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RELATIONSHIP OF PROFITABILITY AND DISCLOSURE OF PROVISIONS AND CONTINGENT LIABILITIES OF HIGH POLLUTION POTENTIAL COMPANIES LISTED ON B3

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ABSTRACT

The present study aims to analyze the relationship between the profitability and the disclosure of environmental contingent provisions and liabilities of the companies with high potential for pollution listed in B3. The research sample consists of 38 companies of shares traded in B3, which makes up the high-impact group, according to Law No. 10,165 / 2000, which deals with the National Environmental Policy. In order to achieve the objective of this research, we used the content analysis to examine the disclosure of environmental contingent provisions and liabilities by companies, in the period from 2011 to 2016, as well as the application of multiple regression of fixed effect. The result presented statistical significance between the independent variable Profitability (RENT) and disclosure, but with a negative coefficient, that is, the most profitable companies are not necessarily the ones that most disclose information on environmental contingent provisions and liabilities. Thus, there was a rejection of the research hypothesis (H1: The profitability of companies with high polluting potential is positively related to the disclosure of provisions and contingent environmental liabilities). Such a result runs counter to the argument that most profitable firms tend to disclose more information than less profitable ones, just to differentiate themselves from them. Regarding the other variables, Market Value and Business Sustainability Index (ISE), these were significant and negative, while Indebtedness was positive; Size was not significant, and finally, Corporate Governance was omitted from the econometric model because it was a fixed dummy along the panel.

Keywords: Disclosure. Provisions and Contingent Liabilities. High Pollution Potential. Profitability.

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1 INTRODUCTION

As of the Industrial Revolution, problems started to repetitively affect the environment, reducing natural resources and promoting climate changes resulted from the pollution of rivers, the air and the soil. Therefore, organizational strategies started being developed aimed to combine action of social responsibility, sustainable development, consumer awareness while achieving company's goals (Souza, Rásia, & Jacques, 2010).

These strategies aim at obtaining image gains and financial advantages, such as the valuation of shares and better economic and financial performance (Kolk, Levy, & Pinkse, 2008), since the good environmental image for organizations, especially those in sectors of high risk of environmental accidents, has gained importance over time (Nossa, 2002).

According to Law no. 10.165/2000, addressing the National Environmental Policy, the activities developed by the entities are categorized according to the level of pollution, and the use of natural resources, whose impact may be classified as small, medium and high polluting (Vieira, Arruda, & Lima, 2014). It is expected, therefore, that organizations with a high polluting impact disclose more environmental information than those that do not carry out potentially polluting activities (Pereira, Bruni, & Dias, 2010). Through the information disclosed, it is possible to know the risks and uncertainties inherent to the activities of the organizations to subsequently contribute to the decision-making process of the agents (Bomfim, Teixeira, & Monte, 2015).

In Brazil there is no specific law that forces companies to disclose social/environmental information, but many companies has adopted these practices mainly to demonstrate environmental concern and social responsibility. In addition, environmental information can directly or indirectly affect the economic/financial situation of companies, (Santos, 2016).

As for environmental accounting information, there are environmental contingent provisions and liabilities, which came into effect with CPC 25 - Provisions, Contingent Liabilities and Contingent Assets, issued in 2009. This pronouncement defines contingent liabilities as present obligation of the entity resulting from past events, the settlement of which shall result in an outflow of resources capable of generating economic benefits. These contingent liabilities are related to labor, tax, civil and environmental matters.

According to Bewley (1998), there is a positive relationship between the disclosure of contingent provision and liabilities and the market value of companies. However, the literature is controversial as to the stock market reaction to the disclosure of environmental information in the financial report. On the other hand, Bushman and Smith (2001) complement that the transparency of the accounting information is an important tool for a company to stand out among competitors; therefore, contingent provisions and liabilities are likely to be disclosed in the financial statements, provided there is an economic gain.

In this sense, there are two lines of thinking. The first, so called traditional, defends that initiatives aimed at improving environmental performance implies in high costs for the companies, thus contributing to declining their financial performance. Contrary to current trends, these initiatives contribute to increase efficiency and improve the company's image before its stakeholders, which can be an authentic and competitive factor that leads to better financial performance (Roque & Cortez, 2006).

Porter (1991) and Porter and Van Der Linde (1995) introduce the Porter Hypothesis (PH), which argues that when environmental regulation is well done, it will benefit both the environment and the company, since environmental preservation aims to increase the productivity of the resources used in the production and, consequently, to increase competitiveness of companies. Nossa (2002) further mentions that the agents disclose the environmental actions of the company for the less informed parties so as to reduce asymmetric information and increase the credibility of the company.

