Louvain School of Management

ARE MORE BULLET POINTS RELATED TO A STRONGER STOCK PRICE REACTION ?

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Declaration Regarding AI Tool Usage

During the preparation of this master's thesis, the author utilized **ChatGPT - 4o** for the following purpose:

1. [REASON] : Assist in developing the statistical code in R, highlighting ideas from previous research, correcting any language errors, and assist in improving the layout.

2. After using **ChatGPT - 4o**, the author diligently reviewed and edited the content produced by the tool. We take full responsibility for the final content presented in this thesis.

By signing this declaration, we affirm that the content of this master's thesis reflects our original work, augmented by the responsible use of AI.

Abstract

Numerous studies have examined various factors contributing to the success of companies, such as linguistic and visual readability. However, the limited evidence on the effect of structural readability on investors' ability to understand information remains an uncharted territory. This paper investigates the impact of using bullet points in corporate communication and its effect on share price reactions. We focused our study on two main aspects: the optimal number of bullet points and their informativeness through the sentiment employed. Our results suggest a curvilinear relationship between the use of bullet points and share price reactions, with six bullet points being the optimal number for maximum impact. Additionally, we found that the use of a positive tone was four times greater within the bullet points than in the rest of the text or the document as a whole. This positive tone is particularly prevalent among companies that outperform predicted results. The positive tone used in Earnings Press Releases (EPRs) has a significant impact on investor reactions, as measured by cumulative abnormal returns (CARs). We contribute to the literature by demonstrating that a better-structured earnings press release, especially one improved through the use of bullet points, can enhance investor decision-making reactions. Moreover, we exploit this specific structure to define better tone proxies, improving the methods for conducting intratextual sentiment analysis. Our findings offer valuable insights for managers to improve their information transmission and for investors to more easily comprehend the presentation and implications of the information provided.

KEYWORDS : Bullet points, Structural readability, Dual-Coding Theory, Impression Management, Cumulative Abnormal Return (CAR), Sentiment analysis, Tone

Contents

1 Introduction

Financial reporting and corporate disclosure are key means by which companies communicate firm performance and governance to investors, and critical for the functioning of an efficient capital market. The intended response to information asymmetry between managers and shareholders, which they are exposed to, shows the quality of this communication can have a significant impact on investors' decisions (Healy and Palepu, 2001). However, corporate disclosures are often complex and technical, using legal language and jargon that can be challenging for non-experts to understand. The presence of information asymmetry in corporate reporting, coupled with the way firms present their results, poses a challenge for investors to accurately interpret the information.

To decrypt this complexity, numerous studies have examined the factors that contribute to the success of funding through the transmission of information. It includes the linguistic readability, which encompasses the pitch's readability, thematic content, language accuracy, and errors, among other factors (Cunningham, 2010 ; Clark, 2008). Additionally, the concept of visual readability suggests that the use of specific images in earnings paper may impact investment decisions and analyst forecast accuracy (Ben-Raphael et al., 2021). However, we found a gap in the literature regarding the concept of structural readability and how it could improve the market efficiency. This paper innovates by studying how the management of the narrative structure in financial reports, especially through the use of bullet points, can enhance the readability, leading to a greater inclination among investors to invest in a project.

Bullet points have been identified as a useful tool for organizing and presenting information in a way that attracts readers' attention and facilitates comprehension. According to Matthews (1990), bullet points not only help to summarize the ideas of a text, but also provide a visually appealing way to structure information.

In the framework of this research, we articulate our focus around two succinct pillars:

- The first one aim to determine if whether or not, it exists a relationship between the use of bullet point in financial reports and stock prices. If so, we seek to understand the nature of this relationship and if there is an optimal number of bullets point to use when presenting information. Is there an excessive use of such cues that can negatively impact the presentation and readability of the text? Our goal is to quantify the optimal threshold of usage.

- Through the second pillar, we are committed to delve into these bullet points by conducting a sentiment analysis to understand if managers tend to use a more positive or negative tone in these cues compared to the rest of the text. It is not just a question of how many bullet points to use, but also of how to use them. And it is Impression Management — which refers to the strategic endeavor by which corporate executives curate the presentation of information in such a way as it highlights successes and minimizes any negative aspects of the company's performance, to shape stakeholders' perceptions positively — set alongside the aforementioned definition of a bullet point, which led us to investigate whether bullet points could be used strategically by managers to convey positive performance, while downplaying negative information.

2 Contributions of This Research

This research presents a novel aspect of earnings press releases, which has not been extensively studied thus far. Firstly, by examining the relationship between the structural elements of financial disclosures and stock price reactions, also exploring how investors process information presented in bullet points and whether more information in this format leads to stronger stock price reactions, we bring novel insights into the effects of the use of bullet points on investor decision¬-making.

Secondly, these performance reports are not simple plain text, they have a specific structure that is often common to most EPR (Bowen et al., 2005), which enables them to comply with any regulatory requirements on the subject, such as the SEC's Plain English rule (Smaili et al., 2022). However, past literature on tone analysis has predominantly used an equally-weighted average method of intratextual sentiment, treating each part of the text equally. Therefore, we are contributing to the literature by being one of the first to exploit this specific structure to define better tone proxies, helping to understand the strategic use words to convey information. Indeed, the opportunity given by the potential impact of bullet point on stock prices prompt us to investigate if it can optimize the way in which tone is measured.

Thirdly, prior research has expanded on linguistic readability (Cunningham, 2010; Clark, 2008) and visual readability (Ben-Raphael et al., 2021) to explain how these concepts can enhance market efficiency and investment decisions. Similarly, our research contributes by introducing new features to understand how structural readability, particularly through the use of bullet points, operates. This enables both managers to improve their information transmission and investors to more easily comprehend the way information is presented and the meanings derived from it. In other words, we are bringing new insights on how this concept contribute to the improvement of the market efficiency.

More broadly, while these results cannot be directly applied to other contexts, they may offer preliminary understandings for use beyond the framework of earnings press releases. For instance, academic institutions could leverage these findings to enhance the structure of their documents by using an optimal range of bullet points or by tailoring the tone to the information conveyed, thereby maximizing comprehension.

3 Literature Review and Hypothesis

According to Loughran and McDonald (2016), readability refers to how well a reader can comprehend the intended message. It is measured using various traditional formulas, such as the Flesch Index, Fog Index (Li, 2008 ; Bloomfield, 2008 ; Guay et al., 2015), and Flesch-Kincaid (De Franco et al., 2015), or by counting the number of words in the annual report (Li, 2008).

Despite the logical assumption that companies aim to clearly explain their operations and performance in financial reports, research spanning the past seven decades reveals a persistent trend of using obfuscation and highly technical language. This practice persists even though companies are aware that the information is vital for investors' decisions and perceptions of both financial and non-financial aspects of the firm.

Miller (2010) discovered that firms failing to clearly communicate their financial information experienced a decline in overall trading activity. This reduction was attributed to the information being too complex and costly for small investors to analyze effectively. Conversely, when investors recognize substantial efforts to enhance transparency and readability, there is an increase in the trust and credibility of the conveyed message (Loughran and McDonald, 2014).

Therefore, the literature identifies five main categories of writing styles: avoidance, deception, informativeness, obfuscation, and a balanced strategy that lies between the latter two styles (Melloni et al., 2017; Bloomfield, 2008; Courtis, 2004). Our goal is to contribute to this field by examining the impact of structural elements, such as bullet points, and the management of sentiment on the readability of financial reports. Extensively, we aim to explore how these factors influence investors and their decision-making processes.

3.1 Hypothesis on the influence of bullet points on the stock market price reaction

Our first hypothesis focuses on whether there is an influence from the use of bullet point in Earnings Press Release (EPR) on stock market prices and if so, what is the direction of this influence. As posits earlier, bullet points are useful tool for organizing and presenting information but also provide a visually appealing way to structure information (Matthews, 1990).

On the one hand, Clark and Paivio (1991), found in their study on Dual Coding Theory (DCT) that the human mind processes and stores information through two distinct but interconnected channels, reacting to verbal and non-verbal stimuli, the last one referring to visual or structural cues. Utilizing both channels to present information can improve processing, comprehension, and recall.

Interweaving Clark and Paivio's (1991) insights into the examination of DCT with the strategic use of bullet points in EPR highlights a practice deeply rooted in the principles of cognitive science. Serving as visual anchors, bullet points draw the attention of the reader to key elements, facilitating a dual coding process where information is received both verbally and visually. This method distills complex narratives into digestible, organized segments, streamlining information assimilation and enhancing mnemonic retention. Also, as noted by Labs (2020), readers retain 33.4% more information when presented with information in bullet point format compared to continuous text, which underscore the importance of using structural cues to highlight key ideas and facilitate comprehension for readers.

On the other hand, previous research has indicated that poor readability can have a detrimental impact on capital markets. Findings from these studies reveal a negative relationship between readability and financial performance, while suggesting that poor readability increases the perceived financial risk among stakeholders. Additionally, regardless of their expertise, readers' decision-making processes are affected by poor readability (Li, 2008 ; Lehavy et al., 2011). Other research argue that less readable disclosures may limit investors' ability or willingness to extract information from relatively long and complex documents (Grossman and Stiglitz, 1980 ; Bloomfield, 2002 ; Hirshleifer and Teoh, 2003).

By combining these findings, we learn that poor readability has a negative impact on the capital market and that the use of visual cues, such as bullet points, can improve readability and information retention in documents. Accordingly, we expect that the use of bullet points to increase structural readability will have a positive impact on This leads to our first hypothesis:

- *H1(a) : An increase of bullet points has a positive influence on the stock price reaction*

To fully capture the potential effect of bullet points on investor reactions, we need to address the link between a firm's performance and its annual reporting practices. Baker and Kare (1992) evidence a positive relationship between the readability of annual reports and corporate financial performance. Companies that produced more readable narratives generally performed better financially, while reducing uncertainty among investors.

To build on these findings, and to avoid a potential bias from underperforming firms, it is insightful to determine whether the use of bullet points to enhance readability has a significant impact on investor decision-making among firms that perform above the median compared to those that perform below it.

- *H1(b): The use of bullet points has greater impact on the stock price reaction for well-performing firms compared to underperforming*

Further important question concerns the nature of the relation between the number of bullet points compared to the stock price reaction. Sweller's (1988) research on Cognitive Load Theory suggests that the human cognitive system has a limited capacity for processing information. Visual clutter, characterized by an excessive use of structural elements, can contribute to extraneous cognitive load.

Therefore, we believe that using bullet points to highlight key information can enhance readability up to a certain threshold. Beyond this point, excessive use could overload the cognitive system, making the information more complex and difficult to read.

If the results confirm a curvilinear relationship between these two variables, it presents a valuable opportunity to identify the optimal number of bullet points that maximize the positive reaction on stock prices.

- *H1(c) : There is a curvilinear relation between the number of bullet points and the stock price reaction*

3.2 Hypothesis on the influence of the tone used in EPR

According to Boudt and Thewissen (2017), there is a significant limitation in traditional sentiment analysis methods, which equally weigh all parts of a text. This approach may be biased due to CEOs' strategic placement of positive and negative words within their letters to shareholders. To address this, they introduce a position-weighted sentiment measure that assigns greater weight to the middle of the text, where sentiment is less likely to be manipulated. This method corrects for sentiment inflation and has demonstrated a significantly higher predictive power for a firm's future performance, specifically in terms of return on assets (ROA), compared to traditional equally weighted sentiment measures.

