and Shrivies (2006) or Cabedo and Tirado (2009), have studied the relationship between information about risks disclosed by companies and various corporate and market proxies. According to Mokhtar and Mellet (2011), there exist two main streams of risks reporting studies: the first stream is focused on the investigation of the relationship between risk disclosure and some market or corporate proxies, while the second is based on the examination of the nature and determinants of risk reporting.

This study aims to provide a brief insight into the main discussion topics on risk reporting (the concept of risk, importance of risk reporting and regulation around risk reporting) as well as an empirical analysis regarding how corporate variables and risk disclosure reported by firms are related.

To achieve this objective, the upcoming information of this study has been divided into three main sections: in section 2 -Problematic of Risk Disclosure- an analysis regarding

the concept of risk, the main implications and benefits of risk reporting and the regulation and nature of risk information is included; in section 3 -Empirical Analysis- and empirical analysis is carried out based on research methods and a series of research hypothesis to find out whether there exist a relationship between four different corporate variables and risk disclosure; and, finally, in section 4 -Conclusions- the different conclusions of the study are exposed.

## 2. - PROBLEMATIC OF RISK DISCLOSURE

Prior to analyzing empirically risk disclosure in Spanish firms, I will give an insight into previous relevant research on the topic of risk disclosure. It covers what different authors understand by risk, the importance of reporting on risks for companies and different regulations and accounting standards that affect risk disclosure.

### 2.1-DEFINING RISK

Before describing the problematic related to risk disclosure, it is important to define what risk is. Cabedo *et al.* (2013, p.13) define risk in a broad sense as '*the likelihood of occurrence of an adverse event and its consequences*'. Within a business context, there are different definitions of risk depending on the stream followed. As the ICAEW (1997) indicates, it can be identified two ways of considering risk: downside risk and volatility risk. Downside risk refers to the fact that there is probability in something going wrong, meanwhile volatility risk is '*the risk associated with uncertainty which means that there is the opportunity for gain as well as the potential for loss*' (ICAEW 1997, p.29).

The ICAEW (1997) defends that it is important to take into account volatility when speaking about risk. Volatility in risk reporting means that there might be a broad range of different outcomes, with positive (upside) or negative (downside) potential. It is crucial to consider both positive and negative effects of risk before executing an investment strategy. In the same vein, Linsley and Shrives (2006) claim that there is a new modernist view of the concept of risk which not only includes the consideration of risks as bad, but also the possible result of events to be positive.

Nevertheless, as the ICAEW (2011) mentions, risk reporting is broadly about the negative meaning of risk. Risk is usually meant as something disadvantageous that can lead to losses or reduced profits, although it is sometimes understood as any future outcome that may be either good or bad in conditions of uncertainty, i.e. the negatives aspects are coupled with the positive ones.

### 2.2-IMPORTANCE OF REPORTING ON BUSINESS RISK

Within the definition of risk, there are different types of risk which could affect the decision-making process of a company (Cabedo *et al.*, 2013): interest rate risk, market risk, exchange rate risk, liquidity risk or operational risk are good examples of business-related risks. The ICAEW (2002) defines business risk as '*the amount of uncertainty as to the benefits that the business will derive from pursuing its objectives and strategies*'.

In a company it is essential to balance risks and rewards in order to maximize returns for investors because of the relation between the pursuit of chances to increase earnings and business risks.

Cabedo and Tirado (2004) state that investors must assess the risk-related information reported by firms so as to specify the level of risk they are exposed to and take investment decisions based on the values of the binomial 'expected return and risk'. As the ICAEW (2002) explains, an investor needs to properly understand the risks of the potential future cash flows of a business. This understanding should be based on an analysis of business risk affecting the firm, the measures used in order to quantify these risks and the actions undertaken by the company in managing risk exposure. In spite of this, Cabedo and Tirado (2004, p.182) argue that *'under the present model of accounting information, investors must work as outsiders, by interpreting this information and inferring company risk levels from it {...} the disclosure of information about risk would improve this situation: the company, using internal data, would directly establish levels of various risks it faces'*. Likewise, the ICAEW (2002) recommends companies to include information about risks in the listed annual reports.

According to the ICAEW (1997), risk reporting needs to include hard and comparable information so as to be considered as reliable, and the best way to incorporate it is to measure and quantify risks using both accounting and non-accounting information. Risk disclosure should focus on what is more important to the activity of the enterprise, not what is easiest to quantify and report about. Although it is not always possible to measure the quantitative impact of all risks inside a wide range of risks, this should not necessarily restrict the information released by a company. When considering risks, we should consider all types of business risks, not only the ones arising from the use of financial instruments. *'All types of risk are relevant to financial reporting, as any information that may help investors to assess future prospects should be available'* (ICAEW 1997, p.26). Inadequate financial reporting leads to an investors' perception of uncertainty about the future cash flows of the firm. The ICAEW (2011) suggests seven principles to follow when reporting risk in order to improve it: tell users what they need to know, focus on quantitative information, integrate into other disclosures, think beyond the annual reporting cycle, keep list of principal risks short, highlight current concerns and report on risk experience.

The benefits of reporting on business risk have been discussed by different authors. As the ICAEW (1997) indicates, financial reporting of risk should focus on the preparation of business risk quality information in order to benefit investors and firms. Risk

information should include actions and relevant measures to manage risks and *'will provide practical forward-looking information, reduce cost of capital, encourage better risk management, help ensure the equal treatment of all investors and improve accountability for stewardship, investor protection and the usefulness of financial reporting'* (ICAEW 1997, p.50).

Financial reporting on risk should provide useful information for the economic decision-making process of a company to a wide range of information users. Past information is useful as a starting point, but there has been an increase in the demand for predictive information so as to assess likely future performance and estimate future cash flows. (ICAEW, 1997). Regarding the cost of capital, the level of risk perceived by investors within a company is one of the key factors in determining the interest rate companies have to pay in order to obtain financial backing (i.e. borrow funds) and have a lower price/earnings ratio for their shares. Firms that are considered to be riskier have to pay more in order to get funds. When investors assume information provided by companies to be inadequate, they will ask for a premium as a reward for the conditions of uncertainty in which they are providing capital. The cost of capital should therefore be lower in conditions of better risk information for investors. Yet, in the short term there could exist some companies with a growth in the cost of capital owing to a greater perception of the risks those companies are facing after disclosing information about risk. Nonetheless, research has shown that there is a positive correlation between financial disclosures, market liquidity and cost of capital and reporting on business risk allocates capital within the market efficiently (ICAEW, 1997).

As mentioned above, in addition to providing practical forward-looking information and reducing cost of capital, reporting on risk enhances risk management and provides other benefits to investors. Regarding risk management, *'a company which adopts a more rigorous and consistent approach to reporting risk is likely to improve its own risk management process'* (ICAEW 1997, p.7). That means an adequate report and management of risk can lead to a better perception of a company and its directors and create additional value to a company. Other benefits of risk disclosure to investors are: equal information to all investors through disclosing risk information that normally would not be issued in the annual report and would not be shared by all investors; improvement of accountability as it provides a basis for analyzing how management carry out their stewardship responsibilities; protection of investors by informing them on company's risk exposure and confirmatory value as it confirms investors' views formed previously on a firm's risks (ICAEW, 1997).



