Non-GAAP Disclosures and Board of Directors Compensation

Divulgações Non-GAAP e a Remuneração do Conselho de Administração

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ABSTRACT

The purpose of this article is to analyze the association between board remuneration and the probability of disclosure of non-GAAP earnings measures by Brazilian companies listed in Brasil, Bolsa, Balcão - [B]3, in the period from 2010 to 2020. The analyzed sample is composed of 271 companies, with 2,093 firm-year observations. To achieve the proposed objective, two econometric procedures were used. Initially, to analyze the probability of EBITDA disclosure, a model with Logit estimation was used. Then, to give robustness to the results, the data were rotated using Ordinary Least Squares with fixed effects and sector control. The variables used in the study were collected from documents filed with the CVM, and Refinitv Eikon® was also used. To identify the disclosure or not of EBITDA by the companies, the press releases published and filed on the IR website or at the CVM were analyzed. The results of the econometric models showed that the remuneration of the board of directors increases, on average, the probability of the firm dis- closing the non-GAAP EBITDA measure by 26%. However, the probability of EBITDA disclosure is reduced by 41% when the firm has a loss for the year and this loss is greater than the loss of the previous year. The other GAAP variables were not statistically significant, so it can be concluded that the increase in earnings did not directly influence the EBITDA disclosure. In addition, quantitatively, there is a reduction in the

disclosure of EBITDA in the years 2019 and 2020. In this way, this study contributes to the various users of accounting information, in particular, it takes a look at the agency problem, by providing evidence related to the agent's remuneration and the disclosure of information – reduction of information asymmetry, to the principal. In addition, it provides evidence on non-GAAP measures for accounting standards bodies, nationally and internationally.

Keywords: Remuneration. Board of Directors. Non-GAAP Measures. EBITDA.

RESUMO

O objetivo deste artigo é analisar a associação entre a remuneração do conselho de administração e a probabilidade de divulgação de medidas de lucros non-GAAP pelas empresas brasileiras listadas no Brasil, Bolsa, Balcão - [B]3 , no período de 2010 a 2020. A amostra ana lisada é composta por 271 empresas, possuindo 2.093 observações firmas-ano. Para alcançar o objetivo proposto foram utilizados dois procedimentos econométricos. Inicialmente, para analisar a probabilidade de divulgação do EBITDA utilizou-se um modelo com estimação Logit. Na sequência, para dar robustez aos resultados, os dados foram rodados por meio de Mínimos Quadrados Ordinários com efeitos fixos e controle de setor. As variáveis utilizadas no estudo foram coletadas nos documentos arquivados na CVM, também utilizou-se a Refinitv Eikon®. Para identificar a divulgação ou não do EBITDA pelas empresas, foram analisadas os press releases divulgados e arquivados no site de RI ou na CVM. Os resultados dos modelos econométricos evidenciaram que a remuneração do conselho de administração aumenta, em média, a probabilidade da firma divulgar a medida non-GAAP EBITDA em 26%. No entanto, a probabilidade de divulgação do EBITDA é reduzida em 41% quando a firma apresenta prejuízo no exercício e esse prejuízo é maior que o prejuízo do ano anterior. As demais variáveis GAAP não foram estatisticamente significantes,

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logo pode-se concluir que o aumento nos lucros não influenciou diretamente na divulgação do EBITDA. Além disto, quantitativamente, observa-se uma redução na divulgação do EBITDA nos exercícios de 2019 e 2020. Desta forma, este estudo contribui para os diversos usuários da informação contábil, em especial, lança um olhar sobre o problema de agência, ao fornecer evidências relacionadas à remuneração do agente e a divulgação de informações – redução da assimetria informacional, ao principal. Além disto, fornece evidências sobre as medidas non-GAAP para os órgãos normativos contábeis, nacional e internacional. Palavras-chave: Remuneração. Conselho de administração. Medidas non-GAAP. EBITDA.

1 INTRODUCTION

The product of accounting is information, a powerful and important commodity capable of mitigating informational asymmetry among its users (Scott, 2015). However, the information on profits presented in the statements required by generally accepted accounting principles (GAAP) does not seem to be sufficient for investors (Ribeiro, Shan, & Taylor, 2019). This dissatisfaction of investors in relation to the informational usefulness of financial statements is supported by empirical evidence that has documented a decrease, in financial information and earnings, in evidencing the present as well as future performance of companies (Lev, 2018).