Given the foregoing, and considering that companies are constantly under pressure to demonstrate a satisfactory performance in the environmental scope, placing the social responsibility as one of the mechanisms by which they seek to meet this requirement, and the corporate environmental disclosure as an important measure to influence external perceptions about the company, aiming to improve its economic performance; the objective of this work is to analyze the relationship between profitability and the disclosure of environmental contingent provisions and liabilities of high polluting companies listed on B3.

This research is justified by the importance of disclosing environmental information of high polluting companies listed in B3, as to contingent provisions and liabilities, as directed by CPC 25. This demonstrates the position of large organizations in providing users with important information, presenting their risks to the market, sharing with society the general risks inherent in their activities. The study is also justified by the relevance of the topic in the context of global competitiveness among companies, since the market gives greater credibility to such companies, stimulating investors' interest (Fernandes, 2013).

Moreover, although there are several studies on voluntary environmental disclosure, the context dealing with environmental contingent provisions and liabilities is poorly explored in national surveys. One of the main reasons for this lack of interest is this is nota n obligatory information; In addition, managers are careful when providing information that may lead stakeholders to distrust investing in companies that are more prone to environmental risks.

2 THEORETICAL FOUNDATION

2.1 Discretionary Disclosure Theory

Disclosure is the announcement of information about entities that aims to meet the needs of the most varied types of external users of accounting information, as well as to comply with legislation. Finally, there are the discretionary disclosures.

According to Verrecchia (2001), the discretionary disclosure of information may be based on three categories of research: (1) association-based disclosure research; (2) judgment-based disclosure research; and (3) research on efficiency-based disclosure. The first category aims to investigate the effects of disclosure on the actions of individuals, such as investors; the second category detects the reasons for the disclosure of certain information of the entity; while the third and last category, according to the author, contains research on which disclosures are preferable in the lack of prior knowledge of some information.

Accordingly, Dye (2001) states that there is no theory of discretionary disclosure, which is classified by the author as a special case of the theory of games, under the following perspective: entities shall only disclose their information that favors them, not publishing those that are disadvantageous. The theory of games assumes that there may be certain outcomes, based on which players, in this case the entities, choose premeditated actions to improve their return, achieving the expected goal.

Dantas, Zendersky, Santos and Niyama (2005) claims that a balance shall be reached between the cost and benefit of disseminating information; disadvantages should not outweigh the advantages. Thus, an entity with satisfactory results in the social/economic and environmental contexts, or that considers itself capable of achieving them, shall have more incentive to voluntarily disclose the information, as the advantages compensate the costs.

However, for an entity that assumes poor performance, non-disclosure may be the safest path; Otherwise, the company may damage both its reputation and that of its manager (Dantas et al., 2005). Verrecchia (2001) points out that, in a context where there are no disclosure costs, entities need to voluntarily expose information, as the market may negatively perceive non-disclosure.

In any case, the more information is disclosed by entities, the less information are exclusive and, therefore, confidential. Thus managers shall have reduced chances of gaining their own benefits for the knowledge they have. Uyar and Kiliç (2012) argue that the more discretionary information is disclosed by companies, the greater the users' understanding of its value.

2.2 Environmental contingent provisions and liabilities

According to Brazilian accounting standards, the publication of environmental information is not mandatory. However, recommendations for the disclosure of provisions contingent assets and liabilities applicable to environmental matters, issued as of CVM Resolution no. 594, dated September 15, 2009, which makes mandatory the application of CPC

25 by publicly-held companies, as of the financial year of 2010 (Martins, Gelbcke, Santos, & Iudícibus, 2013).

CPC 25 requires disclosure of both quantitative and qualitative information on provisions and contingencies (Baldoino & Borba, 2015). On this, Dantas et al. (2005) note a certain similarity between the scope of disclosure and the definition of transparency; However, they point out that the concept of disclosure goes beyond the simple act of disclosure, also covering other factors such as quality, timeliness and clarity, which allows users to evaluate business aspects such as financial condition, business performance, etc.

O CPC pronouncement 25 requires the disclosure both of quantitative and qualitative information on provisions and contingencies (Baldoino & Borba, 2015). On this regard, Dantas et al. (2005) note some similarity between the scope of the disclosure and the definition of transparency; highlighting, however, that the concept of disclosure is not limited to the disclosure, also encompassing other factors such as quality, opportunity and clarity, which allows users to evaluate business aspects such as financial condition, business performance, etc.

