UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

# THE IMPACT OF RIGHT-TO-WORK LAWS ON LAYOFF MEMOS AND INVESTORS

Ljubljana, May 2026 KAJA RIBNIKAR & URBAN UDOVIČ

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## ABSTRACT

Right-to-Work (hereinafter: RTW) laws have generated conflicting evidence regarding their economic impact. We address this by analyzing a novel dataset of 160 United States (hereinafter: U.S.) layoff memos (2020–2023) to test for differences in managerial communication across RTW environments and the resulting investor reactions. We predict that firms in RTW states use a more positive tone and face a harsher market response compared to non-RTW firms. We further argue that positive tone mitigates negative market responses. We find that RTW firms use a more deflated tone, while higher unionization leads to more inflated tone. Investor response is driven by tone, rather than RTW status, and while moderate tone positivity improves their response, its excess is penalized.



**KEY WORDS:** RTW laws, tone management, investor reaction, unions


## SUSTAINABLE DEVELOPMENT GOALS





## POVZETEK

Zakoni o pravici do dela (v nadaljevanju RTW) prinašajo nasprotujoče si dokaze glede njihovega gospodarskega vpliva. To vprašanje naslavljamo z analizo do sedaj neuporabljene baze podatkov, ki vključuje 160 obvestil o odpustu ameriških podjetij (2020–2023), da preučimo razlike v managerski komunikaciji v RTW okoljih zakoni ter posledične reakcije investitorjev. Sklepamo, da podjetja v RTW državah uporabljajo bolj pozitiven ton na katere se trg odzove strožje kot v v državah brez RTW. Prav tako zagovarjamo, da pozitiven ton ublaži negativen tržni odziv na odpuščanja. Nazadnje ugotavljamo, da podjetja v RTW državah uporabljajo bolj izpraznjen ton, medtem ko višja stopnja sindikaliziranosti vodi k bolj napihnjenemu tonu. Na odziv investitorjev vpliva ton in ne RTW status, pri čemer raba zmerno pozitivnega tona odziv izboljša, njen presežek pa je kaznovan.



**KLJUČNE BESEDE:** RTW zakoni, upravljanje tona, odziv investitorjev, sindikati


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## LIST OF ABBREVIATIONS

**AR –** Abnormal Return

**BHAR –** Buy-and-Hold Abnormal Return

**CAPM –** Capital Asset Pricing Model

**CAR –** Cumulative Abnormal Return

**CBA –** Collective Bargaining Agreement

**COVID-19 –** Coronavirus disease 2019

**FOG –** Gunning Fog Index

**GI –** General Inquirer (Dictionary)

**HE –** Henry (Dictionary)

**HML –** High Minus Low (Fama-French factor)

**LM –** Loughran and McDonald (Dictionary)

**OLS –** Ordinary Least Squares

**QDAP –** Quantitative Discourse Analysis Package (Dictionary)

**ROA –** Return on Assets

**RTW –** Right-to-Work

**SMB –** Small Minus Big (Fama-French factor)

**UL SEB –** University of Ljubljana, School of Economics and Business

**U.S. –** United States

# 1 INTRODUCTION

Ever since the adoption of the Right-to-Work (hereinafter: RTW) laws, there has been a dispute in opinion and a clear inconsistency amongst the results and conclusions of studies regarding the economic benefits obtained by the states that enact RTW. Numerous casual observers, journalists, and academics have expressed their point of view on the matters, from the impact of RTW laws on union membership to changes in economic growth rates with no alignment in sight (Hicks & LaFaive, 2013).

Some studies find that RTW law is more symbolic than of substance, and for example has little to no impact on unionization (Lumsden & Petersen, 1975) and on average wages (Moore, 1998). Others find that the enacted law has a negative impact on wages (Chava et al., 2020), while some research suggests that the presence of RTW laws boosts state population growth and firm productivity (Hicks et al., 2016). The ongoing academic debate does not have a coherent answer to whether RTW laws benefit the state or the companies and employees within. Therefore, the topic calls for additional research to provide new insight from a different perspective.

Researchers have mostly tackled the issue by considering commonly used economic proxies as variables, such as growth rates in employment, real (inflation-adjusted) personal income, percentage of unionized workers, and earnings, amongst others, in pursuit of establishing their econometric model. While these are valid considerations and provide valuable insight, the findings of similarly conducted research have still not produced consistent results and consequently often arrive at different conclusions. Only a fraction of studies have attempted to address the lack of differentiation of models used to determine RTW status implications through behavioral finance, more specifically via sentiment analysis. These types of studies are often supported by data such as financial reports or shareholder letters that are easily accessed and therefore commonly used, but once again result in the concentration of data samples used across multiple research endeavors. Due to the lack of cross-differentiation in such studies, there is an opportunity to introduce new datasets as a sample pool that offer alternative approaches to research designs.

To conduct our analysis, we have gathered 160 layoff memos that occurred in major downsizing events of U.S. companies dating from 2020 to 2023. We use this to determine sentiment, readability, positivity, and negativity of the memos, which relates to the overall tone of the manager. With that, we aim to determine factors that influence managerial tone and its impact on the investor, both short-term and long-term.

Our findings show that managers adjust tone differently in layoff memos than suggested by prior studies. Firms in RTW states use a more deflated tone compared to those in non-RTW states, and a similar conclusion is made when using state-level union coverage as a proxy of RTW status, as higher unionization corresponds to a more inflated tone. Moreover, managers

adapt positive wording rather than negative. This is in line with our findings that tone inflation positively affects investor reactions, especially during severe layoffs, where optimistic tone softens the market's response. However, excessive positivity has diminishing returns and might eventually result in a negative market response, as investors penalize perceived manipulation. Finally, while managerial tone varies with RTW context, investor response is driven by the tone itself rather than the RTW status.

Our work contributes to the topic by presenting a different approach with the goal of establishing a unified stance on the economic impact of enforced RTW laws. We achieve this by investigating an underused dataset, which consists of layoff memos, as opposed to commonly used types of data such as economic metrics (Moore, 1998; Chava et al., 2020). We offer a unique outlook on the issue as we assess the presence and impact of managerial tone of the memos relating to the states that adopt RTW law compared to those states that do not. With that, we observe the impact of RTW laws on managers' incentives to disclose layoff information in a positive or negative way. This has already been assessed with textual data from earnings press releases (Arslan-Ayaydin et al., 2020), but we set out to test it further in the context of layoff memos. Furthermore, we determine the short- and long-term economic impact on the investor subjected to layoffs in RTW law states. Additionally, the display of use of a new type of document as data is not only relevant to this subject but also innovates and motivates research in other areas of interest.

# 2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this chapter, we provide a detailed review of the theoretical frameworks and empirical evidence that form the foundation of our research hypotheses. First, we explore the evolution and impact of RTW laws on corporate behavior, focusing on union bargaining strength and managerial incentives. Next, we examine the strategic use of tone management in corporate disclosures and evaluate how investors react to downsizing events, particularly emphasizing how managerial tone and the specific labor environment shape these market responses. Finally, we build on this theoretical foundation to develop our primary research hypotheses regarding the effects of RTW status on managerial communication and the resulting short-term and long-term investor reactions to layoff announcements.

## 2.1 Right-to-Work Laws and Corporate Behavior

In this chapter, we examine the broad implications of RTW laws on the labor market and corporate decision-making. We begin by tracing the historical origins of RTW laws following the Taft-Hartley Act, and later analyze how these laws diminish union membership and bargaining strength by creating a free-rider problem. Furthermore, we explore how this labor dynamic redistributes power, fundamentally changing managerial incentives, executive compensation structures, and internal communication strategies. Finally, we assess the wider macroeconomic consequences of RTW laws, highlighting the

trade-off between regional corporate growth and the negative impacts on individual earning power.

### 2.1.1 Historical Evolution of Right-to-Work Legislation

After the end of World War II, the U.S. experienced a wave of significant labor reforms. The most important of these was the passage of the Taft-Hartley Act in 1947. The Act amended the National Labor Relations Act (commonly referred to as the Wagner Act), which was passed in 1935. The Taft-Hartley Act allowed each state to prohibit agency shop provisions. An agency shop provision in a collective bargaining agreement (hereinafter: CBA) requires all employees who are covered by the agreement to either be members of the union or pay the equivalent fee as a condition of employment. In essence, the passage of the Taft-Hartley Act provided the legal framework for states to enact RTW laws. Consequentially, RTW laws allow employees to work without joining or paying dues to a union (Hicks & LaFaive, 2013).

Many states quickly adopted RTW laws as a central element of their economic development strategies. Advocates believe these laws signal to businesses that a state is a desirable location, essentially acting as a proxy for a business-friendly climate. Examining this relationship across state lines, Holmes (1998) finds that manufacturing activity increased immediately upon entering an RTW state. Specifically, manufacturing employment, as a percentage of total employment, was approximately one-third higher just across the border from a business-unfriendly (non-RTW) state into a business-friendly (RTW) state.

Not only do RTW laws affect firm decisions about where to locate, but they also impact how firms behave internally and interact with their employees and unions. A very recent study uses data on nearly 20,000 CBAs to examine these effects. Chava et al. (2020) find that RTW laws cause a negative exogenous shock to the bargaining position of employees. Specifically, nominal wage growth for employees working under a CBA declined by approximately 0.6 percentage points in the year following the adoption of an RTW law.

In addition to the negative effect on employee wages, firms in RTW environments have adjusted their corporate behaviors in response to the loss of labor's bargaining power. After the adoption of an RTW law, firms have significantly increased both capital expenditures and employment growth. They have also reduced their reliance on debt, which is normally used as an intentional bargaining tactic against powerful unions. When union power is diminished by the passage of RTW laws, the need to employ this financial strategy diminishes. Finally, labor-intensive firms with a high labor-to-assets ratio operating in an RTW environment tend to experience higher operating profit margins (Chava et al., 2020).

This research demonstrates that RTW laws have had a major influence on the economic landscape. Not only do these laws affect the geographic distribution of manufacturing by attracting businesses to states with RTW laws, but they also affect the operational and financial strategies of firms (Holmes, 1998; Chava et al., 2020). Ultimately, these RTW laws

have created an environment where managers have more freedom in making investment and hiring decisions, while unions face increasing obstacles in organizing and maintaining membership (Moore, 1998; Chava et al., 2020).

### 2.1.2 Effects on Union Membership and Bargaining Strength

RTW laws have a direct and significant impact on the financial structure of unions by prohibiting agency-shop provisions. Historically, these provisions in CBAs required all employees covered by the agreement to financially support the union, regardless of their membership status. By eliminating this requirement, RTW laws enable employees to receive the benefits negotiated by the union, such as higher wages and better dispute resolution, without contributing to the underlying costs of negotiating them. This creates a free-rider problem, leading to a systemic loss in both union revenue and membership.

To explain this dynamic, Moore (1998) identifies three possible hypotheses regarding the impact of RTW laws on union membership and bargaining power:

1. The Taste Hypothesis: This perspective argues that RTW laws merely reflect existing anti-union sentiment and do not independently cause a decrease in union membership.
2. The Free-Rider Hypothesis: Here, because union services function as public goods, RTW laws create a disincentive for employees to remain members of a union since they can obtain the same benefits without contributing to the costs. To compensate for this lost revenue, the union must increase dues for remaining members, which further reduces the incentive to stay.
3. The Bargaining Power Hypothesis: This hypothesis argues that RTW laws weaken the union's bargaining position, thereby reducing its ability to strike and diminishing the overall benefit of membership.

Early empirical support for the Taste Hypothesis is provided by Lumsden and Petersen (1975). By analyzing unionization rates from 1939, well before most RTW laws were enacted, they find that states which eventually adopted RTW legislation already exhibited significantly lower union membership than those that did not. Their study confirms that the RTW variable captures the underlying anti-union preferences of the population, rather than a substantive change in the cost of unionization caused by the legislation itself. However, more recent research presents a different picture, emphasizing the direct consequences of these laws.