To meet a need from the market or accounting users in general for more information, managers have started to disclose additional performance measures, known as non-GAAP earnings (Marques, 2010). Companies use non-GAAP earnings measures to reduce information asymmetry and better inform the market about their future earnings (Charitou, Floropoulos, Kamananou, & Loizides, 2018; Cormier, Demaria, & Magnan, 2017; Bradshaw & Sloan, 2002; Brown & Sivakumar, 2003; Huang & Skantz, 2016).

Research has shown that non-GAAP earnings are a measure with more relevant information content than GAAP earnings (Bradshaw & Sloan, 2002; Bhattacharya, Black, Christensen, & Larson, 2003; Ribeiro et al., 2019). The IASB has recognized that non-GAAP measures are quite valuable, since together with GAAP information, they can improve the financial analysis of companies, due to the exclusions of certain items that do not allow an understanding of historical or future trends in profits or cash flows (IASB, 2017).

In the meantime, the use of non-GAAP information by the various users of accounting information for cash flow assessments and predictions is increasingly recurring, based on the claim that the exclusions of transitory items provide a measure of the entity's real performance (Coulton, Ribeiro, Shan, & Taylor, 2016; Black, Black, & Christensen, 2018; Christensen, Pei, Pierce, & Tan, 2019).

Contrary to the aforementioned studies, research shows that there are determinants of non-GAAP disclosures, such as regulation by market authorities, corporate governance characteristics and a series of other exogenous and endogenous factors that can influence the quantity and quality of non-GAAP disclosures (Moscariello & Pizzo, 2019).

In this sense, several studies have identified corporate governance as a determinant in disclosure, since the discretionary actions of CEOs, managers and the board of directors can be used strategically or opportunistically to achieve performance goals (Frankel, McVay, & Soliman, 2011; Black & Christensen, 2009; Charitou et al., 2018). This is because the contractual remuneration agreements of shareholders and managers increase the desire to disclose more informative accounting figures (Grey, Stathopoulos, & Walker, 2012). Also, compensation plans can incentivize managers to increase non-GAAP disclosures (Bansal, Seetharaman, & Wang, 2013).

Considering that one of the board's functions is to review earnings disclosures (Xu, Bhuiyan, & Rahman, 2016), Black, Black and Christensen (2018) highlight the role of the board of directors, which acts as a filter (which may be intentional or not) on managers' non-GAAP reports, similar to the role played by analysts, so the board's monitoring of non-GAAP performance metrics is seen as a sign of non-GAAP disclosure quality. In this way, the presence of an independent board limits opportunism in the voluntary disclosure of earnings (Frankel et al., 2011).

A recent study by Lont, Ranasinghe and Roberts (2020) suggests that managers disclose non-GAAP measures with opportunistic intentions motivated by remuneration and not to reduce information asymmetry. In addition, the study provides empirical evidence that the CEO's level of remuneration is associated with the likelihood and frequency of non-GAAP disclosures.

In view of the above results and given the importance of the role of the board of directors in the disclosure of company profits, it is necessary to investigate a new variable that may be a determining factor in non-GAAP reporting: the effect of the remuneration of the board of directors. In view of the above, the following problem is posed: **What is the association of the remuneration of the board of directors in the non-GAAP disclosure practices of Brazilian companies listed on B3?**

This study seeks to investigate the association between the remuneration of the board of directors and the likelihood of disclosure of non-GAAP earnings measures by Brazilian companies listed on Brasil, Bolsa, Balcão - [B]3, where regulatory supervision is less prescriptive.

In this sense, this study can contribute to the debate with the regulatory bodies of the capital market, as well as the accounting regulatory bodies, by providing new evidence on non-GAAP reporting and the board of directors. It also contributes to broadening the discussion of this topic in Brazil and especially in academia. It also opens up a discussion on the relationship between agent and principal, by investigating the relationship between disclosures of non-GAAP measures to the principal, as a mechanism to mitigate informational asymmetry, in return for requiring an incentive to do so - remuneration.