With that in mind, the disclosure of contingent liabilities in the financial statements with explanatory notes is essential for users to obtain useful and reliable information to assist them in the decision-making (Caetano, Silva, Biesdorf, & Leal, 2010). For this purpose, CPC 25 aims to ensure that its recognition and measurement criteria are properly used, as well as to ensure clear information in explanatory notes that enable their users to understand the nature, timing and value of the elements (Oliveira, Benetti, & Varela, 2011).

In general, all provisions are contingent, as their term or value is uncertain. However, CPC 25 states that the term "contingent" is used for liabilities and assets that are not recognized because their existence is only confirmed by the occurrence or not of one or more uncertain future events, not entirely under the control of the entity. In addition, the term contingent liability is used for liabilities that do not meet the recognition criteria (Martins et al., 2013).

The recognition of environmental contingent liabilities, according to CPC 25, presents two types of obligations: (1) the non-formalized and (2) the legal obligation. The non-formalized obligation arises from the company's actions when the event makes it possible to settle certain responsibilities before third parties. According to the author, the company may be obliged to repair some damage caused to the environment; the company, on the other hand, agrees to repair it by considering the possibility that, in the future, this will become a legal obligation, either by ethical principles or by adherence to practices and policies for such procedure. The legal obligation, on the other hand, arises from legislation or contracts when, for example, there are penalties or cost generation for the company, as in the recovery of environmental areas affected by the company’s actions or in the decontaminations of rivers (Leal, Costa, Oliveira, & Rebouças, 2015).

CPC 25 states that if there is a liability whose amount is safely measurable, it must be provided. If there is only the possibility that such liability exists, it shall be disclosed as a contingent liability. Where the existence of the liability and the outflow of resources for possible settlement are very small (remote), nothing shall be disclosed.

As regards environmental contingent provisions and liabilities, entities must disclose, where applicable, the items required by CPC 25, which, although not directly related to the environmental scope, apply to all cases. If some items are not evidenced because the company does not practice them, the organization must disclose them, clarifying that this item is not applicable to the company’s reality. Murcia and Santos (2009) points out that, given the voluntary nature of the disclosure, entities are free to prepare the scope, period and how to disseminate this information to users.

According to Dye (2001), this disclosure is a special case of the game, whose main premise is that the entity shall only voluntarily disclose favorable information because of the positive effect on market players. The logic is that the benefits of disclosure must outweigh the costs incurred therein; otherwise companies shall not disclose it (Angonese, Sanches, & Bezerra, 2014; Cunha & Ribeiro, 2008).

Cunha and Ribeiro (2008), however, argue that "disclosure of information by accounting deserves special attention in the corporate discussion, as it is one of the most important ways managers can communicate with investors and the general market". Such narrative has survived over several decades, as discussed in the findings by Kennedy, Mitchell and Sefcik (1998), which state that the continuous values in the environmental contingent liabilities evidences impact of the stakeholder's analysis regarding both to the assimilation of investment risk and the decisions on the capital invested.

2.3 Previous studies

The focus of some research has been to verify the existence of a relationship between voluntary environmental disclosure and some factors that may explain the determining factors of this type of disclosure, as well as to analyze the impact of such disclosures, especially within the environmental scope and some financial and economic factors of the entities (such as market, profitability and size of organizations). These studies seek to relate some of these factors to disclosure practices, especially those with greater impact on the stakeholders.

The study conducted by Rufino and Machado (2015) sought to identify the determining factors of social voluntary disclosure of 100 companies listed on BM&FBovespa between 2010 and 2012. The results of this research showed that the return on equity, the size, the regulated sector and the entity's reputation were the most relevant reasons for voluntary social disclosure. It was also verified that external users could also influence voluntary disclosure.

On the other hand, Silva, Alexandre, Freitas & Silva (2014), in the same line of research, analyzed the financial statements of 2012 of 43 entities with high environmental impact, in accordance with Law no. 10.165/00. From the results found, the authors fund that the fact that organizations have a higher sales rate does not proportionally influence the increase in the amount of environmental disclosure, and those entities that are audited by the four largest auditing companies in the world, the Big Four, tend to disclose more than others that are not audited. Unlike the studies presented hereunder, this research found that profitability of companies does not influence the amount of disclosure.

