Cross-border Merger and Acquisitions:

"The impact of tonality and effective communication on performance for acquiring firms"

A study of Swedish companies

BUSN79

Degree Project: Accounting and Finance

Spring 2023

Name: Elizabeth Ramirez Garcia

Muskan Mathur

Supervisor: Elin Funck

Examiner: Johan Dergård

Submission Date: 28th May, 2023

Acknowledgements

We would like to express our gratitude and appreciation for our supervisor Elin Funk for her constant support and guidance throughout the course of this thesis. Along with that, we would like to also thank our beloved parents and friends for their words of motivation and support.
Their belief in us has kept our spirits and motivation high during this process.

Abstract

The research examines the effect of tonality on cross-border mergers and acquisitions (M&A) based on press release announcements. The effect of effective communication, tonality, and positive and negative words on the investor's behaviour and firm performance will be analysed with the aim of acquiring an understanding of the impact on internal and external stakeholders.

A comprehensive database of Swedish companies press release announcements on cross-border M&A deals completed between 2016 to 2021 will be researched to build the hypothesis of nonfinancial factors, such as tonality being an influential factor in gaining share price and gaining more significant market share.

Lastly, the study will build a correlation between the public press release by the company and the tonality effect on firm performance and the positive/negative tone effect on the cognitive ability of investors.

Table of Contents

1. Introduction **6**
1.1 Background 8
1.2 Problematization and Emergence of Research Question 10
2. Literature Review **12**
2.1 Tonality of M&A press releases creating an impact on investors 12
2.2 Press release relation to evaluating strategic fit 12
2.3 The connection between the performance of the firm and tonality 13
2.4 Content of information and tone reversal in letters to the shareholders 13
3. Theoretical Background **14**
3.1 Conceptualization of cross-border Merger and Acquisitions 14
3.2 Investor Information: Quantifiable and Non-Quantifiable 15
3.3 Openness and transparency 16
4. Hypothesis Development **17**
4.1 The Tone of M&A Press Releases 17
4.2 Positive Tone 19
4.3 Negative Tone 20
4.4 Net Tone 22
4.5 Certainty Level 22
5. Methodology, Motivation, and Research Design **24**
5.1 Qualitative Research Methodology 24
5.2 Quantitative Research Methodology 25
5.3 Motivation of the selected method 25
5.4 Research Design 25
6. Data and Methods **26**
6.1 Data 26
6.1.1 Press Release Announcements 26
6.1.2 Historical Data of Stock Market Returns 27
6.1.3 Financial Performance Data 28
6.2 Qualitative Method 28
6.3 Quantitative Method 29
6.3.1 Short-Window Event Study Method 29
6.3.2 Parameter Estimation and Event Period 30
6.3.3 Estimating Expected Return (ER) 31
6.3.4 Estimating Abnormal Returns (AR) 32
6.3.5 Testing the statistically significant of Abnormal Returns 34
6.3.6 Explanatory Regression and Regression Model 34
6.4 Measurement of Variables 36
6.4.1 Measurement of Tone 36

6.4.2 Measurement of stock market performance..... 38
6.4.3 Measurement of firm performance..... 38
6.4.4 Return on Equity (ROE)..... 38
6.4.5 Return on Assets (ROA)..... 39
6.4.6 Measurement of Correlation..... 39
7. Results..... 40
7.1 Tonality of Press Releases..... 40
7.2 Cumulative Abnormal Returns (CAR)..... 40
7.3 Regression Results..... 42
7.4 Fixed Effects (FE) and Random Effects Regression (RE)..... 45
8. Analysis and Discussion..... 46
9. Conclusion..... 50
9.1 Contributions..... 51
9.2 Limitations..... 52
9.3 Future Research..... 53
9.3.1 Further note on Nordic M&A..... 53
10. References..... 54
11. Appendix..... 61
Appendix (1) Measurement of Tone..... 61
Appendix (2) Summary of Variable Definitions..... 62
Appendix (3) Sample..... 64
Appendix (4) Tonality of M&A Press Releases..... 67
Appendix (5) Cumulative Abnormal Returns..... 71
Appendix (6) Sample summary statistic..... 74
Appendix (7) VIF test results..... 74
Appendix (8) Correlation matrix..... 75
Appendix (9) Heteroskedasticity test..... 75
Appendix (10) Fixed Effects (FE)..... 76
Appendix (11) Random Effects (RE)..... 77
Figures..... 78
Figure (1) Tonality of M&A Press Releases..... 78
Tonality of the sample..... 78
Tonality across time..... 78
Figure (2) Frequency of positive and negative words..... 79
Frequency of positive words..... 79
Frequency of negative words..... 79
Frequency of certainty tone..... 80

1. Introduction

The popularity of Mergers and Acquisitions (M&A) has advanced to deploy the growth of companies domestically and internationally. It provides a competitive edge to companies to grow in the global markets (Ferreira et al., 2015). Various literature and research have been done on what contributes to the success of M&A (Shimizu et al., 2004). Still, rather less focus has been placed on the nonfinancial factor, such as communication by the senior management in the press release. The press release for stakeholders, primarily the shareholders, consists of important information that must be conveyed effectively to comprehend the purpose, objective, effect, and benefits (Neuhierl et al., 2013).

This essay aims to examine the connection between how a company's top management communicates information regarding cross-border M&A deals through public press releases and shareholder value creation as an impact of the same. The study involves 100 Swedish publicly listed companies' press releases of cross-border M&A, mainly across Europe, America, Canada, and the Middle East.

A hypothesis is drawn to show the correlation between the impact of effective communication through press releases of the cross-border M&A on shareholder value creation; this is done by emphasizing the effect of positive and negative communication on the firm performance. Specifically, the shareholder value creation, return on investment, share value, Tone of the announcement, and return on stock value. A vital aspect of effective communication is sharing information, concepts, and knowledge to highlight the importance of every commercial transaction that takes place and is more critical in cross-border M&A deals. The hypothesis is that shareholder value creation is impacted significantly by how the management communicates and carries out the press release regarding the M&A.

The press release from the management relating to the cross-border M&A transactions must comprise a clear message about the vision and mission of the merger and acquisition, along with the values of the company and the M&A (Yang et al., 2018). It is of high importance that the message to the shareholders explains the reason for the deal and the strategic advantages that the M&A would entail.

Effective communication minimizes uncertainty, worry, and queries of the shareholders and other stakeholders impacted by the M&A deal (Shimizu et al., 2004); stakeholders may include staff members, existing and potential clients, suppliers, and future investors. Furthermore, effective communication could eliminate the factors of disagreements, mistrust, and misunderstandings and promote alignment, coordination, and collaboration among stakeholders.

While communicating the information, it is essential to consider the cultural differences, sensitivity, and understanding of those involved in the cross-border M&A transaction. These negotiations may involve parties from different cultures, each with its own communication styles, assumptions, and expectations; this might lead to confusion or misunderstandings (Ferreira et al., 2016). As the human mind has different interpretations and perceptions of information, effective communication can help eliminate barriers to any misinterpretations. Additionally, communication style may vary from culture to culture, and common factors in bridging the styles are transparency and honesty, which builds confidence in shareholders in the company plans.

Openness and transparency are the success keys for an effective cross-border M&A deal as this provides the shareholders with access to information and resources directly from the company's top management, which holds the privileged information (Rossi & Volpin, 2004). When provided with openness and transparency, lesser disparities are expected between the acquirer and the target company; while the information provided by the target company may not be as transparent and open, the acquirer has greater responsibility and duty to communicate information to seem trustworthy.

The above factors greatly impact how the company performs during cross-border mergers and acquisitions. Keeping cultural sensitivity, interpretation, and communication style as a primary factor in cross-border M&A is essential to improve the results of cross-border M&A transactions. The management should prioritize effective communication, be culturally sensitive and understanding, ensure transparency and openness, and select the best communication channels and methods based on the situation and goals. By doing this, companies may lessen misunderstandings, build relationships and trust, and increase the possibility that overseas M&A agreements will succeed.

From the research, this paper aims to build a hypothesis on the effect of positive(negative) tone on investors and firm performance, the effect of net tone on firm performance and investors, and lastly, the effect of certainty level on firm performance. Overall, the study aims to examine how M&A press release announcement affects the firm performance and investors' outlook.

1.1 Background

All publicly listed companies must release annual reports and press releases for all the essential information relating to the financial transactions the company makes. Among these transactions, cross-border M&As have higher sensitivity towards such information as these transactions involve people from different cultures, backgrounds, and mindsets.
A press release message comprises various company announcements, such as general news about the company and launches, events, products, and staff (Catenaccio, 2008). The press release also entails a message regarding the merger and acquisition (M&A) among the various announcements. Moreover, press release messages contain a solid message to the shareholders. Within the discourse of the announcement, positive and negative words convey the Tone of the message and the ability to persuade shareholders. This communication medium is called the drip-feeding method (Angwin et al., 2014).

There are previous studies on the impact of effective communication of financial communication, such as due diligence (Hermes et al., 2016), but none on the correlation between effective communication and shareholder value creation from cross-border mergers and acquisitions. To understand the correlation, a study from Swedish publicly listed companies and their impact on the company's financial performance is conducted.

While deciding on the country or region of focus, the primary criteria was the active participation in cross-border mergers and acquisitions. Based on the research and participation level, Sweden came out to be one of the top-performing countries in cross-border M&A deals. The reason for their active participation involves various factors, such as global expansion, as Sweden is a comparatively small domestic market. Hence, companies tend to look for companies and markets that are growing faster and larger as this enhances the revenue stream, adds more opportunities to attract customers, and allows economies to scale. Another factor is the technology and innovation opportunities; as Sweden is a leading hub in telecommunication, life science, information technology, innovation, clean energy, and others, they focus on finding companies or partners that complement and support Swedish companies to grow and become market leaders.

Furthermore, the lack of resources is commonly known in the country; this also motivates Sweden to merge and acquire companies in countries with higher resources to maintain the supply chains. Moreover, Swedish companies, particularly large organisations, have a good track record of financial stability and profitability which puts them at an advantage in getting favourable deals and funds for

mergers and acquisitions. Lastly, Sweden as a market is open to globalisation and welcoming to the collaborative business culture, which promotes its growth-seeking nature and puts them on edge with stakeholders.

The selection of a country based on these factors made Sweden the right choice for cross-border merger and acquisition analysis. For detailed analysis, the focus was placed on the press release from the year 2016- 2021. The reasons for selecting these years of focus are, firstly, the availability of press releases on the company portals. Based on the research, company portals hold press releases and news for the last five years onto their portals, making finding data prevailing to years before that challenging.
Secondly, considering the world's economic conditions, analysing company financials of recent years would help provide a more concrete analysis rather than old data analysis, as there are various factors to consider when analysing (Osadchy et al., 2018).; the correlation would not be concrete with data from previous years. Thirdly, there is research and studies conducted on the data from the 1990s and none on the current market conditions, making this essay's contribution towards the current market analysis relevant. Moreover, cross-border M&As have increasingly become prominent in the market as a key growth strategy for companies.

Lastly, an understanding of the economic situation of Sweden during the studied period provided greater insights into the market. The country was faced with both growth and challenges over the years. In the initial years of 2018-2019 (pre-covid pandemic), there was significant growth in the GDP, nearly by 3%. However, the GDP dropped during the pandemic by 2.8% and had a recovery of 4.3% in 2021.

Despite the economic fluctuations in Sweden, the unemployment rate was maintained daily at a low percentage, with slight fluctuations in temporary unemployment in 2020. The overall unemployment rate has been maintained below 10% throughout the years.
Another factor contributing to the country's economic situation is the government debt ratio, which went from 41.8% in 2018 to 49.8% in 2020. The ratio was reduced to 47.7% by 2021, which implies that Sweden has raised money from the domestic and international markets; this impacted the inflation rate from 1.9% in 2018 to 0.6% in 2020 to a significant rise of 2.2% in 2021.
Finally, international trade in the country was relied on heavily and was significantly impacted due to the pandemic and global conditions (Diewert et al., 2022).

1.2 Problematization and Emergence of Research Question

It is well known that cross-border mergers and acquisitions allow companies to develop their market share into newer markets, have technological advancements and capture a larger market share (Rossi & Volpin, 2004). Nevertheless, cross-border M&A deals are complex and have the involvement of various stakeholders in them who are necessary for the success of the execution. The top management plays a significant, influential role in the press release of such deals as it can directly impact the share price, employee performance, market reaction, and various other factors (Angwin et al., 2014).
Furthermore, while M&A deals are intended to boost the company's development, public press release announcements have the task not only to communicate the deal but also to enhance the lookout of shareholders and other stakeholders. It helps structure the impression of the M&A deal and can lead the company toward success.

In the press release, the company is expected to specify the advantages, possible hazards, strategic advancements, and specific details that might be essential for stakeholders, regulatory bodies, shareholders, and potential investors. Meeting the expectations of all stakeholders may not be possible in a single press release communication as the expectations, requirements, and reasons for concerns may be different among stakeholders (Yang et al., 2018). However, special emphasis must be placed on the shareholders as the firm's value and performance depend on them. If the perception of the deal is taken poorly, it directly impacts the company.

Managing stakeholders' expectations in a culturally different cross-border merger and acquisition becomes a necessity rather than a choice for the management (Yang et al., 2018). While drafting the press release, the considerations should involve various communication methods, conventions, and expectations. Confidence is key for any shareholder to believe in the company's doings. Hence, it is of utmost importance for the company to establish and maintain confidence among them. Moreover, trust is a crucial aspect of gaining shareholder support which will help the company carry out its future growth plans. Trust and honest communication is necessary for the company's performance to be affected and leads to lower market share, which will make the cross-border M&A deal unsuccessful (Angwin et al., 2022).

Another critical factor for the success of cross-border M&A deals is the employee reaction post the press release and how the top management addresses the fears and anxiety of employees (Shimizu et al., 2004). Employees may experience a sense of uncertainty during the M&A deals as various factors that take place are disturbed during a cross-border M&A deal which constitutes a change in cultural differences and may lead to employee dissatisfaction and uncertainty. The communication by the management in the press release must have a sense of motivation for the employees and highlight advantages along with any potential hazards and means to work around them to ensure a happy and growing environment is maintained for the employees.

Along with the environment in which employees work, job security and assurance are also places as a factor of motivation, negative or positive, which may impact employee retention and their reaction toward the press release; this is directly impacted by the time and caliber of the press release message to the stakeholders. Employees can expect an impact on roles and responsibilities which can hamper job security or promote a sense of security via communication and using positive words. As an impact of job security threat, the performance of employees may suffer. On the contrary, if the communication is positive and effective, the employees might see a sense of belonging and job security (Shimizu et al., 2004).

Lastly, the ultimate impact of press release communication on cross-border M&A is on the company's overall performance (Cioli et al., 2020). In order to have effective communication on the M&A deal, the management must convey the transaction's message in an accurate, prompt manner and in a clear tone to avoid any delays, misconceptions, and mistrust. The efficiency and effectiveness lie in the technique of communication by the top management.

The factors above led to the research question, ¨Are investors influenced by the tonality of M&A press releases? Moreover, How is the tonality of M&A press releases connected to the firm's performance?" The M&A announcement press release regarding the cross-border merger and acquisition to the stakeholders will be analysed theoretically and quantitatively to enumerate the use of positive and negative words and the Tone of speech to generate a market reaction.

2. Literature Review

This literature review will supplement the findings for the essay to analyse the effect of effective communication, tonality, strategic fit, and the connection between using positive and negative words with firm performance all relative to the announcement via press release. Moreover, by looking into the previous studies from authors, including Gomes et al., 2013; Hadro et al., 2021; Huang et al., 2014; Abrahamson & Amir, 2006; Henry, 2008 and Wisniewski & Yekini, 2015, the insights into the impact of tonality and wording of press releases will be evaluated.

2.1 Tonality of M&A press releases creating an impact on investors

In an article by Elaine Henry, 2008, which talks about "Are Investors Influenced by How Earnings Press Releases are Written?", the influence on investors' behavior of tonality and readability of the Earnings announcement press release is evaluated. The author highlights that the tonality of press releases influences the behaviour of investors; a more positive tone tends to generate a favourable outcome from the investors. In this article, the tonality is generated by contrasting positive versus negative words.
Henry (2008) deepens the relationship between the stock market reaction to earnings press releases and tone. On the one hand, a positive tone may enhance and persuade shareholders to expect positive outcomes; on the other hand, using a negative tone or wording can lead to investors having a sense of fear or uncertainty. The research indicates the direct relation between the influence of tonality on the investors. Similarly, this thesis aims to establish a relationship between the external stakeholder's reaction and the market and internal stakeholders from the cross-border M&A deal announcement.

