ARTICLES

MARKET REACTION TO THE TONES OF EARNINGS CONFERENCE CALLS

Reação do mercado acionário aos tons transcritos das teleconferências de resultados

Reacción del mercado accionario a los tonos transcritos de las teleconferencias de resultados

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ABSTRACT

This study analyzes the different tones used by the participants in earnings conference calls and the influence on the generation of abnormal stock returns. This study fills the research gap of the segregation of tone analysis by type of analyst and corporate administratives during earnings conference calls. The sample covered the period from 2010 to 2017, totaling 1165 earnings conference calls transcripts from 44 Brazilian companies listed in B3 - Brasil, Bolsa, Balcão. The main finding is that the transcribed tone and words based on the Loughran & McDonald (2011) dictionary, have significant predictive power over stock market reactions after earnings conference calls.

KEYWORDS | Earnings conference calls, tone, abnormal return, buy-side and sell-side analysts, corporate representatives.

RESUMO

Este estudo tem como objetivo analisar os diferentes tons transcritos utilizados pelos participantes nas teleconferências de resultados e sua influência na geração de retornos anormais das ações. Este estudo preenche uma lacuna de pesquisa que é a segregação da análise do tom por tipo de analista e de representantes corporativos durante a teleconferência de resultados. A amostra abrangeu o período de 2010 a 2017, totalizando 1.165 transcrições de teleconferências de resultados de 44 empresas brasileiras listadas na B3 – Brasil, Bolsa, Balcão. O principal achado é que o tom transcrito e as palavras utilizadas com base no dicionário de Loughran e McDonald (2011) têm poder de previsão significativo sobre as reações do mercado de ações após as teleconferências de resultados.

PALAVRAS-CHAVE | Teleconferências de resultados, tom, retorno anormal, analistas buy-side e sell-side, representantes corporativos.

RESUMEN

Este estudio tiene como objetivo analizar los diferentes tonos transcritos utilizados por los participantes en las teleconferencias de resultados y su influencia en la generación de retornos anormales de acciones. Este estudio llena un vacío de investigación que es la segregación del análisis del tono por tipo de analista y representante corporativo durante la teleconferencia de resultados. La muestra abarcó el período comprendido entre 2010 y 2017, totalizando 1165 transcripciones de teleconferencias de resultados de 44 empresas brasileñas cotizadas en la B3 - Brasil, Bolsa, Balcão. El principal hallazgo es que el tono transcrito y las palabras usadas según el diccionario de Loughran y McDonald (2011) tienen un poder predictivo significativo sobre las reacciones del mercado de valores después de las teleconferencias de resultados.

PALABRAS CLAVE | Teleconferencias de resultados, tono, retorno anormal, analistas buy-side y sell-side, representantes corporativos.

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INTRODUCTION

Companies issue mandatory reports and a series of voluntary information to comply with market regulations, and investors use these data in decision-making processes. More voluntary disclosure reduces risk, informational asymmetry, and the cost of capital and increases organizational transparency and market liquidity (Beyer, Cohen, Lys, & Walther, 2010). Thus, the information of accounting reports extrapolates the numbers expressed in financial statements (Chin, Chen, & Liang, 2013; Frankel, Johnson, & Skinner, 1999; Kearney & Liu, 2014) and is expressed through written, spoken, or body language during earnings conference calls.

Among the main research findings in the literature, it is worth noting that, in US companies, corporate representatives use a more positive tone in their speech, compared to financial analysts (Brockman, Li, & Price, 2015). In turn, the stock market reacts more strongly to the discourse of financial analysts than to managers or representatives (Brockman et al., 2015). In other jurisdictions, such as Hong Kong, market participants react more to company tone than analyst tone, contrary to the results found in research on US companies (Brockman, Li, & Price, 2017).

Earnings conference calls are interactive (Chan, Lee, Petaibanlue, & Tan, 2017) and provide ease of transferring information from management to investors (Brockman et al., 2017). As the earnings calls are interactive, participants can ask questions related to their concerns (Tasker, 1998), express opinions, confirm inferences (Palmieri, Rocci, & Kudrautsava, 2015), or discuss issues that were not clarified in the financial reports (Bassemir, Novotny-Farkas, & Pachta, 2013).

During earnings calls, corporate representatives and analysts share their expectations about the company's financial performance. In this context, managers can influence analyst expectations and decision-making (Black, 2016), but the interpretation of the information the company provides may differ between buy-side and sell-side analysts (Yamamoto & Hirata, 2012).

The way information is transmitted can affect stock market performance; the tone observed in the transcription of earnings calls directly correlates with the reaction of investors in the stock market (Kang, Park, & Han, 2018). By evaluating the tone of each of the call's main participants, it is possible to capture their influence on fluctuations in stock returns. Thus, in addition to identifying the different tones of company managers and financial analysts, it is possible to identify which intervening parties have the most significant effect on stock returns.

This study analyzes the transcription of earnings conference calls, examining the tones used by different participants and their influence on the behavior of stock returns in terms of generating abnormal returns. The research intends to fill a gap in the literature by segregating the study of the tone adopted by the type of analysts (buy-side and sell-side) and corporate representatives (Chief Executive Officer [CEO]; Chief Financial Officer [CFO], or Investor Relations [IR]) during earnings conference calls.

Earnings calls have specific argumentative structures, in which a set of particular words can lead to an interpretation (positive or negative) of the quantitative information. The tone of the financial narrative can be assessed using a word dictionary (Henry & Leone, 2016). In this study, we intend to use the word lists elaborated by Loughran and McDonald (2011), creating an index that expresses the tone of Brazilian companies' managers and analysts. The buy-and-hold abnormal return (BHAR) is used to calculate abnormal returns to evaluate the influence of tone on the financial market

An important contribution of this study is the spatial cut of the analysis, which assesses the tone adopted in the earnings calls in Brazil, in contrast with the main studies, which have been conducted in North American companies (Blau, DeLisle, & Price, 2015; Brockman et al., 2015; Doran, Peterson, & Price, 2012; Henry & Leone, 2016; Palmieri et al., 2015). Brazil's stock exchange B3 (Brasil, Bolsa, Balcão) is one of the largest of the world in market capitalization, a position achieved due to institutional changes that allowed to improve governance and risk management mechanisms, and the merger of stock, commodities, and futures exchanges.

Thus, as noted by Chan et al. (2017), studies of other countries point to different degrees of incentive for voluntary disclosure, affecting the reports' quality and transparency. Voluntary disclosure allows managers to increase their transparency to the stock market, reducing both risk and cost of capital, positively affecting stock prices and liquidity (Beyer et al., 2010).

In turn, studies on voluntary disclosure are subdivided into quantitative and qualitative research (Pagliarussi, Aguiar, & Galdi, 2016). The quantitative approach has received more attention in the literature, mainly based on evaluating accounting numbers, macroeconomic indicators, industry productivity, and other aspects. Qualitative analysis, which is the focus of this study, contributes to understanding the influence of textual information on investment decisions.

Studies that treat the qualitative aspect of voluntary disclosure typically test whether the tone (feeling) of the narrative has incremental information and examine the factors that give rise to cross-cutting differences in disclosure (Henry & Leone, 2016). The tone is characterized as a form of articulation of human speech, whether in spoken, written, or visual form. Language, written and oral, is how companies communicate much information about their past and project their future performance (Hales, Kuang, & Venkataraman, 2011).

