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Accounting Restatements, quality of accounting information, cost of debt and stock returns: a comparative study between Brazil and the USA

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Abstract

Objective: This study aimed to examine the relationship between financial restatements and the qualitative characteristics of the information disclosed, namely conservatism, persistence, relevance and timeliness, together with the relationship between the cost of raising funds with banks and investors, by observing the cost of debt and stock returns.
Methods: The study considered quarterly data from 2010 to 2018, comparing Brazilian and US companies, using regression analysis of panel data.
Results: The study results showed that the companies that need to issue financial restatements present accounting information of low quality. This scenario is evident for both Brazil and the US, whose results indicated non-conservative, non-persistent, non-relevant. As for timeliness, this quality has not worsened in Brazil in the context of restatements because it is not present in financial statements even without the context of restatements. About the USA, banks and investors do not seem to react to restatements, but, in Brazil, companies in need of bank financing should consider that a restatement is related to an increase in the cost of debt. A greater number of restatements was also observed for Brazilian companies, which may be related to a lack of enforcement.
Contribution: The study contributes to the literature on the impact of financial restatements, and signals to investors, banks, and analysts the existence of a decrease in the quality of information, a factor that can be considered in their business valuation models.

Keywords: Financial restatements, Quality of Accounting Information, Cost of Debt, Stock Returns.

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Introduction

This study was developed to address the reaction of the main sources of financing of companies and the relationship with the quality of information disclosed in the context of financial restatements.

PwC (2020) highlights, in a survey on economic crime and fraud, that fraud is still a battle far from being fought, having caused around US$ 42 billion in total reported cost. In this context, the restatements of financial statements are related to the theme of fraud, observed by previous research (Murcia & Carvalho, 2007; Graham, Li & Qiu, 2008; Scholz, 2008), and the volume of restatements has been maintained practically constant since 2008, revolving around 8% of the companies, according to a survey pointed out in the Audit Analytics (2020). Furthermore, Alali and Wang (2017), in a study carried out for The CPA Journal, indicated that debt and guarantee instruments tend to be the main category of fraud that motivates restatements and that, of the cumulative total of US$ 500,596,000,000 of the effect of restatements on results, in the years 2000 to 2014, around 18% are related to fraud.

In this context, we must remember that one of the capital market's main activities is allocating resources in the economy so as companies can finance their activities and savers can find viable investment options (Healy & Palepu, 2001), and the faster and more accurate the price adjustment occurs according to the information disclosed, the more developed the market is considered. However, the proper functioning of this market depends, among other factors, on accounting information capable of connecting firms and users, considering that when there are indiscriminate price decreases, as a result of information asymmetry, market efficiency also decreases (Akerlof, 1970) as a consequence of resource allocation decisions.

This informational asymmetry, according to the Theory of Agency (Jensen & Meckling, 1976), can result in private information being used for one party's own benefit during negotiations. This asymmetry may be related to the effects of the management of accounting data on the information users' decision-making process, leading to the need for the restatement of Standard Financial Statements (SFSs) (Albring, Huang, Pereira, & Xu, 2013), which is one of the main indicators of inconsistencies in the production of accounting information. Therefore, the need for accounting restatements is a result of inadequate accounting, which may affect the quality of the information disclosed to users, reduce company earnings, undermine market confidence, constrain opportunities, thus leading to loss in the firm's market value (Graham et al., 2008).

In this sense, there was a gap in academic research, in the context of the need for quality of accounting information, specifically in cases of financial restatements, which may be related to conservatism, relevance, persistence and timeliness, whose consequences affect the information of the main users of accounting information who can react to this issue by reflecting on the required amount of remuneration for their capital invested in companies. Figure 1 illustrates these relationships.

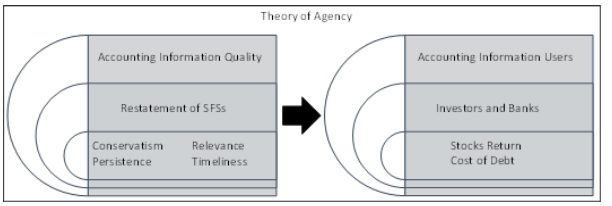

Figure 1: Research design

The need for restatements may indicate flaws in internal control and governance problems, which can lead to substantial damage to the firm's reputation and loss in its market value (Ali, Besar, & Mastui, 2018). In addition, when a company recognizes omissions or distortions in relevant information and issues an adjusted financial restatement, it becomes evident that the external auditors failed to detect the irregularities (Palmrose, Richardson, & Scholz, 2004), a fact that contributes to the increase in financial restatements (Eilifsen & Messier, 2000), indicating a possible negative relationship between audit quality and accounting restatements. In this sense, Anderson and Yohn (2002), Palmrose et al. (2004), Graham et al. (2008), Wilson (2008) and Barniv and Cao (2009) observed that restatements are related to a deterioration in the information environment, in addition to increasing the companies' financing costs.

Similarly, Graham et al. (2008) stated that financial restatements create uncertainty about their credibility, signaling that the information disclosed by companies is of low quality and an increase in information asymmetry. Thus, studies on the topic suggest that restatements can be used as a proxy for uncertainty by the capital market (Barniv & Cao, 2009), increasing the risks for investors and those who allocate their resources to the companies.

In this context, some studies have observed factors related to financial restatements, such as: accounting

fraud and insufficient information (Murcia & Carvalho, 2007); impact on stock prices (Palmrose et al., 2004; Helou Netto & Pereira, 2011); termination of managers (Hennes, Leone, & Miller, 2008). Consequences for banks and investors have also been observed, such as: market reaction in the case of cash flow restatements (Alfonso, Christie, Hollie, & Yu, 2018); negative impact on the investor's perception of earnings quality (Wilson, 2008); loss of investor confidence (Barniv & Cao, 2009); impact on firm growth (Albring et al., 2013; Lin, Lin, Fornaro, & Huang, 2017); increase in spreads, loan interest rates and covenant restrictions as effect of financial restatement on bank loan contracting (Newberry & Parthasarathy, 2007; Graham et al., 2008); worsening of companies' financing conditions (Kravet & Shevlin, 2010). These studies indicate a relationship between financial restatement and decrease in information quality, as well as a negative reaction from information users.

Therefore, given the importance of accounting information for corporate funders, who play a key role in the economic development of a country, there is an opportunity to examine aspects of accounting information quality in relation to accounting restatements, as well as the reaction of the main sources of capital. In this sense, this study aims to approach this issue by comparing two different capital markets, namely Brazil and the USA. This comparative study considers two countries for which differences in results are expected due to differences in legal framework and other aspects: capital market development, origin of legal rules, the main source of fundraising for companies, the pulverization or concentration of capital, among others (La Porta, Lopez-de-Sinales, Shleifer, & Vishny, 1997, 1998).

The choice of two countries with different legal systems is due to the fact that, although the literature lists cases of restatements with low information quality, the US, compared to Brazil, has a greater number of players following the market, a market more developed capital that puts pressure on the dissemination of quality reports, in addition to greater enforcement and inspection powers. Such factors may indicate that there is some difference in the result for the countries, and, as this comparison has not yet been found in the literature, this research was motivated to carry out the comparative study.