Therefore, we aim to extend the literature by exploring the structure of Earnings Press Releases (EPR) to enhance sentiment measurement methods. Particularly, we analyze the tone used in bullet points separately from the rest of the text. This approach allows us to better understand how different structural elements influence overall sentiment and investor reactions.

- *H2(a) : The net sentiment of bullet points is more positive than the net sentiment in the rest of the earning press release*

We expect to find a difference between both relying on impression management techniques which are described, in financial reporting context, as attempts to control and manipulate the impression conveyed to users of financial information (Clatworthy and Jones, 2001).

Prior studies have shown how firms employ impression management in their disclosure documents to highlight their positive performance (Clatworthy and Jones, 2003), or emphasize specific themes (Kohut and Segars, 1992). They also develop linguistic styles such as assertive, defensive, and logic-based cognitive impression management (Aerts and Yan, 2017), selectively include or omit information in discretionary narrative documents (Leung et al., 2015), rhetorically manipulate narrative disclosures (Aerts and Yan, 2017) , and manage the tone of their words (Arslan-Ayaydin et al., 2016).

Therefore, as suggested in previous hypotheses, presenting information in a structured format, such as bullet points, helps investors process and recall information more effectively. Consequently, managers can manipulate third-party expectations by emphasizing positive sentiment in the sections that are most likely to be remembered.

- *H2(b) : There is a difference in the use of the tone between well-performing and underperforming companies*

Laskin's (2018) study delves into how companies use narrative strategies in their annual reports, identifying the differences in communication tactics between overperforming and underperforming companies. He provides evidence that firms with strong financial performance use optimistic and positive language, also give clear and comprehensive plans for future growth. The other way round, businesses with weaker financial performance tend to use more complex and less accessible language. They often employ defensive narratives to justify their poor results. In other words, he provides evidence that companies will use a different tone and narrative structure in their financial reports depending on their performance.

To go further, we are committed to investigate if in our framework there is a similar difference in the use of tone between firms with an ROA above the median and those below it. Our aim is to determine if well-performing companies tend to emphasize more information in bullet points compared to poorly performing companies. In addition, we seek to find out whether the proportion of tone used in bullet points versus the rest of the text differs between the two groups, with the expectation that one group may have more positive information to share than the other.

- *H3 : The informative value of the tone in bullet points is higher than in the rest of the text*

We now turn to the question of the informational value of the textual sentiment expressed in bullet points compared to the rest of the text. Earnings Press Releases (EPRs) are a crucial source of information about a firm's performance for investors (Basu et al., 2013). The interaction between the quality, often referred to as earnings surprise, and the quantity of information reveals that market reaction is most pronounced when both high-quality and high-quantity information are present (Chen et al., 1997). Davis et al. (2012) support that the linguistic tone of EPRs provides incremental information to investors beyond the numerical earnings figures. Specifically, press releases with a positive tone are associated with positive abnormal returns, while those with a negative tone are linked to negative abnormal returns.

Furthermore, Henry (2008) identified a significant positive correlation between the tone of the narrative and the Cumulative Abnormal Return (CAR), indicating that investors' reactions intensify proportionally with increasingly positive rhetoric within disclosures.

However, these studies typically employed an equally-weighted model in their intratextual sentiment analysis, which does not account for the varying proportions of positive and negative words throughout different parts of the text (Boudt and Thewissen, 2017). Therefore, considering the informative value of the sentiment conveyed through bullet points compared to the rest of the text brings a completely new perspective to the literature. This approach helps us better understand how the structure of a written document may affect investor behavior. We expect that the informative value of bullet points will be higher, leading to a greater impact on investor behavior.

The aforementioned presupposition regarding the relation between disclosure quality and a firm's current performance can be extended to its future performance. Davis et al. (2012) demonstrates the predictive power of tone regarding a firm's future performance, showing a statistically significant relationship between the tone of EPRs and future earnings changes. Conversely, in the presence of poor financial reporting quality, uncertainty about a firm's future profitability is expected to be high. Supporting this, Yarifard and Rasool (2018) testify that analysts view firms with lower earnings quality as riskier. We extend the literature by examining if the tone used in bullet points can serve as a proxy to predict future performance or explain investor response.

4 Sample Selection and Data Description

To investigate the impact of the use of bullet points in earnings press release on the stock market reaction, we have constructed a sample based on available data. In this section, we describe the sample selection and the characteristics of the data used for our study.

4.1 Sample selection

Our initial sample consists of over 54,725 earnings press releases between 2004 and 2021, from 1,795 listed companies on different stock exchange. This sample was extracted from databases containing information on press releases. Additionally, we used another database containing information about the content of the bullet point for 89,716 EPRs. This database includes the number of positive and negative words to address the issue of sentiment in earnings press releases.

4.2 Data description

The variables used in our study are sourced from various reliable data providers, including Compustat, IBES, and CRSP. The primary variable of interest is the number of bullet points. To attain a more standardized sample, we excluded data points with extreme values for this variable, resulting in a range of two to 10 bullet points. Beyond Cumulative Abnormal Returns (CAR), which we used to determine the reaction of stock prices on the market, we also incorporated several other variables into our analysis.

These additional variables include the company's stock price, the abnormal return associated with each earnings press release, analyst forecasts, market capitalization, asset structure, fiscal year, total word count, the ratio of positive to negative words, and the exchange on which the company is listed, FOG index. These variables allowed us to control for the specific effects of various factors on the dependent variables, providing a more robust analysis of the impact of bullet points on company performance, sentiment in earnings press releases, and investor reactions.

To address variations in the fiscal year, we included it as a fixed effect control variable. This approach enables us to account for any time-specific factors or trends that could influence the variables studied, thus offering a more robust and accurate assessment of the impact of reporting timing variations on company performance, sentiment in earnings press releases, and investor reactions. By using fixed effects for fiscal years, we can better isolate the effects of our primary variables of interest and draw more reliable conclusions from our study.

5 Empirical Methodology

To corroborate the statements posited in our hypothesis development, we have established a rigorous methodology. This includes the empirical and theoretical validation of our control variables, construction of various summary statistics, and estimation of two regression models. These models are designed to analyze two primary aspects:

- **MODEL.1** — The impact of the number of bullet points on Cumulative Abnormal Returns (CAR).
- **MODEL.2** — The comparison of the sentiment conveyed in bullet points with the sentiment in the rest of the text and its impact on stock market reaction.

By using these models, we aim to understand how the structure and sentiment of earnings press releases influence investor behavior and stock market outcomes.

5.1 Determinants of the regression models

It is important to empirically document the variables allowing the models to accurately capture the studied relationship. This approach minimizes the risk of overfitting, where models become too complex and capture noise rather than true patterns. In that purpose, the variables used in these models include:

5.1.1 Dependent variables

To determine if the variables of interest impact the stock market reaction, we have set the logarithm of the Cumulative Abnormal Return (CAR) as the dependent variable for both models. CAR represents the difference between the expected return on a stock and the actual return, serving as a proxy to evaluate stock market reaction, consistent with previous research (Sun, 1995; Nagano and Yuan, 2013). Establishing a log-log model allow for the coefficients to be interpreted as elasticities, meaning the percentage change in the dependent variable for a one percent change in the independent variable. We evaluate the reaction over three different timeframes around the earnings announcement:

- ***CAR 1*** — one day before the event and one day after
- ***CAR 3*** — three days before the event and three days after
- ***CAR 5*** — five days before the event and five days after

5.1.2 Independent variables

The estimation of MODEL.1 focuses on the impact of the number of bullet points on stock market reaction. For this model, we have set the logarithm of the number of bullet points (nbrbullets) in the earnings press release, ranging from 2 to 10, as the independent variable. For MODEL.2, we compute three different independent variables to compare the sentiment conveyed through the entire document, through the bullet points, and through the rest of the text:

- ***Global Sentiment (Sentall)*** — We match each word in the documents against predefined lists of positive and negative words from Henry's dictionary and count how many times words from each list appear in the text. We then compute the number of positive words (PW) out of the total number of words in each document (TW). Thus, the positive sentiment ($PosSent$) in an EPR is calculated as follows:

$$PosSent = \frac{PW}{TW} \tag{1}$$

Similarly, the negative sentiment ($NegSent$) in earnings press release is :

$$NegSent = \frac{NW}{TW} \tag{2}$$

where NW is the number of negative words in the EPR. Finally, we compute our first independent variable, which measures the total sentiment of an earnings press release ($Sentall$), as follows:

$$SentAll = PosSent - NegSent \tag{3}$$

- ***Sentiment in bullet points (Sentbullet)*** — We apply the same methodology to our second database, which contains the content of the bullet points:

$$Sentbullet = PosBullet - NegBullet \tag{4}$$

where $PosBullet$ is the ratio of positive words to total words in the bullet points, and $NegBullet$ is the ratio of negative words to total words in the bullet points.

- ***Sentiment in the rest of the text (SentRest)*** — We obtain this value by subtracting the sentiment in the bullet points from the total sentiment in the earnings press release:

$$SentRest = SentAll - Sentbullet \tag{5}$$

We then take the logarithm of each independent variable to ensure the validity of our log-log model, allowing us to interpret the coefficients as elasticities.

5.1.3 Control variables

- ***Return On Assets (EARNTA)*** — It is calculated by dividing the company's earnings after tax by its net tangible assets, which are the company's total assets minus intangible assets and liabilities. The coefficient is predicted to be lower than one and positive in case of a profit, negative in case of a loss.

- ***Past stock Returns (return)*** — Calculated as the difference between the price at the end of the fiscal year and the price at the beginning of the fiscal year, scaled by the price at the beginning of the fiscal year. Past stock returns are important determinants for explaining current and future stock returns (Clifford, 1995).

- ***Loss*** — Indicate whether the company reported a loss instead of a profit, in a binary variable. When reporting a loss, firm executives might use impression management techniques to manipulate investor perception, which can impact decision-making and stock market reactions (Clatworthy and Jones, 2003).

- ***Earnings volatility (sd)*** — Volatility is defined as the standard deviation of the return on assets (EARNTA) over the prior five fiscal years. This measure captures the firm's risk, providing an indication of how much the firm's profitability fluctuates over time (Core et al., 1999).

- ***Firm-specific stock return volatility (Risk_monthly)*** — Measured as the standard deviation of the monthly stock returns in the prior year.

- ***Size (mkvaltq)*** — Defined as the logarithm of the market value of equity at the end of the fiscal year. Ex ante, we expect larger firms to make greater use of bullet points, having more complex financial reports (Li, 2008).

- ***Forecast error (errormean)*** — Based on Beaver et al. (2008), we expect a significant effect of forecast errors on stock prices. Forecast errors are calculated as the average of the differences between the forecasted values and the actual values.

- ***Analysts' dispersion (STD_Consensus)*** — This variable measures the extent of disagreement among analysts' forecasts and helps to understand its influence on market activity. A high dispersion of forecasts positively impacts trading volume, whereas a significant relative change in dispersion over time decreases trading volume (Bildersee et al., 1999).

