
COMPARABILITY OF FINANCIAL REPORTS: EFFECTS ON THE TRANSFER OF INFORMATION OF BRAZILIAN COMPANIES

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ABSTRACT

Comparability of financial reports can be a predictor of monitoring disclosure standards, as it is associated with information transfer efficiency. The objective of this research is to evaluate the association between the comparability of financial reports and information transfer efficiency, considering the effects of information externalities around companies' earnings announcements. The comparability of financial reports was measured through the similarity model of accounting functions; the information transfer was obtained through the abnormal trading volume of companies, employing the event study technique; and the association of comparability in information transfer was tested by regression analysis with panel data, in the period from 2012 to 2018, in 122 Brazilian companies. As results, the research showed that: (i) the transport equipment factory sector presented the highest levels of average comparability, while Utilities was the one with the highest abnormal trading volume; (ii) comparability is positively associated with market reaction around abnormal trading volume, confirming that companies' earnings announcements generate information externalities, affecting investors' reaction depending on the timing of information disclosure; and, (iii) comparability of financial reports is associated with the efficiency of information transfer when the company is an industry leader, suggesting that comparability can minimize the negative effects of externalities from earnings announcements.

Keywords: Comparability of Financial Reports. Information Transfer Efficiency. Earnings Announcement. Information Externality.

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COMPARABILIDADE DOS RELATÓRIOS FINANCEIROS: EFEITOS NA TRANSFERÊNCIA DE INFORMAÇÃO DAS COMPANHIAS BRASILEIRAS

RESUMO

A comparabilidade dos relatórios financeiros pode constituir-se como um previsor de monitoramento dos padrões de divulgação, visto que está associada à eficiência da transferência de informação. O objetivo desta pesquisa é avaliar a associação entre a comparabilidade dos relatórios financeiros e a eficiência na transferência de informação, considerando os efeitos das externalidades das informações em torno dos anúncios de resultados das companhias. A comparabilidade dos relatórios financeiros foi mensurada por meio do modelo de similaridades das funções contábeis; a transferência de informação foi obtida por meio do volume anormal de negociação das empresas, empregando-se a técnica de estudo de evento; e a associação da comparabilidade na transferência de informação foi testada pela análise de regressão com dados em painel, no período de 2012 a 2018, em 122 companhias brasileiras. Como resultados, a pesquisa mostrou que: (i) o setor fábrica de equipamentos de transporte apresentou os maiores níveis de comparabilidade média, enquanto o de Serviços de utilidade pública foi o que apresentou maior volume anormal de negociação; (ii) a comparabilidade está associada positivamente à reação do mercado em torno do volume anormal de negociação, confirmando que os anúncios de resultados das companhias geram externalidades das informações, afetando a reação dos investidores em função do tempo de divulgação das informações; e, (iii) a comparabilidade dos relatórios financeiros está associada à eficiência da transferência de informação quando a companhia é uma empresa líder do setor, sugerindo que a comparabilidade pode minimizar os efeitos negativos das externalidades dos anúncios de resultados.

Palavras-Chave: Comparabilidade dos Relatórios Financeiros. Eficiência da Transferência de Informação. Anúncio de Resultados. Externalidade das Informações.

1 INTRODUCTION

The reaction of the capital market to the informational content of the results announced by the first company in the economic sector tends to be greater when announcing the results of companies that disclose after the first (Foster, 1981). This is because the information provided by the first announcers can be used to predict the news of the firms that announce their results later (Freeman & Tse, 1992; Firth, 1996). The idea behind this, is that the company in the industry that first announces its results, it transfers information from its disclosure to the capital market that was not available before, but that now helps in the evaluation of the other companies in the industry that had not yet announced their results.

Evidence on the magnitude of information transfers is needed in the stream of research on disclosure regulation that discusses externalities (Foster, 1981). According to Pandit, Wasley, and Zach (2011), information externalities in capital markets occur when one firm's disclosure of information affects the valuation of

another firm's stock. Intuitively, information externalities (sometimes called "information transfers" on the occasion of economic events such as earnings announcements and management earnings forecasts) are more likely to occur between economically related firms, such as companies in the same industry (Yip & Young, 2012; Pandit, Wasley, & Zach, 2011).

According to Gao and Sidhu (2016), if the enhanced effects of financial reporting externalities are indeed driven by improved comparability of financial reporting after mandatory IFRS adoption, it can be inferred that by varying the degree of comparability, there will also be changes in the effects of financial reporting externalities. Gao and Sidhu (2016) investigated whether financial reporting externalities can be magnified when financial disclosures are based on a common set of accounting standards of mandatory IFRS adopters. The results suggest, that a firm's financial reports can help in making more efficient investments by other firms, as well as can be used as a benchmark to effectively monitor managers and consequently mitigate agency problems between investors and managers.

Information from companies in the same industry can be affected by similar economic forces, and greater disclosure by similar companies can have spillover effects for all companies operating in that industry (Shroff, Verdi, & Yost, 2017). In this regard, the study by Koo, Wu, and Yeung (2017), which investigated the economic factors underlying the news of companies' results released to the press, stands out. Koo, Wu, and Yeung (2017) identified that information transfers are much stronger when each economic factor is mentioned for the first time, in a given company year; and that the strength of information transfers varies according to competitiveness at the company level, within the industry, such as similar business strategies, capital market position, and level of competition.

Most studies on information transfer focus on the stock price reactions of the announcing companies, ignoring the economically significant price reactions of companies belonging to the same industry, underestimating the information content of the companies' earnings announcements (Koo, Wu, & Yeung, 2017). Thus, in the results announced by companies, may contain informational content, capable of producing effects on the behavior of investors in relation to the volume of trading of shares in the capital market. Thus, as an expression of information externalities, the transfer of information between companies evidences that information from one company is valuable to update expectations or verify information about another company (Foster, 1981; Weichao, Daoguang, & Siyi, 2018; Roychowdhury, Shroff, & Verdi, 2019).

Comparability of financial reporting stands out as a significant determinant of the usefulness of financial information in transferring reliable information between advertiser and non-advertiser firms in the same economic sector, given that when an advertiser firm releases information of its results, all other firms in the economic sector are likely to react to that disclosure (Weichao, Daoguang, & Siyi, 2018). Research suggests that firms belonging to an economic sector have more access to information compared to independent investors due to the frequency and nature of their interactions with the other firms in the same economic sector (Roychowdhury, Shroff, & Verdi, 2019).

Research on information transfer shows that information from other firms is useful, that using information has its costs, and that announcing the results of comparable firms can be used as a driver to reduce these information acquisition costs (Weichao, Daoguang, & Siyi, 2018). Thus, the motivation to check the association between financial reporting comparability, information transfer, and externalities of earnings announcements is linked to the perspective that financial reporting comparability can increase information transfer so as to increase the efficiency of monitoring the information disclosed, in a similar economic environment, across firms (Qingyuan & Lumeng, 2018).

Company size and disclosure timing can affect the content of information disclosed in annual results announcements, just as poor information content may not result in information transfer (Weichao, Daoguang, & Siyi, 2018). Furthermore, according to De Franco, Hou, and Ma (2019) companies tend to imitate the disclosure policies of other companies that are industry leaders. However, when a company discloses information about its results, all other companies in the same industry are likely to react to that disclosure. From this perspective, based on the studies presented, we sought to answer the following question: what is the association between the comparability of financial reports and information transfer, considering the effects of information externalities around earnings announcements in Brazilian companies?