The information generated and disseminated during earnings calls can cause variations in the earnings and number of shares traded. Under the efficient-market hypothesis, market participants must react promptly to company-specific information (Blau et al., 2015). However, the tone used in the disclosure reports can lead to incorrect interpretation by agents, as they contain opinions veiled by positive or negative tones about market predictions. In addition, analysts and investors make capital market investment decisions based on what managers choose to discuss and disclose in earnings calls (Black, Christensen, Kiosse, & Steffen, 2013).

In short, to contribute to the literature on accounting disclosure, we brought the following objects of study: a) the tone in spoken words, not in written reports; b) voluntary disclosure documents, such as earnings conference calls, rather than regular company documents; c) the interaction between the corporate representatives' tones (CEO, CFO, and IR, also referred to as "managers"), and financial analysts' tones (buy-side and sell-side); and d) the effect of the tone observed from different interveners in a less developed market, as is the case of Brazilian companies.

From a sample of 1,165 transcripts of earnings calls from the results of 44 companies listed on B3 in the period 2010 to 2017, we found that the tone and the words used based on the dictionary by Loughran and McDonald (2011) have significant predictive power on stock market reactions. The research contributes to the literature by analyzing the differences in tone between corporate representatives/managers (CEO, CFO, and IR) and analysts (sell-side and buy-side) and separating positive and negative words to help better understand the behavior of stock returns after earnings conference calls.

THEORETICAL FRAMEWORK

Earnings conference calls have become a common mechanism for voluntary disclosure in the capital market (Baik & Nam, 2009). Managers and analysts use this type of corporate communication to exchange information or share it with other participants in the stock market (Borochin, Cicon, DeLisle, & Price, 2018). Voluntary communication during earnings calls, especially when company executives make presentations to investors, conveys important information to the market (Bushee, Jung, & Miller, 2011). Therefore, the form in which the market's reaction to such calls is an important issue for the economy, with substantial consequences (Borochin et al., 2018).

The earnings calls are conducted by corporate leaders with financial analysts immediately following the announcement of quarterly results. Participants fall into three distinct categories: a) corporate representatives (CEO, CFO, or IR); b) financial analysts and investors, in particular, those who regularly monitor the company and actively participate by asking questions. They are divided into buy-side analysts (analysts and investment fund managers) and sell-side analysts (professionals from banks and stockbrokers); and c) the operator who conducts the calls (Palmieri et al., 2015).

These conference calls are divided into two parts, a presentation for corporate representatives and a questions and answers (Q&A) session. The interaction between different agents occurs mainly during the Q&A when financial analysts ask questions, which corporate representatives answer immediately (Camiciottoli, 2011). Thus, it is possible to assess the positioning, the performance, and the influence of managers and analysts, isolating the impact of each of these agents in the tone expressed during the call (Brockman et al., 2015).

Studies on the tone of earnings calls have focused on the overall tones of corporate representatives and financial analysts (Brockman et al., 2015, 2017; Henry & Leone, 2016; Loughran & McDonald, 2016). However, there is much to learn about general interaction patterns and how the company stocks will behave afterward. The interactive process of earnings calls is dynamic, different from the static process of the annual reports disclosure, press releases, and news articles, among others (Blau et al., 2015).

In a textual analysis of earnings conference calls, Lee (2016) developed measures to capture the differences in tone expressed between managers' introductory statements and their Q&A responses. Understanding how word choices during corporate disclosures promote trust and credibility can help managers adapt their disclosure to be more informative or exploit investor credulity (Teoh, 2018).

In the context of financial markets, in which managers communicate information to investors about past performance and projections for future performance, managers likely exhibit different affective states depending on their interpretation of company events and situations. Such affective states are more likely to be triggered when managers respond to questions from analysts. Given the affective state demonstrated in the earnings call, the behavior pattern of managers can affect investors' assessment of the company's performance (Mayew & Venkatachalam, 2012).

Senior company members have different styles: some managers are direct and informative speakers, while others are vague (Dzieliiski, Wagner, & Zeckhauser, 2017). In addition to the individual differences in how they transmit information, communication differences depend on a manager's role in the company. The knowledge CFOs and CEOs have about the company differs (Mayew & Venkatachalam, 2012). Furthermore, a company's quarterly income statements need to be interpreted by market analysts. Therefore, word choices by managers affect information processing. The communication style of corporate representatives affects the Q&A moment of earnings calls for financial analysts.

Three strands in the literature explain the difference in the formation of expectations of buy-side and sell-side analysts, with the dispersion of expectations arising when: a) agents have access to information about the current state of the economy; b) agents interpret the same information about the current state of the economy differently; or c) the heterogeneous nature of predictions, in which divergent expectations emerge from a diverse set of information and strategies (Yamamoto & Hirata, 2012).

The literature identified differences between the tones of managers and analysts in North American companies. By studying the transcripts of 16 quarterly earnings calls during the years 2004 – 2007, Brockman et al. (2015) identified that, on average, managers have more optimistic tones than financial analysts. These results give rise to the debate on two important aspects. First, they highlight the role of intermediaries in disseminating the informational content present in this type of public disclosure. Second, they intensify the debate about who (institutional investors or individual investors) has the most significant capacity to analyze and interpret the tones in the earnings calls.

In this context, Brockman et al. (2017) investigated market reactions to tones of managers and analysts during earnings calls using 409 transcripts from the Hong Kong Stock Exchange from 2005 to 2015. In addition to the frequency of disclosure of calls – in Hong Kong, it is biannual; in the United States, it is quarterly – the authors found a difference in the credibility conferred by participants. While investors in the United States place more credibility on the tone of analysts than managers, Hong Kong investors are convinced by the tone of company managers rather than analysts.

In the Brazilian market, Moreira, Ramos, Kozak-Rogo, and Rogo (2016) analyzed the earnings calls of companies listed on B3 from 2008 to 2015. As a research strategy, the authors developed a proxy for the call duration, following Matsumoto, Pronk, and Roelofsen (2011). The duration of the interaction among participants helps measure the influence of the amount of information disclosed on the results and testing the obfuscation and ontology hypotheses. Among the research findings, it is worth noting that, during the calls, companies with "bad news" disclose more information than companies with "good news." Furthermore, the study found evidence that companies with positive and transitory results disclose more information than companies with positive and permanent results.

Additionally, it is worth highlighting the study by Souza (2017), which evaluated the tone used during earnings calls and its relationship with the company's performance in terms of Earning Before Interest, Taxes, Depreciation and Amortization (EBITDA). By evaluating the companies listed on B3, from 2010 to 2014, based on the models developed by Huang, Teoh, and Zhang (2014) and Davis, Ge, and Matsumoto (2015), the author showed that companies with better performance have a more optimistic tone, with effects on the current quarter and the quarter after the earnings conference call.

For Souza (2017), the basic premise that would justify the importance of studying narratives is the perception that the commonly evidenced quantitative information does not allow the presentation of the companies' real situation, specifically in performance and other economic aspects. In addition, the author emphasizes that the study on earnings conference calls is essentially a study on the behavior of voluntary disclosure of information contained in financial statements.

