



Analysis of the influence of audit delay on return on equity and cost of debt of Brazilian publicly traded companies

Análise da influência do audit delay no retorno das ações e no custo da dívida de empresa brasileiras de capital aberto

Análisis de la influencia del retraso de la auditoría en la rentabilidad de las acciones y el costo de la deuda de las empresas brasileñas que cotizan en bolsa

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Abstract

Within the context of the importance of accounting information for the main sources of corporate funds, the objective of the study was to analyze the impact of audit delay on Standardized Financial Statements (SFS) disclosure to investors and banking institutions. The research considered Brazilian publicly traded companies in the quarterly period from 2010 to 2017, via correlation tests, mean difference, panel data regression and quantile regression. The results indicated that there were different reactions between investors and banks, that is, audit delay did not have a negative impact on return on equity, but it was negative in terms of cost of debt. This suggests that investors and banks have different perceptions of audit delay in SFS disclosure. Thus, the study indicates to companies the need to reflect on the opportunity cost of a larger audit delay in SFS disclosure, especially when the objective is financing via banking institutions.

Keywords: Audit delay; Return on equity; Cost of debt

Resumo

No contexto da importância da informação contábil às principais fontes de recursos das empresas, o objetivo do estudo foi analisar o impacto do tempo (*audit delay*) na divulgação das demonstrações contábeis (DFPs) para investidores e instituições bancária. A pesquisa considerou empresas brasileiras de capital aberto no período trimestral de 2010 a 2017, via testes de correlação, diferença de média, regressão com dados dispostos em painel e quantílica. Os resultados indicaram haver reações distintas entre investidores e bancos, ou seja, o *audit delay* não apresentou impacto negativo no retorno das ações, mas foi negativo em termos de custo da dívida. Isso sugere que investidores e bancos apresentam percepções diferentes acerca do *audit delay* das DFPs. Assim, o estudo indica para as empresas a necessidade de refletir quanto ao custo de oportunidade de maior *audit delay* das DFPs, principalmente quando o objetivo é financiamento via instituições bancárias.

Palavras chave: Audit delay; Retorno das ações; Custo da dívida

Resumen

En el contexto de la importancia de la información contable para las principales fuentes de recursos corporativos, el objetivo del estudio fue analizar el impacto del tiempo (demora en la auditoría) en la divulgación de estados financieros (DFP) a inversionistas e instituciones bancarias. La encuesta consideró las empresas brasileñas que cotizan en bolsa en el período trimestral de 2010 a 2017, mediante pruebas de correlación, diferencia de medias, regresión con datos de panel y cuantiles. Los resultados indicaron que hubo diferentes reacciones entre inversionistas y bancos, es decir, el retraso de la auditoría no tuvo un impacto

negativo en la rentabilidad de las acciones, pero sí en el costo de la deuda. Esto sugiere que los inversores y los bancos tienen diferentes percepciones sobre el retraso de la auditoría de los DFP. Así, el estudio indica a las empresas la necesidad de reflexionar sobre el costo de oportunidad del mayor retraso en la auditoría de las DFP, especialmente cuando el objetivo es la financiación a través de entidades bancarias.

Palabras clave: Retraso de auditoría; Rendimiento de las acciones; Costo de la deuda

1 Introduction

Capital market and banks, as the main accounting information users, are important for the country's economic development and are closely linked to necessity of accounting information, since the reliability and availability of this information is an essential condition for market functioning and decision making of these sources of funds (Dantasm & Medeiros, 2015; Healy & Palepu, 2001). In this sense, Niyama (2005) considers accounting an important element that allows users to assess the company's economic and financial situation and investment risks, and the Standardized Financial Statements (SFS) become the link between companies and users, able to assist in the basic development of the set of information for a decision. Therefore, the credibility of this information is considered a key element for users (Pevzner, Xie, & Xin, 2015).

The importance of accounting information for users is supported by the agency relationship. In this scenario, it is possible to state that accounting information is an essential tool to reduce the effects of information asymmetry (Chung, Judge, & Li, 2015). However, according to Jensen and Meckling (1976), information asymmetry can generate users' distrust of the content of the statements, since only managers have access to the company's internal data, enabling their possible intervention in the reports, so that, when managing results, the agent can act opportunistically to the detriment of return to the principal (Healy & Whalen, 1999; Schipper, 1989).

At this point, income management can mislead the user about the company's real profitability, increasing information asymmetry and insecurity in decision making (Nardi & Nakao, 2009), since there is a direct relation between quality of accounting information and return of capital to investors (Easley & O'hara, 2005). Therefore, the higher the quality of the information, the less the information asymmetry, reducing the imprecision to users (Silva, Nardi, & Tonani, 2016).

In this sense, it is worth highlighting the qualitative characteristic of timely accounting information, which means information accessible in a timely manner to decision makers, so that to influence their decisions, and, consequently, improve the efficiency of their investments (Alkhatib & Marji, 2012). Therefore, if the accounting information is not made available in a timely manner, that is, after the end of the accounting period, it loses its economic value (Al-Ajmi, 2008), affecting the competence and economic functioning of the market (Alkhatib & Marji, 2012).

In this context, some researches have been analyzing the determinants of the time to disclose SFS, more specifically, the difference between the fiscal year-end date and the disclosure of information to the market, as well as the difference between the fiscal year-end date and the date of signature of the demonstrations (audit delay - AD). Such studies identified that possible determinants of that time are: i) company's size (Al-Ghanem & Hegazy, 2011; Abidin & Ahmad-Zaluki, 2012; Alkhatib & Marji, 2012; Cohen & Leventis, 2013); ii) profitability (Al-Ajmi, 2008; Abidin & Ahmad-Zaluki, 2012; Alkhatib & Marji, 2012; Cohen & Leventis, 2013); iii) leverage (Al-Ajmi, 2008; Alkhatib & Marji, 2012; Ahmad, Mohamed, & Nelson, 2016; Cohen & Leventis, 2013); iv) type of audit report - modified reports are released after the unmodified ones and, the more severe the change, the greater the AD (Soltani, 2002); v) companies with a greater number of shareholders and with greater indebtedness tend to release the report faster (Barcellos, Júnior, & Laurence, 2014); vi) change of auditor (Abidin & Ahmad-Zaluki, 2012; Ng & Tai, 1994; Whitworth & Lambert, 2014); vii) corporate governance (Kirch, Lima, & Terra, 2012); viii) loss (Sharma, Tanyi, & Litt, 2017; Whitworth & Lambert, 2014); ix) company's liquidity (Al-Ghanem & Hegazy, 2011; Cohen & Leventis, 2013), and x) audit fee (Palmrose, 1986).