Murcia and Santos (2009) and Angonese et al. (2014) studied the determining factors of voluntary disclosure in 100 non-financial corporations in 2007, and the factors that explain online voluntary disclosures. The authors disagreed in some points, but reached the same conclusion regarding profitability as a non-determining factor of the disclosure. They agreed that there is a statistical significance regarding size and corporate governance variables, and they differed in the auditory factor, since Murcia and Santos (2009) concluded that this point is insignificant in the determination of voluntary disclosure, while Angonese et al. (2014) demonstrated that the size of the audit firm is a determining factor for such disclosure, agreeing at this point with the study by Silva et al. (2014).

They agreed there is a statistical significance regarding size and corporate governance variables, and disagreed regarding the auditing factor, since Murcia and Santos (2009) found that this point is insignificant in assessing the voluntary disclosure, while Angonese et al. (2014) demonstrated that the size of the audit firm is a determining factor for such disclosure, in line with the study by Silva et al. (2014).

Regarding compliance with the requirements for the disclosure contingent of provisions and liabilities set forth in CPC 25, Suave, Codesso, Pinto, Vicente and Lunkes (2013) investigated whether the entities most traded on BM&FBovespa complied with this pronouncement. The results of the survey showed that organizations especially point out legal proceedings associated with tax, labor and civil matters, while environmental contingencies have a lower rate of disclosure. Regarding the items requested by CPC 25, it was found that companies mainly meet the description of nature, estimates of financial effects, inaccuracies regarding values and periods of occurrence, and measurement criteria. These authors have found that the entities do not disclose their information with the proper quality, as their reality was not demonstrated.

According to Akerlof (1970), the most profitable organizations tend to disclose more information in order to stand above the less profitable ones and, thus, reduce the risk of adverse selection. In line with the foregoing, Gray, Meek and Roberts (1995) state that the most profitable entities have incentives to stand above those with lower profitability, aiming to raise capital under the best available conditions, so they tend to disclose more information.

Lang and Lundholm (1993) states that most profitable companies can stand out among the less profitable ones by disclosing environmental information, communicating investors in the financial market of their environmental and showing an advantage over competitors.

Lu and Abeysekera (2014) investigated the influence of investors and the characteristics of social and environmental disclosure practices of Chinese companies considered to be socially responsible, identified by a classification list. After analyzing the reports, the authors verified that the variables profitability, company size and industry classification have statistically significant associations with social and environmental disclosure.

Fonteles, Nascimento, Ponte and Rebouças (2012) analyzed the determining factor of the disclosure of provisions and contingencies by the companies listed on the BM&FBovespa, and the results of the survey indicated a very low level of compliance: about 32% of the items required by CPC 25. As regards the determinants, the contingency disclosure index was found to be mainly motivated by the branches of electric energy, electronics, telecommunications, non-metallic minerals, trade and also by the size and profitability of the organizations, since these variables were statistically significant. The same did not happen with the variables liquidity and construction sector, which proved to be insignificant for the disclosure.

This study, in turn, follows the perspective that the discretionary disclosure of environmental contingent provisions and liabilities is directly associated with the profitability of high polluting companies.

2.4 Hypothesis formulation

Given the empirical evidences found, the general nature of studies suggests the existence of a positive relationship between the environmental and financial performance of companies (Stanwick & Stanwick, 1998, Gottsman & Kessler, 1998, Austin, Alberini, & Videras, 1999, Cohen, Fenn, & Konar, 1997).

Regarding the dissemination of environmental information, the Iatridis (2013) study found that the disclosure of environmental information is associated to the good performance of entities, especially in the chemical, paper and industry sectors, as well as in the metal and mining sectors, which are part of the group of high polluting companies.

Based on this assumption, this research is based on the Theory of Discretionary Disclosure (Verrecchia, 2001) to associate the disclosure of information on environmental risks and the profitability of companies. The expectation is that a positive relationship is found between the disclosure of provisions and contingent environmental liabilities and the profitability of high polluting companies listed in B3. Thus, the following hypothesis was tested:

H_1: The profitability of companies with high pollution potential is positively related to the disclosure of environmental contingent provisions and liabilities of the companies with high pollution potential listed in B3.

3 METHODOLOGY

This is a descriptive research, as the objective hereof is to describe the relationship between profitability and the disclosure of environmental contingent provisions and liabilities of companies with high pollution potential listed in B3 from 2011 to 2016. Regarding the approach problem, it is considered quantitative, since it has used statistical analysis instruments (Beuren & Raupp, 2006).