METHODOLOGY

Sample and data collection

The initial database comprised 1,408 transcripts of earnings conference calls from 2010 to 2017 (32 consecutive quarters). They come from 44 Brazilian publicly traded companies with traded common shares, part of the Ibovespa index portfolio from January to April 2018, using only common shares to calculate abnormal returns. Earnings calls without a pdf file were excluded (241 transcripts), along with those where it was impossible to calculate the return (2 transcripts). After these exclusions, the final sample totaled 1,165 transcripts of earnings conference calls from 44 listed companies.

The transcripts of the earnings conference calls were written in English. The other variables in the study came from Bloomblerg®. Statistical treatment was performed using panel data regression. In methodological terms, the models (Fixed, Random, or Pooled Effects) were identified in balanced data, based on ordinary least squares (OLS) regression, which indicates the approach and other statistical tests to use (F Test, Breusch-Pagan, Hausman).

Econometric model and variables

Preliminarily, we conducted an event study to analyze how the different tones used by participants (managers and analysts) in the earnings conference calls influence stock returns. The event study is justified because it measures the impact of a specific event on the company's value (MacKinlay, 1997), and it is ideal for examining accounting and financial disclosures (Campbell, Lo, & MacKinlay, 1997). To achieve the objectives of this study, we use Equation 1:

$$BHAR_{it} = \alpha_0 + \sum_{j=1}^{n} \beta_j TONE^J_{it} + \gamma_k CONTROLS^K_{it} + \varepsilon_{it}$$

(1)

where, $BHAR_{it}$ is the buy-and-hold abnormal return of company i in period t; α_0, β_j e γ_k are the regression model coefficients; $TONE^J_{it}$ is the tone expressed in the earnings calls of company i in period t for the participants j; $CONTROLS^k_{it}$ represents the control variables k of company i in period t; and ε_{it} represents the regression's error term.

Content analysis was adopted with a dictionary-based approach to calculate the tone in earnings conference calls ($TONE^J_{it}$) using the Provalis Research® software. It is noteworthy that the dictionary-based approach employs a glossary prepared by experts in the field. According to Kearney and Liu (2014), the dictionary developed by Loughran and McDonald (2011) is the most appropriate for financial textual analysis. This dictionary was used in its original version in English, so it was not necessary to translate the transcripts.

Since the variable $TONE^J_{it}$ is a segregated representation of the tone for each participant, considering that $j = 1$, the tone is calculated as $TONE_{it} = (POS_{it} - NEG_{it}/POS_{it} + NEG_{it})$, according to the methodology of Henry (2008), also adopted by Price, Doran, Peterson, and Bliss (2012), Henry and Leone (2016), and Brockman et al. (2017). When $j > 1$, we have the calculation of the tone for each type of participant. The analysis sequence (Figure 1) used includes the main participant groups and assess the tone of each part of the earnings calls.

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Figure 1. **Steps of tone analysis by participant type and part of earnings conference calls**
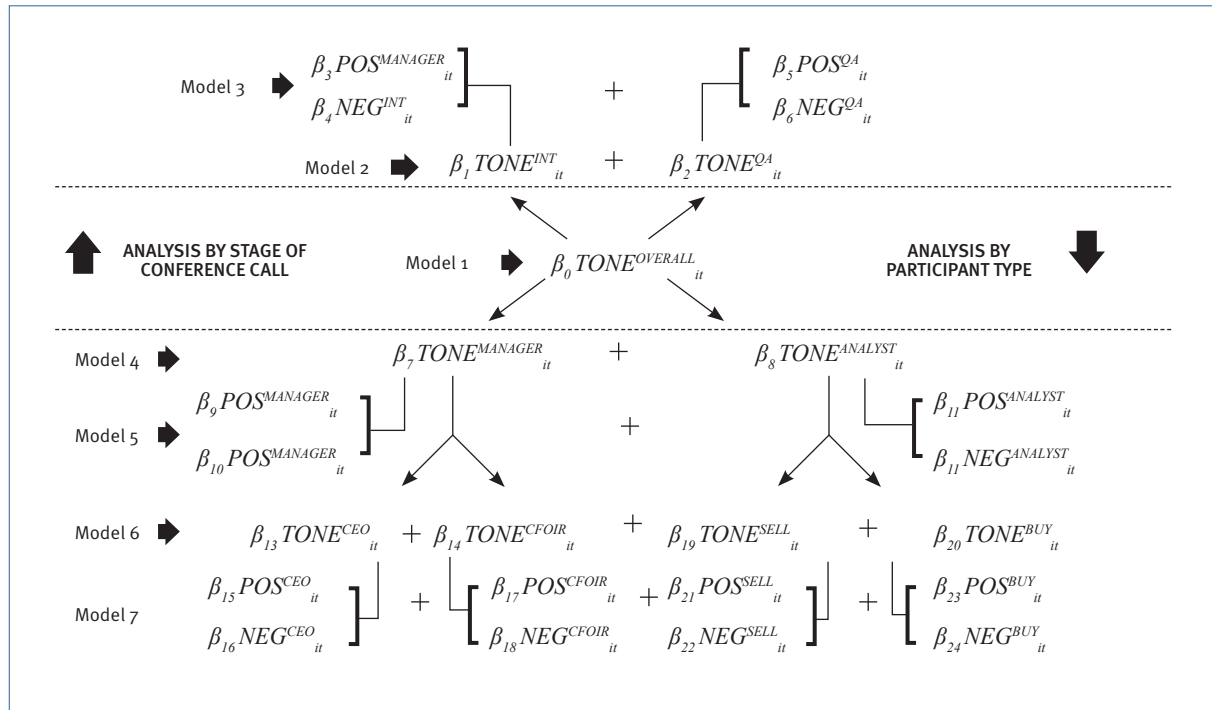
Thus, the general tone analysis model for the participants j follows two distinct approaches, the first is:

$$
\begin{aligned}
BHAR_{it} = \alpha_0 &+ \beta_{13} TONE^{CEO}_{it} + \beta_{14} TONE^{CFOIR}_{it} + \beta_{19} TONE^{SELL}_{it} \\
&+ \beta_{20} TONE^{BUY}_{it} + y_k CONTROLS^{K}_{it} + \varepsilon_{it}
\end{aligned}
\tag{2}
$$

where the variable $TONE^{CEO}_{it}$ is the calculated tone for the CEOs, and the variable $TONE^{CFOIR}_{it}$ is the calculated tone for the CFO or IR. Regarding the variables, $TONE^{SELL}_{it}$ and $TONE^{BUY}_{it}$ are the tones of the sell-side and buy-side analysts, respectively.

In an alternative approach, the direct effect of positive or negative words is evaluated using the LM dictionary:

$$
\begin{aligned}
BHAR_{it} = \alpha_0 &+ \beta_{15} POS^{CEO}_{it} + \beta_{16} NEG^{CEO}_{it} + \beta_{17} POS^{CFOIR}_{it} \\
&+ \beta_{18} NEG^{CFOIR}_{it} + \beta_{21} POS^{SELL}_{it} + \beta_{22} NEG^{SELL}_{it} \\
&+ \beta_{23} POS^{BUY}_{it} + \beta_{24} NEG^{BUY}_{it} + \gamma_k CONTROLS^{k}_{it} + \varepsilon_{it}
\end{aligned}
\tag{3}
$$

where participants j POS^{j}_{it} and NEG^{j}_{it} represent the number of positive and negative words identified in each call. $POS^{MANAGER}_{it} = POS^{CEO}_{it} + POS^{CFOIR}_{it}$ is equivalent to the number of positive words of the corporate representatives, and $POS^{ANALYST}_{it} = POS^{SELL}_{it} + POS^{BUY}_{it}$ represents the number of positive words used by the

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analysts. The same interpretation is applied to the number of negative words. The wide segregation of participants j (managers: CEO, CFO/IR, and analysts: sell-side and buy-side) is a differential since previous studies only segregated between managers and analysts.