Similarly, Jorgensen and Kirschenheiter (2003, as cited in Dobler *et al.* 2011, p.2) indicate that *'risk disclosure shall reduce the information asymmetry between managers and outsiders by providing users of financial reports with information on the risks a company faces and on and how these risks are managed'*. Linsley and Shrivs (2005, as cited in Linsley and Shrivs 2006, p.389) suggest that *'the provision of forward-looking information would be especially useful to investors'*. However, it is also stated that there exist obstacles to disclosure risk information: directors are reluctant to share risk information which is considered to be commercially sensitive and are reluctant to release forward-looking risk information without safe harbor protection. (Linsley and Shrivs (2005), as cited in Linsley and Shrivs 2006, p.389).

In line with Linsley and Shrivs, the ICAEW (2011) hypothesizes that although there are good reasons to report on risk, there still exist barriers in producing high quality risk reporting that should be challenged: inherent unreliability, cost exceed perceived benefits, generic disclosures, risk management reporting difficulties and risks that will never be reported. Inherent unreliability is produced because there is subjectivity in risk reporting and there is no basis for assessing accuracy and completeness of risk reporting; cost exceeded perceived benefits refers to the fact that benefits of disclosing risk information are not seen as something that could outweigh the cost of reporting risks (competitive and managerial costs); generic risk reporting is common to similar enterprises and do not provide new information; risk management reporting difficulties are related to the quality of managers and their effectiveness in reporting risk management, which is part of unrevealed internal information, and risks that will never be reported include poor management decisions and other risks that are usually underestimate by companies (such as competition, technical change or unprecedented events).

### 2.3-RISK DISCLOSURE REGULATION

According to the ICAEW (2011), companies have more to report on risk due to the explosion of new financial products in the last three decades and the huge amount of money invested in them, as well as the change in the evolution of business, with increasingly riskier business models. The increase in the demand for information about risk may be also explained by the fact that information users are less satisfied with historical financial reporting information because of its limitations and are demanding more extensive non-financial and looking forward disclosures. Additionally, as Dobler, Lajili and Zéghal (2011) believe, there has been a growth in the demand for corporate

risk management and disclosure after the recent financial crisis. It has encourage government and accounting standards organizations to promote regulatory reforms and responses to the lack of clarity in risk disclosure and the increasingly complexity of business.

Despite these facts, there is a lack in the quantity of risk information companies are required to release. Disclosure of information about risk is one of the main weaknesses in accounting information reported by companies (Cabedo and Tirado, 2004). Different regulatory accounting bodies have tried to solve the absence of information about the different types of risk to which companies are exposed when they operate by issuing regulations embedded in an international context (Cabedo and Tirado, 2007).

Cabedo and Tirado (2007) identify three main issued standards about risk disclosure: the FRR (Financial Reporting Release) N°48, the IFRS (International Financial Reporting Standards) N°7 and the GAS (German Accounting Standards) N°5. The FRR N°48 (1997, as cited in Cabedo and Tirado 2007,p.33) makes compulsory to report on market risks arising from the use of derivatives and other financial instruments; only listed companies are required to present such information and it must include both quantitative and qualitative information for each market risk, whilst no market risks are no necessary. With regards to the IFRS N°7 (2005, as cited in Cabedo and Tirado 2007,p.35-36), it obliges firms to present information about financial instruments, the whole of risks associated with them and the risk management policy; the report of information is limited to market risks, credit risk and liquidity risk and enterprises must include quantitative and qualitative information. Finally, the GAS N°5 (2000, as cited in Cabedo and Tirado 2007, p.38) obliges German companies to include a statement of risks within the management report, which must inform about both financial and no financial risks; according to this standard, risk must be quantified providing that risk can be calculated with safe methods and quantification affects the decisions of information users.

In the case of Spain, the '*Real Decreto Legislativo 1/2010 (por el que se aprueba el Texto Refundido de Sociedades de Capital)*' regulates what firms are required to report regarding risk information. Such information must include a description of the main risks faced by the company; an explanation of the company's exposure to price, credit, liquidity and cash flow risks arising from the use of financial instruments; and a description of the objectives, policies and procedures the company uses so as to be able to operate with these risks (Article 262 of the '*Ley de Sociedades de Capital*'). Thus, Spanish enterprises disclosure risk information on financial instruments following an international harmonization based on European standards issued by the European Union.

Furthermore, Spanish listed enterprises must follow the IFRS N°7 (Financial Instruments) in accordance with the International Financial Reporting Standards, whilst unlisted companies and companies which do not go public as a consolidate group must follow the Spanish accounting standards included in the Spanish Accounting Plan (Cabedo and Tirado, 2007).

The obligatory nature or optionality of risk reporting is another important issue (Cabedo and Tirado, 2007). The ICAEW (1997) defends that improvements in risk reporting should be carried out as a voluntary action within the existing reporting framework. Nevertheless, companies do report very little information about risks voluntarily. (Lajili and Zéghal, 2003 as cited in Cabedo and Tirado, 2007, p.42). Those results could be explained with the fact that risk disclosure comes with higher costs that limit the incentives of managers to issue non-compulsory information about risk. (Linsley and Shrives, 2000 as cited in Cabedo and Tirado, 2007, p.42).

### **3. - EMPIRICAL ANALYSIS**

The aim of this empirical analysis is to look into the relation between business risk disclosure and four fundamental variables: company size, level of risk, profitability and growth potential. A total of 27 important Spanish companies have been used as a base for the analysis. Through their financial data and risk disclosure information reported in the consolidated annual report I will analyse whether there exist any significant relation between them.

#### **3.1- DATA AND METHODOLOGY**

##### **3.1.1-Sample selection**

The sample of Spanish companies comprises 27 Spanish firms that have been part of the IBEX 35 between the years 2008 and 2013. The sample includes some of the most important Spanish firms in terms of total assets and market capitalization from different economic sectors such as Endesa S.A., Ferrovial S.A. Iberdrola S.A. or Telefónica S.A. (set out in Appendix 1).

The corporate information under study refers to the years 2009 and 2010 for the companies stated above. These years have been selected because are years in which all firms were affected by the economic and financial crisis that had started previously, and it is important to analyse the relationship mentioned above in a period of financial difficulties. Thus, financial statements were prepared by managers in 2010 (for the year 2009) and 2011 (for the year 2010) in a similar economic environment.

After the spread of the financial crisis around the world, it is reasonable to think that there might be changes in the way firms issue information on risks. As the ICAEW (2011) argues, since the beginning of the financial crisis there has been a growth in the demand for better risk reporting and there is a general feeling of underestimation of the risks companies face by managers, investors and regulators. Additionally, the ICAEW (2011) expose three broad possibilities to explain possible inadequate risk reporting regarding the financial crisis: inadequate requirements, managers being unwilling to report risks and managers being unaware of risks or underestimating them. This could make the information issued by enterprises sensitive to the year in which is prepared, but in this case information comes from equal years in terms of demand for risk information.