The definition of the variables in Table 1 was based on the works of Uyar and Kiliç (2012) and Leal et al. (2015). The collection of economic/financial information of the companies in the sample was conducted in the database of Economática®, which allows to verify information related to the economic/financial performance of the companies in their consolidated statements. The data were extracted from the B3 website, through documentary analysis of explanatory notes and sustainability reports, in order to build the variables: Disclosure of environmental contingent provisions and liabilities (DIVULG), Corporate Sustainability Index (ISE) and Corporate Governance (GOV).

Table 1
Research variables

Var.	Type	Description	Calculation	Expected effect	References
DIVULG	D	Disclosure of information on environmental contingent provisions and liabilities according to CPC 25.	(0) for companies that did not disclose, (1) for those that disclosed; afterwards, the total of elements is obtained and the proportion of the item disclosed is verified in relation to the total metrics		
RENT	I	Return on investment (ROA)	Net Income / Total Assets	+	Fonteles *et al.* (2012); Rufino and Machado (2015)
VM	C	Market value	Log of stock market value	+	Sousa, Silva, Ribeiro and Weffort (2014)
ENDIV	C	Indebtness	Total Liability /Net worth	+	Stulz (1990); Durand (1959)
ISE	C	Participation in ISE (*dummy*)	(0) for companies that do not belong to the ISE, (1) for those that belong	+	Rufino and Monte (2014)
GOV	C	Adherence to one of the levels of Corporate Governance (dummy)	(0) for companies that did not adhere to one of the KM levels, (1) for those who did	+	Leal and Silva (2005); Murcia and Santos (2009)
TAM	C	Company size	Natural Logarithm of Total Asset	+	Murcia and Santos (2009); Rufino and Monte (2014)

Note: Var. – variables; D – Dependent; I– Independent; C – Control; CPC – Accounting Pronouncements Committee; PL – Net worth; ISE – Business Sustainability Index; GOV – Corporate Governance.

Source: Adapted from Leal, P. H., Costa, B. M. N., Oliveira, M. C., & Rebouças, S. M. D. P. (2015). Disclosure of Environmental Contingent Provisions and Liabilities Under the Institutional Theory. Yearbook of the Congress of the National Association of Postgraduate Programs in Accounting Sciences, Curitiba, PR, Brazil, 9.

The DIVULG variable was measured according to the fulfillment of the requirements listed in Table 2. The procedure used assigned value 0 to those items that were not identified in the explanatory notes, and 1 to those that were disclosed by the companies. Subsequently, the proportion of the disclosed item was calculated in relation to the total metrics.

According to CPC 25 (2009), the company must disclose all information, except if an item is not mandatory; in which case the company shall justify why it is not applicable. Thus, each justified item shall be considered as information disclosed in the analysis of the explanatory notes (Leal et al., 2015).

Table 2
Items for the disclosure of contingent provisions and liabilities under CPC 25

Environmental provisions
Book value at the beginning and at the end of the period
Additional provisions made during the year, including an increase in existing provisions
Amounts used (that is, incurred and written off against provision) during the financial year
Amounts unused and reverted during the financial year
Brief description of the nature of the obligation
Expected timeline for outflows of economic benefits
Indication of uncertainties regarding the value or timeline for outflows of economic benefits
value of any expected reimbursement, declaring the value of any asset that has been recognized for said expected reimbursement
Environmental contingent liabilities
Brief description of the nature of the contingent liability
Estimated financial effect when practicable
Increase over the period in the discounted value to the present value arising from the lapse of time and the effect of any change on the discount rate
Uncertainties related to the value or moment of occurrence of any output when practicable
Possibility of any reimbursement where practicable

Source: Leal, P. H., Costa, B. M. N., Oliveira, M. C., & Rebouças, S. M. D. P. (2015). Disclosure of Environmental Contingent Provisions and Liabilities Under the Institutional Theory. Yearbook of the Congress of the National Association of Postgraduate Programs in Accounting Sciences, Curitiba, PR, Brazil, 9.

The population of this study comprises all companies with high pollution potential listed on B3 whose shares were traded in the period from 2011 to 2016. However, one of the 39 companies registered in this category was excluded because it did not have all the necessary information for measuring the variables applied in the research. Thus, the final sample comprised 38 companies, as shown in Table 3.

In order to determine if the companies had high pollution potential, attachment VIII of Law no. 10.165/2000, which addresses the National Environmental Policy, was used. This attachment classifies the economic activities of companies in small, medium and high environmental impact.