2.2 Press release relation to evaluating strategic fit

The article by Xuan Huang, Siew Hong Teoh, and Yinglei Zhang, 2014, highlights "Tone Management " and the strategic fit it creates in corporate disclosures such as M&A deals. The authors spotlight using a positive tone in annual reports to generate a positive market reaction. The emphasis on using tonality as a strategic tool has led to this as a strategic fit for generating a positive market reaction. Tonality is used as a strategic tool to create a strategic fit into the market, create a perception and market response, and build investor expectations. This thesis further builds upon the research by comparing using words in the press release and the reaction generated in the cross-border M&A deals.

2.3 The connection between the performance of the firm and tonality

In their research article, Wisniewski & Yekini, 2015, investigate the relationship between the positive Tone of annual reports and the positive market reaction. Even though the research is not focused on the impact of press releases from cross-border M&A deals, the correlation between tonality and annual reports on the stock price and investors is highlighted. The positive tonality leads to an increased stock price and an increase in potential investors, whereas the negative tonality leads to decreased stock prices and pessimism in investors. The research results imply that the effect of the tonality of communication through the annual reports has an impact on the performance of the firm.

2.4 Content of information and tone reversal in letters to the shareholders

The content of information in the letter to the stakeholder by Abrahamson & Amir, 2006, focuses negativity on providing information to investors and helps investors understand the underlying issues within the company, which can signal the investors to reassess and adjust trade decisions. For the research topic of this thesis, the use of reversal of tonality is not applicable. However, it provides insight into creating balanced reporting in cross-border M&A deals to convey a genuine and honest reporting style to gain the stakeholders' trust and reduce any uncertainty.

Lastly, this literature highlights the impact of tonality on M&A deals in order to channelise investor behaviour and its impact on the firm's performance. The findings of these authors suggest the correlation between the tonality and the use of positive words to get a favourable reaction and perception (Henry, 2008). The tonality in shaping the expectations of investors and shaping the market reaction suggests the impact communication can have on the behaviour and reactions of stakeholders. These insights add to the shareholder value creation in shaping the outcome of cross-border M&A deals and setting the right strategic message from the top management to have effective corporate communication via public press releases.

3. Theoretical Background

This chapter aims to explain the theoretical basis of the study. First, the concept of Cross-border mergers and Acquisitions, the Categories of Investor Information, Openness and Transparency, Top management Communication, and Leadership Strategies will be covered. And Secondly, Acquisitions Communication Mechanisms, Sentiment Analysis Methods, the Efficient Market Hypothesis, Quantifiable Performance Assessment of an M&A.

3.1 Conceptualization of cross-border Merger and Acquisitions

A merger and acquisition occur when an operating firm acquires control over the whole or a part of the business of another firm. The share of cross-border M&As in overall M&As has increased dramatically since the 1990s. While there have long been many M&As targeting SMEs, since the 1990s, there has been an explosion in, and geographical widening of, the number and value of mega-mergers among well-known multinationals. Ever since a race for Global cross-border mergers and acquisitions (M&A) continues to drive transactions to new record-breaking highs in volumes and size of deals.
In the first six months of 2000, the value of worldwide deals rose to $ 643 bn, an increase of 60% over the first six months of 1999, and the number of deals transacted rose 20% to 3,310 (KPMG, 2000). Thus, Cross-border M&As must now be included among the fundamental mechanisms of industrial globalisation.

Cross-border M&As are taking place in all sectors, including manufacturing and services. These cross-border M&As are changing the shape of the industry on a global basis. However, unlike the cross-border M&As of previous decades, which often took place between different fields of business or industry, most recent cross-border M&As are taking place in the same or related industries but with businesses abroad; this is particularly true for large-scale M&As.

Even though cross-border M&As are concentrated in a few countries, such as the United States, the United Kingdom, and Germany, countries that were traditionally quite negative towards cross-border M&As are also becoming more acquiescent towards takeovers by foreign investors.
Cross-border M&As can be either inward or outward. Inward cross-border M&As incur an inward capital movement through the sale of domestic firms to foreign investors (M&A sales). In contrast, outward cross-border M&As incur an outward capital movement by purchasing all or parts of foreign firms (M&A purchases). However, inward and outward cross-border M&As are closely related since

M&A transactions involve both sales and purchases. Trends in cross-border M&A differ among developed and developing countries.

Cross-border M&As can yield dividends in company performance, profits, and benefits for home and host countries when successful industrial restructuring leads to greater efficiency without undue market concentration. International M&As can play a role in revitalising ailing firms and local economies and creating jobs through the restructuring process, acquisition of technology, and productivity growth. Nevertheless, countries have differed widely in their openness to foreign direct investment, including cross-border M&As, and in the benefits they have realised from the ongoing globalisation of industry.

3.2 Investor Information: Quantifiable and Non-Quantifiable

The investor information is classified into two categories; the Quantifiable category, such as size, market capitalization, and turnover, and another category that is not quantifiable, such as news, annual reports, and announcements.

There is a substantial body of literature in financial economics and accounting that examines the value, relevance, and information content of conventional quantitative factors in the pricing of stocks using economic and statistical tools that have become increasingly sophisticated over the years. Quantitative data is readily available, is more objective, and certainly less controversial to incorporate than qualitative data. However, there is no reason to expect that market participants communicate solely through quantitative information.

Firms and even the federal government (Boukus & Rosenberg, 2006) regularly provide qualitative information to investors through explanatory statements, disclosures, elaborations, and clarifications, among others., in different forums and media. Such disclosures have become even more frequent due to recent trends which assume transparency and good governance matters of high importance for corporations. Clearly, financial market participants would be expected to process and analyse these pieces of information (in addition to the quantitative data) provided to them while making their decisions. Analysing the impact of these qualitative communications can only enhance the current understanding of the financial markets and, consequently, the performance of M&As.

3.3 Openness and transparency

Reducing employee uncertainty should be a priority for internal communication during organisational change, as it directly contributes to employees 'commitment to change. Without a clear understanding of how the change may impact employees' job roles and responsibilities at a personal level, how the change can be implemented, how they can be involved, and the rationale and direction for change, employees could perceive lower control over the changing situation and experience higher levels of anxieties. These negative experiences and emotions could understandably reduce employees' commitment to change (Chen &Wang, 2007).

Openness and transparency are essential in reducing employees' uncertainty and enhancing their affective commitment to change. As a defining characteristic of excellent internal communication (Men & Bowen, 2017), transparent communication has been empirically associated with numerous organisational and employee outcomes, such as employee trust, employee–organization relationships, internal reputation, and employee engagement (Jiang & Luo, 2018; Men, 2014; Rawlins, 2008; Yue et al., 2019). Particularly in the organisational change context, scholars have argued that openness and transparency are essential to building employee trust, combating rumors, and reducing change-related anxiety (Yue et al., 2019). The current study provided new empirical evidence regarding how perceived transparent communication induces positive employee change-related outcomes.

First, employees' experience of uncertainty during change often results from information insufficiency (Putnam & Sorenson, 1982), which leaves ambiguities, doubts, speculations, and even rumors. When organisations provide relevant change-related information in a timely, accurate, objective, substantial, and complete manner, employees are more likely to be informed about the change in what, why, and how.
Furthermore, when employees believe they are fully informed about the change's goal, strategic purpose, and vision, they are more likely to see the value of change and thus feel committed to the change initiative (Yue et al., 2019).

Second, when employees feel involved in any part of the change effort, they are more likely to commit to the initiative (Clampitt, 2001; Elias, 2009).

Third, transparent change communication highlights accountability. Furthermore, when employees believe they are fully informed about the change's goal, strategic purpose, and vision, they are more

likely to see the value of change and thus feel committed to the change initiative (Yue et al., 2019). Employees are informed about the benefits of change and see a clear, objective, and unbiased picture concerning the downsides of change, if any, and how benefits may outweigh the risk. Such clarity and openness help convey management confidence and build employee trust, leading to their commitment to change.

Such clarity and openness help convey management confidence and build employee trust, leading to their commitment to change. As revealed in the current study, all three dimensions of perceived transparent communication, namely informational transparency, participatory transparency, and accountability, jointly reduced employees' feelings of uncertainty and enhanced their affective commitment to change.

4. Hypothesis Development

4.1 The Tone of M&A Press Releases

In this part of the study, the research examines the tone and certainty level of M&A press releases and the impact of the tonality of announcements on the stock market and firm performance. Archival research has studied the Tone regarding market efficiency and stakeholder communication. In contrast, Certainty is rare to find. Nevertheless, Certainty is critical in the study to prove that leadership proxied by certainty level influences stakeholders' behaviour after an M&A press release.

This study demonstrates that these two properties can be measured using specific word lists representative of financial announcements. In this thesis, the thesaurus of positive and negative words developed by Henry (2008) was specially created to analyse accounting and financial reports. Henry (2008) listed words used in previous research that examined the Tone of press releases, such as earning press releases, chairman letters, annual reports, CEO letters, and even R&D disclosures. Nevertheless, this is the first study that examines the Tone of M&A press releases and its impact on acquiring firms' performance. The following hypotheses have been formulated.

The Tone is the word choice that favourably frames company performance and outlook (Rogers et al., 2011, p.2161). The interest is to examine if a positive tone (negative Tone, net Tone) affects investors' decisions and the company's performance. Investor impact has been commonly assessed using the firm's stock performance as a measurement or proxy for the market reaction near the event date. Previous

research has examined "tone" as a variable that affects a company's stock performance. (Henry, 2008) found that Tone influences investors' reactions toward earnings press releases. Furthermore, (Lang & Lundholm, 2000) found a positive correlation between market returns and the frequency of optimistic statements by companies to a common stock offering announcement release.

Furthermore, empirical research (Kahneman, 2002; Tversky & Kahneman, 1981, 1986) has proven that individuals' probability-dependent judgments are affected by the terms in which expected outcomes are expressed, explained by "Framing Effects," and Prospect Theory predicts that choices differ when outcomes are framed in positive versus negative terms concerning some neutral reference outcome. The framing effect can create a perception and influence investors to perceive the information as positive and beneficial; this, in turn, influences the investors to believe in the strategic decision and motivates them to see the M&A deal evaluation constructively.

The framing effect theory creates a cognitive bias amongst stakeholders and creates a positive/negative framing effect based on the motive of the announcement (Levin et al., 1998). On the other hand, the prospect theory talks about the behavioural economics that leads stakeholders to have control of uncertain decision-making situations. The investors associated with the M&A deal can determine whether the company will have expected gains or losses. The positive tonality may be perceived as positive gains, whereas a negative tone is associated with losses. The positive Tone motivates the investors to take risks and enlists optimistic behaviour. The theory of prospect suggests that people will be risk averse in nature (Grinblatt & Han, 2001).

The aim is to have a holistic understanding of the impact of the M&A announcement. Therefore, this study will examine the impact on external and internal stakeholders. In order to examine the impact of M&A press releases on internal stakeholders, the reactions of employees based on their engagement with the company are evaluated. Heikkeri (2010) states that employee disengagement harms business performance. Consequently, companies focus on enhancing employee engagement through training, communication, and compensation, among others (Risley, 2020; De la-Calle-Durán et al., 2021).

During M&A deals, firms face a period of uncertainty and anxiety which might lead to poor employee engagement. Furthermore, poor communication can damage the acquisition process and the firm's performance (Angwin, 2001; Bastien, 1987; Inkpen et al., 2000; Jenison &Sirkin, 1986; Light, 2001). Moreover, effective communication from the acquirer toward the acquired firm is key to managing stakeholder expectations (Gomes et al., 2013).

Communication after an acquisition is widely discussed as a critical factor for successful integration (Gomes et al., 2013). However, the relationship between the overall performance of cross-border acquisitions and effective communications has only recently been investigated. Gomes et al., 2013 discuss the importance of handling communications carefully in cross-border M&A since cultural differences usually add an extra degree of difficulty to the integration process. Therefore, there might be significant efforts by acquiring firms to manage strategic communications to stabilise workforce engagement and mitigate uncertainty and insecurity using press releases as a powerful tool to promote confidence by demonstrating certainty and leadership skills from the management team.

4.2 Positive Tone

A positive Tone can be achieved by focusing on positive outcomes, emphasising current achievements, and offering positive comments about future performance using positive language. (Francis et al., 2002; Hoskin et al., 1986) discuss that earnings press releases that convey positive (or negative) future expectations are significantly associated with market reaction to the press release. Furthermore, (Gao et al., 2007) have shown that aspects of corporate strategic communications around the time of IPOs are associated with post-offering returns.

Li (2010) shows that the Tone of positive statements predicts future performance, these findings inspired this study to focus on the impact of a positive Tone on the acquiring firm's performance. Press releases will express mainly a positive tone; this can be attributed to managers incentivized to send an upbeat message to investors and stakeholders or express their understanding of the firm's performance (Yekini et al., 2015). In addition, (Davis & Tama-Sweet, 2012) explain that the sensitivity of managers' wealth to the stock price, their equity incentives, and weak governance might influence the decision to use a given level of Tone. Based on this, the following hypothesis is formulated:

Hypothesis 1a (H1a):

"Positive tone of M&A press releases positively affects investors' reaction to M&A announcements"

Hypothesis 1b (H1b):

"Positive tone of M&A press releases positively affects the performance of the acquiring firm"

4.3 Negative Tone

Negative Tone can be defined as the frequency with which the negative words listed in Henry's (2008) tone thesaurus appear in the narrative of the press releases. The research uses frequency as the number of positive(negative) words divided by the number of total words in the document. A negative tone can be achieved by focusing on adverse outcomes and struggles and generally using a vocabulary vast in negative words.

Some studies suggest a neutral tone is a norm for corporate announcements due to regulation (Hadro et al., 2021). Hildebrandt & Snyder (1981) argue that a positive tone is the norm, as this study assumes. However, Loughran and McDonald's (2011) suggest that a negative tone is the norm. (Abrahamson & Amir 1996) show that negative words in annual reports letters have been associated with future market returns and firm failure (Smith & Taffler, 2000).

Moreover, Feldman et al. (2010) suggest that investors are more incredulous towards positive disclosures. Beginski (2018) also found lower credibility due to more significant investor disagreement after positive disclosure. Therefore, the importance to evaluate between levels of ToneTone. Even though this research assumes that press releases are narrated positively, this might not necessarily be true because managers and communication advisors might be aware of the effects of an over-positive tone on stakeholders.
Based on this, the following hypotheses have been formulated:

Hypothesis 2a (H2a):

"Negative tone of M&A press releases negatively affects investors' reaction to M&A announcements"

Hypothesis 2b (H2b):

"Negative tone of M&A press releases negatively affects the performance of the acquiring firm"

4.4 Net Tone

NetTone can be defined as the ratio of positive and negative words contained in the document. NetTone captures the overall Tone of the press release by subtracting the Negative Tone from the positive Tone and then dividing the difference by the sum of the positive Tone and negative Tone (Henry & Leone, 2019). Based on this, following hypotheses has been formulated:

Hypothesis 3a (H3a):

"The net tone of of M&A press releases positively affects investors' reaction to M&A announcements"

Hypothesis 3b (H3b):

"The net tone of M&A press releases positively affects the performance of the acquiring firm"

4.5 Certainty Level

Certainty is defined as "language indicating resoluteness, inflexibility, and completeness and a tendency to speak ex-cathedra" (Digitext Inc. (2000)). In this research, the leadership abilities of the management will be proxied with Certainty due to the relationship between leadership, clarity, decisiveness and ultimately Certainty. Gomes et al., 2013 argue that a lack of clarity and decisive action from the top results in the failure of M&A, therefore, the importance of the role of leadership in the post-acquisition process. According to Demers & Vega (2008), Certainty is an essential determinant of contemporaneous idiosyncratic volatility. They found that Certainty is inversely associated with increased idiosyncratic volatility during the short-window announcement interval, and it also predicts idiosyncratic volatility during the medium-term post-announcement period.

