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Determinants of Republications in the Brazilian Market: An Analysis based on Earnings Management Incentives

Abstract

The republication of the financial statements is considered a proxy for the quality of the accounting information, according to the literature on the subject (Dechow, Ge and Schrand, 2010). Therefore, the objective of this study was to analyze the relationship between the Hypotheses of Earnings Management and the Republications of the Financial Statements. The descriptive, documentary and quantitative research analyzed data from 344 companies listed on BM & FBOVESPA from 1998 to 2014. The analysis was performed through panel data regression, testing the hypotheses that the Compensation Package of the managers, the Level of Indebtedness and the Size of the company affect the Republication of the Financial Statements. It was observed that the size, growth of assets, being audited by a Big4 and the adoption of IFRS had a positive and statistically significant effect on the probability of republishing the statements. On the other hand, the adoption of SOX, NivGov has negative and statistically significant effects.

Key Words: Earnings Management; Republication; Corporate Governance.

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1. Introduction

Financial decisions made by external users are rigorously made based on the information available in the market, including the financial statements (Chalmers, Clinch, & Godfrey, 2011). In this sense, they expect that the information released periodically by the companies will be reliable, free of errors and biases (Mackenzie, Coetsee, Njikizana, Chambobo, Colyvas & Hanekom, 2013).

The case is that different aspects can negatively affect the appropriate measuring, recognition and disclosure of financial information, such as individual characteristics (Jensen & Meckling, 1994), the flexibility of accounting standards (Watts, 1992) and cognitive failures (Chen & Chih, 2005). In the field of finance, this debate is recurrent, as they refer to the agency problems and require a governance structure to mitigate them.

According to Brickley and Zimmerman (2010), corporate governance refers to any mechanism used to monitor and align managers' interests with those of shareholders. Not every governance mechanism is appropriate though, as it may imply an effective agency cost, without the actual expected benefit. This adverse effect was also one of the arguments used by opponents of the enactment of the Sarbanes-Oxley Act (SOX), a North American law that forced companies trading on the New York Exchange Commission (NYSE) to implement more robust and effective internal control systems, mitigating the possibility of frauds like what happened at Enron (Iliev, 2010).

In recent years, there has been an effort by the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) to develop a set of high-quality accounting standards in order to increase the relevance and quality of accounting information (Dechow & Schrand, 2004). This has implied a process of convergence and harmonization of standards that, in Brazil, culminated in the adoption of the International Financial Reporting Standards (IFRS) (Martins, 2012). These actions may not necessarily imply significant improvements in the quality of information, however, since cultural, educational and legal aspects may result in different interpretations and non-homogeneous practices (Ball, 2006).

Despite the adoption of standards such as SOX and IFRS, their real effects are not known in terms of improving the quality of accounting information (Marques, 2016). First, because these standards are relatively recent; second, because the quality of financial information is a broad and operationally complex construct to measure (Francis, Olsson, & Schipper, 2006); third, because different measures exist to assess the financial information quality and the effect of the adoption has not been assessed for each of these measures (Dechow, Ge, & Schrand, 2010).

The literature on the quality of financial information prioritizes the evaluation of earnings management, persistence of profits, conservatism and value relevance (DeFond, 2010). Therefore, studies on the republication of statements have been neglected or have been marginalized in research on the subject, even though they are considered as indicative of prior earnings management and have shown growth in recent decades (Huber & Bochner, 2012).

Republications consist of the re-elaboration and disclosure of financial information when material error or omission is identified after disclosure and publicity (He & Chiang, 2013). According to Dechow, Ge and Schrand (2010), one of the ways to evaluate the quality of financial statements is that it indicates the existence of intentional manipulation of accounting earnings.

Earnings management can derive from several incentives, being studied based on three main hypotheses, namely: (i) opportunism of agents, (ii) level of indebtedness and (iii) political costs (Martinez, 2001). Agent opportunism refers to the possibility for managers to manipulate accounting information in order to maximize their current or future compensation package (Healy, 1985). On the other hand, the hypothesis of the level of indebtedness considers that the managers can manipulate the accounting information in order to comply with debt covenants/leading agreements and also reduce the perceived risk of the company (Dhaliwal, 1985).

Finally, the Political Costs refer to earnings management in order not to draw attention to the unions, regulators, competitors, etc. (Watts & Zimmermann, 1978; Jones, 1991, Key, 1997). Given this context, the present study sought to answer the following question: what is the relationship between republication of financial statements and incentives towards earnings management? Thus, the objective of this study was to verify if the manager remuneration package, the level of indebtedness and the size of the company affect the republication of the financial statements, one of the quality proxies of the accounting information. Additionally, the effect of the regulatory and regulatory environment on republication was observed.

Studies of this nature are justified by the need to understand the determinants of republication and if this proxy of financial information quality is influenced by variables that operationalize the hypotheses that motivate earnings management (Shelton, Owen-Jackson, & Robinson, 2011). In addition, the adoption of SOX and IFRS had the objective of mitigating agency conflicts and improving the quality of financial information. The study sought to contribute to the literature in Accounting and Finance, presenting empirical evidence on the determinants of republication of financial statements and the effect of the regulatory environment. Among the expected empirical implications, we highlight signaling to regulators and market participants about the possible variables that affect the probability of republishing the statements, making it possible to establish monitoring policies that consider this information.

The descriptive, documental and quantitative research used a sample of 344 companies through regression analysis with panel data to reach the objective. The results showed that the size and growth of the assets increase the likelihood of chances of republishing the financial statements. Likewise, the adoption of the IFRS and the fact that the company is audited by the Big4 increases the odds of being republished. Among the variables that reduce this probability of republication, we highlight the Return on Assets (ROA) and the Compensation of the Directors.

The article is divided into five sections, including this introduction. In section two, the main theoretical supports for the development of hypotheses and discussion on the theme are presented. In section three, we present the methodological procedures adopted, highlighting the models, operation of variables and tests used in the study. In section four, the results are recorded and discussed in the light of the theoretical framework. Finally, in section five, the final considerations, limitations of the study and suggestions for future research are presented.

2. Theoretical Framework

2.1 Agency Theory and Governance principles

According to Jensen and Meckling (1976), the main objective of the managers hired by the shareholders is the maximization of company value because, as a result of the separation between ownership and control, the main shareholders outsource the management with the expectation that agents (managers) will seek to achieve the previously defined goals. Some problems are inherent in the process though. First, agents are self-optimizing, evaluating, creative and have unlimited desires (Jensen & Meckling, 1994). Second, because contracts are incomplete and cannot totally eliminate moral hazard, agents can use these contractual imperfections to maximize their own well-being, generating the risk of adverse selection (Aghion & Holden (2011).

Therefore, the firm, as a nexus of contracts, uses several instruments to reduce moral hazard and behavioral anomalies that potentiate adverse selection (agency problems). Lambert (2001) emphasizes that agents will tend to prioritize their interests to (1) reduce the work effort, (2) divert resources for use or consumption, (3) protect their reputation and its effect on the future pay package and (4) mitigate the risk.

