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## DOES THE PRESS RELEASE DISCLOSURE REDUCE INFORMATIONAL ASYMMETRY IN THE PRESENCE OF INSIDER TRADING?

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### Resumo/Abstract

This paper aims to investigate whether press releases contain relevant information to investors and hence generate significant abnormal returns in insider trading activities. Therefore, this study tests whether the abnormal returns generated by insider trading transactions days before and days after the disclosure of the press release significantly explain the companies' abnormal annual or long-term returns. The press release is a mandatory disclosure for Brazilian companies with high corporate governance (listing segment Novo Mercado in Brazilian Stock Exchange, B3 – Bolsa Brasil Balcão) and voluntary for low or medium governance firms (other listing segments). An event study was applied at different time windows around the press release disclosure date. The outcomes show that abnormal returns obtained by insider trading around the disclosure of press release positively affect annual abnormal returns only for firms with high governance. In contrast, for low governance firms, the abnormal insider trading returns generated around the disclosure of press release do not explain the long-term abnormal returns of firms. These findings indicate that the disclosure of the press release by low governance companies reduces informational asymmetry costs between investors and companies. This work contributes to the literature on corporate governance, press releases, and informational costs of asymmetry, providing useful insights for regulators and investors.

### Modalidade/Type

Artigo Científico / Scientific Paper

### Área Temática/Research Area

Contabilidade Financeira e Finanças (CFF) / Financial Accounting and Finance

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### ABSTRACT

This paper aims to investigate whether press releases contain relevant information to investors and hence generate significant abnormal returns in insider trading activities. Therefore, this study tests whether the abnormal returns generated by insider trading transactions days before and days after the disclosure of the press release significantly explain the companies' abnormal annual or long-term returns. The press release is a mandatory disclosure for Brazilian companies with high corporate governance (listing segment Novo Mercado in Brazilian Stock Exchange, B3 – *Bolsa Brasil Balcão*) and voluntary for low or medium governance firms (other listing segments). An event study was applied at different time windows around the press release disclosure date. The outcomes show that abnormal returns obtained by insider trading around the disclosure of press release positively affect annual abnormal returns only for firms with high governance. In contrast, for low governance firms, the abnormal insider trading returns generated around the disclosure of press release do not explain the long-term abnormal returns of firms. These findings indicate that the disclosure of the press release by low governance companies reduces informational asymmetry costs between investors and companies. This work contributes to the literature on corporate governance, press releases, and informational costs of asymmetry, providing useful insights for regulators and investors.

**Keywords:** Press Release; Insider; Abnormal Return.

### 1 Introdução

Insiders condition their trades on prior knowledge of relevant information affecting stock prices (Huddart & Ke, B., 2007). There is evidence that half of stock sales made by insiders occur on dates close to closed meetings between investors and analysts (Bowen, Dutta, Tang, & Zhu, 2018). Studies also report that prior availability of privileged corporate information is related to the presence of abnormal returns and/or volume for different types of news such as mergers and acquisitions (Cheng, Li, & Tong, 2016), change in capital structure (Bonaimé & Ryngaert, 2013) and financial results (Korczak, Korczak, & Lasfer, 2010).

In addition to the importance of the informational content of conference calls (Brown, Hillegeist, & Lo, 2004; Moreira, Ramos, Kozak-Rogo, & Rogo, 2016), disclosure of earnings statements (Basu, Duong, Markov, & Tan, 2013) and meetings with investors (Bushee, Jung, & Miller, 2017; Bowen et al., 2018), some evidence suggests that information contained in the press release can be anticipated by insiders in their movements (Noe, 1999; Korczak et al., 2010). Morris and Boubacar (2018) point out that insiders who buy a company's shares in the period prior to the release of the press release achieve an abnormal return when compared to those who buy shares in the period in which there is no release of such document.

In Brazil, the press release is a document for disclosing economic, financial and operational data, whose rules, including the format for preparation, are not standardized by the Brazilian Securities Commission - CVM. This document is part of the mandatory disclosure package for companies listed in the Novo Mercado segment, as provided for in Article 27 of the Novo Mercado Regulation, *Bolsa Brasil Balcão [B3]* (2017). This segment was launched in 2000 establishing a high standard of differentiated governance by requiring companies to adopt a set of corporate rules, disclosure of policies and structures for inspection and control. The mandatory disclosure of the press release for companies listed on the Novo Mercado does not prevent companies listed on the other segments of the *Bolsa Brasil Balcão - B3* from treating it as voluntary disclosure.

This paper aims to analyze whether the abnormal returns obtained by insider trading

activities around the release of the press release explain the long-term abnormal returns of companies with different levels of governance. If the abnormal returns generated by insiders around the release of the press release do not explain the firm's annual or long-term abnormal returns, this signals that the press release reduces informational asymmetry costs between firm and investors. The hypothesis is that the reduction of information asymmetry costs happens in probability only for companies with low governance, since the press release is an additional mechanism that can discipline the use of privileged information in a market in which the blackout period does not is strongly restrictive. In the American market, the press release has become the predominant tool for disseminating corporate news since the adoption of the Regulation Fair Disclosure (Reg FD) in October 2000 and the Sarbanes-Oxley Act (SOX) in July 2002 (Neuhierl, Scherbina & Schiusene 2013).

The results of this research show that abnormal returns obtained by insider trading activities around the release of the press release have a positive effect on annual abnormal returns (long-term) only for firms with high corporate governance. These findings suggest that insiders are able to anticipate new information contained in press releases released by high governance firms. Thus, the transactional gains obtained by insiders around the release of the press release significantly explain the long-term abnormal returns of firms in the Novo Mercado segment of B3.

In contrast, for low governance firms, the abnormal returns generated by insider trading activities around the release of the press release do not explain these firms' abnormal annual or long-term returns. These findings show that press release disclosure by low governance companies reduces informational asymmetry costs between investors and companies, in order to inhibit the anticipation of new information present in press releases.

For a sample of companies traded on B3 between 2010 and 2019, an event study was carried out, applied in different time windows close to the release dates of the press releases.

The Ball and Shivakumar (2018) model was used as a research design reference to estimate the effects of the abnormal return of the window (short term) on the abnormal annual return (long term). The results were generated through panel estimators with fixed effect per company, for the complete sample and for the one selected via nearest neighbor matching. For both samples, the results remain the same qualitatively.

Morris and Boubacar (2018) analyzed whether stock purchases made by individual insiders within a 30-day window prior to the publication of a press release result in significant abnormal returns. The study sample consists of 48 companies that make up the Toronto Stock Exchange 60 Index, in which 3,193 insider purchases were identified, 540 of which followed by press release publication and 2,653 that occur without the document being subsequently published. This research adds to the work of Morris and Boubacar (2018) by testing whether the abnormal returns generated by insider trading transactions days before and days after the press release significantly explain these companies' annual or long-term abnormal returns. The design adapted from Ball and Shivakumar (2018) in this research allows us to assess whether insider trading activities continuously or persistently affect (long-term returns) the long-term abnormal returns of Brazilian firms, and also allows us to compare effects between Brazilian firms with high and low corporate governance in Brazil.