Based on this, the following hypotheses have been formulated:

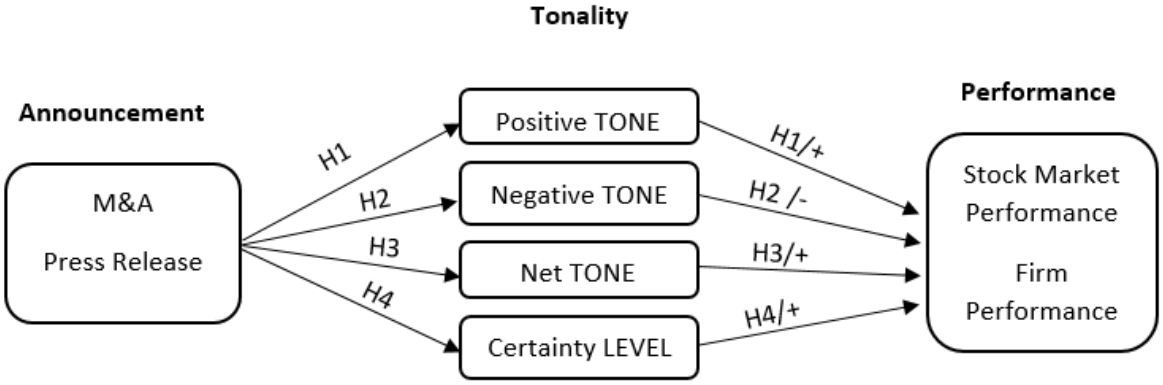
Hypothesis 4a (H4a):

"The level of certainty of M&A press releases positively affects the acquiring firm's performance

Hypothesis 4b (H4b):

"The level of certainty of M&A press releases positively affects employees' engagement"

Figure 1: Assumed effects of hypothesis 1 to 4



Note: The hypotheses show the assumed effects and a positive effect is symbolized by a "+" and a negative effect by a "-."

5. Methodology, Motivation, and Research Design

This chapter presents the methodology and method used in this thesis. First, the relevance of qualitative and quantitative research methods is presented, and how both methods contribute to this research. Following the description of the methodology chosen and the motivation behind it, the research design provides insight into the steps included in the empirical development of this study.

Cross-border M&A deals leave a worldwide footprint. As crucial as these deals are, the public press release communication aspect is as crucial to their success. This thesis will look into the aspect of press release communication via press releases to the stakeholders and how this communication impacts the firm's stakeholders. This study examines the impact on stakeholders through employee performance, employee retention, shareholder reaction, financial company performance, and market reaction. This study uses qualitative and quantitative research techniques to approach the research question.

5.1 Qualitative Research Methodology

The interpretation and analysis of the communication and nonfinancial data of the press release contribute to the qualitative research approach (Taylor et al., 2015). A study of the Tone and words used to communicate to the stakeholders will help analyse the relationship between press release communication and the success of cross-border M&A deals. The source for qualitative research will be press releases from the acquiring company.
In order to analyse the content in the press release, this thesis uses the help of a program called "LIWC2022". LIWC2022 is one of the new automated programs used for analysing word use. LIWC2022 and Diction are proven to be the most reliable software. Researchers agree that an automated method of analysing text conveys a less biased analysis than a manual one.

The qualitative research will be based on the criteria to analyse the Tone of the Press Release addressing the cross-border M&A, the Tone used in the press release, the use of language, and the use of positive and negative words (Sirower & Weirens, 2022). The content analysis will be divided into three sections: finding patterns, topics, and categories. The themes will be examined to determine CEOs' key points in their international mergers and acquisitions announcements. The research will also compare top management communication amongst various firms and industries. The foundation of examining the

press release will be conducted with the help of past research papers and earlier evaluations of leadership communication tactics.

5.2 Quantitative Research Methodology

The statistical analysis assesses the company's financial performance, share price, and employee retention percentage (Queirós et al., 2017). The quantitative research will help supplement the correlation between a company's performance post a cross-border M&A deal and the tonality of press releases. The financial aspects of the company, such as return on equity (ROE), return on asset (ROA), and share price, will be used as metrics. Additionally, regression analysis will be put to use in the quantitative study to further build on the correlation.

5.3 Motivation of the selected method

The motivation behind the selection of the research question is the lack of prior research conducted on this topic and the impact of leadership communication on the various aspects of the company's performance. Since the nature of this research is complicated and can only be examined using both qualitative and quantitative research methods, a mixed method is well-suited (Nag et al., 2023). By conducting the research by this method, insights can be placed into various factors such as cross-border mergers and acquisitions, business success, and financial factors affected by CEO communication tactics.

On the one hand, qualitative research helps to study the CEO press release in-depth and provides insights into communication tactics and the use of positive and negative words, and tonality. On the other, quantitative research will measure and analyse shareholder value creation along with factors that add to the value creation. Furthermore, the quantitative method aims to examine the correlation between the two using hypothesis testing to provide for the research (Nag et al., 2023).

5.4 Research Design

This research starts with developing qualitative research, followed by quantitative research. The qualitative process consists of assessing the tonality of the press releases with the help of LIWC2022. LIWC2022 will provide us with the frequency of positive and negative words in each announcement.
The empirical section of this research study will be conducted in two stages. The first stage develops an event study framework in which Abnormal Returns (ARs) of share price are calculated to investigate

whether the announcement affected the share price. The second stage is conducted to determine the effect of tonality on stock return, return on assets, return on equity, and employee retention. This last stage uses three different panel-data analyses, Pooled OLS regression model, Fixed Effects, and Random effects; this is because the panel-data analysis allows the time-series data of the cross-sectional observations of each firm in the sample to be combined and analysed.

6. Data and Methods

The previous sections developed hypotheses built on the qualitative analysis of M&A press releases and provided a link with the following quantitative analyses. After choosing a methodology that fits best for the research, a guide of the steps for the empirical analysis was provided. In this section, there is a development of two subsections, Data and Methods. The data subsection covers the process in which data gathering and selection were conducted, and the Methods subsection deepens into the empirical framework used and its development and adaptation for the particular approach.

6.1 Data

6.1.1 Press Release Announcements

The press release letters were selected based on the availability and relevance of cross-border mergers and acquisitions in the past seven years. The press release has information about the merger/acquisition company, the strategic advancement the deal would get, and the information regarding the transaction.

A set of standards for the research issue serve as the sample strategy's foundation. For instance, the research chose to sample public press releases from businesses that belong to a particular sector, have a specific size, or are situated in a particular area. In the initial phase of data gathering, the selection of randomly 100 companies from Sweden's index OMXSPI was made. The reason for using this index and country is due to the size and relevance of the companies in the Swedish and international markets. Moreover, this study took place in Sweden, and OMXSPI is considered Sweden's most important and largest index.

Public announcements for all 100 companies' acquisitions from 2015 to 2022 were collected. To randomly select 100 companies from OMXSPI, all companies in this index were randomised using the website random.org, and the announcements of the first 100 companies from OMXSPI were searched. If

a company did not have Acquisitions Announcements in its News & Press, if the announcement was not published in English, or if the announcement was not accessible, the company was excluded from the sample. The following company from the randomised list was used. It is important to highlight that due to the difficulty of finding M&A press release announcements for companies listed on OMXSPI, other Swedish firms listed on the Nasdaq Stockholm stock exchange were added in order to widen the sample. With this approach in place, the acquisition announcement was downloaded from the company's "News & Press" section on its website. In order to set them in the correct format for the text analysis program, the .pdf documents were transformed into .docs. All extra information – pictures, names of CEOs' signatures, greetings and end phrases, tables, graphs, and footnotes - were deleted to have only the same body of the text for each announcement/letter. Afterward, all documents were named according to the standard CompanyName_Year to upload them into the text analysis program LIWC2022.

The validity and dependability of the press release chosen have been based on the standards and consistency. The legitimacy of the press releases is confirmed by the genuine and precise depiction of information and the applicability of the information to the research topic. See a sample of the press release in Appendix (3).

6.1.2 Historical Data of Stock Market Returns

After gathering press releases for 100 Swedish firms, the research collected historical data on stock market returns. Even though the most popular websites visited for this purpose are Google Finance, Yahoo! Finance, and Bloomberg, certain challenges were faced in gathering data on these websites. Both Google and Yahoo lack information for some of the sample companies, and Bloomberg can only be accessed in predetermined terminals, which are often privately owned. The data was retrieved from investing.com because of its easy accessibility and vast content of historical stock data.

For each firm in the sample, the collected information of its historical returns from 365 natural days (a year) before the press release date to 10 days after the press release date. This period was selected as stock exchanges are not open 24/7. Consequently, trading days differ from natural days; this is relevant as examining the period of [-200,5] trading days for the first analysis stage is made to avoid losing information due to the period when a stock exchange is open. Finally, the panel data set consisting of 206 trading days stock return information for the 100 Swedish firms of the sample is finalised. After that, OMXSPI index return was retrieved from the same source as the stock market over the same period to calculate cumulative average abnormal return (CAAR). (See Appendix 5)

6.1.3 Financial Performance Data

The data set for financial performance consists of yearly Return on Assets (ROA), Return on Equity (ROE), Short and Long term Debt (Total Debt), Total Assets, Market Capitalization, and Employees for the year prior to each firm's announcement to the year after. This information was retrieved from the Bloomberg Terminal.

It is important to highlight that some companies lacked information because some firms were not listed during this period, some were delisted during this period, and others did not disclaim information, particularly regarding the employee number. Firms lacking this information were excluded from the sample. Thereby, the final set of 88 companies was attained.

6.2 Qualitative Method

The announcement tonality is evaluated Based on the press releases collected from 100 Swedish companies. Even though the period from 2020 to 2021 is considered polemic because of the impact of the Global Pandemic, the sample does not avoid this year. The reasons are (1) Digitized Press releases prior to 2016 are difficult to find, (2) According to Diewert et al. (2022), the Swedish market was impacted as compared to previous years; however, in comparison to other economies, Sweden was less severely affected by the pandemic. Additionally, the aim is to provide a study of recent M&A deals since the literature on M&A deals in the 1990s is vast due to the boom of this deal during that period. It is of the utmost importance for us to provide a holistic view of the role of strategic communication in recent M&A deals.

In order to provide a fair and random sample, a website called random.org is used to randomise the 408 companies listed on Nasdaq Stockholm. The first 100 companies obtained from that process were selected. However, if a company had not undergone an M&A deal within the study period, or if the press release was in Swedish or was not accessible, the company was excluded from the sample, and the next company from the randomised list was used.

Following this, the press releases for each M&A deal were downloaded and named according to the standard Acquiring Firm’s Name_Target Firm’s Name_M&A Year. In order to set the files in the correct format for the text analysis program, the .pdf documents were transformed into .docs. Afterward, the files were uploaded to LIWC2022 (the text analysis software) to analyse the text.

Then a text analysis was conducted with the previously collected Press Releases using the text analysis program LIWC2022 and building on the previous literature. Using Henry's (2008) list of positive and negative words (see Table 1), creating a dictionary with the variables NegTONE for the negative words and PosTONE for the positive words for the analysis with LIWC2022.

Furthermore, the spelling of Henry's list for American and British spelling was checked, and 'unfavourable' was added to the list. Using Henry's (2008) thesaurus of positive and negative words, a proven tool to measure tonality and analyse the use of these words in the letters to determine a ratio of positive and negative words and, thus, the letter's tone was used. As the program only calculated the ratio of positive (PosTONE) and negative (NegTONE) words, an Excel spreadsheet was used to calculate the NetTONE for every company. Subsequently, all results were gathered, tone and financial information, in one Excel spreadsheet (see Appendix 4).

6.3 Quantitative Method

The previous section developed hypotheses built on the qualitative analysis of M&A press releases and provided a link with the following quantitative analyses. A combination of methodology commonly used in capital markets research, an event study, and a methodology commonly used in quantitative analysis of textual material and content analysis is used to test the hypotheses. Lastly, this study searches for correlation using panel data models such as Fixed Effects, Random Effects, and a Multivariate Linear Regression Analysis.
Following a description of an event study method and sample selection, the section below explains the approach to measuring the variables used in the analysis and presents the results for each hypothesis.

6.3.1 Short-Window Event Study Method

An event study is a statistical method that assesses the impact of an event. The event study approach has been the preferred method for examining M&A deals. The main reason to be the preferred method is its efficiency while studying information regarding specific events and information about them, particularly about share prices and their historical performance around these events. According to MacKinlay (1997), an event's effects will be immediately reflected in security prices due to rationality in market data. Moreover, this method is helpful because it links financial performance to management decision-making.

"In the corporate context, the usefulness of event studies arises from the fact that the magnitude of abnormal performance at the time of an event provides a measure of the (unanticipated) impact of this type of event on the wealth of the firm's stakeholders. Thus, event studies focusing on announcement

effects for a short horizon around an event provide relevant evidence for understanding corporate policy decisions." ((Kothari & Warner, 2006, p. 4)

This study performs an event study to analyse whether the share price was affected by the Tone of the press release of the acquisition. The research relies on the effectiveness of this approach since several event studies have been analysed since the beginning of the 20th century using this approach and refined over the last decades, being Ray Ball and Phillip Brown (1968) and Eugene Fama et al. (1969) who introduced the methodology that is used nowadays.
In order to perform this study, the assumption is that the market is efficient and has a semi-strong form to reflect all the information available on the stock prices McWilliams and Siegel (1997).

6.3.2 Parameter Estimation and Event Period

Since there is no unique structure for the procedure for an event study, the suggested flow of analysis discussed by MacKinlay (1997) will be followed.
Firstly in this event study, the press release is defined as the area of interest and its publishing date as day zero in the event time of this study,

$\tau_0 = Press\ Release\ date$, as the event date, to capture the effect of the M&A announcement on the acquirer stock prices.

Second, the definition of the event window L2=T2-T1 is the time horizon around the event in which abnormal stock market returns are measured. With the selection of the event window, the aim is to capture the market reaction to the event over it. Previous studies have used different event windows; nevertheless, it is customary to define the event window to be larger than the specific period of interest to examine periods surrounding the event. In addition, the use of a short window event study is consistent with previous accounting research that has examined market response to financial and other information disclosed in press releases (e.g., Bowen et al., 2005; Francis et al., 2002; Lougee & Marquardt, 2004; Schrand & Walther, 2000)

The justification for such a short estimation window is to avoid biases or overlap with other events. Nevertheless, longer estimation windows suggested a broader window to capture possible information leaks and the possibility that the event takes more than one day to fully affect the firm value (Mc et al., 1997; Gupta & Misra, 2007). The study intends to capture not only the market reaction but the internal stakeholder's reaction as well in order to analyse the impact of the announcement in a more holistic way; additionally, this will facilitate the use of abnormal returns around the event day in the analysis overlap

MacKinlay (1997). Hence in this study, the test will run for an event window of [-1,+1],[-3,+3][-5,+5] days.

Third, the definition of the length of the estimation window is L1=T1-T0 and L2=T2-T1 as the length of the event window. The estimation window will define the period to calculate the regular stock returns before the event occurs. In order to prevent the event from influencing the typical performance of the stock, the estimation period and event period must not overlap MacKinlay (1997). Therefore, only one month is left between the two windows to exclude market returns influenced by the event. In this study, for each press release, the 250 trading day period before the event window is used as the estimation window and a lower bound of 30 days before the event day; thus, the estimation window will be in total 210 days.

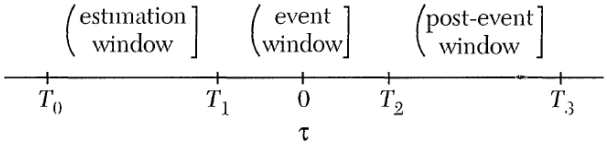


Figure 1. Even Study Timeline, Source McKinlay (1997)

6.3.3 Estimating Expected Return (ER)

Two commonly used models for estimating expected returns have been identified: Market Model (MM) and the Historical Mean Model (HMM).

The market model relates the return of a stock to the return on the market portfolio. By doing so, the market model increases the possibility of removing some of the returns incorporated in the market returns. Thus, the market model detects abnormal returns more accurately and by only abnormal returns associated with the acquisition announcement.

The historical mean model (HMM) represents the expected normal performance as the historical mean return over the estimation window. According to Brown and Warner (1985), the HMM model yields comparable results with the market model. The expected normal returns calculated with the HMM are represented in the following expression.

$$E\left(X_t\right) = \mu_i$$

To avoid any biases, and to capture all the potential abnormal returns, the estimated expected returns using both the market model and the historical mean model will be used.