- ***Number of Analysts (NoA)*** — The logarithm of the number of analysts following a firm, as forecast with more analyst coverage increase de dispersion of the forecasts, impacting the trading volume (Bildersee et al., 1999)

- ***Fiscal year (fyearq)*** — The fixed effect of the fiscal allows to account for any time-specific factors or trends that could influence the stock market reaction (Imai and Kim, 2019).

- ***Book-to-market (btm)*** — Defined as the market value of equity plus the book value of liabilities, divided by the book value of total assets at the end of the fiscal year. A smaller BTM ratio indicates that firms are valued more for their growth potential and are, therefore, more likely to be profitable (Thewissen and Boudt, 2017).

- ***Residuals*** — Residuals from the initial model are included to account for unexplained variability in the data. By incorporating these residuals, we can control for factors affecting the relationship between the dependent and independent variables that were not captured by our initial model (see the next section for more details).

In summary, our study employs a rigorously selected sample and a diverse set of variables to analyze the impact of the number of bullet points in financial reports on stock market price reactions. Additionally, we examine the sentiment conveyed in the bullet points compared to the rest of the text and assess its impact on stock price reactions.

5.2 Robustness of the results

To ensure the accuracy of our measurements, we performed tests, starting with a variance inflation factor (VIF) analysis to detect any multicollinearity issues in our regression models. The collinearity test results (see Table 5 to Table 8) show that multicollinearity is not a significant concern. Specifically, the mean VIF values are 1.179434 for **MODEL.1**, and 1.184751, 1.17917, and 1.183594 for *Sentall*, *Sentbullet*, and *SentRest* in **MODEL.2**, respectively. All these values are well below the standard threshold of 10, indicating no multicollinearity problem. This confirms that our independent variables are not highly correlated, thereby ensuring the reliability of our parameter estimates.

Then, to address any potential heteroskedasticity or other violations of the basic linear regression model assumptions, we utilized a regression model with robust standard errors, as popularized by White (1980). This method allows for valid inferences even in the presence of heteroskedasticity, without requiring the specific form of heteroskedasticity to be specified in the model (see Table 9).

Additionally, to mitigate potential endogeneity issues, we employed the restricted control function approach. This method allows us to control for endogeneity that may stem from unobserved variables or simultaneity between our independent and dependent variables. To implement this method, we first conducted an intermediate regression using variables that determine the number of bullet points (*nbrbullet*) for **MODEL.1** and the sentiment measures (*Sentall*, *Sentbullet*, *SentRest*) for **MODEL.2**.

The selection of control variables for this regression was based on their relevance and potential impact on the tone and structure of earnings press releases:

For both models:

- ***Stock exchange (exchg)*** — The difference in regulations between stock exchanges may influence reporting practices (Leuz, 2011).
- ***Number of words*** — The length of the report might indicate a more comprehensive and detailed report, reflecting greater transparency and thoroughness.
- ***Positive sentiment (PositiveHenry) & Negative sentiment (NegativeHenry)*** — The tone used may influence the quantity of positive versus negative information, and hence the structure of the reports.
- ***Loss*** — Reporting a loss can impact the readability of the earnings press release (EPR), potentially using more complex and negative language (Miller, 2010; Laskin, 2018).
- ***Size (mkvaltq)*** — Firm size can affect the complexity and structure of financial reporting (Li, 2008).
- ***Number of analysts (NoA)*** — Firms with more analysts might adopt a more precise and detailed structure in their earnings press releases to meet higher informational demands (Lang and Lundholm, 1996).
- ***Fiscal year (fyeartq)*** — The fiscal year quarter is included to account for potential seasonal effects on the structure and style of earnings press releases.
- ***FOG Index (FOG)*** — A higher FOG Index could be associated with a more complex structure and less transparent tone, potentially making it harder for investors to quickly interpret the information (Li, 2008).

For MODEL.2 only:

- ***Book-to-market (btm)*** — Companies with high book-to-market ratios might adopt a more conservative or defensive tone in their earnings press releases (Piotroski, 2000).
- ***Return on assets (EARNTA)*** — Firms with strong performance metrics are likely to use a more positive and confident tone in their earnings press releases (Matsumoto, 2002).

By incorporating these control variables, we aim to deliver a thorough and robust analysis of the factors that shape the tone and structure of earnings press releases.

Following the intermediate regression (see Table 10), we extracted the residuals and included them as an additional independent variable in the second-stage regression. This approach helps to more precisely isolate the causal relationships between our variables of interest, enhancing the reliability of our estimates regarding the impact of these independent variables on the dependent variables (refer to the appendix for a comparison of models with (Table 12)and without (Table 11)endogeneity controls).

In conclusion, through the application of the VIF test, robust standard errors, and the restricted control function method, we have implemented significant measures to ensure the robustness and reliability of our findings. These comprehensive efforts provide strong empirical support for our conclusions, enabling us to confidently interpret the results of our study.

5.3 Summary statistics and correlation matrix

This section provides descriptive statistics and correlation matrix with the aim to offer a first overview of the selected variables, including measures of central tendency and dispersion. Since we have created two distinct databases to address the specific needs of both MODEL.1 and MODEL.2, we have compiled the tables separately for each case.

Table 1: MODEL.1 — summary Statistics of Key Variables

	Mean	Median	SD	Min	Max
car1	0.00246	0.00161	0.07181	-0.70287	1.37253
car3	0.00209	0.00150	0.08227	-0.87200	1.20974
car5	0.00227	0.00140	0.09075	-0.92983	1.06876
nbrbullets	5.28528	5.00000	2.56050	2.00000	10.00000
EARNTA	0.00230	0.00547	0.04986	-2.52067	0.67433
return	0.10096	0.08190	0.07156	0.01260	1.82863
sd	0.01241	0.00414	0.03383	0.00000	1.40065
loss	0.20853	0.00000	0.40626	0.00000	1.00000
mkvaltq	15653.51062	2112.47400	48203.31595	4.01060	1678381.32000
errormean	-75.66576	0.00060	7446.73315	-820312.50000	38985.14851
NoA	8.97255	7.00000	6.97465	1.00000	48.00000
$STD_consensus$	8.84384	0.02757	1032.58012	0.00000	139211.64755
fyearq	2014.01350	2014.00000	4.19421	2004.00000	2021.00000
$risk_monthly$	0.08045	0.04660	0.46041	-0.97950	19.55385
btm	1.29538	1.00000	4.77465	0.01014	133.17813

For MODEL.1, the cumulative abnormal returns over one, three, and five days (car1, car3, car5) show mean values close to zero (0.00246, 0.00209, and 0.00227, respectively) with small standard deviations (0.07181, 0.08227, and 0.09075), indicating that stock prices generally perform as expected with only few notable exceptions. The firm's earnings (EARNTA) have a low mean of 0.00230 and a standard deviation of 0.04986, suggesting typical earnings are minor with occasional significant deviations. The average return is positive (mean = 0.10096) but shows some volatility (SD = 0.17156), reflecting overall good investment performance with periods of variability. The standard deviation of returns (sd) is low on average (mean = 0.01241), indicating generally low risk, though occasional high-risk periods exist.

Market value (mkvaltq) has a high mean (15653.51062) and a large standard deviation (48203.31595), pointing to a wide range of company sizes. The number of analysts covering a company (NoA) averages around 8.97 with a standard deviation of 6.97, showing varying levels of market interest. Lastly, the book-to-market ratio (btm) shows substantial variability (mean = 1.29538, SD = 4.77465), reflecting diverse company valuations in the dataset.

Table 2: MODEL.2 — summary Statistics of Key Variables

	Mean	Median	SD	Min	Max
car1	0.00245	0.00160	0.07183	-0.70287	1.37253
car3	0.00206	0.00149	0.08229	-0.87200	1.20974
car5	0.00224	0.00135	0.09076	-0.92983	1.06876
EARNTA	0.00741	0.00528	0.03470	-1.37167	0.67433
return	0.09407	0.07726	0.06444	0.01260	1.13922
sd	0.00898	0.00311	0.02384	0.00000	1.40065
loss	0.14915	0.00000	0.35624	0.00000	1.00000
mkvaltq	21875.02465	2994.09030	58618.04600	4.01060	1678381.32000
errormean	0.00101	0.00062	18.80948	-1386.40777	2000.00000
NoA	10.24049	8.00000	7.32120	1.00000	48.00000
STD_consensus	0.60550	0.02693	52.28643	0.00000	6627.48821
fyearq	2013.74569	2014.00000	4.25061	2004.00000	2021.00000
risk_monthly	0.07848	0.05315	0.39462	-0.97950	14.22917
btm	1.48240	1.00000	6.17133	0.01014	133.17813
Sentbullet	0.04027	0.02972	0.05761	-0.42857	1.00000
SentRest	0.01062	0.00911	0.01035	-0.12500	0.15417
Sentall	0.01140	0.00990	0.01012	-0.02783	0.07703

In MODEL.2, the sentiment variables (Sentbullet, SentRest, Sentall) have means of 0.04027, 0.01062, and 0.01140, respectively, with small standard deviations. This is a first important observation, meaning that the sentiment in bullet point is, on average, four times higher compared to the one in the rest of the text and in the document as a whole. Also, the EARNTA variable has a higher mean (0.00741), suggesting slightly better earnings performance in this model. The average return (mean = 0.09407) and risk (mean = 0.07848) indicate positive investment performance with some variability in the returns., the coefficients of the variables in the two different models are reasonably similar.

Table 3: MODEL.1 — Correlation Matrix of Key Variables

	car1	car3	car5	nbrbullets	EARNTA	return	sd	loss	mkvaltq	errormean	NoA	STD_consensus	fyearq	risk_monthly	btm
car1	1.0000														
car3	0.8661	1.0000													
car5	0.7860	0.9000	1.0000												
nbrbullets	−0.0041	0.0019	0.0052	1.0000											
EARNTA	0.0545	0.0576	0.0424	−0.0286	1.0000										
return	0.0026	0.0107	0.0183	0.0025	−0.1956	1.0000									
sd	0.0063	−0.0054	0.0046	−0.0493	−0.2580	0.2277	1.0000								
loss	−0.0650	−0.0655	−0.0416	−0.0027	−0.4737	0.2929	0.2381	1.0000							
mkvaltq	−0.0303	−0.0264	−0.0200	0.1022	0.0553	−0.0842	−0.0640	−0.0647	1.0000						
errormean	0.0118	0.0055	−0.0005	−0.0078	0.0215	−0.0332	0.0176	−0.0032	−0.0000	1.0000					
NoA	−0.0334	−0.0276	−0.0164	0.0919	0.0823	−0.0707	−0.0667	−0.0731	0.4880	−0.0004	1.0000				
$STD_consensus$	−0.0024	−0.0117	−0.0070	0.0083	−0.0496	0.0068	0.0074	0.0233	−0.0027	−0.3081	−0.0063	1.0000			
fyearq	0.0054	0.0021	−0.0080	0.1214	−0.0157	−0.0513	0.0191	0.0054	0.0007	−0.0119	−0.0497	0.0010	1.0000		
$risk_monthly$	−0.0315	−0.0636	−0.1054	−0.0302	0.1143	0.0383	−0.0159	−0.1127	0.0065	0.0058	−0.0073	−0.0084	−0.0278	1.0000	
btm	0.0037	0.0075	0.0083	0.0637	−0.0007	−0.0694	−0.0250	−0.0332	−0.0265	0.0000	0.0669	−0.0008	−0.1658	−0.0052	1.0000

For MODEL.1, the matrix shows a negative correlation between the number of bullet points and car1, then switching to a positive and evolutive in car3 and car5. EARNTA shows a moderate positive correlation with nbrbullets (0.0424) and a slightly lower correlation with car3 (0.0576). The variable loss has a strong negative correlation with sd (-0.4737) and a moderate positive correlation with return (0.2929). The variables mkvaltq and NoA show moderate correlations with each other (0.4880), suggesting a significant relationship between market value and the number of analysts The correlations among other variables such as errormean, STD_consensus, fyearq, and risk_monthly show less significant relationships.