Thus, the research was conducted considering quarterly data from 2010 to 2018, in Brazil and the USA, applying the model of Basu (1997), Dechow and Scharnd (2004), Ohlson (1995) and Lopes and Walker (2008), to determine conservatism, persistence, relevance, and timeliness, respectively. Analyzes were performed using multiple regression with panel data. Overall, the results indicated that in the context of restatements there is a lower quality of accounting information, and in Brazil, outside the context of restatements, the quality of information tends to be lower when compared to the US, as the timeliness even outside the context of restatements. The results also indicated that the financial markets in the US and Brazil react differently to restatements, showing that this scenario negatively affects the cost of debt for Brazilian companies, but that there is no statistical relevance for US companies.

Thus, the research contributes to the literature in the following ways. First, the research contributes to national and international research, in two lines: research on accounting information quality and research on restatements, since the analysis of the quality of information in light of conservatism, relevance, persistence, timeliness in cases of restatements had not yet been observed in the literature. Second, the study signals to banks and investors that there are problems in the quality of the information in republished statements, and this can be considered in their investment decisions. Third, the survey signals to companies that republication can lead to uncertainties for creditors in Brazil, so that the company should take this into account when there is a need to reduce the cost of funding with banks. Fourth, the research indicates to regulatory bodies that there is a signal of non-quality of accounting information in cases of republication, indicating the need to observe specific rules in the inspection of information from companies that need to issue restatements. Fifth, the results indicated that there is a greater number of restatements in Brazil, drawing attention to the need for rules with greater enforcement power, in order to mitigate cases of restatement.

2 Theoretical Framework

The capital market has primary responsibility for allocating the economy's surplus resources among investment options. During this process, the formation of security prices should reflect the available information on companies to inform investors on whether to allocate resources. When all available information is absorbed and reflected in the firms' stock prices, the market is considered efficient (Immonen, 2015). According to Leal and Amaral (1990), until the beginning of the 1990s the Brazilian capital market's level of information efficiency was not compatible with that of developed countries, such as the United States. However, economic stability and improvements in information disclosure have improved the characteristics of the Brazilian market (Simões, Soares,

Klotzle, & Pinto, 2012).

However, some aspects, defined by Jensen and Meckling (1976) in the Theory of Agency – such as information asymmetry, which hinders the progress and development of the capital market, leading to poor asset pricing and increasing the cost of capital (Bharath, Pasquarielo, & Wu, 2009) – still need to be considered. In this sense, the disclosure of financial statements with quality information can reduce this asymmetry, defining in this context the role of accounting in the market, minimizing conflicts of interest and reducing the inefficiency in capital allocation (Lopes & Martins, 2007). On the other hand, if badly used, accounting information may serve to obtain particular benefits, avoid covenant violations or minimize tax payments (Burgstahler, Hail, & Leuz, 2006), and even to manage earnings, providing investors with information that does not reflect the reality of the company (Healy & Whahlen, 1999).

In this sense, despite legal provisions regulating how financial statements should be presented, some companies omit or provide biased information about their economic and financial situation (Murcia & Carvalho, 2007), leading to requests for restatement. Thus, according to the Government Accountability Office (GAO) (2002), restatement occurs by request of regulatory bodies or voluntarily, when the information contains some type of error, when it is not relevant for a correct understanding or when it does not meet fundamental accounting principles.

Therefore, restatements introduce changes to the previous statement, which was considered not adequate to inform, in a clear and transparent way, company events that could indicate negative impacts on the company's market value (Hribar & Jenkins, 2004; Kravet & Shevlin, 2010; Albring et al., 2013), share value, debt cost, growth or profitability. Restatements can also occur due to poor internal controls weaknesses, human error, complexity of processes and operations, as well as to earnings management (Linn & Diehl, 2005), affecting the quality of information, which, in turn, can influence the perception of users and their resource allocation decisions.

In this sense, accounting restatements increases the uncertainty regarding the credibility of management, managerial competence and perceptions about earnings quality, increasing the rates of return required by investors (Hribar & Jenkins, 2004). However, Murcia and Carvalho (2007) highlight that restatements are not necessarily caused by fraud, but rather by the provision of insufficient information, and that incomplete or misleading information can hinder users' evaluation. In this way, restatements create uncertainty and limit the access to external resources at the lowest cost (Albring et al., 2013), as users lose confidence in the new information provided (Chen, Elder & Hung, 2014).

According to Palmrose et al. (2004), this occurs because a restatement is an indicator of inadequate accounting. The need for restatements is associated with low quality of accounting information (Anderson & Yohn, 2002; Wang & Wu, 2011; Jiang, Habib, & Zhou, 2015) and, consequently, with greater information asymmetry (Nguyen & Puri, 2014). However, it is noteworthy that Anderson and Yohn (2002) observed lower response coefficients to earnings reported after restatements, which indicated less investor confidence in earnings disclosure after restatements, concluding that companies with a restatement scenario have relatively lower quality. Additionally, Wang and Wu (2011) consider that restatements are a proxy for the low quality of accounting information, which is confirmed by the investors' reaction to restatements in China. While Jiang et al (2015) consider restatements and the possibility of earnings management, which implies low quality of accounting information, observing these factors through an audit quality proxy, showing that quality auditing restricts restatements related to manipulation of results, consequently, avoiding poorer quality of information. What is observed in common to these studies is that none of them directly used information quality proxies for the analysis of restatements, as was used in this research, occasionally showing the loss of quality of restatements in terms of conservatism, persistence, relevance and timeliness of accounting information.

In addition, according to Graham et al. (2008), restatements tend to reduce earnings previously reported, revealing that the company's condition is worse than it had reported. In this sense, we may expect companies that need to issue restatements did not provide conservative accounting information, that is, they did not anticipate bad news. Given the assumption that information leading to restatements does not follow the best accounting practices and lack of necessary qualitative characteristics, this study proposes to analyze the following research hypotheses that highlight the possible relationship between the status of restatement and the qualitative characteristics of accounting information, such as conservatism, persistence, relevance and timeliness. So the hypotheses are:

H_1: Companies that need to issue financial restatements present less conservative accounting information.
H_2: Companies that need to issue financial restatements

present less persistent accounting information.
H_3: Companies that need to issue financial restatements present less relevant accounting information.
H_4: Companies that need to issue financial restatements present less timely accounting information.

Regarding the quality of accounting information, Callen, Livnat and Segal (2006) and Kryzanowski and Zhang (2013) considered that financial restatements reduce the quality of the market, indicating an increase in uncertainty about future cash flows and information asymmetry in the market. In this sense, the authors assume that restatements are perceived as negative by investors, as they indicate problems in the accounting system and result in increasing costs of capital and for third parties. This is because the results reported in the restatement can be perceived as less reliable (Kravet & Shevlin, 2010).

In this sense, other studies have identified a negative effects of restatement on costs, such as on municipal debt (Baber, Gore, Rich & Zhang, 2013) and losses to investors (Ma, Kraten, Zhang, & Wang, 2014). In addition, some studies sought to analyze the consequences of financial restatements and found that companies in restatement process had higher debt (Kinney & McDaniel, 1989), in a context of greater information asymmetry between borrowers and creditors, which increases agency costs and the cost of debt. More specifically, Graham et al. (2008) observed that fraud-related restatements increase spreads by almost half compared with those not related to fraud, have more covenant restrictions and pay higher upfront and annual fees on loans.