6.3.4 Estimating Abnormal Returns (AR)

The framework is developed using the market and normal performance return models. The research proceeds to calculate the abnormal returns associated with M&A, defined as the actual returns minus the expected returns without the event.

$$AR_{i,t} = R_{i,t} - E\left(R_{i,t}\right) \qquad (1)$$

Where:

$$AR_{i,t} = \ Abnormal\ returns\ for\ stock\ i\ at\ time\ t$$
$$R_{i,t} = Actual\ return\ for\ stock\ i\ at\ time\ t$$
$$E\left(R_{i,t}\right) = Expected\ return\ for\ stock\ i\ at\ time\ t$$

The expected returns are estimated by using different estimation models. The choice of the estimation model is crucial and could affect all the research results. Many other methods have been discussed in the literature to calculate the expected returns; the most common models are:

The event study here reported uses the market model used by MacKinlay (1997), which is the most commonly used model in empirical research to estimate E(Ri,t) as represented in (2):

$$E\left(R_{i,t}\right) = \ \alpha_i + \beta_i R_{m.t} + \varepsilon_{i,t} \qquad (2)$$

Where:

$$\alpha_i = Intercept\ coefficient$$
$$\beta_i = The\ market\ return\ coefficient$$
$$R_{m.t} = The\ market\ return\ for\ stock\ i$$
$$\varepsilon_{i,t} = The\ residual\ or\ error\ term$$

The Market Adjusted Model is a simpler version of the Market Model and it is represented in (3)

$$AR_{it} = R_{it} - R_{mt} \qquad (3)$$

This lighter version of the market model assumes that α_i, β_i and $\varepsilon_{i,t}$ are 0. In consequence, the correlation is said to be perfect. The Abnormal Returns in this model are defined as the difference between the actual stock return at the event period and the market stock returns at the same period. Even though the market-adjusted method may seem simplistic, Brown and Warner (1980) found that the market-adjusted method and the market model do not present significantly different results.

Now the calculation of AR for a specific stock on a specific day by applying (1). Since the study investigates the impact of the event on more than one day; The results of ARs can be aggregated to obtain the average abnormal returns as the following:

$$\underline{AARt} = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t} \qquad (6)$$

Where:

$$AARt = Average\ Abnormal\ Returns\ at\ t$$

To calculate the Cumulative Abnormal Returns (CAR) over the whole event window, The average abnormal returns can be aggregated as the following:

$$\underline{CAAR(t_1, t_2)} = \sum_{t=t1}^{t2} \underline{AARt} \qquad (7)$$

Where:

$$\underline{CAAR(t_1, t_2)} = Cumulative\ Average\ Abnormal\ Return\ over\ the\ period\ t1\ to\ t2$$

The null hypothesis and the alternative hypothesis are formulated as the following:

$$H_0: CAARt = 0$$

$$H_1: CAARt \neq 0$$

6.3.5 Testing the statistically significant of Abnormal Returns

Following MacKinlay's (1997) framework, the significance of the cumulative abnormal returns can be manually tested by using the variance to perform a t-test as the following:

$$var\left(\underline{CAAR(t_1, t_2)}\right) = \frac{1}{N^2}\sum_{i=1}^{N}\left(CAAR_i(t1, t2) - \underline{CAAR(t1, t2)}\right)^2 \quad (8)$$

And the t-test formula is:

$$t = \frac{\underline{CAAR(t_1,t_2)}}{\sqrt{var\left(\underline{CAAR(t_1,t_2)}\right)}}$$

In order to facilitate the calculation and testing process of CAARs, the research used the STATA program to test the sample.

6.3.6 Explanatory Regression and Regression Model

This Study examines the impact of Tonality on both the market and the return on assets (ROA) and return on equity (ROE) of companies.

The research models of this study, conducted to determine the effect of tonality on stock return, return on assets, return on equity, and employees number, were formed as follows:

$$CAAR = \alpha + \beta_1 PosTONE + \beta_2 NegTone + \beta_3 CerTONE + \beta_4 ROE + \beta_5 Leverage + \beta_6 Employees + \varepsilon \quad (1)$$

$$ROE = \alpha + \beta_1 PosTONE + \beta_2 NegTone + \beta_3 CerTONE + \beta_5 Leverage + \beta_6 Employees + \varepsilon \quad (2)$$

$$Employees = \alpha + \beta_1 PosTONE + \beta_2 NegTone + \beta_3 CerTONE + \beta_4 ROE + \beta_5 Leverage + \varepsilon \quad (3)$$

The estimation of the correlation between the variables of interest will be conducted using three different models: Pooled OLRS, Fixed Effects (FE) and Random Effects (RE) to provide robustness to the empirical procedure. The study relies on the effectiveness of these models since they have been commonly used in archive research for panel data sets. Pooled ORLS in this study serves as a benchmark model for comparing the performance of the other two models, Fixed Effects (FE) and Random Effects (RM). It is important to mention that even though Pooled OLS is a good model to use as a benchmark to compare other models, it ignores the panel structure of the data and the time-constant information

captured by the fixed effect term α; thus, the model proceeds as if we had a regular cross-section. Therefore, FE is the preferred alternative for panel data.

To apply this regression and ensure that the results are unbiased or to minimise the discrepancy between the estimated values and actual values. The following assumptions should be fulfilled, see (Hair,Anderson, Tatham, and Black, 1995).

First, the expected value of the error term is zero,

$$E\{\varepsilon_i\} = 0, \qquad i = 1, \ldots\ldots, n.$$

The estimation models fulfill this condition since the study included the constant α, which will force the residual to be zero. The regression estimations are conducted using the STATA program.

This Study examines the impact of Tonality on both the market and the return on assets (ROA) and return on equity (ROE) of companies. Therefore, the present study differs from other studies and contributes to the literature by comparing the non-operational performance indicators (stock value and stock return) and operational performance indicators (ROA and ROE).

The second assumption is that the independent variables CAAR, ROA, ROE, and Employee number are not correlated with the error term, and the explanatory variables are not correlated with each other; this assumption is referred to as multicollinearity. To test if the model fulfills this assumption, a variance inflation factor test (VIF) will run, which measures the sensitivity of an estimated regression coefficient to collinearity using the formula:

$$VIF_i = \frac{1}{1-R_i^2}$$

The presence of autocorrelation in a model indicates that the error terms are correlated, which can lead to insignificant estimators, even though they are in fact, significant (Gujarati & Porter, 2009). In order for regression results to be trustworthy, the VIF should be a value lower than 5 (Ringle, Wende, and Becker, 2015).

Lastly, assume homoscedasticity for the study, which indicates that the variance of the error term should be constant. A non-constant error variance indicates heteroscedasticity in the model. To test for this assumption, in this study, the Breusch-Pagan (see Appendix 9) test is applied. In this test, the null hypothesis indicates constant variance, whereas the alternative hypothesis indicates heteroscedasticity.

6.4 Measurement of Variables

6.4.1 Measurement of Tone

Positive tone (PosTONE) aims to measure positiveness in the discourse used in announcements, a measure of the degree of upbeat tone; It is calculated as the percentage number of words in a firm's Press Release that are Positive, according to Henry's (2008) thesaurus. Following the same logic, negative tone aims to measure the extent to which the overall feelings of negativity are aroused in the reader by the press release; (NegTONE) is calculated using the same procedure by using words that are Negative according to Henry's (2008) thesaurus. Furthermore, NetTONE measures the contrast between positive and negative words; It is calculated as the count of positive words minus the count of negative words, divided by the sum of positive and negative word counts. As a result, NetTONE will acquire values between -1 and 1. The research used this method to calculate NetTONE based on (Uang et al., 2006) research study on the tone of auditors' opinion letters. Finally, Certainty Level (CerTONE) aims to capture the expressions used in the announcement that transmit feelings of assertiveness, confidence, and leadership. In order to measure Certainty, the use of Demers & Vega's (2008) method, which compares magnitudes of optimism and pessimism by normalising the NetTONE and is done by computing NetTONE minus its minimum value and dividing it through the range of NetTONE (max NetTONE minus min NetTONE).

The measurement choice assumes that qualitative parts in press releases aim to communicate an overall positive tone and that it is achieved by repeatedly signaling to the reader the positiveness of the deal and its effects on the firm, regardless of the immediate context in which these are presented.

Word frequency count used for the tone measure approach may seem simplistic, but it is a well-established procedure in research (Henry, 2008). Moreover, among other frequency measures, positivity, optimism, negativity, and pessimism tones have been used in archive research to measure persuasive elements of earnings press releases, CEO letters, annual report narratives, and letters to shareholders (Hyland, 1998).

Table1: Henry's (2008, p.387) word list of positive and negative words

Positive Word List	*positive positives success successes successful succeed succeeds succeeding succeeded accomplish accomplishes accomplishing accomplished accomplishment accomplishments strong strength strengths certain Certainty definite solid excellent good leading achieve achieves achieved achieving achievement achievements progress progressing deliver delivers delivered delivering leader leading pleased reward rewards rewarding rewarded opportunity opportunities enjoy enjoys enjoying enjoyed encouraged encouraging up increase increases increasing increased rise rises rising rose risen improve improves improving improved improvement improvements strengthen strengthens strengthening strengthened stronger strongest better best more most above record high higher highest greater greatest larger largest grow grows growing grew grown growth expand expands expanding expanded expansion exceed exceeds exceeded exceeding beat beats beating*
Negative Word List	*negative negatives fail fails failing failure weak weakness weaknesses difficult difficulty hurdle hurdles obstacle obstacles slump slumps slumping slumped uncertain uncertainty unsettled unfavourable downturn depressed disappoint disappoints disappointing disappointed disappointment risk risks risky threat threats penalty penalties down decrease decreases decreasing decreased decline declines declining declined fall falls falling fell fallen drop drops dropping dropped deteriorate deteriorates deteriorating deteriorated worsen worsens worsening weaken weakens weakening weakened worse worst low lower lowest less least smaller smallest shrink shrinks shrinking shrunk below under challenge challenges challenging challenged*

6.4.2 Measurement of stock market performance

Stock market performance in this study is measured using two different approaches. The first approach measures Cumulative Abnormal Average Return on stock CAAR. The CAAR is calculated with the event study method previously described. The event study will provide us with an estimation of the expected returns in normal market conditions to compare it with the abnormal conditions that result after the announcement. The average of abnormal returns minus the expected returns estimates the magnitude of the announcement's impact on the stock market during the event window. Since there is no way of knowing with certainty what would have happened had the event not occurred, particularly in daily stock returns, the second approach to measure ARs is the Market Model, which, instead of relying on an unknown hypothetical construct, ARs are compared to an established benchmark. In this study, the established benchmark is the OMXSPI Index.

6.4.3 Measurement of firm performance

Firm performance can be measured using profitability ratios. In this study, the acquiring firm's performance measures are calculated over three years, starting the year prior to the acquisition, following the year of the acquisition's announcement, and lastly, one year after the press release. By using three time periods, the Study attempts to measure the association between past, present, and future performance. Following the same logic used in the event study, the estimation period is short compared to other profitability studies in which the common period length is of six years (e.g., Abrahamson & Amir's (1996) research); this is in order to avoid overlapping of other possible events.

The profitability ratios used in the research are Return on Equity (ROE), which links firm performance with investors' interest in investing in the firm. Moreover, Return on Assets (ROA) is the profitability indicator that links the firm's performance and internal stakeholder engagement.

6.4.4 Return on Equity (ROE)

In archive research, ROE is commonly used to measure performance since it assesses how well a company uses investments to generate earnings growth (Beirão et al., 2017; Galvagno & Dalli, 2014). ROE provides a measure of profitability concerning the book value of equity derived from the difference between assets and liabilities. This metric is usually expressed as a percentage, and a higher ROE implies a higher efficiency of a firm to generate earnings growth. In this study, no computation was made. Instead, it was downloaded from the firm's sample ROEs from the Bloomberg Terminal.

It should be highlighted that even though ROE is one of the most important ratios in explaining a firm's performance, Abrahamson & Amir (1996), ROA, in contrast with ROE which is influenced by the number of outstanding shares, can provide us with more accurate results. These measures are not independent; however, presenting evidence on two performance measures is more reliable than presenting only one.

6.4.5 Return on Assets (ROA)

Return on Assets (ROA) is one of the leading performance measures used in earlier studies (Abrahamson &Amir, 1996; Keusch et al., 2012); ROA provides us with a standardised value of the average profitability since it is the most popular financial ratio used for this purpose. ROA is calculated by dividing the Net Income amount by a firm's total assets. This metric is usually expressed as a percentage, and a higher ROA implies a higher efficiency of a firm in generating profits. Thus ROA is an accurate measurement of a firm's performance. In this study, no computation was made. Instead, the data was downloaded from the Bloomberg terminal.

6.4.6 Measurement of Correlation

Correlations are estimated in the regression analysis stages and measured according to Cohen's (1997) guidelines. Cohen (1997) establishes that a 0.10 measurement indicates a weak correlation, 0.30 a moderate correlation, and 0.50 a strong correlation. Correlation is estimated in the second stage of the analysis using Fixed Effects and Random Effects models. Lastly, in the third stage, a multivariate linear regression is performed using Stata, a statistical software for data science and empirical studies.

7. Results

This chapter presents the empirical results and an analysis that explains the findings in detail. First, CAAR is presented, followed by the regression results for each hypothesis.

7.1 Tonality of Press Releases

As mentioned in previous sections, Tonality was analysed with the help of LIWC2022 software. Appendix (4) depicts the Positive, Negative, Certainty, and Net Tone captured in the press releases of the 88 observations. It can be observed in Figure (1) that Positive Tone is the predominant Tonality of the press releases, as suggested while formulating the hypothesis. Furthermore, for each announcement, the Study obtained the mean, median, standard deviation, 1st, 25th, 75th, and 99th percentile of the variables in the sample in Appendix (6). Mean (median) PosTONE is 1.68, (1.63) NegTONE is .34 (.34), CertTONE is .9 1 (1.06), and NetTONE is .64 (.71). This is in line with Huang, Teoh, and Zhang (2014) and Demers and Vega (2008), which imply that the disclosure tone in press releases is generally relatively optimistic.

Tonality was also analysed across the years, and a tendency for an increase in Positive Tone was found, being 2021, the year in which press releases had a higher frequency of the positive tone, with almost a 100% increase compared to 2015. In the year 2020, the frequency of positive disclosure decreased compared to the prior year, perhaps due to the crisis that came along with the global pandemic. Finally, the rest of the variables remain relatively constant in time. See Figure (2) for more details.

7.2 Cumulative Abnormal Returns (CAR)

The impact of the acquisition announcement on the acquirers' stock prices was calculated using the Market Model following MacKinlay (1997) procedure.

Table (2) CAAR for the overall sample

	CAAR			**P-Value**		
Model	**CAAR[-1,1]**	**CAAR[-3,3]**	**CAAR[-5,5]**	**[-1,1]**	**[-3,3]**	**[-5,5]**
Market Model	2.52%	4.14%	4.89%	(0.000)***	(0.000)***	(0.000)***

Estimated p-values given in parentheses. Statistical significance levels of 10%, 5%, and 1% are denoted with *, **, and ***, respectively.

Table (2) depicts the cumulative average abnormal returns CAAR for an overall sample of 88 observations for the Market Model. It can be observed that the CAAR [-5,5] window has the highest abnormal returns, which suggests possible information leakage before the press release, and the market reacted to this information positively. The results are highly statistically significant at 1%. Level. Thus, the Study implies that the cumulative abnormal returns for the acquirer firm's CAARs are positive, with almost 5% higher returns around the press release date.

Furthermore, the Swedish Market is an effective market that has been verified: this is due to the fact that the market has reacted quickly to the leaked information regarding the acquisition and reflected this on the stock prices. More details about the p-value and CAARs for each announcement can be seen in Appendix (5) and Appendix (6).

7.3 Regression Results

In this section, the study will test all the hypotheses previously stated in the hypotheses development chapter. To determine the correlation of tonality with the acquirer's abnormal returns (CAAR), Return on Assets (ROA), and Return on Equity (ROE) and measure the magnitude and effect of positive, negative, net tone, and certainty, the regression models are run. In this study, the Stata program was used, and the three models established for the purpose of the research were analysed sequentially. In the first stage of panel-data analysis, cross-sectional dependence tests are performed to avoid bias and inconsistency.

Table (3) represents the Pooled OLS regression results for models (1), (2), and (3). The sample includes a total of 88 observations. This Table presents the coefficients and t-statistics (in parentheses) for three POLS regressions based on the whole sample. Estimated t-statistics are based on robust standard errors. In the regression model, the dependent variable CAAR as measured in the event study, will be assessed in the event window [-5, +5] based on the effects found in the cumulative abnormal returns section.