Other surveys addressed the impact of forms of disclosure other than press releases on the Brazilian stock market. Rodrigues and Galdi (2017) explain that there is sharing of operational data (sales volume, production capacity, among others) in closed meetings with third parties, whose disclosure is not required by regulatory bodies in Brazil. Additionally, they conclude that the dissemination of financial information is the activity that most contributes to the reduction of informational asymmetry. Martins, Paulo and Girão (2016) conclude that the share price is positively impacted by news on the company's website and notices to the market, and negatively affected by material facts and forms required by CVM Instruction 358.

This work has implications for regulatory bodies and the stock exchange in Brazil as it indicates the need to reformulate the regulations on the preparation and dissemination of press releases. Companies that must or choose to publish such a document do so based on the format and informational content defined by the company itself, as there is no standard model defining minimum content standardized by B3. The definition could include chapters and/or other standard information that would be useful to stakeholders and that would avoid informational bias caused by Management's influence on the disclosed news.

From the perspective of insider operations, there is a need to define a more restrictive blackout period, whose rules prevent insiders from trading on dates close to the release of corporate news (for example, in the last 30 days of each quarter). During this period, it is highly likely that the insider already has a vision of the company's operational, economic and financial performance, which puts them at an advantage in relation to the market in general. Such more restrictive rules could be considered in the reformulation, by CVM together with B3, of the Individual Investment Plan provided for in ICVM 358.

This study is organized as follows: Chapter 2 reviews the literature on the subject, aiming to support the tested hypotheses; Chapter 3 deals with the methodology, describing the steps of data collection, data processing and statistical modeling; Chapter 4 presents the results and their implications for the literature; and, in the last section, the final considerations of the work are presented, with suggestions for further research.

## **2 Background and Hypothesis Development**

### **2.1 Insider trading before the disclosure of corporate news**

Insider trading is any transaction involving securities and that has been carried out for their own benefit by a person who holds the information not shared with other shareholders (Fidrmuc, Goergen, & Renneboog, 2006). In general, capital market regulations require insiders to disclose transactions after they are completed (Fishman & Hagerty, 1995).

In the United States, insider trading is currently regulated by the Securities Exchange Commission (SEC) through Regulation FD (Fair Disclosure), in force since October 23, 2000. The agency understands that the prohibition of privileged information in the securities market plays an essential role in maintaining fairness, health and market integrity. The SEC defines that illegal use of inside information, which is generally related to the purchase or sale of a security, is in breach of a fiduciary duty or other trust. As the use of inside information undermines investor confidence, the regulator has treated detection and prosecution as a priority.

In order to prevent the existence of insider trading, the SEC adopts the blackout period, defined as the 60-day period in which an employee cannot change his/her retirement or investment plan that contains the company's securities. With the objective of prohibiting trading of securities by directors, executives, some employees and related companies during the blackout period, the body defines the prohibition of trading in the period of 15 days prior to the quarterly closing until the second day after the disclosure of the results. The blackout period can also be linked to other corporate events, such as a merger and acquisition announcement, and can last anywhere from 3 to 60 days. The SEC requires companies to report transactions made by their insiders, using a Form 4 report, within two business days of the transaction date.

Studies show that insiders achieve abnormal returns when operating before the publication of corporate news, by deciding to buy (sell) based on favorable (unfavorable) information that is not in the public domain (Jabbaur, Jalilvand, & Switzer, 2000; King, 2009; Aier, 2013).

The impact of providing inside information before the disclosure of corporate results was studied by Bowen et al. (2018). The study addressed the informational content of 17,631 minutes of closed meetings between insiders, investors and analysts of 1,316 companies listed

on the Shenzhen Stock Exchange, in China. The results suggest that such meetings remain highly informative and that insiders trade opportunistically before and after these private meetings.

Other research also points out that insiders may choose to carry out their stock transactions around events that are value-relevant, such as the press release, in order to further leverage their internal positions (Morris & Boubacar, 2018). For example, Aier (2013) found evidence that insiders reduce their long positions before a loss announcement is released.

Insider actions and the existence of abnormal returns (AR) are summarized for different types of news, as shown in Table 1:

**Table 1: Insider's Abnormal Return – Per Type of News**

| Type of news                | Authors  | Findings   |
|-----------------------------|--|--|
| Change of legislation       | Griffin et al. (2004)                            | AR of 2.96% in the range from D-1 to D+1 and 5.48% in the range from D-2 to D+2 to a 79 asset sample.                          |
|                             | Davis et al. (2017)                              | Litigation generated by class actions and the announcement of settlements impact the share price and generate AR for insiders. |
| Merge and acquisitions      | Cheng et al. (2016)                              | Informational asymmetry is positively correlated with AR within the 5-day window of the announcement date.                     |
|                             | Jabbour et al. (2000)                            | AR before M&A is due to insider trading.   |
|                             | King (2009)                                      | Strong turnover before mergers and acquisitions announcements, suggesting insider deals.                                       |
| Project performance         | Sood e Tellis (2009)                             | Disclosures about new activities such as development and commercialization of innovative projects are associated with AR.      |
|                             | Chen e Wang (2013)                               | Market reacts slowly to project announcements and, in this case, insider AR is identified for a longer period.                 |
| Financial results           | Korczak el al. (2010)                            | Profit announcement strongly affects price and leads to an AR of 5.9% for good news and -7.6% for bad news.                    |
|                             | Huddart e Ke (2007)                              | Company members refrain from trading in short windows before results are released.   |
| Change in capital structure | Louis et al. (2010)<br>Bonaimé e Ryngaert (2013) | Abnormal sales volume made by insiders during the quarter in which fixed price shares are offered.                             |
|                             | Karpoff e Lee (1991)                             | Increase in share sale transactions prior to announcement of issuance of common shares and convertible debt.                   |
| Change in top management    | Korczak et al. (2010)                            | Insiders benefit from bad news releases associated with board changes.   |
|                             | Morris e Boubacar (2018)                         | Positive correlation between purchases made by insiders and changes in the executive board or board of directors.              |

Source: Survey data.

## 2.2 Disclosure of financial results through press release

The press release is characterized as a disclosure mechanism that reveals an "information package" for investors (Francis et al., 2002). This is the main document of the earnings release season for many companies, as well as for investors, analysts, the press and the market (Mahoney & Lewis 2004). Also according to the authors, the press release can be used to disseminate different types of news, such as impact resulting from new legislation, announcement of merger and acquisition, project scenario, change in capital structure, change in executive staff, sale of assets and financial results.

In the North American market, the SEC 8-K form was used by companies until September 2000 to disclose relevant information to the market. However, the rule in force at the time allowed the form to be sent within 4 days after the event took place and, consequently, it reached investors with an additional delay. During this period, a subset of market participants, mainly analysts and investment funds, could benefit from selective disclosure of information and this knowledge would have already been, even partially, incorporated into share prices at the time of official disclosure to the public (Neuhierl et al., 2013).

