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Disclosure of the risk factors of public traded Brazilian companies

Evidenciação dos fatores de risco de empresas brasileiras de capital aberto

Article received: 08/23/2024, Article accepted: 10/25/2024

Brenda Nepomuceno Bezerra
Rio de Janeiro – RJ
Undergraduate in Accounting Science from UERJ[1]
brenda.nepo@hotmail.com

Layla Sena de Oliveira
Rio de Janeiro – RJ
Undergraduate student at UFRJ
layla.sena@hotmail.com

Regina de Jesus Nunes
Rio de Janeiro – RJ
Undergraduate student at UFRJ
regina.n.contabil@gmail.com

Thiago de Abreu Costa
Rio de Janeiro – RJ
Adjunct Professor of Accounting at UFRJ
thiago@facc.ufrj.br

ABSTRACT

The objective of this study was to identify which factors influence the risk disclosure of Brazilian publicly traded companies and to broaden the discussion on the relationship between the level of risk and the quality of disclosure. For this, Brazilian publicly traded companies listed on the Brazilian Stock Exchange (B3) as non-financial in 2022 were selected, a quantitative analysis was used through the use of multiple linear regression, where the dependent variable is the level of risk disclosure and the independent variables represent incentives for disclosure (size, debt, regulation, profitability, levels of governance, internationalization and level of risk). The results obtained show that the variables audit, size, governance and control were significant. The other variables were not relevant in the disclosure of risks. A contribution of the study, its relevance is highlighted by offering empirical evidence by analyzing how the level of risk influences the quality of risk disclosure, identifying the variables that can elucidate the relationship, through the analysis of the organizational structure of the companies and their characteristics.

Keywords: Risk, Disclosure, Brazilian Companies.

1 UFRJ - Federal University of Rio de Janeiro - Campus Praia Vermelha – Rio de Janeiro – RJ – CEP 22290-240.

1. INTRODUCTION

As technological advances and economic changes increase, companies are susceptible to greater risks. It is therefore necessary for companies to be aware of the risks to which they are or may be exposed (ALVES; GRAÇA, 2013). In this sense, it is essential that companies follow standards or find ways to disclose their risks, enabling stakeholders to analyze them when making investments (ALMEIDA; COSTA, 2021).

In Brazil, the regulation of risk disclosure is governed by Instruction 480/2009 of the Brazilian Securities and Exchange Commission (CVM, in its Portuguese acronym), particularly through its Annex 24, known as the "Reference Form". This instruction determines that listed companies must provide a comprehensive description, addressing both quantitative and qualitative aspects, of the main market risks to which they are exposed (PASSOS et al., 2017).

It should be noted that the act of disclosing information about risks tends to reduce the information asymmetry between the entity and its stakeholders, constituting a vital activity, since the organization that pays attention to identifying, mitigating and highlighting the risks to which it is subject reflects its concern, thus generating greater credibility for its institutional image (PASSOS et al., 2017; ANDRADE et al., 2009). In this way, the risk of adverse selection is reduced, avoiding negative interpretations of companies by interest groups.

Ponte and Oliveira (2004) argue that companies can adhere to different forms of disclosure but considering the quantity and quality of the information, as this must meet the needs of the users of the financial statements. Bhattacharya, Desai and Venkataraman (2007) add that for accounting information to provide reliable and useful information for decision-making, it needs to have qualitative aspects that legitimize it as a reducer of asymmetries.

Given the relevance of information linked to corporate risks, it is noticeable that there is an extensive literature developing at a national level, exploring the disclosure of these risks and examining the content of their disclosure (PAMPLONA et al., 2015; LUCENA; SIQUEIRA, 2020). Within this scenario, Pamplona et al. (2015) reinforce the need for qualitative-quantitative improvement in research into the disclosure of risk factors in the electricity sector, finding that companies with higher levels of debt tend to disclose more information, due to strict monitoring by creditors, which leads managers to intensify disclosure.