Specifically, recent empirical studies using data from the Current Population Survey have quantified the negative impact of RTW laws on union membership. This recent research finds that RTW laws lead to a significant increase in free-riding, triggering a rise of approximately 34.1% in the private sector and a rise of 46.7% in the public sector. Consequentially, RTW laws are associated with a decline in union membership of

approximately 15.5% in the private sector and 13.5% in the public sector (Bono-Lunn, 2024, p. 780-781).

Importantly, this membership decline is not only caused by individuals choosing to free-ride, but also by a broader decline in union coverage, i.e., the proportion of workers covered by a union contract regardless of membership. RTW laws result in a 12.2% decline in coverage in the private sector and an 8.8% decline in the public sector. As a consequence, when faced with declining resources due to free-riding, unions may be forced to make difficult strategic choices. They often discontinue organizing activities in new bargaining units or withdraw from existing units entirely when the financial viability of continued organization becomes unsustainable (Bono-Lunn, 2024).

While RTW laws affect both public and private sectors, the private sector faces unique vulnerabilities that compound these legislative challenges. Historically, unions in the private sector have concentrated on negotiating over workplace issues, including collective bargaining to determine wages and benefits. However, the ability of unions to engage in these activities is subject to the strict discipline of the market. Private sector firms, unlike public sector employers, face intense competitive pressures from non-union domestic and foreign producers. If a union negotiates wage and benefit packages that place a high burden on a firm's costs, the firm faces the risk of losing market share and jobs to lower-cost producers. Additionally, the presence of a union often generates a threat effect among non-union employers, pressuring them to voluntarily increase wages to discourage union organization. This is most successful when unions can "remove wages from competition" by establishing standardized compensation across an entire industry. However, this strategy has become increasingly unreachable in the private sector due to the rapid globalization of markets. Consequently, as the threat of unionization decreases, the economic pressure on non-union employers to pay a wage premium to prevent unionization disappears (Farber, 2005).

### 2.1.3 Managerial Incentives in Right-to-Work Environments

The implementation of RTW laws fundamentally changes the internal governance structure of a firm and redistributes the relative bargaining power from labor to management. By limiting the capacity of unions to scrutinize management's decision-making, RTW laws create an environment in which managers can make strategic and operational decisions independently of outside pressures. Interestingly, when there are no external pressures from strong unions, managers may exhibit "quiet life" behaviors, which include avoiding the stress and discipline associated with aggressive bargaining environments (Marciukaityte, 2015).

Research has established that the adoption of RTW laws leads to significant changes in executive compensation packages. On average, the base salary and total option grants awarded to chief executive officers increase in the year immediately after the passage of

RTW laws. Importantly, these changes in compensation are not solely the result of managerial rent-seeking, but rather reflect the increased size and complexity of the firm. As a result of lower labor costs, firms are able to invest more in capital and expand operations. This expansion consequentially increases the demand for highly skilled managers, who normally demand higher salaries (Chava et al., 2020).

This shift in compensation structure also directly influences how executives communicate with the public. Managerial decision-making regarding corporate disclosure is significantly impacted by these financial incentives. When executives possess equity-based compensation that is directly tied to stock prices (i.e., stock options), they are significantly more likely to increase the positive tone of earnings press releases in order to maximize the value of their portfolios (Arslan-Ayaydin et al., 2016).

As a result of these structural changes, a firms' overall communication strategies are significantly altered. In highly unionized environments, managers experience a unique proprietary cost of disclosure. Specifically, if they report high profitability or an optimistic outlook, unions may use this information to negotiate higher wages. In order to prevent this rent-seeking, managers deliberately soften or deflate the tone of earnings press releases during profitable periods. Managers actively avoid using overly optimistic language even when performance is strong. This strategic tone deflation is particularly evident during profitable periods, as managers have a greater incentive to hide good news in order to limit labor's bargaining power (Arslan-Ayaydin et al., 2020).

On the other hand, RTW laws act as a negative exogenous shock to the power of unions. Since the threat of having rent extracted by unions is eliminated, there is no longer a need for managers to engage in tone deflation. Therefore, companies in RTW environments are much more likely to communicate with an optimistic tone than companies in non-RTW environments, since they do not fear that communicating positive news will cause unions to aggressively demand higher wages (Arslan-Ayaydin et al., 2020). This emphasis on using narrative disclosure is especially relevant in situations where there is a large degree of information asymmetry between management and external stakeholders. In these situations, qualitative disclosures can help to close the valuation gap between management and the public (Boudt et al., 2018).

In addition to communication, RTW laws also significantly affect the financial and operational strategies of companies, including capital structure and liquidity. In non-RTW environments, companies often rely on high levels of debt as a strategic tool. By increasing financial leverage, managers can threaten to file for bankruptcy during contract negotiations with unions, and thus force unions to lower their wage demands. However, once RTW laws are enacted and the power of unions is significantly diminished, there is no longer a need for managers to use this strategy. Therefore, companies in RTW states tend to significantly decrease their leverage ratios, and maintain much smaller and less risky capital structures (Chava et al., 2020). Similarly, the strength of unions also affects the amount of liquidity

held by companies. Companies in non-RTW states (which have stronger unions) typically hold lower levels of cash, in order to protect liquid assets from potential union demands. If a company has visible amounts of cash listed on the balance sheet, unions are more likely to target this cash during collective bargaining. On the other hand, since RTW laws eliminate this threat, companies in RTW states are able to hold optimal levels of cash for precautionary purposes without concern about union demands (Marciukaityte, 2015).

Ultimately, the reduced pressure from unions in RTW states results in tangible operational shifts. Without the constraints of strategic debt, and with cash flows protected from union threats, companies in RTW states tend to increase their capital expenditures and hire additional employees. Additionally, since the likelihood of wage increases is decreased, companies in RTW states are better able to distribute value to shareholders through higher dividend payments (Chava et al., 2020). In essence, the transition to a RTW environment provides management with the financial flexibility and communication freedom to prioritize shareholder value over labor negotiations.

### 2.1.4 Consequences of Right-to-Work Legislation for Firms and Policymakers

RTW laws significantly influence regional economic performance, shaping corporate location strategies and overall employment trends. By removing mandatory union dues, these laws offer employers a perceived increase in operational flexibility, making RTW jurisdictions highly attractive for business investment. Consequently, RTW laws are often implemented as part of a comprehensive business climate package designed to stimulate macroeconomic growth. A review of location studies by Moore (1998) finds that manufacturing employment is approximately one third higher in counties bordering RTW states than in similar non-RTW counties. Furthermore, research indicates that states adopting these laws experience accelerated population growth ranging from 1.1% to 1.5%, while firms operating within these regions demonstrate higher levels of productivity (Hicks et al., 2016).

However, this corporate and regional growth often comes at a cost to individual earning power. The relationship between RTW laws and income inequality has been the subject of much discussion and has evolved over time. While prior research indicates little to no effect on average wages, recent studies reveal that RTW laws directly result in lower overall compensation. As established previously, this decline is driven by both reduced collective bargaining power and the diminished threat effect that forced non-union employers to raise wages in order to prevent unionization. Additionally, the negative impact of RTW laws on wages varies significantly across different demographics and industries. For example, women workers are more negatively affected than men. Furthermore, this decline in pay is highly concentrated in high-unionization industries, including construction, education, and public administration, where the decline in membership is greatest following legislative enactment (Fortin et al., 2022).

Ultimately, policymakers must take into account these complex economic outcomes when considering RTW laws. While they effectively serve as tools to attract business, boost investment, and enhance productivity, they also pose a distinct risk of lowering wages and increasing inequality. By financially weakening labor unions, these laws significantly reduce union organization, ultimately leading to a long-term decline in unionization (Moore, 1998).

## 2.2 Tone Management in Corporate Events

While the regulatory labor environment dictates a firm's operational and financial strategies, it also heavily influences how managers choose to communicate those realities to the public. Investors obtain important information about company performance in the form of either quantitative (financial reports) or qualitative (letters to shareholders, etc.) data. To make a fully informed investment decisions, shareholders usually need to understand and combine both types of data. Managers, therefore, are heavily encouraged to manipulate accounting practices and/or employ tone management in their communications to alter investors' perceptions of the actual state of a company.

### 2.2.1 Drivers and Motivations of Disclosure Tone

Research on discretionary corporate narrative disclosures is generally divided into two competing schools of thought. The incremental information school assumes managers provide qualitative data to overcome information asymmetries and improve market decision-making, whereas the impression management school suggests managers behave opportunistically to distort perceptions of corporate achievements. While the former relies on the efficient market hypothesis where investors can accurately assess reporting bias, the latter assumes a weak form of market efficiency where managers exploit information gaps to influence stock prices (Merkl-Davies & Brennan, 2007).

Under the impression management perspective, tone management refers to managers strategically adopting a communication tone that misrepresents the actual financial results, usually to manipulate investor perceptions. This practice is especially common during earnings conference calls because managers have significant freedom to conceal the specific methods, such as earnings management, used to achieve their financial targets. When firms just barely meet or beat their earnings benchmarks through discretionary accruals or real earnings management, executives frequently rely on tone management. In these instances, managers inflate their positive tone to camouflage the underlying accounting tactics. Empirical evidence confirms that the positive tone of these specific firms lacks predictive value for future performance, suggesting that the strategic optimism successfully leads investors to misinterpret the firm's condition. Furthermore, this manipulation deceives not only the average investor but also professional intermediaries. This is reflected in the analysts' own reactions, as their tone during these conference calls fails to accurately predict the firm's future performance. This implies that managers successfully mislead sophisticated

analysts as well as retail investors, establishing tone management as a powerful, complementary strategy to financial engineering in masking economic reality (Kayed & Meqbel, 2022).

Conversely, proponents of the incremental information school argue that managers use earnings press releases to voluntarily bridge the informational gap between management and stakeholders. However, the utility of the tone used in these releases varies significantly by firm, with the level of information asymmetry acting as a major driver of this variation. Notably, Boudt et al. (2018) find that the tone of earnings press releases is informative for only about 25% of firms. Nevertheless, in situations characterized by high information asymmetry, such as those involving small, young, complex, or high-growth companies, the tone used in earnings press releases becomes highly useful to stakeholders. The predictive value of tone in these environments is at least double, and potentially quadruple, that of transparent firms. Additionally, tone proves to be an increasingly reliable indicator of future performance in uncertain environments where analyst forecast inaccuracy is high.

Demers and Vega (2011) classify this textual sentiment as "soft information," distinct from the "hard information" found in quantitative financial statements. They investigate whether this soft information acts merely as noise (manipulation) or genuine news (fundamental data). Their findings indicate that net optimism in managerial tone provides unique, additional insight into a firm’s future earnings, providing predictive value that goes beyond what is found in current financial reports. This suggests that tone serves an important function in reducing uncertainty and is priced by the market as a fundamental signal rather than just an impression management tool.

Furthermore, because investors are generally more responsive to negative information than positive information, managers will naturally emphasize the positive features of the company to minimize the negative response to the release. However, this approach can lead to the self-promoter's paradox, which is the phenomenon that managers who overemphasize legitimacy will actually increase the skepticism of decision makers. As a result, the tone management strategy may ultimately backfire if the positive tone of the release is seen as "too good to be true". In this regard, investors, particularly those that are non-professional investors, may view the release as less credible than they would if the tone was neutral. This creates a so called bifurcated effect, where a strong managerial tone may positively influence investors' willingness to purchase shares by signaling good health, while simultaneously damaging the disclosure's credibility, ultimately resulting in a net reduction of the positive effect. Moreover, individuals cannot distinguish tone management from genuine tone, and the language used by investors to describe the tone of the release is viewed as more optimistic by investors with more personal investment experience than those with less (Triki et al., 2015).