### 3.1.2-Data Sources

Annual reports and notes to the financial statements are sources of risk information within Spanish companies, although only risk information included in annual reports has been used for the empirical analysis. This is because risks in the notes to the financial statements Spanish firms only report on financial risks, and this analysis focuses on both financial and non-financial risks. The information needed to elaborate the risk disclosure indices is based on those annual reports and has been classified into different states that are described below in the subsection '*3.1.4- Quantification of risk disclosure*'.

On the other hand, the corporate variables used in the analysis have been obtained through the database SABI ('*Sistema de Análisis de Balances Ibéricos*'). In order to determine corporate variables, company size has been used to measure the natural logarithm of company's total assets; the level of risk has been measured with the company's percentage of indebtedness; company's profitability has been estimated with the Return on Assets (ROA); and finally growth potential has been measured with the Book-to-Market Ratio.

### 3.1.3 Classification of risks

As Cabedo and Tirado (2004, p.185-186) remark: '*companies are essentially exposed to two types of risk: non-financial risks, which are not directly related to monetary assets and liabilities, although they will have an effect on future cash-flows losses and financial risks, which do have a direct influence on the loss of value of monetary assets and liabilities (market risk, credit risk, liquidity risk and operational and legal risks)*'.

In this analysis risk have been classified into two main categories: financial and non-financial risks, following what Cabedo and Tirado (2004) expose in their analysis of risk disclosure in financial statements. To determine which specific risk are include in each category, I have used the '*Arthur Andersen Business Risk Model™*' (set out in Appendix III) used by the ICAEW (1997). This model divides business risks into different categories, although in this empirical analysis these categories have been simplified to financial and non-financial risks in order to study expressly the relation between these categories and corporate information. With respect to the categories, they include a wide range of different business risks.

The category of financial risks include the following types of risks:

- Interest rate risk (RFTI): arises from changes in the interest rates of the financial operations companies carry out.

- Exchange rate risk (RFTC): generated due to changes in the quotations of the different currencies.
- Commodity risk (RFCO): derives from variations in commodities prices.
- Liquidity risk (RFLI): stems from the potential losses companies could face as a consequence of problems paying short term liabilities.
- Credit risk (RFCR): derives from non-expected defaults from clients as a consequence of a reduction in clients' liquidity or solvency.

On the other hand, non-financial risks encompass different categories: operations risk, empowerment risk, information processing/technology risk, integrity risk and strategic risk. Within these categories there are a lot of different business risks that may be relevant:

- Customer satisfaction risk (RNSC): stems from clients' dissatisfaction with company's goods purchased or services received and can affect company's future sales.
- Product development risk (RNDP): arises from potential losses due to failure in new-developed products.
- Efficiency risk (RNER): caused by a reduction in firm's efficiency.
- Sourcing risk (RNSO): generated due to problems in the sourcing of company's products and services.
- Obsolescence/Shrinkage risk (RNPS): derives from company's products obsolescence and could lead to stock's value losses.
- Product/Service failure risk (RNFP): caused by failure in products and services from the business portfolio of the firm.
- Environmental risk (RNME): generated due to toxic emissions, dumping of waste and depletion of resources used in the productive activity of the company.
- Trademark/ Brand name erosion risk (RNMA): stems from a loss in the value of the company's trademark and could trigger to a loss in company's competitiveness.
- Other operations risks (RNOT): encompass other risks that affect firm's competitiveness and creation of value for investors.
- Leadership risk (RELG): stems from a loss in leadership and members of the management team of the firm.
- Outsourcing risk (REOS): caused by problems that arise from company's outsourced activities.

- Performance incentives risk (REIR): stems from an incentives scheme in which company's objectives and managers' incentives are not aligned.
- Change readiness risk (REES): derives from insufficient preparation to changes in changing environments.
- Communications risk (RECO): arises from inadequate communication channels to the company's environment.
- Other empowerment risks (REOT): includes other types of risks that affect company's internal strengths.
- Information processing/technologic risk (RPIT): caused by inadequate processing of information within the firm.
- Management fraud risk (RIFR): derives from fraud committed by managers or employees.
- Illegal acts risk (RIAI): generated due to illegal acts that could affect company's reputation or survival.
- Other integrity risks (RIOT): incorporates other risks that may affect firm's ethics principles or reputation.
- Business portfolio risk (RSCN): stems from changes in company's business portfolio due to economic or political changes.
- Competition risk (RSCO): caused by the entrance of new competitors in the market that reduce company's market share.
- Planning risk (RSPA): arises from error in the planning process of the company.
- Life cycle risk (RSCV): derives from the position in which the company is located within industry's life cycle.
- Regulatory risk (RSRE): caused by possible changes in the regulation of the sector in which the firm operates.
- Country risk (RSPA): stems from specific factors of a country that could impact on the investments the company has made in that country.
- Other strategic risks (RSOT): encompasses other factors affecting company's future plans and business strategies.

#### 3.1.4-Quantification of risk disclosure

Information reported by companies have been considered to be judged as risk disclosures according to the definition provided by Linsley and Shrivs (2006, p.389): *'If the reader is informed of any opportunity or prospect, or of any hazard, danger, harm,*

*threat or exposure, that has already impacted upon the company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure.'*

It is important to set a unit through which risk disclosure can be measured. As Linsley and Shrivies indicate (2006), it is possible to use different measures when carrying out an analysis of risk content, such as number of words or sentences. Authors such as Linsley and Shrivies (2006) and Dobler, Lajili and Zéghal (2011) use sentences as a unit of measure. Nevertheless, as Cabedo and Tirado (2009) defend, this measure implies that a bigger number of sentences means greater information on risk disclosure reported by the firm and presumes that a firm which discloses two sentences about a particular risk is reporting twice than a firm that informs about that risk in one sentence. Actually it is possible that both firms disclose the same information but one of the firms does it with an 'extensive narrative'.

Therefore, Cabedo and Tirado (2009) propose a new index to measure risk disclosure in order to approach risk disclosure quantification to reality. This method requires a deep analysis of the information about risks provided by companies in their annual financial statements and reports and is based on five different states in accordance with risk information disclosed. Cabedo and Tirado (2009, p.124) define a state as 'an informative level, regardless the number of sentences, in relation to a specific aspect of risk'. Additionally, a firm can be classified into different states (i.e. states are not exclusive between them).

In this analysis the different states used are the same as the ones exposed by Cabedo and Tirado (2009):

- State 1: the firm indicates solely the risks to which is exposed.
- State 2: the firm describes the risk and the effect it has on the firm.
- State 3: the firm reports on the quantitative measurement of the risk's impact.
- State 4: the firm informs about how the risk is managed.
- State 5: the firm reports on the instruments used so as to mitigate the impact of the risk

A company will, for instance, issue information about the types of risks it is exposed to (state1) and carefully describe their effects (state 2), but not inform about how those risks are managed (state 4); or mention and describe the main risks that affect its operations (states 1 and 2), but not report on the quantitative impact those risks have on the firm's performance (state 3).