Evidence that agency problems are part of the business environment is numerous (Di Pietra, McLeay, & Ronen, 2014). Young & Peng (2013) noted that in the period from 1995 to 2009, revenue fraud and fictitious transaction recognition were the main reasons for Accounting & Auditing, Enforcement Releases (AEER). (2015) Lisic, Silveri, Song and Wang (2015) complement that, in view of the imminent risk of agency problems, regulatory and institutional environments play an important role.

In this scenario, since the 1980s, the debate about corporate governance has intensified, because the recurrence of cases of accounting fraud and the greater connection between the financial and capital markets have given rise to a global concern that has led to: (i) greater concern of economic agents with the regulatory environment they operate in; (ii) the enactment of standards that assigned greater responsibility to managers through the internal control system; (iii) enactment of standards that protect investors (mainly non-controlling shareholders); (iv) establishment of minimum standards of governance accepted by accession; and (v) improved accounting standards (Ball, 2006; Brickley & Zimmerman, 2010; Dechow, Ge, & Schrand, 2010; Di Pietra, McLeay, & Ronen, 2014).

As shown in Figure 1, in summary, all these efforts are based on the principles of Corporate Governance. Corporate governance is understood to be any internal and external mechanism that aims to align interests between agents and principals and mitigate agency problems (Armstrong, Guay, & Weber, 2010). The agent (manager), assuming the management of resources on behalf of the principals, is obliged to render accountability in a transparent and equitable manner, in accordance with the standards and laws in force (Brown & Caylor, 2009; Yoo & Jung, 2015).

The Brazilian Securities and Exchange Commission (CVM) suggests an ideal Corporate Governance Structure (EGC) (Comissão de Valores Mobiliários, 2016). As can be seen in Figure 1, there are several specific mechanisms, such as: (1) internal controls, (2) accounting system, (3) auditing, (4) corporate legislation, (5) regulators, and (6) self-regulation. Internal controls are manuals and rules of procedures that seek to minimize the risk of expropriation and / or inefficiency in the process of carrying out the activities.

According to Ronen (2014), the Enron case exposed the weaknesses of internal control systems but, on the other hand, it stimulated the assignment of better defined responsibilities to managers and the definition of more structured controls. On the other hand, the accounting system, at the same time as it serves as a mechanism of control, monitoring and reduction of asymmetry (Sunder, 2014), it acts as an instrument of manipulation, since the flexibility of the accounting standards allows the agents to use it to meet specific objectives (Watts, 1992; Ball, 2006).

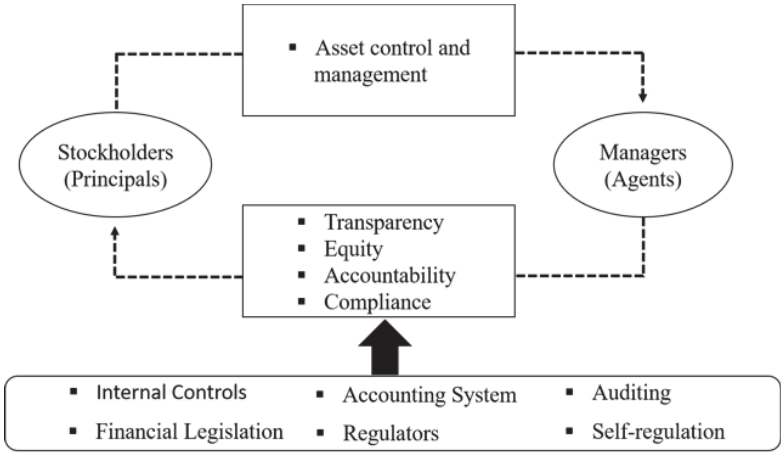

Figure 1. Agency Relationship and Governance Principles

Source: Elaborated based on Brickley & Zimmerman (2010), Di Pietra and Ronen (2014).

In this context, Ramanan (2014) also observes that auditing plays an important role in the corporate governance structure. Internal Audit seeks to reduce the risks related to critical processes by structuring, reviewing and monitoring the due compliance with internal controls and policies defined by companies, in order to mitigate the occurrence of errors and fraud. The purpose of the External Audit is to evaluate the adequacy of the financial statements to be disclosed to the market.

The regulatory environment that encompasses the laws and regulations established by regulators with police power over economic agents play an essential role as a governance instrument, since they establish the rules and restrictions the various economic agents are subject to, as well as the punishments that may occur in case of infringements. The regulatory environment and the enforcement power of the standards have consistently proven to be relevant to improve the business environment, quality of accounting information, and even republication (Pfarre, Smith, Bartol, Khanin & Zhang 2008; Khanin & Mahto, 2012).

Finally, the market itself seeks mechanisms for greater efficiency and differentiation among economic agents. In this sense, the efforts of the various market participants to better relate to the various stakeholders have been intense. In Brazil, since the 1990s, private non-profit institutions have sought to stimulate the improvement of corporate transparency.

The Brazilian Corporate Governance Institute (IBGC), created in 1995, for example, has published the Code of Good Corporate Governance Practices since 1999. In 2000, this movement stimulated the creation of the Differentiated Levels of Governance of companies whose shares are traded on BM & FBOVESPA. It is a ranking of listed companies that adopt differentiated Corporate Governance practices. BM & FBOVESPA (2016) requires a series of requirements to be listed on the differentiated levels (Level 1, Level 2 and New Market), namely: (i) issuing of common stock, (ii) minimum circulation of 25% of stock, (iii) encouragement of share dispersion, (iv) encouragement of share dispersion, (v) encouragement of board independence, (vi) concession of Tag Along.

2.2 Earnings management hypotheses

Earnings management refers to the making of accounting and operational choices to meet the specific interests of the firm (and/or manager). According to Defond (2010), the increase in studies on the quality of profits (earnings) is based on issues such as: (1) harsh accusations by the SEC regarding earnings management; (2) accusations of opportunistic actions by managers of publicly held companies; (3) criticism as to the possible connivance of auditors with earnings management; (4) the recurring accounting frauds, such as the Enron case and; (5) change in the regulatory environment, such as SOX and, more recently, IFRS.

It is an event that originates in the agency conflict and aims to meet the objectives of the agents and / or the firm, having several motivations based on three main hypotheses: (1) opportunism of agents, (2) level of indebtedness and (3) political costs (Dechow, Ge, & Schrand, 2010).

2.2.1 Opportunism of agents

Opportunism occurs when agents use informational asymmetry to meet their objectives to the detriment of those of (major) shareholders. Fields, Lys & Vincent (2001) note that, although accounting choices arise from the exercise of judgment in the application of accounting standards, the manager's interest in positively affecting the results may be one of the reasons for its occurrence. According to Bergtresser and Philipon (2006), the main motivations for the opportunism of agents is the manager's interest in maximizing his compensation package, either through the performance bonus or through the exercise of options and actions under his control. From this relationship, the first research hypothesis (H_1) of the study emerges:

H_1 = The remuneration of managers positively affects the republication of the statements.

As managers tend to seek to maximize their well-being, there is potential for earnings managing for that purpose. Elayan, Li and Meyer (2008) argue that republications are a major negative event in companies and are associated with earnings management, sometimes encouraged by the opportunism of agents interested in maximizing their compensation package. Evidence that this event occurs has been systematically observed in studies such as Masulis, Wang & Xie (2012), Dao, Huang, Chen and Huang (2014), Collins, Masli, Reitega & Sanchez (2015) Chen and YurAustin (2015), Khalil and Ozkan (2016).