However, despite research that observes factors that impact the company's return on equity (Abidin & Ahmad-Zaluki, 2012; Barcellos et al., 2014; Robu & Robu, 2015; Pevzner et al., 2015; Lei, Wang, & Yan, 2017; Souza & Nardi, 2018) and cost of corporate debt (Nardi & Nakao, 2009; Eliwa, Haslam, & Abraham, 2016; Lugo, 2017), there was no work aimed at observing the relation between the time to disclose SFS and return on equity and cost of debt.

Therefore, given the importance of accounting information to the capital market; the existence of international studies that analyze the determinants of audit delay; the few national pieces of research on this relation, and since studies on the impact of audit delay on the main accounting information users have not been found, the interest is to observe the following research question: What is the impact of audit delay on return on equity and on cost of debt of Brazilian publicly traded companies?

Thus, the objective of the study is to understand the effects that the time to disclose SFS may cause in terms of return on equity and cost of fundraising via banking institutions. Thus, with such results, it is expected to be possible to demonstrate to Brazilian publicly traded companies the impact that the time to

disclose SFS may have on their main sources of fundraising, so that they can reflect and ponder as to the opportunity cost of a greater or lesser audit delay.

2 Theoretical Framework

2.1 Importance of Accounting Information

One of the incentives of the economy is related to the savers' resources being directed at investments, so that the efficient allocation of resources should be conducted to economically viable investments. If this resource allocation process is efficient, then there is an economical distribution, stimulating the main investing sources, consequently helping fundraising companies to raise funds. In addition, in order for market competence to be maintained, a company's value should reflect all the information available about it, so that the sources of funds can make their decisions regarding the destination of their investments in an environment with reduced uncertainties (Souza & Nardi, 2018).

For this reason, the qualification of the sources of funds on a company is stronger when the information disclosed reflects the economic value disclosed in a reliable manner, and it is perceived as reliable (Hohenfels, 2016). However, an implicit adversity is in the fact that information users are unable to observe a company's real economic performance (Healy & Whalen, 1999), which makes the manipulation of data by the company's management more likely to happen. And this can occur due to the principal-agent relationship established in the Agency Theory (Jensen & Meckling, 1976).

This relationship is generally characterized by the discrepancy in the quantity and quality of information that the principal and the agent have, and the latter may create obstacles for the proper functioning of the market (Kirch et al., 2012). Thus, when these interests are not aligned, conflicts of interest issues arise (Jensen & Meckling, 1976), generated by the information asymmetry, a circumstance in which one of the parts of an operation does not come from fundamental information to analyze the performance of those involved, either company or users (Akerlof, 1970).

In this sense, accounting reports are configured as important pieces for the relationship between savers and market captors (Chen, Chen, & Su, 2001; Kirch et al., 2012), capable of reducing the effects of information asymmetry (Rocha, Pereira, Bezerra, & Nascimento, 2012). This is because accounting information is able to reduce the disparity in information content, minimizing agency conflict, assisting information users in decision making, and reducing costs of capital (Kirch et al., 2012).

However, this process has to be based on reliable and transparent information, since understanding the credibility of accounting information is a key determinant for the reaction of the sources of funds (Boone, Khurana, & Raman, 2010; Chung et al., 2015; Dantas & Medeiros, 2015; Healy & Palepu, 2001; Pevzner et al., 2015; Nardi & Nakao, 2009). That said, a better quality in the disclosure of financial reports improves the information users' trust, which can generate higher returns and lower costs for companies (Boone et al., 2010).

2.2 Quality of Accounting Information

Due to the importance of the quality of accounting information for the better functioning of the relationship between savers and fund-raisers, it is valid to consider that this information should have certain qualitative characteristics in order to better base the investment decisions of companies' main sources of funds, whether they are investors or banks. In this sense, according to CPC 00 (2011), useful accounting and financial information has fundamental qualitative characteristics, such as relevance, materiality and reliable representation, and improvement characteristics, such as comparability, verifiability, timeliness, and comprehensibility. Thus, for the usefulness of the information to be improved, it has to be relevant and represented with reliability.

Among the aforementioned characteristics, timeliness implies providing information accessible to information users in time to influence their decisions, thus persuading the relevance of the accounting data (Barcellos et al., 2014), and, consequently, improving the efficiency of resource allocations (Alkhatib & Marji, 2012).

In this sense, since older data is less useful, unless the information user needs to identify and evaluate the company's trends, then the higher the degree of lag between the fiscal year-end date and the statement publication, the less important this information will be (Barcellos et al., 2014) and lower its relevance (Beaver, 1968). Still in this context, according to SFAC No.2 (FASB, 1980), accounting information is considered relevant when it helps predict or confirm financial events within the business sphere. Therefore, if the information is not made available within a short period of time after the fiscal year-end date, it loses its economic value.

Timeliness also stands out as a means of minimizing information asymmetry and reducing opportunism in the rumors of stock spreads, that is, the difference in the purchase and sale price of a share on the company's performance (Al-Ajmi, 2008), factors that help accounting information users in decision

making, resulting in a likely influence on stock values (Al-Ghanem & Hegazy, 2011) and on the preferences of investment sources (Habib & Bhuiyan, 2011).