Using another approach, Albring et al. (2013) researched the effect of accounting restatements on firm growth, observing that the higher cost of external financing after a restatement limits the company's investments and consequently affects the company's market value, showing that the accounting restatements have a negative impact on cash flow, reducing the level of investment. And also regarding the effect in terms of third-party capital, some studies found that a restatement increases the cost of capital (Albring et al., 2013), increases agency costs (Linn & Diehl, 2005) and represents a financial credibility crisis for the company (Chen et al., 2014).

Investigating the relationship between accounting restatements and their impact on the capital market, Barniv and Cao (2009) consider accounting restatements as an empirical proxy for informational uncertainty, leading investors to seek more information from sources such as analysts to remedy this situation. Some studies have observed negative market reactions to restatements causing: i) higher pricing of information risk and, consequently, an increase in the estimated cost of equity (Hribar & Jenkins, 2004; Kravet & Shevlin, 2010, Albring et al., 2013); ii) fall in stock prices (Palmrose et al., 2004); and iii) negative market reaction (Alfonso et al., 2018).

More specifically, Graham et al. (2008) state that a restatement may harm a company's reputation, reducing its value for the market and even for suppliers. The authors found that the need for a restatement increases the information asymmetry between the company and lenders, raising the cost of debt, since banks tend to look for alternatives to overcome the risk of the accounting information problem arising from the financial restatement scenario. These findings are in line with those by Albring et al. (2013), who consider that restatements are not irrelevant, as they make it difficult to raise funds at better rates. This occurs because restatements decrease the perceived reliability of financial statements, creating an environment of uncertainty. In addition, the authors add that a restatement tends to reduce profitability, indicating that the company is in a worse condition than it seemed, which ends up not being well regarded by external users of information.

Therefore, if financial restatements indicate lower quality of the information disclosed, then we can expect that there will be a reaction by the main sources of financing for the companies. We thus present other hypotheses as follows:

H_5: Companies that need to issue financial restatements have a higher cost of debt.
H_6: Companies that need to issue financial restatements have lower stock returns.

However, the literature since La Porta et al. (1997) highlights the relationship between the legal origin of countries, the normative quality, the role of institutions in overseeing and the power of enforcement, consequently in the development of the capital market. In this sense, Beck, Demirgüç-Kunt and Levine (2003b) place that legal origin is important for financial development because legal traditions differ in their ability to adapt to changing economic conditions. Thus, while the Common Law tradition emphasizes private property rights and promotes financial development, the Civil Law base has implemented a legal tradition less favorable to financial development (Beck et al., Demirgüç-Kunt and Levine, 2003a).

More specifically, countries of Civil Law origin tend to emphasize the rights of the State, not private property,

whose consequences can be in a State that creates policies and institutions that divert the flow of resources from society to favored ends, contrary to what happens in competitive markets. Therefore, by way of comparison, the Common Law system's emphasis on private property rights vis-à-vis the State tends to support financial development to a greater degree than the Civil Law system (Beck et al., 2003b).

Additionally, La Porta et al. (1997, 1998) state that countries of Common Law origin have laws more aimed at investors and their applications are more effective, which enhances the economic development of these countries, when compared to Civil Law ones.

Still comparing the legal systems, Beck et al. (2003a), highlight that the base of countries where there is a responsive legal system has incentives and capabilities to divert the flow of resources from society to some favors, which impedes the development of financial systems free and competitive. Hence, Civil Law origin countries tend to place less emphasis on protecting private property rights and will enjoy correspondingly lower levels of financial development than countries with a customary law tradition. So, in addition to the superiority of the Common Law system over Civil Law in promoting financial development, it should be noted that the Common Law system offers greater adaptability to social and economic needs.

All this difference between the role of the State in legal development and in the capital market also leads to a distinct quality of accounting and auditing, consequently of the quality of the information generated. In this context, Francis, Khurana and Pereira et al. (2003) state that Common Law countries of origin have accounting and auditing in superior quality to Civil Law. In addition, there is a difference in institutional and market forces, with the quality of accounting and auditing, implies the quality of the information generated, consequently it is positively associated with the development of the capital market. Along the same lines, Shelton, Owens-Jackson and Robinson (2011) point out that the quality of financial reporting is affected by the country's legal rules and by the quality of law enforcement for capital markets, so that the quality of legal standards influences savers, making them more willing to invest (Bris, 2019). And so, countries with accounting standards that produce high-quality financial statements tend to have more developed financial intermediaries (Levine, Loayza & Beck, 2000).

Therefore, although based on Agency Theory regarding agency conflict scenarios, agency costs, information asymmetry, opportunism, etc., which can explain the lower quality of information in restatement scenarios and the higher cost required by the return on capital invested by investors and the bank, given the context of differences in legal origin between Brazil and the USA, with emphasis on normative definitions, enforcement power, role of supervised bodies and policies for financial development, it can be expected that, even in the face of restatements, the impact on the quality of accounting information in Brazil tends to be smaller when compared to the US, since Brazil may have lower quality even without the restatement scenario. Furthermore, even if restatements indicate a loss of information quality, they may not have the same relevance to reflect on US funding sources, given their greater protection and support for funding sources.

In this sense, the study can present two other research hypotheses:

H_7: Restatements make the loss of accounting information quality more evident in the US when compared to Brazil.
H_8: Restatements have more consequences for the cost of raising funds for Brazilian companies compared to North American ones.

3 Methods

3.1 Sample and tests

The study is based on empirical research, which analyzed the relationship of financial restatements with the quality of the accounting information disclosed and the cost of raising funds from banks and investors. To this end, the study sample was composed of publicly traded Brazilian and US companies, analyzing quarterly data from 2010 to 2018. The beginning in 2010 is due to the accounting normative change that took place in Brazil by the complete adoption of IFRS, which significantly changes the accounting principle of tax that was done in the country, so that the consideration of the period prior to the year 2010 could distort the results of the search.

The study compares two countries with legal rules of different origins, i.e. a civil law country and a common law one, with differences in terms of legal protection of users of information, development and performance of the capital market, main fundraising sources, and enforcement (La Porta et al., 1997, 1998), which may point to different outcomes, thus contributing to the literature on the issue.

The data were obtained from Economática, Thomson Reuters and from websites such as B3, CVM and SEC. The final sample, after the exclusion of financial companies and companies for which no data was available for calculating the models' variables, was composed of 158 Brazilian

companies and 536 US companies, totaling 5,688 and 19,296 observations, respectively.

STATA® was used to perform regressions with panel data, starting with the evaluation of the use of pooled, fixed effects (FE) or random effects (RE) models. Next, observing the assumptions of the regression and the definition and application of corrected models, when necessary. Thus, to decide between the pooled and FE models, the Chow test was applied; to compare the pooled and RE models the Breusch-Pagan test was used; and for fixed and random effects the Hausman test was applied. In addition, the Wooldridge and VIF tests were applied for the analysis of serial correlation and multicollinearity, as well as the Wald and White tests for the analysis of heteroscedasticity. The tests, depending on their results, led to the application of tests corrected in the cases where the assumptions were not met.