Table 4: MODEL.2 — Correlation Matrix of Key Variables

	car1	car3	car5	EARNTA	return	sd	loss	mkvaltq	errormean	NoA	STD_consensus	fyearq	risk_monthly	btm	Sentbullet	SentRest	Sentall
car1	1.0000																
car3	0.8661	1.0000															
car5	0.7861	0.9000	1.0000														
EARNTA	0.0542	0.0572	0.0422	1.0000													
return	0.0026	0.0108	0.0183	−0.1952	1.0000												
sd	0.0064	−0.0053	0.0046	−0.2581	0.2276	1.0000											
loss	−0.0648	−0.0654	−0.0417	−0.4734	0.2926	0.2380	1.0000										
mkvaltq	−0.0303	−0.0264	−0.0200	0.0552	−0.0843	−0.0640	−0.0647	1.0000									
errormean	0.0118	0.0055	−0.0005	0.0215	−0.0332	0.0176	−0.0032	−0.0000	1.0000								
NoA	−0.0335	−0.0277	−0.0164	0.0822	−0.0710	−0.0668	−0.0732	0.4880	−0.0004	1.0000							
$STD_{c}onsensus$	−0.0024	−0.0117	−0.0070	−0.0497	0.0068	0.0074	0.0233	−0.0027	−0.3081	−0.0063	1.0000						
fyearq	0.0055	0.0021	−0.0081	−0.0153	−0.0515	0.0191	0.0052	0.0008	−0.0119	−0.0496	0.0010	1.0000					
$risk_{m}onthly$	−0.0318	−0.0637	−0.1054	0.1135	0.0386	−0.0156	−0.1125	0.0066	0.0058	−0.0074	−0.0084	−0.0274	1.0000				
btm	0.0037	0.0075	0.0084	−0.0008	−0.0694	−0.0250	−0.0332	−0.0265	0.0000	0.0669	−0.0008	−0.1658	−0.0052	1.0000			
Sentbullet	0.0625	0.0503	0.0415	0.0889	−0.0712	−0.0330	−0.0904	0.0205	−0.0029	0.0339	−0.0057	−0.0851	0.0956	0.0173	1.0000		
SentRest	0.0512	0.0474	0.0465	0.1181	−0.1506	−0.0687	−0.1262	0.0852	−0.0084	0.0069	−0.0008	−0.1914	0.1028	0.1473	0.2763	1.0000	
Sentall	0.0652	0.0597	0.0569	0.1302	−0.1565	−0.0696	−0.1382	0.1027	−0.0095	0.0002	−0.0017	−0.1930	0.1211	0.1513	0.3812	0.9410	1.0000

The table attributed to MODEL.2 shows similar correlation patterns with a few notable differences. Sentbullet exhibits a stronger correlation with car1 and car3 (0.0625 and 0.0503) compared to SentRest (0.0512 and 0.0474), indicating a stronger relationship between sentiment in the bullet and cumulative abnormal returns. Additionally, the coefficient for Sentbullet is higher than that for SentRest in its correlation with the number of analysts (0.0339 vs. 0.0069). However, SentRest shows a stronger correlation with variables such as EARNTA, market value (mkvaltq), and risk_monthly when compared to Sentbullet.

6 Empirical analysis

6.1 An increase of bullet points has a positive influence on the stock price reaction

The first part of our study aimed to provide evidence of the influence of bullet points, used as a proxy for structural readability, on the associated stock price reaction. In the methodology section, we defined the variable used in MODEL.1. The regression equation is constructed as follows:

$$log(1 + CAR_{(1,3,5)}) = \beta_0 + \beta_1 * log(1 + nbrbullet) + \beta_2 * Controls + \varepsilon \tag{6}$$

[Insert Table 12 here.]

While the outcome is not statistically significant for CAR1 and CAR3, it becomes positive and significant at the 1% level of confidence for CAR5. An increase of 1% of bullet points leads to a change in abnormal returns of 0.01798% for CAR5.

The results allow us to conclude that while the immediate (Car1) and medium-term (Car3) stock market reactions are not significantly affected by the number of bullet points in the earnings press release, the longer-term reaction (Car5) is positively influenced. This implies that providing more bullet points in the earnings press release can help in conveying information more effectively to investors, leading to a more favorable stock market reaction as investors process and appreciate the structured presentation of earnings information over time.

However, these findings do not fully meet our expectations. We anticipated that the number of bullet points would have a significant positive impact on both the immediate and medium-term stock market reactions. We suspect that this discrepancy may be due to a bias stemming from the performance of the companies. Specifically, underperforming companies might dilute the overall effect observed among well-performing companies, as literature suggest it (Baker and Kare, 1992).

6.1.1 The use of bullet points has greater impact on the stock price reaction for well-performing firms compared to underperforming

To address this potential bias, we investigate whether a firm's performance impacts the way bullet points influence Cumulative Abnormal Returns (CAR). To do this, we split our database into two groups based on whether the earnings (EARNTA) are above or below the median. We then apply the previous regression equation separately to each of these two new datasets.

[Insert Table 13 here.]

The outputs indicate that the impact of bullet points is not statistically significant for CAR1 and CAR3 for underperforming firms. However, it becomes positive and significant at the 1% confidence level for CAR5. Specifically, a 1% increase in the number of bullet points leads to a 0.0292% change in abnormal returns for CAR5 among underperforming firms. For well-performing companies, the number of bullet points has a significant positive impact on all three measures of cumulative abnormal returns. Specifically, a 1% increase in bullet points leads to a 0.01411% increase in CAR1 (significant at the 10% level), a 0.02115% increase in CAR3 (significant at the 5% level), and a 0.02362% increase in CAR5 (significant at the 5% level).

The results confirm our intuition that the impact of bullet points in earnings press releases varies depending on the firm's performance. For well-performing firms, the use of bullet points has an immediate and sustained positive effect on stock market reactions, as investors quickly appreciate the clear and organized presentation of information. In contrast, for underperforming firms, the positive effect of bullet points on stock market reactions is only observed in the longer term, suggesting that investors may require more time to process and respond to the structured information provided by these firms.

This finding aligns with the work of Baker and Kare (1992), who established that companies producing more readable narratives generally performed better financially. We have demonstrated that the use of bullet points to enhance readability positively influences investors' propensity to invest.

6.1.2 There is a curvilinear relation between the number of bullet points and the stock price reaction

The last step of this first hypothesis consists of determining the nature of the relationship between the use of bullet points and the Cumulative Abnormal Returns. Indeed, we do not know if the increase in CAR associated with the increase of 1% of bullet points will be indefinitely linear, or if there is a threshold after which a further increase of such cues will negatively impact the stock market reaction. To test that, we have integrated the square of the independent variable in our regression model, which allows to fit a quadratic function to the data. The equation of this regression is :

$$log(1+CAR_{(1,3,5)}) = \beta_0 + \beta_1 * log(1+nbrbullets) + \beta_2 * log(1+nbrbullets)^2 + \beta_3 * Controls + \varepsilon \quad (7)$$

[Insert Table 14 here.]

The coefficients for the variable log(1 + nbrbullets) are not statistically significant for CAR1, but they are significant at the 5% and 1% levels for CAR3 and CAR5, respectively. Specifically, a 1% increase in bullet points leads to a 0.0292% and 0.0539% increase in cumulative abnormal return for CAR3 and CAR5. When considering the variable logsquarebullet, the results show a negative and significant relationship at the 5% level for CAR1 and CAR3, and at the 1% level for CAR5. Up to a certain point, a 1% increase in bullet points leads to a 0.00479%, 0.00642%, and 0.00969% decrease in CAR1, CAR3, and CAR5, respectively.

The positive coefficient for log(1 + nbrbullets) combined with the negative coefficient for logsquarebullet provides clear evidence of a curvilinear relationship. This finding is consistent with Sweller's (1988) Cognitive Load Theory, which posits that the human cognitive system has a limited capacity for processing information. We have demonstrated that bullet points have a positive impact up to a certain point, after which excessive use of structural elements can contribute to extraneous cognitive load, making information more complex and difficult to process. This leads to a decrease in CAR, indicating a negative investor reaction.

This information presents an opportunity to define an optimal number of bullet points to maximize investor reaction. To do this, we extract the coefficients of the regression equation and calculate the optimal values for log(1+nbrbullets) and logsquarebullet:

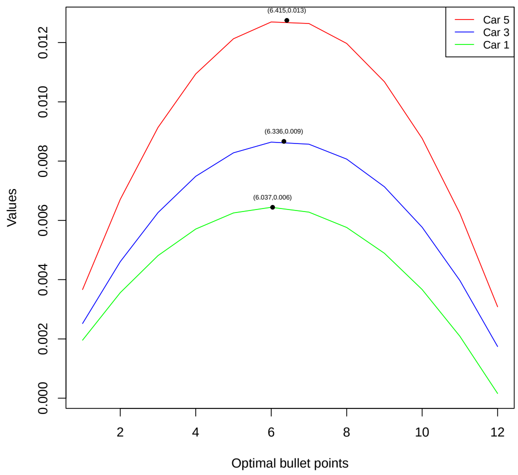
$$\text{OPTIMAL} = \text{coef}_1 \times \log(1{+}\text{nbrbullets}) + \text{coef}_2 \times \ \text{logsquarebullet} \tag{8}$$

Next, we calculate the maximum points of the quadratic function:

$$x_{\text{max}} = -\frac{b}{2a} = -\frac{\text{coef}[\text{" log(1+nbrbullets)"}]}{2 \times \text{coef}[\text{" logsquarebullet "}]} \tag{9}$$

$$y_{\text{max1}} = \text{coef}[\text{" logsquarebullet "}] \times x_{\text{max1}}^2 + \text{coef}[\text{" log(1+nbrbullets)"}] \times x_{\text{max1}} \tag{10}$$

Now we can plot the optimal values. The resulting graph is shown below.



The graphical representation of the results in the aforementioned figure depicts optimal points at [6.037; 0.006] for CAR1, [6.336; 0.009] for CAR3, and [6.415; 0.013] for CAR5. These points indicate the optimal number of bullet points to use in order to maximize the impact on cumulative abnormal return. As shown, beyond these specific points, the relationship becomes increasingly negative.

In conclusion for this first research study, we have provided evidence regarding the influence of bullet points on stock price reactions following earnings press releases. Initially, we found that a higher number of bullet points leads to an increase in abnormal returns in the longer term, indicating that investors need more time to process and appreciate the structured presentation of information.