Similarly, the approach to identify each participant's tone is also applied to identify the general tone of each part of the earnings calls:

$$BHAR_{it} = \alpha_0 + \beta_1 TONE^{INT}_{it} + \beta_2 TONE^{QA}_{it} + \gamma_k CONTROLS^k_{it} + \varepsilon_{it}$$

(4)

where the variable $TONE^{INT}_{it}$ represents the tone during the introductory part, while $TONE^{QA}_{it}$ is the tone during the Q&A. It also analyzes the effects of positive and negative words in the context of the different parts of the calls.

The proxy for the accumulated abnormal return used in this study is the Buy-and-Hold Abnormal Return (BHAR), accumulated as proposed by Barber and Lyon (1997) and the abnormal return calculation by MacKinlay (1997):

$$BHAR_{i(\tau_1,\tau_2)} = \prod_{t=0}^{\tau_2}(1 + AR_{i,t}) \qquad comAR_{i,t} = R_{i,t} - (\widehat{\alpha}_i + \widehat{\beta}_i R_{mt})$$

(5)

where, $BHAR_{it}$ represents the buy-and-hold abnormal return of company i in period t, accumulated in an event window that encompasses the event day (t_0) and the following day ($t+1$) and a 30-day estimated window; AR_{it} is the abnormal return for company i in period t, with $R_{it} = \ln(P_t/P_{t-1})$ being the daily stock return, with P_t and P_{t-1} representing the daily share price of the selected companies i in the sample and $R_{mt} = \ln(C_t/C_{t-1})$ as the daily market return with C_t and C_{t-1} representing the daily price of the market portfolio (Ibovespa) in periods t and $t-1$, respectively.

Table 1 presents the control variables:

Table 1. Control variables used in the statistical models

Variables	Description	Formula	Literature
BM_{it}	Variable that represents the Book-to-market indicator of company i in period t	$BM_{it} = \text{BOOK\_VAL\_PER\_SH}$	Price et al. (2012), Bannier, Pauls and Walter (2017), and Brockman et al. (2017).
LEV_{it}	Variable that represents the leverage of company i in period t	$LEV_{it} = \dfrac{BS\_TOT\_LIAB2}{BS\_TOT\_ASSET}$	Price et al. (2012), Bannier et al. (2017), Brockman et al. (2015, 2017).
$SIZE_{it}$	Variable that represents the capitalization and market of company i in period t	$SIZE_{it} = \ln(TO\_MKT\_VAL)$	Price et al. (2012), Bannier et al. (2017), Henry e Leone (2016), and Brockman et al. (2017).
$SUPR_{it}$	Variable that represents the surprise in the results of company i in period t	$SUPR_{it} = \dfrac{(EPS_{it} - EPS_{i,t-1})}{P_{i,t-1}}$	Price et al. (2012), Bannier et al. (2017), and Brockman et al. (2017).
$LnAT_{it}$	Variable that represents the total assets of company i in period t	$\ln(BS\_TOT\_ASSET)$	

Note: The variables were calculated from data extracted from Bloomberg®, with BS_TOT_ASSET being the total assets; BS_TOT_LIAB2 the total liability; $BOOK\_VAL\_PER\_SH$ the book value per share; TOT_MKT_VAL the total market value; $EPSit=IS\_EPS$ represents earnings per share, with $P_{i,t-1}$ being the share price in the previous quarter.

RESULTS AND DISCUSSION

We divided the tones obtained from the sample according to the part of the call and the type of participants. During earnings conference calls, $TONE^{OVERALL}$ tends to be more positive than negative, with an average of 0.042. The standard deviation is 0.235, and the range is from a minimum of -0.714 to a maximum of 0.818, indicating considerable variation compared to the variable of interest (Table 2).

Table 2. **Descriptive statistics**

Panel A: descriptive statistics for variable BHAR (0.1) and variables TONE (2010-17)

Statistics	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient	Asymmetry	Kurtosis
$BHAR\,(0,1)$	-0.239	0.242	0.000	0.043	247.438	0.421	8.217
$TONE^{OVERAL}$	-0.714	0.818	0.042	0.235	5.623	-0.130	2.824
$TONE^{INT}$	-0.800	1.000	0.224	0.306	1.369	-0.363	2.867
$TONE^{QA}$	-1.000	0.700	-0.133	0.309	-2.322	-0.707	4.017
$TONE^{MANAGER}$	-0.733	0.846	0.168	0.265	1.579	0.124	2.978
$TONE^{ANALYST}$	-1.000	1.000	-0.099	0.281	-2.852	-0.301	4.354
$TONE^{CEO}$	-0.714	0.911	0.181	0.274	1.514	0.471	2.749
$TONE^{CFOIR}$	-0.867	0.938	0.117	0.294	2.509	-0.112	2.947
$TONE^{SELL}$	-0.833	0.750	-0.084	0.261	-3.116	0.082	3.097
$TONE^{BUY}$	-0.857	0.846	-0.031	0.210	-6.839	-0.678	6.706

Panel B: Descriptive statistics of words classified as positive and negative by the LM dictionary

Statistics	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient	Asymmetry	Kurtosis
POS^{INT}	2	189	33.209	24.608	0.741	1.734	7.919
NEG^{INT}	0	126	19.068	13.181	0.691	2.041	11.589
POS^{QA}	0	286	36.227	28.268	0.780	1.452	8.734
NEG^{QA}	0	164	41.548	28.844	0.694	0.920	3.854
$POS^{MANAGER}$	1	339	58.409	38.390	0.657	1.479	7.048
$NEG^{MANAGER}$	2	203	38.657	22.932	0.593	1.472	7.554
$POS^{ANALYST}$	0	49	11.894	8.790	0.739	0.782	3.377
$NEG^{ANALYST}$	0	73	15.397	12.391	0.805	1.154	4.477

Panel C: Descriptive statistics of words classified as positive and negative, segregated by participant type

Statistics	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient	Asymmetry	Kurtosis
POS^{CEO}	0	180	25.112	31.311	1.247	1.594	5.554
NEG^{CEO}	0	117	13.464	17.334	1.287	1.816	7.245
POS^{CFOIR}	0	121	24.026	20.921	0.871	1.504	5.778
NEG^{CFOIR}	0	126	18.097	15.732	0.869	1.539	6.959
POS^{SELL}	0	46	9.930	7.804	0.786	0.859	3.588
NEG^{SELL}	0	61	12.711	10.855	0.854	1.155	4.421
POS^{BUY}	0	15	1.249	2.310	1.849	2.356	9.227
NEG^{BUY}	0	39	1.670	3.205	1.920	3.593	26.643

Note: The number of observations is 1,165. BHAR (0.1) is the Buy-and-Hold Abnormal Return, calculated in an event window comprising periods $_{t0}$ and $t + 1$; TONE is the calculated tone; POS and NEG are the positive and negative word count, respectively, for each participant and each part of the conference call.