2 THEORETICAL REFERENCIAL

2.1 Historical Context of non-GAAP Disclosures in Brazil

In Brazil, due to the growing use and disclosure of non-GAAP information in press releases, and following in the same direction as the SEC, the Brazilian Securities Commission (CVM) issued Circular Letter No. 01/2006 with guidelines on the preparation of accounting information by companies. According to the CVM, publicly traded companies have been disclosing EBITDA alongside the conventional measures presented in the financial statements. In 2012, the CVM issued Instruction 527/2012, containing specific rules for entities that voluntarily disclose EBITDA, adjusted EBITDA and EBIT.

According to a study by KPMG which, among other topics, verified the disclosure of non-accounting measurements (metrics or measures) by Brazilian companies, the Reference Forms of 236 companies were analyzed in 2016, 235 in the first edition in 2015. According to the sample analyzed, 181 companies or 77% disclose EBITDA, thus representing the non-GAAP metric most disclosed by companies. In second place, with 89 companies disclosing or 38%, is adjusted EBITDA (KPMG, 2016).

Since the disclosures of the first non-GAAP metrics, i.e. from the mid-1990s to the early 2000s, regulators and bodies formulating accounting standards and norms have shown concern and, at the same time, interest in the disclosure of non-GAAP metrics over the last 20 years. Until then, these alternative metrics were fairly uncommon, grouped together in certain sectors and unregulated (Black & Christensen, 2009).

2.2 Board of Directors

Agency theory was defined by Jensen and Meckling (1976) as a contractual relationship in which one party, known as the principal, hires an agent to carry out some work on its behalf, giving it decision-making authority. This relationship is complex, since the agent, having its own interests, will not always act in the interests of the principal. In this sense, it is up to the principal to delimit divergences of interest and monitor the agent's attitudes, implying agency costs, which include the costs of structuring, monitoring and binding a set of contracts between agents with conflicting interests (Fama & Jensen, 1983, 2005).

In this scenario, corporate governance emerges as a factor that mitigates agency problems, since it plays a substantial role in monitoring and disciplining managers - agents, on behalf of shareholders - principal (Moscariello & Pizzo, 2019). The board of directors is the central body of the governance system, so it must ensure that its relationships - with shareholders, the CEO, other executives, committees, the supervisory board and audits - are effective and transparent, avoiding asymmetry of information, observing rules of confidentiality and fairness. (IBGC, 2015).

The board of directors is responsible for decision control in large companies (Fama & Jensen, 1983, 2005). The internal control system led by the board of directors is a control force that works within the company to resolve problems caused by divergence between the decisions of managers and society. The internal control system has ultimate responsibility for the functioning of the firm, defines the rules of the game for the CEO, hiring, firing and remunerating the CEO and providing high-level consultancy (Jensen, 1993).

Among the board's activities is the review of annual reports, earnings announcements and other profit disclosures. In this sense, the quality of governance is associated with earnings disclosures, since the board of directors is responsible for these disclosures, thus acting to protect the interests of shareholders against managerial opportunism (Xu et al., 2016). Beekes and Brown (2006) investigated the link between the quality of governance and the informativeness of its disclosures and found that better-managed companies make more informative disclosures. Thus, companies that have an effective board structure are more likely to make more consistent earnings disclosures (Karamanou & Vafeas, 2005; Frankel et al., 2011).

However, the quality of governance is questioned, since studies indicate the incidence of manipulation of results related to weak governance. According to Dechow, Sloan and Sweeney (1996):

> *companies that manipulate profits are: (i) more likely to have boards dominated by management; (ii) more likely to have a CEO who simultaneously acts as Chairman of the Board; (iii) likely to have a CEO who is also the founder of the company; (iv) less likely to have an audit committee; and (v) less likely to have an external blockholder.*

A study by Frankel, McVay and Soliman (2011) suggests that board independence limits opportunism in voluntary earnings disclosure. The study analysed the association between board independence and the characteristics of non-GAAP earnings and found that companies with less independent boards are more likely to opportunistically exclude recurring items from non-GAAP earnings. In addition, managers appear to use exclusions to meet earnings targets before selling their shares more frequently in companies with fewer independent directors. Overall, the results suggest that board independence is positively associated with the quality of non-GAAP earnings.