Nonetheless, managers are free to choose when to release the report in the period that covers the closing of the SFS preparation process and the regulatory term described. For this reason, choosing the timing of publication is made in a timely manner, determined by incentives to anticipate or delay it, directly affecting the information relevance (Barcellos et al., 2014).

Due to the importance of accounting information in the resource allocation processes by the main sources, such as investors and banks, and the need to analyze efficiencies for the better functioning of these markets, there is a line of research that has sought to investigate the causes and consequences of longer time spent by companies in disclosing their SFS. This time spent between the closing date of SFS and their disclosure is called Audit Delay (AD) (Bonsón-Ponte, Escobar-Rodríguez, & Borrero-Domínguez, 2008).

Such studies found that AD is related to inferior accounting metrics and issues in generating accounting information (Dopuch, Holthausen, & Leftwich, 1986; KRISHNAN; YANG, 2009), which, in turn, can cause scenarios of greater uncertainty for investors and banks. This is because longer time to disclose SFS can be a consequence of issues in internal control, complexity of processes, volume of activities, or even results management that end up hampering the external audit processes (Linn & Dihel, 2005). In this sense, longer time to disclose SFS can make predictability of future results more difficult, hindering savers' decision to allocate resources (Nardi, Amadi, & Silva, 2019). Such a scenario can make it difficult for banks to monitor loans made by companies (Kim, Song, & Tsui, 2013), making it possible for them to demand information with a higher quality level (Slovin, Sushka, & Hudson, 1990). Moreover, AD, according to Knechel and Payne (2001), reduces the informative power of SFS, indicating a greater information asymmetry. It can also be seen as a factor that restricts SFS relevance (Dong, Robinson, & Xu, 2018), which may interfere negatively with the users' decision-making process, in addition to increasing uncertainty (Beiruth, Brugni, Fávero, & Goes, 2014).

3 Methods

The study was based on Brazilian non-financial publicly traded companies listed on B3 and conducted in the quarterly period from 2010 to 2017. The information was collected from Economática database and from B3 website.

Regarding the analysis methods, it started with the normality (Kolmogorov-Smirnov), correlation (Spearman), and mean difference (U of Mann-Whitney) tests, in which the values of return on equity and cost of debt were ordered according to the ascending order of each variable, separated in the extreme quartiles, 1 and 4, for each variable, and the means of return and cost of debt were calculated to analyze whether there is a statistical difference between them.

Then, multiple regression was applied with multiple panel data regression and quantile regression for an analysis of the differences between the small, medium and large groups of companies with regard to return and cost of debt.

The objective of the defined test sequence was to give robustness to the analyzes, observing from the relation between two variables (correlation and mean difference) to the joint analysis (regressions). It should be noted that, in the case of regression models, tests were performed to observe the assumptions of the regression, such as: i) heteroscedasticity; ii) multicollinearity, and iii) serial correlation, as well as tests to indicate the use of Pooled OLS, fixed effects, or random effects.

The predefined models for regression analysis were:

$$\text{Return} = \alpha_{it} + \beta_1 \times \text{AD}_{it} + \beta_2 \times \text{Size}_{it} + \beta_3 \times \text{Indeb}_{it} + \beta_4 \times \text{Perf}_{it} + \beta_5 \times \text{CG}_{it} + \beta_6 \times \text{Liq}_{it} + \beta_7 \times \text{Big4}_{it} + \beta_8 \times \text{Mg}_{it} + \beta_9 \times \text{Grow}_{it} + \beta_{10} \times \text{Age}_{it} + \beta_{11} \times \text{Lev}_{it} + \varepsilon_{it}$$

$$\text{Ki} = \alpha_{it} + \beta_1 \times \text{AD}_{it} + \beta_2 \times \text{Size}_{it} + \beta_3 \times \text{Indeb}_{it} + \beta_4 \times \text{Perf}_{it} + \beta_5 \times \text{Risk}_{it} + \beta_6 \times \text{CG}_{it} + \beta_7 \times \text{Liq}_{it} + \beta_8 \times \text{Mg}_{it} + \beta_9 \times \text{Big4}_{it} + \beta_{10} \times \text{Grow}_{it} + \beta_{11} \times \text{Age}_{it} + \beta_{12} \times \text{Lev}_{it} + \beta_{13} \times \text{Tang}_{it} + \beta_{11} \times \text{Volat}_{it} + \varepsilon_{it}$$

Where:

Return: return on equity, calculated using the methodology of Brooks (2002), dividing Pt (stock price mean five days after the SFS disclosure) by Pt-1 (stock price mean five days before the SFS disclosure);

Ki: cost of debt, calculated using the ratio between net financial expense and total interest-bearing liability;

AD: represents the difference between the fiscal year-end date and the SFS disclosure. A negative relation with return on equity is expected (Al-Ghanem & Hegazy, 2011; Cohen & Leventis, 2013; Habib & Bhuiyan, 2011), since the higher the values in relation to the audit delay, the worse the company's situation can be (Oliveira, Cunha, Santo, Faveri, & Junior, 2014). In this case, the company may have issues in relation to its SFS (Pereira & Costa, 2012), such as management of results. Regarding cost of debt, a positive relation is expected (Alzoubi, 2018; Gong, Li, & Yin, 2019; Al-Ghanem & Hegazy, 2011; Cohen & Leventis, 2013), as banking institutions value timeliness information and quality information (Alzoubi, 2018). Therefore, the longer the company takes to disclose the results, the riskier it is considered;

Size: companies' size, calculated by the logarithm of Total Assets. A positive relation with return on equity is expected (Chen, Kim, & Yao, 2017; García, Alejandro, Sáenz, & Sánchez, 2017; Pornupatham, 2015; Souza & Nardi, 2018) and negative with cost of debt (Eliwa et al., 2016; Lugo, 2017; Nardi & Nakao, 2009), as larger companies have a greater credibility in debt contracts, since there are more assets for collateralization and, often, they are focused on offering several assets and/or services, making bankruptcy less likely to occur (Valle, 2007);