We also established that the impact of bullet points varies depending on the performance of the firm. Well-performing firms experience immediate and sustained positive effects from the use of bullet points, while underperforming companies see these positive effects only in the longer term.

Furthermore, we demonstrated a curvilinear relationship between the number of bullet points and stock price reactions. Beyond a certain threshold, additional bullet points begin to negatively impact stock market reaction. We identified that the optimal number of bullet points to maximize positive impact on cumulative abnormal returns is six.

These findings align with the principle of Dual Coding Theory (DCT), which posits that when the human mind processes and stores information through both verbal and visual channels, it enhances processing, comprehension, and recall of information. The positive impact observed suggests that investors benefit from the enhanced readability and structural clarity provided by bullet points. This improved readability likely reduces perceived financial risk among stakeholders and aids in their decision-making processes, corroborating the findings of Li (2008) and Lehavy et al. (2011) that poor readability can negatively impact financial performance and increase perceived financial risk.

6.2 The net sentiment of bullet points is more positive than the net sentiment in the rest of the earning press release

Having provided evidence that the number of bullet points can positively impact investor reactions, we now have the opportunity to delve into how the sentiment in earnings press releases might be emphasized differently in various parts of the text depending on the structure. Our aim is to understand if the sentiment conveyed in bullet points is more positive compared to the rest of the text, which could offer a new way to measure sentiment in financial reporting.

After estimating the parameters Sentall, Sentbullet, and SentRest, we observed in the summary statistics section that the positive sentiment in bullet points is, on average, four times higher than in the rest of the text and even higher than in the document as a whole. However, to substantiate these findings, it is essential to determine whether these differences in means are statistically significant.

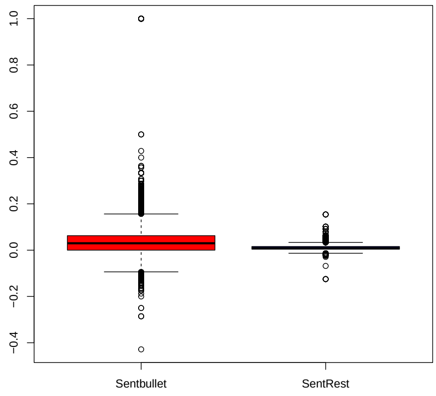
To this end, we conducted a Welch Two Sample t-test to compare if the difference in the mean between Sentbullet and SentRest is significant. This test is given by:

$$t = \frac{\bar{X}_{\text{Sentbullet}} - \bar{X}_{\text{SentRest}}}{\sqrt{\frac{s^2_{\text{Sentbullet}}}{n_{\text{Sentbullet}}} + \frac{s^2_{\text{SentRest}}}{n_{\text{SentRest}}}}}$$

[Insert Table 15 here.]

The 95% confidence interval for the difference in means (0.0290 to 0.0303), combined with the extremely small p-value (¡ 2.2e-16), confirms that the sentiment in bullet points is significantly more positive than in the rest of the text. This finding highlights the strategic use of bullet points to emphasize positive information more strongly than the rest of the text.

Figure 1: Boxplot of sentiment in bullet points and in the rest of the text



The boxplot comparison visually reinforces this distinction. The median sentiment in bullet points is higher, indicating a more positive tone. Additionally, the wider interquartile range and the presence of more outliers in Sentbullet underscore greater variability and more extreme sentiment values.

These results corroborate the first part of our second hypothesis and are consistent with literature that demonstrates companies manipulate tone and selectively present information to influence investor perceptions (Clatworthy and Jones, 2003). Our findings support the idea that structured formats like bullet points are used to emphasize positive sentiments, making them more memorable and impactful for investors.

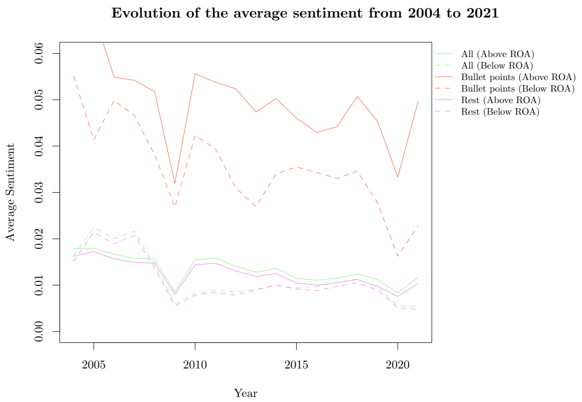
6.2.1 There is a difference in the use of the tone between well-performing and underperforming companies

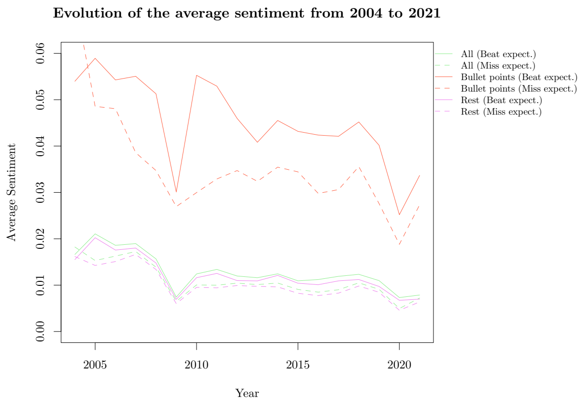
Building on our previous findings, we have established that the net sentiment is more positive in bullet points than in the rest of the text. However, it would also be insightful to examine the extent to which there might be a difference in the use of a more or less positive tone between good and bad performance, and companies that achieve results below expectations versus those that exceed them.

To evaluate performance, we divided our database as in Study 1, using the return on assets (EARNTA) median to differentiate between firms performing above and below average. To integrate market expectations, we considered the median of the analyst forecast error (errormedian). Firms below this median missed expectations, while firms above met or exceeded them. We then conducted Welch Two Sample t-tests, as previously, to compare the means of each parameter.

[Insert Table 16 here.]

The overall trend shows that sentiment in bullet points is consistently higher compared to other parts of the text. Beating or meeting analysts' forecasts and having an ROA superior to the median appears to maximize positive sentiment in general, particularly in the bullet points.





The graphical representation in these figures again highlights the significant difference in positive tone employed in bullet points compared to the rest of the text or the whole document.

These findings align with the literature that highlights how narrative strategies in financial reporting differ based on company performance (Laskin, 2018). Our analysis extends this understanding to the specific context of sentiment in bullet points versus the rest of the text, showing that well-performing companies not only use a more positive tone overall but also strategically emphasize positive information in bullet points to enhance investor perception. This strategic use of tone aligns with impression management tactics aimed at highlighting positive performance and fostering investor confidence.

6.3 The informative value of the tone in bullet points is higher than in the rest of the text

By attempting to demonstrate a difference between the impact of the sentiment used in bullet points and that of the rest of the text on investor reactions, we bring to the literature an innovative method, highlighting the importance of considering that the tone used in financial reports is not equally distributed, as outlined by Boudt and Thewissen (2017).

To test this hypothesis, we first used our second regression model (MODEL.2) to evaluate the impact of each parameter (Sentall, Sentbullet, and SentRest) on the Cumulative Abnormal Returns (CAR). The equation for these regressions is:

$$log(1 + CAR_{(1,3,5)}) = \beta_0 + \beta_1 * log(1 + Sent.parameters) + \beta_2 * Controls + \varepsilon \quad (11)$$

[Insert Table 17, Table 18 and Table 19 here.]

When considered individually, it appears that the sentiment in the rest of the text has as much impact as the sentiment in the whole document on the CAR, to the detriment of the bullet points. For example, we see that for a 1% increase in global sentiment (Sentall), CAR1 reacts by +0.42%, compared to +0.26% for Sentbullet and +0.42% for the rest.

To take this model a step further, we integrated the Sentbullet and SentRest variables into the same equation for two purposes. First, to refine our model by considering the impact of each variable on the others, isolating the specific effect of each type of sentiment by controlling for the other. Second, to see if we could refine the models used to predict firm performance by explaining a previously unexplained variable. The equation is:

$$log(1 + CAR_{(1,3,5)}) = \beta_0 + \beta_1 * log(1 + Sentbullet) + \beta_2 * log(1 + SentRest) + \beta_3 * Controls + \varepsilon \quad (12)$$

[Insert Table 20 here.]

In this case, we see a completely different relationship compared to the previous model. In the short and medium term, sentiment in the bullet points has a positive impact on abnormal returns, while sentiment in the rest of the text has a negative impact (CAR1: 0.781% ¿ -1.027%; CAR3: 0.506% ¿ -0.481%). These findings highlight the significance of our work. They indicate not only that the sentiment conveyed within financial reports is not homogeneously distributed, contrary to the assumption of traditional literature, but also that this heterogeneous distribution impacts how investors perceive information and their resulting decision-making processes.

Comparing the R^2 of the Sentall model previously conducted with that of the regression including both Sentbullet and SentRest, the latter appears greater (0.02047 ¡ 0.02226). In other words, segmenting sentiment variables provides a more detailed and accurate representation of how sentiment affects CAR. This provides considerable support for the work of Boudt and Thewissen (2017), showing that investors might react differently to various parts of the EPR. Therefore, it is essential to consider this structure in analyses on this subject.

6.3.1 Additional analysis

To broaden our understanding of the impact of tones used in earnings press releases, we decided to conduct two additional analyses.

The first involves measuring the economic impact of the relationship by considering the volatility of the variables, measured by the standard deviation. The rationale is that if the standard deviation of the dependent variable is large, even significant changes in the independent variable may not substantially affect the dependent variable, and vice versa. We measured this coefficient as follows :

$$Economic\ Impact = \frac{(\beta * SD\ independant)}{SD\ dependant} \tag{13}$$

[Insert Table 21 here.]

In the table, we observe that an increase in the variability of sentiment in the bullet points has a positive impact, while an increase in variability in the rest of the text negatively influences the impact on Cumulative Abnormal Returns (CAR). In both cases, this effect is more pronounced in the immediate time horizon (CAR1) and gradually diminishes when considering a longer-term perspective.

The second analysis aims to confirm our previous results by examining the differential impact between the sentiments expressed in the bullet points and those in the rest of the text. This approach not only measures the relative impact of these sentiments but also helps us understand the evolution of cumulative abnormal returns as the disparity between these variables changes.

For this purpose, we calculated two new parameters: Sentgap and Sentgap2. Sentgap represents the difference between the sentiment in the bullet points and the sentiment in the rest of the text, while Sentgap2 is the inverse. We included these parameters in our regression model (MODEL.2):

$$log(1 + CAR_{(1,3,5)}) = \beta_0 + \beta_1 * Sentgap + \beta_2 * Controls + \varepsilon \tag{14}$$

[Insert Table 22 here.]

This method indicates that an increase in the difference between the sentiment in the bullet points and that in the rest of the text has a significantly positive impact on cumulative abnormal returns. In other words, the more positive the sentiment in these structural cues compared to the rest of the text, the more positively investors will react to this information.

7 Conclusion

In this article, we investigated how the management of narrative structure in financial reports, particularly through the use of bullet points, can enhance readability and increase investors' inclination to invest in a project. Our interest in this subject stemmed from the lack of literature explaining how a well-structured document can improve market efficiency. Additionally, we conducted a sentiment analysis of these bullet points, being among the first to exploit this specific structure to define better tone proxies, aiding in the understanding of strategic word use to convey information. This supports the research of Boudt and Thewissen (2017), which showed that intratextual sentiment is not evenly distributed across different parts of a text, contrary to traditional literature assumptions.