Using these states as framework, two different risk disclosure indexes (IDR) have used in order to quantify information on risks issued by companies. The first risk disclosure index (IDR1) is the result of the sum of the number of states the firm is classified to separately for financial and non-financial risks and for both years 2009 and 2010. For example, if a firm mentions financial risks and describes their effects on it, it has an IDR1 for financial risks of 2; if the firm mentions the financial risks, informs about how risks are managed and describes which financial instruments are used to reduce their impact it has an IDR1 for financial instruments of 3. The maximum score is 5 (when the firm is identified in all five states mentioned above) and the minimum score is 0 (when the firm does not report on financial/non-financial risks in its annual report. The same explanation of the IDR1 takes place with non-financial risks.

The second risk disclosure index (IDR2) used in the analysis is produced in a different way. For the calculation of this index paragraphs have been used as unit of measure to quantify risk disclosure. The IDR2 stems from the sum of all the paragraphs which include information about financial/non-financial risks taking into account the classification of risks exposed in the previous subsection and the classification of risks into states. For instance, if a firm mentions and describes two financial risks such as interest rate risk and liquidity risk in a different paragraph for each one, it has an IDR2 for financial risks of 4 (i.e. the sum of two states 1 and two states 2 for financial risks). Another example: a firm mentions and describes a non-financial risk (for example, country risk) and only mentions in the same paragraph another non-financial risk (for example, regulatory risk). The firm's score for the IDR2 for non-financial risks is 3 (i.e. the sum of two states 1 and one state 2 for non-financial risks). The minimum score is 0 for firms which do not report on risk on their annual reports and there is no maximum score (the score depends on the disclosure of risk provided by the firm).

### 3.2- RESEARCH HYPOTHESES

For this empirical analysis a series of hypotheses have been contrasted in order to determine to which extent there exist a relationship between risk disclosure and the four corporate variables mentioned above. This analysis is in line with the research previously done by Cabedo and Tirado (2009), in which these authors propose a new method to quantify risk disclosure and study the statistic relation between risk disclosure and corporate variables such as company size and risk level.

### 3.2.1-Risk disclosure and company size

As Cabedo and Tirado (2009) and Linsley and Shrides (2006) remark, there are different academic works that prove a positive relationship between disclosure of information on risks and company size. Linsley and Shrides (2006) found association between risk disclosure and this variable and consider that if this association exists, there should not be difference in this association happening for both financial and non-financial risks.

For IDR1 (Risk Disclosure Index 1) tested hypothesis are the following:

- Hypothesis IDR1 RF 1(a). There will be a positive relationship between company size and financial risk disclosure.
- Hypothesis IDR1 RNF 1(b). There will be a positive relationship between company size and non-financial risk disclosure.

For IDR2 (Risk Disclosure Index 2) tested hypothesis are the following:

- Hypothesis IDR2 RF 1(a). There will be a positive relationship between company size and financial risk disclosure.
- Hypothesis IDR2 RNF 1(b). There will be a positive relationship between company size and non-financial risk disclosure.

### 3.2.2-Risk disclosure and the level of company risk

Cabedo and Tirado (2009) argue that there may be two possible explanations to predict the result of this relationship: on the one hand, it is possible to defend that companies with higher levels of risk will report more information on risks in order to reduce uncertainty and information asymmetries between managers and investors; in this way, directors could have incentives to report more information on how risks are originated and how are they managed. According to this explanation, it is reasonable to think that there will be a positive relationship between risk disclosure and level of company risk.

On the other hand, it could be claimed that in firms with higher levels of risk, managers are reluctant to show those levels of risk and, contrary to the argument exposed above, have no incentives to disclose risk information. Following the logic of this argument, there should be a negative correlation between risk disclosure and level of company risk.

Cabedo and Tirado (2009) indicate that, based on previous research, there is no a clear evidence of the relationship between risk disclosure and this variable. Authors such as Linsley and Shrides (2006) did not find significant relationship between them.

For IDR1 (Risk Disclosure Index 1) tested hypothesis are the following:

- Hypothesis IDR1 2(a). There will be a relationship between the level of company risk and financial risk disclosure.
- Hypothesis IDR1 2(b). There will be a relationship between the level of company risk and non-financial risk disclosure.

For IDR2 (Risk Disclosure Index 2) tested hypothesis are the following:

- Hypothesis IDR2 2(a). There will be a relationship between the level of company risk and financial risk disclosure.
- Hypothesis IDR2 2(b). There will be a relationship between the level of company risk and non-financial risk disclosure.

### 3.2.3-Risk disclosure and growth potential of the company

Regarding growth potential and risk disclosure, it could be argued that firms with higher growth potential tend to disclose more information about risks than companies with lower growth potential, which could try to not mention different risks that could be undermining their development potential.

For IDR1 (Risk Disclosure Index 1) tested hypothesis are the following:

- Hypothesis IDR1 RF 3(a). There will be a positive relationship between growth potential of the company and financial risk disclosure.
- Hypothesis IDR1 RNF 3(b). There will be a positive relationship between growth potential of the company and non-financial risk disclosure.

For IDR2 (Risk Disclosure Index 2) tested hypothesis are the following:

- Hypothesis IDR2 RF 3(a). There will be a positive relationship between growth potential of the company and financial risk disclosure.
- Hypothesis IDR2 RNF 3(b). There will be a positive relationship between growth potential of the company and non-financial risk disclosure.

### 3.2.4-Risk disclosure and profitability

As reported by Cabedo and Tirado (2009), in firms with high profitability managers have incentives to show a good corporate images by reporting how these figures have been reached to shareholders and investors. Thus, it is reasonable to think that firms with better profitability are more prone to report risk information than firms with worse profitability, which try to hide performance deficiencies. In line with this argument, there

should be a positive relationship between profitability and the quantity of information firms report on business risks.

For IDR1 (Risk Disclosure Index 1) tested hypothesis are the following:

- Hypothesis IDR1 RF 4(a). There will be a positive relationship between profitability and financial risk disclosure.
- Hypothesis IDR1 RNF 4(b). There will be a positive relationship between profitability and non-financial risk disclosure.

For IDR2 (Risk Disclosure Index 2) tested hypothesis are the following:

- Hypothesis IDR2 RF 4(a). There will be a positive relationship between profitability and financial risk disclosure.
- Hypothesis IDR2 RNF 4(b). There will be a positive relationship between profitability and non-financial risk disclosure.

All these hypothesis stated above will be contrasted through different regression analysis by using the method of the ordinary squared minimums.