2.2.2. Hypothesis of indebtedness

The level of indebtedness is an indicator of the firm's risk and growth opportunity (Myers & Majluf, 1984). Despite the fact that debt has a cost of capital lower than equity and optimizes the value maximization, there is an acceptable limit to this level of indebtedness (Modigliani & Miller, 1963; Myers & Majluf, 1984). In this context, agents (and companies) will be concerned about this measure. Graham, Harvey & Rajgopal (2005) point out that 26.5% of executives believe that the level of indebtedness is a strong incentive towards earnings management.

First, because the increase in the level of indebtedness can lead to violation of debt covenants; Secondly, that raising this indicator may undermine credit risk, and therefore increase the cost of capital, restrict access to other lines of financing, among other implications. Third, because this motivation is strongly associated with the reputation and performance of the manager and, hence, his package of incentives and career opportunities. Based on this context, the second research hypothesis (H_2) was analyzed:

H_2 = The level of corporate indebtedness positively affects the republication of the statements.

According to Mayers & Majulf (1984), the indebtedness, in addition to the lower cost, signals to the market about the investment opportunity, besides receiving influence from external members in the governance structure due to debt covenants. On the other hand, it can increase the risk perceived by the market and generate adverse effects, such as increased cost of capital and risk of bankruptcy, for example. These effects, in turn, may be reasons for earnings management. Previous studies such as Bardos (2011), Badertscher, Collins and Lys (2012), Chen, Cheng & Lo (2013), Dao et al. (2014) and Baber, Kang, Liang and Zhu (2015) have shown that more indebted companies tend to have higher levels of republication.

2.2.3. Hypothesis of Political Costs

According to Watts and Zimmerman (1978), the political costs refer to the possibility of expropriation in one of the parties and derives from the visibility of the company, be it to regulators, competitors and other interested parties. According to Key (1997), in the Political Cost Theory, to the extent that a firm is subject to the potential transfer of wealth to stakeholders (political process), agents will be prone to making accounting choices that will reduce such transfer. This is a concern of the agents with the visibility of the firm towards analysts, institutional investors, regulators, the treasury, competitors and other stakeholders (such as trade unions for example).

The implication of this theory is that companies with higher visibility will be more likely to incur political costs, either because of the need to increase employee compensation, to pay taxes due to tax fines or to increase the cost of capital and reduce the stock value resulting from the higher perceived risk (Dechow, Ge, & Schrand, 2010; Graham, Harvey, & Rajgopal, 2005; Tan, 2013; Nelson & Skinner, 2013; Beatty & Liao, 2014). In this context, managers will seek to present a result that: (1) is relatively homogeneous, (2) meets market expectations; (3) does not differ excessively from other companies in the sector. From this perspective, the third hypothesis (H_3) of this study was tested:

H_3 = The size of the companies positively affects the republication of the statements.

Studies that have considered the size effect on republications have shown that, because large firms are more susceptible to fraud and error risk, they tend to republish financial statements more (Ettrede, Scholz, Smith & Sun, 2010; Alexander, Baugruss, Bernili, Lee & Westberg, 2013). The fact is that these republications have significant adverse effects on the firm's market value, cost of capital and reputation (Cao, Myers, & Omer, 2012; Palmrose, Richardson, & Scholz, 2004), so they will make efforts to mitigate these risks, as the costs for reputation rebuilding are higher, including for auditors (Kryzanowski & Zhang, 2013, Francis, Michas and Yu, 2013). The evidence found supports more persistently that, the larger the firms, the greater the likelihood of republication (Schrand & Zechman, 2012, Chen, Cheng & Lo, 2013, Cao, Feroz & Davalos, 2015, Agrawal & Copper, 2015 , Baber et al., 2015).

2.3 Republication of the Financial Statements: concepts and implications

Republication consists of correcting the recognition, measurement or disclosure of data that significantly changes the evaluation and interpretation of external users, reducing the risk of their adverse selection. This change may result from an intentional and adequate change in the accounting policy, or an error or fraud, identified a posteriori, requiring rectification of the information disclosed (Marques, 2016).

Elayan et al. (2013) state that the restatements are associated with accounting irregularities and have consumed millions of dollars in recent years due to the risks of litigation, reputation and expropriation. It is not restricted to this though, since the republications can also be based on qualitative motivations, to correct data related to the explanatory notes, management reports, among others (Hellou Netto & Pereira, 2010). Marques (2016) complements that the republications can be compulsory or spontaneous. Obligations occur when the regulator or interested party (auditor, for example) requires the republication of the information disclosed. The spontaneous republications are done by the company's own will and do not derive from normative or contractual imposition. The author notes that most of the statements republished in Brazil are spontaneous (83%) and that 73% of republications are to correct qualitative data.

Burks (2010), when analyzing data from the Government Accountability Office (GAO) for the period 1997-2005 in North American companies, concluded that the recognition, disclosure and measurement of events related to revenues, costs, assets, insurance and reclassifications account for 75% of the republications in the period.

In Brazil, studies of this magnitude are not available, largely because the available databases with information about republications do not present a level of detail that makes such a survey possible. Some scientific effort has been made in this direction though.

Dantas, Chaves, Silva and Carvalho (2011, p. 57) analyzed 65 republications by determination of CVM from 2001 to 2009 and grouped the motivations in: (1) Recognition and measurement of assets and liabilities (45.4%); (2) Shortage in disclosure of explanatory notes (39%); (3) Recognition and measurement of revenues and expenses (7.8%); and (4) Others (7.8%). These results move in the same direction as the international studies on the motivations towards compulsory republication, since problems of measuring equity and income items account for more than 50% of the motives in recent times (Collins et al., 2015).

Republishing can generate relevant empirical implications. On the one hand, this is a proxy for higher (or lower) quality of accounting information with associated problems (Dechow, Ge, & Schrand, 2010). For example, Cao, Myers & Omer (2012) emphasize that republication has an adverse effect on corporate reputation, which can reduce the value of the company, increase the cost of capital, start execution and bankruptcy, among others. Chen, Elder & Hung (2014) emphasize that the market reacts negatively to republications, causing subsequent information disclosed by companies to lose credibility. In this perspective, some studies were carried out in the Brazilian context, which are relatively scarce though (Murcia & Carvalho, 2007).

Among the few studies identified, Helou Netto & Pereira (2010) sought to analyze the effect of republications on market value. To do so, they analyzed 197 republications of 24 companies listed on BM & FBOVESPA from 2001 to 2009. The results showed that compulsory republications had a positive effect on the value of the company, suggesting that the Brazilian market receives the rectification positively when it is mandatory. On the other hand, the other motivations did not significantly affect prices, suggesting information irrelevance of spontaneous republications for example.

Cunha, Magro & Fernandes (2015) conducted a study on the effect of republication on Earnings Management. The authors analyzed data from 40 republications that occurred between 1999 and 2012. The results showed that republication has a negative effect on discretionary accumulations, which is consistent with the literature in the area. The compulsory republication is a requirement of the regulator. Sometimes, this demand seeks to correct problems related to the recognition of assets, liabilities and results (Dantas et al., 2011, Collins et al., 2015). This implies that, if there is a compulsory republication, the agency will require that a potential event associated with the discretionary accumulations be rectified, since the agent will tend to manage earnings (up or down). The regulator, in turn, will require that the procedure adopted previously be reversed, implying the result found by Cunha, Magro & Fernandes (2015).