Table 3
Companies comprising the research sample

Pollution potential	**Sectors of Law no. 10.165/2000**	**Sectors of B3**	**Companies**
High	Extraction and treatment of minerals	Metallic minerals	Bradespar
			Litel
			MMX Mineração e Metalicos S.A.
			Vale S.A.
	Metallurgy	Artifacts of Iron and Steel	Fibam
			Mangels Indl
			Panatlantica
			Tekno
		Artifacts of Copper	Paranapanema
		Steel Industry	Ferbasa
			Gerdau
			Gerdau Met
			Sid Nacional
			Usiminas

Continue

Table 3 (continuation)

Pollution potential	Sectors of Law no. 10.165/2000	Sectors of B3	Companies
High	Pulp and Paper	Pulp and Paper	Celul Irani
			Firbia
			Klabin S/A
			Santher
			Suzano Hold
			Suzano Papel
	Chemical industry	Petrochemical	Brasken
			Elekeiroz
			GPC Part
		Fertilizers and Defensive	Fer Heringer
			Nutriplant
		Miscellaneous Chemicals	Cristal
			Unipar
	Transportation, terminals, warehouses and trade	Extraction, Refining and Distribution	CosanLtd
			Cosan
			Nova Oleo
			OGX Petroleo
			Pet Manguinh
			Petrobras
			Petrorio
			QGEP Part
			Ultrapar
		Equipment and services	Lupatech S.A
			OSX Brasil

Source: Santos, L. M. S. (2016). *Explanatory factors for the disclosure of environmental information of potentially polluting companies listed on BM&FBovespa. Master's Dissertation in Accounting Sciences, Federal University of Paraíba, João Pessoa, PB, Brazil*.

The period analyzed hereunder was from 2011 to 2016, since in 2010 CPC 25 was issued, however, the reflexes of its adoption could be identified in the following year. The objective of this Technical Pronouncement is to establish recognition criteria and measurement bases that are appropriate to provisions, liabilities and contingent assets. It further aims to disseminate sufficient information in the explanatory notes so as to allow users to understand its nature, opportunity and value.

To test the research hypothesis, the multiple linear regression model with panel data was used for the period from 2011 to 2016. The econometric model used in the estimation was as follows:

$$DIVULG_{it} = \alpha + \beta_1\, RENT_{it} + \beta_2\, VM_{it} + \beta_3\, ENDIV_{it} + \beta_4\, ISE_{it} + \beta_5\, GOV_{it} + \beta_6\, TAM_{it} + \varepsilon \quad (1)$$

Where the dependent variable is the Disclosure of Environmental contingent provisions and liabilities (DIVULG), having Profitability (RENT) as independent variable and Size (TAM), Indebtedness (ENDIV), Market Value (VM), Governance (GOV) and the participation of companies in the Corporate Sustainability Index (ISE) as control variables.

4 PRESENTATION AND ANALYSIS OF RESULTS

This section shall address the search results. First, a descriptive analysis of the variables is presented aimed at observing their behaviors and the associations between them; subsequently, the regression model with unbalanced panel data is used to assess the research hypothesis and then it is analyzed if the profitability of firms with high polluting potential is positively related to the disclosure of environmental contingent provisions and liabilities.

4.1 Descriptive analysis of data

As seen in Table 4, some variables, such as RENT (35.5297), ENDIV (10.9375) and TAM (3.5149), presented a greater dispersion of the data around the mean, unlike the variables DIVULG (0.1460), GOV (0.4754) and ISE (0.4907), whose results show lower dispersion of data, as these are *dummy* variables. Variables TAM (21.0801) and VM (13.8523) has the highest means. The difference between the mean and the median of the variables RENT, VM, ENDIV and TAM evidence the asymmetric distribution of data.

Table 4
Descriptive statistics of data

Variable	Remarks	Mean	Standard deviation	Median	Minimum	Maximum
DIVULG	228	0.1348	0.1460	0.1538	0	0.5384
RENT	225	2.3857	35.5297	0.0387	-6.6172	532.428
VM	218	13.8523	2.7052	13.5150	7.4204	19.4907
ENDIV	226	3.3120	10.9375	1.8435	-32.6294	64.0001
ISE	228	0.6008	0.4907	1	0	1
GOV	228	0.6578	0.4754	1	0	1
TAM	225	21.0801	3.5149	21.2413	9.333	27.5258

Note. RENT: Return on assets; DIVULG: Disclosure of information on environmental contingency provisions and liabilities according to CPC 25; VM: Market Value; ENDIV: Indebtedness; ISE: Participation in the ISE; GOV: Adherence to one of the levels of Corporate Governance; TAM: Company Size.
Source: Research data (2017).