After the adoption of Reg FD in October 2000 and SOX in July 2002, press release

became a predominant method of communicating new news (Neuhierl et al., 2013). The SEC Regulation Reg FD requires publicly traded companies to disclose all private information that may impact their market values and to report changes in their financial condition or transactions in a timely manner and simultaneously to all market participants.

The use of press releases to disclose financial results is highlighted by Korczak et al. (2010). According to the author, in the North American market, earnings announcements affect stock prices more strongly and trigger an average abnormal return of 5.9% for good news and -7.6% for bad news. Several studies predate these results and demonstrate that markets react positively to earnings-raising announcements and negatively to lower earnings announcements (Ball & Brown, 1968; Chari, Jagannathan, & Ofer, 1988; Easton & Zmijewski, 1989; Gennotte & Truemann, 1996).

Neuhierl et al. 2013 demonstrates that press releases remove the informational advantage of the company's insiders, as evidenced by nearly universal reductions in buy and sell spreads in the post-announcement period. If corporate members have prior knowledge of the information to be disclosed, adverse selection in trade will decrease in the post-announcement period and trading costs will also decrease, following the models of Glosten and Milgrom (1985) and Kyle (1985). If, instead, a group of insiders has an advantage in interpreting the news, adverse selection will be greater in the post-announcement period and trading costs will increase (Kim & Verrecchia, 1994).

### **2.3 Insider regulations and press release disclosure in brazil**

In Brazil, the first regulation of the insider practice emerged in the mid-1960s. Law No. 4,728, which was enacted on July 14, 1965, assigned the Central Bank the obligation to inspect privileged information, which is currently regulated by the civil code, by Laws 6,385/76 and 11,638/07 (Law of Corporations), by the penal code and, also, by CVM, the body responsible for supervising this practice.

In order to inspect, regulate, discipline and develop the securities market in Brazil, CVM seeks to minimize informational asymmetry by issuing norms and intensifying inspection processes. In January 2002 this body issued Instruction n. 358 which provides for:

The disclosure and use of information on a material act or fact relating to publicly-held companies, disciplines the disclosure of information in the trading of securities and in the acquisition of a significant lot of shares issued by the publicly-held company, establishes prohibitions and conditions for the trading of shares of publicly-held company pending a material fact not disclosed to the market.

In its 8th article, Instruction n. 358 defines the insider's duty to keep confidential information that has not been disclosed to the market:

Article 8 - It is incumbent upon the controlling shareholders, directors, members of the board of directors, the fiscal council and any bodies with technical or advisory functions, created by statutory provision, and employees of the company, to keep confidential information relating to the minutes or material fact to which they have privileged access due to the position or position they occupy, until its disclosure to the market, as well as ensuring that subordinates and third parties they trust also do so, responding jointly with them in the event of non-compliance.

A topic that deserves to be studied is the prohibition of securities trading in the absence of disclosure to the market of relevant corporate information. In case any individual described in article 8 of instruction n. 358 conducts trading in the company's securities, the latter is required to report personal and transaction data to the investor relations officer, within the following deadlines: (i) within five days after the transaction with securities and/or (ii) on the first business day after taking office or when the company submits documents for the IPO process. The company, represented by the aforementioned officer, must report this information to the CVM by the 10th day of the month following the month in which the transaction took place. The agency makes them available in the electronic system of Periodic and Occasional Information (IPE), which was one of the sources of information for this research.

To regulate insider transactions, the CVM prohibits trading by these agents before the

disclosure of a material act or fact to the market, including the press release, without defining a blackout period. This quiet period is 15 days in the case of quarterly (ITR) and annual (DFP) disclosures. However, the prohibition linked to the period prior to the disclosure to the market of a material act or fact is not applicable if the insider establishes the Individual Investment Plan in shares of the company that includes: (i) formalization in writing to the investor relations officer, (ii) the dates and amounts or quantity of securities and (iii) a minimum period of 6 months for the duration of the plan.

In recent cases of insider activity, the entity's Term of Commitment Committee issued a favorable opinion on the punishment of Ser Educacional S/A's CEO and investor relations officer, through the payment of a fine in the amount of R\$ 150,000 and R\$100 thousand, respectively. The cause of the punishment was the act of trading shares issued by the Company within 15 days prior to the disclosure of a Material Fact, in possible violation of article 13 of CVM Instruction No. 358/02. In another case on December 17, 2019, the CVM board refused to report the occurrence of insider trading, filed by the Superintendence of Market Relations and Intermediaries, against the company Saraiva S/A.

With regard to disclosure practices, it is known that corporate disclosure brings benefits such as a reduction in the cost of capital and greater liquidity to the capital market (Lopes & Alencar, 2010). Faced with voluntary or mandatory disclosure practices, authors such as Healy and Palepu (2001) and Verrechia (2007) already highlighted that the voluntary disclosure of corporate news is a behavior that contributes to the reduction of informational asymmetry. This contribution opens an opportunity for this research to analyze how the act of releasing press releases by companies with high and low corporate governance impacts the abnormal return on the disclosure window and the abnormal annual return on the share.

B3's five segments - Basic, Bovespa Mais, Level 1, Level 2 and Novo Mercado - have different disclosure requirements that must be followed by listed companies. Table 2 presents the disclosure requirements of the Novo Mercado segment, considered of the highest quality in corporate governance. Table 3 shows the information disclosure requirements for the other segments:

**Table 2: Disclosure requirements – New Market**

| <b>Mandatory Disclosure</b>                                  | <b>Contents</b>   |
|--|---|
| Financial Statements   | According to Law No. 11,638, of December 28, 2007.  |
| Information in English simultaneous disclosure in Portuguese | Relevant facts<br>- Information on earnings (notice to shareholders or notice to the market).<br>- Results press release.   |
| Annual public meeting  | Carry out, within 5 business days after the disclosure of quarterly results or financial statements, a public presentation (in person, via teleconference, videoconference or any other means that allows remote participation) of the information disclosed.   |
| Corporate Events Calendar                                    | Mandatory disclosure  |
| Additional disclosure of information                         | Policies of (i) remuneration; (ii) appointment of members of the Board of Directors, its advisory committees and statutory board; (iii) risk management; (iv) transaction with related parties; and (v) trading of securities, with minimal content.<br><br>Disclosure (i) annual summary report of the statutory audit committee covering the points indicated in the regulation; or (ii) quarterly minutes of the Board of Directors' meeting, informing the report of the non-statutory audit committee. |

Source: B3 (2021).

**Table 3: Disclosure requirements – Other Segments**

| Mandatory Disclosure   | Content per segment       |  |                          |          |
|--|---------------------------|--|--------------------------|----------|
|  | Bovespa Mais              | Level 2  | Level 1                  | Basic    |
| Financial Statements   | According to legislation  | Translated into English                                    | According to legislation |          |
| Information in English simultaneous disclosure in Portuguese | No specific rule          | There is no specific rule other than financial statements. | No specific rule         |          |
| Annual public meeting  | Optional                  | Mandatory in-person  |                          | Optional |
| Corporate Events Calendar                                    | Mandatory                 | Mandatory  |                          | Optional |
| Additional Disclosure of Information                         | Securities Trading Policy | Securities Trading Policy and Code of Conduct              |                          | No rule  |

Source: B3 (2021).