In a different scenario, the United Kingdom, the authors Elshandidy, Fraser and Hussainey (2013) investigate the impact of corporate risk levels on aggregate, voluntary and mandatory risk disclosures in the narratives of annual reports of companies listed as non-financial. They state that, although there is a large number of studies, there are few that have focused on how risk levels impact on the strengthening of this type of disclosure.

Given the above, this study is justified in that it broadens the discussion on the relationship between the level of risk and the quality of disclosure, seeking to identify which factors influence the risk disclosure of Brazilian companies and to investigate how the level of risk affects the quality of risk disclosure of Brazilian non-financial listed companies.

Another argument that corroborates the study is the fact that the national literature that addresses this association is incipient, differing from the others in that it targets Brazilian non-financial publicly traded companies and the levels of corporate risk in mandatory disclosures.

Therefore, this study stands out for its relevance in providing empirical evidence by analyzing how the level of risk influences the quality of risk disclosure in Brazilian non-financial publicly traded companies. In addition, the research will seek to identify the variables that can elucidate the relationship between risk levels and the quality of information, by analyzing the organizational structure of companies and their characteristics.

2. THEORETICAL FRAMEWORK

2.1. Risks

Risk is inherent to any size or sector of activity, as it is part of the organizational routine (Klann, Kreuzberg & Beck, 2014). Given its relevance, a conceptual understanding is essential. It should be noted that there are numerous definitions of the word, given that different authors do not agree upon it. Many of these definitions focus on a more negative interpretation of risk, but the risk-return relationship, as discussed by Padoveze (2010), indicates that the higher the level of risk accepted, the higher the expected return on investment. The Brazilian Institute of Corporate Governance (2007) conceptualizes risk as an adverse action, usually understood as the possibility of something going wrong, but its current concept involves the quantification and qualification of uncertainty.

Thus, it is argued that there are classifications for the risks that non-financial organizations face in their activities. Padoveze (2010) and Gasparetto et al. (2018) classify the concept of risk as a threat or opportunity that results from changes in the business environment or that generates an impact on the company, as described in Table 1.

Table 1: Concept of Risk

Risk as danger or threat	Potentially negative situations, such as: financial losses, fraud, damage to the institution's credibility, theft or robbery, systems failures or lawsuits.
Risk as opportunity	Situations involving high risks lead to high returns, whether positive or negative (PADOVEZE, 2010).
Risk as uncertainty	Probability of economic, financial, environmental and social damage (GASPARETTO et al., 2018)

Source: Prepared by the authors (2023)

According to Zonatto and Beuren (2010), each organization must establish which categories of risk to adopt and manage. However, there are studies that show which types of risk are present in the business environment. According to Duarte Júnior (1996), the risks to which companies are subject are divided into: market, operational, credit and legal. Deloitte (2004) highlights liquidity risk; and Klann, Kreuzberg and Beck (2014) also include strategic and environmental risk (KLANN; KREUZBERG; BECK, 2014). The types of risks mentioned are described in Table 2.

Table 2: Types of risk

Market risk	Related to the changes to which financial instruments and investment portfolios are susceptible due to the volatility of market variables, such as interest rates, exchange rates, stock and commodity prices. (LEMGRUBER et al, 2001; GOULART, 2003)
Operational risk	Possible losses as a result of internal processes, human resources, inadequate and failed systems, and the external environment (LEMGRUBER et al, 2001).
Strategic Risk	These are inherent in the decision-making process and can result in losses for the organization (DELOITTE, 2004).
Credit risk	It relates to the possibility of one of the contracting parties not honoring their commitments (DUARTE JÚNIOR, 1996).
Liquidity risk	The organization's inability to meet its financial commitments to customers or the market at the agreed time, place and currency (DELOITTE, 2004).
Environmental risk	Systematic analysis of the risks of industrial accidents and their consequences, by studying the probabilities of events occurring (SÁNCHEZ, 1994).
Legal risk	Related to possible losses that may occur when a contract cannot be legally supported (DUARTE JÚNIOR, 1996).