2.3 Information Asymmetry and Probability of Non-GAAP Disclosure vs. Remuneration

Financial accounting and its reports based on generally accepted accounting principles (GAAP) is a mechanism for reducing information asymmetry, since it converts privileged information into public information for its users in a timely and credible manner (Scott, 2015). However, according to the literature, GAAP reports are not enough to reduce information asymmetry between market participants. Managers have therefore started to disclose additional performance measures, non-GAAP earnings (Marques, 2010; Ribeiro et al., 2019).

Additional non-GAAP performance measures, which derive from GAAP metrics, are also considered effective tools, as they allow managers to make adaptations to earnings metrics to meet company specificities, with the aim of mitigating informational asymmetries and signaling to the market, more effectively, the company's ability to produce cash flows and earnings persistence over time (Moscariello & Pizzo, 2019; Charitou et al., 2018).

In this sense, the study by Cormier, Demaria and Magnan (2017) investigated whether the disclosure of EBITDA (non-GAAP) reduces information asymmetry between managers and investors in addition to the disclosure of GAAP earnings, the results indicated that the disclosure of EBITDA is associated with less asymmetry, as the reports increase the positive relationship between earnings and stock prices, as well as being able to predict future cash flows, thus reducing asymmetry between managers and investors.

These findings corroborate the idea that adjustments, such as the exclusion of depreciation and amortization, are strategies to reduce asymmetry and provide a profit that is closer to cash flow for investors (Bradshaw & Sloan, 2002; Brown & Sivakumar, 2003). In this way, non-GAAP earnings adjustments by analysts and managers provide more accurate earnings information and thus reduce information asymmetry between informed and uninformed traders after earnings announcements (Huang & Skantz, 2016).

However, despite studies showing the benefit of reducing informational asymmetry in non-GAAP disclosure, the discretionary nature of the calculations opens the way for managerial opportunism that can mislead investors (Lougee & Marquadt, 2004; Venter, Emanuel, & Cahan, 2014; Guillamon-Saorin, Isidro, & Marques, 2017). In this sense, there is evidence that managers may disclose non-GAAP measures opportunistically, motivated by remuneration and not for the purpose of reducing informational asymmetry (Lont et al., 2020). Disclosure of non-GAAP measures can be used strategically to help managers achieve earnings benchmarks on a pro forma basis when GAAP earnings are not sufficient to meet an earnings benchmark. (Marques, 2010).

There is an association between risk-taking incentives provided by stock-based compensation arrangements and non-GAAP financial disclosures, so managers with higher compensation for sensitivity to stock volatility are more likely to be associated with voluntary disclosures of non-GAAP earnings information (Bansal et al., 2013).

This association was also evidenced in the study by Grey, Stathopoulos and Walker (2012), which aimed to analyze the relationship between the disclosure of an alternative earnings per share

(EPS) figure and the existence of an EPS target for UK companies between 2001 and 2003. The results suggest that the existence of an EPS target is significantly and positively related to managers' decision to disclose an alternative EPS figure.

The literature provides evidence that there is a link between the remuneration contracting process and voluntary disclosure decisions and that the use of non-GAAP earnings per share (EPS) to contract remuneration influences the likelihood and quality of non-GAAP EPS information disclosed to investors in annual earnings announcements (Black et al., 2018). Based on the studies presented, the following hypothesis is formed:

H_1: Board remuneration is associated with the probability of non-GAAP disclosures.

2.4 Related studies: non-GAAP and Corporate Governance

The managerial motivations for the use and disclosure of non-GAAP earnings metrics by companies operating in the capital market have already been the subject of several studies in the international field. The studies listed below set out to investigate new determinants that influence the quality of non-GAAP disclosure, such as: corporate governance characteristics, board of directors and CEO remuneration.

In the US, Frankel et al. (2011) examined how board independence may be associated with the quantity and quality of non-GAAP earnings disclosure. According to the study, companies with less independent boards are more likely to opportunistically exclude recurring items from non-GAAP earnings. In addition, exclusions from non-GAAP earnings have a greater association with future GAAP earnings and operating profits when boards contain proportionally fewer independent directors. The authors also point out that there is evidence that managers use exclusions to meet earnings targets before selling their shares more often in companies with fewer independent directors.

Black and Christensen (2009) investigated the use of non-GAAP adjustments by US managers to meet strategic earnings targets and found that managers often exclude recurring expenses such as depreciation, research and development and stock-based compensation to meet these strategic targets. This evidence was found aggressively in non-GAAP reports.