Thus, this study raised the following research hypotheses:

**H1: The abnormal returns generated by insider trading activities around the release of the press release explain the long-term abnormal returns only for high governance firms.**

**H2: The abnormal returns generated by insider trading activities around the release of the press release do not significantly explain the long-term abnormal returns of low governance firms.**

The hypotheses are supported by the findings that the company seeks to reduce the agency cost through the implementation of information monitoring activities, corporate governance practices and voluntary disclosures (Fama & Jensen, 1983). In other words, a better level of corporate governance creates a quality and timely accounting information environment (Baioco & Almeida, 2017) and reduces the incidence of profit in insider transactions (Ravina & Sapienza, 2010; Fidrmuc et al., 2016).

In this context, the decision to disclose information, even in a corporate governance environment inferior to that existing in the Novo Mercado segment, demonstrates a trait of Management's profile by establishing a commitment to stakeholders, and not just a formal and mandatory disclosure act. It is expected that such an act inhibits the insider's performance, since it is inserted in an environment in which Management has a genuine commitment to disclosure.

### 3 Methodology

#### 3.1 Research structure

The sample includes secondary data released by companies listed on B3 in the period between the first quarter of 2010 and the last quarter of 2019. Such data were extracted from the IPE - CVM Periodic and Eventual Information Submission System and from the Economatica® software.

An automated data collection process was used - robotic process automation - developed for this study through the Python programming language, which made it possible to collect in the IPE system the press release dates of all companies that filed in the period, as well as all the following forms that were available for the period analyzed: (i) Individual Trading of Securities by the company itself, its subsidiaries and affiliates - Art.11 of CVM Instruction No. 358 and (ii) Consolidated - Trading by Administrators and Related Persons - Art .11 of CVM Instruction No. 358. These forms present all transactions made by insiders that must be reported to the company's investor relations officer and who, subsequently, send them to the CVM.

The information needed to compose the model's accounting and financial variables were obtained from Economatica®, such as: total assets, shareholders' equity, gross debt, earnings, earnings per share, dividends per share (Morris & Boubacar, 2018), in addition to daily historical series of the volume traded and the closing price of the shares.

The Panel 1 summarizes the process of selection and treatment of the sample extracted from IPE and Economatica®.

**PANEL 1 – SAMPLE SELECTION PROCESS**

| Treatment process (in number of data) | Exclusion | Subtotal |
|---------------------------------------|-----------|----------|
| Number of data from Economatica®      |           | 5.220    |
| Exclusions:                           |           |          |
| Financial sector companies            | 540       | 4.680    |
| Companies without sector information  | 11        | 4.669    |
| Companies with missing data           | 3.449     | 1.220    |
| Total of data                         |           | 1.220    |

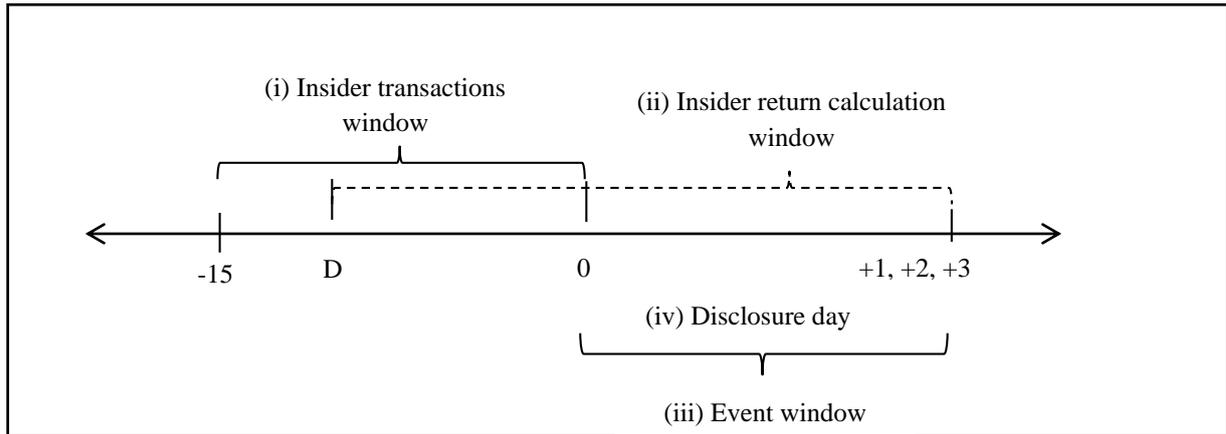
Source: Survey Data.

### 3.2 Event study

The event study methodology was used to identify how the abnormal annual return is impacted by the abnormal return of the press release disclosure window in companies with low and high governance that have insider transactions. By consulting data from two forms provided for in ICVM No. 358 that were used in the research database, all insider transactions that occurred in the 15-day period prior to the release of the press release were collected. The information collected were: company, transaction date, volume and price transacted.

Furthermore, the sizes of the windows for calculating the abnormal return were defined as being 1, 2 or 3 days after the press release date, whether it comes from companies with low or high governance. The release date of the press release is defined by each company, which usually occurs before the release of the Quarterly Information (ITR), whose period regulated by the CVM is 45 days after the end of the quarter. In the case of information related to the fourth quarter and the fiscal year, the disclosure required by the body is the Standardized Financial Statement (DPF), whose submission deadline is 90 days after the end of the fiscal year. Thus, the objective was to identify how the level of governance associated with the act of publishing the press release inhibits the insider from benefiting from the share price movement by having bought or sold the asset at a time when only he knew the corporate news that, later, was disclosed to the market.

Considering that Brazilian law allows the disclosure of insider transactions to be informed to the CVM by the tenth day of the month following the one in which the transaction took place, this study considered the transaction date as a reference for calculating the abnormal return of the press release disclosure, as used by Morris and Boubacar (2018). The transaction date is the date when the insider buys or sells the company's securities. This approach is different from that adopted by Fidrmuc et al. (2006), who used the date of declaration to the regulatory body. If this methodology were applied, we could find a declaration date later than the press release date, which would make it impossible to examine the insider's behavior ex ante to the disclosure of the information.



**Fig. 1. Event Study Timeline**

Source: Survey Data.

Notes:

- (i) Insider Transactions Window - 15-day period prior to the release of the press release in which insider transactions were identified and considered in the abnormal return calculation
- (ii) Insider return calculation window (D+1, +2, +3) – period between the date of purchase or sale of the stock by the insider and +1, +2, or +3 days after the press release disclosure.
- (iii) Event window (0,+1, +3 +5) represents the period in which the press release content is expected to impact the share price.
- (iv) Disclosure day – date on which the press release became available on the CVM website;

Fig. 1 illustrates the timeline composed of (i) insider transaction window, (ii) insider return calculation window, (iii) event window and (iv) day of press release disclosure.