3. Research design

In this study, we present information about republications between 1998 and 2014. The sample consisted of 33 companies listed on BM&FBOVESPA, distributed among the listing segments as follows: 25 Level 1, 15 Level 2, 109 New Market and 195 Traditional segment. The data were collected on the websites of CVM and BM&FBOVESPA.

3.1. Models and variables

The analysis of the hypotheses used regression with panel data. The models with panel data are appropriate to reduce the econometric effects and/or problems, such as individual heterogeneity, besides increasing the degrees of freedom and permitting more robust inferences (Fávero L. , 2013). In this study, two specifications were used. The first, logistic, in which the probability of republishing [P(repub)] was a function of the Managers' Compensation, Indebtedness Level, Company size and the Control variables, *f* (RemGes, NivEnd, Tam, Control Variables). Figure 1 presents the operation of the variables and the expected signals of each coefficient.

Figure 1:
Description of the Variables

Variable	Expected signal	Sigla	Operacionalização
	Abbreviation	Operation	Total de Republicações Acumuladas até o ano t/Total de Publicações Obrigatórias até o ano t.
Cumulative Republication Rate		TRA	Total Cumulative Replications by year t/Total Compulsory Publications by year t.
Republication		Repub	Dummy variable equal to 1 when the statement was republished and zero when not.
Compulsory Republication	+	RepObrig	Dummy variable equal to 1 in case of compulsory republication of the statement and zero in case of spontaneous republication.
Total Manager Compensation	+	RemTot	Logarithm of index between Managers' compensation in year t by Compensation in the immediately preceding year (t-1)
Director Compensation	+	RemDir	Logarithm of index between Director compensation in year t by Compensation in the immediately preceding year (t-1)
Audit Committee Compensation	+	RemCFisc	Logarithm of index between Audit Committee compensation in year t by Compensation in the immediately preceding year (t-1)
Indebtedness Level	+	NivEnd	Total Liabilities divided by Total Assets
Size	+	Asset	Logarithm of total Assets of company i in year t
Asset Growth	+	CrescAt	Logarithm of total current assets/total previous assets
Return on Assets	-	ROA	Index between EBIT/ Total Assets
Previous Cumulative Republication Rate	+	TRAt-1	Total de Republicações Obrigatória até o ano t/Total de Republicações Obrigatórias até o ano t
Total Cumulative Republications by year t-1/Total Compulsory Publications by year t-1	+	AT	[(Ativo Circulante Operacional – Passivo Circulante Operacional) - Depreciação] /Ativo Total (t-1)]
Compulsory Republication Rate	+	TRO	Total Compulsory Republications by year t/Total Compulsory Republications by year t
Total Accruals	+	AT	[(Current Operating Assets – Current Operating Liabilities) - Depreciation] /Total Assets (t-1)]
Profit Variation Coefficient	+	CVEbit	Variation Coefficient of EBIT by year t of company i
Return on Shares	+	Ri	Logarithm of (PtPt-1) in which Pt is the mean stock price in the three months subsequent to the publication of the statement and Pt-1the mean stock price in the three months before the publication
Economic Segment	+/-	SegEcon	Dummy variable equal to 1 for the i-eth sector, 0 for the others
Governance Level	-	*NivGov*	Dummy variable equal to 1 for Governance Level (N1, N2 or NM), 0 for traditional
Sarbanes-Oxley	-	SOX	Dummy variable equal to 1 for the initial year of SOX, 0 for the others.
International Financial Report Standards Partial	-	IFRS Parcial	Dummy variable equal to 1 for the initial year of Partial IFRS and 0 for the others.
International Financial Report Standards Full	-	IFRS Full	Dummy variable equal to 1 for the initial year of Full IFRS and 0 for the others.
Big Four	+	Big4	Dummy variable equal to 1 for companies audited by one of the Big4, 0 for the others.

Source: Elaborated based on Bardos (2011); Badertscher, Collins e Lys (2012); Masulis, Sing & Xie (2012); Schrand & Zechman, (2012); Chen, Cheng & Lo (2013); Dao *et al.* (2014), Baber *et al.*, (2015); Collins *et al.*, (2015); Cao *et al.*, (2015); Agrawal & Copper (2015); Lin *et al.* (2015) Khalil and Ozkan (2016), Marques (2016).

The estimation of the model was performed by means of Maximum Likelihood. Pindyck and Rubinfeld (2004) state that, when using a logit or probit model, this technique is the most appropriate. The interpretation consists of analyzing the marginal effect of the explanatory variables on the probability of observing the explained variable (Wooldridge, 2010). Therefore, the effect of Compensation (RemTot, RemGes and RemCFisc), Level of Indebtedness and Size of the Company on the likelihood of republishing the financial statements (Repub) was analyzed. In addition to these variables that operationalize the hypotheses evaluated in the study, we used control variables, which have been systematically identified in the literature as having significant effects on earnings management in other proxies (Bardos, 2011; Badertscher, Collins and Lys, 2012, Masulis, Sing & Xie, 2012, Schrand & Zechman, 2012; Chen, Cheng & Lo, 2013; Dao et al., 2014; Baber et al., 2015; Collins et al., 2015; Cao et al., 2015; Agrawal & Copper, 2015; Lin et al., 2015; Khalil and Ozkan, 2016; Marques, 2016).

For statistical significance, a maximum level of 10% was considered, so z-statistics with p-values equal to or lower than 10% were considered significant, values commonly accepted in the area of Accounting (Fávero, Belfiore, Lopes da Silva & Chan, 2009). The initial model tested was defined by (Equation 1):

$$\begin{aligned} P(Repub)_{it} = {} & \beta_0 + \beta_1 RemTot_{it} + \beta_2 Remdir_{it} + \beta_3 RemCFisc_{it} + \beta_4 NivEnd_{it} + \beta_5 Tam_{it} + \\ & \beta_6 ROA_{it} + \beta_7 AT_{it} + \beta_8 CVEbit_{it} + \beta_{10} TRA_{it-1} + \\ & \beta_9 Ri_{it} + D_1 SegEcon_{it} + D_2 NivGov_{it} + D_3 SOX_{it} + D_4 IFRS_{it} + D_5 Big4_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

In addition, the robustness was tested, using the Cumulative Republication Rate as an explanatory variable (Equation 2). This index is calculated based on the total Cumulative republications until year "t" divided by the total publications the company was obliged to publish until year "t." It is a relative measure used by Marques (2016) with a downward trend, as the republications are expected to be isolated and not recurrent events.

$$\begin{aligned} TRA_{it} = {} & \beta_0 + \beta_1 RemTot_{it} + \beta_2 Remdir_{it} + \beta_3 RemCFisc_{it} + \beta_4 NivEnd_{it} + \beta_5 Tam_{it} + \beta_6 ROA_{it} + \\ & \beta_7 AT_{it} + \beta_8 CVEbit_{it} + \beta_{10} TRA_{it-1} + \\ & \beta_9 Ri_{it} + D_1 SegEcon_{it} + D_2 NivGov_{it} + D_3 SOX_{it} + D_4 IFRS_{it} + D_5 Big4_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

The interpretation of the data used the significance parameter but, in this case, the interpretation is to analyze the marginal effect of the explanatory variables on the TRA, which is a percentage. Hence, the 1% increase in ROA will imply an increase by X percentage points in TRA.