Noting the research gap presented above, the objective of this research is to evaluate the association between the comparability of financial reports and the information transfer, considering the effects of information externalities around the companies' results announcements. To this end, it is adopted for this research the concept of comparability of financial reports, which has as assumption the measurement of comparability through the similarity of the accounting function, based on the companies' profit and return, according to the assumptions defined in the model of De Franco, Kothari and Verdi (2011).

The contributions of this research are related to the presentation of evidence that can corroborate the strengthening of the Brazilian capital market, by showing the investors' reaction to the companies' results announcements through the abnormal trading volume (Franco, Kothari, & Verdi, 2011; Yip & Young, 2012; Wang, 2014; Byard, Mashruwala, & Suh, 2017; Weichao, Daoguang, & Siyi, 2018). Such a perspective, projects itself, especially in an environment that still has characteristics that are not very favorable to improving the quality of the information disclosed.

Finally, comparability can decrease information asymmetry by allowing less informed investors to conduct simple, standardized, yet effective financial analyses, as the implications of comparability for informational asymmetry are more direct than those of public reporting, in general (Kim, Kraft, & Ryan, 2013). Moreover, while firms internalize the externalities of their disclosures on firms in the same economic sector, understanding their implications for investment decisions in the disclosing firm and the partner firm is a promising avenue for future research (Roychowdhury, Shroff, & Verdi, 2019).

2 LITERATURE REVIEW AND RESEARCH HYPOTHESES

According to Foster (1981) and Baginski (1987), when information

disclosed by firm i generates an unexpected revision of the stock price for firm j , an information transfer occurs. In this sense, if the information transfers implied by early advertiser disclosures are properly incorporated into the stock prices of late advertisers, there should be no predictable movements in prices when these late advertisers subsequently report their results (Thomas & Zhang, 2008). For Chen, Young and Zhuang (2013), the effects of information externalities of foreign companies of the same economic sector improve with the adoption of IFRS, regarding the investment efficiency of companies, while the increased comparability of information operates as a driver of the enhanced effect of externalities of returns on companies' assets in the post-adoption period of IFRS. In addition, comparable information from firms in the same economic sector can improve a firm's investment efficiency by helping managers make better investment decisions, and, comparable information from firms in the same economic sector enables investors to effectively evaluate and monitor firms' investment projects (Chen, Young, & Zhuang, 2013).

Improved comparability of financial reports results in better valuation performance, based on companies in the same economic sector, and improved valuation performance is a consequence of improvements in the degree of comparability of financial reports across countries (Young & Zeng, 2015). In this perspective, investors can evaluate the relevance of information efficiently and with corresponding weights to better estimate the value of a company, also considering that improving comparability reduces the cost of information processing, therefore, promotes information transfer (Weichao, Daoguang, & Siyi, 2018).

Externalities from disclosures among companies in the same industry vary temporally and occur as a function of the relative amounts of firm-specific information and information from other companies in the industry available to investors, with information from industry peers affecting information asymmetry and financing costs (Shroff, Verdi, & Yost, 2017). Additionally, they find that understanding the variable nature of economic effects (externalities) is useful in assessing the benefits of regulation through disclosure (Shroff, Verdi, & Yost, 2017), on the grounds that by reducing information acquisition costs, the uncertainties associated with performance evaluation are reduced, as it increases the overall quantity and quality of information available to external firms as well as, assess the cost benefits of their disclosures (Habib, Hasan, & Al-Hadi, 2017; Roychowdhury, Shroff, & Verdi, 2019).

For Shroff, Verdi, and Yost (2017), over time, the comparability of financial reports may increase the effect of externalities due to the greater amount of information available from firms, in addition to contributing to an increase in the adverse selection problem. Information externalities may also encourage managers to engage in opportunistic behavior; and manipulation of accounting information in disclosures may be magnified with information externalities (Weichao, Daoguang, & Siyi, 2018). Moreover, in addition to the effects generated on firm-level investments, financial reporting also generates externalities, which can exacerbate investment distortions if managers attempt to manipulate their information access advantage to meet financial reporting targets (Roychowdhury, Shroff, & Verdi, 2019).

Hoitash et al. (2018) argue that a comparability measure based on information inputs, such as accounting choices, for example, can help project ratios against firms' balance sheets. Nevertheless, the same authors argue that both *input-based* measures (*inputs*) and *output-based* measures (*outputs*) are complementary ways of measuring the comparability of financial reporting. Thus, the impact of comparability on information transfer can be analyzed with earnings announcements as a source of information, since information about companies' results represents the accounting system and plays a valuable role in investors' decision-making (Weichao, Daoguang, & Siyi, 2018).

Kim, Verdi and Yost (2020) state that disclosure externalities have *feedback* effects, considering that companies strategically disclose information with the intention of influencing other companies when it is beneficial to them. Disclosure externalities, affects, in addition to the merger process of companies, many corporate actions, such as competition in the product capital market, stock issuance, and executive compensation (Kim, Verdi, Yost, & 2020). In this perspective of the economic effects produced by the disclosure of companies, according to Weichao, Daoguang, and Siyi (2018) at least three shared economic consequences due to the comparability of companies stand out, namely: (i) the complexity of measurement restricts the development of studies, with the evidence provided being relatively indirect; (ii) the emergence of firm-level measurement has led to a continuous enrichment of studies on the economic consequences; and (iii) although the measurement of comparability at the firm level promotes the development of new research, measurement at the level of comparable companies or companies belonging to the same industry is aligned with the characteristics of the relative concept.

According to Gross and Perotti (2017), the researches follow in the perspective of the comparability of financial reports with emphasis on the companies' results, because they seek to explain the economic events that lead to the results disclosed by the companies. In this sense, in Figure 1, consisting of the synthesis of the studies, it can be seen, that the focus of research is concentrated on the economic results of comparability.

Goals	Results	Author (s)
To test whether the existence and magnitude of information transfer is associated with the announcement of company results in European Union countries	Negative surprises from announcements by firms in one country affect investors' perceptions of comparable firms that do not announce in other countries. Moreover, the shape and magnitude of cross-country effects are consistent with internal country transfers and provide evidence that effects vary across a range of firm, economic sector, and country characteristics.	Alves, Pope and Young (2011)
Analyze the effects of externalities on asset returns.	The spillover effects are significantly affected by the strength of enforcement, peer firm composition, and industry competition environments and that increased disclosure by both foreign and domestic firms in the same economic sector after IFRS adoption affects a firm's investment efficiency due to the positive externalities of regulation.	Chen, Young and Zhuang (2013)
Check whether the harmonization of accounting standards increases the comparability of financial information between European	The harmonization of accounting standards facilitates cross-border information transfer; and they suggest comparability as a direct mechanism for this. In addition, the study found that companies experience a significant increase in market reactions to the release of profits by voluntary adopters following mandatory	Wang (2014)

countries.	adoption.	
Analyze the effects of financial statement comparability on cash and cash equivalents in U.S. companies.	They concluded that a greater degree of comparability reduces the information acquisition costs and uncertainties associated with performance evaluation; and increases the overall quantity and quality of information available to outside firms, which in turn helps to alleviate the firm's constraints by external financing.	Habib, Hasan, and Al-Hadi (2017)
Analyze the comparability perceived by investors in financial reports.	The results showed that with the rule change, there was a decrease in comparability for financial analysts forecasting earnings for comparable companies.	Byard, Mashruwala, and Suh (2017)
Verify the impact of comparability of accounting information on the transfer of information in the capital market.	Increases in the comparability of financial reports can facilitate the transfer of earnings information between firms, regardless of whether the investor uses them to expect unknown information or to verify existing information, and that investors' use of comparable information reduces the market's response to information regarding the firm's earnings.	Weichao, Daoguang and Siyi (2018).
Investigate how the location of companies' headquarters affects the comparability of companies' financial statements.	The comparability of financial reports between an industry leading company and a company imitating its disclosures is greater than between two companies that tend to imitate the industry leading company or than between two companies that are industry leaders.	From Franco, Hou, and Ma (2019).