Indeb: company's indebtedness, calculated by the ratio between short and long-term financial liabilities and total assets. The calculation used the interest-bearing liability, in order to isolate the possible effect of financing, loans and financial charges derived from short and long-term loans. A negative relation with return on equity is expected, as companies with higher levels of indebtedness have less flexibility to finance their activities (Artiach, Lee, Nelson, & Walker, 2010), which can impair their performance. A negative relation with cost of debt is also expected (Lugo, 2017; Nardi & Nakao, 2009), since, in general, companies with a lower level of indebtedness but a higher volume of intangible assets should have a higher cost of debt, because absence of guarantees raises the cost (Perobelli & Famá, 2003);

Perf: company's performance, calculated by the ratio between net income and the difference between total assets and net income. A positive relation with return is expected, as a greater performance can increase the company's value, consequently, the shareholders' wealth (Bastos, Nakamura, David, & Rotta, 2009). A positive relation with cost of debt is also expected, as a greater performance can mean the expansion of the company's fundraising structure and, consequently, its cost of debt increases (Chen et al., 2017; Lugo, 2017; Souza & Nardi, 2018). However, for banking institutions, an increase in the company's performance may signal a reduction in the probability of default (Barros, Silva, & Voese, 2015), resulting in lower financing rates.

Risk: corporate risk, calculated by the ratio between total liabilities and total assets. Variable also used by Silva and Nardi (2014, 2017). A positive relation with cost of debt is expected, since companies are able to decrease their cost when they give more guarantees, since it reduces their risk (Kayo & Famá, 2004; Pornupatham, 2015);

CG: dummy variable that assumes 1 if the company is listed on Bovespa's Levels of Corporate Governance, and 0 otherwise. A positive relation with return on equity is expected, since the practice of Corporate Governance seeks to reduce information asymmetry and, with this, companies' more transparent statements are expected. In addition, this practice leads to an increase in the credibility of the manager, attracts more investors, and improves the stock price valuation (Lima, 2009). With regard to cost of debt, a negative relation is expected, since one of the benefits of a greater transparency in the companies' statements is the reduction in the cost of capital, both for third parties and for the company itself (Lima, 2009), as the accounting information directly influences organizations' cost of capital (Lambert, Leuz, & Verrecchia, 2007);

Liq: corporate liquidity, calculated using the ratio between the difference of current assets and non-cash items and current liabilities. A positive relation with return on equity is expected, as the organizations' liquidity indicators show their financial health. With regard to cost of debt, a negative relation is expected (Hopp & Leite, 1989);

Big4: dummy variable, being 1 for companies audited by the Big Four, and 0 otherwise. A positive relation with return (Firmino, Damascena, & Paulo, 2010) and a negative relation with cost of debt is expected (Arruda, Sousa, Pena, Paulo, & Paulo, 2012; Souza & Nardi, 2018);

Mg: company's net margin, calculated by the ratio between net income and sales revenue. A positive relation is expected with return and cost of debt from the ratio between net profit and sales revenue, as has been tested in previous studies (Robu & Robu, 2015; Souza & Nardi, 2018);

Grow: company's growth, calculated according to the variation in sales revenue, expecting a positive result for return and cost of debt (García et al., 2017; Gomariz & Ballesta, 2014; Silva et al., 2016; Souza & Nardi, 2018)

Age: company's age, in which a positive relation with return and a negative relation with cost of debt is expected, since older companies have a long-term history of analyzing their financial conditions (Lugo, 2017; Nardi & Nakao, 2009);

Lev: company's leverage, calculated by the ratio between the company's total assets and shareholders' equity. A positive relation is expected with return and cost of debt (Eliwa et al., 2016; Chen et al., 2017), as companies with a greater leverage are more likely to choose accounting methods that cause increases in reported earnings (Iudícibus & Lopes, 2004), while companies with more debt can be seen as riskier (Nardi & Nakao, 2009).

Tang: tangibility, calculated through the difference of net fixed assets divided by total assets. A negative relation with cost of debt is expected, since, by representing the list of assets to be pledged as collateral in debt contracts, it reduces the possibility of the borrower issuing additional debts on that asset (Valle, 2007);

Volat: volatility, calculated by the standard deviation of operating cash flow, and a positive relation with cost of debt is expected (Lei et al., 2017; Chen et al., 2017; Nardi & Nakao, 2009).

4 Presentation and Result Analysis

In order to observe important aspects of the variables used in the model, descriptive statistics can be seen in Table 1. Analyzing Table 1, it can be seen that, with the exception of cost of debt, the variables have a mean value close to the median, signaling that the data are not strongly impacted by the extreme values. It is worth mentioning that, in the case of audit delay, there are two companies with values that differ from the others, regarding time to disclose SFS, and one of which is Petrobras. If these companies are removed, there is a greater approximation of mean and median, as well as a reduction in the standard deviation of the variable.

Although there are, in general, close mean and median values, in terms of variability, that is, observing the difference between minimum and maximum values, it is possible to notice that there is variability in the data.

Table 1:
Descriptive statistic

	Mean	Median	Standard deviation	Minimum	Maximum
Return	0.999	0.997	0.069	0.723	2.061
Ki	0.266	0.187	0.216	0.100	1.393
AD	45.630	43.0	19.233	7.0	299.0
Size	15.037	15.057	1.716	9.584	20.652
Indeb	0.224	0.206	0.182	0.0	0.982
Perf	0.057	0.039	0.065	0.0	0.781
Risk	0.566	0.565	0.197	0.013	0.999
Liq	1.340	1.204	0.798	0.015	4.998
Mg	0.029	0.041	0.315	-1.999	1.928
Grow	0.061	0.073	0.249	-0.995	0.991
Lev	2.487	2.227	1.124	0.225	5.994
Age	18.664	11.433	15.055	0.0	75.681
CG	0.740	1.0	0.439	0.0	1.0
Big4	0.810	1.0	0.392	0.0	1.0
Tang	0.236	0.195	0.220	0.0	0.899
Volat	0.027	0.018	0.030	0.001	0.199

Observing the data dispersion, through the standard deviation, a greater dispersion is perceived for cost of debt, indebtedness, performance, margin, growth, age, tangibility, and volatility. Such analyzes signal data heterogeneity.