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After separating the $TONE^{MANAGER}$ and the $TONE^{ANALYST}$, the managers' tone tends to be positive (averaging 0.168), and the analyst's tone is more likely to be negative (with an average of -0.099). This corroborates Brockman et al. (2015) for the United States and Brockman et al. (2017) for Hong Kong. These studies showed that the managers' tones are significantly more positive than the analysts' tones, demonstrating that analysts and investors decide based on what managers choose to discuss and disclose in earnings conference calls (Black et al., 2013).

Regarding the differences between the two parts of the earnings call (introductory and Q&A), the $TONE^{INT}$ of management is the most positive of all tone measures. Its average value is 0.224, and $TONE^{Q&A}$ is negative, with an average of -0.133. It is possible to notice that the linguistic tone during the Q&A changes immediately after the introductory statements. The distribution of tone in the introductory part resembles a normal distribution with a moderate degree of asymmetry (x^2 of 105.42 and p-value of 0.000 for Jarque-Bera normality test), while in the Q&A, it is leptokurtic, with negative asymmetry due to a heavy tail on the negative side (χ^2 of 25.14 and p-value of 0.000 for Jarque-Bera normality test), due the sample showed transcribed calls that only registered negative words.

For the main groups of participants, the frequency distribution of the tone of company managers ($TONE^{MANAGER}$) is slightly shifted to the right (average of 0.168, χ^2 of 17.10 and p-value of 0.002 for Jarque-Bera normality test). In contrast, the tone of the analysts ($TONE^{ANALYST}$) has negative asymmetry (average of -0.099, χ^2 of 39.10 and p-value of 0.000 for Jarque-Bera normality test), with a concentration of values close to the average (leptokurtosis). Similar results were found by Brockman et al. (2015).

With the application of the LM dictionary, it was observed an average greater volume of both positive and negative words in the Q&A part compared to the introductory part of the earnings calls. This result is explained by greater interaction between participants in the Q&A. However, how the debate and the Q&A are driven depends on the information presented in the introductory part.

The number of positive and negative words is also useful to identify the acting pattern of each type of participant. On average, CEOs and CFOs/IRs use more positive words than negative in their speeches. CFOs/IRs tend to use more negative words than CEOs, as can be seen in Table 2. The comparison between the number of words used by sell-side and buy-side analysts revealed that sell-side analysts (POS^{SELL}, average of 9,930 with a maximum of positive words of 46 and NEG^{SELL}, average of 12,711 with the maximum number of negative words of 61) use a greater number of both positive and negative words compared to buy-side analysts (POS^{BUY}, average of 1,249 with maximum positive words of 15 and NEG^{BUY}, average of 1,670 with maximum of negative words of 39). This finding can be attributed to the heterogeneous nature of predictions, in which divergent expectations are formed from a diverse set of information and strategies (Yamamoto & Hirata, 2012).

Table 3 shows the matrix of correlations between the study variables.

Table 3. **Correlation matrix**

Panel A: Pearson correlation between BHAR (0.1) and the TONE variables (2010-17)

VARIABLES	BHAR (0,1)	TONE^{OVERALL}	TONE^{INT}	TONE^{QA}	TONE^{MANAGER}	TONE^{ANALYST}
$BHAR (0,1)$	1					
$TONE^{OVERALL}$	0.1147**	1				
$TONE^{INT}$	0.1087**	0.7622**	1			
$TONE^{QA}$	0.0723**	0.5867**	0.3055**	1		
$TONE^{MANAGER}$	0.0926**	0.9475**	0.8270**	0.5453**	1	
$TONE^{ANALYST}$	0.1137**	0.4759**	0.1751**	0.4779**	0.3265**	1

Panel B: Pearson correlation between BHAR (0.1) and control variables (2010-17)

VARIABLES	BHAR (0.1)	SIZE	BM	LnAT	SUPR	LEV
$BHAR (0.1)$	1					
$SIZE$	-0.0604**	1				
BM	0.0364	-0.0244	1			
$LnAT$	-0.0814**	0.8578**	-0.3240**	1		
$SUPR$	-0.0236	-0.0034	-0.0021	0.0061	1	
LEV	0.0197	0.2501**	0.1610**	0.3376**	0.0086	1

Note: ** corresponds to statistically significant variables at the 5% level.

Panel A of Table 3 shows that the correlation between the managers' tone ($TONE^{MANAGER}$) and the overall tone of the earnings calls is greater than the correlation between the general tone and the analysts' tone (TONE^{ANALYST}). Similar results were observed in the studies by Brockman et al. (2015, 2017).

The lowest correlation between the analysts' tone ($TONE^{ANALYST}$) and the introductory tone ($TONE^{INT}$) was expected because the analysts only speak during the Q&A part of the calls. In turn, the correlation between the introductory part $(TONE^{INT})$ and the Q&A part ($TONE^{QA}$) was 0.3055. In the analysis among participants, the correlation between the managers' tone ($TONE^{MANAGER}$) and the analysts' tone ($TONE^{ANALYST}$) was 0.3265. These lower levels of correlation demonstrate changes in positioning between the parts of the calls and among participants. Panel B contains the correlations for the control variables. There is a low correlation between the dependent variable and the explanatory variables, around 0.10 in relation to the tone, and at levels below 0.05, in most cases, with the control variables.

Then, the effect of the tone on abnormal return was analyzed, in general terms, by the part of the earnings call and by type of participant. Also, the analysis of the direct effect of positive and negative words was conducted. Table 4 shows the results.

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Table 4. Results of panel data regressions with pooled model, with estimation of the tone segregated by conference call part and by type of participant

Panel A: Estimation of models

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
$TONE^{OVERALL}$	0.0188***	-	-	-	-
$TONE^{INT}$	-	0.0120***	-	-	-
$POS^{INT\,(1)}$	-	-	0.0148*	-	-
$NEG^{INT\,(1)}$	-	-	-0.0203	-	-
$TONE^{QA}$	-	0.0058	-	-	-
$POS^{QA\,(1)}$	-	-	0.0124	-	-
$NEG^{QA\,(1)}$	-	-	-0.0048	-	-
$TONE^{MANAGER}$	-	-	-	0.0089*	-
$POS^{MANAGER\,(1)}$	-	-	-	-	0.0054
$NEG^{MANAGER\,(1)}$	-	-	-	-	-0.0065
$TONE^{ANALYST}$	-	-	-	0.0132***	-
$POS^{ANALYST\,(1)}$	-	-	-	-	0.0847***
$NEG^{ANALYST\,(1)}$	-	-	-	-	-0.0363*
$SIZE^{(1)}$	0.4870	0.5140	0.4480	0.5090	0.4570
$BM^{(1)}$	-0.0357	-0.0452	-0.0445	-0.0388	-0.0503
$LnAT^{(1)}$	-0.409*	-0.4520*	-0.4770**	-0.4140*	-0.4610*
$SUPR^{(1)}$	-0.4740	-0.4560	-0.4810	-0.4960	-0.4870
$LEV^{(1)}$	0.0171*	0.0168*	0.0171*	0.0164*	0.0139
constant	0.0099	0.0123	0.0159*	0.0104	0.0161

Panel B: Model specification tests and econometric tests

F Test					
t-stat	1.59	1.56	1.58	1.71	1.72
p-value	0.0097	0.0131	0.0111	0.0034	0.0030
LM Test					
t-stat	2.12	1.44	1.53	3.24	3.34
p-value	0.0728	0.1155	0.1077	0.0359	0.0338
Hausman Test					
t-stat	5.15	-	-	7.56	12.15
p-value	0.5253	-	-	0.373	0.2049
Specification	POLS	POLS	POLS	POLS	POLS

Note: POLS represents the Pooled OLS specification. For comparison purposes, we chose to present the results of the Pooled model. Given the proximity of these results with the fixed effects and random effects specifications, and to keep this article concise, these specifications were not presented but can be requested from the authors. *, ** and *** correspond to the significance levels of 10%, 5% and 1% respectively. (1) Given the magnitude of the coefficients and to facilitate data visualization, the estimated values should be divided by 100.