It is noteworthy that for the analysis of normality of the dependent and independent variables, the non-parametric Kolmogorov-Smirnov test was applied, and the results indicated that the variables do not have a normal distribution. To consider endogeneity, the robust Generalized Method of Moments - GMM model for endogeneity was applied, whose results were similar to those presented in the research. For the panel regression tests, after observing the assumptions of heteroscedasticity and serial correlation, Generalised Least Square - GLS models robust for heteroskedasticity and with Newey and West (1987) correction were applied, using Bartlett-kernel weighting in the case of models with the presence of heteroscedasticity and serial correlation.

3.2 Definition of models for qualitative analysis of accounting information

We present below the models for identifying the qualitative characteristics of accounting information, which were based on previous research (Dechow, Ge, & Schrand, 2010; Dahmash & Qabajeh, 2012; Lawrence, Sloan, & Sun, 2013; Silva & Nardi, 2017). To assess the impact of restatements, after an initial application, the models they were reapplied considering the interaction of their respective variables with the restatement dummy (Rest).

The model used to identify the conservatism characteristic is based on Basu (1997), according to the following equation:

$$EARN_{it}=a+\beta_1 DR_{it}+\beta_2 Ret_{it}+\beta_3 DR_{it}*Ret_{it}+\varepsilon_{it} \quad (1)$$

Where:
$EARN_{it}$= earnings per share of the company;
DR_{it}= dummy variable equal to one if the return on the stock is negative and zero otherwise;
Ret_{it}= stock returns for the company.

Model 1 examines price changes in stock returns and whether accounting profit is more sensitive to negative returns than to positive returns. In addition, Model 1 analyzes the relationship between stock returns and the dummy variable. The β_2 coefficient reflects returns for positive and negative results, while β_3 reflects the return for the negative result. Thus, the β_3 regression parameter is expected to be positive after the asymmetric recognition between good and bad news, so that higher and more significant values for the β_3 coefficient reflect more timely negative than positive returns, indicating the existence of conservatism.

For the analysis of persistence, the model of Dechow and Scharnd (2004) was used:

$$X_{it+1}=a_0+a_1 X_{it}+\varepsilon_{it} \quad (2)$$

Where:
X_{it+1}= company's earnings in the next period;
X_{it}= company's earnings in the current period.

To verify earnings persistence, the a1 coefficient is expected to be positive, indicating that the definition of the company's future earnings considers current earnings.

To analyze the relevance of the information, the model of Ohlson (1995) was used, which treats the stock price as a dependent variable:

$$P_{it}/P_{it-1}= a_0+\beta_{1t} BV_{it}/P_{it-1} + \beta_{2t} EARN_{it}/P_{it-1}+\varepsilon_{it} \quad (3)$$

Where:
P_{it}= Stock price of company i in year t;
P_{it-1}= Stock price of company i in year t-1;
BV_{it}= Shareholders' equity per share of company i in year t;
$EARN_{it}$= Earnings per share of company i in year t.

This model allows us to verify whether the stock price of a company in a certain period is explained by variances in information on Shareholders' equity and stock returns. Thus, the β_2 coefficient is expected to be significant and positive, indicating the relevance of the information.

For the analysis of timeliness, a model based on Lopes and Walker (2008) was used:

$$Ret_{it}=a_0+\beta_1 EARN_{it}+\beta_2 (EARN_{it}-EARN_{it-1})+\varepsilon_{it} \quad (4)$$

Where:
Ret_{it}= stock returns for the company;
$EARN_{it}$= earnings per share of the company in the period under analysis;
$EARN_{it-1}$= earnings per share of the company in the previous period;
$EARN_{it}$ - $EARN_{it-1}$= earnings variation in the period.

In this model, a company's stock returns are determined by

analyzing the earnings per share in the period and also by earnings variation between the period analyzed and the previous period. According to Lopes and Walker (2008), the information is considered timely when the β_2 coefficient has statistical significance, that is, when stock returns in the period affects earnings variation between t and t-1.

3.3 Models for analyzing the relationship between stock returns and cost of debt

In order to assess the impact of restatements on stock returns and the cost of third-party capital, the following models were used:

$$Ki_{it+1}=a_{it}+\beta_1 Rest_{it}+\beta_2 Size_{it}+\beta_3 Indeb_{it}+\beta_4 Perf_{it}+\beta_5 Risk_{it}+\beta_6 CGt_{it}+\beta_7 Liq_{it}+\beta_8 Big4_{it}+\beta_9 Mg_{it}+\beta_{10} Growth_{it}+\beta_{11} Age_{it}+\beta_{12} Lev_{it}+\beta_{13} Tang_{it}+\beta_{14} Volat_{it} \quad (5)$$

$$Ret_{it+1}=a_{it}+\beta_1 Rest_{it}+\beta_2 Size_{it}+\beta_3 Indeb_{it}+\beta_4 Perf_{it}+\beta_5 Risk_{it}+\beta_6 CGt_{it}+\beta_7 Liq_{it}+\beta_8 Big4_{it}+\beta_9 Mg_{it}+\beta_{10} Growth_{it}+\beta_{11} Age_{it}+\beta_{12} Tang_{it}+\beta_{13} Volat_{it} \quad (6)$$

Where:

Ret_{it} = stock return is calculated based on the average stock price, considering 5 days before and 5 after the restatement disclosure; ln(Pt/Pt–1), where P is the stock price. This time horizon was defined to reduce the probability of the return being affected by other events besides the accounting statement disclosure, which could distort the results (Czernkowski, Green, & Wang, 2010);

K_{it+1} = cost of debt, calculated using the relationship between net financial expense and total liabilities;

$Rest_{it}$ = dummy variable equal to one in the case of restatement and zero otherwise. According to Richardson, Tuna and Wu (2002) and Palmrose et al. (2004), a positive relationship is expected with the cost of debt and a negative one with stock returns;

$Size_{it}$ = the total asset logarithm was used for firm size. A positive relationship with returns (Czernkowski et al., 2010; Cheong & Zurbruegg, 2016; Chen, Kim, & Yao, 2017; Souza & Nardi, 2018) and a negative one with the cost of debt are expected (Nardi & Nakao, 2009; Lugo, 2017);

Indebt = debt calculated by the relation between earnings before interest, taxes and amortization and depreciation expenses and the short- and long-term liabilities. A negative relationship with return is expected (Souza & Nardi, 2018; Silva, Nardi, & Tonani, 2016) and a positive one with cost of debt, as in Nardi and Nakao (2009) and Lugo (2017);

$Perf_{it}$ = performance index, calculated by the relation between the operating profit and total assets. A positive relationship with returns (Souza & Nardi, 2018; Chen et al., 2017) and a negative relationship with the cost of debt are expected (Lugo, 2017);

$Risk_{it}$ = represents the risk of the companies or financial dependency. The ratio of total liabilities to total asset was used; a negative relationship with returns (Souza & Nardi, 2018) and a positive one with the cost of debt are expected (Nardi & Nakao, 2009);

CG_{it} = dummy variable equal to one if the company is listed on the B3's Corporate Governance Levels and zero otherwise. A positive relationship with returns (Souza & Nardi, 2018) and a negative relationship with the cost of debt are expected (Barros, Silva, & Voese, 2015);

Liq_{it} = liquidity of the company obtained by the ratio between current assets net of inventories and current liabilities. A positive relationship with returns and a negative one with the cost of debt are expected (Souza & Nardi, 2018);

$Big4_{it}$ = dummy equal to one if the company is audited by Big Four firms and zero otherwise. A positive relationship with returns (Robu & Robu, 2015; Souza & Nardi; 2018) and a negative one with the cost of debt are expected (Costa, Matte, & Monte-Mor, 2018);

Mg_{it} = division between after-tax earnings and total revenue. A positive relationship with returns and the cost of debt is expected (Robu & Robu, 2015; Souza & Nardi; 2018);

$Growth_{it}$ = company growth, calculated by the variation in sales revenue between t-1 and t. A positive relationship with returns (Silva et al., 2016; Souza & Nardi; 2018) and a negative one with the cost of debt are expected (Nardi, & Nakao, 2009).