3.2. Tests of differences between means and medians

The tests of differences between means and medians were useful to evaluate the existence of statistical differences between the Pre and Post IFRS periods. As different normative periods are treated, a comparison of the means between the two is justified. Therefore, the T, Wilcoxon and Kruskall Wallis tests were used. Parametric and non-parametric tests are useful for comparison between groups with different characteristics (Favero et al., 2009; Manly, 2008). The null hypothesis evaluated in the "t" test consisted of . The rule of decision was to reject H_0 when the p-value is equal or inferior to 10%. The null hypothesis evaluated in the Wilcoxon and Kruskall Wallis tests consisted of . Therefore, when the p-value is equal or inferior to 10%, we reject .

4. Analysis and interpretation of results

4.1. Descriptive statistics

Initially, we analyzed the main aspects of descriptive statistics (Table 1). In this respect, considering the separation between the Pre and Post periods, it is important to highlight the observed changes in the variables in terms of homogeneity. It was observed that the Coefficient of Variation (μ / σ) dropped in all accounting variables except the Return (LnRi) and Total Accruals. This result, on the one hand, presents indications of better data quality for the purpose of quantitative studies, since less dispersion contributes mainly to the estimation. On the other hand, it presents indications of greater conservatism in dealing with Total Accruals and greater uncertainties perceived by the market when the stock returns are observed. In general terms, the variables used increased in most cases. This increase comes with different interpretations, because the increase in the level of indebtedness, for example, can be understood as a bad sign a priori (Hutton, Marcus, & Teharanian, 2009), but, positively, it can show an increase of the investment opportunities (Myers & Majluf, 1984).

Table 1:
Descriptive statistics of variables in the models

	Before IFRS						Post-IFRS						T test	Wilcoxon	Kruskal Wallis
	n	μ	S	CV	1o.Q	3o.Q	n	μ	S	CV	1o.Q	3o.Q	t(Prob > t)	z(Prob > z)	x^2(Prob F)
Panel A – Quantitative variables															
TRA	3.367	0.12	0.21	1.74	0.00	0.20	2.432	0.27	0.23	0.87	0.08	0.39	-24.8059*	-32.028*	931.727*
TRA□	3.367	0.09	0.26	2.88	0.00	0.00	2.443	0.26	0.23	0.91	0.08	0.38	-24.5356*	-31.072*	867.497*
LnNivEnd	1.760	-1.13	1.19	-1.06	-1.38	-0.43	1.984	-1.27	1.36	-1.08	-1.57	-0.46	3.0188*	2.673*	7.144*
LnAtivo	3.367	8.87	6.45	0.73	0.00	13.87	2.415	12.86	4.15	0.32	12.31	15.03	-28.5671*	-25.640*	650.925*
LnRemTot							1.717	12.75	5.77	0.45	13.44	16.09			
LnRemDir							1.717	11.38	6.69	0.59	8.88	15.91			
LnRemCFisc							1.717	10.37	5.66	0.55	10.20	14.09			
LnRi	3367	0.09	0.43	4.78	0.00	0.00	2.415	-0.00	0.22	-100.44	-0.02	16.09	10.8097*	9.820*	82.872*
Total Accruals	3367	-0.12	3.00	-25.64	-0.05	0.00	2.415	-0.04	5.34	-123.23	-0.09	0.02	-0.7060	2.014**	3.989**
CrescAtivo	3.367	0.09	0.71	8.01	0.00	0.10	2.415	0.11	0.80	7.01	-0.01	0.16	-1.2104	-7.392*	53.778*
ROA	3.367	-1.89	8.53	-4.51	0.00	0.09	2.415	-2.84	7.37	-2.59	0.00	0.12	1.7707***	-9.786*	94.681*
CVEbit	3.367	9.81	28.37	2.89	6.05	11.26	2.415	6.25	1.21	0.19	5.90	6.87	7.5577*	26.705*	713.132*
Panel B – Qualitative variables															
Republic	3.367	0.14	0.35	2.48	0.00	1.00	2.443	0.30	0.46	1.52	0.00	1.00		-15.140*	112.729*
TipRes	3.367	0.16	0.37	2.26	0.00	0.00	2.443	0.24	0.42	0.42	0.00	0.00		-5.923*	16.809*
NivGov	3.367	0.43	0.50	1.15	0.00	1.00	2.443	0.43	0.50	1.15	0.00	1.00			
SOX	3.367	0.10	0.30	2.98	0.00	0.00	2.443								
IFRS Full							2.443	0.14	0.35	2.45	0.00	1.00			
Big4	3.367	0.39	0.49	1.26	0.00	1.00	2.443	0.65	0.48	0.73	0.00	1.00		-19.348*	283.375*

Obs.: *, **, *** - Difference statistically significant at 1%, 5% and 10%. Means of qualitative variables (dummy) refer to the proportion of the characteristic equal to 1.
Legend: TRA: Total Cumulative Replications by year t/Total Compulsory Publications by year t.; **Repub**: Dummy variable equal to 1 when the statement was republished and zero when not; **RepObr:** Dummy variable equal to 1 in case of compulsory republication of the statement and zero in case of spontaneous republication; **RemTot**: Logarithm of index between Managers' compensation in year t by Compensation in the immediately preceding year (t-1); **RemDir**: Logarithm of index between Director compensation in year t by Compensation in the immediately preceding year (t-1); **RemFisc**: Logarithm of index between Audit Committee compensation in year t by Compensation in the immediately preceding year (t-1); **NivEnd:** Liabilities/Assets; **Tam: CrescAt**: Logarithm of total current assets/total previous assets; Ln(Asset); **ROA:** Index between EBIT/ Total Assets; Total Compulsory Republications by year t/Total Compulsory Republications by year t;

: Total Compulsory Republications by year t/Total Compulsory Republications by year t; **AT:** [(Current Operating Assets – Current Operating Liabilities) - Depreciation] /Total Assets (t-1)]; **CVEbit:** Variation Coefficient of EBIT by year t of company i: **Ri:** Logarithm of) in which is the mean stock price in the three months subsequent to the publication of the statement and the mean stock price in the three months before the publication; **SegEcon:** Dummy variable equal to 1 for the i-eth sector, 0 for the others; **NivGov:** Dummy variable equal to 1 for Governance Level (N1, N2 or NM), 0 for traditional; **SOX:** Dummy variable equal to 1 for the initial year of SOX, 0 for the others. **IFRS Partial:** Dummy variable equal to 1 for the initial year of Partial IFRS and 0 for the others. **IFRS Full:** Dummy variable equal to 1 for the initial year of Full IFRS and 0 for the others; **Big4:** Dummy variable equal to 1 for companies audited by one of the Big4, 0 for the others.