4.1 Analysis for return on equity

To analyze the relation between audit delay and return on equity, the correlation between variables was initially observed using Spearman test (Table 2). Then, the mean difference test was applied (Table 3), and for each independent variable defined in the study, the return on equity was ordered in an increasing order, then the extremes were separated (quartiles 1 and 4), calculating the average return for each case.

Table 2:
Spearman correlation for return

	Return
AD	0.0015
Size	0.023
Indeb	-0.0373**
Perf	0.0912***
Liq	0.0554***
Mg	0.1515***
Grow	0.1028***
Lev	-0.367**
Age	-0.117
CG	-0.0191
Big4	0.0218

***, ** and * are significant at 1%, 5% and 10%.

Table 3:
Mean difference for return

	Q1	Q4	z
AD	1.003351	1.005115	-0.43
Size	0.9998908	0.9985309	-2.059**
Indeb	1.000929	0.9980934	2.14**
Perf	0.9903915	1.00347	-6.028***
Liq	0.9957559	1.001198	-4.118***
Mg	0.9863168	1.006172	-9.82***
Grow	0.9900366	1.001704	-5.795***
Lev	1.002387	0.9955951	2.877***
Age	1.001068	1.00265	1.295
CG	1.002354	0.9976485	1.249
Big4	0.9997571	0.9986662	-1.878**

***, ** and * are significant at 1%, 5% and 10%.

To provide more robustness to the research, regression analysis was performed with data displayed in a panel (Table 4), and tests were applied to identify the indication for use of data in Pooled OLS, fixed effects, or random effects. To decide between random effects and Pooled OLS, Breusch Pagan Lagrangian test was applied; between fixed effects and Pooled OLS, Chow F test was used, and between random effects and fixed effects, Hausman test was applied. The results indicated use of fixed effects, presenting issues of heteroscedasticity, analyzed using Wald test, but without issues of serial correlation and multicollinearity, tested by Wooldridge (2012) and VIF tests, respectively.

For both correlation analysis, mean difference and multiple regression, the results indicated a positive relation between time to disclose SFS and return on equity. This result was also corroborated in the quantile analysis, for whatever the quartile level (Q10, Q50 or Q90), as long as it considers positive returns. This result is contrary to what was expected by the literature (Al-Ajmi, 2008; Al-Ghanem & Hegazy, 2011; Cohen & Leventis, 2013; Habib & Bhuiyan, 2011; Payne & Jensen, 2002). A possible justification for this is that the time taken to disclose the financial year results allows the company to proceed with a better review and choice of accounting methods (Skinner, 1994; Watts & Zimmerman, 1986; Trueman, 1990). In this sense, Lambert, Brazel and Jones (2007) identified that longer time to disclose SFS is associated with a higher quality of results, which can be apprehended by investors. It is still possible to consider that, given the longer time to disclose

SFS, the market can anticipate some information in order to cancel the possible negative effect related to the time itself.

Table 4:
Regression analysis for return

Variables	Coefficient	z
AD	0.0001128	2.13**
Size	-0.0001032	-0.15
Indeb	-0.0034856	-0.7
Perf	0.0122377	2.28**
Liq	0.0007501	1.43
Mg	0.0016056	3.31***
Grow	0.0039024	1.9*
Lev	-0.0003689	-1.72*
Age	-0.0000222	-0.3
CG	-0.0051517	-1.88*
Big4	-0.0007863	-0.26
Constant	0.9999708	98.09***
F		33.42***
X ²		0.04
Breusch and Pagan Lagrangian test		11.93***
Chow Test		3.03***
Hausman test		54.95***
Wald test		8630.74***
VIF test		1.23
Wooldridge test		0.015

***, ** and * are significant at 1%, 5% and 10%.

Finally, quantile regression was analyzed (Table 5). Since the previous literature lists longer time to publish SFS in the market as an indication of low audit quality and even of practices of result management, when verifying a positive relation between this time and return on equity, we can consider that a great amount of accounting information is reflected in the market even before SFS publication, so that such information allows the market to anticipate the results. This idea is in line with what Chambers and Penman (1984) commented, who also stated that the longer the time to disclose SFS, the greater the opportunity for more information to be provided by other sources and the longer the investor's research time, highlighting here the role of financial analysts.

Table 5:
Quantile analysis for return

	Q10		Q50		Q90	
	Coefficient	t	Coefficient	t	Coefficient	t
AD	0.00004	0.58	0.00012	2.71***	0.00015	1.53
Size	0.00336	4.23***	0.00127	2.89***	-0.00303	-2.19**
Indeb	-0.01258	-1.99**	-0.00670	-1.93*	-0.01309	-1.27
Perf	0.03307	1.22	0.01055	1.03	0.00710	0.41
Liq	0.00211	4.9***	0.00066	1.4	-0.00206	-2.36**
Mg	0.00270	1.53	0.00175	4.06***	0.00088	0.94
Grow	0.00410	1.37	0.00154	0.79	-0.00010	-0.04
Lev	-0.00232	-4.23***	-0.00045	-2.54**	0.00117	1.9*
Age	-0.00021	-2.14**	-0.00006	-1.18	-0.00004	-0.24
CG	-0.00776	-1.74*	-0.00539	-2.77***	-0.00183	-0.39
Big4	-0.00144	-0.28	0.00215	1.02	-0.00696	-1.64
Constant	0.89491	73.26***	0.97608	134.07***	1.11408	52.31***

***, ** and * significant at 1%, 5% and 10%.

Still, it is possible to consider that, while the statements are not disclosed, the managers can change the market strategy so that the stock prices and return don't perform poorly. This observation is in line with that put by Trueman (1990).