### 3.3-RESULTS

#### 3.3.1-Descriptive results

**Table 1:** Risk Disclosure in 2009

	Financial Risks		Non-financial Risks	
	Number of firms	%	Number of firms	%
<b>Firms that disclose information</b>	25	93	20	74
<b>Firms that do not disclose information</b>	2	7	7	26

**Table 2:** Risk Disclosure in 2010

	Financial Risks		Non-financial Risks	
	Number of firms	%	Number of firms	%
<b>Firms that disclose information</b>	24	89	20	74
<b>Firms that do not disclose information</b>	3	11	7	26

As is it possible to observe in Table 1 and Table 2, most of the Spanish firms which are part of the sample selection report information on both financial and non-financial risks in their annual reports for the years 2009 and 2010. Regarding financial risks, almost every firm report information (93% of firms in 2009 and 89% in 2010), while the percentage of companies which disclose information related to non-financial risks is slightly lower (74% of firms for both years). There are no significant differences between the years object of study.

**Table 3:** Risk Disclosure disaggregated into states in 2009

States <sup>1</sup>	Financial risks		Non-financial risks	
	Number of states	%	Number of states	%
1	285	100	396	100
2	123	43	229	58
3	2	1	0	0
4	165	58	103	26
5	78	27	5	1

**Table 4:** Risk Disclosure disaggregated into states in 2010

States <sup>1</sup>	Financial risks		Non-financial risks	
	Number of states	%	Number of states	%
1	278	100	424	100
2	118	42	228	54
3	9	3	0	0
4	162	58	123	29
5	69	25	14	3

From Tables 3 and 4, it may be argued that companies report more information on risk management and use of instruments to manage this risk (states 4 and 5) when describing financial risks (58% in both years on risk management and 27% in 2009/ 25% in 2010 on use of instruments) rather than non-financial risks (26% in 2009/ 29% in 2010 on risk management and 1% in 2009/ 5% in 2010 on use of instruments) for years 2009 and 2010.

In relation to states 2 and 3, it might be mentioned that approximately half of the firms provide information related to the descriptions of risks and their effects on firm's performance, i.e. included in state 2 (43% in 2009 and 42% in 2010 for financial risk and 58% for 2009 and 54% in 2010 for non-financial risks), whilst there is no

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<sup>1</sup> State 1: the firm indicates solely the risks to which is exposed.

State 2: the firm describes the risk and the effect it has on the firm.

State 3: the firm reports on the quantitative measurement of the risk's impact.

State 4: the firm informs about how the risk is managed.

State 5: the firm reports on the instruments used so as to mitigate the impact of the risk

quantification of risks' impact (state 3) for non-financial risks and only a little for financial risks (1% in 2009 and 3% in 2010). Quantification of risks' impact on the company should include measure units as the Value at Risk (VaR) proposed by Cabedo and Tirado (2004) to measure market risks.

Finally, it is important to say that there are no significant differences between the type of information enterprises report on risks in 2009 and 2010. There are only small differences that do not require special attention and do not change the main implications of the results obtained.

**Table 5:** Disclosure of financial risks in 2009

	Interest Rate Risk		Exchange Rate Risk		Commodity Risk		Credit Risk		Liquidity Risk	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Firms that disclose information</b>	21	78	21	78	12	44	14	52	15	56
<b>Firms that do not disclose information</b>	6	22	6	22	15	56	13	48	12	44
<b>States</b>										
<b>1</b>	61	100	72	100	65	100	52	100	35	100
<b>2</b>	21	34	32	44	30	46	21	40	19	54
<b>3</b>	2	3	0	0	0	0	0	0	0	0
<b>4</b>	18	30	43	60	29	45	32	62	23	66
<b>5</b>	21	34	23	32	12	18	10	19	12	34

**Table 6:** Disclosure of financial risks in 2010

	Interest Rate Risk		Exchange Rate Risk		Commodity Risk		Credit Risk		Liquidity Risk	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Firms that disclose information</b>	21	78	19	70	14	52	14	52	16	59
<b>Firms that do not disclose information</b>	6	22	8	30	13	48	13	48	11	41
<b>States</b>										
<b>1</b>	58	100	64	100	62	100	54	100	40	100
<b>2</b>	23	40	30	47	25	40	22	41	18	45
<b>3</b>	6	10	3	5	0	0	0	0	0	0
<b>4</b>	36	62	38	59	29	47	35	65	24	60
<b>5</b>	21	36	20	31	10	16	9	17	9	23

**Table 7:** Disclosure of non-financial risks in 2009

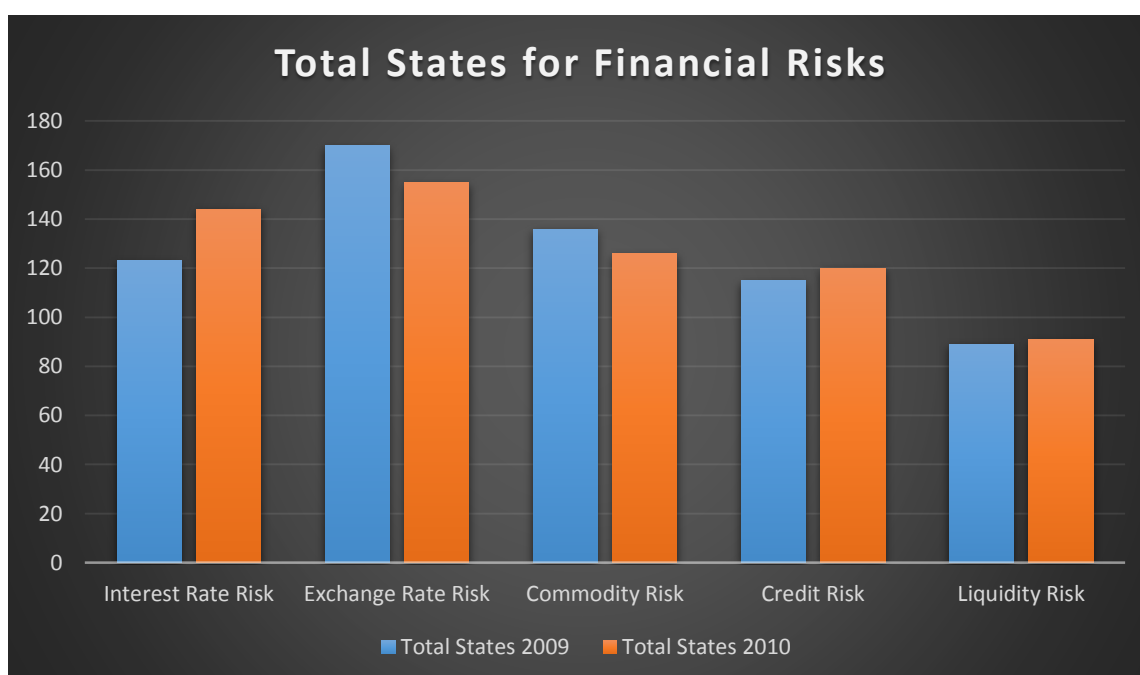
	Environmental Risk		Sourcing Risk		Integrity Risk		Country Risk		Regulatory Risk		Business Portfolio Risk		Other Non-financial Risks	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Firms that disclose information</b>	9	33	6	22	5	19	12	44	14	52	6	22	18	67
<b>Firms that do not disclose information</b>	18	67	21	78	22	81	15	56	13	48	21	78	9	33
<b>States</b>														
<b>1</b>	30	100	13	100	17	100	77	100	61	100	25	100	17	100
<b>2</b>	17	57	4	31	6	35	50	65	47	77	17	68	88	51
<b>3</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>4</b>	14	47	6	46	8	47	7	9	9	15	6	24	52	30
<b>5</b>	1	3	1	8	0	0	0	0	0	0	0	0	3	2