Refer to the table below

Table (3) Pooled OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	A	B	C	D	E	F	G	H	I	BB	CC	DD	EE
VARIABLES	CAAR5	CAAR5	CAAR5	roe	roe	roe	roa	roa	roa	employees	CAAR5	roe	roa
PosTONE	0.027			10.644*			2.650						
	(0.029)			(6.113)			(2.444)						
NegTONE		-0.123***			-25.201**			-0.536					
		(0.086)			(17.879)			(7.156)					
NetTONE											0.071	-14.750	2.164
											(0.071)	(14.796)	(5.882)
CerTONE			0.026			11.377			4.631	-110.666*			
			(0.043)			(9.017)			(3.564)	(64.517)			
roe	-0.000	0.000	-0.000							-0.481	0.000		
	(0.001)	(0.001)	(0.001)							(0.795)	(0.001)		
roa	-0.001	-0.002	-0.001								-0.002		
	(0.002)	(0.002)	(0.002)								(0.002)		
leverage	0.113	0.089	0.131	-6.394	4.482	-0.175	21.653*	21.953*	23.874*	70.763	0.097	2.158	21.176*
	(0.152)	(0.152)	(0.153)	(30.721)	(31.531)	(31.147)	(12.285)	(12.620)	(12.311)	(224.507)	(0.153)	(31.770)	(12.630)
employees	-0.000*	-0.000	-0.000	-0.012	-0.017	-0.009	0.006	0.006	0.008		-0.000	-0.015	0.007
	(0.000)	(0.000)	(0.000)	(0.015)	(0.015)	(0.015)	(0.006)	(0.006)	(0.006)		(0.000)	(0.015)	(0.006)
year_1== 1.0000	-0.047	-0.065	-0.055	-2.734	2.012	-0.781	0.160	1.562	1.484	21.597	-0.057	0.367	1.493
	(0.053)	(0.052)	(0.052)	(11.002)	(11.207)	(11.098)	(4.399)	(4.485)	(4.387)	(80.008)	(0.052)	(11.166)	(4.439)
year_1== 2.0000	-0.059	-0.090	-0.069		8.444	0.867		1.525	0.764	31.612	-0.078	5.967	1.208
	(0.053)	(0.055)	(0.053)		(11.808)	(11.319)		(4.726)	(4.474)	(81.565)	(0.054)	(11.612)	(4.617)
year_1== 3.0000 = o,	-	-	-		-	-		-	-	-	-	-	-
year_1== 2.0000 = o,				-			-						
year_1== 3.0000				-4.917			-2.112						
				(11.148)			(4.458)						
Constant	0.046	0.149**	0.069	-2.084	-0.262	0.944	-6.206	-3.286	-8.110	290.689***	0.056	19.458	-4.623
	(0.074)	(0.065)	(0.068)	(14.482)	(13.987)	(14.055)	(5.791)	(5.598)	(5.555)	(96.154)	(0.065)	(13.165)	(5.234)
Observations	88	88	88	88	88	88	88	88	88	88	88	88	88
R-squared	0.087	0.100	0.081	0.046	0.034	0.030	0.067	0.054	0.073	0.047	0.089	0.023	0.056
Standard errors in parentheses													
*** p<0.01, ** p<0.05, * p<0.1													

Column 1 of Table (3) presents results for estimating model (1), column 2 for model 2, and column 3 for model 3, all using POLS. The study controls for yearly effects, leverage, and other covariates relevant to the outcome (CAAR). The relationship between PosTONE and CAAR is positive and statistically significant at the 10% level. A ten percentage point increase in Positive Tone leads to a 0.027 percentage increase in CAAR.

There is a negative relationship between CAAR and NegTONE, the result is highly statistically significant at 5% and 1% level, and the coefficient is 0.123. This result suggests that the cumulative abnormal returns decrease 0.12% when the announcement increases by 1% the frequency of negative words.

Moreover, the findings suggest a positive, yet not significant, correlation between CAAR and NetTONE with a coefficient of (0.07). Further, it can be observed that a positive relationship between CAAR and certainty level is seen; however, it is not statistically significant.

Columns 4 to 6 in Table (3) present results for estimating model (2). The findings observed a positive relation between PosTONE and ROE with a coefficient of (10.64); this result is statistically significant at 10%. Further, the results indicate a negative non-significant correlation between NetTONE and ROE. However, the results did not find either statistical significance in the relationship between CerTONE and ROE. Nonetheless, the results found a negative relationship between NegTONE and ROE with a coefficient of (-25.20) statistically significant at 5%; this means that a 5% increase in NegTONE leads to a 0.26% increase in ROE.

Similar results have been found for the relationship between PosTONE, NegTONE, CerTONE, and ROA. The negative relationship between NegTONE and ROA is preserved, and it remains statistically significant at 10%.

Finally, a positive relationship between CerTONE and Employees was found with a coefficient of -11.06 and statistically significant at 10%; this implies that an increase of 10% in CerTONE leads to a decrease of 11.06% in employees.

7.4 Fixed Effects (FE) and Random Effects Regression (RE)

The regressions performed using Fixed and Random Effects present similar results to the POLS model. When using a FE model, the results fully average out the fixed effect term; this allows us to control for all time-invariant effects. With the FE model, the Study can partially average out the fixed effect term. Appendix (10) presents results for estimating models (1), (2), and (3) using the Fixed Effects model, and Appendix (11) presents the results for the estimation of models (1), (2), and (3) using Random Effects.

For model (1), the coefficients associated with PosTONE, NegTONE, and CerTONE are stable and comparable in magnitude to the results from the POLS. The effect of NegTONE on CAAR is also highly statistically significant at the 5 and 1% levels.

In order to assist in choosing between the FE and RE models, a Hausman test is used, for which results are reported in Appendix (9). The null hypothesis of the test is that the RE model is the appropriate model. Therefore, the initial hypothesis that the random effects model adequately models the individual-level effects is strongly rejected. Based on the *chi^2 statistics (and the p-value), we reject the null hypothesis in favour of the fixed effects model.*

8. Analysis and Discussion

In this section, the findings are analysed, to assess the hypotheses and compare the results to the literature of archive research.

Hypothesis 1a (H1a): A more positive tone of M&A press releases positively affects investors' reaction to M&A announcements

In line with Demers & Vega (2008) and Huang, Teoh, and Zhang (2014), the results found regarding the relationship between cumulative abnormal returns (CAAR) and positive tone (PosTONE) was significant but weak. The Study found that abnormal positive tone predicts up to a point positive increases in the stock market return within the event window of the announcement; this provides support to the hypothesis that a more positive tone affects the market reaction to M&A press releases, even when controlling for fundamental indicators of the past performance of the firm. The results demonstrate as well that framing M&A announcements in positive terms will influence investors to think that the deal contributes positively to the acquiring firm value. Moreover, press releases are an important tool for the management to not only inform investors but for signaling purposes as well.

Furthermore, the results suggest that the impact of tone on market reaction is consistent with prospect theory, which predicts that positively framing financial performance will influence investors to perceive the disclosed information in terms of increases in financial fundamentals indicators. Moreover, it contradicts Abrahamson and Amir (1996), who states that the positive tone of announcements is redundant because the management might be incentivized to "sugarcoat" the communication of relevant events for the firm. The findings confirm that the positive tone of M&A announcements has increased over the years, bringing a long positive reaction to the market.

The evidence indicates that an abnormally positive tone influences an overly optimistic immediate return on the stock as a response to an M&A announcement.

Hypothesis 1b (H1b): A more positive tone of M&A press releases positively affects the performance of the acquiring firm

Furthermore, the results suggest that the impact of tone on market reaction is consistent with prospect theory, which predicts that positively framing financial performance will influence investors to perceive the disclosed information in terms of increases in financial fundamentals indicators. Moreover, it contradicts Abrahamson and Amir (1996), who states that the positive tone of announcements is

redundant because the management might be incentivized to "sugarcoat" the communication of relevant events for the firm. The findings confirm that the positive tone of M&A announcements has increased over the years, bringing a long positive reaction to the market.

Hypothesis 2a (H2a): A more negative tone of M&A press releases negatively affects investors' reaction to M&A announcements

The relationship between negative tone and CAAR was highly significant over all the samples. The results indicate a negative correlation between using negative words and poorer cumulative abnormal returns on the acquiring firm; this aligns with Abrahamson and Amir (1996), who found that using negative words is associated with poorer long-term stock market performance. Furthermore, the findings suggest a higher reaction towards negative tone than positive tone. This result is far from evident because management, as mentioned before, might have manipulated the narrative of the M&A announcement to reduce the effect of bad news.

Hypothesis 2b (H2b): A more negative tone of M&A press releases negatively affects the performance of the acquiring firm

In contrast with previous research by Abrahamson and Amir (1996), there has been a positive relation between negative tone and return on equity of the acquiring firm in the short-term after the acquisition announcement. The results suggest a significant correlation between the usage of negative words and poorer firm performance; this contradicts hypothesis 2a. Contrary to what was expected, the negative use of words in press releases has more predictability power in assessing the future performance of the acquiring firm after the announcement, even though, in general, announcements are full of positive statements.

The evidence indicates a positive correlation between a negative tone and return on equity, which indicates that acquiring firms performed better when the press release used more negative words. Moreover, the evidence suggests that the narrative in the announcement may have underestimated the acquisition's success.

Hypothesis 3a (H3a): The net tone of of M&A press releases positively affects investors' reaction to M&A announcements

In line with archive research, Huang, Teoh, and Zhang (2014) and Yekini, Wisniewski, and Millo (2016), the Study found a significant positive correlation between net tone (Tonality). However, the results show this correlation is weak among all the observations. Additionally, when analysing correlations clustering

by firm size, no significant results led to a rejection of the hypothesis. The findings suggest that the higher the tone of the press release, the higher the cumulative abnormal returns on the stock market.

The results for Net Tone obtained from the empirical analysis might not be strong enough due to the nature of the variable itself. Since Net Tone is calculated by subtracting negative tone from positive tone, the number of negative words might have diluted the effect of Tonality on the stock market's reaction. Consequently, the reliability of net tone as an indicator of Tonality is affected.

The positive and negative tones findings reinforce hypothesis 1a, showing a more consistent relationship between positive tone and CAAR. Thus, positivity is a better indicator of CAAR than negativity.

Hypothesis 3b (H3b): The net tone of M&A press releases positively affects the performance of the acquiring firm

Contrary to the findings from hypothesis 3a, the Study found a negative yet non-significant relation between net tone and firm performance. Even though the results do not support the hypothesis, they are not strong enough to reject hypothesis 3b. The findings regarding this hypothesis reinforce the suggestion regarding positivity as a better indicator, in this case, for firm performance.

Hypothesis 4a (H4): The level of certainty of M&A press releases positively affects firm performance

The Study found a positive non-significant correlation between the level of certainty and firm performance. Certainty level was assessed using Demers & Vega's (2008) definition of certainty; this definition is based on a positive and negative tone, and similarly to net tone, it can be observed that negativity conveys a diminished effect on the variable. Therefore the results deduce that the variable for certainty, as the findings measured it, does not capture the level of certainty in the narrative of the press release. Furthermore, it is unclear whether there is an effect of certainty level on firm performance, neither assessing it with return on assets nor with return on equity.

Hypothesis 4b (H4b): The level of certainty of M&A press releases positively affects employees' engagement

Contrary to hypothesis 4 a, the Study found a negative correlation between certainty level and employee engagement. Even Though statistical significance was found, the results are not conclusive in the relationship between these factors. First, based on the findings in hypothesis 4a, it can be deduced that certainty level is not an accurate measure of certainty in the narrative of press releases. Second, following an acquisition, job losses and disruption for employees happen, and this affects the results as

there is not sufficient information regarding the number of employees laid off versus employees who decided to leave the company due to lack of engagement. Therefore, it cannot be confirmed in the hypothesis or rejected.

However, previous research and literature highlight the direct correlation between the impact of effective communication and employee engagement. With the increased level of certainty and effective communication, the engagement of employees should be improved.

The findings leave a question open: How does communication affect employee retention after an acquisition? Moreover, what is the difference in the impact of communication on employee retention and layoffs?

9. Conclusion

In conclusion, the hypothesis and literature build upon the results that M&A press release announcements are considered very useful and influential in assessing the success of M&A deals. The results highlight the importance of announcements and communication that have been neglected by finance researchers and may help explain the association of management discourse and stock returns and a firm's performance after an acquisition. The findings suggest that the non-financial aspects, such as press release announcements and letters to external and internal stakeholders, should be given more importance to drive success from cross-border M&A deals. As these announcements contain relevant and significant information, the success or failure of M&A deals is contributed from these announcements.

In order to have further advances in this research, a suggestive measure of approaching a certain level that does not include a positive or negative tone would be beneficial. Nonetheless, transparency and openness are important in such press release announcements and disclosures, especially regarding shareholders and employees.

The hypothesis built above suggests a strong correlation between Tonality and the success of cross-border M&A deals, and companies should consider such non-financial aspects to drive growth in the market. The results found are also helpful for companies that are starting to build stronger market share by having effective communication with internal stakeholders and eventually with external stakeholders and imbibe the use of effective communication within the organisation.

The empirical evidence supports the above hypothesis of positive Tonality having a great impact on the success of cross-border M&A deals; the importance of Tonality on the stock market and firm performance are the greatest measurement factors. Employing a positive tonality in the announcements has yielded positive outcomes from cross-border M&A deals. Based on the previous literature and the results from this thesis, findings suggest the relationship between positive tone and words with positive market reaction and investor reaction, which leads to the increase in stock prices for the acquiring company. Whereas a negative tone leads to distrust in the market and investors, negatively impacting the firm performance. Using positive words builds stakeholders' confidence and makes the cross-border M&A deal more favourable. Lastly, it is of great importance to bear in mind that a balance between positive and over-positive words needs to be maintained, as positive words strike positivity and transparency. In contrast, over-positive words tend to convey negative implications.

9.1 Contributions

The thesis contributes to the research by highlighting the usefulness and need for effective communication to stakeholders via press release announcements for cross-border mergers and acquisitions. The influence of using positive and negative words and the Tonality of communication affects investors, external shareholders, and internal shareholders. The research has enabled a deeper understanding of investor behaviour and stakeholders' reactions toward communication effectiveness. The impact of language and words on the stakeholders' interpretations and responses highlights the need to keep psychological and cognitive factors into consideration when the company conveys financial communication as it contributes as a shaping factor (Cooren et al., 2011)

The results obtained in this study further open up room for companies to evaluate the need for effective communication and enhance the corporate strategies for communication. The top management must consider strategies to communicate and shape the reaction and perception of investors to influence them; this will help provide a signaling effect for companies. The research adds to the post-M&A deal insights into firm performance and communication implications.

Lastly, the importance of conveying the strategic decision and content analysis of the press release announcement will help evaluate the importance of effective communication, especially when cross-border mergers and acquisitions are considered (Shimizu et al., 2004). Overall the impact will help deepen the understanding of communication strategies, investor behaviour, and the effect of Tonality. This research will facilitate the investors, organisations, and stakeholders.

9.2 Limitations

While conducting the research, certain limiting factors could further enhance and ease the research. Firstly, finding press release announcements from a decade ago was not possible as the availability of online press releases was limited to the last five years. Additionally, the companies that have available press releases online have either gone private in recent years or have gone public in recent times, making it difficult to fetch financial data online. These factors contributed to the limitations in the data search.

Another drawback is the research's reliance on publicly accessible data; publicly available data may not give an accurate picture of the top management communication tactics for internal stakeholders due to the lack of access to data such as emails shared with employees regarding the M&A deal, employee reaction, retention of employees, among others.

Third, in contrast to the richness of the manual approach, automated word-list-based measures of tone take into account only the frequencies with which different words occur in the text (Henry&Leone, 2016); this limits their contribution to large-sample market-based studies, where a weak, noisy signal is statistically significant. Moreover, reliability and replicability concerns force researchers to use a single set of word lists (Loughran & McDonald, 2016) that were developed on the basis of SEC-10K forms and optimised for the US market (Hadro et al., 2021), such word lists are limited and depiction of the tone might seem poor compared to the manual approach.

Lastly, the tone can be ceased if managers attempt to mislead readers; this can happen when managers are faced with situational incentives, such as the sensitivity of their personal wealth to the stock price effects of information (Davis & Tama-Sweet, 2012), their equity incentives (Arslan Ayaydin et al., 2016), and weak corporate governance (Hadro et al., 2021).

9.3 Future Research

Future research can further explore various aspects, such as using over-positive words that may be sugarcoated, which may imply that the company is hiding or not telling the complete truth. Research on the kind of the communication element used can also be made to explore the influence on stakeholder reactions from the different stylistic elements. Additionally, further research on how investors' reaction differs from messages from CEOs from different age groups, genders, ethnicities, and organizational tenures.

Another factor that would be interesting to have further research on is the CEO incentives and compensations linked to the communication aspect, whether the CEO releases an over-positive letter to the stakeholders to receive a higher compensation or incentive.