Considering the values of Table 5, the variable DIVULG is positively related with almost all variables hereunder, except for the Return on Investment, which presents negative correlation (-0.0611), but with low intensity. The market value (MV) was the explanatory variable that presented the highest correlation with DIVULG, recording 44.21%.

Table 5
Correlation between variables

	DIVULG	RENT	VM	ENDIV	ISE	GOV	TAM
DIVULG	1.0000						
RENT	-0.0611	1.0000					
VM	0.4421	-0.0307	1.0000				
ENDIV	0.0603	-0.0047	0.1972	1.0000			
ISE	0.3995	0.0566	0.5922	0.0878	1.0000		
GOV	0.2297	0.0435	0.5185	-0.0392	0.5639	1.0000	
TAM	0.3153	-0.0466	0.5290	0.0889	0.3247	0.2971	1.0000

Source: research data (2017).

Regarding the interaction of the other variables, the variable MV is strongly and positively related to ISE (0.5922), GOV (0.5185) and TAM (0.5290); likewise, ISE is related to GOV (0.5639), while the other variables are less closely related to one another.

4.2 Analysis of econometric results

After a brief descriptive analysis, the next step was the estimation of the econometric model. To that end, the tests of Chow and Hausman were performed to establish the most appropriate panel for the analysis of this research data.

Upon the Chow test (Prob> F = 0.0000) and the Hausman test (Prob> Chi2 = 0.0447), it was observed that there are evidences to reject the hypothesis that panel effects are not significant – that is, the effect of companies and the years is significant; and the fixed effects model is preferable to the random effects model. Therefore, it is reasonable to say that the fixed effects panel is more appropriate than the multiple linear regression for the relevant sample.

The tests of Wooldridge (Prob> F = 0.0185) and Wald (Prob> chi2 = 0.000) were also applied to verify, respectively, the self-correlation and heteroscedasticity. The results showed problems of autocorrelation and heteroscedasticity. The correction of these two problems was based on the Driscoll and Kraay (1998) test, which is grounded on the standard errors of the coefficients estimated by fixed effects, being these errors significant to the heteroscedasticity, temporal and spatial correlation (Missio, 2012).

The analysis of the results of the regression of fixed effects, highlighted in Table 6, indicate that, except for size (TAM), all other variables (RENT, VM, ENDIV and ISE) have statistical significance (10%, 5% 1% and 5%, respectively). It is further noted that GOV was omitted from the model, as it is a fixed dummy variable along the panel, therefore, its coefficients cannot be estimated in the regression with panel data.

Regarding the independent variable (RENT), it was found to have a negative coefficient (-8.51e-5) and statistical significance (p-value = 0.077); in this sense, it is possible to conclude that there is an indirect relation between Profitability (RENT) and the dependent variable (DIVULG), suggesting that most profitable companies disclose less information on environmental contingent provisions and liabilities.

Therefore, the hypothesis that profitability of companies with high pollution potential is positively related to the disclosure of environmental contingent provisions and liabilities was rejected. The results of the research are consistent with the findings by Silva et al. (2014), Murcia and Santos (2009) and Angonese et al. (2014), which show that profitability did not influence the disclosure of environmental information. On the other hand, researches by Rufino and Machado (2015) and Fonteles et al. (2012) identified a positive relationship between profitability and environmental disclosure.

Table 6
Regression results with fixed effects panel data

EXPLANATORY VARIABLES	COEFFICIENT	ERROR	T	P-VALUE
RENT	-8.51e-5*	4.68e-5	-1.82	0.077
VM	-0.0087**	0.0036	-2.41	0.021
ENDIV	0.0004***	8.89e-5	4.94	0.000
ISE	-0.0091**	0.0025	-3.63	0.001
GOV		(Omitted)		
TAM	0.0020	0.0015	1.29	0.207
Constant	0.2232	0.0332	6.72	0.000
Remarks:	215			
Within R-squared	0.0119			
F test:	0.0000			

Equation: DIVULG it = α+ β1 RENT + β2 VM it + β3 ENDIV it + β4 ISE it + β5 GOV it + β6 TAM it + ε

Note. *p<0,10; **p<0,05; ***p<0,01; DIVULG: disclose of information on environmental contingent provisions and liabilities according to CPC 25; RENT: Return on assets; VM: Market Value; ENDIV: Indebtedness; ISE: Participation in the ISE; GOV: Adherence to one of the levels of Corporate Governance; TAM: Company Size.
Source: Research data (2017).

Variables VM (p-value = 0.021) and ISE (p-value = 0.001) followed the opposite direction of the variable RENT, since they obtained statistical significance and presented negative coefficients of -0.0087 and -0.0091, respectively, thus indicating that the higher the market value of the companies, and provided they are listed in the ISE, the lower the disclosure of contingent provisions and liabilities.