First, we provided evidence of the positive influence of bullet points on stock price reactions following earnings press releases. An increase in the number of bullet points leads to an increase in cumulative abnormal returns, up to a certain threshold of six bullet points, beyond which any further increase begins to negatively influence investor reactions. Furthermore, based on company performance, we found that well-performing firms experience immediate and sustained positive effects from the use of bullet points, while underperforming companies see these positive effects only in the longer term.

Secondly, by conducting our intratextual sentiment analysis, we concluded that the sentiment conveyed in bullet points is nearly four times more positive than the sentiment in the rest of the text. This difference is even more pronounced when firms perform above the median or meet/beat analysts' forecasts. This phenomenon is explained by the use of impression management techniques, manipulating tone and selectively presenting information to influence investor perceptions (Clatworthy and Jones, 2003).

Finally, we provided strong evidence showing that the sentiment in bullet points prompts a significantly more positive reaction from investors than the sentiment in the rest of the text, which tends to influence their reaction negatively. Additionally, segmenting different parts of the EPR when analyzing sentiment provides a more detailed and accurate representation of how sentiment affects CAR, compared to equally weighting the sentiment in the whole document. The more positive the sentiment in these structural cues compared to the rest of the text, the more positively investors react to this information.

However, these findings are not without limitations. The first of our study is that we did not include the industry sector in which each firm operates. Reporting standards and tone can vary by sector. For example, companies in specific industries might adopt particular tones in their EPRs depending on industry norms and expectations. It would be interesting to understand whether the use of bullet points is perceived as positively by investors across all sectors or more in some than others.

Additionally, our analysis did not consider the specific content of each bullet point. To broaden the perspective on how structural elements influence market efficiency, it would be necessary to study the content conveyed in these sections. Ensuring the relevance and importance of the information conveyed through these means could be achieved, for example, by using topic modeling techniques.

These limitations point to areas for future research, aiming to provide a more holistic view of how the use of bullet points can improve the structure and readability of earnings press releases, thereby enhancing their effects on investors and their decision-making processes.

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9 Appendix

Table 5: VIF Results for the relationship between Number of Bullet and CAR

	GVIF	GVIF^(1/(2*Df))
log(1 + nbrbullets)	1.041	1.020
EARNTA	1.360	1.166
return	1.703	1.305
loss	1.406	1.186
sd	1.138	1.067
log(1 + mkvaltq)	2.484	1.576
errormean	1.109	1.053
log(1 + NoA)	2.275	1.508
factor(fyearq)	2.098	1.022
risk_monthly	1.117	1.057
STD_consensus	1.108	1.053
btm	1.299	1.140
Mean		1.179434

Table 6: VIF Results for Global Sentiment Model

	GVIF	GVIF^(1/(2*Df))
log(1 + Sentall)	1.145	1.070
EARNTA	1.364	1.168
return	1.703	1.305
log(1 + mkvaltq)	2.486	1.577
risk_monthly	1.127	1.062
sd	1.136	1.066
loss	1.409	1.187
factor(fyearq)	2.163	1.023
errormean	1.109	1.053
log(1 + NoA)	2.280	1.510
STD_consensus	1.108	1.053
btm	1.309	1.144
Mean		1.184751

Table 7: VIF Results for Bullet Points Sentiment Model

	GVIF	GVIF^(1/(2*Df))
log(1 + Sentbullet)	1.039	1.019
EARNTA	1.361	1.167
return	1.700	1.304
log(1 + mkvaltq)	2.481	1.575
risk_monthly	1.123	1.060
sd	1.136	1.066
loss	1.407	1.186
factor(fyearq)	2.065	1.022
errormean	1.109	1.053
log(1 + NoA)	2.275	1.508
STD_consensus	1.108	1.053
btm	1.294	1.138
Mean		1.17917

Table 8: VIF Results for Rest of Text Sentiment Model

	GVIF	GVIF^(1/(2*Df))
log(1 + SentRest)	1.125	1.061
EARNTA	1.363	1.167
return	1.704	1.305
log(1 + mkvaltq)	2.483	1.576
risk_monthly	1.124	1.060
sd	1.136	1.066
loss	1.408	1.187
factor(fyearq)	2.150	1.023
errormean	1.109	1.053
log(1 + NoA)	2.277	1.509
STD_consensus	1.108	1.053
btm	1.308	1.144
Mean		1.183594

Table 9: Robust Standard Error model

	Dependent variable:		
	Car1		
	(1)	(2)	(3)
log(1 + nbrbullets)	−0.00299	0.00535	0.01798***
	(0.00366)	(0.00447)	(0.00489)
EARNTA	0.09246***	0.12541***	0.14194***
	(0.01820)	(0.02251)	(0.02882)
return	−0.01244	0.00715	0.01218
	(0.01177)	(0.01482)	(0.01780)
loss	−0.01602***	−0.01879***	−0.01592***
	(0.00170)	(0.00191)	(0.00221)
sd	0.04183*	0.00206	0.02017
	(0.02536)	(0.02873)	(0.03544)
log(1 + mkvaltq)	−0.00354***	−0.00347***	−0.00343***
	(0.00033)	(0.00039)	(0.00044)
errormean	0.00004**	0.00001	−0.00001
	(0.00002)	(0.00004)	(0.00005)
log(1 + NoA)	0.00300***	0.00317***	0.00417***
	(0.00085)	(0.00100)	(0.00113)
risk_monthly	−0.00693***	−0.01462***	−0.02603***
	(0.00191)	(0.00179)	(0.00217)
STD_consensus	0.000004*	−0.00001***	−0.00001*
	(0.000002)	(0.00001)	(0.00001)
btm	−0.00001	0.00006	0.00006
	(0.00004)	(0.00005)	(0.00005)
residualsBC1ENDO	0.00452	−0.00348	−0.01558***
	(0.00376)	(0.00453)	(0.00500)
Constant	0.02595***	0.00256	−0.02307**
	(0.00827)	(0.01005)	(0.01069)
Year FE	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*

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

Table 10: First Step Regression for Endogeneity Control

	Dependent variable:
	Number of Bullet
	(1)
FOG	−0.00595***
	(0.00054)
exchg	0.00391***
	(0.00124)
NumberOfWords	0.00003***
	(0.000002)
PositiveHenry	0.00094***
	(0.00006)
NegativeHenry	0.00054***
	(0.00011)
loss	−0.01735***
	(0.00447)
log(1 + mkvaltq)	−0.01303***
	(0.00146)
log(1 + NoA)	0.01221***
	(0.00344)
Constant	1.74948***
	(0.03078)
Year FE	*yes*
Observations	54,725
R^2	0.06622
Adjusted R^2	0.06579
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 11: Relationship between Number of Bullet Points and CAR without Endogeneity Control

	Dependent variable:		
	Car1	Car3	Car5
	(1)	(2)	(3)
log(1 + nbrbullets)	0.00133	0.00203*	0.00312**
	(0.00097)	(0.00111)	(0.00123)
EARNTA	0.09366***	0.12449***	0.13780***
	(0.01352)	(0.01552)	(0.01720)
return	−0.01292	0.00752	0.01383
	(0.00816)	(0.00936)	(0.01037)
loss	−0.01592***	−0.01887***	−0.01626***
	(0.00134)	(0.00154)	(0.00170)
sd	0.04362**	0.00068	0.01400
	(0.01803)	(0.02069)	(0.02293)
log(1 + mkvaltq)	−0.00357***	−0.00345***	−0.00334***
	(0.00033)	(0.00037)	(0.00041)
errormean	0.00004*	0.00001	−0.00001
	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00296***	0.00320***	0.00432***
	(0.00084)	(0.00096)	(0.00107)
risk_monthly	−0.00685***	−0.01468***	−0.02630***
	(0.00108)	(0.00124)	(0.00137)
STD_consensus	0.000004	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)
btm	−0.00002	0.00007	0.00008
	(0.00007)	(0.00009)	(0.00009)
Constant	0.01878***	0.00808	0.00163
	(0.00539)	(0.00619)	(0.00686)
Year FE	*yes*	*yes*	*yes*
Control for endogeneity	*no*	*no*	*no*
Observations	32,311	32,311	32,311
R^2	0.01549	0.01771	0.02030
Adjusted R^2	0.01464	0.01686	0.01945
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 12: Relationship between Number of Bullet and CAR with Endogeneity Control

	Dependent variable:		
	Car1	Car3	Car5
	(1)	(2)	(3)
log(1 + nbrbullets)	−0.00299	0.00535	0.01798***
	(0.00445)	(0.00511)	(0.00566)
EARNTA	0.09246***	0.12541***	0.14194***
	(0.01358)	(0.01558)	(0.01727)
return	−0.01244	0.00715	0.01218
	(0.00817)	(0.00938)	(0.01039)
loss	−0.01602***	−0.01879***	−0.01592***
	(0.00134)	(0.00154)	(0.00171)
sd	0.04183**	0.00206	0.02017
	(0.01812)	(0.02079)	(0.02304)
log(1 + mkvaltq)	−0.00354***	−0.00347***	−0.00343***
	(0.00033)	(0.00037)	(0.00042)
errormean	0.00004*	0.00001	−0.00001
	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00300***	0.00317***	0.00417***
	(0.00084)	(0.00096)	(0.00107)
risk_monthly	−0.00693***	−0.01462***	−0.02603***
	(0.00108)	(0.00124)	(0.00137)
STD_consensus	0.000004	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)
btm	−0.00001	0.00006	0.00006
	(0.00007)	(0.00009)	(0.00009)
residualsBC1ENDO	0.00452	−0.00348	−0.01558***
	(0.00456)	(0.00523)	(0.00580)
Constant	0.02595***	0.00256	−0.02307**
	(0.00902)	(0.01035)	(0.01147)
Year FE	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*
Observations	32,311	32,311	32,311
R^2	0.01552	0.01772	0.02052
Adjusted R^2	0.01464	0.01684	0.01964

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

Table 13: Relationship between Number of Bullet and CAR based on firm's performance