In addition, there is an improvement in some indicators relevant to the financial analysis, such as: LnAtivos, CrescAtivo, ROA. A reduction in important indicators for the same purpose was also observed, especially: LnRi, Total Accruals and CVEbit. With regard to the indicators that increased, these are parameters used to evaluate the companies' potential of generating return, so their increase may indicate an increase of this potential (Jiao, Kaning & Roosenboom, 2012).

Likewise, the variables whose averages dropped strictly are used by the market in their evaluations, but with opposite interpretations. In the case of the return (LnRi), this reduction indicates a deterioration in the performance of stock prices, which may generate adjustments downward of investors' expectations. Regarding the reduction of the Accruals (Accruals) and the Profit Variation Coefficient (CVEbit), the first can be related to post-IFRS conservatism (Abed, Al-Badainah, & Serdaneh, 2012) which, in turn, tends to reduce the variability of profits, suggesting what is understood in the Accounting and Finance literature as Income Smoothing, one way of earnings management (André, Filip, & Paugam, 2015). Finally, it was verified that the differences were statistically significant, according to the tests of differences between the averages used.

4.2. Incentives towards republication of the statements

Initially, the logistic model (1) was analyzed to evaluate the effect of the earnings management hypothesis on the republication (Table 2). With respect to the Hypothesis of Agents' Opportunism (H_1), it was observed that, consistently, only the Remuneration of the Directors (RemDir) was statistically significant at 1%. The predicted signal [S (p)] was negative though, evidencing that the remuneration package is a great incentive to improve the quality of accounting information, in the present study, using the proxy of republication. Schrand & Zechman (2012) identified a positive relationship between remuneration package and republication, confirming the hypothesis of agents' opportunism.

The incentive package is one of the companies' strategies to mitigate agency risks (Jensen & Meckling, 1976). Since agents have a self-renewing and insatiable desire, however, the risk may remain (Jensen & Meckling, 1994). Masulis, Wang & Xie (2012) point out that the appropriate compensation scheme may discourage managers from acting opportunistically. Healy (1985) already recommended the formulation of contract contracts that would meet the objectives of the principals, since the agents are prone to accounting choices, considering the remuneration packages. Another relevant aspect that supports the results is that there is a positive association between replication and the turnover of managers, external auditors - this means that there is an imminent risk of potential losses of these agents, which may discourage republication (Kryzanowski & Zhang, 2013, Collins et al., 2015).

Table 2:

Logit (1) model for Determinants of Financial Statement Republications

P (Repub)	1998-2014			1998-2007			2008-2014		
	S(P)	OR	z	S(P)	OR	z	S(P)	OR	z
Intercept	-	0.0326	-5.00*	-	0,0460	-5.08*	+	0.0261	-9.36*
NivEnd	-	0.9890	-0.19	+	1,0884	1.22	+	1.1054	0.45
Tam	+	1.1108	2.87*	+	1,1696	3.72*	+	1.1285	4.50*
RemTot	+	1.0311	1.37				+	1.0219	1.14
RemDir	-	0.9619	-2.39**				-	0.9698	-2.12**
RemCFisc	+	1.0245	1.23				+	1.0074	0.42
Ri	+	1.5747	1.45				+	1.4955	1.48
Total Accruals							-	0.9815	-1.53
CrescAtivo	+	1.6956	1.80**	+	1,7495	2.31**	+	1.0821	1.01
N1	+	1.5651	1.66***	-	0,7942	-0.84	+	1.5407	1.60***
SOX				-	0,5253	-2.56**			
IFRS Full	+	5.8242	7.75*				+	5.0490	8.14*
Big4	+	1.5501	2.21**	+	1,2363	1.30	+	1.5252	2.47**
N.Obs./Groups	1395|321			1760| 247			1717 | 349		
F stat (Prob > F)/Wald (x^2)	116.82|0.0000			62.09 | 0.0000			127.88 |0.0000		

Obs: *, **, *** Statistically significant at 1%, 5% and 10%. The Wooldridge test evidenced the presence of self-correlation and heteroscedasticity using clustered robust standard errors in the company. The Logistic Panel Data Model with Random Effects was used according to the adjustment properties described by Fávero et al. (2009). **In the period 1998-2007** a negative and statistically significant effect was observed in the following years: 1998 (|OR| 0.2230158 |z| -3.89 *), 1999 (|OR| 0.5652443 |z| -2.13**), 2000 (|OR| 0.3128625 |z| -4.01*) , 2001 (|OR| 0.6217064 |z| -1.89**), 2003 (|OR| 0,416642 |z| -3.39*), 2004 (|OR| 0.4150204 |z| -3.45*), 2005 (|OR| 0.5989329 |z| -2.14**) and 2006 (|OR| 0.6672775 |z| -1.75***). **In the period 2008-2014** statistical significance was observed in the dummies for the years 2011 (|OR| 2.404319 |z| 4.43*), 2012 (|OR| 2.059242 |z| 3,62*) and 2013 (|OR| 1.36857 |z| 1,54*). The remaining variables were omitted due to lack of statistical significance, except for the variables directly related with the general earnings management hypotheses. According to the instructions by Wooldridge (2010), variables with Z statistics equal or higher than 1 were maintained, even if not statistically significant at 1%, 5% and 10%.

Legend: Repub: Dummy variable equal to 1 when the statement was republished and zero when not; **NivEnd:** Liabilities/ Assets; **Tam:** ln(asset of total assets); **RemTot**: Logarithm of index between Managers' compensation in year t by Compensation in the immediately preceding year (t-1); **RemDir**: Logarithm of index between Director compensation in year t by Compensation in the immediately preceding year (t-1); **RemFisc**: Logarithm of index between Audit Committee compensation in year t by Compensation in the immediately preceding year (t-1); **Ri:** Logarithm of) in which is the mean stock price in the three months subsequent to the publication of the statement and the mean stock price in the three months before the publication; **AT:** [(Current Operating Assets – Current Operating Liabilities) - Depreciation] /Total Assets (t-1)]; **CrescAt**: Logarithm of total current assets/total previous assets; **NivGov:** Dummy variable equal to 1 for Governance Level (N1, N2 or NM), 0 for traditional; **SOX:** Dummy variable equal to 1 for the initial year of SOX, 0 for the others. Dummy variable equal to 1 for the initial year of Full IFRS and 0 for the others; **Big4:** Dummy variable equal to 1 for companies audited by one of the Big4, 0 for the others.

The Hypothesis of Indebtedness () states that more indebted companies are more likely to manage earnings, either to reduce the perception of risk or to avoid debt covenants. Therefore, it was expected that the level of indebtedness would positively affect republications. In the present study, the results were consistent with the theoretical expectation regarding expected signals (Tan, 2013; Baber et al., 2015, Cao et al., 2015), but were not statistically significant. According to Jensen and Meckling (1976), if the company presents a higher level of indebtedness and, therefore, a higher level of perceived risk, it can be stimulated by the benefit of the higher quality of the information provided, as this would generate a lower cost of capital (Bardos, 2011; Agrawal & Cooper, 2015). In the present study, however, the level of indebtedness did not present sufficient statistical significance to support the proposed theory.