The relationship between the tone of a release and its perceived credibility is not a constant one but rather is highly dependent upon the context of the release and the persuasive intent

heuristic. If a company reports poor financial results and uses a positive tone, this seems inconsistent with the reported results and highlights the incentive of the manager to mislead stakeholders. The inconsistency causes suspicions of persuasive intent from readers and consequently lowers the credibility of the message. On the other hand, if a company reports excellent financial results and uses a positive tone, the pressure between the manager's desire to inform investors and his desire to promote the company disappears. In this case, the positive tone of the release is not viewed as undermining credibility. Instead, it is viewed as a legitimate expression of optimism for the continued success of the company (Bodoff & Hirsch, 2023).

Managerial behavior related to tone management is highly driven by the managers' financial incentives, specifically the incentives related to executives' wealth being tied to stock price movements, referred to as portfolio delta. There is empirical evidence that managers with high levels of portfolio delta are more likely to exaggerate the tone of earnings press releases and to use aggressive language to drive up the stock price, thereby maximizing the value of their compensation packages. Furthermore, the use of tone management is predominantly driven by the Chief Executive Officer's incentives rather than the incentives of the rest of the executive team. On the other hand, managers who have wealth that increases with stock return volatility (portfolio vega) are less likely to use tone management, suggesting a trade off between the rewards of a higher stock price and the benefits of increased volatility (Arslan-Ayaydin et al., 2016).

Fortunately, investors appear to anticipate this opportunistic behavior of managers to some degree. This is consistent with the Almost Cheap Talk model, which claims that investors are not systematically deceived, but rather adjust their expectations based on the manager's known incentives. As a result, while the immediate market reaction to the tone of an earnings press release is still positive, it becomes much weaker as the managers' equity incentives increase. Moreover, for firms with very high equity incentives for their managers, the delayed market reaction (over 60 days) to the tone of the earnings press release can actually become negative, indicating that the market ultimately adjusts for the initial tone inflation (Arslan-Ayaydin et al., 2016).

However, it is important to recognize that a disconnect between tone and financial data does not always stem from a deliberate attempt to mislead investors. Davis et al. (2015) argue that a significant portion of disclosure tone is driven by manager-specific optimism, which reflects an unintentional cognitive bias rather than a strategic choice to mislead investors. While our study focuses on the strategic deflation of tone in response to union pressure, this dispositional optimism suggests that a manager’s natural communication style serves as a baseline that is then adjusted by external incentives.

Labor unions also significantly influence the tone management strategies employed by managers. Managers in industries with high levels of unionization tend to be more cautious, and therefore strategically deflate the tone of disclosures to present a less optimistic view of

financial performance. They accomplish this by decreasing the frequency of positive words rather than increasing the use of negative words. Because investors respond significantly more strongly to negative information than to positive information, simply reducing the use of positive language enables managers to dampen union expectations without creating a significant decline in stock price. This type of tone management is successful under the right circumstances, particularly when firms are financially performing well. During these profitable periods, managers have a greater incentive to conceal good news from unions in order to prevent them from leveraging the firm's profitability to negotiate for higher wages. On the other hand, in states with RTW laws, where unionism is generally weakened due to the free-rider problem, managers are under less pressure to distort performance. Consequently, they are able to adopt a more optimistic tone in their communications (Arslan-Ayaydin et al., 2020).

### 2.2.2 Contextual Drivers and Motivations

Several factors drive the strategic use of tone management, particularly during high-stakes corporate events. Managers often employ carefully selected language during important financing activities to influence market perceptions. For instance, firms issuing seasoned equity or undertaking mergers and acquisitions exhibit significantly higher levels of abnormal positive tone in their earnings press releases. This strategic use of language allows managers to hype investors' perceptions of future performance, potentially optimizing the terms of capital raising or acquisition deals. Furthermore, the pressure to meet earnings benchmarks creates a strong incentive for tone manipulation. Firms that just meet or beat past earnings benchmarks tend to use abnormally positive tone to mask poor underlying performance and mislead investors about the sustainability of their results (Huang et al., 2014).

Research indicates that managers are more likely to adopt positive tones when their firms are smaller, older, and possess lower market-to-book ratios. The information environment also plays a crucial role. While tone becomes more informative in environments characterized by high information asymmetry, such as those with greater operational complexity, research suggests that operational complexity itself negatively affects the optimism of earnings announcements (Luo & Zhou, 2020). Growth characteristics also influence communication strategies. Kayed and Meqbel (2022) find a significant positive correlation between revenue growth and abnormal positive tone. This suggests that firms experiencing revenue growth are more likely to manipulate their words positively, most likely to maintain market narratives or sustain expectations.

As previously noted in the context of RTW laws, managerial compensation plays an important role in shaping disclosure tone. Consistent with the incentives observed in RTW environments, managers with high equity-based incentives are significantly more likely to inflate the tone of earnings press releases to increase the short-term stock price. In contrast,

managers are less likely to inflate tone when their compensation is sensitive to stock price volatility (Arslan-Ayaydin et al., 2016).

Finally, tone management is partly attributed to the inherent characteristics of the managers themselves. Expanding on the concept of manager-specific optimism, Davis et al. (2015) provide evidence that tone contains a significant personal component that persists even when managers switch firms. They identify specific background factors that shape this disposition. For example, managers involved in charitable organizations tend to use significantly more optimistic language, consistent with a psychological link between volunteerism and optimism. Conversely, managers who began their careers during recessionary periods or possess investment banking backgrounds tend to use less optimistic tone, suggesting that inherent risk aversion and professional skepticism impact the tendency to use inflated language. This suggests that the tone in layoff memos is likely a composite of these personal ingrained traits and the external pressures of the labor environment.

Moreover, a shift in a manager's tone from their established communication style acts as an important source of information. Specifically, an increase in negativity, also known as a bleak tone change, serves as a strong indicator of lower future earnings and increased uncertainty regarding a company's future. As a result, both analysts and investors tend to respond severely to these shifts. For instance, analysts significantly reduce their earnings forecasts in response to bleak tone changes, whereas they only marginally increase expectations following bright tone changes, which is defined as decreases in negativity. Similarly, market prices show an asymmetric response in which stock prices decline sharply after detecting bleak tone changes, reflecting a heightened sensitivity to negative signals compared to positive ones (Druz et al., 2020).

### 2.2.3 Risks and Consequences

While short-term tone management can be effective, there are significant risks associated with over-reliance on such a strategy. If a company relies too heavily on an overly positive tone that does not reflect the company's true performance, it risks losing credibility with both analysts and investors. This dynamic is governed by the persuasive intent heuristic previously discussed. When a company reports strong financial performance, positive tone improves credibility as it is viewed as legitimate optimism. However, when reporting weak performance, that same positive tone triggers the heuristic. Stakeholders perceive the inconsistency as an intentional attempt to mislead, which severely undermines the credibility of the disclosure rather than hiding the poor results (Bodoff & Hirsch, 2023).

A disconnect between a company's positive tone and its actual performance causes investors to lose trust and can damage the company's overall legitimacy. Companies experiencing financial difficulties often use overly optimistic, positive language as a way to hide their failures (Huang et al., 2014). This practice creates a dangerous gap between the image the company portrays to stakeholders and what the stakeholders expect. In addition, some

managers intentionally confuse stakeholders by combining language that attempts to be positive with text that is complex and hard to read (Fisher et al., 2019). Using an artificial narrative to portray the firm's position establishes a significant risk. When the truth inevitably comes to light, the damage to the company's credibility is often far more damaging than the initial poor performance would have been.

Beyond reputational damage, companies that make overly optimistic statements also increase the risk of being sued by shareholders, as plaintiff attorneys often focus on identifying specific optimistic statements as part of their claim. Also, making overly optimistic statements can provide a signal to the market of the company's high profitability, which can unintentionally encourage other companies to enter the same business, thus exposing the company to new strategic threats. Collectively these risks are increased by the fact that qualitative data is regulated to a much lesser extent than quantitative data. Quantitative data is governed by strict financial reporting standards and is audited by independent auditors, whereas qualitative data, such as earnings press releases, are generally not regulated. Due to the elastic and flexible nature of words versus the rigid nature of numbers, qualitative data is much harder to regulate compared to quantitative data. Consequently, managers have almost unlimited freedom in terms of how they communicate qualitative information, providing them with the opportunity to engage in opportunistic behavior (Arslan-Ayaydin et al., 2016).

## 2.3 Investor Reaction and Disclosure Tone

In this chapter, we analyze investor reaction to corporate downsizing, focusing on the role of managerial communication and the labor environment. First, we present the theoretical explanation of how the market responds to layoffs by outlining the Pure Efficiency and Decreased Demand hypotheses. We then evaluate how managerial tone shapes investors' views on the announcement and, consequently, the stock price performance. Finally, we address the influence of unionization and RTW status, which act as important factors on investor reaction to layoffs.

### 2.3.1 Market Reaction to Corporate Downsizing

There are two opposing hypotheses that frame the theoretical explanation of how the market responds to layoffs announced by a firm. The first is the Pure Efficiency Hypothesis, which argues that if unit sales remain constant while factor costs vary, cost reduction actions such as layoffs allow the firm to find a new minimum cost structure. From this perspective, if the reason for taking cost-cutting actions is to achieve greater efficiency, the firm would expect to increase cash flow and, consequently, the stock price (Lin & Rozeff, 1993). Similarly, the organizational efficiency perspective views downsizing as a proactive means to optimize productivity and correct performance decreases (Datta et al., 2010).

Conversely, the Decreased Demand Hypothesis suggests that layoffs are typically an indication of decreasing unit sales, where the firm is no longer producing at minimum cost due to the drop in output. Although the cost-cutting measure may be a wealth-maximizing decision based on current circumstances, the announcement signals that the firm is experiencing a decline in demand and net cash flow, resulting in a lower stock price. Empirical research primarily supports the Decreased Demand Hypothesis. Announcements of layoffs typically result in negative abnormal returns (hereinafter: AR), implying that the market generally interprets such announcements as signals of financial distress rather than indicators of increased efficiency (Lin & Rozeff, 1993).

Recent evidence supports the prevalence of this negative interpretation, demonstrating that the typical investor response to layoff announcements is approximately -0.549%. However, this penalty is not static, as investors have reacted less negatively to layoff announcements in recent years compared to historical trends. The type of layoff announcement also moderates the investor response. Research indicates that investors differentiate between proactive layoffs, which are aimed to increase efficiency and competitiveness, and reactive layoffs, which are caused due to internal or external issues. Investors do not respond negatively to proactive layoffs; however, reactive layoffs that indicate a response to internal issues or external environmental changes trigger a highly negative response. Additionally, the magnitude of the layoff announcement affects the severity of the investor penalty, with larger layoffs associated with larger penalties (Eshghi & Astvansh, 2023).

Furthermore, the specific context of the firm alters these general market reactions. For instance, downsizing by financially healthy firms often negatively impacts their stock price because the announcement signals to the market that the firm is in unexpected trouble (Datta et al., 2010). Additionally, the presence of labor unions significantly changes investor perception. Abraham (2006) provides evidence that while the market reaction to layoffs in non-union firms is significantly negative, the reaction to layoffs of unionized employees is actually positive. Investors view the downsizing of unionized employees as a positive signal that the firm is reducing the inefficiencies and costs associated with unionization. Finally, comparing layoffs to other cost-cutting measures highlights the unique weight investors place on workforce reductions. While layoff announcements result in significant negative returns, announcements of wage freezes or reductions in pay do not result in statistically significant negative returns (Lin & Rozeff, 1993).

The specific context of the Coronavirus disease 2019 (hereinafter: COVID-19) pandemic introduces an interesting view into these hypotheses. While the Decreased Demand Hypothesis might suggest that layoffs during such a global crisis would signal severe distress and trigger sharper market penalties, recent evidence suggests otherwise. Eshghi and Astvansh (2023) find no significant statistical difference in investor reactions to layoffs during recessionary periods compared to non-recessionary times. This suggests that the market may view downsizing during the pandemic not strictly as a signal of firm-specific failure, but potentially as a necessary adaptation to a global shock.