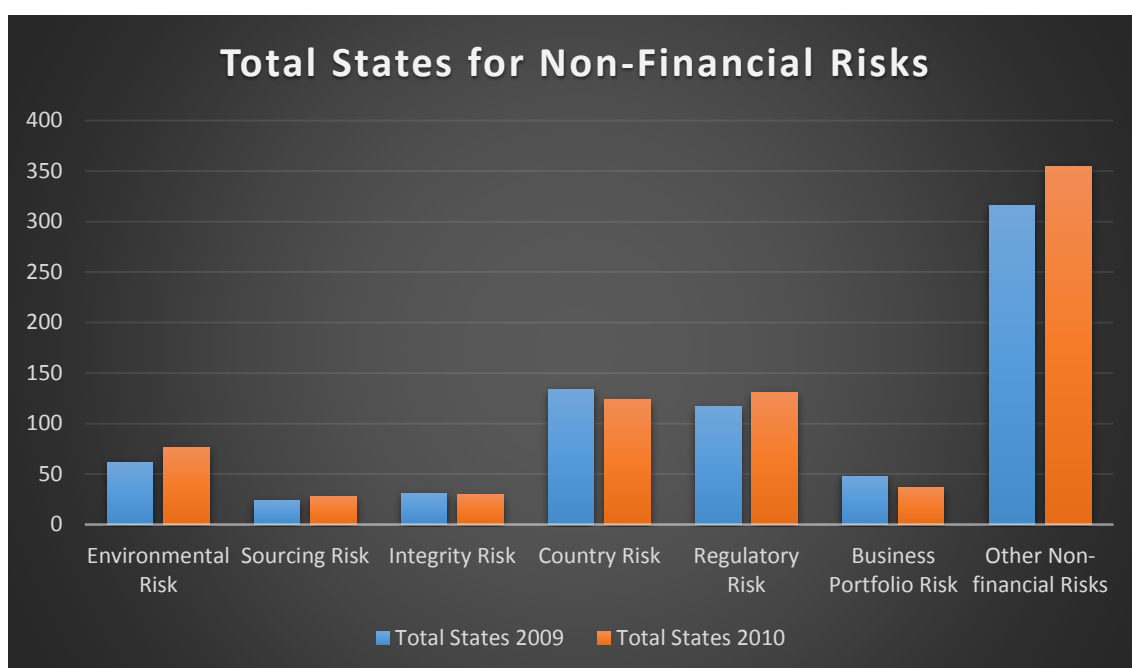
**Table 8:** Disclosure of non-financial risks in 2010

	Environmental Risk		Sourcing Risk		Integrity Risk		Country Risk		Regulatory Risk		Business Portfolio Risk		Other Non-financial Risks	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
<b>Firms that disclose information</b>	9	33	7	35	4	15	10	37	14	52	6	22	17	63
<b>Firms that do not disclose information</b>	18	67	20	65	23	85	17	63	13	48	21	78	10	37
<b>States</b>														
<b>1</b>	39	100	14	100	16	100	75	100	67	100	19	100	19	100
<b>2</b>	20	51	5	36	6	38	41	55	50	75	12	63	92	47
<b>3</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>4</b>	16	41	8	57	8	50	7	9	13	19	6	32	59	30
<b>5</b>	1	3	1	7	0	0	1	1	1	1	0	0	10	5

**Figure 1:** Total States for Financial Risks



**Figure 2: Total States for Non-Financial Risks**



Tables 5, 6, 7 and 8 and figures 1 and 2 include information related to risk disclosure disaggregated into different types of financial and non-financial risks. As shown in the tables 5 and 6, exchange rate risk and interest rate risk are the financial risks on which companies report more information. 78% of firms report information for the years 2009 and 2010 about exchange interest and a 78% in 2009 and 70% in 2010 of firms issue information about interest rate risks. However, the figures of companies which report information on credit, commodity and liquidity risk are closer to the half.

With regard to non-financial risks, in tables 7 and 8 it is shown that regulatory risk (52% of firms in 2009 and 2010) and country risk are the individual risks about which firms concern more when preparing annual reports. Although the category with a higher percentage is other non-financial risks, it encompasses different risks that individually would have a small impact on the consideration of risk reporting. Other non-financial risks are also important when disclosing risk information according to the results, such as environmental and sourcing risk.

Finally, in figures 1 and 2 it is possible to appreciate which are the most reported risks within the categories of financial and non-financial risk and to observe that there are only small changes in the quantity of information companies report during 2009 and 2010.

### 3.3.2-Hypothesis testing

**Table 9:** Regression Analysis Results for IDR1 and Financial Risks

Adjusted R <sup>2</sup>			0.03809
	Coefficient	t statistic	P-value
Company size	0.10955	0.88423	0.38089
Level of risk	-0.08816	-0.81843	0.41708
Growth Potential	-0.00959	-0.23960	0.81164
Profitability	-0.01549	-2.35091	0.02280

**Table 10:** Regression Analysis Results for IDR1 and Non-Financial Risks

Adjusted R <sup>2</sup>			0.15830
	Coefficient	t statistic	P-value
Company size	0.07100	0.53275	0.59662
Level of risk	-0.03163	-2.60412	0.01216
Growth Potential	-0.26050	-0.59556	0.55419
Profitability	-0.11875	-3.28866	0.00187

**Table 11:** Regression Analysis Results for IDR2 and Financial Risks

Adjusted R <sup>2</sup>			0.22622
	Coefficient	t statistic	P-value
Company size	2.61062	1.26953	0.21025
Level of risk	-0.55414	-2.95663	0.00477
Growth Potential	-3.37199	-0.49957	0.61961
Profitability	-2.01464	-3.64312	0.00065

**Table 12:** Regression Analysis Results for IDR2 and Non-Financial Risks

Adjusted R <sup>2</sup>			0.33086
	Coefficient	t statistic	P-value
Company size	13.75808	4.93043	0.00001
Level of risk	-0.68440	-2.69099	0.00972
Growth Potential	-5.49560	-0.60000	0.55127
Profitability	-0.57943	-0.77251	0.44373

To determine whether exists a relationship between disclosure of financial and non-financial risks and corporate variables an analysis of regression has been carried out. In this analysis the dependent variable is the risk disclosure index and the independent variables are company size, level of risk, growth potential and profitability with a confidence level of 95%. The results are the exposed in the tables above.