Regarding market value, this result corroborates the evidences verified by Sousa et al. (2014), which showed a possible conflict of interests, since the disclosure of information implies costs for companies, resulting in a reduction of gains for investors. This finding is different from Santos, Araújo and Leite (2016), who identified that companies that present information on environmental contingent provisions and liabilities perceive higher market value than those that do not disclose such information.

Regarding the variable ISE, the result deviate from the findings by Rufino and Monte (2014), which showed a positive relationship between sustainability and discretionary disclosure, suggesting that the variable ISE directly influences the disclosure of information. This result also opposed the study by Garcia and Orsato (2013), where no significant statistical differences between the decision of a company to adhere to the ISE and the impact on the value of the company's shares.

Regarding indebtedness (ENDIV), a positive (0.0004) and significant (p-value = 0.0000) relation was observed with the variable DIVULG, evidencing that more indebted companies have a higher level of disclosure of environmental contingent provisions and liabilities. This result deviates from the findings by Rufino and Monte (2014), which concluded that the greater the indebtness the lower is the discretionary disclosure of information in the entities. It also contradicted the findings by Murcia and Santos (2009), which proved the variable ENDIV was insignificant in determining the discretionary disclosure.

Finally, when analyzing the variable TAM, it was observed that there was no statistical significance, that is, the size of companies is not related to the disclosure of contingent provisions and liabilities; result similar to that found by Santos, Lucena and Duarte (2015), but contrary to the findings by Murcia and Santos (2009), Rufino and Monte (2014), which showed that company size is a determining factor of discretionary disclosure.

5 CONCLUSIONS

This objective of this study was to analyze whether the profitability of the companies with high polluting impact listed on B3 is positively related to the disclosure of provisions and environmental contingent liabilities, between the years 2011 to 2016. The research sample comprised 38 companies falling within the group of companies with high polluting potential, determined in accordance with Attachment VIII of Law 10.165/2000, which provides for the National Environmental Policy.

Data analyzed in this research were collected in the database of Economática® and organized in an unbalanced panel, as it was not possible to obtain all the data for all companies with high polluting potential. From the regression model with robust panel data, it was found that , except for size (TAM), all variables (RENT, VM, ENDIV and ISE) are statistically significant (10%, 5% 1% and 5%, respectively); that is, they can explain the disclosure of environmental contingent provisions and liabilities. The variable GOV was omitted from the model, since it is a fixed dummy variable along the panel.

Regarding the hypothesis (**H_1**: The profitability of companies with high polluting potential is positively related to the disclosure of environmental contingent provisions and liabilities), a rejection was observed, because, despite the significance, a negative coefficient was obtained, showing that the most profitable companies are not necessarily those that most disclose information about environmental contingent provisions and liabilities.

A possible explanation for the result found is that the implementation of a legal requirement for the disclosure of environmental contingent provisions and liabilities leads to higher cost, which, in turn, is reflected in the performance of the company, given the possible of conflicts of interest and expectations of a reduction of gains by shareholders/investors. On the other hand, this result can be explained by the fact that the most profitable companies already stands above their competitors in the capital market, with positive financial indicators and, therefore, they do not disclose "all" information if they perceive that it may jeopardize their results.

In this sense, the results hereof indicate the need to deeper discuss the regulation of the disclosure of environmental contingent provisions and liabilities, considering that companies tend to disclose more data under the watch of a regulatory agent. Moreover, it is extremely important to standardize the disclosure of such information, especially in the decision-making process of investors and other interested parties of companies with high polluting potential.

It is further highlighted that this result may have been influenced by some limitations throughout the study, such as the subjectivity of the content analysis to determine the variable DIVULG, and the fact that the analysis did not cover the sector in which each company operates.

Future researches may analyze these limitations, as well as the use of other variables and metrics to expand the study and the use of other classification levels, such as companies with small and medium environmental impact, according to the provisions of Attachment VIII of Law no. 10.165/2000.

This research contributes to the literature by revealing if there is a positive relationship between the profitability of the companies with high polluting impact listed on B3, and the disclosure of environmental contingent provisions and liabilities. Although some research - such as Rufino and Machado (2015) and Fonteles et al. (2012), which addresses the determining factors of discretionary disclosure - consider that the most profitable companies tend to disclose more information, the results found in this study showed that this does not occur when the disclosure encompasses environmental contingent provisions and liabilities.

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