### 2.3.2 Role of Managerial Tone in Shaping Reactions

Although tone is primarily driven by the economic context surrounding a layoff, the manager's tone in delivering the news significantly affects investors' views on the announcement and, consequently, the stock price. The manager's tone is part of an impression management strategy where the manager manipulates the presentation of information to shape investor interpretation of company performance. Managers typically employ two strategies to manipulate these views. The first is concealment, where managers downplay negative outcomes and emphasize positive aspects. The second is attribution, which is a defensive technique where managers attribute negative outcomes such as layoffs to the external environment while taking credit for positive outcomes (Merkl-Davies & Brennan, 2007).

High levels of pessimism or negative tone in corporate reports serve as a proxy for negative investor sentiment. This negative tone creates downward pressure on market prices and significantly increases trading volume by noise traders or investors who overreact to linguistic signals. The negative words cause a decline in returns in the days following the announcement, but this trend reverses itself as the market corrects for the initial over-reaction (Tetlock, 2007). Consequently, managers frequently use a positive tone to offset the negative impact on the stock price that occurs when bad news such as a layoff is reported. However, the influence of positive tone is highly dependent on the context. While investors generally react positively to optimistic tone, the magnitude of this reaction depends on the firm's information environment. Tone is much more informative, and thus triggers a stronger market reaction, for firms with high information asymmetry, specifically those that are smaller, younger, and growth-oriented (Boudt et al., 2018).

This aligns with the Noisy Hard Information Hypothesis introduced by Demers and Vega (2011). They document that the market reaction to soft information is significantly stronger when the accompanying hard financial information is noisy or difficult to value, such as in high-tech firms or those with lower earnings quality. In the context of corporate downsizing, a layoff announcement introduces significant uncertainty regarding the firm's future operational stability. Therefore, investors are likely to place greater weight on the "soft" signals provided by the manager's tone to interpret the "hard" news of the workforce reduction.

However, it is crucial to note that the informative power of tone is asymmetric. Druz et al. (2020) introduce the concepts of bleak tone changes which are increases in negativity, and bright tone changes which are decreases in negativity. They find that while bleak tone changes strongly predict lower future earnings and higher uncertainty, bright tone changes are significantly weaker predictors of future performance. This indicates that managerial optimism often fails to offset the impact of negative signals. While managers may use a positive tone as a strategic buffer, investors are inherently more sensitive to negative shifts.

Despite these strategic attempts, investors are not naive and will actively discount the signal of positive tone if they believe that there is opportunistic behavior involved. Investor skepticism towards positive tone is often due to managerial incentives. For example, when managers have substantial equity-based incentives to increase stock prices, they are much more likely to inflate the tone of their earnings press release. However, when investors perceive that a manager has substantial equity-based incentives to drive up stock prices, they significantly decrease their reaction to the positive tone in that release (Arslan-Ayaydin et al., 2016). Merkl-Davies and Brennan (2007) argue that bounded rationality defines the investor experience. contrast to the 'economic man' model of perfect rationality, real-world investors operate with cognitive limitations, often seeking to satisfy rather than maximize utility. Consequently, they often rely on heuristics or rules of thumb and are influenced by framing effects, where the presentation of information, such as the strategic use of positive tone, systematically alters their judgment of the firm's fundamental value, even when the underlying economic facts remain unchanged.

Furthermore, the market appears to discern and price these manager-specific stylistic differences. Davis et al. (2015) document a manager-specific effect on stock returns, implying that investors react to the individual's established communication style in addition to the firm's fundamentals. This suggests that if a manager is known for being normally optimistic due to their personal background, investors may discount their positive tone during a layoff announcement more heavily than they would for a typically reserved manager.

Finally, the style of presenting tone affects how information is interpreted. While some research suggests that managers employ complex language to obscure bad news, other studies indicate that the relationship between tone and readability is far more interconnected. Fisher et al. (2019) demonstrate that tone directly influences readability. They find that optimistic, positive, and realistic language are associated with increased readability, whereas highly active, certain, or communal language are associated with decreased readability. Therefore, managers may not always use complexity to conceal bad news, but may also use specific types of tone to present their news.

### 2.3.3 Influence of Unionization and RTW Status

An important moderating factor on investor reaction to layoffs is the labor environment, specifically the presence of unions and RTW laws. Investors view highly unionized firms as having strong unions that act as competitors to the shareholders for firm's profits. Therefore, investors may see non-union or less unionized firms as being more aligned with their interests (Pouder et al., 2004).

This perspective affects how the market reacts to layoffs. An extensive analysis conducted by Pouder et al. (2004) demonstrates a clear difference in the market response to layoffs. Non-union firms exhibit a statistically significant negative cumulative abnormal return

(hereinafter: CAR) of approximately -1.09% following a layoff announcement, while unionized firms demonstrate a positive, though non-statistically significant, return of approximately 0.14% (Pouder et al., 2004, p. 499).

To explain why unionized firms would react positively to layoffs, researchers proposed several theoretical explanations. Pouder et al. (2004) suggest that in cases of financial distress, investors will see the recuperative value of unions. Investors may see a layoff in a unionized firm as a sign that the union is working cooperatively with management to preserve the long-term viability of the firm and protect the remaining jobs. Abraham (2006) argues that investors will view layoffs of unionized workers as a positive indicator that the inefficiencies and costs associated with unions (such as union wage premiums or additional requirements) are decreasing. He also argues that because unionized firms are more likely to engage in layoffs, investors are less surprised by layoffs announced by unionized firms as compared to non-union firms, resulting in less extreme market reactions.

As established in Chapter 2.1.3, unionized firms in non-RTW states use high financial leverage as a strategic bargaining tool to counterbalance pressure from organized labor. Consequently, investors interpret the introduction of RTW laws as a structural shift that eliminates the need for this defensive leverage, granting firms enhanced financial flexibility to increase capital investments and dividend payments (Chava et al., 2020; Marciukaityte, 2015).

## 2.4 Hypotheses Development

Existing literature on RTW laws provides substantial evidence regarding how RTW laws affect union strength and labor market dynamics. For example, Bono-Lunn (2024) finds that RTW laws significantly increase free-riding behavior while reducing union membership and coverage. Furthermore, Arslan-Ayaydin et al. (2016) show that managerial tone management significantly affects investor perceptions, as managers typically use tone management due to their financial incentives, such as equity-based compensation. Additionally, Huang et al. (2014) show that tone management is used by executives to hide poor performance during important events such as earnings press releases and mergers.

Despite these findings, there exists little academic research about the direct interaction between labor institutions and corporate tone management. Moreover, the degree to which the institutional labor environment affects how managers communicate with stakeholders, and ultimately how the market reacts to that communication, remains largely unexplored. In particular, the relationship between managerial communications, specifically layoff memos, and how the market reacts to those communications is still in its early stages of research. Prior research indicates that the tone of corporate communications affects investor sentiment, particularly during periods of volatility. Therefore, the negative tone in announcements can act as a proxy for negative sentiment that decreases market prices (Tetlock, 2007). However, prior research has not examined the regulatory and institutional

context in which managerial communications occur, including how RTW laws affect how managers communicate with investors during downsizing events.

The purpose of this research is to fill this void by examining if there is a relationship between RTW laws and whether the tone employed by managers in layoff memos differs systematically and if these differences in tone lead to different short and long-term investor responses. As stated above, the following hypotheses were developed based upon the theoretical and empirical literature reviewed in the preceding chapters.

*Table 1: Summary of Hypotheses*

| Hypothesis | Description of Hypothesis | Description of Null Hypothesis |
|---|---|---|
| **H1** | Companies headquartered in RTW states are more likely to use a positive or neutral tone in layoff memos compared to companies in non-RTW states. | There is no significant difference in the tone of layoff memos between firms in RTW and non-RTW states. |
| **H2.1** | Companies in non-RTW states experience a more positive short-term investor reaction to major layoffs compared to those in RTW states. | There is no significant difference in short-term investor reaction to layoffs between companies in RTW and non-RTW states. |
| **H2.2** | Companies in non-RTW states experience a more positive long-term investor reaction to major layoffs compared to those in RTW states. | There is no significant difference in long-term investor reaction to layoffs between companies in RTW and non-RTW states. |
| **H3.1** | Tone inflation in layoff memos positively impacts short-term investor response. | Tone inflation in layoff memos has no significant effect on short-term investor response. |
| **H3.2** | Tone inflation in layoff memos positively impacts long-term investor response. | Tone inflation in layoff memos has no significant effect on long-term investor response. |

*Source: own work.*

### 2.4.1 Hypothesis 1: RTW Status and Managerial Tone

Prior research shows that the tone of earnings press releases is, on average, significantly lower (i.e., less optimistic) in firms that are not located in a RTW state compared to those that are. Arslan-Ayaydin et al. (2020) suggest that managers in highly unionized settings, such as non-RTW states, intentionally lower the tone of earnings disclosures to present a less optimistic view of firm performance. They reason that by presenting a less optimistic view of firm performance, managers are able to decrease union bargaining power and reduce rent-seeking demands. Conversely, in RTW states, unions are significantly weakened by the

free-rider problem. Consequently, managers in RTW states face less pressure to deliberately deflate tone for bargaining purposes and may instead focus on signaling value to investors.

We expect similar observations in terms of managerial tone exhibited in layoff memos. Specifically, managers in RTW states, whose bargaining power is relatively stronger compared to unions, are expected to use a more positive or neutral tone compared to managers in non-RTW states. Thus, the first hypothesis is formulated as follows:

Hypothesis 1 (H1): Companies headquartered in RTW states are more likely to use a positive or neutral tone in layoff memos compared to companies in non-RTW states.

Null Hypothesis (H0): There is no significant difference in the tone of layoff memos between firms in RTW and non-RTW states.

### 2.4.2 Hypothesis 2: RTW Status and Investor Reaction to Layoffs

As previous literature shows, investors generally react negatively to union gains, successful organization efforts, and strikes, as these are viewed as transferring wealth from shareholders to employees. Conversely, investors tend to react positively to union losses. Therefore, it is reasonable to assume that layoffs in unionized firms could be viewed as positive news by shareholders, as they may signal a reduction in union influence or costs (Pouder et al., 2004).

Empirical research provides evidence that layoff events in unionized firms are received positively, or at least less negatively, by the market compared to non-unionized companies. Abraham (2006) suggests that the market views layoffs of unionized employees as a signal that the inefficiencies associated with unions, such as wage premia, are being diminished. Pouder et al. (2004) also propose that investors may see the recuperative value of unions in distressed firms, where unions are viewed as partners working together to ensure the long-run viability of the firm.

Based on the evidence presented above, we establish a parallel between unionized environments and non-RTW states, where unions retain more bargaining power, and non-union environments and RTW states. As a result, layoffs in non-RTW states may be viewed by investors as a necessary adjustment to labor inefficiencies, resulting in a more positive reaction. Conversely, layoffs in RTW states may be viewed by investors as indicative of financial distress, in accordance with the Decreased Demand Hypothesis. Therefore, the second hypothesis is stated as follows:

Hypothesis 2.1 (H2.1): Companies in non-RTW states enjoy a more positive short-term investor reaction to major layoffs, compared to those headquartered in RTW states.

Null Hypothesis (H0): There is no significant difference in short-term investor reaction to layoffs between companies in RTW and non-RTW states.

To determine if this initial market reaction continues or diminishes over time, it is necessary to examine longer time horizons of investor returns. The evidence supporting this is provided by Abraham (2006), who expands his analysis of layoff announcements to include a 90-day event window. He finds that the difference in market reaction persists over time. Non-union firms experience significantly greater cumulative negative returns compared to union firms over the longer period. This supports the assumption that investors interpret layoffs of unionized workers not simply as a temporary sentiment booster, but as a permanent decline in the union's influence and costs, and thus the firm's overall cost structure, helping to sustain company growth over longer periods. Therefore, we apply the second hypothesis to longer time horizons of investor returns to determine if the effect continues or diminishes, using buy-and-hold abnormal return (hereinafter: BHAR) as a measure of the long-term impact on investors:

Hypothesis 2.2 (H2.2): Companies in non-RTW states enjoy a more positive long-term investor reaction to major layoffs, compared to those headquartered in RTW states.