In addition to these aspects, there is another point that justifies the result obtained in this study, addressed by deHaan, Shevlin and Thornock (2015). These authors consider it possible to speculate that many times companies wait for the market to calm down to publish their results. This usually happens to avoid extreme market reactions, especially negative ones. By avoiding extreme reactions, one avoids attracting

media attention, for example, to alarming situations. Therefore, companies can delay the disclosure of information to attract or avoid market's attention (deHaan et al., 2015; Johnson & So, 2018).

Finally, it is still possible to consider the fact that managers may prefer to wait for the disclosure of the competitor's accounting information. This is because, as noted by Gong et al. (2019), the disclosure of results by companies may be a strategy in the face of the capital market, since the disclosure after that of its competitors's statement disclosure allows the company to explore the discretion of the reports in order to achieve certain goals and, thus, present performance superior to its competitors in order to affect the capital market.

As for size, the correlation analysis indicated a positive relation with return, as expected by the literature (Che, 2018; Nardi & Nakao, 2009), although not significant. The mean difference and regression analyzes showed evidence that larger companies tend to have lower returns, contrary to the literature (Eliwa et al., 2016; García et al., 2017; Lugo, 2017; Pornupatham, 2015; Nardi & Nakao, 2009; Silva et al., 2016; Souza & Nardi, 2018). In addition, the quantile regression indicated that companies with lower returns have a positive relation with size, but that companies with higher returns present a negative relation.

The results of all tests point to a negative relation between debt and return on equity, including in any return quartile, consistent with Lugo (2017) and Nardi and Nakao (2009). This result indicates that return on equity is affected when the company has a greater amount of debt, since cash and cash equivalents are committed for this purpose (Nardi & Nakao, 2009).

As observed by previous research (Chen et al., 2017; Souza & Nardi, 2018), the results indicated that companies with a higher performance have higher returns, and this result is indifferent in quantile terms. This happens since good market practices and the company's internal policy reveal the company's efficiency, measured through performance indicators (Waddock & Graves, 1997). Its efficiency increases when there is a better performance, tending to positively impact the profitability of return on equity and, consequently (Pace, Basso, & Silva, 2003), attract more investors.

With regard to liquidity, the results indicated that companies with a higher liquidity have higher returns, corroborating the literature (Souza & Nardi, 2018), although companies with higher returns showed a lower liquidity when observing the quantitative analysis. Liquidity allows investors to have a short-term analysis of the company's financial situation, that is, the greater its liquidity, the better its financial health, which may justify a positive impact on returns. The results indicated that companies with a higher margin have a higher return, consistent with what was pointed out in the literature (Robu & Robu, 2015; Souza & Nardi, 2018).

Regarding the relation between company's return and growth, the results indicated that there was a positive relation between the variables, corroborating previous research (García et al., 2017; Gomariz & Ballesta, 2014; Souza & Nardi, 2018; Silva et al., 2016). As growth is linked to company's performance, the greater the growth, the greater the return on equity is to be expected.

The results indicated that more leveraged companies have lower returns, diverging from the literature (Chen et al., 2017; Eliwa et al., 2016; Nardi & Nakao, 2009). A possible explanation for this is that if the company is leveraged, it means that it is financed through short-term third party capital, which increases its short-term debt and, consequently, its current liabilities, which ends up impacting the return on equity (Nardi & Nakao, 2009). In quantile tests, it was observed that companies with higher returns have a greater leverage. Possibly, when leveraging, the company incurs greater operational, capital and financial risks (Penman, Richardson, & Tuna, 2007), thus, the return on shares tends to increase.

Regarding age, the tests indicated a negative relation with the return on equity, whatever the return quartile, which is contrary to that obtained by the previous literature (Arruda et al., 2012; Lugo, 2017; Nardi & Nakao, 2009; Souza & Nardi, 2018). A possible justification for this is that, in the maturation of the company's life cycle, many companies reduce their operational activities, since they are unable to bear their costs (Lima, Carvalho, Paulo, & Girão, 2015); as a result, the profitability of its shares falls and fewer investors are attracted.

For all the tests used, the results indicated that the companies listed on Bovespa's Differentiated Levels of Corporate Governance (NDGC) have lower returns. Such findings are contrary to those obtained by the previous literature (Arruda et al., 2012; Lugo, 2017; Nardi & Nakao, 2009; Souza & Nardi, 2018). On the other hand, there is a line of study that has been observing that the companies that end up listing themselves on NDGC are those in which it is possible to observe not so favorable financial health, since the internal effects on the Corporate Governance company are much more visible in weaker organizations (Ciftci, Tatoglu, Wood, Demirbag, & Zaim, 2019).

Finally, the results indicated that companies audited by the Big Four have a negative relation with return. A possible explanation for this is that there is the idea that the companies audited by the Big Four have a higher level of conservatism (Lai, 2013) and, as investors tend to be risk averse, in order to attract more investors, companies with financial health issues choose to be audited by the Big Four, aimed at trying to attract more investors.

4.2 Analysis for cost of debt

Similar to the return analysis, the relation between cost of debt and audit delay was performed using

Spearman correlation test (Table 6), mean difference test between the explanatory variables and cost of debt (Table 7), analysis of regression with panel data (Table 8), whose models presented issues of heteroscedasticity, tested by Wald test, and 10% serial correlation, tested by Wooldridge test, but there were no multicollinearity problems, tested by VIF test. Finally, quantile regression was analyzed (Table 9).