Lastly, to understand the employee engagement correlation with the level of certainty, further research needs to be conducted with companies by assessing their internal communication and behavioural aspects to assess the extent to which the hypothesis will hold true.
The field for research is countless and opens room for theories to be explored and understand the psychological and external biases that contribute to factors affecting the financial performance of an organisation.

9.3.1 Further note on Nordic M&A

All continents and countries have different economic backgrounds and characteristics that make them differ from one another. The Nordic countries, Denmark, Sweden, and Finland are a part of the European Union (EU) and Iceland and Norway are members of the European economic area (EEA). These nordic countries being in the same continent, have different economic structures. These countries have their own currencies used, except Finland, which has implemented the EU currency of Euros.

Even though these countries have various similarities, Rose, et al. (2018), argues that these similarities will not help in providing any advantage for the M&A deals in terms of locations such as lower cost of production/labour/facilities. Additionally, the difference in culture, language, and traditions can act as a barrier to integrating the process. These factors are a hindrance in the transfer of knowledge, skills, and external factors.

10. References

Abrahamson, E. and Amir, E. (2006) ‘The information content of the president’s letter to shareholders’, Journal of Business Finance & Accounting, 23(8), pp. 1157–1182. doi:10.1111/j.1468-5957.1996.tb01163.x.

Abrahamson, E., & Amir, E. (1996). The Information Content of the President’s Letter to Shareholders, Journal of Business Finance and Accounting, 23(8), pp. 1157–1182, doi:10.1111/j.1468-5957.1996.tb01163.x [Accessed 22 November 2020]

Aerts, W., & Yan, B. (2017). Rhetorical Impression Management in the Letter to Shareholders and Institutional Setting: A metadiscourse perspective, Accounting, Auditing and Accountability Journal, 30(2), pp. 404–432, doi: 10.1108/AAAJ-01-2015-1916 [Accessed 19

Ahmed, K., & Courtis, J.K. (1999). Associations Between Corporate Characteristics and Disclosure Levels in Annual Reports: a meta-analysis, British Accounting Review, vol. 31,March, pp. 35-61, doi: 10.1006/bare.1998.0082 [Accessed 3 March 2021]

Angwin, D.N. et al. (2014) ‘How communication approaches impact mergers and acquisitions outcomes’, The International Journal of Human Resource Management, 27(20), pp. 2370–2397. doi:10.1080/09585192.2014.985330.

Angwin, D.N. et al. (2022) ‘Does Merger & Acquisition (M&A) strategy matter? A contingency perspective’, European Management Journal, 40(6), pp. 847–856. doi:10.1016/j.emj.2022.09.004.

Arslan-Ayaydin, Ö., Boudt, K. and Thewissen, J. (2016) ‘Managers set the tone: Equity incentives and the tone of earnings press releases’, Journal of Banking & Finance, 72. doi:10.1016/j.jbankfin.2015.10.007.

Ashton, M. C., & Lee, K. (2016). Age Trends in HEXACO-PI-R Self-Reports, Journal of Research in Personality, Elsevier Inc., 64, pp. 102–111, doi: 10.1016/j.jrp.2016.08.008 [Accessed 3 March 2021]

Bartlett, S., & Chandler, R. (1997). The Corporate Report and The Private Shareholder, British Accounting Review, vol 29, pp. 245-26, doi: 10.1006/bare.1996.0044 [Accessed 19 February 2021]

Boesso, G., & Kumar, K. (2007). Drivers of Corporate Voluntary Disclosure, Accounting, Auditing & Accountability Journal, vol. 20, 269–296. https://doiorg. ludwig.lub.lu.se/10.1108/09513570710741028 [Accessed 19 February 2021] Boudt, K., &

Bonsón, E., Perea, D. & Azevedo, G. (2021). Tone and Content Analysis in the President's Letters to Shareholders : Spanish evidence, Upravlenets – The Manager, vol. 12, pp. 78–90, doi: 10.29141/2218-5003-2021-12-1-6 [Accessed 19 February 2021]

Cambridge Dictionary (2021). Tone, Cambridge Dictionary. Available online: https://dictionary.cambridge.org/dictionary/english/tone [Accessed 13 January 2021]

Catenaccio, P. (2022) 'Press releases as a hybrid genre', Pragmatics. Quarterly Publication of the International Pragmatics Association (IPrA), pp. 9–31. doi:10.1075/prag.18.1.02cat.

Cioli, V. et al. (2020) 'Cross-border M&A and financial performance: Empirical evidence on bidder/target companies', International Journal of Business and Management, 15(4), p. 67. doi:10.5539/ijbm.v15n4p67.

Cohen, Jacob. (1977). Statistical Power Analysis for the Behavioral Sciences, New York: Academic Press

Cooren, F. (1), Kuhn, T. (2), Cornelissen, J. P. (3), & Clark, T. (4). (2011). Communication, organizing and organization: An overview and introduction to the special issue. Organization Studies, 32(9), 1149-1170–1170. https://doi-org.ludwig.lub.lu.se/10.1177/0170840611410836

Costa, G. A., Oliveira, L. C., Rodrigues, L. L., & Craig, R. (2013). Factors Associated with the Publication of a CEO Letter, Corporate Communications: An International Journal, vol. 18, no. 4, 432–450, https://doi-org.ludwig.lub.lu.se/10.1108/CCIJ-07-2012-0045 [Accessed 19 February 2021]

Davis, A. K. & Tama-Sweet, I. (2012). Managers' Use of Language Across Alternative Disclosure Outlets: Earnings press releases versus MD&A', Contemporary Accounting Research, vol. 29, no. 3, pp. 804–837, doi: 10.1111/j.1911-3846.2011.01125.x [Accessed 22 February 2021]

Davis, A. K., Piger, J. M. & Sedor, L. M. (2012). Beyond the Numbers: Measuring the information content of earnings press release language, Contemporary Accounting Research, 41 vol. 29, no. 3, pp. 845–868, doi: 10.1111/j.1911-3846.2011.01130.x [Accessed 19 February 2021]

Davis, A.K. and Tama-Sweet, I. (2012) ‘Managers’ use of language across alternative disclosure outlets: Earnings press releases versus MD&A’, SSRN Electronic Journal, doi:10.2139/ssrn.1866369.

Demers, E. A. & Vega, C. (2008). Soft Information in Earnings Announcements: News or noise? Available online: https://www.federalreserve.gov/econres/ifdp/soft-information-inearnings-announcements-news-or-noise.htm [Accessed 22 February 2021]

Diewert, W.E.(1) and Fox, K.J.(2) (2022) ‘Rejoinder: Measuring Inflation under Pandemic Conditions’, Journal of Official Statistics, 38(2), pp. 663-668–668. doi:10.2478/jos-2022-0029

February 2021]

Ferreira, M.P., dos Reis, N.R. and Pinto, C.F. (2016) ‘Three decades of strategic management research on M&AS: Citations, co-citations, and topics’, Global Economics and Management Review, 21(1–2), pp. 13–24. doi:10.1016/j.gemrev.2015.12.002.

Field, A. (2013). Discovering Statistics Using IBM SPSS Statistics, Los Angeles; London: Sage Publications Inc Greener, M. (1980). Between the Lines of the Balance Sheet, Elsevier Science, https://doi.org/10.1016/C2013-0-05883-5 [Accessed 12 January 2021]

Gomes, E. et al. (2012) ‘Critical success factors through the mergers and acquisitions process: Revealing pre- and Post-M&a connections for improved performance’, Thunderbird International Business Review, 55(1), pp. 13–35. doi:10.1002/tie.21521.

Grinblatt, M. and Han, B. (2001) ‘Prospect theory, mental accounting, and momentum’, SSRN Electronic Journal [Preprint]. doi:10.2139/ssrn.288466.

Hadro, D., Klimczak, K.M. and Pauka, M. (2021) ‘Management’s choice of tone in letters to shareholders: Sincerity, bias and incentives’, Revista de Contabilidad, 24(2), pp. 202–219. doi:10.6018/rcsar.393181.

Hadro, D., Klimczak, K.M. and Pauka, M. (2021) ‘Management’s choice of tone in letters to shareholders: Sincerity, bias and incentives’, Revista de Contabilidad, 24(2), pp. 202–219. doi:10.6018/rcsar.393181.

Henry, E. (2008) ‘Are investors influenced by how Earnings Press releases are written?’, Journal of Business Communication, 45(4), pp. 363–407. doi:10.1177/0021943608319388.

Henry, E. (2008). Are Investors Influenced by How Earnings Press Releases Are Written?, Journal of Business Communication, vol. 45, no. 4, pp. 363–407, https://doiorg. ludwig.lub.lu.se/10.1177/0021943608319388 [Accessed 22 November 2021]

Henry, E. (2008a) 'Are investors influenced by how Earnings Press releases are written?', Journal of Business Communication, 45(4), pp. 363–407. doi:10.1177/0021943608319388.

Henry, E. & Leone, A. J. (2009). Measuring Qualitative Information in Capital Markets Research, SSRN, doi: 10.2139/ssrn.1470807 [Accessed 3 March 2021] Hildebrandt, H. W., & Snyder, R. D. (1981). The Pollyanna Hypothesis in Business Writing: Initial Results, Suggestions for research, Journal of Business Communication, vol. 18, no. 1, pp. 5–15, doi:10.1177/002194368101800102 [Accessed 19 February 2021]

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

Hoboken, NJ: Wiley Strengths and limitations of qualitative and quantitative research methods. Available at:https://www.researchgate.net/publication/319852576_Strengths_and_Limitations_of_Qualitative_and_Quantitative_Research_Methods (Accessed: 1 May 2023).

Huang, X., Teoh, S. H., & Zhang, Y. (2014). Tone Management, The Accounting Review, vol. 89, no. 3, pp. 1083–1113, Available online: https://www-jstororg. ludwig.lub.lu.se/stable/24468328 [Accessed 3 December 2021]

Hyland, K. (1998). Exploring Corporate Rhetoric: Metadiscourse in the CEO's letter, Journal of Business Communication, vol. 35, no. 2, pp. 224–245, doi: 10.1177/002194369803500203 [Accessed 22 January 2021]

Keusch, T., Bollen, L., & Hassink, H. (2012). Self-Serving Bias in Annual Report Narratives: An empirical analysis of the impact of economic crises, European Accounting Review, vol. 21, no. 3, 623–648, doi: 10.1080/09638180.2011.641729 [Accessed 3 March 2021] Kruglanski, A. W. &

Levin, I.P., Schneider, S.L. and Gaeth, G.J. (1998) 'All frames are not created equal: A typology and critical analysis of framing effects', Organizational Behavior and Human Decision Processes, 76(2), pp. 149–188. doi:10.1006/obhd.1998.2804.

Litterature, 35, 13-39.

LOUGHRAN, T. and MCDONALD, B. (2016) ‘Textual analysis in accounting and finance: A survey’, Journal of Accounting Research, 54(4), pp. 1187–1230. doi:10.1111/1475-679x.12123.

MacKinlay, C. (1997). Event Studies in Economics and Finance. Journal of Economic

Nag, M. B., & Ahmad Malik, F. (2023). Research Design and Methodology. Springer Nature Singapore. https://doi-org.ludwig.lub.lu.se/10.1007/978-981-19-7350-

Neuhierl, A., Scherbina, A. and Schlusche, B. (2013) ‘Market reaction to corporate press releases’, Journal of Financial and Quantitative Analysis, 48(4), pp. 1207–1240. doi:10.1017/s002210901300046x.

Osadchy, E.A. et al. (2018) ‘Financial statements of a company as an information base for decision-making in a transforming economy’, EUROPEAN RESEARCH STUDIES JOURNAL, XXI(Issue 2), pp. 339–350. doi:10.35808/ersj/1006.

Rossi, S. and Volpin, P.F. (2004) ‘Cross-country determinants of mergers and acquisitions’, Journal of Financial Economics, 74(2), pp. 277–304. doi:10.1016/j.jfineco.2003.10.001.

Shimizu, K. (1), Hitt, M. A. (2), Vaidyanath, D. (3), & Pisano, V. (4). (2004). Theoretical foundations of cross-border mergers and acquisitions: A review of current research and recommendations for the future. Journal of International Management, 10(3), 307-353–353. https://doi-org.ludwig.lub.lu.se/10.1016/j.intman.2004.05.005.

Shimizu, K. et al. (2004) ‘Theoretical foundations of cross-border mergers and acquisitions: A Review of Current Research and recommendations for the future’, Journal of International Management, 10(3), pp. 307–353. doi:10.1016/j.intman.2004.05.005.

Sirower, Mark L. and Weirens, Jeff m. (2022) The success of your M&A deal hinges on how you announce it, Harvard Business Review. Available at: https://hbr.org/2022/04/the-success-of-your-ma-deal-hinges-on-how-you-announce-it (Accessed: 2 May 2023).

Taylor, S.J., Bogdan, R. and DeVault, M.L. (2016) Introduction to qualitative research methods: A guidebook and resource.

Thewissen, J. (2019). Jockeying for Position in CEO Letters: Impression management and sentiment analytics, Financial Management, vol 48, 77–115, https://doiorg. ludwig.lub.lu.se/10.1111/fima.12219 [Accessed 13 January 2021]

Thompson, E. P. (1999). Persuasion by a Single Route: A view from the unimodel, Psychological Inquiry, vol. 10, no. 2, pp. 83–109, doi:10.1207/S15327965PL100201 [Accessed 15 January 2021] Laerd Statistics. (2018). Mann-Whitney U Test Using SPSS Statistics, Available online: https://statistics.laerd.com/spss-tutorials/mann-whitney-u-test-using-spss-statistics.php [Accessed 9 April 2021] 42

Wisniewski, T.P. and Yekini, L.S. (2015) 'Stock market returns and the content of annual report narratives', Accounting Forum, 39(4), pp. 281–294. doi:10.1016/j.accfor.2015.09.001.

Yang, B. et al. (2019) 'Can financial media sentiment predict merger and acquisition performance?', Economic Modelling, 80, pp. 121–129. doi:10.1016/j.econmod.2018.10.009.

11. Appendix

Appendix (1) Measurement of Tone

Tone	Measurement Method
Positive Tone (PosTONE)	Percentage number of words in a firm's Press Release that are Positive according to Henry's (2008) thesaurus. $PosTONE = \frac{Nume\ of\ Positive\ words}{Total\ number\ of\ words}$
Negative Tone (NegTONE)	Percentage number of words in a firm's Press Release that are Negative according to Henry's (2008) thesaurus. $PosTONE = \frac{Nume\ of\ Negative\ words}{Total\ number\ of\ words}$
Net Tone (NetTONE)	NetTONE is calculated as the count of positive words minus the count of negative words, divided by the sum of positive and negative word counts. For the regression analysis, the maximum and minimum values of NetTONE are 1 and -1, respectively. $NetTONE = \frac{(PosTONE - NegTONE)}{(PosTone + NegTONE)}$
Certainty Level (CertLEVEL)	$CerTONE = \frac{NetTONE - min(NetTONE)}{(NetTONE) - min(NetTONE)}$

Appendix (2) Summary of Variable Definitions

Variable	**Definition**
Soft Information Variables	
Positive Tone (PosTONE)	Percentage number of words in a firm's Press Release that are Positive according to Henry's (2008) thesaurus.
Negative Tone (NegTONE)	Percentage number of words in a firm's Press Release that are Negative according to Henry's (2008) thesaurus.
Net Tone (NetTONE)	NetTone is measured as a ratio of positive words and negative words. For the regression analysis, we will set a dummy variable that gets the value 1 if the NetTone is predominantly positive and 0 otherwise.
Certainty Level (CertTone)	Certainty, is a normalized variable that indicates the degree of assertiveness, confidence and leadership. CerTONE=
Other Variables	
CAARs	Stock cumulative abnormal average returns defined alternatively over the press release announcement window [t-5,t+5], [t-3,t+3] and [t-1,t+1]relative to the t=0 press release announcement day.