Source: Prepared by the authors (2023)

2.2. Risk disclosure standards

Risk disclosure is seen in a complex way, due to the estimates that must be made by the company to identify a risk that is likely to impact it (GASPARETTO et al., 2018). As one of the most attractive information components for investors, risk disclosure provides insight into the organization's risk profile. It fills in the gaps left by financial information and can be done on a mandatory or voluntary basis.

In the case of mandatory disclosure, there are specific regulations for the different market sectors. These regulations seek to increase the reliability and standardization of the information disclosed, in order to meet the information needs of users. On the other hand, in voluntary disclosure, there are no regulations or pre-established standards to ensure the reliability of the information, which is a choice made by company managers to disclose information beyond that required by legislation (Gonçalves & Ott, 2002; Alves and Graça, 2013).

Given its importance, regulatory bodies have increasingly demanded that companies disclose the risks to which they are exposed. According to the Brazilian Securities and Exchange Commission, the Reference Form (RF) establishes a new information regime that supports the analysis of information, paying attention to the occurrence of an increase in the quality and presentation of information.

As a requirement of the CVM, every public company listed on the stock exchange must present the FR to its shareholders. This is yet another instrument for disclosing accounting information, but its structure is mainly based on narrative texts and is not limited to financial statements and economic and financial indicators (SOUZA; BARBOSA, 2011). The content of the form includes information about the company's statute, the risks inherent to it, changes in capital, and a category for Risk Factors with the aim of minimizing information asymmetry between the company and its stakeholders (PASSOS et al., 2017).

It should be noted that in 2021 the Brazilian Securities and Exchange Commission issued its Resolution 59, which amends CVM Instruction 480/2009, establishing a new system for the disclosure of information by publicly traded companies. One of the changes was the reformulation of the presentation of risk factors, with greater emphasis on the five that are considered to have the greatest impact on the issuer (CVM, 2021). Another significant change for this study occurred in article 7, where it is necessary to describe the main changes in risk factors that occurred in the previous year and expectations regarding the reduction or increase in exposure to risks as a result of the operation (CVM, 2021).

2.3 Related studies

Studies have been conducted to analyze risk disclosure by Brazilian publicly traded companies. Among them is the work by Klann, Kreuzberg and Beck (2014) which identifies the types of risk disclosed in the Reference Forms of the largest companies in each sector listed on BM&FBOVESPA for the period 2011. The research concluded that risk management is related to the particularities of each organization, and that the types of risks can change according to the companies' sector classification.

In investigating the behavior of Brazilian companies listed on BM&FBOVESPA in relation to filling in the Reference Form, Aragão and Cavalcante (2014) found that the quality of the information analyzed was low. Attempts were made to omit information about the processes and practices adopted in the conduct of business, constituting non-compliance with CVM rules.

Lucena and Siqueira (2020) analyzed the influence of risk factor disclosure on the share price of Brazilian companies, investigating whether this type of information is value relevant, and found a positive and significant association with the share price, as well as an informational gain in the model used when risk disclosures were included. Thus, the evidence shows that investors react positively to this type of information being considered in decision-making.

From another perspective, Gasparetto et al. (2018) analyzed the disclosure content related to the risk factors of 44 companies in the electricity sector from 2013 to 2015. They concluded that there is a diversity of risks disclosed by the companies. However, disclosure is performed predominantly in narrative form, and companies practically do not change their disclosure policies from one period to the next. There is a standardization of the information disclosed, regardless of the political, economic and social scenario.

Alves and Graça (2013) explain the need for stakeholders to obtain information on companies' financial performance and the growing demand for information that companies are trying to meet. However, they warn against Portuguese companies generating abstruse data due to possible competitive disadvantages.