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From the analysis of Model 1, we observe that the general tone (TONE[OVERALL]) exerts a statistically significant influence at the level of 1% on the abnormal return calculated by the BHAR methodology (1.0). This finding is similar to Price et al. (2012), Henry and Leone (2016), and others. Among the control variables, there is evidence that investors react to numerical representations of company size (LnAT) and financial leverage (LEV). The signals observed in these variables are consistent with the findings of Brockman et al. (2017).

Analyzing Model 2, when segregating the results from the introductory (TONE[INT]) and the Q&A (TONE[QA]) parts of the calls, the tone was statistically significant at 1% with the abnormal return calculated by the BHAR methodology (1.0). The positive effect between the introductory tone and the abnormal return is similar to that found by Brockman et al. (2017) for the Hong Kong market, which adopted the CAR (0.1) specification for abnormal returns, and in the study by Price et al. (2012), for the North American market, in which the specification for the accumulated abnormal return was CAR (-1.1). In this context, a possible interpretation is that participants tend to give more relevance to the content provided in the introductory part of the calls. The dialogue in the Q&A tending to be structured based on the information presented in the introductory part.

Model 3 captured the direct effects of positive (or negative) words on the abnormal return in the introductory and Q&A parts. It was observed that only the positive words in the introductory section (POS[INT]) exert some influence on the abnormal return. Verrecchia (2001) explained that when evaluating voluntary disclosure in their categorization of association-based disclosure, managers tend to ensure the transmission of information that impacts positively and retain information that negatively impacts the company value. In this context, as shown in Table 2, the average number of positive words in the introductory part (33.209) exceeds the average of negative words (19.068) by 74.16%. Thus, negative information is usually obtained during the Q&A, in which the average number of negative words (41,548) exceeds positive words (36,227).

Model 4, evaluating the main groups of participants in the earnings calls, found that only the analysts' tone (TONE[ANALYST]) was statistically significant at 1% on the abnormal return. Similar results were obtained by Brockman et al. (2015), with the specification of CAR (0.1) for abnormal return, and by Borochin et al. (2018), who related the analysts' tone to stock price volatility. In this context, given the more frequent occurrence of positive tones by managers, the market tends to capture additional information transmitted throughout the calls. Among this information, analysts (sell-side or buy-side), which, according to Blau et al. (2015), are considered "sophisticated investors," can induce the investors' behavior.

In this analysis line, Model 5 demonstrates that analysts' positive and negative words affect the abnormal return corroborating the results presented in Model 4. A 1% variation in the number of positive words has a 0.095% effect on the abnormal return, while the same variation in the number of negative words has a 0.045% negative effect. As analysts use, on average, more negative words. When they use positive words, there is a market reaction resulting in abnormal positive returns.

The results presented in Table 5 were used to develop the analysis by type of participant. Also, pooled OLS was applied since both null hypotheses of the Breusch-Pagan F and LM tests at the significance level of 5% were confirmed.

Table 5. Panel data results of tone by participants with Pooled OLS model, with tone estimation segregated by type of participant

Panel A: Estimation of models

Variables	Model 6			Model 7		
	POLS	FE	RE	POLS	FE	RE
$TONE^{CEO}$	0.0070	0.0065	0.0071	-	-	-
$POS^{CEO\,(1)}$	-	-	-	-0.0006	-0.0008	-0.0011
$NEG^{CEO\,(1)}$	-	-	-	-0.0041	-0.0022	-0.0044
$TONE^{CFOIR}$	0.0089*	0.0025	0.0073	-	-	-
$POS^{CFOIR\,(1)}$	-	-	-	0.0195**	0.0108	0.0179*
$NEG^{CFOIR\,(1)}$	-	-	-	-0.0199	-0.0824	-0.0168
$TONE^{SELL}$	0.0112**	0.0106*	0.0111**	-	-	-
$POS^{SELL\,(1)}$	-	-	-	0.0761***	0.0885***	0.0820***
$NEG^{SELL\,(1)}$	-	-	-	-0.0382*	-0.0560**	-0.0426**
$TONE^{BUY}$	0.0053	0.0108	0.0068	-	-	-
$POS^{BUY\,(1)}$	-	-	-	0.1720**	0.1900**	0.1800**
$NEG^{BUY\,(1)}$	-	-	-	-0.0384	-0.1250**	-0.621
$SIZE^{(1)}$	0.5020	0.1400	0.4600	0.3910	0.1400	0.3670
$BM^{(1)}$	-0.0393	-0.0176**	-0.0551	-0.0486	-0.1710**	-0.0617
$LnAT^{(1)}$	-0.3910*	-0.6130	-0.4060*	-0.4200*	-0.6320	-0.4300*
$SUPR^{(1)}$	-0.5150	-0.4830	-0.5000	-0.5480	-0.5300	-0.5410
$LEV^{(1)}$	0.0167*	0.3150	0.0185*	0.0143	0.0365	0.0166*
constant	0.0073	0.0422	0.0103	0.0134	0.0404	0.0149

Panel B: Model specification tests and econometric tests

F Test

t-stat	1.61	1.66
p-value	0.0082	0.0054

LM Test

t-stat	1.82	2.22
p-value	0.0884	0.0680

Hausman Test

t-stat	16.33	21.27
p-value	0.0603	0.0677

Note: POLS represents the Pooled OLS specification, FE fixed effects, and RE random effects. *, ** and *** correspond to the significance levels of 10%, 5% and 1%, respectively. (1) Given the magnitude of the coefficients and to facilitate data visualization, the estimated values should be divided by 100.

In Model 6, the group of company managers was divided into CEO and CFO or IR, and the group of analysts was divided into sell-side and buy-side. Among the results, it is worth noting that the CFO/IR tone has a positive and statistically significant effect on the abnormal return, and the CEO tone was also significant but less so. Despite the differences identified in the literature of emotional state (Mayew & Venkatachalam, 2012), or the presence of deceptive practices (Larcker & Zakolyukina, 2012) in the CEO or CFO behavior, the fact that the CEO uses practically twice the amount of positive words (25,112 on average, as noted in Table 2) than negative words (13,464) means that the CEOs' behavior is more predictable, with no noticeable effects on abnormal returns.