Return on Assets (ROA)	ROA is a metric that indicates a company's profitability in relation to its total assets-
Return on Equity	ROE is a metric that indicates a firm's profitability that asses how efficiently its equity is converted onto profits
Market Capitalization	Market capitalization refers to the firm's value according to the stock market. It is defined as the total market value of all outstanding shares.
Leverage	Leverage is ratio that indicates a firm's use of debt to assets.
Total Assets	Total Assets refers to the sum of book values of all assets owned by the firm
Employee Number	Current number of employess

Appendix (3) Sample

Ticker	Acquiring Firm	Press Release Rate
AACM	AAC MICROTEC AB	12/21/2017
ABB	ABB LTD	02/07/2018
ABLI	ABLIVA	08/15/2016
ALIFb	ADDLIFE AB	11/26/2018
AFRY	AFRY AB	08/10/2018
ALFA	ALFA LAVAL	12/01/2021
ASSAb	ASSA ABLOY AB	09/08/2021
AZN	ASTRAZENECA PLC	12/11/2020
ATCOa	ATLAS COPCO AB	01/07/2019
BICO	BICO GROUP AB	12/28/2021
BILIa	BILIA AB	11/13/2018
BIOGb	BIOGAIA AB	12/30/2021
BIOT	BIOTAGE AB	12/02/2018
BORG	BJORN BORG AB	08/12/2016
BOOZT	BOOZT AB	06/21/2021
BTSb	BTS GROUP AB	07/15/2019
BUFAB	BUFAB AB	06/11/2019
CATa	CATELLA AB	12/13/2018
CATE	CATENA AB	09/09/2021
CEVI	CELLAVISION AB	10/02/2019
CLOEb	CLOETTA AB	07/17/2015
CONIC	CONCENTRIC AB	10/26/2021
CYB1	CYBER SECURITY 1 AB	04/03/2018
DOMETIC	DOMETIC GROUP AB	09/17/2021
DORO	DORO AB	05/31/2018
DURCb	DUROC AB	06/12/2019
ELANb	ELANDERS AB	11/11/2021
ELUXb	ELECTROLUX AB	02/10/2018
ELOSSb	ELOS MEDTECH AB	07/04/2017
ENQ	ENQUEST PL	10/22/2021
ERICb	ERICSSON AB	11/22/2021

ESSITYa	ESSITY AB	01/04/2020
FAG	FAGERHULT AB	12/21/2018
FINGb	FINGERPRINT CARDS AB	07/06/2017
FMMb	FM MATTSSON MORA GROUP AB	05/13/2019
GIGSEK	GAMING INNOVATION GROUP INC	11/19/2021
GRANG	GRANGES AB	08/17/2016
HANZA	HANZA AB	03/19/2021
HEXAb	HEXAGON AB	06/13/2016
HMSN	HMS NETWORKS AB	05/02/2016
HUMBLE	HUMBLE GROUP AB	12/06/2021
HUSQb	HUSQVARNA AB	10/26/2021
IARb	IAR SYSTEMS GROUP AB	03/21/2018
ISY	IMAGE SYSTEMS AB	02/06/2018
INISSb	INISSION AB	11/01/2018
IPCOR	INTERNATIONAL PETROLEUM CORP	03/06/2020
INTRUM	INTRUM AB	06/27/2017
JETPAK	JETPAK TOP HOLDING AB	12/28/2021
KABEb	KABEB SS EQUITY	02/19/2021
KARNO	KARNOV GROUP AB	12/14/2020
KDEV	KARO HEALTHCARE AB	08/24/2017
KINVb	KINNEVIK AB	03/06/2021
LIAB	LINDAB INTERNATIONAL AB	06/06/2020
MEDCAP	MEDCAP AB	10/29/2020
MEKO	MEKO AB	06/07/2018
MTGa	MODERN TIMES GROUP MTG	12/18/2020
MYCR	MYCRONIC AB	01/06/2018
NCAB	NCAB GROUP AB	10/19/2021
NIBEb	NIBE INDUSTRIER AB	10/17/2018
NOLAb	NOLATO AB	06/08/2020
NDASE	NORDEA BANK ABP	09/26/2018
NPAPER	NORDIC PAPER HOLDING AB	12/31/2021
NOTE	NOTE AB	01/11/2018
OEMb	OEM INTERNATIONAL AB	04/28/2017
PANDXb	PANDOX AB	12/10/2018

RATOa	RATOS AB	03/17/2017
REJLb	REJLERS AB	09/30/2019
SAND	SANDVIK AB	06/18/2020
SCST	SCANDI STANDARD AB	07/06/2017
SHOTE	SCANDIC HOTELS GROUP AB	12/29/2017
SDIPb	SDIPTECH AB	07/24/2020
SDSY	SEAMLESS DISTRIBUTION SYSTEMS AB	06/04/2019
SECUb	SECURITAS AB	12/08/2021
SINCH	SINCH AB	09/30/2021
SKFa	SKF AB	11/11/2019
SSABa	SSAB AB	07/25/2019
STZEa	STARBREEZE AB	10/25/2016
SFRG	STILLFRONT GROUP AB	12/06/2017
SVEDb	SVEDBERGS I DALSTORP AB	12/01/2021
SWECb	SWECO AB	07/21/2015
TELIA	TELIA CO AB	07/17/2018
THULE	THULE GROUP AB	12/18/2018
TRAD	TRADEDOUBLER AB	01/26/2015
TRELb	TRELLEBORG AB	01/16/2019
VITb	VITEC SOFTWARE GROUP AB	04/19/2019
VNV	VNV GLOBAL AB	08/23/2021
VOLO	VOLATI AB	02/09/2020
XVIVO	XVIVO PERFUSION AB	01/10/2020

Appendix (4) Tonality of M&A Press Releases

Ticker	Acquiring Firm	PosTONE	CerTONE	NegTONE	NetTONE
AACM	AAC MICROTEC AB	1.28	0.83	0.64	0.33
ABB	ABB LTD	1.4	1.04	0.42	0.54
ABLI	ABLIVA	1.44	1.07	0.39	0.57
ALIFb	ADDLIFE AB	1.87	1.41	0.09	0.91
AFRY	AFRY AB	1.64	1.50	0	1.00
ALFA	ALFA LAVAL	2.56	1.25	0.37	0.75
ASSAb	ASSA ABLOY AB	1.73	1.16	0.35	0.66
AZN	ASTRAZENECA PLC	0.87	0.63	0.67	0.13
ATCOa	ATLAS COPCO AB	0.99	0.83	0.5	0.33
BICO	BICO GROUP AB	2.03	1.14	0.45	0.64
BILIa	BILIA AB	2.56	1.25	0.37	0.75
BIOGb	BIOGAIA AB	1.88	1.37	0.13	0.87
BIOT	BIOTAGE AB	1.7	1.39	0.1	0.89
BORG	BJORN BORG AB	1.09	1.30	0.12	0.80
BOOZT	BOOZT AB	2.77	1.23	0.43	0.73
BTSb	BTS GROUP AB	3.43	1.36	0.25	0.86
BUFAB	BUFAB AB	2.18	1.50	0	1.00
CATa	CATELLA AB	3.15	1.22	0.52	0.72
CATE	CATENA AB	1.38	1.10	0.34	0.60
CEVI	CELLAVISION AB	1.74	1.25	0.25	0.75
CLOEb	CLOETTA AB	1.17	1.22	0.19	0.72
CONIC	CONCENTRIC AB	1.75	1.10	0.44	0.60
CYB1	CYBER SECURITY 1 AB	1.47	1.50	0	1.00
DOMETIC	DOMETIC GROUP AB	2.56	1.30	0.28	0.80
DORO	DORO AB	1.79	0.98	0.63	0.48
DURCb	DUROC AB	0.76	1.00	0.25	0.50
ELANb	ELANDERS AB	2.33	1.32	0.23	0.82
ELUXb	ELECTROLUX AB	3.23	1.50	0	1.00
ELOSSb	ELOS MEDTECH AB	3.15	1.31	0.33	0.81

ENQ	ENQUEST PL	0.83	0.84	0.41	0.34
ERICb	ERICSSON AB	1.4	1.05	0.41	0.55
ESSITYa	ESSITY AB	1.69	1.50	0	1.00
FAG	FAGERHULT AB	1.36	0.87	0.63	0.37
FINGb	FINGERPRINT CARDS AB	2.18	1.36	0.16	0.86
FMMb	FM MATTSSON MORA GROUP AB	2.46	1.50	0	1.00
GIGSEK	GAMING INNOVATION GROUP INC	1.73	1.21	0.29	0.71
GRANG	GRANGES AB	1.36	1.10	0.34	0.60
HANZA	HANZA AB	1.52	1.32	0.15	0.82
HEXAb	HEXAGON AB	2.49	1.17	0.5	0.67
HMSN	HMS NETWORKS AB	0.89	1.50	0	1.00
HUMBLE	HUMBLE GROUP AB	1.57	1.03	0.48	0.53
HUSQb	HUSQVARNA AB	1.32	0.78	0.74	0.28
IARb	IAR SYSTEMS GROUP AB	1.5	0.80	0.8	0.30
ISY	IMAGE SYSTEMS AB	2.26	1.21	0.38	0.71
INISSb	INISSION AB	1.95	1.26	0.26	0.76
IPCOR	INTERNATIONAL PETROLEUM CORP	1.28	0.38	1.62	-0.12
INTRUM	INTRUM AB	1.03	0.66	0.74	0.16
JETPAK	JETPAK TOP HOLDING AB	3.84	1.23	0.61	0.73
KABEb	KABEB SS EQUITY	1.8	1.50	0	1.00
KARNO	KARNOV GROUP AB	2.74	1.37	0.19	0.87
KDEV	KARO HEALTHCARE AB	0.28	0.30	0.42	-0.20

KINVb	KINNEVIK AB	0.89	0.58	0.76	0.08
	LINDAB INTERNATIONAL				
LIAB	AB	0.99	1.21	0.17	0.71
MEDCAP	MEDCAP AB	3.19	1.17	0.64	0.67
MEKO	MEKO AB	0.88	1.03	0.27	0.53
	MODERN TIMES				
MTGa	GROUP MTG	2.18	1.50	0	1.00
MYCR	MYCRONIC AB	3.06	1.39	0.17	0.89
NCAB	NCAB GROUP AB	1.66	1.21	0.28	0.71
	NIBE INDUSTRIER				
NIBEb	AB	0.24	1.50	0	1.00
NOLAb	NOLATO AB	0.97	0.62	0.76	0.12
	NORDEA BANK				
NDASE	ABP	2.48	1.28	0.31	0.78
	NORDIC PAPER				
NPAPER	HOLDING AB	1.98	1.50	0	1.00
NOTE	NOTE AB	2.31	1.00	0.77	0.50
	OEM INTERNATIONAL				
OEMb	AB	0	-0.50	0.41	-1.00
PANDXb	PANDOX AB	1.38	0.91	0	1.00
RATOa	RATOS AB	1.94	0.69	0.24	0.78
REJLb	REJLERS AB	0.64	0.91	0	1.00
SAND	SANDVIK AB	1.43	0.15	0.86	0.25
	SCANDI STANDARD				
SCST	AB	1.09	0.36	0.41	0.45
	SCANDIC HOTELS				
SHOTE	GROUP AB	1.76	0.91	0	1.00
SDIPb	SDIPTECH AB	1.66	0.51	0.41	0.60
	SEAMLESS DISTRIBUTION				
SDSY	SYSTEMS AB	1.63	0.27	0.76	0.36
SECUb	SECURITAS AB	1.39	0.41	0.46	0.50

SINCH	SINCH AB	1.7	0.55	0.37	0.64
SKFa	SKF AB	0.85	0.91	0	1.00
SSABa	SSAB AB	1.52	0.58	0.3	0.67
STZEa	STARBREEZE AB	1.14	0.55	0.25	0.64
SFRG	STILLFRONT GROUP AB	0.88	-0.01	0.74	0.09
SVEDb	SVEDBERGS I DALSTORP AB	1.41	-0.21	0.41	0.55
SWECb	SWECO AB	1	0.24	0	1.00
TELIA	TELIA CO AB	1.51	-0.26	0.5	0.50
THULE	THULE GROUP AB	1.53	-0.19	0.42	0.57
TRAD	TRADEDOUBLER AB	2.02	0.24	0	1.00
TRELb	TRELLEBORG AB	1.74	-0.21	0.5	0.55
VITb	VITEC SOFTWARE GROUP AB	2.2	0.01	0.28	0.77
VNV	VNV GLOBAL AB	1.82	-0.09	0.36	0.67
VOLO	VOLATI AB	1.11	-0.33	0.44	0.43
XVIVO	XVIVO PERFUSION AB	0.25	0.00	0	1.00

Appendix (5) Cumulative Abnormal Returns

Ticker	Acquiring Firm	CAAR [-5,5]	CAAR [-3,3]	CAAR [-1,1]
AACM	AAC MICROTEC AB	37.98%	29.35%	15.88%
ABB	ABB LTD	-8.23%	-4.81%	0.34%
ABLI	ABLIVA	13.27%	7.26%	4.04%
ALIFb	ADDLIFE AB	-14.81%	-13.18%	-8.50%
AFRY	AFRY AB	0.84%	1.44%	1.45%
ALFA	ALFA LAVAL	2.20%	2.28%	3.45%
ASSAb	ASSA ABLOY AB	-7.31%	-5.80%	-3.78%
AZN	ASTRAZENECA PLC	-9.39%	-7.06%	-2.83%
ATCOa	ATLAS COPCO AB	16.45%	13.06%	7.79%
BICO	BICO GROUP AB	-5.92%	-4.75%	-4.78%
BILIa	BILIA AB	1.60%	1.73%	1.07%
BIOGb	BIOGAIA AB	14.70%	12.48%	5.84%
BIOT	BIOTAGE AB	22.08%	18.21%	10.40%
BORG	BJORN BORG AB	3.71%	2.63%	1.00%
BOOZT	BOOZT AB	5.24%	4.51%	3.07%
BTSb	BTS GROUP AB	0.51%	0.13%	-0.50%
BUFAB	BUFAB AB	13.77%	9.70%	6.11%
CATa	CATELLA AB	32.41%	25.19%	15.33%
CATE	CATENA AB	-8.89%	-8.53%	-3.75%
CEVI	CELLAVISION AB	-17.50%	-14.66%	-10.84%
CLOEb	CLOETTA AB	-5.87%	-5.11%	-3.50%
CONIC	CONCENTRIC AB	68.13%	58.77%	35.57%
CYB1	CYBER SECURITY 1 AB	3.21%	5.98%	6.51%
DOMETIC	DOMETIC GROUP AB	0.60%	-0.04%	0.90%
DORO	DORO AB	-22.29%	-18.81%	-12.70%
DURCb	DUROC AB	33.48%	27.34%	18.41%
ELANb	ELANDERS AB	41.82%	33.52%	22.18%
ELUXb	ELECTROLUX AB	-2.45%	-1.10%	-0.29%
ELOSSb	ELOS MEDTECH AB	-4.99%	-3.27%	-1.23%
ENQ	ENQUEST PL	4.54%	4.96%	3.91%

ERICb	ERICSSON AB	-18.41%	-15.26%	-10.94%
ESSITYa	ESSITY AB	-3.67%	-3.07%	-2.44%
FAG	FAGERHULT AB	-2.12%	-2.05%	-2.15%
FINGb	FINGERPRINT CARDS AB	1.23%	3.13%	3.75%
FMMb	FM MATTSSON MORA GROUP AB	30.23%	23.17%	11.25%
GIGSEK	GAMING INNOVATION GROUP INC	-8.67%	-4.26%	-0.36%
GRANG	GRANGES AB	-5.54%	-4.24%	-2.55%
HANZA	HANZA AB	8.73%	5.69%	2.32%
HEXAb	HEXAGON AB	-10.66%	-8.59%	-4.21%
HMSN	HMS NETWORKS AB	-0.36%	3.53%	4.58%
HUMBLE	HUMBLE GROUP AB	-0.12%	2.51%	4.32%
HUSQb	HUSQVARNA AB	15.17%	9.55%	5.93%
IARb	IAR SYSTEMS GROUP AB	0.55%	-0.17%	0.31%
ISY	IMAGE SYSTEMS AB	-7.81%	-8.48%	-5.80%
INISSb	INISSION AB	29.86%	24.05%	13.91%
IPCOR	INTERNATIONAL PETROLEUM CORP	-63.13%	-39.25%	-18.25%
INTRUM	INTRUM AB	-10.25%	-7.84%	-3.38%
JETPAK	JETPAK TOP HOLDING AB	22.48%	19.80%	13.21%
KABEb	KABEB SS EQUITY	24.08%	18.52%	11.73%
KARNO	KARNOV GROUP AB	19.58%	15.50%	8.54%
KDEV	KARO HEALTHCARE AB	-2.70%	-1.87%	-1.12%
KINVb	KINNEVIK AB	-7.58%	-6.98%	-3.99%
LIAB	LINDAB INTERNATIONAL AB	16.29%	11.80%	7.84%
MEDCAP	MEDCAP AB	0.36%	1.13%	0.03%
MEKO	MEKO AB	3.07%	2.89%	2.66%
MTGa	MODERN TIMES GROUP MTG	0.65%	2.09%	1.48%
MYCR	MYCRONIC AB	4.53%	3.43%	1.61%
NCAB	NCAB GROUP AB	43.06%	31.21%	15.38%
NIBEb	NIBE INDUSTRIER AB	-5.56%	-1.74%	-0.53%