### 3.3 Calculations of accumulated abnormal returns

Abnormal returns were calculated using the market-adjusted statistical model commonly applied in event studies (Brown & Warner, 1980). First, the daily abnormal return (AR) was calculated for each of the assets, separately, of companies that presented a press release on the release date, without considering, in this first calculation, the presence of insiders and their purchase or sale of shares, as shown in Figure 1. The press release return calculation window was the base period to identify the extent of daily return calculation. The calculation is shown as follows:

$$RA_{i,t} = R_{i,t} - R_{m,t} \quad (1)$$

wherein:

$RA_{i,t}$  = abnormal return of share i in date t;

$R_{i,t}$  = return of share i on date t

$R_{m,t}$  = market average return on date t

The return of share i on date t was calculated for all shares of companies listed on B3 from January 2010 to December 2019, where P is the share's closing price on date t.

$$R_{it} = \ln \left( \frac{P_t}{P_{t-1}} \right) \quad (2)$$

The calculation of the average market return (RM) was calculated using the Market Value - Weight Return method, the result of the sum of the market portfolio return weighted by the respective weight ( $W_i$ ) in Reais (R\$) on the total market value in Reais, on date t (De Araújo, Dos Santos Rodrigues, Monte-Mor & Correia, 2018).

$$RM_t = \sum_{t-1}^t R_{it} \cdot W_{it} \quad (3)$$

In order to calculate the standardized abnormal return coefficient, the excess return of the stock is divided by its standard deviation. This result is called Standardized Abnormal Return (McWilliams & Siegel, 1997), as follows:

$$SAR = \left( \frac{AR_{it}}{\sigma_{it}} \right) \quad (4)$$

Finally, in order to know the insider's abnormal return accumulated in the calculation window, the cumulative abnormal return (CAR) is calculated as shown below. In this work, the annual CAR was calculated as well as the CAR of the PR Disclosure Window, following the models described above.

$$CAR_{it} = \sum_{t-1}^t SAR_{it} \quad (5)$$

### 3.4 Model

The research design adapted from Ball and Shivakumar's (2018) regression model, which studies the impact of returns around earnings disclosure on the firm's annual or long-term return. Those authors compare the R<sup>2</sup> of different regression models in order to seek evidence of the informational relevance that earnings announcements have on firms' long-term returns.

The original model developed by Ball and Shivakumar (2018) is as follows:

$$R_i (\text{annual}) = a_0 + a_1 R_i (\text{window1}) + a_2 R_i (\text{window2}) + a_3 R_i (\text{window3}) + a_4 R_i (\text{window4}) + \varepsilon_i$$

Equation (6), described below, was adapted from the model by Ball and Shivakumar (2018). Unlike what was idealized by those authors, that is, analyzing the R<sup>2</sup> through different types of news, this research aims to test whether the abnormal returns generated by insider transactions in the press release disclosure window (CAR<sub>PR</sub>) significantly explain the returns annual or long-term abnormalities of these companies (CAR<sub>annual</sub>). It is expected that the β<sub>3</sub> coefficient is not significant or negative for low governance companies and, consequently, significant and positive for high governance companies.

$$CAR_{annual_{i,t}} = \beta_0 + \beta_1 CAR_{PR_{i,t}} + \beta_2 \delta_{insider_{i,t}} + \beta_3 \left( CAR_{PR_{i,t}} * \delta_{insider_{i,t}} \right) + \sum \beta_j Controls + \varepsilon_{it} \quad (6)$$

**Table 4: Variables**

| Variable           | Type        | Description  |
|--------------------|-------------|--|
| $CAR_{annual}$     | Explanatory | Standardized Annual Abnormal Return of the company as described in the equation $CAR_{it} = \sum_{t-1}^t SAR_{it}$   |
| $CAR_{PR}$         | Explained   | Accumulated Abnormal Return in the press release disclosure window, calculated for all companies in the sample that made such disclosure. Such as described in equation $CAR_{it} = \sum_{t-1}^t SAR_{it}$                                   |
| Insider            | Dummy       | Dummy that takes a value of 1 when the time window around the press release disclosure date contains insider transactions and takes a value of 0 when there are no insider trading transactions in the press release disclosure time window. |
| Dividend per share | Control     | $Div_i = \frac{\text{Dividend last 12 months}}{\text{Share closing price}}$  |
| Profit per share   | Control     | $LPA = \frac{\text{Net Income } i, t}{\text{Number of shares outstanding } i, t}$  |
| Size               | Control     | $Total\ asset = current\ asset + non\ current\ asset$  |
| ROA                | Control     | $ROA = \frac{\text{Net income } i, t}{\text{Total Asset } i, t}$   |
| Debt               | Control     | $Endiv = \frac{\text{Current liabilities} + \text{Non current liabilities}}{\text{Total Asset}}$   |

Source: Survey Data.

Note: The explanatory and control variables were winsorized at 2% at each end in order to reduce the influence of outliers.

## 4 Results and Analysis

### 4.1 Descriptive statistics

Tables 2 and 3 present descriptive statistics, showing the means, the number of observations and the minimum and maximum values of the sample. Table 2 presents the total number of observations (1220), separated by the classification of the level of governance and the presence of insider transactions in the 15-day window that precedes the release of the press release. Table 3 presents the descriptive statistics, the relationships between the variables and the percentage of insider transactions (16%) of the total observations.

It appears that most observations (911) have a high level of governance, characterized by listing in the Novo Mercado segment and, therefore, the other observations (309) are linked to companies with low governance. Thus, it appears that companies with low governance are representative (25%) in the total of observations and, this fact reinforces the relevance of the topic when analyzing the impacts of the management decision to disclose corporate content and, consequently, the impacts on Accumulated abnormal returns from the companies' annual and disclosure window.

Therefore, when analyzing which observations took place insider transactions in the 15-day event window prior to the release of the press release, a representative number (197) is identified, that is, 16% of the total, which demonstrates the presence of this type of transaction around the date the news was released to the market. Of the total observations that presented insider transactions in this time window (197), 28% occurred in companies with low governance and 72% in companies with high governance. Even in face of Fama and Jensen's (1983) finding that the company seeks to reduce the agency cost through the implementation of information monitoring activities, corporate governance practices and voluntary disclosures, insider transactions are found in 55 observations. (18%) of a total of 309 who chose to maintain low corporate governance.

#### PANEL 2: DATA – DISCLOSURE OF PRESS RELEASE AND PRESENCE OF INSIDER TRANSACTIONS

| Are there insider transactions? | Is press release disclosure by companies with low corporate governance? |     | Total |
|---------------------------------|---|-----|-------|
|                                 | No  | Yes |       |
| No                              | 769   | 254 | 1.023 |
| Yes                             | 142   | 55  | 197   |
| Total                           | 911   | 309 | 1.220 |

Source: Survey data.

Table 3 presents the descriptive statistics of the explanatory variable Standardized Annual Abnormal Return, the independent and control variables.