In turn, the sell-side analyst tone has a positive and statistically significant effect on the abnormal return. It is worth noting that, in earnings conference calls, there is more frequent participation of sell-side analysts and, as this type of analyst has a direct relationship with the company managers, this helps to improve their dialogue during the calls, thus influencing other investors. Furthermore, when analyzing the effect of the positive and negative words classified by the LM dictionary of each participant (Model 7), the positive words of the CFO/IR, the sell-side analyst, and the buy-side analyst have a positive effect on the abnormal return. There was also a positive and statistically significant effect on the abnormal return (Model 6) for the buy-side analyst tone but smaller than that of the sell-side analyst. However, when comparing the use of words (Model 7), we see a greater effect on the use of positive words by buy-side analysts than the effect related to sell-side analysts.

In short, the amount of positive words by CEOs, who normally have a positive tone, does not influence the abnormal return. In contrast, the number of positive words by CFO/IRs, considered to have a more neutral tone (on average, approximately 57 % of words are positive and 43% negative), has a small effect (0.019) on abnormal returns. On the other hand, the sell-side analyst, who has more information and uses more positive words, generates a higher positive abnormal return (0.076). However, the abnormal return is greater when the buy-side analyst, who is expected to have less information, uses positive words (0.172). These findings align with Groysberg, Healy, Serafeim, and Shanthikumar (2013), who concluded that buy-side analysts' recommendations are less optimistic than sell-side analysts due to fewer conflicts of interest. Hobbs and Singh (2015) suggest that sell-side analysts outperform buy-side analysts in negotiations and recommendations, despite the conflicts of interest documented in the literature.

CONCLUSION

This study focused on voluntary disclosures through quarterly earnings conference calls, which do not follow the mandatory standards regulated by law and are dynamic and interactive means of communication between managers and stakeholders.

This study analyzed the different tones used by the participants of earnings conference calls and their influence on generating abnormal stock returns. The main contribution of this study is filling the gap in the literature of segregation of tone analysis by type (buy-side analyst and sell-side analyst) and by corporate representatives (CEO, CFO, or IR) during the earnings conference calls.

It is noteworthy that the research findings reinforce other studies and research on the subject mostly focused on the North American market. Thus, this work improves the understanding of the influence of tone in the stock market, arguing that an event of disclosure should be considered beyond the numbers presented in financial statements.

This article analyzed the relationship of tone in transcribed earnings conference calls on stock market reaction using Brazilian companies listed on B3, with five main findings. First, the tone of earnings conference calls has significant predictive power over stock market reactions. Second, predictability is predominant during the introductory part of the calls, specifically in the managers' opening speech.

The third finding is that participants tend to give more relevance to the analysts' tone than to the managers' tone in earnings conference calls in Brazil. This result is similar to recent discoveries in the North American scenario and contrary to findings obtained in Hong Kong. The fourth finding concerns the segregation by corporate representatives (CEO and CFO/IR) during earnings conference calls and that both corporate representatives drive a market reaction. Finally, the fifth finding refers to the segregation of the tone analysis by the type of analyst (buy-side and sell-side), indicating a greater reaction to tone presented by sell-side analysts.

It is noteworthy that, in the analysis of the dynamic interaction between managers and the external investment community, it was possible to identify four main results. The first empirical finding shows that the tone in the introductory part of the transcribed calls is more positive than during the Q&A. The second finding concerns the positive effects of the analysts' tone on market returns. Aggregated analysis on the group of analysts who spoke during the Q&A revealed that the words classified as positive or negative were monitored and evaluated by other investors in the market. Separately, of the group of managers, the CFO/IR showed greater influence than the CEO.

Finally, this study contributed to understanding the tones presented by managers and analysts in earnings conference calls. First, it measured the overall tone. Then compared the two parts of the call – the introductory part and the Q&A – showing the different tones presented according to each participant segregated into managers (CEO and CFOIR) and analysts (sell-side and buy-side). The findings suggest that investors should pay close attention to all participants as they can generate a reaction in the stock market.

In addition, there is evidence on the sources and channels of information transfer during earnings conference calls. The findings confirm the proposal of this research that participants' tone affects the intensity and direction of the stock market over time.

In short, this study contributed to the literature by focusing on the tone expressed by managers and analysts. The contribution of this research is the tone difference between managers (CEO, and CFO or IR) and analysts (sell-side and buy-side), and the separation between positive and negative words, to understand better the behavior of stock returns after earnings conference calls. It is also worth noting that the two main parts of earnings conference calls were differentiated, separating the speech in the introductory part from the more spontaneous Q&A part. Overall, the findings on earnings conference calls and stock returns point to several areas of interest for further research.

REFERENCES

Baik, B., & Nam, H.-J. (2009). The effect of regulation fair disclosure on conference calls: The case of earnings surprises. *Asia-Pacific Journal of Financial Studies, 38*(6), 801-829. doi: 10.1111/j.2041-6156.2009.tb00031.x

Bannier, C., Pauls, T., & Walter, A. (2017). *CEO-speeches and stock returns.* CFS Working Paper No. 583. doi: 10.2139/ssrn.3051151

Barber, B. M., & Lyon, J. D. (1997). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics, 43*(3), 341-372. / doi: 10.1016/S0304-405X(96)00890-2

Bassemir, M., Novotny-Farkas, Z., & Pachta, J. (2013). The effect of conference calls on analysts' forecasts: German evidence. *European Accounting Review, 22*(1), 151-183. doi: 10.1080/09638180.2011.640454

Beyer, A., Cohen, D. A., Lys, T. Z., & Walther, B. R. (2010). The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics, 50*(2-3), 296-343. doi: 10.1016/j.jacceco.2010.10.003

Black, E. L. (2016). The ethical reporting of non-GAAP performance measures. *Revista Contabilidade & Finanças, 27*(70), 7-11. doi: 10.1590/1808-057x201690090

Black, E. L., Christensen, T. E., Kiosse, P. V., & Steffen, T. D. (2013). *Does management discussion of pro forma earnings in press releases and conference calls influence street earnings exclusions*. Working Paper presented at American Accounting Association conference.

Blau, B. M., DeLisle, J. R., & Price, S. M. (2015). Do sophisticated investors interpret earnings conference call tone differently than investors at large? Evidence from short sales. *Journal of Corporate Finance, 31,* 203-219. doi: 10.1016/j.jcorpfin.2015.02.003

Borochin, P. A., Cicon, J. E., DeLisle, R. J., & Price, S. M. (2018). The effects of conference call tones on market perceptions of value uncertainty. *Journal of Financial Markets, 40,* 75-91. doi: 10.1016/j.finmar.2017.12.003

Brockman, P., Li, X., & Price, S. M. (2015). Differences in conference call tones: Managers vs. analysts. *Financial Analysts Journal, 71*(4), 24-42. doi: 10.2469/faj.v71.n4.1

Brockman, P., Li, X., & Price, S. M. (2017). Conference call tone and stock returns: Evidence from the Stock Exchange of Hong Kong. Asia-Pacific *Journal of Financial Studies, 46,* 667-685. doi: 10.1111/ajfs.12186

Bushee, B. J., Jung, M. J., & Miller, G. S. (2011). Conference presentations and the disclosure milieu. *Journal of Accounting Research, 49*(5), 1163-1192. doi: 10.1111/j.1475-679X.2011.00426.x

Camiciottoli, B. C. (2011). Ethics and ethos in financial reporting: Analyzing persuasive language in earnings calls. *Business Communication Quarterly, 74*(3), 298–312. doi: 10.1177/1080569911413810