NOLAb	NOLATO AB	-18.24%	-13.21%	-7.46%
NDASE	NORDEA BANK ABP	2.88%	2.98%	1.96%
NPAPER	NORDIC PAPER HOLDING AB	8.81%	6.45%	2.69%
NOTE	NOTE AB	8.52%	4.24%	2.70%
OEMb	OEM INTERNATIONAL AB	0.70%	1.17%	-0.27%
PANDXb	PANDOX AB	-9.60%	-7.11%	-5.47%
RATOa	RATOS AB	-2.12%	-0.85%	-0.44%
REJLb	REJLERS AB	17.29%	16.34%	12.09%
SAND	SANDVIK AB	7.66%	5.79%	1.91%
SCST	SCANDI STANDARD AB	1.44%	0.04%	0.56%
SHOTE	SCANDIC HOTELS GROUP AB	2.89%	2.16%	0.97%
SDIPb	SDIPTECH AB	0.34%	-4.15%	-8.14%
SDSY	SEAMLESS DISTRIBUTION SYSTEMS AB	91.57%	75.23%	45.74%
SECUb	SECURITAS AB	-9.26%	-6.01%	-3.53%
SINCH	SINCH AB	0.32%	3.33%	5.17%
SKFa	SKF AB	1.98%	1.42%	1.17%
SSABa	SSAB AB	-6.83%	-4.60%	-3.24%
STZEa	STARBREEZE AB	-5.64%	-4.19%	-1.70%
SFRG	STILLFRONT GROUP AB	26.70%	18.45%	5.82%
SVEDb	SVEDBERGS I DALSTORP AB	50.89%	39.75%	18.55%
SWECb	SWECO AB	-7.07%	-5.46%	-3.74%
TELIA	TELIA CO AB	-16.27%	-13.48%	-8.22%
THULE	THULE GROUP AB	-11.75%	-8.76%	-2.82%
TRAD	TRADEDOUBLER AB	0.91%	0.09%	-1.15%
TRELb	TRELLEBORG AB	8.54%	7.46%	4.19%
VITb	VITEC SOFTWARE GROUP AB	3.81%	2.72%	2.02%
VNV	VNV GLOBAL AB	7.22%	6.39%	4.37%
VOLO	VOLATI AB	-9.79%	-7.83%	-4.86%
XVIVO	XVIVO PERFUSION AB	2.50%	-0.05%	-0.69%

Appendix (6) Sample summary statistic

	Mean	Median	SD	Min	Max	N
CAAR [-5,5]	.05	.01	0.20	-.63	.92	264
CAAR [-3,3]	.04	.02	0.16	-.39	.75	264
CAAR [-1,1]	.03	.01	0.09	-.18	.46	264
PosTONE	1.68	1.63	0.75	0	3.84	264
NegTONE	.34	.34	0.28	0	1.62	264
CerTONE	.9	1.06	0.53	-.5	1.5	264
NetTONE	.64	.71	0.33	-1	1	264
ROA	5.33	5.78	14.30	-67.05	97.6	264
ROE	13.1	14.23	35.22	-253.15	263.3	264
Market Cap	6369.39	829.63	18568.33	9.91	181959.1 5	264
Leverage	.24	.24	0.15	0	.68	264
Total Assets	11805.32	643.02	69646.90	7.8	699213.9 5	264
Employees	203.22	47.37	278.43	1	1207	264

Appendix (7) VIF test results

Variable	**VIF**	**1/VIF**
PossTONE	**1.60**	**0.626717**
NegTONE	**1.65**	**0.605047**
CerTONE	**3.77**	**0.264931**
NetTONE	**2.70**	**0.370868**
ROE	**1.06**	**0.943468**
ROA	**1.60**	**0.626817**
Leverage	**1.65**	**0.606169**

Appendix (8) Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) CAAR [-5,5]	1.000							
(2) PosTONE	0.113	1.000						
(3) NegTONE	-0.134	-0.046	1.000					
(4) NetTONE	0.106	0.430	-0.743	1.000				
(5) CerTONE	0.063	0.438	-0.408	0.569	1.000			
(6) ROA	-0.115	0.112	-0.035	0.065	0.091	1.000		
(7) ROE	-0.056	0.187*	0.120	-0.084	0.159	0.771	1.000	
(8) Leverage	0.063	0.040	-0.168	0.182*	-0.121	-0.033	-0.071	1.000

Appendix (9) Heteroskedasticity test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Ha: heteroskedasticity

Variables: fitted values of CAR (-1,+1)

chi2(1) = 9.02 Prob > chi2 = 0.0027

Variables: fitted values of CAR (-3,+3)

chi2(1) = 12.35 Prob > chi2 = 0.0004

Variables: fitted values of CAR (-5,+5)

chi2(1) = 25.43 Prob > chi2 = 0.0000

White's test for heteroskedasticity

Ho: homoskedasticity

against Ha: unrestricted heteroskedasticity

chi2(181) = 182.00 Prob > chi2 = 0.4651

The Hausman test

$chi^2(11)$	*37.24*
Prob > chi^2	*0.0001*

Appendix (10) Fixed Effects (FE)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	CAAR5	CAAR5	CAAR5	roe	roe	roe	roa	roa	roa
PosTONE	0.026*			10.035*			2.399		
	(0.039)			(4.765)			(1.933)		
NegTONE		-0.107***			27.634**			8.978*	
		(0.084)			(12.616)			(5.200)	
CerTONE			0.030			16.082			4.738
			(0.094)			(10.881)			(4.457)
roe	0.002	0.002	0.002						
	(0.002)	(0.002)	(0.002)						
roa	-0.010**	-0.010**	-0.010**						
	(0.005)	(0.005)	(0.005)						
leverage	-0.470	-0.463	-0.504	21.522	21.019	29.618	-5.318	-5.462	-2.904
	(0.388)	(0.387)	(0.391)	(46.243)	(44.280)	(45.619)	(18.759)	(18.251)	(18.684)
employees	0.000	0.000	0.000	0.022	0.023	0.024	0.012	0.012	0.013
	(0.000)	(0.000)	(0.000)	(0.022)	(0.021)	(0.021)	(0.009)	(0.008)	(0.009)
year_1==									
1.0000	-0.056	-0.074	-0.070	9.148	11.129*	10.028	2.164	2.795	2.405
	(0.057)	(0.058)	(0.057)	(6.765)	(6.497)	(6.611)	(2.744)	(2.678)	(2.707)
year_1==									
2.0000	-0.061	-0.091	-0.084	3.309	8.881	6.305	1.270	3.069	2.136
	(0.056)	(0.060)	(0.058)	(6.713)	(6.898)	(6.873)	(2.723)	(2.843)	(2.815)
year_1==									
3.0000 = o,	-	-	-	-	-	-	-	-	-
Constant	0.136	0.241**	0.139	-6.227	-16.542	6.362	0.412	-2.841	4.269
	(0.117)	(0.111)	(0.117)	(13.998)	(12.546)	(13.732)	(5.678)	(5.171)	(5.624)
Observations	88	88	88	88	88	88	88	88	88
R-squared	0.155	0.156	0.153	0.057	0.135	0.094	0.049	0.099	0.068
Number of									
event	30	30	30	30	30	30	30	30	30

Standard errors in parentheses, *** p<0.01, **p<0.05, *p<0.1

Appendix (11) Random Effects (RE)

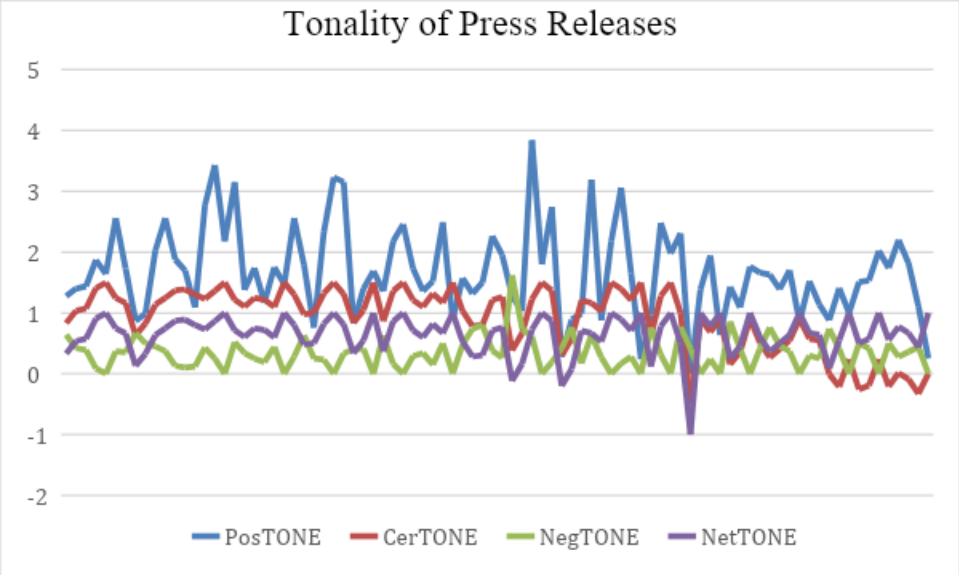
VARIABLES	(10) CAAR5	(11) CAAR5	(12) CAAR5	(13) ROE	(14) ROE	(15) ROA	(16) ROA	(17) ROA	(18) ROA
PosTONE	0.027*			9.058			1.265		
	(0.029)			(5.599)			(1.819)		
NegTONE		-0.123***			30.732*			6.738	
		(0.086)			(15.723)			(5.087)	
CerTONE			0.026			8.687			-0.084
			(0.043)			(9.849)			(3.583)
ROE	-0.000	0.000	-0.000						
	(0.001)	(0.001)	(0.001)						
ROA	-0.001	-0.002	-0.001						
	(0.002)	(0.002)	(0.002)						
Leverage	0.113	0.089	0.131	-23.552	-13.760	-20.525	6.703	8.344	6.967
	(0.152)	(0.152)	(0.153)	(35.022)	(35.327)	(35.464)	(13.543)	(13.490)	(13.567)
Employees	-0.000*	-0.000	-0.000	-0.015	-0.018	-0.013	0.007	0.007	0.007
	(0.000)	(0.000)	(0.000)	(0.017)	(0.017)	(0.017)	(0.006)	(0.006)	(0.007)
year_1== 1.0000	-0.047	-0.065	-0.055	4.479	5.401	2.034	2.289	2.606	2.011
	(0.053)	(0.052)	(0.052)	(8.939)	(8.777)	(8.957)	(2.738)	(2.724)	(2.730)
year_1== 2.0000	-0.059	-0.090	-0.069	4.406	9.345	1.118	1.640	2.843	1.428
	(0.053)	(0.055)	(0.053)	(8.945)	(9.326)	(9.190)	(2.733)	(2.900)	(2.815)
year_1== 3.0000 = o,	-	-	-	-	-	-	-	-	-
Constant	0.046	0.149**	0.069	-2.385	-1.407	5.645	-3.099	-4.110	-0.868
	(0.074)	(0.065)	(0.068)	(15.210)	(13.807)	(14.797)	(5.513)	(5.109)	(5.479)
Observations	88	88	88	88	88	88	88	88	88
R-squared									
Number of event	30	30	30	30	30	30	30	30	30

Standard errors in parentheses, *** p<0.01, **p<0.05, *p<0.1

Figures

Figure (1) Tonality of M&A Press Releases

Tonality of the sample



Tonality across time

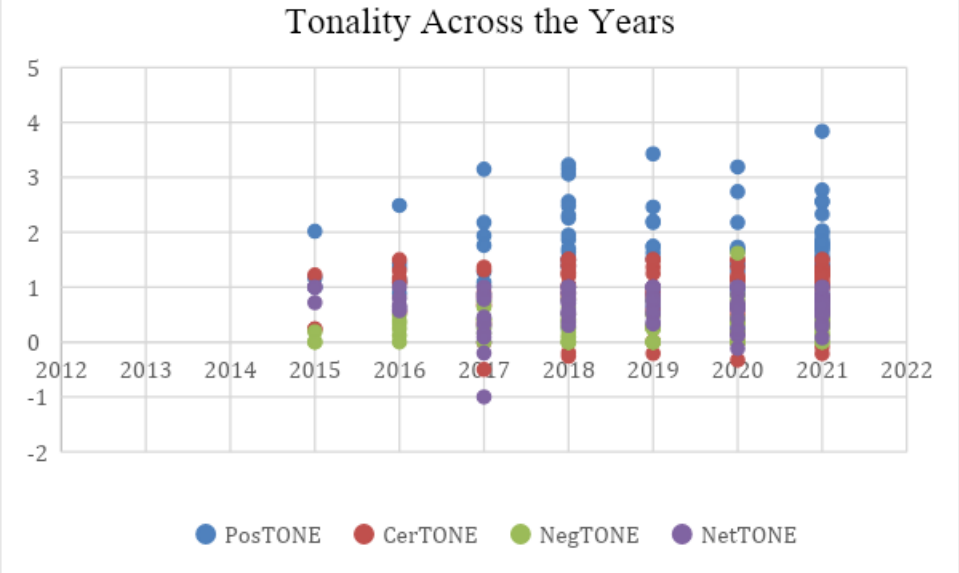
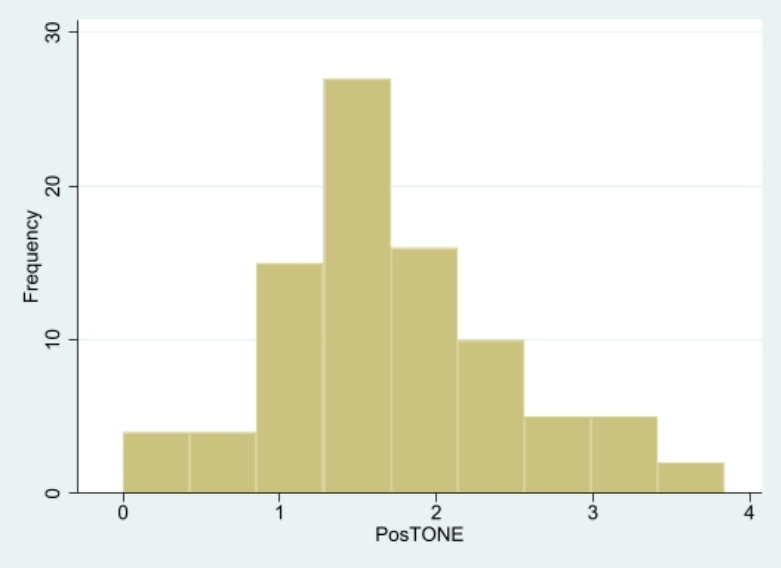
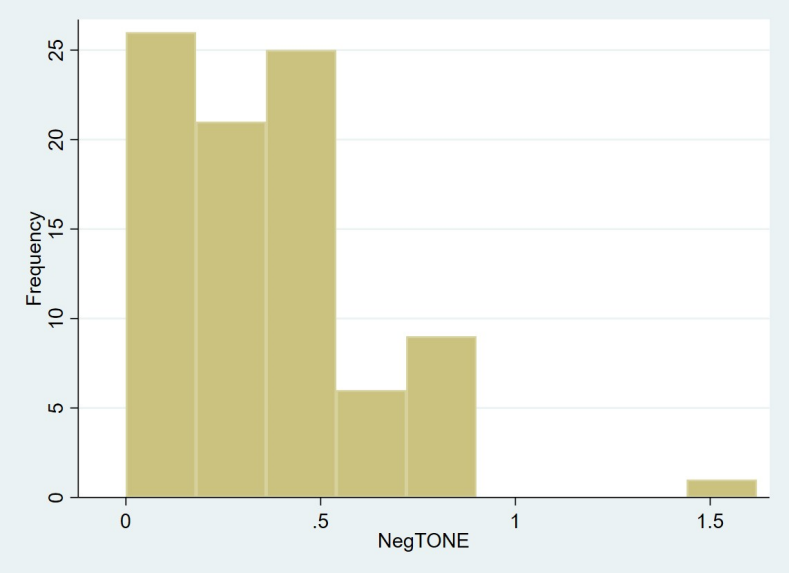


Figure (2) Frequency of positive and negative words

Frequency of positive words



Frequency of negative words



Frequency of certainty tone