In the United Kingdom, the study by Charitou, Floropoulos, Karamanou and Loizides (2018) aimed to identify whether the decision of British companies that disclosed non-GAAP earnings in the income statement from 2006 to 2013 was related to the company's financial performance and corporate governance characteristics. The results showed that companies with higher governance and lower profitability are more likely to disclose non-GAAP earnings in the income statement.

In New Zealand, Xu, Bhuiyan and Rahman (2016) highlighted the presence of independent directors on the board as one of the main determinants of non-GAAP earnings disclosure. According to the results, there is a negative association between the level of disclosure of non-GAAP earnings and the quality of governance. The findings are similar to those of (Charitou et al., 2018)

In Canada, Cormier, Lapointe-Antunes and Magnan (2011) analyzed the relationship between governance and financial reporting for non-GAAP performance measures. According to the study, a higher proportion of independent trustees on the board restricts management discretion and supports the view that the responsibility of boards extends beyond audited GAAP reports.

Also in the Canadian market, Cormier et al. (2017) found that corporate governance substitutes for EBITDA. According to the study, EBITDA helps market participants better assess earnings valuation when a company's governance is weak. Conversely, when governance is strong, the disclosure of EBIT- DA information has a much smaller impact on the earnings-to-share price ratio.

3 METHODOLOGICAL PROCEDURES

This paper aims to investigate the association between board remuneration and the likelihood of disclosure of non-GAAP earnings measures by Brazilian companies listed on the Brasil, Bolsa, Balcão - [B]3. The period of analysis is from 2011 to 2020; however, data was collected from 2010 onwards in order to formulate the dummies used as independent variables. The following sections of this methodology will present the population and sample, data collection, the variables that will underpin the research response, and the econometric models and methods used in the study, respectively.

3.1 Population, Sample and Data Collection

The population of this study will consist of all Brazilian companies listed on [B]3. The initial period for analysis was set to begin in the year 2010, as this was the year in which IFRS became mandatory for companies. Data will be used up to 2020, as this is the most recent full fiscal year available at the time this research is conducted.

Data collection was performed using the Refinitiv Eikon® platform for all variables, except for the variables "board of directors' remuneration" and the dependent variable – "disclosure or non-disclosure of non-GAAP measures." The board of directors' remuneration variable was collected manually from the database shared by the CVM, while the dependent variable – disclosure or non-disclosure of non-GAAP measures, was manually collected from the press releases published by the companies. The press releases were obtained from the Investor Relations section of the companies' websites or filed with the CVM.

3.2 Variables Used and Econometric Model

In order to answer the problem question, which includes all companies that did or did not disclose non-GAAP measures during the period under analysis, the dependent variable - NON-GAAP, will be represented by a binary variable. NON-GAAP will be equal to 1 when the company discloses EBITDA, a non-GAAP measure, and 0 otherwise.

For the process of selecting the variables, reference was made to the article by Lont et al. (2020), which used the same methodology to verify the probability of disclosure and the remuneration of CEOs in New Zealand companies.

A multiple regression model was used to analyze the probability of companies disclosing EBITDA as a non-GAAP measure; Equation 1 below details the model. In addition, two econometric procedures were used: first, the data was run using a Logit estimation, and then, to make the results more robust, the same model was run using Ordinary Least Squares with fixed effects and sector control.

$$NONGAAPit = \alpha 0 + \beta 1lnREMUNBOARDit + \beta 2lnTAMit + \\ + \beta 3GAAPNEG{>}it + \beta 4GAAPNEG{<}it + \beta 5GAAPPOS{<}it + \varepsilon it \quad (1)$$

Table 1 next describes the variables used in equation 1.

Table 1 - Description of the variables used in the study

VARIABLE	DESCRIPTION	COLLECT	VARIABLE
NON-GAAP	Represents the disclosure or non-disclosure of EBITDA by the companies, 1 if disclosed, 0 otherwise	Press releases and/or CVM	Dependent variable
lnREMUNBOARDit	Represents the natural logarithm of the remuneration of the board of directors of company i in year t	CVM	Independent variable
lnTAMit	Natural logarithm of company i's total assets in year t	Refinitiv Eikon®	Independent variable
GAAPNEG>it	Dummy assuming a value of 1 if GAAP results are negative in year t and represent an increase on the previous year's results (1 if GAAPt < 0 and GAAPt-1 < GAAPt), 0 otherwise		Independent variable
GAAPNEG<it	Dummy assuming value 1 if GAAP results are negative in year t and represent a decrease in relation to the previous year's results (1 if GAAPt < 0 and GAAPt-1 > GAAPt), 0 otherwise		Independent variable
GAAPPOS<it	Dummy assuming value 1 if GAAP results are positive in year t and represent a decrease in relation to the previous year's results (1 if GAAPt > 0 and GAAPt-1 > GAAPt), 0 otherwise		Independent variable

Source: Elaborated by the author (2022).