Campbell, J. Y., Lo, A. W. C., & MacKinlay, A. C. (1997). *The econometrics of financial markets*. Princeton, NJ: Princeton University Press

Chan, A. L., Lee, E., Petaibanlue, J., & Tan, N. (2017). Do board interlocks motivate voluntary disclosure? Evidence from Taiwan. *Review of Quantitative Finance and Accounting, 48*(2), 441-466. doi: 10.1007/s11156-016-0557-1

Chin, C., Chen, Y., & Liang, J. (2013). International diversification and conference calls. *Asia-Pacific Journal of Accounting & Economics, 20*(3), 297-314. doi: 10.1080/16081625.2012.719856

Davis, A. K., Ge, W., & Matsumoto, D. (2015). The effect of manager-specific optimism on the tone of earnings conference calls. *Review of Accounting Studies, 20,* 639-673. doi: 10.1007/s11142-014-9309-4

Doran, J. S., Peterson, D. R., & Price, S. M. (2012). Earnings conference call content and stock price: The case of REITs. *Journal of Real Estate Finance and Economics, 45*(2), 402-434. doi: 10.1007/s11146-010-9266-z

Dzieliiski, M., Wagner, A. F., & Zeckhauser, R. J. (2017). *Straight talkers and vague talkers: The effects of managerial style in earnings conference calls.* NBER Working Paper No. w23425. doi: 10.3386/w23425

Frankel, R., Johnson, M., & Skinner, D. J. (1999). An empirical examination of conference calls as a voluntary disclosure medium. *Journal of Accounting Research, 37*(1), 133-150. Retrieved from http://www.jstor.org/stable/2491400

Groysberg, B., Healy, P., Serafeim, G., & Shanthikumar, D. (2013). The stock selection and performance of buy-side analysts. *Management Science, 59*(5), 1062-1075. Retrieved from http://www.jstor.org/stable/23443927

Hales, J., Kuang, X. I. J., & Venkataraman, S. (2011). Who believes the hype? An experimental examination of how language affects investor judgments. *Journal of Accounting Research, 49*(1), 223-255. doi: 10.1111/j.1475-679X.2010.00394.x

Henry, E. (2008). Are investors influenced by how earnings press releases are written? *Journal of Business Communication, 45*(4), 363-407. doi: 10.1177/0021943608319388

Henry, E., & Leone, A. J. (2016). Measuring qualitative information in capital markets research: Comparison of alternative methodologies to measure disclosure tone. *The Accounting Review, 91*(1), 153-178. doi: 10.2308/accr-51161

Hobbs, J., & Singh, V. (2015). A comparison of buy-side and sell-side analysts. *Review of Financial Economics, 24,* 42-51. doi: 10.1016/j.rfe.2014.12.004

Huang, X., Teoh, S. H., & Zhang, Y. (2014). Tone management. *Accounting Review, 89(3), 1083-1113. doi: 10.2308/accr-50684*

Kang, T., Park, D. H., & Han, I. (2018). Beyond the numbers: The effect of 10-K tone on firms' performance predictions using text analytics. *Telematics and Informatics, 35*(2), 370-381. doi: 10.1016/j.tele.2017.12.014

Kearney, C., & Liu, S. (2014). Textual sentiment in finance: A survey of methods and models. *International Review of Financial Analysis, 33,* 171-185. doi: 10.1016/j.irfa.2014.02.006

Larcker, D. F., & Zakolyukina, A. A. (2012). Detecting deceptive discussions in conference calls. *Journal of Accounting Research, 50*(2), 495-540. doi: 10.1111/j.1475-679X.2012.00450.x

Lee, J. (2016). Can investors detect managers' lack of spontaneity? Adherence to predetermined scripts during earnings conference calls. *Accounting Review, 91*(1), 229-250. doi: 10.2308/accr-51135

Loughran, T., & McDonald, B. (2011). When is a liability not a liability? Textual analysis, distionaries, and 10-Ks. *Journal of Finance, 66*(1), 35-65. doi: 10.1111/j.1540-6261.2010.01625.x

Loughran, T., & McDonald, B. (2016). *Textual analysis in accounting and finance: A survey.* Working Paper. doi: 10.2139/ssrn.2504147

MacKinlay, A. C. (1997, March). Event studies in economics and finance. *Journal of Economic Literature, 35,* 13-39. doi: 10.2307/2729691

Matsumoto, D., Pronk, M., & Roelofsen, E. (2011). What makes conference calls useful? The information content of managers' presentations and analysts' discussion sessions. *The Accounting Review, 86*(4), 1383–1414. doi: 10.2308/accr-10034

Mayew, W. J., & Venkatachalam, M. (2012). The power of voice: Managerial affective states. *The Journal of Finance, LXVII*(1), 1-43. doi: 10.1111/j.1540-6261.2011.01705.x

Moreira, N. C., Ramos, F., Kozak-Rogo, J., & Rogo, R. (2016). Conference calls: Uma análise empírica do conteúdo informacional e do tipo de notícia divulgada. *BBR – Brazilian Business Review, 13*(6), 304-329. doi: 10.15728/bbr.2016.13.6.6

Pagliarussi, M. S., Aguiar, M. O., & Galdi, F. C. (2016). Sentiment analysis em relatórios anuais de empresas brasileiras com ações negociadas na BM&FBovespa. B*ASE – Revista de Administração e Contabilidade da Unisinos, 13(*1), 53-64. doi: 10.4013/base.2016.131.04

Palmieri, R., Rocci, A., & Kudrautsava, N. (2015). Argumentation in earnings conference calls. Corporate standpoints and analysts' challenges. *Studies in Communication Sciences, 15*(1), 120-132. doi: 10.1016/j.scoms.2015.03.014

Price, S. M., Doran, J. S., Peterson, D. R., & Bliss, B. A. (2012). Earnings conference calls and stock returns: The incremental informativeness of textual tone. *Journal of Banking and Finance, 36*(4), 992-1011. doi: 10.1016/j.jbankfin.2011.10.013

Souza, A. C. de. (2017). *As palavras importam? O uso do tom linguístico nos discursos das apresentações de resultados.* São Paulo, SP: Universidade de São Paulo, Faculdade de Economia, Administração e Contabilidade.

Tasker, S. C. (1998). Bridging the information gap: Quarterly conference calls as a medium for voluntary disclosure. *Review of Accounting Studies, 3*(1-2), 137-167. https://doi.org/10.1023/A:1009684502135

Teoh, S. H. (2018). The promise and challenges of new datasets for accounting research. *Accounting, Organizations and Society, 68-69*, 109-117. doi: 10.1016/j.aos.2018.03.008

Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting and Economics, 32*(1-3), 97-180. doi: 10.1016/S0165-4101(01)00025-8

Yamamoto, R., & Hirata, H. (2012). Belief changes and expectation heterogeneity in buy-and sell-side professionals in the Japanese stock market. *Pacific-Basin Finance Journal, 20*(5), 723-744. doi: 10.1016/j.pacfin.2012.03.001

AUTHOR'S CONTRIBUTIONS

Joyce Menezes da Fonseca Tonin and Luciano Marcio Scherer worked on the conceptualization and theoretical-methodological approach as well as on data analysis, writing and final revision of the manuscript. The theoretical review and data collection was conducted by Joyce Menezes da Fonseca Tonin.