Null Hypothesis (H0): There is no significant difference in long-term investor reaction to layoffs between companies in RTW and non-RTW states.

### 2.4.3 Hypothesis 3: Tone Management and Investor Response

As noted above, the majority of research linking managerial tone to investor reaction is based on easily available data sources, primarily earnings press releases, in which an optimistic tone is associated with an immediate positive AR. Additionally, Arslan-Ayaydin et al. (2016) provide evidence that while investors may discount tone when managers possess high equity incentives, the initial stock price reaction is still positively correlated with the degree of abnormal tone.

Druz et al. (2020) provide robust evidence for this market inefficiency, documenting that both analysts and investors systematically under-react to managerial tone changes. Because the initial market response fails to completely absorb the information signaled by the manager's tone, stock prices experience a predictable drift over the subsequent quarter as the market fully prices in this new information.

We want to strengthen these findings by using alternative data, such as layoff memos. We believe that even in the context of negative events like layoffs, an inflated or more positive tone can help mitigate negative market reactions by signaling managerial confidence or softening the bad news. Therefore, we developed the following final hypothesis:

Hypothesis 3.1 (H3.1): Tone inflation in layoff memos positively impacts short-term investor response.

Null Hypothesis (H0): Tone inflation in layoff memos has no significant effect on short-term investor response.

Similar to the second hypothesis, we divided our prediction into two parts, applying the second part to the longer time horizons of the market return, measured by BHAR. Some of the prior research suggests that investors may eventually correct for the strategic inflation of tone by reversing. For instance, Huang et al. (2014) find that firms employing abnormal positive tone ultimately experience negative abnormal stock returns in subsequent quarters as the market corrects its expectations. However, other prior research supports the opposite conclusion based on market under-reaction. For example, Demers and Vega (2011) find that unexpected managerial net optimism is associated with return continuation or post-earnings announcement drift rather than reversal. Similar to these findings, Price et al. (2012) find that positive tone variables remain significant over the longer horizon, suggesting that the market incorporates the information conveyed by positive call tone more slowly. Therefore, based on the idea that investors under-react to tone management practices, we conclude that the positive effect of tone persists over the longer time horizon:

Hypothesis 3.2 (H3.2): Tone inflation in layoff memos positively impacts long-term investor response.

Null Hypothesis (H0): Tone inflation in layoff memos has no significant effect on long-term investor response.

# 3 METHODOLOGY AND VARIABLE DESCRIPTION

In this chapter, we outline the quantitative framework and research design employed to test the impact of RTW laws on managerial tone and investor reaction. First, we present the baseline regression models, followed by a detailed description of the event study methodology used to estimate CAR and BHAR.

In accordance with the UL SEB Technical Guidelines, we use generative artificial intelligence tools to familiarize ourselves with the field, collect ideas, and improve the text throughout the theoretical and analytical chapters. Methodologically, we use generative artificial intelligence to help develop the Python programming code required to process the large volume of daily return data and calculate abnormal returns. All information, interpretations, and code outputs obtained in this way are verified against the relevant literature and manual testing to guarantee the accuracy and reliability of our findings.

## 3.1 Baseline Regression Models

To test Hypothesis 1, which examines how RTW laws influence the tone and sentiment in layoff memos, we employ a linear regression model. This approach is consistent with prior literature on disclosure tone, specifically the methodology used by Arslan-Ayaydin et al. (2020):

$$Tone = \alpha + \delta \times RTW + \beta \times Controls + \varepsilon_i \quad (1)$$

where:

- $\varepsilon_i$ represents the error term, for which significance is tested using Newey–West standard errors adjusted to account for heteroscedasticity and autocorrelation;
- $RTW$ is a binary independent variable that equals 1 if the company's headquarters are located in a state with RTW laws in place at the time of the announcement, and 0 if otherwise; and
- $\delta$ represents the impact of RTW laws on the manager's tone when addressing laid-off employees.

The control variables included in the model are presented in Table 2.

To address Hypotheses 2 and 3, which consider investor reaction to layoff events, we use a baseline regression model to determine the impact of RTW laws on market returns:

$$AR = \alpha + \tau \times RTW_i + \beta \times Controls + \varepsilon_i \quad (2)$$

In this model, the dependent variable AR represents the impact on the investor, measured as either CAR or BHAR, depending on the time horizon tested. For short-term term impacts, we use 3-, 5-, 30-, or 60-day CARs. For long-term impacts, we use BHAR. The coefficient $\tau$ captures the impact of the RTW law on the investor. A positive $\tau$ would indicate that RTW laws positively (or less negatively) influence ARs during large layoff events compared to non–RTW states.

To further explore these hypotheses across different time horizons, we introduce an interaction term. In this model, we test if market reaction to tone is conditional on the presence of RTW laws:

$$AR = \alpha + \xi \times Tone \times RTW + \tau \times Tone + \delta \times RTW + \beta \times Controls + \varepsilon_i \quad (3)$$

where:

- $\xi$ is the coefficient capturing the differential effect of managerial tone on investors for companies in RTW versus non-RTW states.

A positive coefficient suggests that the impact of tone on ARs is inflated in RTW environments. This interaction model structure aligns with prior methodologies that examine how external pressures, such as unionization or incentives, moderate the relationship between tone and market response.

*Table 2: Control Dependent and Independent Variables*

| **Dependent and Independent Variables** | **Variable Description** |
|---|---|
| Tone | The Tone variable captures the overall sentiment expressed in layoff memos, serving as either a dependent or independent variable depending on the specific analysis. To determine Tone, sentiment scores are calculated using four different dictionaries: General Inquirer (hereinafter: GI), Henry (hereinafter: HE), Loughran and McDonald (hereinafter: LM), and Quantitative Discourse Analysis Package (hereinafter: QDAP). Each dictionary provides a sentiment score based on the proportion of positive and negative words used in the memos. The final Tone measure is the average of these four standardized scores, providing a balanced overall sentiment indicator:<br>$$Tone_i = \frac{1}{4}\sum_{j=i}^{4} zSentiment_{ij} \quad (4)$$<br>where $zSentiment_{ij}$ represents the standardized sentiment score from dictionary $j$ for memo $i$. |
| FOG | The Gunning Fog Index (hereinafter: FOG) captures memo readability, combining sentence length with the proportion of complex words. It is calculated as:<br>$$FOG = 0.4 \times \left(\frac{words}{sentences} + 100 \times \frac{complex\ words}{words}\right) \quad (5)$$<br>A higher FOG score means the text is harder to read, i.e., lower readability, so we use it as a control for linguistic complexity in our regressions. |
| **Dependent Variable** | **Variable Description** |
| $CAR_{[t]}$ | Cumulative abnormal returns ($CAR_{[t]}$) capture how investors react over various short timeframes following layoff announcements. It sums the difference between the actual returns investors receive and the returns they were expected to receive. It is calculated as:<br>$$CAR_{i,t} = \sum_{t=1}^{T}(R_{it} - E[R_{it}]) \quad (6)$$<br>where $R_{it}$ is the actual return and $E[R_{it}]$ is the expected return, calculated according to models like the Capital Asset Pricing Model (hereinafter: CAPM) and the Fama-French model. |

To be continued

*Table 2: Control Dependent and Independent Variables (cont.)*

| **Dependent Variable** | **Variable Description** |
|---|---|
| $BHAR_{[t]}$ | Buy-and-hold abnormal return ($BHAR_{[t]}$) measures long-run market reactions. It measures how a share held continuously through the event window performs relative to a benchmark portfolio. It is calculated by compounding daily returns for both the stock and the benchmark and then taking their difference. It is calculated as:<br>$$BHAR_{i,T} = \prod_{t=1}^{T}(1 + R_{i,t}) - \prod_{t=1}^{T}(1 + R_{m,t}) \quad (7)$$<br>where $R_{i,t}$ is the firm's return and $R_{mt}$ is the market return. |
| PositivityGI and NegativityGI | These are proportions of positive and negative words in the layoff memo based on the GI dictionary. They are calculated as:<br>$$PositivityGI = \left(\frac{Number\ of\ Positive\ Words}{Total\ Words}\right) \quad (8)$$<br>$$NegativityGI = \left(\frac{Number\ of\ Negative\ Words}{Total\ Words}\right) \quad (9)$$ |
| **Independent Variable** | **Variable Description** |
| RTW | This dummy variable equals 1 if the company is headquartered in a U.S. state that enforces an RTW law at the time of the layoff announcement, and 0 if not. It is referred to as "RTWYES" in regression results. |
| Union Coverage | This variable reflects the state-level average union coverage rate and serves as a proxy for union presence in the firm's operating environment. It is used in robustness checks to account for institutional labor characteristics. It is referred to as "UniCov_State" in regression results. |
| **Control and Other Variables** | **Variable Description** |
| ROA | Return on Assets (hereinafter: ROA) is a measure of profitability, which indicates operational efficiency. It is calculated as:<br>$$ROA = \frac{Net\ Income}{Total\ Assets} \quad (10)$$ |
| Size | Firm size is measured as the natural logarithm of total assets. It is used both as a control variable to account for firm characteristics that influence disclosure behavior and market reaction. |

To be continued

*Table 2: Control Dependent and Independent Variables (cont.)*

| Control and Other Variables | Variable Description |
|---|---|
| % Laid Off | Percentage of employees laid-off relative to the firm's total workforce. It is calculated as: $$\%\ Laid\ Off = \frac{Number\ of\ Laid\ Off\ Employees}{Total\ Employees} \quad (11)$$ Control for the magnitude of the downsizing event. It is referred to as "perc_laid" in regression results |
| Size (total assets) | Included again to emphasize its function as a control variable. It is referred to as "log(size)" in regression results. |
| fyear | Fiscal year fixed effects account for time trends and macroeconomic shocks. |
| Industry | Industry fixed effects were included to control for sectoral variation in tone usage and return responses. |

*Source: own work based on Butet et al. (2025); Santos and Victorio (2013); Satapathy and Mohapatra (2021); and Université catholique de Louvain, Louvain School of Management (2023).*

## 3.2 Measurement of Investor Reaction

In this chapter, we analyze investor reaction to corporate layoff announcements by estimating abnormal stock returns around the event dates. We evaluate both short-term and long-term market reactions to understand how capital markets perceive and price the restructuring signal contained within layoff announcements. For this purpose, we calculate CARs and BHAR using four different methodologies: the Mean-Adjusted Return model, Market-Adjusted Return model, the Fama–French Three-Factor model, and long-run BHAR estimation. Using multiple methodologies to estimate ARs enhances the overall robustness of this study and provide a broad view of market efficiency related to the context of layoff announcements.

### 3.2.1 Data Collection and Sample Description

We gather daily stock return data for the period January 1, 2019 through December 31, 2023, from S&P Capital IQ Pro. We use daily stock prices to calculate daily returns for each firm using the standard return formula:

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad (12)$$

where:

- $P_{i,t}$ is the price on day t.

We exclude firms for which the return data is incomplete or for which the firm was delisted prior to the layoff date from the sample. We use a Python script to cross-reference the sample against our database of layoff memo dates. If a layoff announcement falls on a non-trading day, such as a weekend or holiday, the script automatically shifts the event date to the next available trading day.

We also download daily Fama–French three-factor data from the Kenneth R. French Data Library. Event dates are matched with the closest available trading day using forward fill logic to ensure accurate window matching. All models use an estimation window of 151 trading days prior to the event window (day -181 to day -31). This approach is consistent with standard event study methodology, where a pre-event estimation window is used to obtain normal performance parameters that are free of the influence of the event itself. Furthermore, this duration minimizes sampling error, ensuring that the model parameters are estimated precisely (MacKinlay, 1997).

### 3.2.2 Event Study Framework

The event study methodology is commonly used to evaluate the market reaction to corporate events, such as earnings announcements, mergers, or layoffs. The basic idea behind the methodology is to establish the normal return, which represents the return that is expected if the event did not occur, and to compare it to the actual observed return. This method was developed by Fama, Fisher, Jensen, and Roll in 1969 and has since become the standard for measuring the impact of events on the value of the firm. The methodology is based upon the assumption that the market behaves rationally, therefore, the effects of an event should be reflected immediately in security prices (MacKinlay, 1997).