In an analysis of disclosures and company characteristics, Elshandidy, Fraser and Hussainey (2013) concluded that companies with high levels of financial risk and low stock returns disclose more risk information, both mandatory and voluntary, as well as larger companies with high dividend yields, board independence, low insider ownership and effective audits.

Analyzing the results of the aforementioned studies, it can be seen that various factors can influence companies' risk disclosure. Looking at the specific case of Brazil, where risk disclosure is mandatory, but its content can vary, it is important to understand how these factors can influence risk disclosure in Brazil.

3. METHODOLOGY

3.1. Sample selection

To achieve the aim of the study, Brazilian non-financial publicly traded companies listed on the Brazilian Stock Exchange (B3) in 2022 were selected using the Economatica database. Non-financial companies were excluded because their operational activity is very specific, which has a direct impact on their risk factors. The initial population contained 356 non-financial companies, but 169 were excluded, of which 166 did not have the necessary accounting information for the study, and 3 were not actively registered at B3, resulting in a final sample of 187 companies, as described in Table 3.

Table 3: Composition of the Study Sample - Year 2022

Number of public traded companies	356	100%
(-)Companies that lacked desirable information	(166)	46,63%
(-)Companies not actively registered at B3	(3)	0,84%
(=)Final Sample of the Study	187	52,53%

Source: Prepared by the authors (2023)

Once the sample had been selected, the identification of the risk factors and the other data required for the study were collected manually using the companies' Reference Forms, under item 4.1 - Risk Factors, except for data relating to internationalization, which was collected manually using the website Investing.com.

3.2. Multivariate analysis

To conduct this analysis, a quantitative analysis will be used using multiple linear regression with cross-sectional data, in which the dependent variable is the level of risk disclosure, and the independent variables represent incentives for disclosure (audit, control, size, profitability, internationalization, governance, indebtedness and level of risk).

As all companies are obliged to disclose their risk factors in the reference form, the number of words in item 4.1 of the reference form was counted to measure the quality of the reports. The count was performed using Python, where all words with more than 3 letters were considered. It is important to note that according to Elshandidy, Fraser and Hussainey (2013), this methodology is commonly used in studies involving risk disclosure.

The model used in this study was:

$$RISK\_DIS = \beta 0 + \beta 1\ AUDIT + \beta 2\ CONTROL + \beta 3\ SIZE + \beta 5\ RENT + \beta 6\ INTERN$$

$$+ \beta 7\ GOV + \beta 8\ INDEBT + RISK + \varepsilon$$

The independent variables represent factors that, according to the literature, can help explain the level of risk disclosure by companies. These factors include financial issues such as risk level, governance, auditing and control. The operational description of each variable is shown in Table 4.

Table 4: Operationalization of independent variables

VARIABLE	ACRONYM	DEFINITION
Risk disclosure	RISK_DIS	Number of words in item 4.1 of the Reference Form
Auditing	AUDIT	1 if the company is audited by a 'Big Four' and 0 otherwise
Controller	CONTROL	1 if the largest shareholder in the company's capital has a percentage stake of more than 50% and 0 otherwise
Size	SIZE	Natural logarithm of total assets
Rentability	RENT	Net profit divided by total assets for the year 2022
Internationalization	INTERN	1 if the company sells American Depositary Receipt (ADR) and 0 otherwise
Governance	GOV	1 if the company belongs to the new market and 0 otherwise
Indebtedness	INDEBT	Liabilities divided by total assets for the year 2022
Risk	Risk	Beta, which represents the diversifiable risk of companies

Source: Prepared by the authors (2023)

The statistical results were obtained using Stata 15 software. The regression results consider White's robust errors, to deal with possible heteroscedasticity problems. The diagnosis of multicollinearity was obtained using the VIF test. The significance level adopted in the study was 10%.

4. RESULTS

Table 5 shows the results of the descriptive statistics for the sample variables. With regard to the dependent variable, it can be seen that the average number of words used by the companies in the sample is 7054.17. Despite this, there are companies in the sample which, despite the requirement, did not disclose information in item 4.1 of the reference form, as well as companies which disclosed risk factors using 26,166 words, which is more than three times the average number of companies in the sample.