Source: Prepared by the authors

Figure 1: Summary of Studies on Comparability and Information Transfer

In the wake of the studies presented in Figure 1, it is understood that, in the context of the announcement of results of announcing and non-announcing companies, an externality of the disclosed information occurs when a company, which announces later, exhibits a reaction in the abnormal trading volume different from zero to the disclosure event of the company, which announces its results first (Foster, 1981; Firth, 1996; Thomas & Zhang, 2008; Pandit, Wasley, & Zach, 2011). According to the literature, the underlying idea to expect this effect is that the company in the economic sector that first announces its results transfers to the capital market, from its disclosure, information that was previously unavailable, but that helps in the evaluation of the other companies in the sector that have not yet announced their results (Foster, 1981; Freeman & Tse, 1992; Firth, 1996; Thomas & Zhang, 2008; Pandit, Wasley, & Zach, 2011).

Regarding the companies' disclosure time, studies evidence that a determinant of the magnitude of information transfers is the time of disclosure of a company's results in relation to the dates of disclosure of the other companies, in its economic sector (Foster, 1981; Firth, 1996; Thomas & Zhang, 2008). In this sense, when the first company announces its results, there is a transfer of information from the first announcer to the other companies, in its economic sector, in such a way that the informational content of the announcements of the results of these subsequent announcers is reduced (Foster, 1981; Firth, 1996; Thomas & Zhang, 2008).

According to Wang (2014), the capital market reactions of the non-announcing company of its results, increase with the comparability of financial statements, since accounting standards allow investors to extract more information from the announcing company's results signal, when evaluating the non-announcing company. Thus, controlling for the similarity of business

between the announcing and non-announcing companies that belong to the same economic sector, investors must decide to what extent information from similar companies is useful, and information processing involves judging the relevance of information from similar companies to the information of the analyzed company (Wang, 2014; Young & Zeng, 2015).

For Weichao, Daoguang, and Siyi (2018), when the first company announces its results, there is an information transfer from the first announcer to the other companies in its economic sector, such that the informational content of the results announcements of these subsequent announcers is reduced. In addition, over time, from the date of the companies' results announcement, the information content of the results gradually decreases, and this may occur because most of the economic sector information is already known to investors (Weichao, Daoguang, & Siyi, 2018).

Therefore, hypothesis H1 is presented as follows: An increase in abnormal trading volume around earnings announcements, experienced by a firm that subsequently discloses (non-announcing) its economic sector results, is positively associated with increased comparability of its financial reports.

The size of the announcing firm based on its market value can impact information transfer. On average, information transfers from firms that dominate the economic sector are greater relative to the other firms that do not, indicating that earnings announcements by dominant firms are signaling industry-wide information to firms that do not dominate the industry (Schoderbek, 1995). This industry-wide information includes the industry standards set by the dominant firms, such as prices and salaries of managers, the results of future investments, and investment opportunities in the other firms in the industry (Schoderbek, 1995). The results of large firms may better reflect broad economic trends and receive greater international publicity (Firth, 1996). Larger firms may be associated with more evident information transfer effects (Alves, Pope, & Young, 2011). Despite this, no research linking the size of firms, given their market value, and associating increased comparability of financial reports with information transfer, abnormal trading volume, and their earnings announcements is observed in the literature.

The process of information transfer about companies' results occurs because analysts use the surprise results of the announcing companies as an input to revise the profit forecasts of other companies that are similar but have not yet disclosed (Firth, 1996). Thus, if earnings announcements contain new insights into the expected performance of companies that do not announce, analysts of companies in the same industry can be expected to respond by updating their earnings forecasts to reflect these changes (Alves, Pope, & Young, 2011).

Desir (2012) states that when managers intervene in disclosures, there is a significant reduction in negative information transfers on their firms' stock prices, further stating that managers in more concentrated economic sectors are more likely to disclose good news following a competitor's good news. Desir (2012) investigated the disclosure patterns of firms that subsequently announce their results in response to information transfers. The results suggest that managers who announce their results later take steps to protect their firms from the bad

news of their industry peers or to mimic the good news of their peers.

The policy imitation in the disclosure of informational content occurs because managers seek to gain legitimacy and credibility to justify their decisions, based on policies of other larger companies in the economic sector, in order to defend against potential questioning in uncertain environments (De Franco, Hou, & Ma, 2019). Moreover, according to De Franco, Hou, and Ma (2019), firms tend to imitate the policies of other firms in the economic sector, especially those of other larger and more established firms among the sectors, which are considered more successful. Thus, hypothesis H2 is stated: The increase in abnormal trading volume around earnings announcements, experienced by a leading firm in its economic sector, is positively associated with increased comparability of its financial reports.

3 METHODOLOGICAL PROCEDURES

3.1 Sampling and Statistical Approach for Panel Data

The classification of sectors was based on the international standard *North American Classification System* - NAICS (level 2), which increased the amount of companies available for the study in the Brazilian context (Ribeiro et al., 2016). The data on net income, dates of the companies' results announcements, total assets, returns on shares, volume of shares traded, market value of the companies, as well as the data on the control variables were collected from the website of [B]⁹ Brazil, Bolsa, Balcão, the companies' website and the website of the Securities and Exchange Commission (CVM), the Economatica® database and the Thomson One Analytics Refinitiv® database. Moreover, the return on shares was obtained based on the common shares, and in the absence of these, the preferred shares were referred to. It is noteworthy that once the share category (common or preferred) was defined as the base, there was no change in the share over the years. This procedure was adopted to avoid distortions in the comparability of the financial reports due to the fact that the negotiation volume between preferred and common shares oscillates throughout the years.

This research was delimited by the period from 2012 to 2018, with accounting estimation of the data between the years 2008 and 2011. The choice of this cutout aimed to dissipate possible shocks caused to the returns of Brazilian companies by extraordinary events, such as the Financial Crisis of 2008 and 2009, greater use of discretionary *accruals* (Ribeiro et al., 2016). Thus, to measure the transfer of information, the abnormal trading volume of the companies is adopted, according to the time of disclosure of the results of a company in relation to the dates of disclosure of the other companies. Thus, in this study, the first company to disclose its results was considered as an announcing company (AE). It is worth noting that the effects of macroeconomic and political crises were not subject to analysis in this research. Thus, the economic crises that occurred in the period from 2012 to 2018 may be limitations to the results of this study.

For the composition of the final sample, companies with no available asset value, companies in the financial sector, and *holding companies* and stakes in other companies were excluded. Other criteria were also adopted in

the sample composition, namely: (i) it was considered as fiscal year of the companies the date of December 31; (ii) the filing dates of the results announcements available on the CVM website are adopted to differentiate the announcing companies from the companies that announce later; (iii) the dates considered for announcements were the first disclosures made by the companies, given that resubmissions, in general, are related to reasons of technical adjustments for disclosure; and, iv) exclusion of sectors with less than five companies was adopted to minimize the possible cross effects of disclosure and contagion effects (Weichao, Daoguang, & Siyi, 2018; Thomas & Zhang, 2008). In view of this, after appropriate exclusions, 122 year-firms referring to the period from 2012 to 2018 were selected, totaling 854 observations, distributed in 12 sectors, as shown in Table 1.