For the MQO and Logit models according to Equation 1, the result was an analysis of 271 companies and a total of 2,093 firm -year observations. The variables REMUNBOARD and TAM were winsorized at 1% before the logarithmization process.

In addition, procedures were carried out to check for a possible multicollinearity problem between the variables. The assumption was verified using the Variance Inflation Factor (VIF). Based on the results presented in Table 2 below, it can be seen that Eq. 1 does not present a multicollinearity violation. This means that there are no high correlations between the variables.

Table 2 –Variance inflation factor (vif)

	EQ. 1
Variable	VIF
lnREMUNBOARD	1,19
lnTAM	1,23
GAAPNEG>	3,57
GAAPNEG<	3,05
GAAPPOS<	2,60
Average VIF	2,33

Source: Research data, 2022.

The normality of the data was tested, besides checking for possible heteroscedasticity. In the presence of heteroscedasticity, according to Wooldridge (2015) it is possible to adjust the standard errors, t, F and LM statistics to make them valid in the presence of heteroscedasticity of unknown form. Due to the result presented for heteroscedasticity, carried out using White's test, whose prob>chi2 result was equal to 0.0000, White's correction was applied to obtain robust standard errors.

4 ANALYSIS OF RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics

Table 3 below shows the number of companies analyzed per year and the number of EBITDA disclosures over the period from 2011 to 2020. It can be seen that from 2012 onwards, the practice of disclosing EBITDA increased when compared to 2011. It is important to note that the practice of disclosing EBITDA was regulated by the CVM with the institution of Instruction 527/2012, to standardize the use and voluntary disclosure of non-accounting information and began to be used by entities from the fiscal year beginning in 2013. Since then, there has been an upward trend in disclosure from 2013 to 2018. It is

Table 3 – Disclosure of non-gaap measure per year

YEAR	TOTAL NUMBER OF COMPANIES	EBITDA DISCLOSURE	%
2011	175	89	50,86
2012	182	102	56,04
2013	176	106	60,23
2014	181	110	60,77
2015	177	109	61,58

2016	189	113	59,79
2017	252	143	56,75
2018	256	106	41,41
2019	255	99	38,82
2020	250	99	39,60

Source: Research data, 2022.

worth noting that in 2019 and 2020, there was a significant fluctuation in EBITDA disclosure.

Table 4 below shows the descriptive statistics of the variables analyzed in this study in order to inspect them.

that 25% of the sample showed a profit lower than the previous year's profit.

Table 4 – Descriptive statistics

VARIABLE	NO. OF OBSERVATIONS	AVERAGE	STANDARD ERROR	MINIMUM	MAXIMUM
NON-GAAP	2.093	0,5140946	0,4999207	0	1
lnREMUNBOARD	2.093	11,91804	1,468343	6,659294	14,94174
lnTAM	2.093	21,82178	1,887529	17,40576	27,52581
GAAPNEG>	2.093	0,085676	0,2783037	0	1
GAAPNEG<	2.093	0,1844243	0,3879225	0	1
GAAPPOS<	2.093	0,2537028	0,4352335	0	1

Source: Research data, 2022.

As shown above, the averages of the variables behaved differently. The explanatory variable lnREMUNBOARD and lnTAM had very different averages. The average of the variable lnTAM was much higher than that of lnREMUNBOARD. The variable lnTAM had the highest minimum values and the highest maximum values than the other variables. The standard deviations were within the limits and were not higher than the averages, which could have interfered with the data.