Age_{it} = number of years between the company's foundation and the date of data observation. A positive relationship with returns (Cheong & Zurbruegg, 2016) and a negative relationship with the cost of debt are expected (Nardi & Nakao, 2009; Lugo, 2017);

Lev_{it} = the company's leverage, calculated using ROE/ROA, where ROE = earnings/equity and ROA = earnings/total assets. A positive relationship with returns and the cost of debt is expected (Nardi & Nakao, 2009; Chen et al., 2017);

$Tang_{it}$ = calculated using the difference of net fixed assets and revaluation reserve divided by the difference of total assets and revaluation reserve. A negative relationship is expected with the cost of debt (Nardi & Nakao, 2009);

$Volat_{it}$ = obtained through the standard deviation of cash

flow for the realization of debt; a positive relationship with the cost of debt (Nardi & Nakao, 2009) and with returns is expected (Chen et al., 2017).

In order to allow a general presentation of the data, descriptive statistics, considering mean (Mean), median (Med), minimum (Min), maximum (Max) and standard deviation (SD), is presented in Table 1.

Table 1 - Descriptive statistics

	Brazil					USA				
	Mean	**Med.**	**Min.**	**Max.**	**SD**	**Mean**	**Med.**	**Min.**	**Max.**	**SD**
Ki	0,19	0,10	0,00	8,70	0,43	0,02	0,01	0,00	4,74	0,13
Ret	1,00	1,00	0,72	1,44	0,06	1,00	1,00	0,44	1,59	0,07
Size	14,81	14,97	9,40	20,65	1,73	14,69	14,74	8,33	19,70	1,92
Indeb	0,33	0,32	0,00	2,26	0,21	0,26	0,24	0,00	1,67	0,18
Perf	0,04	0,03	-0,99	0,84	0,08	0,02	0,02	-0,32	0,48	0,03
Risk	0,68	0,59	0,07	5,53	0,46	0,58	0,57	0,09	2,34	0,21
Liq	1,39	1,18	0,00	9,99	1,03	1,46	1,29	0,04	7,47	0,83
Mg	0,00	0,05	-5,59	3,98	0,46	0,05	0,06	-2,80	1,00	0,18
Growth	0,00	0,08	-9,49	1,00	0,56	0,07	0,05	-0,93	1,99	0,22
Lev	0,97	1,16	-14,98	14,80	3,01	1,54	1,38	-5,98	8,98	1,45
Tang	0,26	0,21	0,00	0,96	0,23	0,30	0,23	0,00	0,98	0,24
Volat	0,04	0,03	0,00	1,99	0,06	0,04	0,04	0,00	0,32	0,02

Source: made by the authors

For both countries, descriptive statistics indicate that the data show some variability, when observing the difference between the minimum and maximum values. However, the mean and median values are close for the variable set, indicating that the data set is not being heavily influenced by extreme values.

It is also possible to observe that the dispersion of the data is not unsatisfactory, however, the data show that the coefficient of variation of the data is higher for some variables in Brazil, compared to the USA, such as Mg, Growth and Volat.

Comparatively, descriptive statistics show some differences between Brazil and the USA that can be highlighted and that are related to the differences between these countries. The maximum value and standard deviation of the cost of debt tends to be higher in Brazil, consistent with the financing profile of companies in that country, which occurs more often with banks. In this sense, it also has that in Brazil the indebtedness presents statistics superior to the USA.

In Brazil, the indicators are worse in terms of risk, margin, growth, leverage and volatility, which is consistent with the country's characteristic of less economic and political instability, compared to the US.

In addition to descriptive statistics, Spearman's correlation test was applied, since the variables used do not have a normal distribution. The results are shown in Tables 2 and 3.

Table 2 - Spearman Correlation – Brazil

	Ki	Ret	Size	In-deb	Perf	Risk	Liq	Mg	Growth	Age	Lev	Tang
Size	-0.22 (***)	0.02										
Indeb	-0.28 (***)	-0.04 (***)	0.23 (***)									
Perf	0.22 (***)	0.16 (***)	0.14 (***)	-0.00								
Risk	0.05 (***)	-0.05 (***)	0.06 (***)	0.61 (***)	-0.12 (***)							
Liq	-0.17 (***)	0.05 (***)	0.12 (***)	-0.12 (***)	0.16 (***)	-0.47 (***)						
Mg	-0.18 (***)	0.14 (***)	0.23 (***)	-0.16 (***)	0.64 (***)	-0.39 (***)	0.37 (***)					
Growth	-0.04 (***)	0.11 (***)	0.07 (***)	-0.01	0.25 (***)	-0.03 (***)	0.06 (***)	0.21 (***)				
Age	0.17 (***)	-0.01	-0.11 (***)	-0.10 (***)	-0.08 (**)*	0.10 (***)	-0.19 (***)	-0.17 (***)	-0.14 (***)			
Lev	-0.13 (***)		0.06 (***)	-0.06 (***)	0.07 (***)	0.02	0.11 (***)	0.23 (***)	0.04 (***)	0.03 (**)		
Tang	0.05 (***)	0.04 (**)	-0.12 (***)	0.02 (*)	-0.06 (***)	0.01	-0.15 (***)	-0.17 (***)	0.02 (*)	0.24 (***)	-0.12 (***)	
Volat	0.10 (***)	0.03 (*)	-0.09 (***)	-0.04 (***)	0.21 (***)	-0.05 (***)	0.01	0.12 (***)	-0.07 (***)	-0.03 (***)	0.08 (***)	-0.05 (***)

Source: made by authors

Table 2 indicates that most of the explanatory and control variables considered are correlated with the cost of debt and stock returns. The same occurs with the correlation of US data, as shown in Table 3.

Table 3 - Spearman Correlation – USA

	Ki	Ret	Size	Indeb	Perf	Risk	Liq	Mg	Growth	Lev	Tang
Size	-0.13 (***)	0.04 (***)									
Indeb	-0.12 (***)	0.01	0.25 (***)								
Perf	-0.08 (***)	0.11 (***)	0.14 (***)	-0.02 (**)							
Risk	0.05	0.01	0.33 (***)	0.69 (***)							
Liq	-0.01	0.01	-0.19 (***)	-0.20 (***)	-0.19 (***)	-0.46 (***)					
Mg	-0.16 (***)	0.11 (***)	0.30 (***)	0.04 (***)	0.72 (***)	-0.05 (***)	0.11 (***)				
Growth	0.04	0.05 (***)	-0.04 (***)	-0.01	0.19 (***)	-0.04 (***)	-0.01	0.13 (***)			
Lev	-0.10 (***)		0.24	0.25 (***)	-0.05 (***)	0.43 (***)	-0.23 (***)	0.13 (***)	-0.06 (***)		
Tang	0.03 (***)	-0.02 (**)	0.11 (***)	0.11 (***)	-0.12 (***)	0.03 (***)	-0.21 (***)	-0.03 (***)	0.01	0.00	
Volat	-0.06 (***)	-0.01	-0.11 (***)	-0.19 (***)	0.32 (***)	-0.15 (***)	0.06 (***)	0.15 (***)	-0.08 (***)	-0.04 (***)	0.03 (***)

Source: made by the authors

The descriptive statistics of the data shows that a good part of the variables and control is related to the cost of debt and stock return and that, although some variables correlated above 50%, the multicollinearity test for regression was not sensitive to this characteristic. Despite this, most control variables do not show a high correlation between them.