Table 1:

Sample Composition

SECTOR	ECONOMIC SECTOR	BUSINESS	OBS. EMP.-YEAR	PERC.
1	Agricultural production	5	35	4.10%
2	Utilities (electricity, gas and water)	33	231	27.05%
3	Building construction	12	84	9.84%
4	Food industry	8	56	6.56%
5	Textile industry	7	49	5.74%
6	Chemical Industry	9	63	7.38%
7	Primary metal industry	9	63	7.38%
8	Metal products industry	5	35	4.10%
9	Machine Industry	6	42	4.92%
10	Transport equipment factory	10	70	8.20%
11	Telecommunications	6	42	4.92%
12	Real Estate	12	84	9.84%
	TOTAL OF COMPANIES/OBSERVATIONS	122	854	100.00%

Note: OBS. COMPANY-YEAR = number of observations/companies/year. Perc. = percentage of representation of each economic sector in relation to the sample.

Source: Prepared by the authors

Data were analyzed using regression models for panel data with three approaches for regression models with panel data, namely: (i) Pooled (POLS) - panel data with combined effect; (ii) EA - panel data with random effects; and (iii) EF - panel data with fixed effects. In addition, the following procedures were performed to test the models: (i) a pooled model (POLS) was initially estimated to check the hypotheses of homogeneity [by Breusch-Pagan Test (χ^2)], specification [by Ramsey's RESET Test (F)] and multicollinearity [by examining the variance inflation factor (VIF)]; (ii) with the problems identified in the previous step, the estimation of all other Pooled (POLS), Random Effects - (EA) and Fixed Effects - (EF) models was performed, in view of the solutions to the problems; and (iii) the Breusch-Pagan LM Test was run to define among the POLS, random effects models, the Hausman Test to choose among the random effects, fixed effects models, and the Chow Test (LM model restriction test) to decide between the Pooled (POLS) and fixed effects models.

3.2 Measuring the Comparability of Financial Reports

To calculate the comparability measure, the share categories were selected (common or preferred), which presented the highest average daily trading presence in the trading session, in the analyzed period. After this first selection, to avoid the effect on return, the stock option chosen initially was maintained, since the prices of preferred and common shares may be different and cause distortions in the comparability measure (De Franco, Kothari, & Verdi, 2011; Ribeiro et al., 2016). In addition, to calculate the average comparability of the companies, the share categories (common or preferred), which presented the highest daily presence in the trading session during the study period, were selected. To measure the comparability measure, the individual accounting function of each company was estimated, based on the last four years (to calculate the 2012 data, it was necessary to obtain the data from the years 2008, 2009, 2010 and 2011), using Equation 1.

$$ROA_{it} = \alpha_i + \beta \text{Return}_{it} + \varepsilon_{it} \quad (1)$$

Where: ROA_{it} = Unconsolidated annual net income over the initial unconsolidated total assets of company i , in period t . The term annual net income used here is derived from the English term *earnings*, whose meaning is the accounting result, which may be positive or negative (Yip & Young, 2012). Thus, for the Brazilian context, we adopted the term net income, as defined from IFRS, representing the positive or negative accounting result of companies; βReturn_{it} = Average annual return of company i in period t , calculated based on the closing price, adjusted for dividends and stock splits. Thus, these indicators were calculated for each company individually, regardless of its sector and on the non-consolidated figures.

After estimating the parameters of the individual functions, the expected ROA [$E(ROA)$] of each company was projected, based on the regressions obtained. First, the company-specific ROA for the period was estimated, according to Equation 2. Next, the $E(ROA)$ of the same company was calculated, with the estimators of the other companies in the same sector, according to Equation 3.

$$E(ROA)_{iit} = \alpha_i + \beta_i \text{Return}_{it} \quad (2)$$

$$E(ROA)_{ijt} = \alpha_j + \beta_j \text{Return}_{it} \quad (3)$$

The objective of the procedures described for equations 2 and 3 was to keep the economic event constant, using the estimators of one company in the event of the other company. Thus, the comparability measure was calculated by the average distance between these two functions for each year [$E(ROA)_{iit} - E(ROA)_{ijt}$] (De Franco, Kothari, & Verdi, 2011). Also according to De Franco, Kothari and Verdi (2011), the closer these two functions are, the greater the comparability between the companies. The calculation of the average proximity of each accounting function by period (year) was performed through Equation 4.

$$\text{COMP}_{ijt} = -\frac{1}{4} \times \sum_{t=3}^t |E(ROA)_{iit} - E(ROA)_{ijt}| \quad (4)$$

Where: $COMP_{ij,t}$ = represents a measure of relative individual comparability of firm i , based on firm j ; $E(ROA_{ij,t})$ = represents the return on expected assets of firm i , based on the estimators of firm i and the return of firm i in period t ; and $E(ROA_{ij,t})$ = represents the return on expected assets of firm i , based on the estimators of firm j and the return of firm i in period t . According to De Franco, Kothari and Verdi (2011), the higher the value obtained in $COMP_{ij,t}$, the greater is the comparability between the companies, since the comparability measure (Equation 5) indicates the average distance between the functions of two isolated companies. Additionally, the mean originated in $COMP_{ij,t}$ was multiplied by -1, so that a higher value would represent that the company has higher comparability of financial reporting (Yip & Young, 2012; Ribeiro et al., 2016).

In order to obtain an individual measure of comparability of financial reports, compared to industry peers, it was necessary to calculate the average of these distances between the reference companies, according to Equation 5. Thus, for De Franco, Kothari and Verdi (2011), the closer to zero is the $COMP_{ij,t}$ measure, the higher the level of comparability of the company's individual financial reports, compared to other companies belonging to the same industry.

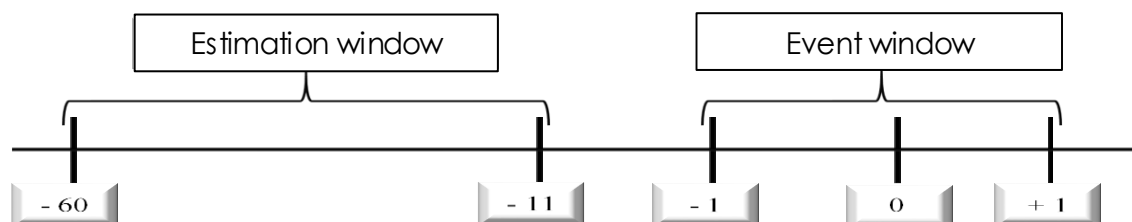
$$COMP_{i,t} = \frac{Comp_{ij,t}}{n} \quad (5)$$

Where: $COMP_{i,t}$ = Comparability measure of individual company financial reports relative to industry peers; $COMP_{ij,t}$ = Comparability measure of individual, relative financial reports of each company peer; and N = number of companies in the industry (or being compared).

3.3 Measuring Abnormal Trading Volume

According to Alves, Pope and Young (2011), unlike direct capital market-based measures such as price, trading volume provides a measure of the market's response to an announcement, and as such, is able to capture positive and negative information transfers. Trading volume also yields *insights* regarding information asymmetry and investor divergence that are of particular interest to researchers and accounting policymakers (Bamber, Barron, & Stevens, 2011), as well as being a superior measure to stock returns, especially in the context of an information transfer study based on business linkages between firms (Byard, Mashruwala, & Suh, 2017), and in light of abnormal trading volume better capture the information transferred around the content of the companies' earnings announcements, even if the company releases other reports with the earnings information (Bamber, Barron, & Stevens, 2011; Byard, Mashruwala, & Suh, 2017).