While early event study research primarily relies on monthly data, later studies demonstrates that daily data can also be used without compromising the validity of standard parametric tests. Brown and Warner (1985) show that despite potential issues associated with daily returns, such as non-normality and cross-sectional dependence, these factors generally do not materially affect the reliability of parametric test results in event study analyses.

For our short-term analysis, we focus on CARs. The AR for firm *i* at time *t* is defined as the difference between the actual return and the expected normal return. To estimate the normal return parameters without them being influenced by the event itself, we use an estimation window of 151 trading days, spanning from day -181 to day -31 relative to the event date.

For our long-term analysis, we employ the BHAR metric. BHAR is preferred for long-horizon analyses because summing daily ARs may result in a variety of biases, such as

measurement bias, that could lead to misinterpretations (Barber & Lyon, 1997). BHAR is calculated by compounding the daily returns of the firm and subtracting the compounded daily returns of a benchmark portfolio or similar firm over the same period, which provides a more accurate measure of the long-run wealth effect for an investor (Satapathy & Mohapatra, 2021).

We compute CARs over several event windows to capture the total AR surrounding the layoff announcement date 3. For our short-term analysis, we use windows of [-1, +1] and [-2, +2] to account for potential information leakage prior to the event and minor delays in immediate market processing (Eshghi & Astvansh, 2023). Conversely, we define our extended horizons as [0, +30], [0, +60], and [0, +252]. Because these longer periods aim to track how complex information diffuses slowly into asset prices over time, they are less sensitive to immediate pre-event noise (Arslan-Ayaydin et al., 2016). The windows used in this study are summarized in Table 3.

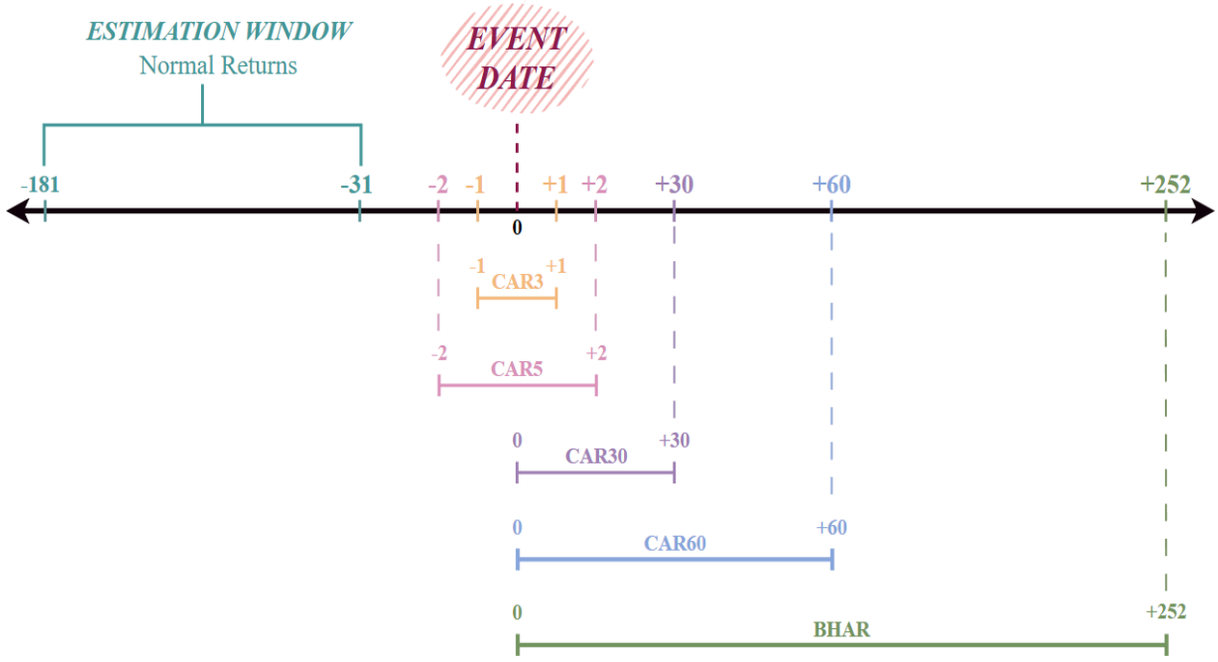
*Table 3: Event Windows*

| Window | Time Frame in Days | Description |
|---|---|---|
| CAR3 | [-1, +1] | One day before to one day after the event. |
| CAR5 | [-2, +2] | Two days before to two days after. |
| CAR30 | [0, +30] | One month post-event. |
| CAR60 | [0, +60] | Two months post-event. |
| BHAR | [0, +252] | One year post-event. |

*Source: own work.*

Figure 1 illustrates the event study timeline used in this analysis, mapping the pre-event estimation window for normal return (spanning from day -181 to day -31) and the subsequent short-term CAR and long-term BHAR event windows.

*Figure 1: The Event Study Timeline*




*Source: own work.*

### 3.2.3 Models Used for Normal Return Estimation

This chapter outlines the specific mathematical models used to assess investor reactions across both short-term and long-term horizons. Short-term market responses were captured using three established approaches from the event study literature:

1. the Market Adjusted Returns (based on CAPM),
2. the Mean Adjusted Returns, and
3. the Fama-French Three-Factor Model.

Additionally, to capture the extended wealth effects of layoff announcements over a longer period, we use the BHAR methodology.

#### *3.2.3.1 Market Adjusted Returns*

To analyze the relationship between layoff announcements and ARs, we use the Market Adjusted Return model. Following the classification by Santos and Victorio (2013), this approach calculates the normal return based on the CAPM parameters alpha and beta. In addition to accounting for the changes in the market, this model allows us to isolate the part of the return that is unique to the event, therefore reducing the variance of the AR by eliminating the part caused by the fluctuations in the market return (MacKinlay, 1997).

The return for firm *i* on day *t* is defined as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (13)$$

where:

- $R_{it}$ is the return for firm *i* on day *t*;
- $\alpha_i$ is the intercept term for firm *i*;
- $\beta_i$ is the systematic risk coefficient (beta) for firm *i*;
- $R_{mt}$ is the return of the market index (S&P 500) on day *t*;
- $\varepsilon_{it}$ is the error term for firm *i* on day *t*, capturing the firm-specific residual return not explained by the market.

We calculate the ARs by subtracting the expected returns from the actual returns:

$$AR_{it} = R_{it} - E(R_{it}) \quad (14)$$

where:

- $R_{it}$ is the actual return of firm *i* at time *t*; and
- $E(R_{it})$ is the expected (normal) return at time *t*, calculated using the estimated firm-specific parameters.

Finally, we compute the CARs by summing these ARs across the event window, as defined in formula (6) in Chapter 3.1.

To estimate the parameters $\alpha_i$ and $\beta_i$, we use Ordinary Least Squares (hereinafter: OLS) regression on the daily returns within the 151-day estimation window to obtain the firm-specific coefficients. To implement this model, we use the Python programming language to process the daily return data for each firm and for the S&P 500 Index.

#### *3.2.3.2 Mean Adjusted Returns*

As a robustness check, we also implement the Mean Adjusted Return model. This approach uses the historical average return of each firm over the estimation window to estimate the expected return (Santos and Victorio, 2013). Unlike the Market Adjusted model, it does not account for the market risk (beta). Instead, it relies on the assumption that a firm's historical performance provides a reasonable basis for determining its normal returns. This method is particularly useful when market sensitivity parameters are unstable (Brown and Warner, 1985).

We calculate the expected return for each firm as the simple arithmetic average of the daily returns over the estimation window:

$$E(R_{it}) = \frac{1}{N}\sum_{t=1}^{N} R_{it} \quad (15)$$

where:

- $N$ represents the number of trading days in the estimation window (151 days).

We then calculate the AR for day $t$ in the event window as:

$$AR_{it}^{Mean} = R_{it} - E(R_{it}) \quad (16)$$

where:

- $R_{it}$ is the actual return of firm $i$ at time $t$; and
- $E(R_{it})$ is the historical average return calculated in formula (16).

Finally, we calculate CARs by summing these ARs across the specific event window, as defined in formula (6) in Chapter 3.1.

#### *3.2.3.3 Fama-French Three-Factor Model*

To strengthen the reliability of the estimated expected return and address potential issues related to single-factor models such as the CAPM, we employ the Fama-French Three-Factor model. This model improves the CAPM by incorporating two additional systematic risk factors, which are firm size (Small Minus Big; hereinafter: SMB) and book-to-market equity (High Minus Low; hereinafter: HML). These factors capture well-documented cross-sectional variations in stock returns that cannot be explained by market movements alone (Fama & French, 1996).

The regression model used to estimate normal returns is defined as:

$$R_{it} - R_{ft} = \alpha_i + b_i\left(R_{mt} - R_{ft}\right) + s_i SMB_t + h_i HML_t + \varepsilon_{it} \quad (17)$$

where:

- $R_{it} - R_{ft}$ is the excess return of stock $i$ on day $t$;
- $R_{mt} - R_{ft}$ is the excess return on the market portfolio;
- $SMB_t$ is the difference between the return on a portfolio of small stocks and the return on a portfolio of large stocks (size factor);

- $HML_t$ the difference between the return on a portfolio of high-book-to-market stocks and the return on a portfolio of low-book-to-market stocks (value factor);
- $b_i, s_i, h_i$ are the factor sensitivities (slopes); and
- $\varepsilon_{it}$ is the regression error term.

We calculate the ARs by subtracting the expected return predicted by the Fama-French model from the actual return, as defined in formula (14) in Chapter 3.2.3.1, where $E(R_{it})$ represents the expected return calculated using the estimated coefficients and the realized risk factors during the event window.

Finally, we calculate the CAR using the standard formula over the event window, as defined in formula (6) in Chapter 3.1.

#### *3.2.3.4 Buy-and-Hold Abnormal Return Model*

Although CARs are a good measure of short-term reactions, the BHAR model is preferred for measuring long-term effects. As Barber and Lyon (1997) argue, BHARs are better suited for long-horizon studies because they directly measure an investor's compound returns. CARs are prone to measurement bias over long intervals because summing daily ARs implies that a portfolio is rebalanced to equal weightings every period, which does not accurately represent the typical buy and hold investment strategy common over a longer window.

We calculate BHAR as the difference between the cumulative compounded returns of the firm and the cumulative compounded returns of the benchmark (S&P 500) over the holding period *T* (252 days), as defined in (7) in Chapter 3.1.

The AR was calculated as the difference between the compounded firm return and the compounded market return. This provided a measure of the excess wealth generated or lost by shareholders who held the stock for one year after the layoff announcement.

### 3.2.4 Methodological Integration and Rationale

To obtain reliable results, this study incorporates both short-term and long-term AR models. CAR and BHAR are used to measure investor reactions over different horizons. CARs are especially well suited for measuring immediate stock market reactions to corporate events, especially the speed of information assimilation and the initial sentiment of investors. However, it may overlook delayed market adjustments to more complex disclosures, particularly those involving subtle tone manipulation or shifts in institutional labor dynamics. Investors may initially overreact to the positive tone of an earnings

announcement, however, this response may reverse over longer horizons as firm fundamentals are gradually incorporated into prices (Huang et al., 2014). On the other hand, the BHAR measures the continuous scrutiny of investors in terms of company's stock price over a longer period, and the delayed incorporation of complex information into a company's stock price. Because BHAR takes into consideration the compounding nature of an investor's returns, it is preferred for long horizon studies. Calculating BHAR eliminates the measurement bias inherent in CARs over longer periods (Barber & Lyon, 1997).