	EARNTA >' Median			*EARNTA <Median*		
	Car1	Car3	Car5	Car1	Car3	Car5
	(1)	(2)	(3)	(1)	(2)	(3)
log(1 + nbrbullets)	0.01411*	0.02115**	0.02362**	0.00063	0.00665	0.02292***
	(0.00834)	(0.00927)	(0.01025)	(0.00582)	(0.00688)	(0.00764)
EARNTA	0.04560	0.05456	0.07298*	0.08699***	0.14644***	0.17508***
	(0.03051)	(0.03391)	(0.03749)	(0.01907)	(0.02257)	(0.02506)
return	0.05650***	0.05493***	0.04088**	−0.03417***	−0.00861	0.00321
	(0.01514)	(0.01683)	(0.01861)	(0.01027)	(0.01215)	(0.01349)
loss				−0.01148***	−0.01570***	−0.01284***
				(0.00147)	(0.00174)	(0.00193)
sd	−0.02448	−0.04000	−0.05752	0.05676**	0.03749	0.08064**
	(0.03634)	(0.04038)	(0.04465)	(0.02512)	(0.02973)	(0.03301)
log(1 + mkvaltq)	−0.00382***	−0.00408***	−0.00492***	−0.00307***	−0.00289***	−0.00242***
	(0.00052)	(0.00058)	(0.00064)	(0.00045)	(0.00053)	(0.00059)
errormean	−0.00022	−0.00005	−0.00004	0.00004*	0.000004	−0.00001
	(0.00017)	(0.00018)	(0.00020)	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00316***	0.00459***	0.00634***	0.00239**	0.00203	0.00225
	(0.00119)	(0.00132)	(0.00146)	(0.00121)	(0.00143)	(0.00159)
risk_monthly	−0.01481***	−0.01957***	−0.03068***	−0.00155	−0.01136***	−0.02254***
	(0.00151)	(0.00168)	(0.00186)	(0.00160)	(0.00190)	(0.00211)
STD_consensus	0.00396***	−0.00048	0.00065	0.000004	−0.00001	−0.00001
	(0.00116)	(0.00129)	(0.00143)	(0.00001)	(0.00001)	(0.00001)
btm	−0.00042	−0.00044	−0.00055	−0.00002	0.00004	0.00006
	(0.00032)	(0.00036)	(0.00040)	(0.00009)	(0.00010)	(0.00011)
residualsBC1ENDO	−0.01021	−0.01687*	−0.01979*	−0.00041	−0.00668	−0.02149***
	(0.00841)	(0.00935)	(0.01033)	(0.00594)	(0.00704)	(0.00781)
Constant	−0.00942	−0.02943	−0.03010	0.02259*	0.00542	−0.02924*
	(0.01614)	(0.01794)	(0.01984)	(0.01205)	(0.01426)	(0.01583)
Year FE	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	15,968	15,968	15,968	16,343	16,343	16,343
R^2	0.01732	0.01805	0.02675	0.01601	0.01809	0.01860
Adjusted R^2	0.01560	0.01633	0.02504	0.01426	0.01634	0.01685

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

Table 14: Evidence of a curvilinear relationship between Number of Bullet and CAR

	Dependent variable:		
	Car1	Car3	Car5
	(1)	(2)	(3)
log(1 + nbrbullets)	0.01484	0.02920**	0.05395***
	(0.00996)	(0.01143)	(0.01267)
logsquarebullet	−0.00479**	−0.00642**	−0.00968***
	(0.00240)	(0.00275)	(0.00305)
EARNTA	0.09138***	0.12397***	0.13977***
	(0.01359)	(0.01559)	(0.01728)
return	−0.01252	0.00704	0.01201
	(0.00817)	(0.00938)	(0.01039)
loss	−0.01602***	−0.01879***	−0.01592***
	(0.00134)	(0.00154)	(0.00171)
sd	0.04059**	0.00040	0.01767
	(0.01813)	(0.02080)	(0.02305)
log(1 + mkvaltq)	−0.00351***	−0.00343***	−0.00336***
	(0.00033)	(0.00038)	(0.00042)
errormean	0.00004*	0.00001	−0.00001
	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00299***	0.00315***	0.00415***
	(0.00084)	(0.00096)	(0.00107)
risk_monthly	−0.00695***	−0.01465***	−0.02607***
	(0.00108)	(0.00124)	(0.00137)
STD_consensus	0.000005	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)
btm	−0.00001	0.00007	0.00007
	(0.00007)	(0.00009)	(0.00009)
residualsBC1ENDO	0.00341	−0.00497	−0.01783***
	(0.00459)	(0.00527)	(0.00584)
Constant	0.01020	−0.01851	−0.05485***
	(0.01197)	(0.01373)	(0.01522)
Year FE	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*
Observations	32,311	32,311	32,311
R^2	0.01564	0.01789	0.02083
Adjusted R^2	0.01473	0.01697	0.01992
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 15: Welch Two Sample t-test Results

	Sentbullet	**SentRest**
Mean	0.04027282	0.01062183
Test Statistic (t)	91.015	
Degrees of Freedom (df)	34,355	
P-value	¡ 2.2e-16	
95% Confidence Interval	(0.02901245, 0.03028954)	

Table 16: Welch Two Sample t-test Results

	Miss (x) vs. Beat (y) expectations			*Good (x) vs. Bad (y) performances*		
	Sentall	Sentbullet	SentRest	Sentall	Sentbullet	SentRest
	(1)	(2)	(3)	(1)	(2)	(3)
t-statistic	-17.853	-17.343	-16.249	24.94	23.687	20.06
df	18360	19694	19499	32264	32227	32193
p-value	¡ 2.2e-16	¡ 2.2e-16	¡ 2.2e-16	¡ 2.2e-16	¡ 2.2e-16	¡ 2.2e-16
95% CI	(-0.0024, -0.0019)	(-0.0129, -0.0103)	(-0.0022, -0.0017)	(0.0026, 0.0030)	(0.0138, 0.0163)	(0.0021, 0.0025)
Mean of x	0.0099	0.0321	0.0092	0.0128	0.0478	0.0118
Mean of y	0.0120	0.0437	0.0112	0.0100	0.0327	0.0095

Table 17: Impact of Global Sentiment on Cumulative Abnormal Returns

	Dependent variable:			*Dependent variable:*		
	Car1	Car3	Car5	Car1	Car3	Car5
	(1)	(2)	(3)	(1)	(2)	(3)
log(1 + Sentall)	0.41584***	0.44589***	0.56127***	0.65085***	0.63822***	0.74501***
	(0.05416)	(0.06217)	(0.06891)	(0.09314)	(0.10691)	(0.11850)
log(1 + Sentall2)				−7.22007***	−5.90895**	−5.64512*
				(2.32792)	(2.67232)	(2.96181)
EARNTA	0.08664***	0.11589***	0.12677***	0.08563***	0.11506***	0.12597***
	(0.01357)	(0.01558)	(0.01727)	(0.01357)	(0.01558)	(0.01727)
return	−0.00997	0.01157	0.01900*	−0.00980	0.01171	0.01913*
	(0.00817)	(0.00937)	(0.01039)	(0.00817)	(0.00937)	(0.01039)
log(1 + mkvaltq)	−0.00417***	−0.00395***	−0.00399***	−0.00410***	−0.00389***	−0.00393***
	(0.00038)	(0.00044)	(0.00048)	(0.00038)	(0.00044)	(0.00049)
risk_monthly	−0.00822***	−0.01620***	−0.02804***	−0.00847***	−0.01640***	−0.02823***
	(0.00108)	(0.00124)	(0.00138)	(0.00109)	(0.00125)	(0.00138)
sd	0.04525**	0.00196	0.01403	0.04518**	0.00190	0.01397
	(0.01798)	(0.02064)	(0.02287)	(0.01798)	(0.02063)	(0.02287)
loss	−0.01542***	−0.01834***	−0.01565***	−0.01527***	−0.01822***	−0.01553***
	(0.00134)	(0.00154)	(0.00171)	(0.00134)	(0.00154)	(0.00171)
errormean	0.00005**	0.00001	−0.000004	0.00005**	0.00001	−0.000003
	(0.00002)	(0.00003)	(0.00003)	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00356***	0.00381***	0.00513***	0.00350***	0.00376***	0.00508***
	(0.00084)	(0.00097)	(0.00107)	(0.00084)	(0.00097)	(0.00107)
STD_consensus	0.000004	−0.00001	−0.00001	0.000004	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
btm	−0.00009	−0.00001	−0.00001	−0.00007	0.00001	0.00001
	(0.00007)	(0.00009)	(0.00010)	(0.00008)	(0.00009)	(0.00010)
residualsSENTALL.ENDO	0.28499***	0.32269***	0.25420**	0.27116***	0.31138***	0.24339**
	(0.08937)	(0.10258)	(0.11369)	(0.08947)	(0.10270)	(0.11383)
Constant	0.01785***	0.00700	0.00128	0.01610***	0.00557	−0.00008
	(0.00543)	(0.00623)	(0.00691)	(0.00546)	(0.00627)	(0.00695)
Year FE	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	32,276	32,276	32,276	32,276	32,276	32,276
R^2	0.02047	0.02198	0.02481	0.02077	0.02213	0.02492
Adjusted R^2	0.01956	0.02107	0.02390	0.01982	0.02119	0.02398

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

Table 18: Impact of the Sentiment in Bullet Points on Cumulative Abnormal Returns

	Dependent variable:			*Dependent variable:*		
	Car1	Car3	Car5	Car1	Car3	Car5
	(1)	(2)	(3)	(1)	(2)	(3)
log(1 + Sentbullet)	0.26443***	0.26343***	0.30809***	0.27008***	0.26867***	0.31398***
	(0.02907)	(0.03339)	(0.03701)	(0.02916)	(0.03349)	(0.03712)
log(1 + Sentbullet2)				−0.06370**	−0.05912**	−0.06646**
				(0.02610)	(0.02998)	(0.03323)
EARNTA	0.07356***	0.10341***	0.11305***	0.07376***	0.10360***	0.11326***
	(0.01373)	(0.01577)	(0.01748)	(0.01373)	(0.01577)	(0.01748)
return	−0.00881	0.01234	0.01971*	−0.00882	0.01233	0.01970*
	(0.00818)	(0.00939)	(0.01041)	(0.00818)	(0.00939)	(0.01041)
log(1 + mkvaltq)	−0.00428***	−0.00407***	−0.00411***	−0.00427***	−0.00406***	−0.00410***
	(0.00038)	(0.00044)	(0.00048)	(0.00038)	(0.00044)	(0.00048)
risk_monthly	−0.00834***	−0.01614***	−0.02790***	−0.00846***	−0.01625***	−0.02802***
	(0.00108)	(0.00124)	(0.00138)	(0.00108)	(0.00124)	(0.00138)
sd	0.03659**	−0.00716	0.00392	0.03672**	−0.00705	0.00405
	(0.01798)	(0.02064)	(0.02289)	(0.01797)	(0.02064)	(0.02288)
loss	−0.01427***	−0.01724***	−0.01444***	−0.01433***	−0.01730***	−0.01450***
	(0.00135)	(0.00155)	(0.00172)	(0.00135)	(0.00155)	(0.00172)
errormean	0.00004**	0.00001	−0.00001	0.00004**	0.00001	−0.00001
	(0.00002)	(0.00003)	(0.00003)	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00283***	0.00307***	0.00422***	0.00287***	0.00310***	0.00425***
	(0.00084)	(0.00097)	(0.00107)	(0.00084)	(0.00097)	(0.00107)
STD_consensus	0.000005	−0.00001	−0.00001	0.000005	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
btm	0.00001	0.00010	0.00012	0.000005	0.00010	0.00012
	(0.00007)	(0.00009)	(0.00009)	(0.00007)	(0.00009)	(0.00009)
residualsSENTBULLET.ENDO	−0.18636***	−0.19165***	−0.23754***	−0.17610***	−0.18212***	−0.22683***
	(0.03017)	(0.03465)	(0.03841)	(0.03046)	(0.03498)	(0.03878)
Constant	0.01137**	0.00116	−0.00499	0.01141**	0.00119	−0.00495
	(0.00558)	(0.00641)	(0.00711)	(0.00558)	(0.00641)	(0.00711)
Year FE	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	32,276	32,276	32,276	32,276	32,276	32,276
R^2	0.02106	0.02144	0.02388	0.02124	0.02156	0.02400
Adjusted R^2	0.02014	0.02053	0.02298	0.02030	0.02062	0.02307
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 19: Impact of the Sentiment in the rest of the text on Cumulative Abnormal Returns