The abnormal trading volume was calculated according to the methodology adopted in the study by Reina et al. (2020) in which, first, an estimation window is established, based on 50 trade sessions, counted as of ten trade sessions that occurred before the event, so that there was no influence of the event on the estimation window. Second, the procedure was adopted for the event window. That is, if the event occurred on date 0, the event window goes from period -1 to +1 (three days), as illustrated in Figure 2.



Source: Reina et al. (2020, p. 8).

Figure 2: Estimation and Event Window

The cumulative abnormal trading volume around the announcement of the companies' results was obtained by the difference of the averages between the estimation window and the event window, having as reference for these windows the date of disclosure of the results by the companies. From these dates, the daily trading volumes were identified, based on the number of shares traded divided by the total number of outstanding shares. It should be noted that, similar methodology was adopted in the studies of Bamber, Barron and Stevens (2011), Byard, Mashruwala and Suh (2017) and Reina et al. (2020). Thus, according to Bamber, Barron and Stevens (2011), the abnormal trading volume (VOL) in the announcement period can be calculated as per Equation 6.

$$VOL_{ijt} = VNP_{ijt} - VNE_{ijt} \quad (6)$$

Where: VOL_{ijt} = represents the abnormal trading volume for firms i and j (announcing and non-announcing firms) in period t ; VNP_{ijt} = represents the average trading volume for the period in the estimation window of 50 trading sessions (as per Figure 2) over days $t - 60$ through $t - 11$; and VNE_{ijt} = indicates the average expected trading volume for firms i and j , over days $t - 1$, 0 and $t + 1$ in the three-day event window. It is noteworthy that, the choice of 50 trading sessions was established to allow other events not to interfere in the event studied, considering that the projections of the companies' results are usually released at the beginning of each year (Folster, 2018) and, the period of the event was not included in the estimation window, so as not to influence the event (Mackinlay, 1997; Mellaci, Petrokas, & Famá, 2012).

The daily trading volume, both in the estimation window and in the event window, is the sum of the number of traded shares (common and preferred), scaled by the number of shares, outstanding on the date of the earnings announcement of the firms that announce first. Thus, the smaller this percentage difference in trading volume between the estimation window and the event window of the companies, the greater the transfer of information of this company in relation to the others in the sector.

3.4 Information Transfer In Perspectives Disclosure Time And Economic Sector Leadership

Equation 7 was adopted as the initial model for measuring information transfer, based on the models of Byard, Mashruwala, and Suh (2017) and Weichao, Daoguang, and Siyi (2018), and modified to measure the hypotheses of this study. Thus, Equation 8 was modified to test the association of the influence of comparability of financial reporting on information transfer.

$$VOL_{ENA,ijt} = \beta_0 + \beta_1 DPOST_{EA,it} + \beta_2 VOL_{EA,it} + \beta_3 VOL_{EA,it} * DPOST_{EA,it} + \sum \beta_j * CONTROLES_{i,t} + \varepsilon_{i,t} \quad (7)$$

The objective of Equation 8 was to test the relationship between the following variables: (i) comparability of financial reports; (ii) abnormal trading volume; and (iii) the timing of disclosure among firms in the economic sector.

$$VOL_{ENA,ijt} = \beta_0 + \beta_1 \cdot VOL_{EA,it} + \beta_2 \cdot COMP_{Mijt} + \beta_3 \cdot DPOST_{EA,it} + \beta_4 \cdot (VOL_{EA,it} * COMP_{Mijt}) + \beta_5 \cdot (VOL_{EA,it} * DPOST_{EA,it}) + \beta_6 \cdot (COMP_{Mijt} * DPOST_{EA,it}) + \beta_7 \cdot (VOL_{EA,it} * COMP_{Mijt} * DPOST_{EA,it}) + \sum \beta_j * CONTROLES_{i,t} + \varepsilon_{i,t} \quad (8)$$

Where: $VOL_{ENA,ijt}$ = is a dependent variable representing the abnormal trading volume of firm j (non-announcer - ENA) around the results announcement in period t of firm i (announcer - EA); $VOL_{EA,it}$ = is an indicator variable of the abnormal trading volume of company i (announcer - EA) around the results announcement in period t of company i itself; $COMP_{Mijt}$ = represents the average comparability of companies i and j that disclose their results in period t; $DPOST_{EA,it}$ = is a dummy variable, indicative of the time of disclosure equal to 1 for all announcements of companies that announce first in the sector, in period t; 0, the opposite, that is, all announcements of companies that announce later; and $CONTROLS_{ijt}$.

In Equation 8, the coefficient of interest is β_7 , which evaluates the association of firms' average comparability with the information transfer of the abnormal trading volume, around the time of disclosure of the firms' advertisements (advertisers and non-advertisers). In this sense, from the interaction between $VOL_{EA,it} * COMP_{Mijt} * DPOST_{EA,it}$ (β_7) may result in a positive sign, indicating that the effect of the comparability of financial reports on the transfer of information is smaller in the company that announces its results first in relation to those that announce later, in the same sector, or it may be negative, indicating that the effect of comparability on the transfer of information is independent of the time of disclosure of the companies.

Equation 9 aims to test the relationship between the following variables: (i) comparability of financial reports; (ii) abnormal trading volume; and (iii) sector leadership of firms in their industry.

$$VOL_{ENA,ijt} = \beta_0 + \beta_1 \cdot VOL_{EA,it} + \beta_2 \cdot COMP_{Mijt} + \beta_3 \cdot DLSET_{ijt} + \beta_4 \cdot (VOL_{EA,it} * COMP_{Mijt}) + \beta_5 \cdot (VOL_{EA,it} * DLSET_{ijt}) + \beta_6 \cdot (COMP_{Mijt} * DLSET_{ijt}) + \beta_7 \cdot (VOL_{EA,it} * COMP_{Mijt} * DLSET_{ijt}) + \sum \beta_j * CONTROLS_{i,t} + \varepsilon_{i,t} \quad (9)$$

Where: $DLSET_{ijt}$ = is a dummy variable, indicating when firms i and j, in period t, are leaders in their industry. This variable equals 1 when the firm is a leader in its industry; 0 otherwise. Leadership was measured by the highest market value.

In Equation 9, the coefficient of interest is β_7 , which checks the association of firms' average comparability with the information transfer of abnormal trading volume, around firms' industry leadership. Thus, from the interaction between $VOL_{EA,it} * COMP_{Mijt} * DLSET_{ijt}$ (β_7), may result in a positive sign, indicating that the effect of the comparability of financial reports on the transfer of information is smaller in the leading firm in its sector than in the others, or it may be negative, indicating that the effect of comparability on the transfer of information is independent of the sector leadership of the firms.

3.5 Variables Used in the Research

According to Alves, Pope, and Young (2011), there is little theory to guide the most appropriate selection of control variables. In this sense, following the literature (Wang, 2014; Francis, Pinnuck, & Watanabe, 2014; Weichao, Daoguang, & Siyi, 2018; De Franco, Hou, & Ma, 2019), the following were chosen as control variables: Delay of earnings announcements (RLAG_{ijt}); Size of firms (TAM_{ijt}); Leverage of firms (ALAV_{ijt}); Absolute value of the difference in the MTB ratio (MTBDF_{ijt}); Indebtedness of firms (END_{ijt}); Type of result announced (DPRE_{ijt}); Economic sector (DSETOR_{ijt}).

Table 2 shows the variables used in this study, with their respective descriptions and forms of measurement. The variables in Chart 2 were defined according to the literature and adequate to the models and hypotheses, according to the objective of this research.