The last hypothesis tested (H_3) was that firm size has a positive effect on republication (Elayan, LI, & Meyer, 2008, Kryzanowski & Zhang, 2013, Khalil & Ozkan, 2016). This hypothesis was confirmed both in the Pre IFRS and in the Post IFRS period. This means that larger companies are more likely to republish. In the Brazilian contex, however, t it should be noted that most of the republications are of the "spontaneous" type, so it is not necessarily an increase in irregularities. Marques (2016) observes that the increase of the republications, if they are spontaneous and qualitative information, do not necessarily mean a problem. In that sense, Helou Netto & Pereira (2010) observed that, in the Brazilian market, only mandatory republishments have a significant effect on the behavior of stock prices. In foreign literature, republishing generates adverse market behavior more quickly, which is expected given the level of capital market development, as well as the fraud and error events in the last two decades (Di Pietra, McLeay, & Ronen, 2014).

The normative environment is relatively important in Accounting research (Di Pietra, McLeay, & Ronen, 2014), because Accounting is strongly influenced by the current normative standard, so that the study in the field without considering its effect can bias the analysis. In the present study, a temporal cut--off was made between the pre-IFRS (1998-2007) and post-IFRS (2008-2014) data. This separation was necessary due to the fact that most of the variables are of an accounting nature, which implies that, as they were measured from different standards, the joint analysis could bias the results. On the other hand, the separation makes it possible to better visualize the differences between the periods.

In addition, the effect of adopting two important standards for accounting, Sarbanes-Oxley (SOX) and IFRS was controlled. SOX has established stricter internal control rules (Alexander et al., 2013). IFRSs consist of a standard of accounting standards, a priori, of better quality (Dechow, Ge, & Schrand, 2010). The results showed that the implementation of SOX generated a reduction in the probability of republishing. This result reinforces the importance of the standard and governance mechanisms (Kryzanowski & Zhang, 2013, Chen, Elder, & Hung, 2014) because, as SOX reinforces the structure of internal controls and Accountability instruments, this implies an improvement in the quality of the reported information, reducing the volume of republication.

On the other hand, the adoption of Full IFRS showed a positive and significant effect. This result points to the concerns raised by Ball (2006). In that author's view, IFRS does not necessarily mean instant improvement, since cultural aspects may lead to different interpretations. As most republications are spontaneous and for qualitative reasons though (Marques, 2016), these findings may be due to changes and / or corrections that do not significantly affect the quality of information (Hellou Netto & Pereira, 2010). It draws the attention of regulators to greater alertness to the continuity of the republication rate, however.

Another control variable evaluated was Asset Growth (CrescAtivo) - its use, as well as ROA, is based on the Political Costs Hypothesis (Key, 1997). First, firms with higher growth rates will be more subject to republishing (Young & Peng, 2012; Baber et al., 2015). On the other hand, companies with higher performances (ROA) will have incentives not to republish (Cao, Myers, & Omer, 2012; Chen, Elder, & Hung, 2014; Masulis, Wang, & Xie, 2012). The results of the study demonstrated exactly what was expected. Asset growth had a positive effect on the likelihood of republishing the financial statements, so higher asset growth rates indicate a greater risk of manipulation and earnings management, which has a positive effect on republication. In the case of ROA, as it increases, it reduces the likelihood of republication, which is consistent with two earnings management hypotheses: the first, of the political costs and the second of the opportunism of the agents, since the increase in ROA would only stimulate them to manage earning, if, and only if, the current result is beyond expectations. Therefore, it could anticipate losses to favor the future remuneration package or even to homogenize current performance (Tan, 2013; Beatty & Liao, 2014).

Finally, the auditor effect was controlled. The audit has a representative role in the corporate governance structure. In addition, earnings management studies have systematically reported a reduction effect of the Big Four on this event. This means that the general assumption about the effect of large audit firms is that they reduce the likelihood of republishing the statements (Thompson & McCoy, 2008). In the present study, the results refuted the hypothesis about the Big Four effect. What was observed was that they have a positive and significant effect on the probability of republication. At first, it seems theoretical incoherence, however, two issues need to be considered. First, that there is a concentration of these companies among the listed companies, which may cause the growth of the republications associated with this type of auditor. Even in the adoption period of SOX, however, when the number of republications dropped, the result for the auditors was an increase. As they are mostly spontaneous republications (Marques, 2016), these results may signal a higher level of transparency by the companies (Cao, Myers, & Omer, 2012).

4.2.3. Test of robustness

In order to verify the robustness of the results presented in Table 2, we performed an analysis of the previous model, however, using the TRA - Cumulative Republication Rate as an explanatory variable (Table 1). The results (Table 3) demonstrated that the NivEnd, which did not present statistical significance in Mod.1, presented negative statistical significance for the TRA, suggesting that more indebted companies will tend to have a lower TRA. This result is consistent with the search to improve the company reputation, for example by reducing the cost of capital and increasing access to third-party sources of funding (Huber & Bochner, 2012; Dao, Huang, Chen, & Huang, 2014). In turn, Tam, a variable that captures the effect of the political costs on the republication, maintained the positive signal, but without statistical significance.

Finally, the total remuneration had a positive effect on the TRA, consistent with the hypothesis that there is a positive association between earnings management and the compensation package (Healy, 1985). Two issues need to be observed though. The fact that this is a proxy republication, which, as analyzed by Marques (2016), in Brazil, mostly refer to qualitative republications, so it is not necessarily possible to say that this is earnings management. Accordingly, as can be seen in Table 3, the compensation of the fiscal council presented a negative signal, although it was not statistically significant. This indicates that there may be a restriction effect of the Fiscal Council on the chances of republishing though, which converges with the proposal of the Agency theory that monitoring and control mechanisms should be used (Jensen & Meckling, 1976).

In addition, it was observed that SOX and NivGov were statistically significant and with negative effects, evidencing the improvement of the quality of the statements, using the TRA as a quality measure. These results reinforce the need to use governance mechanisms and a better internal control structure (Alexander, Bauguess, Bernile, Lee, & Westberg, 2013; Brickley & Zimmerman, 2010). It was also observed that the TRA of the previous period has a significant and positive effect on the current TRA, which suggests that companies with a history of republishing tend to have higher rates, which is consistent. As the TRA is an index of the Cumulative Republications and Publications, however, a natural downward trend is expected, which was evidenced, observing the annual effects in the 1998-2007 cut-off (see note below Table 3). In this context, the result suggests that there is an association between the republication history and its chance to republish today. Important evidence that was not captured in the Logit model (Mod.1) was the effect of mandatory republications (RepObr). In Mod. 2 it was found that RepObr, despite being a minority (Marques, 2016), has a positive and statistically significant effect, which grants relevance to its subsequent analysis.

Finally, it was found that being audited by a Big4 increases the chance of republication. This result may be associated with a search for greater transparency in the market, as most of the republished statements are qualitative in nature (Marques, 2016). On the other hand, it may be the joint effect of size x Big4, since larger companies will be more likely to republish as observed.