The other dummies were used to capture the effect on EBITDA disclosure. It can be seen that 51% of the sample disclosed EBTIDA in the period. With regard to the GAAPNEG> dummy, only 8% of the sample showed a loss greater than the loss for the previous year. With regard to the variable GAAPNEG<, 18% of the sample showed a lower loss than the previous year's loss. Finally, with regard to the variable GAAPPOS<, it can be seen

4.2 Econometric Analysis

In order to assess the probability of EBITDA disclosure based on the variable of remuneration of the board of directors, Table 5 below shows the results of the Logit and Logistic regressions (Odds ratio).

It can be seen that the explanatory variables lnREMUNBOARD and ln- TAM showed positive and significant coefficients. Thus, according to the behavior of these explanatory variables, it can be concluded that the higher the board's remuneration and the company's total assets, the greater the likelihood of EBITDA disclosure. The dummy GAAPNEG> was statistically significant, but its coefficient was negative, so it can be inferred that when the loss for the year is greater than the loss for the previous year, there is no increase in the probability of disclosing EBITDA. The

Table 5 - Results of the regression of equation 1

PANEL A: STATISTICS OF THE VARIABLES			
NON-GAAP (EQUATION 1)			
VARIABLES	COEFFICIENT	ODDS RATIO	P-VALUE
lnREMUNBOARDit	0,2382934 (0,0397756)¢	1,269082	0,000*
lnTAMit	0,1996234 (0,0301056)¢	1,220943	0,000*
GAAPNEG>it	-0,5310091 (0,1755837)¢	0,5880113	0,002*
GAAPNEG<it	-0,1447757 (0,1236144)¢	0,8652163	0,242
GAAPPOS<it	0,0684465 (0,1134233)¢	1,070843	0,546
Constante	-7,08773 (0,6798933) ¢	0,0008353	0,000*

PANEL A: STATISTICS OF THE VARIABLES			
NON-GAAP (EQUATION 1)			
VARIABLES	COEFFICIENT	ODDS RATIO	P- VALUE
PANEL B: MODEL STATISTICS			
MODEL	LOGIT WITH WHITE'S CORRECTION FOR HETEROSCEDASTICITY		
Pseudo R2	0,066		
Wald chi2	136,94		
Prob > F	0,0000		
No. of observations	2.093		
Wald chi2	136,94		
Prob > F	0,0000		
No. of observations	2.093		

Source: Research data, 2022 **Notes**: *Statistically significant at 1%; **Statistically significant at 5%; ***Statistically significant at 10%. ¢ Robust standard errors.

other variables GAAPNEG< and GAAPPOS< were not statistically significant.

In order to identify the ratios of the chances of occurrence of the event of disclosure of non-GAAP information, the odds ratio above was obtained. This shows that a one-unit increase in the natural logarithm of the remuneration of the board of directors increases, on average, by 1.269082 times the chances of the company disclosing the non-GAAP measure EBITDA, i.e. a 27% increase in disclosure. Likewise, a one-unit increase in the natural logarithm of the company's total assets increases, on average, 1.220943 times the chance of the entity disclosing EBITDA, i.e. a 22% increase in disclosure. With regard to the variable GAAPNEG >, if the entity shows a loss greater than the previous year's loss, this reduces the chance of the entity disclosing EBITDA by an average of 41%. The other variables were not statistically significant.

Next, after analyzing Equation 1 using the Logit and Logistic methodology, and in order to add solidity to the results presented

Table 6 - Results of the regression of equation 1

PANEL A: STATISTICS OF THE VARIABLES		
NON-GAAP (EQUATION 1)		
VARIABLES	COEFFICIENT	P-VALUE
lnREMUNBOARDit	0,0370411 (0,0155804)¢	0,039**
lnTAMit	0,084927 (0,0284179)¢	0,014**
GAAPNEG>it	-0,1752207 (0,0508329)¢	0,006*
GAAPNEG<it	-0,0872376 (0,0258651)¢	0,007*
GAAPPOS<it	0,0271031 (0,0249414)¢	0,303
Constant	-1,75659 (0,4905644) ¢	0,005*
PANEL B: STATISTICS OF THE MODEL		
MODEL FIXED EFFECTS WITH WHITE'S CORRECTION FOR HETEROSCEDASTICITY AND SECTOR CONTROL		
R2	0,0640	
F (5, 10)	27,65	
Prob > F	0,0000	
No. of observations	2.093	

Source: Research data, 2022. | **Notes:** *Statistically significant at 1%; **Statistically significant at 5%; ***Statistically significant at 10%. **¢ Robust standard errors.**

above, the same equation was run using Ordinary Least Squares (OLS) with fixed effects, White's correction for heteroscedasticity and controlled for the sector. The results are shown in Table 6.