Table 2

Variables used and their form of measurement

Variables	Coef.	Description	Measuring Form	Base Search	Type
$VOL_{ENA,ijt}$	(+)/(-)	Abnormal trading volume of non-advertising companies	Scalar measure, measured using the following equation: $VOL_{ijt} = VNP_{ijt} - VNE_{ijt}$	Bamber, Barron, and Stevens (2011); Byard, Mashruwala, and Suh (2017)	Variable Dependent
$VOL_{EA,it}$	(+)/(-)	Abnormal trading volume of the advertising companies	Scalar measure, measured using the following equation: $VOL_{ijt} = VNP_{ijt} - VNE_{ijt}$	Bamber, Barron, and Stevens (2011); Byard, Mashruwala, and Suh (2017)	Variable Test
$COMPM_{ijt}$	(+)/(-)	Average comparability of companies i and j	Scalar measure, calculated according to the model by De Franco, Kothari, and Verdi (2011).	De Franco, Kothari, and Verdi (2011); Ribeiro et al. (2016); Reina et al. (2019); Reina et al. (2020)	Variable Test
$DPOST_{EA,it}$	(+)/(-)	Disclosure Time	<i>Dummy</i> = equal 1 for all advertising firms; 0, the opposite, for all non-advertising firms.	Firth (1996); Thomas and Zhang (2008); Weichao, Daoguang, and Siyi (2018)	Variable Test
$DLSET_{ijt}$	(+)	Industry-leading Companies	<i>Dummy</i> = equal 1 for all firms i and j (advertising and non-advertising firms, which are leaders in their industry; 0, the opposite.	Alves, Pope, and Young (2011); Weichao, Daoguang, and Siyi (2018)	Variable Test
$RLAG_{ijt}$	(+)/(-)	Days of delay in releasing the results announcement	Natural logarithm of the total number of days, as of January 1 of each year, plus 1.	Francis, Pinnuck, and Watanabe (2014); Weichao, Daoguang, and Siyi (2018)	Variable Control
TAM_{ijt}	(+)/(-)	Size	Natural logarithm of total assets at the end of each year.	Wang (2014), Weichao, Daoguang and Siyi (2018).	Variable Control
$ALAV_{ijt}$	(+)/(-)	Leverage	Ratio of total liabilities at the end of the year to total assets.	Wang (2014), Weichao, Daoguang and Siyi (2018).	Variable Control
$MTBDIF_{ijt}$	(+)	Absolute value <i>Market-to-Book</i> (MTB)	Absolute value of the difference in <i>book-to-market</i> (MTB) ratio between companies i and j (advertising and non-advertising companies, respectively) in the industry, around time t, measured from the ratio market value of assets / book value of equity.	Francis, Pinnuck, and Watanabe (2014); De Franco, Hou, and Ma (2019).	Variable Control
END_{ijt}	(-)	Indebtedness	Gross debt / total liabilities.	Wang (2014), Ribeiro et al. (2016); Weichao,	Variable Control

Source: Prepared by the authors

The abnormal trading volume (VOL) indicates the transfer of information that occurs around the announcement of company results. In this sense, the abnormal trading volume (VOL) was calculated for both non-announcing firms ($VOL_{ENA,ijt}$) and for announcing companies ($VOL_{EA,it}$) in all sectors. Thus, following the literature, the dependent variable is: $VOL_{ENA,ijt}$.

4 PRESENTATION AND DISCUSSION OF RESULTS

4.1 Descriptive Data Analysis

Table 3 summarizes the descriptive statistics for the main variables of this research. Thus, it can be seen that the dependent variable VOL_{ENA} had a mean value of 0.1271, a median of 0.00001, and a standard deviation of 0.1252.

According to Table 3, a high standard deviation is observed for the COMPM variable, especially when analyzing the dispersion measures of these variables.

Table 3

Descriptive statistics of the main variables used in the research

Variables	N	Average	Median	Standard Deviation	Minimum	Maximum
VOLena	854	0,1271	0,00001	0,1252	-0,2842	0,3867
VOLea	854	0,1538	0	0,1398	-0,2888	0,4240
COMPM	854	0,8172	-0,5385	19,1765	-36,4712	57,3786
TAM	854	14,8889	15,2252	1,8672	8,8156	17,7540
ALAV	854	0,7356	0,6161	0,4598	0,2176	2,1978
MTBDIF	854	1,2701	0,8512	1,3105	0,0733	5,4966
END	854	0,4998	0,5491	0,2409	0	0,8563
RLAG	854	4,2848	4,3820	0,28612	2,8903	5,7776

Source: Prepared by the authors

The economic sector of Public Utilities was the one that presented the highest transfer of information, due to its abnormal volume of negotiation in relation to the other sectors. This transfer of information may be related to the quantity of companies that are part of this sector, considering that it represents more than 27% of the companies that comprise the sample. It is worth noting that this information transfer is measured by the percentage difference of stock trading between the estimate windows and the event windows, based on the dates of the companies' announcements. The larger number of result announcements tends to produce a greater reaction in the market where these companies operate.

From Table 4, where the behavior of the variable VOLena by year is presented, it is possible to observe that, on average, the VOLena presented a small variability during the period investigated. Thus, in order to test whether these apparent differences are statistically significant, analysis of variance was performed, and the ANOVA test (Table 4) showed that there are no statistically significant differences in VOLena levels during the period investigated. This result suggests that the abnormal trading volume of firms that announce their results later is not associated, directly, with the given number of years in which the firms trade and/or operate in the market.

Table 4

Descriptive Statistics of VOLena Year

Year	N	Average	Standard Deviation	Minimum	Maximum
2012	122	0,014	0,112	-0,284	0,386
2013	122	0,005	0,124	-0,284	0,386
2014	122	-0,001	0,105	-0,284	0,386
2015	122	-0,004	0,101	-0,284	0,386
2016	122	0,307	0,136	-0,284	0,386
2017	122	0,006	0,129	-0,284	0,386
2018	122	0,037	0,155	-0,284	0,386
TOTAL	854	0,127	0,125		

Analysis of Variance (ANOVA)					
	SS	df	MS	F	Prob > F
Between groups	0,185	6	0,030	1,98	0,066
Within the groups	13,204	847	0,015		
Total	13,390	853	0,015		

Source: Prepared by the authors

Table 5 presents the behavior of the variable $VOLea$, segregated among the economic sectors investigated. The average result obtained for the variable $VOLea$, based on the companies in the sector was 0.153. With regard to the economic sectors, it was found that there are apparent differences of $VOLea$ among the different sectors.

Table 5

Descriptive Statistics of $VOLea$ by Economic Sector

Sector	N	Average	Standard Deviation	Median	Minimum	Maximum
Agricultural production	35	-0,000	0,003	-0,000	-0,000	0,000
Public Utilities	231	0,080	0,148	0,000	-0,000	0,424
Building construction	84	-0,007	0,219	-0,016	-0,288	0,424
Food industry	56	0,021	0,054	-0,000	-0,001	0,153
Textile industry	49	0,075	0,146	0,208	-0,022	0,424
Chemical Industry	63	-0,412	0,101	0,000	-0,288	0,000
Primary metal industry	63	0,000	0,000	-0,000	-0,000	0,001
Metal products industry	35	-0,084	0,148	-0,084	-0,288	0,117
Machine Industry	42	-0,008	0,034	-0,000	-0,078	0,117
Factory transport equipment	70	0,005	0,179	0,000	-0,021	0,402
Telecommunications	42	0,060	0,150	-0,000	-0,000	0,424
Real Estate	84	-0,080	0,126	-0,001	-0,288	0,001
TOTAL	854	0,153	0,139			

Analysis of Variance (ANOVA)					
	SS	Df	MS	F	Prob > F
Between groups	2,671	11	0,242	14,60	0,000
Within the groups	14,007	842	0,016		
Total	16,678	853	0,019		

Source: Prepared by the authors

To test whether the apparent differences are statistically significant, analysis of variance was performed, where the ANOVA test (Table 5) showed that there are statistically significant differences in the $VOLea$ levels among the companies according to their distribution by economic sectors. This result shows that the sector can exert influence on the abnormal trading volume among the companies that announce first. The same influence was also observed among non-advertising firms. Nevertheless, the overall average across sectors was lower among firms that advertise later, indicating that the abnormal trading volume across sectors with firms that advertise later is higher than across sectors with firms that advertise first.