On the one hand, tables 9 and 10 show regression analysis with the IDR 1. According to the results exposed in the table 9, the correlation between the Risk Disclosure Index 1 (IDR1) for financial risks and the corporate variables is only significant when talking about company's profitability. P-value is under the confidence level of 0.05. The coefficient of regression is negative with a value of -0.01549. In the same vein, the relationship between the Risk Disclosure Index 1 (IDR) for non-financial risks (Table 10) is significant with the variable profitability with a negative coefficient of -0.11875. A negative coefficient of regression implies a negative relationship between the dependent and the independent variable.

In this case, the information exposed in the paragraph above involves that with a higher profitability a company will report less information on risks. These results do not support the hypotheses IDR 1 RF 4(a) / RNF 4 (b) that implied a positive relation between risk disclosure and profitability.

In the table 10 there is also a significant relation between the IDR 1 for non-financial risks and the level of risk. The relation is negative with a coefficient of -0.03163 and is consistent with the hypothesis IDR1 RNF 2(b) that implies a relationship between level of risk and non-financial risk disclosure. This result is consistent with the argument exposed by Cabedo and Tirado (2009) which argues that managers of companies with higher levels of risk are reluctant to disclose risk information.

On the other hand, tables 11 and 12 include information of the IDR 2. Table 11 (IDR 2) show similar results to table 10 (IDR 1). It has the same implications exposed above for it. Significant negative relation between the index and profitability is not consistent with hypotheses that consider it to be positive (Hypothesis IDR 2 RF 4(a) is not consistent), and a significant negative relationship between level of risk and IDR 2 for financial risks could be explained by the arguments stated above.

The table 12 shows the strongest relation of all variables. There is a strong positive relationship (p-value=0.00001 and coefficient =13.75808) between the IDR 2 for non-financial risks and company size. This positive relation means that companies disclose more information on non-financial risks when their size is bigger. This supports hypothesis IDR 2 RNF of positive relation between risk disclosure and company size; other authors, such as Linsley and Shrives (2006) and Cabedo and Tirado (2009), found similar results on this hypothesis. In table 12 there is also a significant negative relation between company's level of risk and IDR 2 for non-financial risks that may be interpreted following the same arguments exposed above (directors are reluctant to show information on risks when their companies are exposed to higher levels of risk).

Finally, it is important to say that there is no relation between risk disclosure and growth potential in any of the cases, although according to Fama and French (1992, as cited in Cabedo and Tirado 2009, p.127) the book-to-market ratio is a good proxy variable of risk.

## **4.-CONCLUSIONS**

The present work analyses the relationship between four corporate variables (company size, level of risk, growth potential and profitability) and information on business risks disclosed by firms. As Cabedo and Tirado (2009) remark, it is difficult to quantify the information companies report on risks; therefore, the classification of companies into risks proposed by these authors has been used in this analysis in order to obtain a quantification of risks closer to reality. In this way, two different indexes of risk disclosure have been made. The first index (IDR1) implies the classification of the firm into five non-exclusive states, whilst the second index (IDR2) includes the sum of all paragraphs (classified into states) which report information about risks disclosed for each firm.

The sample of the empirical analysis comprises 27 Spanish firms that are or have been part of the IBEX 35 and refers to the years 2009 and 2010. These years have been selected because in them annual reports were prepared within a context of economic crisis that demanded more risk disclosure.

To determine corporate variables, natural logarithms of firms' total assets are used to measure company size; percentage of indebtedness is used to determine company's level of risk; ROA is employed in order to measure company's profitability; and growth potential is estimated with the Book-to-Market ratio.

Regarding the results of the empirical analysis, in almost every regression (except for non-financial risks using the second index of disclosure) the most significant corporate variable is profitability. The sign of the coefficient of this variable is always negative, what shows an inverse relationship between profitability and quantity of information about risks disclosed.

Additionally, when using the second index of risk disclosure (IDR2) to quantify risk disclosure, together with profitability, there is a significant negative relationship between level of risk and risk disclosure. Apart from this, in only one of the four regressions a positive relation has been found between company size and non-financial risks.