4 Results

4.1 Qualitative Characteristics of the Accounting Information

Table 4 shows the results for the analysis of the relationship between conservatism and financial restatements for Brazil.

Table 4 - Conservatism

Z	Brazil				USA			
	Base Model		Rest Model		Base Model		Rest Model	
	Coef.	t	Coef.	t	Coef.	z	Coef	z
DR_{it}	-5,80	-2,37**	-5,61	-2,16**	-0,84	-5,81***	-0,85	-5,82***
Ret_{it}	-2,33	-1,06	-2,33	-1,05	-0,29	-3,54***	-0,29	-3,57**8
$DR_{it}xRet_{it}$	5,68	2,37**	5,52	2,17**	0,80	5,44***	0,81	5,45***
$DR_{it}xRest$			-0,58	-0,21			0,05	0,12
$Ret_{it}xRest$			0,09	0,86			-0,08	-3,76***
$DR_{it}xRet_{it}xRest$			0,50	0,17			-0,01	-0,03
F/X^2	6,12***		3,84***		28,24***		16,95***	
R^2	0,067		0,066		0,40		0,399	
Shapiro Francia	3,871***		3,871***		0,56		0,56	
Wooldridge	25,958***		26,449***		6,41**		6,337**	
Wald	3,2e+06***		3,3e+06***		8,2e+05***		8,0e+05***	
Chow	7,62***		3,99***		29,96***		17,80***	
Breusch-Pagan	4972,39***		4936,67***		4966***		4938***	
Hausman	46,14***		42,87***		854,16***		880,28***	

Source: made by the authors

Results for the β_3 and β_6 of the base model and the restatement model indicated that the accounting information of restatement companies shows a change in conservatism. For the base model, the results indicated conservatism in the information provided, but also that this characteristic is not maintained in the restatement scenario, thus confirming hypothesis 1.

Conservatism results for US companies are similar to those for Brazil. The information in the base model indicates conservatism, but this is not maintained in the restatement scenario, also confirming hypothesis 1.

The results for conservatism are in agreement with those by Chen et al (2014), who observed that companies have incentives to adopt higher accounting conservatism in the years after the restatement in order to enhance the perception of credibility of its financial reports. Thus, if it is possible to enhance the accounting conservatism, we can surmise that this was not necessarily the goal of restatement companies. In this regard, the statistics of Chen et al. (2014) showed that the companies did not enhance accounting conservatism, which was perceived after controlling by the next statements. With respect to persistence, Table 5 show the results obtained.

Table 5 - Persistence

	Brazil				USA			
	Base Model		Rest Model		Base Model		Rest Model	
	Coef.	z	Coef.	z	Coef.	t	Coef.	t
X_{t-1}	0,53	3,98***	0,48	2,99***	0,291	4,06***	0,290	4,07***
$X_{t-1}xRest$			0,12	0,71			0,080	0,470
Constant					1,298	10,87***	1,297	10,80***
F/X^2	15,83***		9,96***		16,50***		8,54***	
R^2	27,90%		28,44%		0,989		0,988	
Shapiro Francia	3,81***		3,81***		0,334		-4,2e+13	
Wooldridge	200,16***		196,73***		0,172		0,157	
Wald	1,3e+1***		4,4e+11***		2,4e+13***		2,4e+13***	
Chow	2076,2***		710,76***		1042***		342,82***	
Breusch-Pagan	287,9***		307,18***		730,08***		733,18***	
Hausman	1033,1***		1085,40***		5395,97***		5465,15***	

Source: made by the authors

The results for persistence shown in Table 5 indicate that Brazilian companies issue financial statements considering this characteristic. However, for restatement companies the persistence of results was not maintained, which allows us to accept hypothesis 2.

Our findings for the USA also indicate a loss of persistence for restatement companies. Table 6 show results referring to the relevance of accounting information.

Table 6 - Relevance

	Brazil				USA			
	Base Model		Rest Model		Base Model		Rest Model	
	Coef.	z	Coef.	z	Coef.	t	Coef.	t
BV_{it}/P_{it-1}	0,00	1,20	0,001	-0,28	0,03	5,85***	0,03	5,84***
$EARN_{it}/P_{it-1}$	0,01	3,17***	0,01	4,55***	-0,04	-2,24**	-0,04	-2,13***
$BV_{it}/P_{it-1}xRest$			0,001	3,06***			-0,001	-0,18
$EARN_{it}/P_{it-1}xRest$			-0,02	-3,81***			-0,04	-0,80
Constant	1,0	1119,8***	1,0	1121,3***	0,99	412,8***	0,99	412,5***
F/X^2	14,83***		33,21***		22,92***		11,98***	
R2			0,028		0,028			
Shapiro Francia	3,64***		3,636***		0,300		0,300	
Wooldridge	0,91		1,793		0,008		0,019	
Wald	4325,85****		4359,47***		1,5e+05***		1,5e+05***	
Chow	2,66*		5,91***		102,78***		51,74***	
Breusch-Pagan	14,31***		14,56***		8,32***		8,17***	
Hausman	22,75***		22,56***		151,06***		157,28***	

Source: made by the authors

With regard to relevance, our results indicate that the information of Brazilian companies is relevant, and that this characteristic change in the case of restatement companies, therefore it is possible to accept hypothesis 3 for Brazil.

In the case of US companies, results point to the relevance of accounting information, but that this characteristic is lost when in a restatement scenario. Thus, for the USA,

hypothesis 3 can be accepted.

Tables 7 show the results with respect to timeliness.

Table 7 - Timeliness

	Brazil				USA			
	Base Model		Rest Model		Base Model		Rest Model	
	Coef.	z	Coef.	z	Coef.	t	Coef.	t
$EARN_{it}$	0.001	2.86***	0.002	3.18***	-0.002	-1.72*	-0.002	-1.65*
$EARN_{it}$-$EARN_{it-1}$	0.001	0.50	0.001	0.62	-0.003	-2.27**	-0.003	-2.26**
$EARN_{it}$xRest		-0.001	-0.93			-0.004	-1.330	
$EARN_{it}$-$EARN_{it-1}$ xRest			0.001	-0.19			0.002	0.340
Constant	1.0	1189.5***	1.0	1183.1***	1.005	1652.9***	1.005	1656.6***
F/X^2	16.16***		18.63***		6.13***		3.59***	
R^2			0.077		0.077			
Shapiro Francia	3.659***		3.657***		0.326		0.326	
Wooldridge	1.267		1.499		0.206		0.212	
Wald	4215.8***		4169.6***		1.4e+05***		1.4e+05***	
Chow	2.61*		1.670		10.13***		5.35***	
Breusch-Pagan	13.38***		12.96***		4.60**		4.59***	
Hausman	12.72***		16.26***		9.68***		10.03**	

Source: made by the authors

With respect to timeliness, we could not observe an impact on this characteristic due to financial restatements by Brazilian companies. In fact, the results indicate that timeliness was not a characteristic present in the information of Brazilian companies, therefore hypothesis 4 cannot be accepted for Brazil. Additionally, about the timeliness, our results showed its presence in the information of US financial restatements, but that it is lost for restatement companies. This result seems with the fact that a financial restatement presents information in a later period, hypothesis 4 can thus be accepted.