4.2 Analysis of the Estimated Information Transfer Models

In order to test H_1 , the regression model was estimated according to Equation (9) with the POLS approach. Thus, the Breusch-Pagan test for heteroscedasticity ($BG = 32.73$; $P\text{-Value} < 0.000$) was performed, which allowed rejecting the hypothesis of homogeneity of the residuals, indicating that the model should be estimated considering robust standard errors regarding heteroscedasticity.

Next, the statistics of the variance inflation factor (VIF) were checked, and the average value found was 2.16, ranging from 1.15 ($VOLa * DPOST$) to 6.28 (SECTOR 2). Therefore, it is considered that there are no multicollinearity problems in this model. The RESET test of Ramsey ($F = 1.42$; $P\text{-value} < 0.2354$) indicated that the

model was correctly specified. Thus, the Chow ($F=9.61$; $P\text{-value} < 0.000$), Breusch-Pagan ($BP=0.00$; $P\text{-value} < 1.000$) and Hausman specification tests were performed and with that, the null hypotheses were accepted. This result means that the fit of the model with POLS was accepted when compared to the FE model (Fixed Effect), and to the AE model (Random Effect). Thus, the model with the Pooled Ordinary Least Squares (POLS) approach was chosen, since it was indicated as the best fit.

The results of the models with and without treatment of *outliers* are presented in Table 6 from which we observe that the variable DPOST presented a negative and non-significant relationship in the model with *outliers* and a positive and non-significant relationship in the model without *outliers*. However, the variable VOL * COMPM showed a positive and significant relationship (10%) in the model with *outliers*, while, in the model without *outliers*, a positive relationship was observed, although not significant.

Table 6

Information Transfer Model and Disclosure Time

	Dependent variable: VOLena					
	With outliers			No outliers		
	Pooled (POLS)	EA	EF	Pooled (POLS)	EA	EF
Intercept	-0,048	-0,048	-0,207	-0,051	-0,055	-0,071
VOLea	0,093***	0,093***	0,078**	0,072***	0,071***	0,063**
COMPM	0,000	0,0002	-0,0007	0,000	-0,000	-0,00005
DPOST	-0,013	-0,013	-0,026*	0,004	0,004	-0,006
VOLea*COMPM	0,003*	0,003*	0,003*	0,002	0,002	0,002
VOLa*DPOST	0,851***	0,851***	1,059***	0,879***	0,887***	1,009***
COMPM*DPOST	-0,000	-0,000	-0,000	-0,000	-0,000	-0,00009
VOLea*COMPM*DPOST	-0,003	-0,003	-0,001	-0,002	-0,002	-0,001
ALAV	0,022	0,022*	0,042	0,003	0,003	-0,003
TAM	0,001	0,001	0,005	-0,003	-0,003	-0,006
MTBDIF	-0,000	-0,000	0,001	0,001	0,001	0,002
END	0,007	0,007	0,042	0,014	0,014	0,058
RLAG	0,004	0,004	0,021	0,018	0,019	0,032
DPREJ	0,016	0,016	0,010	0,008	0,008	-0,003
2. Public utility services	-0,010	-0,010		0,004	0,004	
3. Building construction	0,006	0,006		-0,008	-0,007	
4. Food industry	-0,014	-0,014		-0,003	-0,003	
5. Textile industry	0,054**	0,054***		0,030	0,030	
6. Chemical industry	0,001	0,001		0,003	0,003	
7. Primary metal industry	0,014	0,014		0,025	0,025	
8. Metal products industry	-0,001	-0,001		-0,009	-0,008	
9. Machine industry	0,002	0,002		0,003	0,003	

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Source: Prepared by the authors

When analyzing the influence of variables on the abnormal trading volume of non-announcing firms (VOLena), with the Pooled (POLS) approach indicated by the specification tests, and with the *outliers* in the model, a positive but non-significant relationship was observed with the variables COMPM, ALAV, END, RLAG, DPREJ and the sectors of chemical industry, primary metal industry, machine industry and telecommunications. The variables VOLea and VOLea * DPOST showed, on the other hand, a positive and significant (1%) relationship. For these last variables, the results did not diverge, substantially, with the presence of *outliers*.

Another evidence observed in Table 6 refers to the positive and significant (5%) relationship between the textile industry sector and VOLena in the model with

outliers. However, in the model without *outliers*, this relationship, although also positive, is not significant. The furniture sector, on the other hand, in the model with *outliers*, presented a positive and significant relationship (10%) and, in the model without *outliers*, a positive and significant relationship (5%) was found.

The purpose of testing the hypothesis H1 was to verify whether the increase in abnormal trading volume around results announcements, experienced by a company that subsequently discloses (non-announcing) its results in the economic sector, is positively associated with an increase in the comparability of its financial reports. The results pointed out that, in general, hypothesis H1 cannot be fully confirmed, as the COMPM and DPOST variables alone did not show a significant effect on VOLena.

The interaction of the variables COMPM * VOLea as well as the interaction of the variables COMPM * DPOST were shown to be positive and significant when analyzing the model with *outliers*. This result reinforces the role of comparability of financial reports as a qualitative characteristic associated with disclosure timing. Additionally, this result shows that comparability is positively associated with market reaction around trading volume, and fills the gap proposed by Weichao, Daoguang, and Siyi (2018) regarding the positive association of comparability with the timing of firms' announcements.

In order to test H2, the regression model was estimated, according to Equation (10), with the POLS approach. The Breusch-Pagan test for heteroscedasticity was performed (BG= 49.74; P-Value < 0.000) and, with this, the hypothesis of homogeneity of the residuals was rejected, indicating that the model should be estimated considering robust standard errors regarding heteroscedasticity. The statistics of the variance inflation factor (FIV) was checked, and the average value found was 2.17, ranging from 1.21 (VOLea * COMPM) to 6.51 (SECTOR 2). Therefore, it is considered that there are no multicollinearity problems in this model. The RESET test of Ramsey (F=2.31; P-value < 0.0752) indicated that the model was correctly specified. Furthermore, the Chow (F=0.89; P-value < 0.7855), Breusch-Pagan (BP =0.00; P-value < 1.000), and Hausman specification tests were also performed, and the null hypotheses were accepted. This result means that the fit of the Ordinary Least Squares (OLS) model was accepted when compared to the FE model and the AE model. Therefore, the Ordinary Least Squares (OLS) model was chosen, since it was indicated as the best fit.

The results of the models with and without treatment of *outliers* are presented in Table 7, where we observed a negative and non-significant relationship between the variables COMPM and VOLena, and between the variables DLSET and VOLena. The variable VOLea, in turn, showed a positive and significant (1%) relationship, and the same occurred with the multiplicative variable VOLea * DLSET. However, the multiplicative variable VOLea * COMPM showed a positive relationship, but not significant. It was also observed that, for these variables, the results did not diverge substantially with the presence of *outliers*.