Note that despite the presence of a positive Annual Abnormal Return (+56%), on average, there is a negative return of 13% in the disclosure window when companies publish the press release. When calculating the averages for the 197 observations (16%) that have insider transactions in the time windows, it is identified that the negative abnormal return reduced from -0.13 to -0.01 for windows D+1 and D +2, and 0% for the D+3 window, which may suggest that there is an effect of insider transactions on the abnormal return of the event. Additionally, it is identified that the size of the window (+1, +2 or +3) does not change the effect of the dependent variable on the explanatory variable, being -0.13 in the absence of an insider and approximately -0.01 when there is transaction of this agent.

#### PANEL 3: DESCRIPTIVE STATISTICS

##### Panel A – Total Sample

| Variables       | Average | Standard deviation | Q1     | Median | Q3    |
|-----------------|---------|--------------------|--------|--------|-------|
| CAR annual      | 0,56    | 15,88              | -10,42 | 0,14   | 11,62 |
| CAR PR - 1 day  | -0,13   | 1,41               | -1,10  | -0,16  | 0,83  |
| CAR PR - 2 days | -0,13   | 1,49               | -1,13  | -0,16  | 0,87  |

|                     |            |      |       |       |       |
|---------------------|------------|------|-------|-------|-------|
| CAR PR - 3 days     | -0,13      | 1,56 | -1,16 | -0,16 | 0,91  |
| Insider             | 0,16       | 0,37 | 0     | 0     | 0     |
| Profit per share    | -0,79      | 5,08 | -0,02 | 0,18  | 0,44  |
| Dividends per share | 0,11       | 0,24 | 0     | 0     | 0,08  |
| Size                | 15,47      | 1,48 | 14,42 | 15,36 | 16,46 |
| ROA                 | 0,04       | 0,04 | 0,02  | 0,04  | 0,06  |
| Debt                | 0,32       | 0,18 | 0,18  | 0,30  | 0,42  |
| N                   | 1.220 data |      |       |       |       |

Source: Survey data.

#### 4.2 Average difference test

The mean difference test of the control variables for the 1,220 observations is shown in Table 4. The results show that there are mean differences (for all variables, except Debt, with p-value equal to 0.51) between companies that have high governance, that is, those listed in the Novo Mercado segment of B3, and companies with low or medium governance that are listed in the other segments. This result means that these control variables influence the explained variable (Y).

**PANEL 4: AVERAGE DIFFERENCE TEST – TOTAL SAMPLE**

|                    | Companies with low<br>or medium<br>governance | Companies with<br>high governance | P-Value   |
|--------------------|---|-----------------------------------|-----------|
| Dividend per share | 0,144   | 0,093                             | 0,000***  |
| Profit per share   | -0,358  | -0,930                            | 0,086*    |
| Size               | 16,07   | 15,27                             | 0,0000*** |
| ROA                | 0,041   | 0,046                             | 0,066*    |
| Debt               | 0,309   | 0,317                             | 0,51      |
| N                  | <b>309</b>                                    | <b>911</b>                        |           |

Source: Survey data.

#### 4.3 Regress analysis

The research hypothesis of this paper aims to investigate whether, in the presence of insider transactions, the CAR of the press release disclosure window of companies with different levels of governance explains the long-term abnormal return of companies. This hypothesis is supported by the observation that the form of voluntary disclosure of corporate information (in the case of companies outside the Novo Mercado listing of B3) reduces the incidence of profits in insider transactions (Ravina & Sapienza, 2010; Fidrmuc et al., 2016).

Thus, it is expected that the coefficient of interaction between the CARPR variables and the Insider dummy ( $\beta_3$ ) is insignificant or negative for companies with low governance.

$$CAR_{annual_{i,t}} = \beta_0 + \beta_1 CAR_{PR_{i,t}} + \beta_2 \delta_{insider_{i,t}} + \beta_3 (CAR_{PR_{i,t}} * \delta_{insider_{i,t}}) + \sum \beta_j Controls + \varepsilon_{it} \quad (6)$$

Table 5 shows the results of the panel regression model with fixed effect that was calculated for groups with 309 observations of companies with low corporate governance, as these companies are listed in the Bovespa Mais, Level 1, Level 2 or Basic segment of B3, in addition to the 911 observations from the Novo Mercado. This is the interaction between the abnormal window return variables and the presence of insider transactions for the three event windows mentioned above.

The results presented in Table 5 show that, with 99% confidence, in the absence of insider transactions, there was no difference in the impact that CARWin, for the two levels of corporate governance, has on CARannual. Given the three different event window simulations, it is clear that the statistical significance remains (+8,737, +8,368 and +8,037) for companies with low governance.

By inserting the insider variable into the regression model, it is observed that the presence of an insider associated with the quality of governance does not impact the share's annual CAR. The impact was found only in combination with mandatory press release at 99% confidence.

The control variables: dividend per share, asset size and ROA proved to be significant. For the variable 'dividend per share', the relationship is positive with different confidence intervals, which means that the higher the dividend per share proposed by management, the greater the impact on the company's annual abnormal return. The variable 'asset size' proved to be significant and negative only for companies with high governance, which suggests that the annual abnormal return is smaller the larger the size of the company, in this case represented by the size of the asset. Finally, the 'ROA' variable showed a positive signal with 99% confidence for companies with low governance, in all three event windows that were calculated.