Table 6:
Correlation for cost of debt

	Cost of Debt
AD	0.2310**
Size	-0.1462***
Indeb	-0.405***
Perf	0.3474***
Risk	0.1209***
Liq	-0.1580***
Mg	-0.1108***
Grow	0.011
Lev	-0.0186
Age	0.0925***
Tang	-0.0041
Volat	0.1713***

***, ** and * are significant at 1%, 5% and 10%.

Table 7:
Mean difference for cost of debt

	Q1	Q4	z
AD	0.1433133	0.3362591	-17.874***
Size	0.3353654	0.1605064	9.752***
Indeb	0.5536129	0.0919344	25.695***
Perf	0.1661619	0.3381364	-20.776***
Risk	0.1935315	0.3706508	-9.658***
Liq	0.3561193	0.2111116	11.504***
Mg	0.3293763	0.1934615	8.076***
Grow	0.2884815	0.250575	-0.492*
Lev	0.3330961	0.2118693	0.974**
Age	0.1686345	0.2081375	-7.812***
CG	0.2642249	0.1879587	11.104***
Big4	0.3232336	0.1843446	9.081***
Tang	0.1858942	0.2389545	-2.891***
Volat	0.1702752	0.3472415	-10.616***

***, ** and * are significant at 1%, 5% and 10%.

Table 8:
Regression analysis for cost of debt

Variables	Coefficients	z
AD	0.0015184	1.99**
Size	-0.0373885	-0.47
Indeb	-1.645035	-3.33***
Perf	0.4272765	1.11
Risk	0.6329121	2.46**
Liq	-0.0185466	-1.62
Mg	-0.0015959	-1.06
Grow	0.083422	2.32**
Lev	-0.0040491	-2.45**
Age	0.0472026	4.65***
CG	-0.0677569	-2.35**
Big4	0.0057824	0.21
Tang	0.6244295	3.11***
Volat	5.374908	2.05**
F	3.31***	
R ²	7.78	
Breusch and Pagan Lagrangian test	1443.08***	
Chow Test	29.89***	
Hausman test	110.88***	
Wald test	3.7e+07***	
VIF test	1.32	
Wooldridge test	3.145*	

***, ** and * are significant at 1%, 5% and 10%.

The results indicated that there is a positive and significant relation between longer times to disclose SFS and cost of debt, consistent with the literature (Al-Ghanem & Hegazy, 2011; Cohen & Leventis, 2013; Habib & Bhuiyan, 2011). A possible justification for this is that a greater audit delay supports the idea that there are issues in the company's SFS (Pereira & Costa, 2012). Chan, Luo and Mo (2015) suggest that longer time to disclose SFS is associated with greater risk and complexity of auditing, suggesting the need for large agreements between the audit and the management of companies to align accounting standards. In addition, they found that a greater audit delay in the present causes a resurgence of issues in SFS in subsequent years. Such aspects can be seen by banks as companies with a higher risk, justifying the positive relation with cost of debt.

Table 9:
Quantile analysis for cost of debt and AD

	Q10		Q50		Q90	
	Coefficient	t	Coefficient	t	Coefficient	T
AD	0.00011	1.97**	0.00094	7.04***	0.00137	3.67***
Size	0.00007	0.13	-0.00111	-1.4	-0.00405	-0.96
Indeb	-0.07163	-9.11***	-0.24604	-18.3***	-0.92897	-11.49***
Perf	0.23711	9.07***	0.43868	7.06***	1.17836	3.72***
Risk	0.02208	5.85***	0.13349	10.52***	0.70842	7.36***
Liq	-0.00024	-0.33	0.00224	1.74*	0.03631	3.15***
Mg	-0.00094	-1.11	0.00003	0.02	0.00116	0.13
Grow	-0.00184	-1.06	-0.00127	-0.39	0.00347	0.28
Lev	0.00059	1.95*	0.00127	3.3***	-0.00156	-1.22
Age	0.00009	1.77*	-0.00006	-0.51	0.0005	1.33
CG	-0.00379	-3.51***	0.00032	0.11	0.03496	2.45**
Big4	0.00237	1.22	-0.0071	-1.87*	-0.021	-1.42
Tang	0.01092	4.75***	0.02336	3.92***	0.11135	4.26***
Volat	0.06237	1.47	0.10586	1.17	0.91202	1.8*
Constant	0.01228	1.33	0.01995	1.59	-0.05577	-0.96

***, ** and * are significant at 1%, 5% and 10%.

In addition, banks may require frequent updates of financial information to maintain borrowed funds at a particular company, therefore failure to obtain such information in a timely manner may lead to deterioration of debt terms. This idea is in line with that observed by Osma, Gomez-Conde and Heras (2018), that is, that banks are more sensitive to a reduction in company's value than to increases, then there is a higher level of temporal financial health monitoring. Moreover, they consider that companies with more timely and informative disclosure are less likely to retain bad news relevant to creditors, and thus they are able to obtain better credit terms. This is in line with the findings of this study.

Regarding size, although the result of the regression was not significant, it is possible to observe that there are indications that larger companies have lower costs of debt. This result is consistent with the expected (Eliwa et al., 2016; García et al., 2017; Lugo, 2017; Pornupatham, 2015; Nardi & Nakao, 2009; Silva et al., 2016; Souza & Nardi, 2018), possibly due to the fact that these companies have a greater amount of assets to offer as collateral to banks when obtaining loans, managing to better negotiate costs of debt (Valle, 2007).

The results indicated that companies with a higher indebtedness have a lower cost of debt, which is in line with that found by Lugo (2017) and Nardi and Nakao (2009). One of the hypotheses to be raised is that the profitability of the company's operational activities is capable of meeting the needs for payment of debts, since the optimal debt would be defined by a lower total cost (Kayo, Teh, & Basso, 2006).

The findings pointed to a positive relation between companies' performance and cost of debt, regardless of the quantile level of cost of debt, a result contrary to that obtained by Lugo (2017) and Souza and Nardi (2018). This can be explained by the fact that companies with higher performance indexes need more resources to develop, resulting in higher costs of debt.

There was also a positive relation between risk and cost of debt, as expected by Pornupatham (2015) and Souza and Nardi (2018). Generally, banks use audited statements to analyze the company's potential suitability for operational risk before making any type of loan, in order to assess how risky the organization is. In the case of banks, for example, the riskier the company, the higher the interest charged on loans.