Corroborating the results presented in the Logit, the remuneration of the board of directors is positively associated with the disclosure of the non-GAAP measure analyzed in this study. For each unit of the natural logarithm of remuneration, the probability of EBITDA being disclosed increases by 3.7 percentage points. The variable REMUNBOARD is statistically significant at the 5% level.

This result is directly related to the findings of the study by Lont et al. (2020), in which the authors showed that there is evidence that managers, in this case the Board of Directors, disclose non-GAAP measures opportunistically, motivated by the context of remuneration. However, the authors point out that managers with altruistic intentions probably disclose non-GAAP measures to signal inside information to investors.

The result is also in line with the study by Bansal et al. (2013), which found an association between the disclosure of non-GAAP measures and remuneration incentives. Thus, in the context of this study, the Board of Directors, on average, is more inclined to disclose non-GAAP measures, and there is financial compensation for this.

5 CONCLUDING REMARKS

This article provides evidence on the remuneration of the board of directors and the probability of disclosure of non-GAAP earnings measures (EBITDA) by Brazilian companies listed on the Brasil, Bolsa, Balcão - [B]3, considering the period from 2011 to 2020. The sample analyzed consists of 271 companies, with 2,093 firm-year observations. According to a recent study by Lont et al. (2020), managers disclose non-GAAP measures with opportunistic intentions motivated by remuneration and not to reduce information asymmetry, so the level of CEO remuneration is associated with the probability and frequency of non-GAAP disclosures. In this sense, the following hypothesis was formulated: H1: the remuneration of the Board of Directors is associated with the probability of non-GAAP disclosures.

The results of the econometric models did not reject H1, thus it showed that the remuneration of the board of directors increases the probability of the firm disclosing the non-GAAP EBITDA measure by 26%. The results of the linear regression with fixed effects are also in line with the Logit model, and there is a 3.7 percentage point higher probability of disclosure. These findings are similar to the baseline study by Lont et al. (2020), where CEO remuneration was associated with the probability and frequency of non-GAAP disclosures. However, the probability of disclosing EBITDA is reduced by 41% when the firm has a loss for the year and this loss is greater than the previous year's loss. The other variables were not statistically significant, so it can be concluded that the increase in profits did not directly influence the disclosure of EBITDA.

It is important to note that the practice of disclosing EBITDA was regulated by the CVM with the introduction of Instruction 527/2012, which aimed to standardize the use and voluntary disclosure of non-accounting information and began to be used by entities from the fiscal year beginning in 2013. Since then, there has been an upward trend in the disclosure of EBITDA from 2013 to 2018. It is worth noting that in 2019 and 2020, there was a significant negative swing in EBITDA disclosure. The reduction in EBITDA disclosure may be associated with losses in the financial years or the economic consequences of the Covid-19 pandemic.

It should be noted that new disclosure requirements for EBITDA and other non-GAAP measures defined as measures of management performance are being proposed by the IASB in its Primary Financial Statements project (2020). The aim is to improve the way companies communicate information in their financial statements. Thus, if approved, companies will have to disclose non-GAAP information in their notes to the financial statements, with a proper explanation of the importance of the non-GAAP measure for the company.

In this way, this study contributes to the various users of accounting information, in particular, it sheds light on the agency problem by providing evidence related to agent remuneration and information disclsure - reducing informational asymmetry for the principal. It also provides evidence on non-GAAP measures for national and international accounting regulatory bodies.

One of the limitations of this study is the analysis of only one non-GAAP measure, EBITDA. The definition of EBITDA as the object of this study was based on the results of the KPMG survey (2016), which found that EBITDA is the voluntary measure most disclosed by Brazilian companies listed on the [B]3. We therefore suggest analyzing other non-GAAP measures, such as: adjusted EBITDA, net debt, Funds from Operations (FFO), adjusted FFO, Net Operating Income (NOI), adjusted net income and efficiency ratio. The analysis of board remuneration is based only on fixed salary, so it is suggested to analyze variable remuneration, such as: cash-based share plans or delivery of shares, other equity instruments and other bonuses.

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