**PANEL 5: REGRESSION IN PANEL WITH FIXED EFFECT FOR THE YEAR AND FIRM**

| Variable                  | Sample with Low or Medium Corporate Governance firms |              |              | Sample with High Corporate Governance firms |                 |                 |
|---------------------------|--|--------------|--------------|---|-----------------|-----------------|
|                           |  |              |              |   |                 |                 |
| CAR PR (1 day)            | 8.737***   |              |              | 9.813***                                    |                 |                 |
|                           | (19.10)  |              |              | (43.75)                                     |                 |                 |
| CAR PR * Insider (1 day)  | <b>1.055</b>   |              |              | <b>1.260***</b>                             |                 |                 |
|                           | (0.699)  |              |              | (3.134)                                     |                 |                 |
| CAR PR (2 days)           |  | 8.368***     |              |   | 9.388***        |                 |
|                           |  | (19.70)      |              |   | (44.56)         |                 |
| CAR PR * Insider (2 days) |  | <b>1.040</b> |              |   | <b>1.163***</b> |                 |
|                           |  | (0.771)      |              |   | (3.116)         |                 |
| CAR PR (3 days)           |  |              | 8.037***     |   |                 | 9.022***        |
|                           |  |              | (20.14)      |   |                 | (44.74)         |
| CAR PR * Insider (3 days) |  |              | <b>1.010</b> |   |                 | <b>1.116***</b> |
|                           |  |              | (0.810)      |   |                 | (3.295)         |
| Insider                   | 2.263  | 2.224        | 2.296        | -0.787                                      | -0.846          | -0.922          |
|                           | (1.482)  | (1.491)      | (1.581)      | (-1.192)                                    | (-1.310)        | (-1.444)        |
| Dividend per share        | 4.421**  | 4.226**      | 4.304**      | 3.037**                                     | 2.758*          | 2.565*          |
|                           | (2.361)  | (2.310)      | (2.416)      | (2.041)                                     | (1.880)         | (1.773)         |
| Profit per share          | 0.00811  | 0.00330      | 0.00554      | 0.0749                                      | 0.0662          | 0.0586          |
|                           | (0.0419)   | (0.0173)     | (0.0306)     | (1.382)                                     | (1.216)         | (1.066)         |
| Size                      | 0.466  | 0.351        | 0.338        | -3.898***                                   | -3.852***       | -3.769***       |
|                           | (0.343)  | (0.267)      | (0.266)      | (-5.569)                                    | (-5.580)        | (-5.502)        |
| ROA                       | 60.95***   | 61.93***     | 59.70***     | 27.30*                                      | 24.46*          | 21.76           |
|                           | (2.837)  | (2.910)      | (2.856)      | (1.952)                                     | (1.790)         | (1.606)         |
| Debt                      | -3.040   | -3.261       | -4.024       | 0.734                                       | 0.544           | 0.821           |
|                           | (-0.497)   | (-0.533)     | (-0.650)     | (0.280)                                     | (0.212)         | (0.322)         |
| Constant                  | -6.660   | -4.675       | -4.404       | 63.24***                                    | 62.93***        | 61.74***        |
|                           | (-0.309)   | (-0.225)     | (-0.219)     | (5.857)                                     | (5.894)         | (5.835)         |
| N                         | <b>309</b>   | <b>309</b>   | <b>309</b>   | <b>911</b>                                  | <b>911</b>      | <b>911</b>      |

**Note:** Coefficients marked with a star (\*) are statistically significant with 10% significance, coefficients marked with two stars (\*\*) are statistically significant with 5% significance, and finally, coefficients marked with three stars are statistically significant with 1% significance. The p-values are in parentheses.

**Source:** Survey data.

#### 4.3.1 Similarity analysis – nearest neighbor matching

In addition to the regression model proposed by Equation (6), which considered the 309 observations with low governance and the 911 observations with high governance, a subgroup with 242 observations that comes from the main sample was calculated using the Nearest Neighbor Matching methodology of a company with high governance. The objective in creating this subgroup is to identify those observations that have similar characteristics and that can, consequently, be more comparable and have a greater ability to explain the effects of the variables in Y. The covariates used were: dividend per share, earnings per share, size, ROA and indebtedness.

It is noticed that, with the exception of the Asset Size variable, the others presented p-values without statistical significance and equal means. This result may be an indication that the effect on the Standardized Annual Abnormal Return (Y) calculated in the regression model below may be due to the Abnormal Return of the event (insider transaction in a press release disclosure window) and not to the effects of control variables.

**PANEL 6: AVERAGE DIFFERENCE TEST – MATCHED SAMPLE**

| <b>Sample selected via Nearest Neighbor Matching</b> |   |   |                |
|--|---|---|----------------|
|  | <b>Low Governance (Other<br/>B3 listing segments)</b> | <b>High governance<br/>(New Market)</b> | <b>P-Value</b> |
| Dividend per share                                   | 0,144   | 0,126                                   | 0,43           |
| Profit per share                                     | -0,358  | -0,199                                  | 0,57           |
| Size   | 16,07   | 15,82                                   | 0,065*         |
| ROA  | 0,041   | 0,046                                   | 0,16           |
| Debt   | 0,309   | 0,322                                   | 0,37           |
| <b>N</b>   | <b>309</b>  | <b>242</b>                              |                |

Source: Research data.

The results presented in Table 7 are similar to those shown in Table 5, that is, the annual CAR is less impacted on companies that have insider transactions and low governance (+1,055, +1,040, +1,010, not significant), when compared to companies that have insider transactions and low governance (1,677\*, 1,540\*, 1,246). This result proves the research H1, that is, in the presence of insider transactions, low governance does not affect the company's annual abnormal return, reducing informational asymmetry costs. As shown in the first regression (Table 5), in the absence of an insider, the abnormal return of the event, in both governance modalities, positively impacts the annual abnormal return of the share, with a significance of 99%.

The control variables: dividend per share, earnings per share and ROA proved to be significant. The relationship between the dividend per share and the Y variable was positive, with 95% significance for the observations with high governance and 99% confidence for those with low governance. Earnings per share were positive and significant only in observations with high governance, while ROA, on the contrary, in those with low governance.

**PANEL 7: REGRESSION IN PANEL WITH FIXED EFFECT FOR THE YEAR AND SIGNATURE -**

| <b>Sample obtained via NN Matching</b> |   |                     |                     |  |                     |                     |
|--|---|---------------------|---------------------|--|---------------------|---------------------|
| <b>Variables</b>                       | <b>Sample with Low or Medium<br/>Corporate Governance firms</b> |                     |                     | <b>Sample with High Corporate<br/>Governance firms</b> |                     |                     |
| CAR PR (1 day)                         | 8.737***<br>(19.10)   |                     |                     | 9.882***<br>(19.28)                                    |                     |                     |
| CAR PR * Insider (1 day)               | <b>1.055</b><br>(0.699)   |                     |                     | <b>1.677*</b><br>(1.893)                               |                     |                     |
| CAR PR (2 days)                        | 8.368***<br>(19.70)   |                     |                     | 9.444***<br>(19.59)                                    |                     |                     |
| CAR PR * Insider (2 days)              | <b>1.040</b><br>(0.771)   |                     |                     | <b>1.540*</b><br>(1.844)                               |                     |                     |
| CAR PR (3 days)                        | 8.037***<br>(20.14)   |                     |                     | 9.119***<br>(20.18)                                    |                     |                     |
| CAR PR * Insider (3 days)              | <b>1.010</b><br>(0.810)   |                     |                     | <b>1.246</b><br>(1.590)                                |                     |                     |
| Insider                                | 2.263<br>(1.482)  | 2.224<br>(1.491)    | 2.296<br>(1.581)    | 1.766<br>(0.977)                                       | 1.696<br>(0.963)    | 1.828<br>(1.037)    |
| Dividend per share                     | 4.421**<br>(2.361)  | 4.226**<br>(2.310)  | 4.304**<br>(2.416)  | 10.98***<br>(4.114)                                    | 10.43***<br>(4.054) | 9.902***<br>(3.865) |
| Profit per share                       | 0.00811<br>(0.0419)   | 0.00330<br>(0.0173) | 0.00554<br>(0.0306) | 0.524*<br>(1.811)                                      | 0.557*<br>(1.970)   | 0.634**<br>(2.204)  |
| Size                                   | 0.466<br>(0.343)  | 0.351<br>(0.267)    | 0.338<br>(0.266)    | -0.684<br>(-0.333)                                     | -0.635<br>(-0.325)  | -0.847<br>(-0.439)  |
| ROA                                    | 60.95***<br>(2.837)   | 61.93***<br>(2.910) | 59.70***<br>(2.856) | 35.76<br>(0.691)                                       | 33.80<br>(0.664)    | 27.09<br>(0.539)    |

|          |                    |                    |                    |                    |                    |                    |
|----------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Debt     | -3.040<br>(-0.497) | -3.261<br>(-0.533) | -4.024<br>(-0.650) | -2.140<br>(-0.264) | -2.921<br>(-0.372) | -2.376<br>(-0.308) |
| Constant | -6.660<br>(-0.309) | -4.675<br>(-0.225) | -4.404<br>(-0.219) | 14.35<br>(0.467)   | 14.09<br>(0.480)   | 17.50<br>(0.605)   |
| N        | 309                | 309                | 309                | 242                | 242                | 242                |

**Note:** Coefficients marked with a star (\*) are statistically significant with 10% significance, coefficients marked with two stars (\*\*) are statistically significant with 5% significance, and finally, coefficients marked with three stars are statistically significant with 1% significance. The p-values are in parentheses.