The Mean-Adjusted Return model, the Market-Adjusted model, and the Fama–French Three-Factor model possess unique assumptions and strengths. The Mean-Adjusted model is relatively easy to apply and does not require the use of market data or factor estimation. While market-based models generally outperform the Mean-Adjusted model in terms of power (Brown and Warner, 1985), we include it as a robustness check to ensure our results are not driven solely by the choice of a specific model. The Market-Adjusted model, which is based on the CAPM, isolates firm-specific effects from market-wide trends, thereby reducing the variance of the AR caused by changes in the market's return (MacKinlay, 1997).

However, single-factor models may not account for other systematic risk factors that can affect returns. To address this issue, the Fama-French Three-Factor model serves as the fundamental model for CAR estimation in this study. Past research has demonstrated that the Fama-French model explains many of the average return anomalies that the single-factor models cannot explain (Fama & French, 1996). Given the diverse sample of companies in our study, the Fama-French model is more likely to provide an accurate benchmark. Therefore, while all three models are applied, the Fama-French model is the primary model used to test hypotheses due to its superior ability to explain variations in stock returns.

### 3.2.5 Comparative Analysis of Different Models

To evaluate the robustness of our return estimations, we calculate CARs using the three distinct methodologies previously defined. This comparative analysis evaluates the consistency of CAR estimates across different models and assesses whether more sophisticated models provide any additional insight into capturing abnormal market reactions.

To assess model consistency, we compute correlation coefficients for each pair of models across the four event windows (CAR3, CAR5, CAR30, and CAR60). As shown in Table 4, the results show very strong correlations in the shortest window (CAR3), with a correlation of 0.987 between the Market-Adjusted and Mean-Adjusted models. This high correlation indicates that over very short event windows, the choice of the expected return model does not significantly change the final abnormal return results. This observation is consistent with Brown and Warner (1985), who find that in short horizon event studies, simpler models perform comparably to more complex alternatives because variance is primarily firm-

specific. Correlations involving the Fama–French model are also high (0.932 with Market-Adjusted and 0.893 with Mean-Adjusted), though slightly lower because they reflect the additional risk factor adjustments.

As the event windows expand, the relationships between the models weaken. The correlation between the Fama-French model and the Mean-Adjusted model in CAR5 is approximately 0.871. In CAR30 and CAR60, the correlations are substantially weaker. For example, in CAR60, the correlation between Fama–French and the Market-Adjusted model decreases to 0.768. The decline in correlations suggests that over longer horizons, differences in expected return assumptions and benchmark construction become more important (Barber and Lyon, 1997).

*Table 4: Correlation Matrix*

| Window | Fama–French vs Market-Adjusted | Fama–French vs Mean-Adjusted | Market-Adjusted vs Mean-Adjusted |
|---|---|---|---|
| 3-day | 0.931976585 | 0.892655669 | 0.986915369 |
| 5-day | 0.986915369 | 0.871155696 | 0.982789534 |
| 30-day | 0.768233274 | 0.787408234 | 0.90770562 |
| 60-day | 0.767969611 | 0.800095897 | 0.866567043 |

*Source: own work.*

In addition to correlation analysis, we calculate the standard descriptive statistics. For shorter event windows, both the Mean-Adjusted and Market-Adjusted models show positive average ARs (0.010 and 0.008 for CAR3, respectively). However, the Fama-French model estimates a slightly negative mean return for CAR3 (-0.0003) and a significantly smaller positive return for CAR5 (0.004) compared to the other models. This pattern suggests that, once size and value risk factors are taken into account, a substantial part of the positive abnormal reaction identified by simpler models reflects compensation for systematic risk rather than a genuine market response to the layoff event.

Across the longer windows (CAR30 and CAR60), the average AR becomes negative for all models. Particularly, the Mean-Adjusted model generates the most negative result (-0.156) in CAR60, while the Fama-French model generates the least negative result (-0.103). These results suggest that simpler models may overstate the negative impact of layoffs over longer horizons by failing to account for the risk characteristics of the sample firms (Fama & French, 1996).

The variability of the CAR estimates increases noticeably as the event window becomes longer. This effect is most noticeable for the Mean-Adjusted model, where the standard deviation reaches 0.462 in CAR60. By contrast, the Fama–French model consistently yields lower standard deviations across almost all event windows. This pattern suggests that the

multifactor specification captures a meaningful share of the systematic variation in returns, reducing residual volatility and producing estimates that better reflect firm-specific responses.

The descriptive statistics further reveal a pronounced difference between CAR and BHAR estimates. The mean BHAR of −0.410 is substantially more negative than the corresponding CAR60 values, which range from −0.103 to −0.156. This difference supports the measurement bias mentioned by Barber and Lyon (1997), confirming that CARs tend to overstate long-run performance relative to BHARs.

The standard descriptive statistics are presented in Table 5.

*Table 5: Standard Descriptive Statistics*

| Returns | Mean | Standard Deviation | Minimum | 0.25 | 0.5 | 0.75 | Maximum |
|---|---|---|---|---|---|---|---|
| CAR3MKT | 0.007764 | 0.115192 | -0.38819 | -0.0455 | 0.006698 | 0.050349 | 0.483153 |
| CAR5MKT | 0.013671 | 0.144975 | -0.50575 | -0.05559 | 0.014061 | 0.080601 | 0.581579 |
| CAR30MKT | -0.04118 | 0.228162 | -1.13244 | -0.14416 | -0.00994 | 0.091397 | 0.61539 |
| CAR60MKT | -0.11999 | 0.358041 | -2.1033 | -0.29091 | -0.06874 | 0.118447 | 0.67437 |
| CAR3MEAN | 0.010152 | 0.125205 | -0.38283 | -0.04126 | 0.002188 | 0.060685 | 0.521489 |
| CAR5MEAN | 0.016312 | 0.156197 | -0.48324 | -0.0553 | 0.011285 | 0.082543 | 0.583964 |
| CAR30MEAN | -0.05518 | 0.26846 | -1.02588 | -0.18761 | -0.03857 | 0.096473 | 0.52288 |
| CAR60MEAN | -0.15563 | 0.461842 | -2.22924 | -0.32868 | -0.09917 | 0.143037 | 1.020578 |
| CAR3FF | -0.00031 | 0.102968 | -0.43758 | -0.03753 | -0.00393 | 0.043336 | 0.413068 |
| CAR5FF | 0.003613 | 0.12788 | -0.46386 | -0.0519 | 0.004153 | 0.057901 | 0.488537 |
| CAR30FF | -0.0538 | 0.224548 | -0.88623 | -0.16906 | -0.03216 | 0.06789 | 0.70325 |
| CAR60FF | -0.10302 | 0.364177 | -2.2684 | -0.25857 | -0.09937 | 0.054352 | 1.279116 |
| BHAR | -0.41036 | 0.322034 | -0.8977 | -0.66372 | -0.49771 | -0.21327 | 0.546746 |

*Source: own work.*

Based on this comparative analysis, the Fama-French Three-Factor model was again selected as the primary method for estimating ARs in this study. While the Mean-Adjusted and Market-Adjusted models produce results that are highly correlated with the Fama-French estimates in short-term windows, their consistency relative to the multifactor model decreases over longer time horizons. Furthermore, the Fama-French model consistently yields lower standard deviations across most windows, implying greater accuracy and reduced residual volatility in AR estimations. Ultimately, by controlling for firm-specific exposures to size and value factors, the Fama-French model provides a more robust framework for identifying actual ARs.

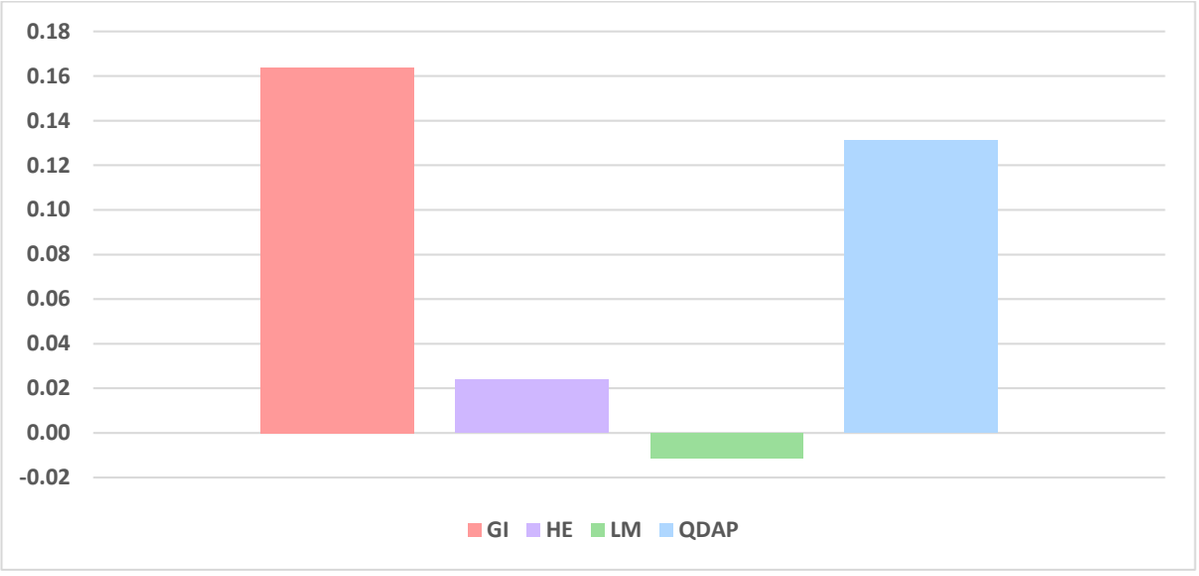
### 3.3 Text-Based Variables and Tone Measurement

For the purposes of this study, we collect 160 publicly available layoff memos posted from March 27, 2020 through November 17, 2023, to assess their tone. The gathered memos are processed to remove punctuation and words that cannot be determined as positive or negative, such as definite articles, to reduce noise in the textual analysis.

We employ robustly established dictionaries within the R Studio environment to determine the sentiment of the memos, specifically measuring the frequency of positive and negative words. We use four different dictionaries, the GI, HE, QDAP and LM dictionaries. The selection of appropriate dictionaries is very important because general dictionaries, such as the GI, can incorrectly classify common financial terms, such as tax, cost, liability, or risk, as negative, although these terms are typically neutral when describing business practices. To mitigate this bias, we incorporate both the finance specific HE and LM dictionaries. This methodological choice is also supported by Price et al. (2012), who conducted a direct comparison between general word lists and finance specific dictionaries. They found that the context-specific dictionary was significantly more powerful in detecting value-relevant tone and predicting post-event abnormal returns, confirming that general dictionaries frequently fail to capture the specific sentiment of financial narratives. Additionally, the LM dictionary uses a weighting scheme based on inverse document frequency, which improves the measurement of tone by assigning higher weights to informative words that appear less frequently across the memos (Luo & Zhou, 2020).

This distinction between dictionary types is also supported by our data, as illustrated in Figure 2.

*Figure 2: Comparison of Mean Sentiment Scores Across Dictionaries*




*Source: own work.*

As shown in Figure 2, there is a substantial difference in sentiment scores between the general and finance-specific dictionaries. The GI and QDAP show positive mean sentiment scores of 0.1638 and 0.1312, respectively. In contrast, the finance-specific dictionaries yield significantly lower results. The HE dictionary produces a score close to 0.0240, while the LM dictionary reflects a negative sentiment of -0.0116. This discrepancy indicates that general dictionaries likely categorize common polite or non-financial words as positive, whereas finance-specific dictionaries exclude these terms, providing a more accurate reflection of the negative financial implications of layoff announcements. Consequently, we employ a composite Tone variable to mitigate this measurement bias.

We calculate the net sentiment for each memo as the difference between the number of positive and negative words, scaled by the total word count. To reduce measurement error associated with the use of any single dictionary, the Tone was calculated as the average of the standardized sentiment scores from these dictionaries.

In addition to assessing Tone, we collect additional variables related to the text itself to account for the potential complexity of each memo. Specifically, we calculate the FOG, which is a readability index that estimates the number of years of formal education needed to understand the text on the first reading. A higher FOG score indicates lower readability or greater complexity, which managers may strategically use to obscure negative information during layoffs (Butet et al., 2025). The FOG is calculated using the formula defined in (5) in Chapter 3.1.