Table 3:

Model (2) for Determinants of Financial Statement Republications

TRA	1998-2014			1998-2007			2008-2014		
	S(P)	Coef.	z	S(P)	Coef.	z	S(P)	Coef.	z
Intercept	+	0.2092	8.22*	+	0,1880	4.38*	+	0.2095	8.24 *
NivEnd	-	0.0099	-2.61*	+	0,0050	1.03	-	0.0098	-2.59*
Tam	+	0.0007	0.58	+	0,0027	0.97	+	0.0007	0.58
RemTot	+	0.0021	1.60***				+	0.0021	1.60***
RemDir	-	0.0000	0.04				+	0.0000	0.03
RemCFisc	-	0.0004	0.40				-	0.0004	-0.41
Ri				-	0,0130	-1.59			
CresAtivo				-	0,0399	-2.69*			
CVEbit				-	0,0008	-1.12			
TipRes	+	0.0097	1.11	+	.011858	1.08	+	0.0097	1.11
TRA-1	+	0.0351	1.30	+	0,1293	5.45*	+	0.0351	1.30
NivGov	-	0.0492	-2.0**	-	.0490802	-2.03***	-	0.0492	-2.00**
SOX				-	.0757442	-5.11*			
IFRS Full	+	0.0177	2.37**				+	0.0177	2.37**
Big4	+	0.0336	2.73*	+	0,0351	3.21*	+	0.0336	2.73*
RepObr	+	0.0432	2.89*	+	0,0648	3.05*	+	0.0432	2.89*
N.Obs./Groups	1395 | 321			1760 | 247			1395 | 321		
F Stat (Prob > F)/Wald (x^2)	70.97 | 0.0000			178.06 | 0.0000			62.24 | 0.0000		
R^2 (Between, Within, General)	(5.65% | 2.31% | 2.32%)			(8.45% | 17.07% | 15.49%)			(5.65% | 2.31% | 2.32%)		
Dummy for the year	Yes			Yes			Yes		
Dummy for the sector	No			No			No		

Obs.: *, **, *** Statistically significant at 1%, 5% and 10%. The Wooldridge test evidenced the presence of self-correlation and heteroscedasticity using clustered robust standard errors in the company. The Panel Data Model with Random Effects was used and Chow, Breush-Pagan and Hausmann's tests were performed (Wooldridge, 2010). **In the period 1998-2013** positive and statistical significance was observed in the following years -: 2011 (|Coef| 0.0272001 |z| 3.71*), 2012 (|Coef| 0.0301007 |z| 4.16*) e 2013 (|Coef| 0.0220834 |z| 3.05*). **In the period 1998-2007** a negative and statistically significant effect was observed in the following years: 1998 (|Coef| -0.1235946 |z| -6.33 *), 1999 (|Coef.| -0.0881512 |z| -5.18*), 2000 (|Coef| -0.0975112 |z| -6.08*) , 2001 (|Coef.| -0.0938012|z| -6.12*), 2003 (|Coef.| -0.0768859 |z| -5.25*), 2004 (|Coef.| -0.0762157 |z| -5.35*), 2005 (|Coef.| -0.0406388|z| -2.91*) and 2006 (|Coef.| -0.0262708 |z| -1.94*). **In the period 2008-2014** a positive and statistically significant effect was observed in the years 2011 (|Coef.| 0.0281561 |z| 3.84*), 2012 (|Coef.| 0.0312189|z| 4.31*) and 2013 (|Coef.| 0.0219911 |z| 3.03*).

Legend: TRA: Total Cumulative Replications by year t/Total Compulsory Publications by year t.; **NivEnd:** Liabilities/ Assets; **Tam:** ln(asset of total assets); **RemTot**: Logarithm of index between Managers' compensation in year t by Compensation in the immediately preceding year (t-1); **RemDir**: Logarithm of index between Director compensation in year t by Compensation in the immediately preceding year (t-1); **RemFisc**: Logarithm of index between Audit Committee compensation in year t by Compensation in the immediately preceding year (t-1); **Ri:** Logarithm of) in which is the mean stock price in the three months subsequent to the publication of the statement and the mean stock price in the three months before the publication; **AT:** [(Current Operating Assets – Current Operating Liabilities) - Depreciation] /Total Assets (t-1)]; **CrescAt**: Logarithm of total current assets/total previous assets; **NivGov:** Dummy variable equal to 1 for Governance Level (N1, N2 or NM), 0 for traditional; **SOX:** Dummy variable equal to 1 for the initial year of SOX, 0 for the others. **IFRS Full:** Dummy variable equal to 1 for the initial year of Full IFRS and 0 for the others; **Big4:** Dummy variable equal to 1 for companies audited by one of the Big4, 0 for the others.

Source: Research data.

5. Final considerations

The objective in this study was to verify if the manager remuneration package, the level of indebtedness and the size of the company affect the republication of the financial statements. The descriptive, documentary and quantitative approach analyzed data from 344 companies listed on BM & FBOVESPA from 1998 to 2014. Data were analyzed through regression analysis with panel data, using two models. In the first, with the binary explanatory variable (1 for Republication and 0 for no republication), a multivariate logistic model was used. In the second, as a robustness test, a quantitative variable called Cumulative Republication Rate (TRA), was used as the explanatory variable.

In the logistic model, it was observed that the size and remuneration package have a positive effect on Republication (Repub and TRA). Likewise, the adoption of the IFRS and the fact that it is audited by the Big4 increases the odds of being republished. Among the variables that reduce this probability of republishing, SOX and the NivGov stood out.

The robustness test confirmed the statistical significance of the variables used in Mod.1, highlighting the effects of IFRS and Big4 on the republications, since both had a statistically significant and positive effect. In addition, it was verified in the robustness test that the TRA suffers a lag effect, so the TRA of the previous period has a significant effect on the current one. It is worth noting the Governance effect, which suggested a lower level of TRA as the level of governance increases, which also happened with the strengthening of internal controls (SOX). Another important finding was the negative effect of the Total Accruals on TRA. This result suggests that the increase in Total Accruals reduces ART. This a priori anomalous relationship may be associated with the effect of political costs to the extent that larger Accruals encourage agents to seek to avoid republishing due to adverse effects, regardless of the type of republication made (Hubber & Bochnerm 2012).

The results observed in the present study are in agreement with the majority of those observed in the international literature (Bardos, 2011, Badertscher, Collins and Lys, 2012, Masulis, Sing & Xie, 2012, Schrand & Zechman, 2012; Chen, Cheng & Lo, 2013; Dao et al., 2014; Baber et al., 2015; Collins et al., 2015; Cao et al., 2015; Agrawal & Copper, 2015; Lin et al., 2015; Khalil & Ozkan, 2016), and the few results identified in the Brazilian literature (Cunha, Magro, & Fernandes, 2015, Marques, 2016).

The study contributes to the Brazilian and international literature on the subject and opens space to understand the determinants of republication in the Brazilian context in further depth, specifically in an empirical-quantitative approach. From a theoretical point of view, the study contributes to agency theory insofar as it provides evidence that the firm's control mechanisms (Audit, Governance Structure) and the agent incentives mechanisms (Compensation Package) contribute to reduce the level and likelihood of republication. In practice, it calls attention to the need to reinforce the respective mechanisms and especially draws the attention of regulators, since the change in the accounting standard had a positive effect on the republications.

The study presents limitations on how to analyze only data from listed companies, the unavailability of information on managers' remuneration in the Pre-IFRS period, and the use of a more robust proxy for sector control. For future research, we suggest analyzing the firm's reputation effect in this relationship, besides inserting other control variables, such as auditor change, auditor's opinion, reasons for republication, among others.

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