Table 7

Information Transfer Model and Sector Leadership

Dependent variable: VOLena						
	With outliers			No outliers		
	Pooled (POLS)	EA	EF	Pooled (POLS)	EA	EF
Intercept	-0,036	-0,036	-0,273	-0,038	-0,038	-0,236
VOLea	0,128***	0,128***	0,123***	0,087***	0,087***	0,087***
COMPMP	-0,000	-0,000	-0,000	-0,000	-0,000	-0,000
DLSET	-0,003	-0,003	-0,009	-0,004	-0,004	-0,008
VOLea*COMPMP	0,003	0,003	0,004*	0,003	0,003	0,003
VOLea*DLSET	0,485***	0,485***	0,592***	0,531***	0,531***	0,546***
COMPMP*DLSET	0,002**	0,002**	0,002**	0,001	0,001	0,000
VOLea*COMPMP*DLSET	0,010*	0,010**	0,011***	0,008	0,008	0,009
ALAV	0,024*	0,024**	0,052	0,012	0,012	0,005
TAM	-0,001	-0,001	0,009	-0,003	-0,003	0,003
MTBDIF	-0,001	-0,001	0,000	-0,001	-0,001	0,000
END	0,016	0,016	0,051	0,022	0,022	0,078*
RLAG	0,005	0,005	0,021	0,014	0,014	0,037*
DPREJ	0,015	0,015	0,010	0,007	0,007	0,002
2. Public utility services	-0,008	-0,008		0,002	0,002	
3. Building construction	0,008	0,008		-0,016	-0,016	
4. Food industry	-0,011	-0,011		-0,001	-0,001	
5. Textile industry	0,059**	0,059***		0,052**	0,052**	
6. Chemical industry	0,005	0,005		0,003	0,003	
7. Primary metal industry	0,016	0,016		0,023	0,023	
8. Metal products industry	-0,014	-0,014		-0,020	-0,020	
9. Machine industry	-0,001	-0,001		0,001	0,001	
10. Transportation Equipment Factory	0,025	0,025*		0,006	0,006	
11. Telecommunications	0,018	0,018		0,011	0,011	
12. Furniture	0,048*	0,048***		0,041*	0,042*	
NOTE	854	854	854	811	811	811
R ²	0,10		0,078	0,094		0,057
R ² adjusted	0,075	0,100	0,286	0,312	0,094	0,051
Est. F	3.574		5.513	3.411		3.153

Note: *p<0.1; **p<0.05; ***p<0.01

Source: Prepared by the authors

The interaction of the variables COMPMP * DLSET and VOLEa * COMPMP * DLSET, in the model with *outliers*, showed a positive and significant relationship (at 5% and 10% respectively), whereas, in the model without *outliers*, the multiplicative interaction of these variables are not significant.

With regard to the control variables, the textile and furniture sectors presented positive and significant relationships in the models with and without *outliers*. However, the variable ALAV presented a positive relationship, but it is significant only in the model with *outliers*. Furthermore, the result points out that, in general, the hypothesis H2 cannot be confirmed in its entirety, considering the model with *outliers*, since the variables COMPMP and DLSET did not present a significant effect on VOLena. However, the interaction of the variables COMPMP with DLSET, the interaction of the variables VOLEa with DLSET, and the interaction of the variables VOLEa * COMPMP * DLSET showed a positive and significant effect.

The positive and significant relationship between abnormal trading volume, comparability and sector leadership confirms the hypothesis that an increase in abnormal trading volume around earnings announcements experienced by a leading company in its economic sector is positively associated with an increase in the comparability of its financial reports (H2). Such a result suggests that increased comparability operates as a driver of the enhanced effects of positive

disclosure externalities in companies belonging to the same economic sector in a regulatory environment of mandatory IFRS adoption, corroborating the research findings of Chen, Young and Zhuang (2013) and Gao and Sidhu (2016). This result also helps fill the gap indicated by Weichao, Daoguang, and Siyi (2018) regarding the effect of firm size on the content of information disclosed in earnings announcements, as well as confirms the view of De Franco, Hou, and Ma (2019) in suggesting that firms tend to mimic the disclosure policies of other firms, especially those that are industry leaders.

5 CONCLUSIONS AND RECOMMENDATIONS FROM THE RESEARCH

The objective of this research was to evaluate the association between comparability of financial reports and information transfer, considering the effects of information externalities around companies' earnings announcements. The research assumption was that companies' earnings announcements generate information externalities, capable of producing reactions in investor behavior, which may be associated with comparability and information transfer. Thus, the comparability of financial reports could work as a monitoring predictor of information standards, due to its ability to minimize the negative effects of information externalities.

The results obtained showed a positive relationship between comparability and trading volume and the interaction of comparability with disclosure timing. These results show that comparability is positively associated with market reaction, around trading volume, and responds to the gap identified by Weichao, Daoguang and Siyi (2018), suggesting as a conclusion, that companies' earnings announcements generate information externalities, in view of the informational content they contain, capable of producing reactions in investors, depending on the time of disclosure of companies and the comparability of financial reports.

The positive and significant relationship identified between abnormal trading volume, comparability and sector leadership confirms De Franco, Hou and Ma's (2019) view that firms tend to mimic the disclosure policies of their peers. This result also allows for the conclusion that increased comparability operates as a driver of enhanced effects of externalities in the economic sector, corroborating the research findings of Chen, Young, and Zhuang (2013) and Gao and Sidhu (2016). From these results, it can be concluded that comparability of financial reports is associated with information transfer when the firm announcing its results is an industry-leading firm, confirming the thesis that comparability of financial reports can assist in monitoring disclosure standards by minimizing the negative effects of externalities from results announcements.

Another conclusion of the study is related to the timing of companies' disclosures and their ability to produce information externalities among companies in the capital market, as a function of transferring information between companies that announce first and those that announce later. In this sense, the study provided evidence that these economic effects, generated as disclosure externalities, are even greater as companies are market leaders in their economic sector, and that there is a tendency for imitation in disclosures between companies that announce first and those that announce later.

The results of this study should be analyzed with caution, given some limitations related to the characteristics of this research. The main limitation refers to the efficiency of the Brazilian market in responding to company announcements. Even if we adopt the companies' abnormal trading volume to measure information transfer, and even if the Brazilian companies are operating under the same set of standards (IFRS), the results of this research need to be analyzed in the context of the sample companies. Under this reasoning, future research could verify the behavior of the variables of this study in countries whose capital market maturity and longer period of exposure to the same set of standards exceed the experience of the Brazilian capital market.

Another limitation, refers to the effects of macroeconomic and political crises that were not the object of analysis in this research. Thus, the economic crises that occurred in the period from 2012 to 2018 in the Brazilian context may have influenced the results of this study. Thus, future research could analyze such variables to capture these macroeconomic and political effects.

Finally, it is highlighted as a limitation of the study the way of measuring the comparability of the financial reports, which adopted as a basis the model of De Franco, Kothari and Verdi (2011), which has as assumption the comparability measurement through the similarity of the accounting function, based on the companies' profit and return. Thus, it is noteworthy that the results of the study do not refer to the measurement of the comparability of financial reports in a general and broad way in the sense of contemplating all the qualitative characteristics of the accounting information regarding comparability. Thus, future research could present evidence regarding the measurement of the comparability of reports by adding other variables and/or models that broaden the perspective of measurement based on ROA and return variables.

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