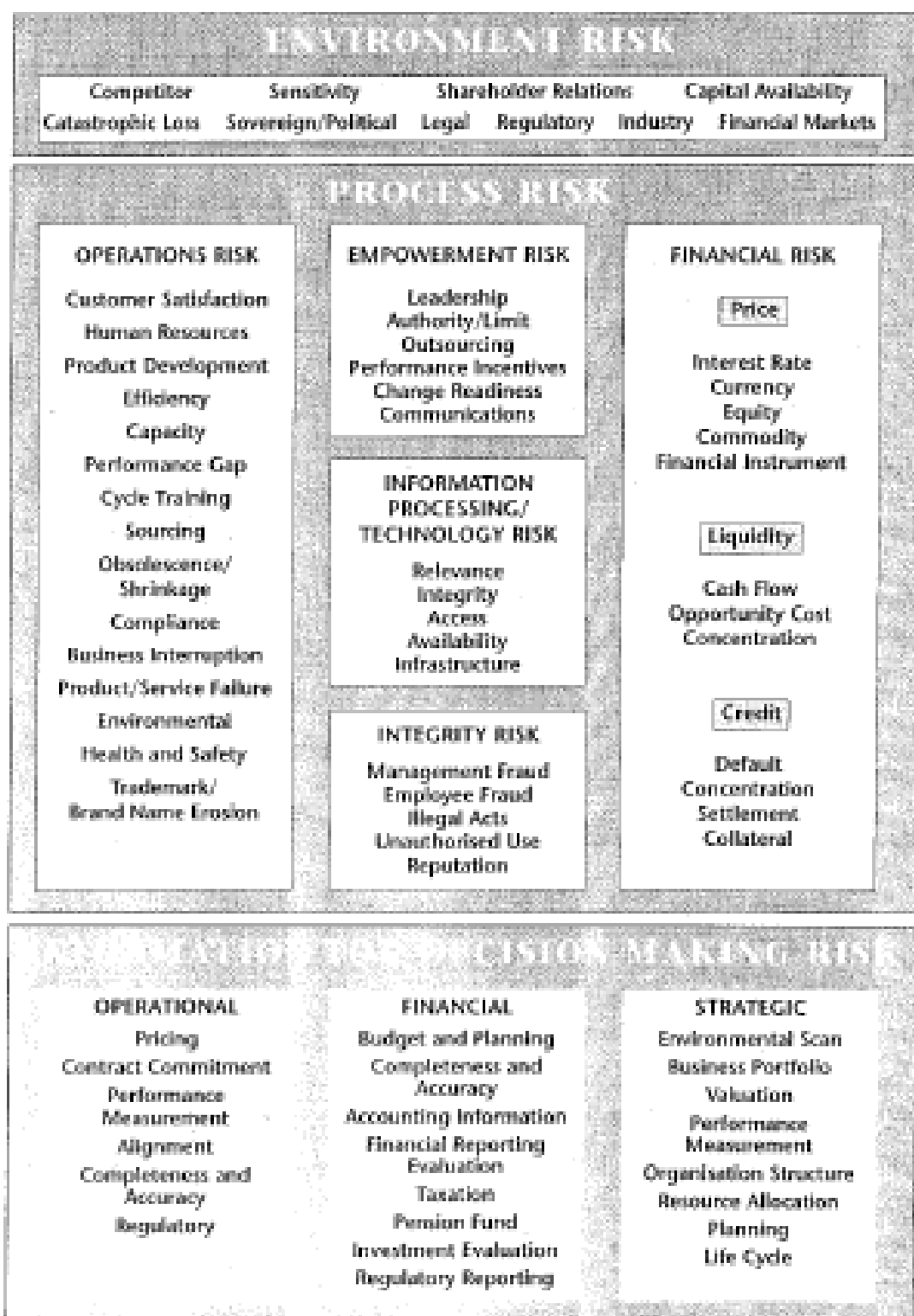
## 5. - APPENDICES

### APPENDIX I – LIST OF FIRMS OF THE SAMPLE SELECTION

FIRM	INDUSTRY
ABERTIS INFRAESTRUCTURAS, S.A.	INFRASTRUCTURES
ABENGOA, S.A.	TECHONOLOGY
ACS, ACT. DE CONST. Y SERVICIOS, S.A.	CONSTRUCTION
ACERINOX, S,A,	STEEL
AMADEUS IT HOLDING	TRAVEL TECHONOLOGY
ACCIONA, S.A.	INFRASTRUCTURE
EBRO FOODS, S.A.	FOOD
ENDESA, S.A.	ELECTRICITY
ENAGAS, S.A.	ENERGY
FOMENTO DE CONSTR. Y CONTRATAS, S.A.	CONSTRUCTION
FERROVIAL	INFRASTRUCTURES
GAMESA CORPORACION TECNOLOGICA, S.A.	RENEWABLE ENERGY
GAS NATUAL SDG, S.A.	ENERGY
GRIFOLS, S.A.	PHARMACEUTICALS
IBERDROLA, S.A.	ELECTRICITY
IBERIA, LINEAS AEREAS DE ESPAÑA, S.A.	TRANSPORT
IBERDROLA RENOVABLES, S.A.	RENEWABLE ENERGY
INDRA SISTEMAS, S.A.	INFORMATION TECHNOLOGY
INDITEX, S.A.	RETAILING
JAZZTEL PLC	TELECOMMUNICATIONS
RED ELECTRICA CORPORACION, S.A.	ELECTRICITY
REPSOL YPF, S.A.	ENERGY
SACYR VALLEHERMOSO, S.A.	CONSTRUCTION
TELEFONICA, S.A.	TELECOMMUNICATIONS
MEDIASET ESPAÑA COMUNICACION	MEDIA
TECNICAS REUNIDAS, S.A.	ENERGY
VISCOFAN, S.A.	FOOD

APPENDIX II – ARTHUR ANDERSEN *BUSINESS RISK MODEL*™<sup>2</sup>

ARTHUR ANDERSEN *BUSINESS RISK MODEL*™



<sup>2</sup> Source: ICAEW (1997). Financial Reporting of Risk. London: ICAEW



APPENDIX III – NUMBER OF PARAGRAPHS IN THE NOTES TO THE FINANCIAL STATEMENTS

FIRM	2009		2010	
	No. Paragraphs <sup>3</sup>	No. Paragraphs About Risks	No. Paragraphs <sup>2</sup>	No. Paragraphs About Risks
<b>ABERTIS</b>	600	31	723	34
<b>ABENGOA</b>	821	35	1053	66
<b>ACS</b>	868	44	968	51
<b>ACERINOX</b>	640	42	804	47
<b>AMADEUS IT HOLDING</b>	560	26	648	26
<b>ACCIONA</b>	756	40	690	47
<b>EBRO FOODS</b>	608	41	696	27
<b>ENDESA</b>	789	59	965	62
<b>ENAGAS</b>	660	36	552	36
<b>FCC</b>	740	40	850	37
<b>FERROVIAL</b>	1000	52	1026	51
<b>GAMESA</b>	536	31	663	32
<b>GAS NATURAL</b>	772	34	838	36
<b>GRIFOLS</b>	730	42	722	40
<b>IBERDROLA</b>	832	44	860	46
<b>IBERIA</b>	398	24	440	25
<b>IBERDROLA RENOV.</b>	599	34	622	45
<b>INDRA SISTEMAS</b>	550	26	620	29
<b>INDITEX</b>	349	27	334	22
<b>JAZZTEL</b>	400	20	421	20
<b>RED ELECTRICA</b>	304	27	357	28
<b>REPSOL YPF</b>	760	54	920	44
<b>SACYR VALLEHERMOSO</b>	1370	87	1074	91
<b>TELEFONICA</b>	688	58	715	54
<b>MEDIASET</b>	635	33	633	32
<b>TECNICAS REUNIDAS</b>	516	23	500	26
<b>VISCOFAN</b>	552	23	536	24

<sup>3</sup> Determined through methods of stratified sampling with proportional allocation.

APPENDIX IV – NUMBER OF PARAGRAPHS IN THE ANNUAL REPORTS

FIRM	2009		2010	
	No. Paragraphs	No. Paragraphs About Risks	No. Paragraphs	No. Paragraphs About Risks
<b>ABERTIS</b>	97	8	101	9
<b>ABENGOA</b>	317	7	254	10
<b>ACS</b>	193	9	225	10
<b>ACERINOX</b>	228	25	227	28
<b>AMADEUS IT HOLDING</b>	201	9	305	25
<b>ACCIONA</b>	196	25	171	25
<b>EBRO FOODS</b>	188	45	193	48
<b>ENDESA</b>	365	70	406	83
<b>ENAGAS</b>	151	23	147	18
<b>FCC</b>	232	5	309	5
<b>FERROVIAL</b>	171	2	246	2
<b>GAMESA</b>	152	4	161	4
<b>GAS NATURAL</b>	422	51	389	52
<b>GRIFOLS</b>	115	3	111	3
<b>IBERDROLA</b>	188	47	184	54
<b>IBERIA</b>	440	19	101	4
<b>IBERDROLA RENOV.</b>	156	38	203	40
<b>INDRA SISTEMAS</b>	114	9	118	9
<b>INDITEX</b>	117	2	62	2
<b>JAZZTEL</b>	105	15	121	22
<b>RED ELECTRICA</b>	60	3	118	4
<b>REPSOL YPF</b>	533	60	721	54
<b>SACYR VALLEHERMOSO</b>	199	17	123	3
<b>TELEFONICA</b>	626	58	573	54
<b>MEDIASET</b>	138	1	147	6
<b>TECNICAS REUNIDAS</b>	47	11	47	11
<b>VISCOFAN</b>	52	8	46	13

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