With regard to the other variables, 86% of the companies in the sample are audited by Big 4 companies, 64% of which are part of the new market. In terms of ownership structure, 34% of the companies have a shareholder with more than 50% of the voting capital, while only 17% of the companies trade their shares on the US Stock Exchange.

Table 5 - Descriptive Statistics

VARIABLE	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
RISK_DIS	7054,17	4759,42	0,00	26176,00
SIZE	15,68	1,95	9,36	20,70
ENDIV	0,77	0,61	0,01	5,11
INTERN	0,17	0,37	0,00	1,00
RENT	0,02	0,20	-1,36	1,08
AUDIT	0,86	0,35	0,00	1,00
GOV	0,63	0,48	0,00	1,00
CONTROL	0,34	0,47	0,00	1,00
RISK	1,04	0,52	-0,03	2,52

Source: Prepared by the authors (2024)

Table 6 shows the results of the multivariate analysis, where it can be seen that the variables audit, size, governance and control were significant variables. As such, they were decisive in explaining the risk disclosure of the companies in the sample. According to the data obtained, the audit variable proved to be significant in the analysis of risk disclosure, revealing that a greater number of companies audited by the “Big Four” opted for greater disclosure in order to convey to stakeholders that they are safe companies in which to invest. The size of the company showed significance, indicating that larger companies tend to provide more information about risks. This finding is congruent with the theories proposed by Verrecchia (2001), since large companies have greater public visibility and, consequently, a greater incentive for discretionary disclosure. In addition, such companies generally face fewer obstacles related to the costs of producing information for disclosure, as it is often generated to improve business management.

Another relevant variable was corporate governance. It should be noted that companies classified in the Novo Mercado have greater transparency, i.e. good business management practices. Similarly, the variable representing the existence of the controlling shareholder also proved to be significant in the multivariate analysis. In other words, companies with shareholders holding large percentages of the share capital tend to have a low level of disclosure about their Risk Factors compared to those with more diluted shareholder control. However, this behavior is unlikely to be observed in companies with dispersed shareholder control, since disclosure of information aims to reduce information asymmetry among users (MURCIA; SANTOS, 2009). On the other hand, the other variables were not relevant to the study, i.e. they did not influence risk disclosure.

Table 6: Results of the multivariate analysis

VARIABLE	COEFFICIENTS
Auditing	1,551**
Controller	1.137*
Size	1.213***
Rentability	-2.619*
Internationalization	-488.9
Governance	1,426**
Indebtedness	174.0
Risk	680.9
Contant	-14.517***
Observations	187
R-squared	0.365

Note: ***1% **5% *10%. The VIF of all variables is less than 10. | **Source**: Prepared by the authors (2023)

5 FINAL CONSIDERATIONS

In this context, the aim of this research was to identify which factors influence the risk disclosure of Brazilian companies and to investigate how the level of risk affects the quality of risk disclosure of Brazilian non-financial publicly traded companies. To this end, a sample of 187 publicly traded Brazilian companies was analyzed in 2022, using multivariate statistics and multiple linear regression.

The multivariate analysis revealed that the variables audit, size governance and control were significant in explaining risk disclosure The other variables were not relevant to risk disclosure. Risk was found not to be statistically significant. Therefore, the risk levels of Brazilian companies do not influence the quality of disclosure.

Thus, as a contribution of the study, we highlight its relevance in offering empirical evidence by analyzing how the level of risk influences the quality of risk disclosure, identifying the variables that can elucidate the relationship, through the analysis of the organizational structure of companies and their characteristics.

The main limitation of this study is the analysis of different sectors and companies. If the study were less comprehensive, it could demonstrate more specific characteristics. In this context, it is suggested that other studies use specific sectors, thus seeking a more in-depth analysis of possible variables that influence risk disclosure.

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