	Dependent variable:			*Dependent variable:*		
	Car1	Car3	Car5	Car1	Car3	Car5
	(1)	(2)	(3)	(1)	(2)	(3)
log(1 + SentRest)	0.42550***	0.45933***	0.58285***	0.48810***	0.53884***	0.68180***
	(0.05596)	(0.06423)	(0.07118)	(0.06371)	(0.07311)	(0.08102)
log(1 + SentRest2)				−1.97594**	−2.50946**	−3.12324**
				(0.96102)	(1.10295)	(1.22224)
EARNTA	0.08660***	0.11580***	0.12666***	0.08599***	0.11503***	0.12570***
	(0.01358)	(0.01559)	(0.01728)	(0.01359)	(0.01559)	(0.01728)
return	−0.01023	0.01136	0.01882*	−0.01031	0.01125	0.01869*
	(0.00818)	(0.00938)	(0.01040)	(0.00818)	(0.00938)	(0.01040)
log(1 + mkvaltq)	−0.00420***	−0.00398***	−0.00401***	−0.00420***	−0.00398***	−0.00401***
	(0.00038)	(0.00044)	(0.00048)	(0.00038)	(0.00044)	(0.00048)
risk_monthly	−0.00766***	−0.01560***	−0.02742***	−0.00772***	−0.01568***	−0.02751***
	(0.00108)	(0.00124)	(0.00138)	(0.00108)	(0.00124)	(0.00138)
sd	0.04317**	−0.00022	0.01188	0.04305**	−0.00036	0.01170
	(0.01800)	(0.02065)	(0.02289)	(0.01800)	(0.02065)	(0.02289)
loss	−0.01540***	−0.01832***	−0.01562***	−0.01537***	−0.01829***	−0.01558***
	(0.00134)	(0.00154)	(0.00171)	(0.00134)	(0.00154)	(0.00171)
errormean	0.00004**	0.00001	−0.00001	0.00004**	0.00001	−0.00001
	(0.00002)	(0.00003)	(0.00003)	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00349***	0.00374***	0.00503***	0.00352***	0.00378***	0.00507***
	(0.00084)	(0.00097)	(0.00107)	(0.00084)	(0.00097)	(0.00107)
STD_consensus	0.000004	−0.00001	−0.00001	0.000004	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
btm	−0.00010	−0.00001	−0.00001	−0.00009	−0.000002	−0.00001
	(0.00007)	(0.00009)	(0.00010)	(0.00007)	(0.00009)	(0.00010)
residualsSENTREST.ENDO	−0.09775	−0.08448	−0.17524	−0.09026	−0.07496	−0.16340
	(0.08426)	(0.09670)	(0.10717)	(0.08433)	(0.09679)	(0.10726)
Constant	0.01859***	0.00774	0.00203	0.01819***	0.00724	0.00141
	(0.00543)	(0.00623)	(0.00691)	(0.00543)	(0.00624)	(0.00691)
Year FE	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	32,276	32,276	32,276	32,276	32,276	32,276
R^2	0.01838	0.02015	0.02321	0.01851	0.02031	0.02341
Adjusted R^2	0.01746	0.01924	0.02230	0.01756	0.01937	0.02247
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 20: Impact of the Sentiment in Bullet Points + the rest of the text on Cumulative Abnormal Returns

	Dependent variable:			*Dependent variable:*		
	Car1	Car3	Car5	Car1	Car3	Car5
	(1)	(2)	(3)	(1)	(2)	(3)
log(1 + Sentbullet)	0.78189***	0.50644***	0.23810	0.78307***	0.50508***	0.23517
	(0.11418)	(0.13117)	(0.14542)	(0.11424)	(0.13124)	(0.14548)
log(1 + SentRest)	−1.02723***	−0.48136*	0.14105	−0.97902***	−0.40892	0.23892
	(0.21952)	(0.25218)	(0.27957)	(0.22244)	(0.25554)	(0.28328)
log(1 + Sentbullet2)				−0.05876**	−0.05285*	−0.05914*
				(0.02611)	(0.03000)	(0.03326)
log(1 + SentRest2)				−1.28607	−1.93219*	−2.61075**
				(0.96125)	(1.10432)	(1.22420)
EARNTA	0.05207***	0.09359***	0.11649***	0.05204***	0.09343***	0.11623***
	(0.01449)	(0.01665)	(0.01846)	(0.01449)	(0.01665)	(0.01846)
return	−0.00461	0.01493	0.02037*	−0.00472	0.01478	0.02017*
	(0.00821)	(0.00943)	(0.01045)	(0.00821)	(0.00943)	(0.01045)
log(1 + mkvaltq)	−0.00430***	−0.00405***	−0.00405***	−0.00429***	−0.00403***	−0.00404***
	(0.00038)	(0.00044)	(0.00048)	(0.00038)	(0.00044)	(0.00048)
risk_monthly	−0.00900***	−0.01661***	−0.02814***	−0.00913***	−0.01675***	−0.02830***
	(0.00109)	(0.00125)	(0.00138)	(0.00109)	(0.00125)	(0.00139)
sd	0.02941	−0.00901	0.00796	0.02948	−0.00895	0.00802
	(0.01808)	(0.02077)	(0.02303)	(0.01808)	(0.02077)	(0.02302)
loss	−0.01249***	−0.01644***	−0.01475***	−0.01254***	−0.01649***	−0.01481***
	(0.00141)	(0.00162)	(0.00179)	(0.00141)	(0.00162)	(0.00179)
errormean	0.00005**	0.00001	−0.00001	0.00005**	0.00001	−0.000005
	(0.00002)	(0.00003)	(0.00003)	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00135	0.00235**	0.00436***	0.00141	0.00242**	0.00446***
	(0.00090)	(0.00103)	(0.00114)	(0.00090)	(0.00103)	(0.00114)
STD_consensus	0.000005	−0.00001	−0.00001	0.000005	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
btm	0.00025***	0.00022**	0.00009	0.00025***	0.00022**	0.00009
	(0.00009)	(0.00010)	(0.00012)	(0.00009)	(0.00010)	(0.00012)
residualsSENTBULLET.ENDO	−0.70723***	−0.43893***	−0.17244	−0.69424***	−0.42517***	−0.15585
	(0.11442)	(0.13144)	(0.14572)	(0.11451)	(0.13156)	(0.14584)
residualsSENTREST.ENDO	1.29424***	0.80128***	0.21310	1.28700***	0.79349***	0.20365
	(0.22841)	(0.26240)	(0.29089)	(0.22841)	(0.26240)	(0.29089)
Constant	−0.00091	−0.00483	−0.00378	−0.00103	−0.00503	−0.00406
	(0.00614)	(0.00705)	(0.00782)	(0.00614)	(0.00705)	(0.00782)
Year FE	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Control for endogeneity	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations	32,276	32,276	32,276	32,276	32,276	32,276
R^2	0.02226	0.02213	0.02447	0.02247	0.02233	0.02471
Adjusted R^2	0.02129	0.02116	0.02350	0.02144	0.02130	0.02368

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

Table 21: Economic Impact Results for Sentbullet and SentRest

	Car1	**Car3**	**Car5**
log(1 + Sentbullet)	0.563816	0.3187565	0.1358789
log(1 + SentRest)	-0.1456002	-0.05955234	0.01582253

Table 22: Impact of the Gap in Sentiment on Cumulative Abnormal Returns

	Dependent variable:			*Dependent variable:*		
	Car1	Car3	Car5	Car1	Car3	Car5
	(1)	(2)	(3)	(1)	(2)	(3)
log(1 + Sentgap)	0.55518***	0.52454***	0.57204***			
	(0.05473)	(0.06287)	(0.06971)			
log(1 + Sentgap2)				0.00644*	0.00477	0.00598
				(0.00370)	(0.00425)	(0.00471)
EARNTA	0.06014***	0.09198***	0.10233***	0.09644***	0.12629***	0.13972***
	(0.01396)	(0.01604)	(0.01778)	(0.01353)	(0.01553)	(0.01722)
return	−0.00577	0.01512	0.02228**	−0.01406*	0.00730	0.01374
	(0.00819)	(0.00941)	(0.01043)	(0.00816)	(0.00937)	(0.01039)
log(1 + mkvaltq)	−0.00428***	−0.00406***	−0.00410***	−0.00424***	−0.00402***	−0.00406***
	(0.00038)	(0.00044)	(0.00048)	(0.00038)	(0.00044)	(0.00048)
risk_monthly	−0.00886***	−0.01663***	−0.02837***	−0.00769***	−0.01552***	−0.02716***
	(0.00109)	(0.00125)	(0.00138)	(0.00108)	(0.00124)	(0.00138)
sd	0.03302*	−0.00972	0.00162	0.04452**	0.00120	0.01348
	(0.01800)	(0.02067)	(0.02292)	(0.01799)	(0.02065)	(0.02290)
loss	−0.01322***	−0.01635***	−0.01361***	−0.01621***	−0.01917***	−0.01669***
	(0.00137)	(0.00157)	(0.00174)	(0.00134)	(0.00154)	(0.00170)
errormean	0.00005**	0.00001	−0.000005	0.00004*	0.00001	−0.00001
	(0.00002)	(0.00003)	(0.00003)	(0.00002)	(0.00003)	(0.00003)
log(1 + NoA)	0.00203**	0.00233**	0.00344***	0.00327***	0.00349***	0.00471***
	(0.00085)	(0.00098)	(0.00108)	(0.00084)	(0.00097)	(0.00107)
STD_consensus	0.000004	−0.00001	−0.00001	0.000005	−0.00001	−0.00001
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
btm	0.00014*	0.00023***	0.00026***	−0.00002	0.00007	0.00009
	(0.00008)	(0.00009)	(0.00010)	(0.00007)	(0.00009)	(0.00009)
residualsSENTBULLET.ENDO	−0.48681***	−0.46287***	−0.51261***	0.08699***	0.07734***	0.07754***
	(0.05591)	(0.06423)	(0.07121)	(0.01092)	(0.01254)	(0.01391)
residualsSENTREST.ENDO	0.81841***	0.84040***	0.92107***	0.25290***	0.30780***	0.33934***
	(0.08384)	(0.09631)	(0.10678)	(0.06400)	(0.07348)	(0.08146)
Constant	0.00373	−0.00538	−0.01097	0.02593***	0.01555**	0.01188*
	(0.00577)	(0.00663)	(0.00735)	(0.00536)	(0.00615)	(0.00682)
Year FE	*yes*	*yes*	*yes*		*yes*	*yes*
yes						
Control for endogeneity	*yes*	*yes*	*yes*		*yes*	*yes*
yes						
Observations	32,276	32,276	32,276	32,275	32,275	32,275
R^2	0.02219	0.02223	0.02439	0.01918	0.02020	0.02242
Adjusted R^2	0.02125	0.02129	0.02345	0.01823	0.01926	0.02148

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

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