**Source:** Research data.

#### 4.3.2 Sensitivity test

A question that may arise is whether, within a sample that contains only insider trading transactions, the press release conveys relevant informational content differently between companies on the Novo Mercado (high governance) and the other B3 listing segments. This additional testing was conducted in accordance with the following survey design (equation 7).

$$CAR_{Win_{it}} = \beta_0 + \beta_1 \delta_{PR\ high\ governance_{it}} + \sum \beta_j Controls \quad (7)$$

The press release disclosure window gave rise to the variable  $CAR_{Win}$ , which can be defined as the abnormal return accumulated in the press release disclosure window, calculated for the companies in the sample that have insider transactions, calculated using the  $CAR_{it} = \sum_{t-1}^t SAR_{it}$ .

It is expected that the effect of  $\beta_1$  on variable Y ( $CAR_{Win}$ ) be positive and significant, indicating that the presence of high governance related to the practice of press release disclosure does not prevent abnormal returns in insider transactions. The estimator used was a panel with fixed effects per company, in a linear regression that absorbs a categorical factor (dummy 1 for Novo Mercado). This estimator is designed for datasets with many groups, but this number of groups does not increase as the sample size grows.

**PANEL 8: CAR IN THE EVENT WINDOW**

| Variables             | Window size:          |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|
|                       | 1 day                 | 2 days                | 3 days                |
| Dummy Press Release * |                       |                       |                       |
| Dummy High Governance | 0.152*<br>(1.738)     | 0.152*<br>(1.657)     | 0.161*<br>(1.675)     |
| Dividend per share    | 0.401**<br>(2.331)    | 0.431**<br>(2.386)    | 0.461**<br>(2.431)    |
| Profit per share      | 0.0498***<br>(6.128)  | 0.0529***<br>(6.230)  | 0.0560***<br>(6.310)  |
| Size                  | 0.105***<br>(3.838)   | 0.110***<br>(3.802)   | 0.116***<br>(3.819)   |
| ROA                   | 4.747***<br>(4.635)   | 5.090***<br>(4.706)   | 5.479***<br>(4.834)   |
| Debt                  | -0.399*<br>(-1.719)   | -0.395<br>(-1.621)    | -0.388<br>(-1.520)    |
| Constant              | -1.967***<br>(-4.512) | -2.054***<br>(-4.483) | -2.167***<br>(-4.508) |
| N                     | 142                   | 142                   | 142                   |

**Note:** Coefficients marked with a star (\*) are statistically significant with 10% significance, coefficients marked with two stars (\*\*) are statistically significant with 5% significance, and finally, coefficients marked with three stars are statistically significant with 1% significance. The p-values are in parentheses.

**Source:** Research data.

The results in Table 8 show weak evidence that there is a difference between the effect on press release disclosure between high governance companies (Novo Mercado) and low and medium governance companies (other segments of B3). The coefficient of the interaction between the press release dummy and the high governance dummy is positive and significant

only at 10%.

#### **4.4 Theoretical and practical implications of the results**

The research results suggest reflections on the theoretical and practical aspects that currently exist in the international and national literature and, also, in the legislation applicable to the Brazilian capital market.

In its theoretical aspects, the research is presented as a complement to the conclusions of Fama and Jensen (1983) who treat voluntary disclosure as a tool to reduce the cost of agency, and Baioco and Almeida (2017) who emphasize that such disclosure it is a way to create a timely and quality accounting information environment. Additionally, Ravina and Sapienza (2010) and Fidrmuc et al. (2016) conclude that voluntary disclosure can reduce the incidence of profit on insider transactions.

In its practical aspects, it is necessary to reflect on the rules for preparing and disseminating the press release so that this document can become, in fact, a disciplinary mechanism for the use of privileged information and a way to create a commitment to stakeholders to reduce informational asymmetry, thus following practices implemented in the adoption of Reg FD in October 2020 and SOX in July 2002 in the American market.

The results of this research show that, in the Brazilian capital market, there seems to be no reduction in informational asymmetry linked to the choice of method for disclosing such a document. Companies that are not required to disclose do so by common market practice, but such decision has not contributed to a time differential in the disclosure of symmetric information to stakeholders. Additionally, it is necessary to reflect on the blackout period of the investment policy defined in CVM Instruction 358.

#### **5. Final Considerations**

This work proposed to examine the impacts on abnormal returns in companies that have insider transactions and make the voluntary release of the press release, a practice commonly adopted by companies that are not listed in the Novo Mercado segment of B3. To achieve the proposed objective, quarterly data of companies listed on B3 that hold common (ON) and/or preferred (PN) shares in the period from 2010 to 2019 were used, resulting in 1,220 observations.

The database of this work was developed through a survey of secondary data collected in the Economática® software and on the CVM website, for the period between the first quarter of 2010 and the last quarter of 2019.

Based on the results achieved in this work, it is observed that the voluntary nature of the press release's disclosure is not inhibiting the role of the insider, nor even exercising a disciplining role in the capital market. As in Brazil, companies that do not do so on a mandatory basis opt, for the most part, to do so on a voluntary basis and, which is also worth mentioning, in a non-standardized CVM report format, it seems that such an act of disclosure is framed as a routine of companies, without, in fact, meaning an action to reduce informational asymmetry.

These statements contradict evidence from the international literature that the company seeks to reduce the agency cost through the implementation of information monitoring activities, corporate governance practices and voluntary disclosures (Fama & Jensen, 1983). Additionally, such conclusions oppose the understanding that a better level of corporate governance creates an environment of quality and timely accounting information (Baioco & Almeida, 2017) and reduces the incidence of profit in insider transactions (Ravina & Sapienza, 2010; Fidrmuc et al., 2016). This counterpoint is evidence that more legal enforcement is needed to discipline insider actions in the Brazilian capital market, since the press release is not enough.

For future research, it is recommended that this study be expanded to analyze the

informational content of the press release, in its qualitative and quantitative nature, given the lack of standardization of this report by the regulatory body, in order to verify whether such content can, for example, influencing the reduction of abnormal insider returns, contributing to the reduction of informational asymmetry.

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