As for liquidity, the evidence obtained was that more liquid companies tend to have a lower cost of debt, since more liquid companies are better seen by banks, reducing cost of debt (Hopp & Leite, 1989). However, through the quantile analysis, it was observed that companies with higher costs of debt have a greater liquidity, which may be related to the fact that the payment of a debt can reduce the company's liquidity index; therefore, to increase again the liquidity index, it is necessary to get loans, which would lead to an increased cost of debt (Hopp & Leite, 1989).

Regarding the relation between cost of debt and margin, the results indicated that there is a negative relation between the variables. This can be explained by the fact that companies with higher margins have a greater credibility with creditors, that is, they avoid high costs of external financing (Silva & Brito, 2005).

On the whole, the results indicated that there is a positive relation between companies' growth and cost of debt, contrary to what was found by García et al. (2017), Gomariz and Ballesta (2014), Souza and Nardi (2018) and Silva et al. (2016). This can be explained by the fact that the company's growth trend may be related, besides other factors, to necessity of a loan to finance its activities, increasing its cost of debt. However, the mean difference test pointed to a negative relation between growth and cost of debt, which may be related to the fact that the company is in the growth phase within its life cycle (Kayo, Kimura, Martin, & Nakamura, 2006), with no need for third-party capital to be financed.

With regard to leverage, the results showed that more leveraged companies have a lower cost of debt, contrary to the literature (Eliwa et al., 2016; Nardi & Nakao, 2009). In addition, it was observed that companies

with lower costs of debt, observing the quantile division, show a greater leverage, while companies with higher costs of debt showed a negative relation with leverage. One hypothesis to be raised about this result is that there may be a momentary manipulation of data and results in more leveraged companies (Iudícibus & Lopes, 2004; Morsfield & Tan, 2006; Schipper, 1989) to obtain financing at low costs, enabling reduction in its cost of debt and no violation of contractual debt clauses (Morsfield & Tan, 2006).

Overall, the results indicated that older companies have higher costs of debt, consistent with Lugo (2017), and Nardi and Nakao (2009). Possibly, older companies tend not to be in the growth phase of their operations, requiring some investments to maintain some activities (Kayo et al., 2006; Lima et al., 2015).

With regard to corporate governance and cost of debt, the results indicated that there is a negative and significant relation between them. However, it is possible to observe that the companies with a higher mean cost of debt (Q90) have a positive relation with companies listed at these levels, which is in line with recent research that identified that the riskiest companies are listing on NDGC to try to show a greater market security (Ciftci et al., 2019), since it is implicit that processes, in Corporate Governance, are developed with a greater visibility and transparency for decision making (Bertucci, Bernardes, & Brandão, 2006).

The results also indicated that the companies audited by the Big Four have lower costs of debt, consistent with Arruda et al. (2012) and Souza and Nardi (2018), which can be explained by the fact that SFS monitored by independent auditors tend to provide more credibility, reliability and transparency in the quality of the information. With reference to the relation between cost of debt and tangibility, a positive relation was observed, consistent with Nardi and Nakao (2009) and Titman and Wessels (1988). This result can be explained by the fact that the tangibility of the assets is used in guarantees for debt contracts (Titman & Wessels, 1988; Valle, 2007), thus, the interest rates around this asset, theoretically, are not increased (Nardi & Nakao, 2009) and terms can be extended.

Finally, the tests indicated that there is a positive relation between volatility and cost of debt, consistent with the literature by Lei et al. (2017) and Nardi and Nakao (2009). Volatility measures the fluctuation of a company's cash flow; it is therefore related to the company's risk. Thus, the more volatile and riskier the company's results are, the higher its costs of debt.

5 Final Considerations

In an efficient market, investors continually seek alternatives that provide the maximum possible return with the lowest risk (Robu & Robu, 2015). Thus, it is possible to affirm that the company's accounting information has great influence on the information users' decision making. Therefore, the objective of this work was to analyze audit delay influence on the reliability of accounting information for its users, that is, to check whether there are variations in return on equity and in costs of capital according to the time it takes for SFS to be disclosed to the capital market, since any change in the reports directly affects the main capital market information users, such as investors and banking institutions. For this purpose, a sample of companies listed on B3 and CVM was used, covering from 2010 to 2017.

In general, the results indicated a positive relation between audit delay and return on equity and cost of debt. With respect to return, this positive relation may be due to the fact that managers can retain the information for some time to avoid any fluctuation in the market, or even expect that the market reaction to time to disclose the SFS has occurred in a period prior to disclosure. In addition, the relation can be explained by the fact that there is a greater revision of accounting information, resulting in higher quality results.

However, the positive results for cost of debt indicate that banking institutions may react differently from investors in the face of longer time for SFS disclosure, that is, perceiving greater risk and complexity in the audit processes, and as a consequence, company's greater risk.

The research shows the distinct reactions to the delay in disclosing SFS by the companies' main sources of funds. This result is important for companies to understand that longer time to disclose accounting information needs to be considered in view of their interest in defining their fundraising structure, in order to avoid increasing the costs of this financing. Consequently, the results also suggest that the benefit of not delaying SFS disclosure may be in terms of a reduction in the cost of fundraising by banking institutions.

In this way, the study contributes to academic research by analyzing relations not yet evidenced by national studies, although relatively addressed by international research, as well as evidencing consequences to which the company is exposed in the face of the time to disclose SFS, understanding that the negative effect happens more from the point of view of banks in relation to investors.

It is worth noting that the study should be deepened, considering the relation between cost of debt and time to disclose SFS in lagged periods. It could also focus on analyzing the possibility of interrelation between variables through the use of simultaneity analysis. Also, it could make a comparison between markets based on the common law and civil law systems, to analyze whether the fundraising behavior of these markets can present a different relation between the funding costs and the time to disclose SFS.

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