Overall, our results indicated that the need for restatement is related to the lower quality of the information contained in the financial statement, which is in agreement with the findings by Anderson and Yohn (2002), who showed that restatement companies had issued financial statements of inferior quality; with Hribar and Jenkins (2004) when they argued that a restatement implies a reduction in the quality of the results; with Graham et al. (2008), in that a restatement causes an increase in information asymmetry; and with Nguyen and Puri (2014), who found that a restatement increases uncertainty and information asymmetry, reduces the reliability of financial statements and can be an indication of poor quality of information.

4.2 Cost of Debt and Stock Returns

Table 8 show the results for the relationship between financial restatements, cost of debt with third parties and stock returns.

Table 8 - Regression Analysis of Cost of Debt and Returns

	Brazil				USA			
	Cost of Debt		Returns		Cost of Debt		Returns	
	Coef.	z	Coef.	z	Coef.	z	Coef.	z
Rest	0,008	2,34**	-0,001	-0,64	-9,58E-06	-0,01	0,001	0,31
Size	-0,020	-2,52**	-0,005	-1,36	-0,004	-2,28**	-0,005	-1,51
Indeb	-0,259	-7,11***	0,002	0,12	-0,127	-6,58***	-0,003	-0,30
Perf	0,753	16,74***	0,046	2,50**	-0,047	-2,34**	0,260	3,58***
Risk	0,161	4,53***	0,018	1,62	0,0540	3,67***	0,021	1,78*
CG	0,007	1,08	-0,006	-0,81				
Liq	-0,003	-0,93	-0,002	-1,19	-0,000	-0,10	0,002	1,16
Big4	0,001	0,24	-0,008	-1,61	0,000	0,24	-0,007	-0,63
Mg	-0,068	-6,18***	0,018	3,77***	-0,004	-1,27	0,008	0,89
Growth	-0,028	-2,19**	0,008	2,33**	0,003	2,71***	0.004	0,99
Age	0,007	10,26***	0,0000	0				
Lev	-0,002	-1,57			0,000	-0,07		
Tang	-0,025	-1,65	-0.005	-0,43	-0,010	-1,52	0,015	0,78
Volat	0,376	3,44***	0.020	0,38	0,011	0,67	-0,104	-1,98**
Constant							1,06	19,85***
X^2/F	37,25***		4,28***		37,25***		3,05***	
R^2	0,17		0,14		0,15		0,19	
Breusch-Pagan	4207,78***		1,85		3709,78***		0,18	
Chow	65,47***		4,65***		54,43***		11,34***	
Hausman	28,63***		26,62**		189,88***		38,83**	
Wald	140000***		3379,43***		5,7e+07***		81473,26***	
VIF	1,39		1,37		1,52		1,58	
Wooldridge	61,625***		2,981*		35,078***		0,164	
Shapiro-Francia	4,554***		4,414***		0,731		0,512	

Source: made by the authors

In the case of Brazil, our results indicate that financial restatements have a positive impact on the cost of debt, that is, the need for a restatement results in a higher cost of debt. This result is in line with what is expected according to the literature (Hribar & Jenkins, 2004; Kravet & Shevlin, 2010; Albring et al., 2013). As for stock returns, although the relation was negative, i.e. lower returns when there is a restatement, this relation was not statistically significant. Thus, there are indications that third-party sources of funds may react more when a restatement is issued than investors. This suggests that the need for a restatement will not result in losses or a decrease in the company's market value, a result that differs from those found in the literature (Kinney & McDaniel, 1989; Palmrose et al., 2004; Hribar & Jenkins, 2004; Albring et al., 2013).

For the US market, the results indicate that the issuance of a financial restatement is not a factor that has an impact on the costs of raising third-party or own funds. This result differs from that of Bartov and Konichitchki (2017), who found that delayed SEC filings are accompanied by abnormal negative reactions in stock prices. Table 9 below presents a summary of the main study results:

Table 9 – Summary of results

		Brazil		US	
		Result	Hypothesis confirmed?	Result	Hypothesis confirmed?
Conservatism	Overall	C	Yes	C	Yes
	Restatement	NC		NC	
Persistence	Overall	P	Yes	P	Yes
	Restatement	NP		NP	
Relevance	Overall	R	No	R	Yes
	Restatement	NR		NR	
Timeliness	Overall	NT	No	T	Yes
	Restatement	NT		NT	
Ki		+	Yes	NS	No
Return		NS	No	NS	No

Note. C=conservatism; NC=non-conservatism; P=persistence; NP=non-persistence; R=relevance; NR=non-relevance; T=timeliness; NT=non-timeliness; "+" = positive relationship; NS=non-significant.
Source: made by the authors

Furthermore, it is noteworthy that the results allow us to accept hypotheses 7 and 8 of the research, since the condition of restatement tends to imply a more evident effect on the quality of accounting information for the US, since, in Brazil, even without considering the condition of restatement the accounting information did not present the quality of timeliness. Furthermore, the results seem to confirm that the condition of restatement implies a higher agency cost for companies in Brazil, observing the positive and significant relationship with the cost of debt. The same was not observed in the USA, where the results indicate that the restatement condition is not sufficient to cause significant effects in the financing market. This can be explained by the legal, regulatory, enforcement and inspection differences that permeate Brazil and the US and was explored in the theoretical framework.

The results also indicate that, in Brazil, the context of republication affects the creditor's perception of risk, resulting in a higher debt cost. While, in the US, the perception of risk with the republication does not tend to change. The findings indicate, in addition, that the level of efficiency of the two capital markets may be different, while in the US there is a market that knows more about the assets traded, so there is greater efficiency, so that in a scenario of information asymmetry, the effect and reaction of funding sources do not reflect the importance of accounting restatements.

It is interesting to note that of all Brazilian observations, in 26.9% there is a financial restatement, of which 4% were required. While for the USA, in our sample of observations, in 3.1% there is a restatement, 2.2% of which was required. This finding is in agreement with that by Shelton et al. (2011), who identified that companies submitted to greater enforcement power and a more traditional legal framework issue a lower number of restatements. It also is in line with Francis et al. (2003), who had already observed that accounting and auditing quality are higher, as well as enforcement, in common law countries compared to civil law countries, which is consistent with the identification of a smaller number of restatements for US companies. The profile of these restatements is shown in Tables 10.

Table 10: Reason for restatement-US and Brazil

US	Brazil
General	General
Not identified	Not identified
Scale or number of shares	Scale or number of shares
Regulatory	Regulatory
Explanatory Note	Explanatory Note
Auditor's Report	Auditor's Report
SFS	SFS
Statement of Cash Flow and Income Statement	Income Statement and Earnings
XBRL documents required	Statement of Cash Flow
Annex required	Balance Sheet
Review of information confidentiality requests.	IFRS
Filing/Re-filing	Capital budget proposal
	DVA, Statement of Stockholder's Equity, Statement of Comprehensive Income

Source: made by the authors

The classification was made based on the type of restatement as declared by the company. Next, we present some considerations about this classification. In the "General" category, there are cases of restatements issued due to the need to make changes related to dates, management reports, names, registry data, inclusion of types of shareholders, credit agencies' classification information, inclusion of signatures, typographical errors and alteration of figures. "Scale or number of shares" includes the cases where it was necessary to correct the scale for presenting information and make adjustments in the number of shares disclosed. "Not identified" cases refer to companies that have not stated the reason for the restatement.

There were cases where more than one reason for restatement was declared, such as impact on financial statements (SFSs), together with changes in scales, signatures, etc. In these cases, the classification was made by the factor that was considered most important in terms of impacting the information provided to users, i.e. they were classified into the SFS category. In addition, the SFS category also included cases of changes that would imply more than one statement. Specific cases, which emphasized only one statement, have been classified into "BP," "DFC" and other categories.

The "Regulatory" category includes cases of companies that

need to make adjustments due to some specific CVM, SEC or other agency's regulation. "Auditor's Report" comprises cases of changes in the content of the independent audit reports. For Brazil, there is still the specific case of "IFRS," referring to the adoption of these standards in the country in 2010, which led companies to make adjustments to better adapt to the changes in accounting practices.

Our results showed that, for both countries, the majority of the restatements are of a general nature. For Brazil, more specifically, the "General," "Not identified" and scale problems categories add up to more than 50% of the restatement cases. This fact may explain why the study did not observe any impact of restatements on the capital market. Similarly, Scholz (2008) also observed that restatements related to fraud and revenue, which would lead to negative market reactions, represent a very small percentage, i.e. 2% in 2006. Which explains the lack of evidence of a relationship with capital markets.

In general, the tests indicated that the need for a restatement tends to imply low-quality information, which is in line with the findings of Amel-Zadeh and Zhang (2015). Regarding the effect of restatements on the cost of debt, for Brazil, our results are in line with those of Hribar and Jenkins (2004) and Kravet and Shevlin (2010), who showed that restatements worsened financing conditions, increasing expected costs. And they are also in agreement with those of Graham et al. (2008) and Park and Wu (2009), who observed that restatements are associated with financing difficulties. Although we have not identified a relationship between restatements and the cost of debt for US companies, it is interesting to note that Park and Wu (2009) found that this relationship exists, especially if the reason for the restatement involves revenue, as also observed by Newberry and Parthasarathy (2007).

The results for the cost of debt, which differ between the countries, is in agreement with La Porta et al. (1997), who points out that richer countries offer more legal protection to investors and creditors and have laws that provide for greater enforcement power. Therefore, it makes sense for banks to react negatively to the restatement of Brazilian SFSs. In addition, La Porta et al. (1998) pointed out that common law countries tend to offer greater protection to creditors against managers, which explains the result obtained indicating no relationship between the cost of debt and financial restatements for the USA.

As for the results regarding the relationship between restatements and stock returns, Anderson and Yohn (2002) found that financial restatements does not lead to a permanent increase in information asymmetry, which may explain the fact that there is no statistical indication of the influence of restatements on stock returns.

Barniv and Cao (2009) showed that investors, in a restatement scenario, tend to rely more on the information provided by financial analysts than on that provided by the companies themselves. This means that a restatement increases the uncertainty about the quality of the information to be disclosed, leading investors to demand more for analyst research, which may even signal that there are no problems with the information provided in the restatement, or even that in an environment of greater uncertainty investors tend to seek other sources of information. Thus, according to the authors, the investors' response to this information uncertainty is to demand more information, assuming that the analysts' informativeness and the opportunity to supply financial information are substitutes. This explains the study findings, i.e. that although a restatement appears to have a detrimental effect on its qualitative characteristics, this factor is not sufficient to influence capital markets.

Finally, our findings are consistent with those of Helou Netto and Pereira (2011), who observed that the market does not react, either positively or negatively, to financial restatements. The authors argue that one explanation for this result is the fact that the majority of restatements are not related to fraud or adjustments that cause significant changes in the companies' results.

5 Final Considerations

The research examined the relationship between financial restatements with the qualitative characteristics of the information disclosed, more specifically with conservatism, persistence, relevance and timeliness, in addition to the cost of raising funds from banks and investors, observing the cost of debt and return of the actions.

The main results indicated that national and international financial statements have different characteristics in terms of the quality of the accounting information disclosed. While for US companies the characteristics were identified, for Brazil the timeliness characteristic was not evident.

Our results indicated that there is a tendency that financial statements that need to be adjusted through restatements have accounting information of low quality. More specifically, they are non-conservative, non-persistent, non-relevant and non-timely in the case of the USA. For Brazil, the decrease in quality occurred in terms of conservatism, persistence and relevance. The loss of accounting information quality in terms of timeliness does not only

occur in Brazil because this quality is not perceived outside the context of restatements either.

In addition, our findings showed that Brazilian banks react negatively to the cases of restatement, as indicated by a higher cost of debt, but that US banks do not seem to see restatements as a factor that would have an impact on the cost of debt. For both Brazil and the USA, our results also indicate that capital markets do not react to a restatement.

The result for the relationship between restatements and the cost of debt for Brazil is in line with that of Albring et al. (2013), who identified that a restatement may be related to higher financing costs, implying possible difficulties in the search for potentially more profitable financing projects, which can limit investments in the company and contribute to lower growth rates. In the USA, bank financing is not a major way of obtaining funds, which may explain the lack of relationship observed.

It is interesting to note that our study found that the reasons for a restatement are mostly unrelated with results, which may explain the fact that we observed no relationship with stock returns. In addition, for the USA, the number of restatements was relatively low compared to the number of observations used in the study. It was also possible to observe that the proportion of restatements in the sample for Brazil is higher than that for the USA, indicating that the tolerance for these events in Brazil is greater, probably due to the lack of penalties and enforcement, which is characteristic of civil law countries.

Considering the above, our study contributes to the national and international literature on the impacts of financial restatements. It also signals to users of information that there is a worsening in the qualitative characteristics of information of companies that have had to issue a restatement, a fact that can now be considered in their investment decisions. In addition, it signals to national companies that although capital markets do not seem to react to restatements, third-party funding sources do not seem to react positively to a restatement scenario. Furthermore, our study can help regulatory bodies to evaluate the need to revise guidelines regarding financial restatements, in order to ensure the quality of the information provided to users.

Our study has some limitations that can be addressed in future research, such as the absence of the "Age" and "Corporate Governance" variables for US companies. In addition, other studies could address the reasons for a restatement, which may help to explain relationships with the quality of information and with the reaction of investors and banks. The analysis methodology could also be varied, adding a Conditional AutoRegressive–CAR model to better observe the relationship between restatements and stock returns. Future research could further extend the tests by applying non-parametric models that do not depend on the prerogative of linearity between variables to confirm improving the results of this research, such as the Random Forest models. In addition, classification models such as Bayesian could be applied, which are suitable for problems in which multiple attribute information must be considered simultaneously to estimate the overall probability of an outcome (Lantz, 2019).

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