When calculating this index, we gave particular attention to linguistic nuances to ensure an accurate assessment of textual complexity. Complex words are defined as words containing three or more syllables. However, to avoid overstating complexity, proper nouns, commonly

used jargon, and compound words formed from simple terms are excluded from this category. Sentence length is also included as a key indicator of syntactic complexity, as longer sentences typically involve more complex structures. In addition, difficult words are identified based on syllable count as a proxy for complexity (Butet et al., 2025). This distinction is especially important in the context of corporate layoff memos, which may contain long lists or compound explanations that would otherwise artificially inflate the readability score.

While we also calculated other readability indices, such as Flesch Kincaid, SMOG, and the Dale Chall readability index, to evaluate consistency, the FOG is selected for the final analysis, because the index effectively translates linguistic complexity into a highly tangible metric (Butet et al., 2025).

### 3.4 Control Variables

We include control variables in the regression analysis to isolate the effects of the key explanatory variables, i.e. RTW status and managerial tone, on investor reaction, while mitigating the influence of potential confounding factors. The choice of controls is based on both the theoretical framework underlying the study and existing empirical research in the area of corporate disclosures (Arslan-Ayaydin et al., 2020).

We control for firm size, measured as the natural logarithm of total assets, to account for differences in resource availability and public visibility. Larger firms generally receive more attention from the media and analysts, which can potentially impact how corporate information is disclosed and how investors react to it (Arslan-Ayaydin et al., 2020). However, empirical findings on firm size are often contradictory. According to Eshghi and Astvansh (2023), larger firms are caught between the media reputation hypothesis, where which suggests larger firms face more punitive scrutiny, and resource-based view (or agency theory), where greater resource availability provides a buffer against financial distress. Consequently, they find no significant relationship between firm size and the magnitude of investor reaction, making it essential to control for this variable to isolate the specific effects of tone and RTW status.

We include ROA as a measure of profitability since a firm's financial situation shapes investor expectations, as well as the narrative justifications for layoffs. For example, if a firm lays off workers due to financial difficulties, it would likely be viewed differently than if a firm was laying off workers who were being redundant (Arslan-Ayaydin et al., 2020).

We also include the percentage of employees laid off to capture the magnitude of the restructuring event. Prior research shows that the size of the workforce reduction can serve as a salient market signal. Moderate layoffs could be viewed positively by investors as a cost-cutting measure to improve efficiency, but a large-scale cut could be interpreted

negatively as an indication of significant internal issues within the company (Datta et al., 2010).

Finally, we include RTW status in the study as a control variable to represent the institutional labor market in which a company operates. RTW laws are often associated with less powerful unions and lower expected labor costs. There is also evidence that the adoption of RTW laws leads to positive stock price reactions reflecting the anticipated benefits to shareholders (Abraham & Voos, 2000).

We include readability and sentiment as two control variables in the analysis to take into account the language characteristics of the layoff memos. We represent readability using the FOG index, as defined in Chapter 3.1, to control for the strategic use of complexity (Butet et al., 2025). Additionally, we account for sentiment, as research has shown that negative sentiment expressed in corporate communications can negatively impact stock prices and lead to increased trading activity (Tetlock, 2007).

Lastly, we use industry fixed effects, such as labor intensity and competition. We use industry fixed effects to account for unobservable differences across sectors, such as varying labor intensity and competition, that can affect how investors react to corporate disclosures. Furthermore, we employ year fixed effects to control for macroeconomic shocks and time-specific influences that impact the market regardless of a firm's individual characteristics (Arslan-Ayaydin et al., 2020).

All of the control variables are summarized in Table 2.

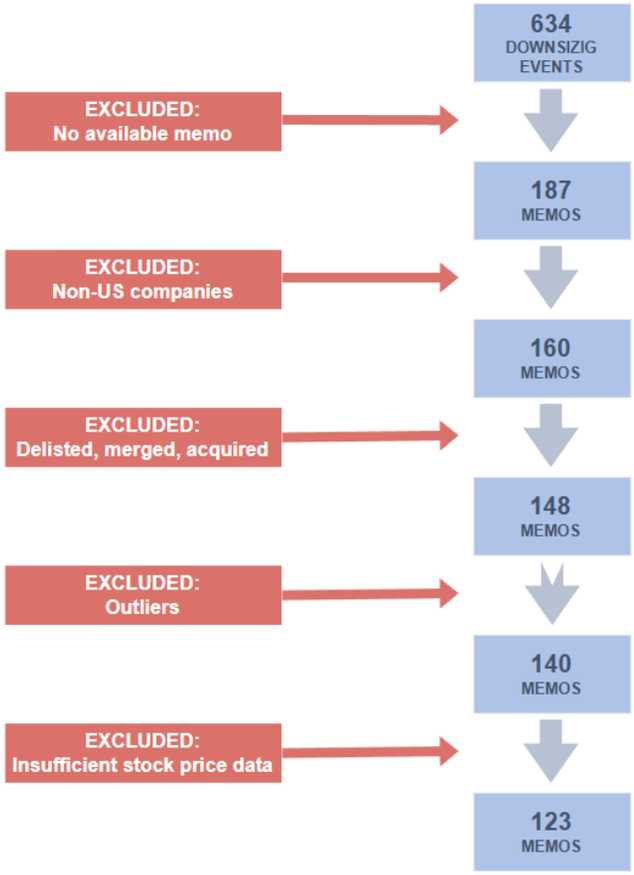
## 3.5 Sample Selection

Our analysis focuses on layoff memos handed out to employees in major downsizing events of U.S. and non-U.S. companies dating from March 27, 2020, to November 17, 2023. We select this period due to high volume of layoff activity caused by the COVID-19 pandemic, which provides valuable insight into corporate communication strategies during crisis scenarios. Moreover, the global pandemic was at the time a common catalyst for downsizing across affected companies, contributing to more comparable sentiment analysis.

To consider relevant texts as layoff memos, they must be a direct or public message to the employees from the manager strictly addressing the matter of personnel being let go. Therefore, we exclude quotes from general conferences, post-layoff interviews, and such. The initial sample size of our data is established through manual screening of news reports from various media outlets on sizable layoff events affecting public companies. This initial stage of data collection was conducted as part of the course LLSMS2108 Current Issues in Finance, taught by Professor James Thewissen at Université catholique de Louvain, Louvain School of Management. We acknowledge and thank him for granting permission to use this collected dataset of layoff memos to extend our research in this thesis.

Figure 3 illustrates our step-by-step sample filtration process. Starting from an initial pool of 634 potential downsizing events, we apply several exclusion criteria to arrive at our final sample.

*Figure 3: Sample Selection Process*




*Source: own work.*

Out of 634 cases of reported downsizing events, we obtain 187 corresponding memos. We find most of these in the form of leaked emails or documents, while sometimes companies are very transparent and release the news in the form of public documents or company online posts, directly addressing the affected employees in the eyes of the public. These can, although with difficulty, be retrieved from various sources such as the Edgar website of the Securities and Exchange Commission, companies' websites, news articles, social media platforms, etc. There is generally a downside to relying solely on publicly available or leaked data, as the sample may be biased toward larger firms with greater media exposure or companies operating in more transparent industries. However, in this study, such bias aligns with our basic research interest: our hypothesis suggests that managers strategically use tone to communicate company performance in either positive (with intent to increase stock price performance) or negative (with intent to reduce the union's bargaining power) ways that influence investor decisions. Since companies engaging in tone management are more likely

to publicly release or leak such data, the characteristics of our sample are consistent with the focus of our analysis.

Because we are dealing with the impacts of U.S. state-level RTW law, we subtract 27 non-U.S. companies, arriving at a total number of 160 observations in our sample selection. Certain companies do not meet this criterion due to delisting, mergers, or acquisitions, which reduces the final sample size to 148. Despite not influencing the analysis itself, there are cases of multiple layoff memos attributed to the same company, resulting in a discrepancy between the number of memos and the number of companies.

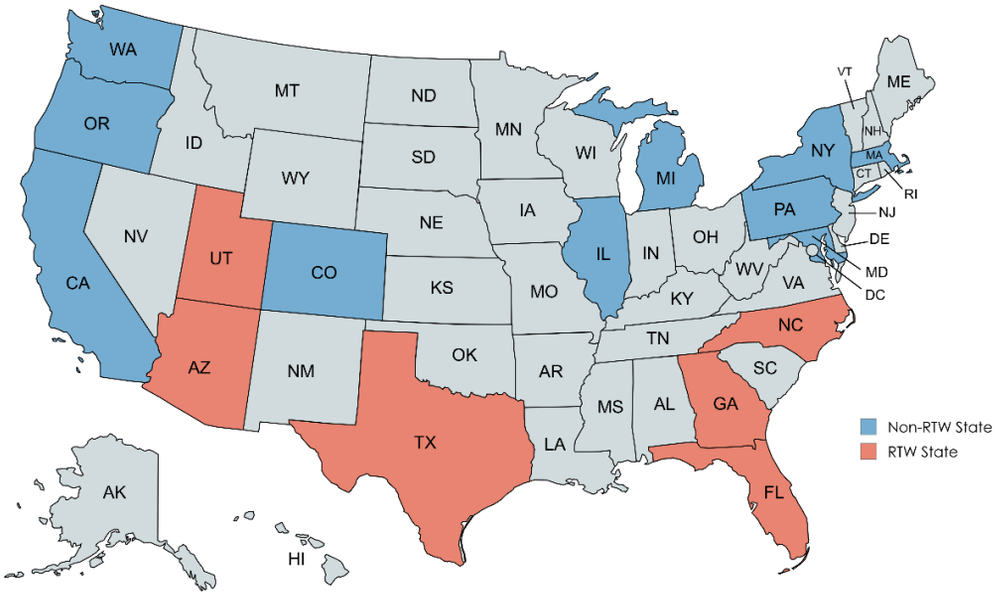
It is worth mentioning that the data gathering process is manual and extensive. With different data sources and a vast variety of data itself, from textual, categorical, to numeric, multiple human and systematic errors can occur. Therefore, in efforts to improve the robustness of the analysis, extreme outliers are detected and removed from the dataset. First, we look at the observations where size variables (total assets) are negative and exclude 4 cases of insolvency from the dataset, leaving 144 observations. Then, we identify multivariate outliers using the Mahalanobis distance, calculated on the basis of three independent variables: ROA, firm size (total assets), and the percentage of employees laid off. Categorical variables such as financial year, industry, and RTW status are excluded from the Mahalanobis distance calculation, since these serve as controls for fixed effects in regression models. 3 observations with a Mahalanobis distance greater than 20 are excluded, leaving 141 observations. The variable Tone is excluded from this calculation as it represents an independent variable in some of the regression models. Due to potential noise in the textual data of layoff memos and the manual approach to obtaining such data, the Tone variable is examined separately for extreme outliers using a z-score approach. In line with previous conservative cutoffs with the Mahalanobis distance method, 1 observation with tone values exceeding ±3.5 standard deviation from the mean is removed. With all procedures performed, we arrive at a total of 140 observations, in which the reduction of sample size is mostly attributed to the elimination of observations associated with companies that became insolvent during the studied period.

The calculation of abnormal returns imposes strict data constraints, necessitating a further reduction of the 140 observation dataset. Specifically, we exclude 17 observations that lack the continuous 252 trading days of stock price data required both before and after the downsizing event. A comprehensive list detailing all companies included in the final sample, categorized by state, industry, number of layoff events, and the total magnitude of laid-off employees, is provided in Appendix 1.

Our final database of layoff memos after processing is attributed to 103 companies, having their headquarters spread out between 16 different U.S. states. Six of these states (Arizona, Florida, Georgia, North Carolina, Texas, Utah) have enacted RTW law, with around 10% of all layoff memos being related to companies with headquarters in the latter states. To visually

illustrate the institutional environments represented in our data, Figure 4 maps the U.S. states included in our sample, categorized by their RTW status.

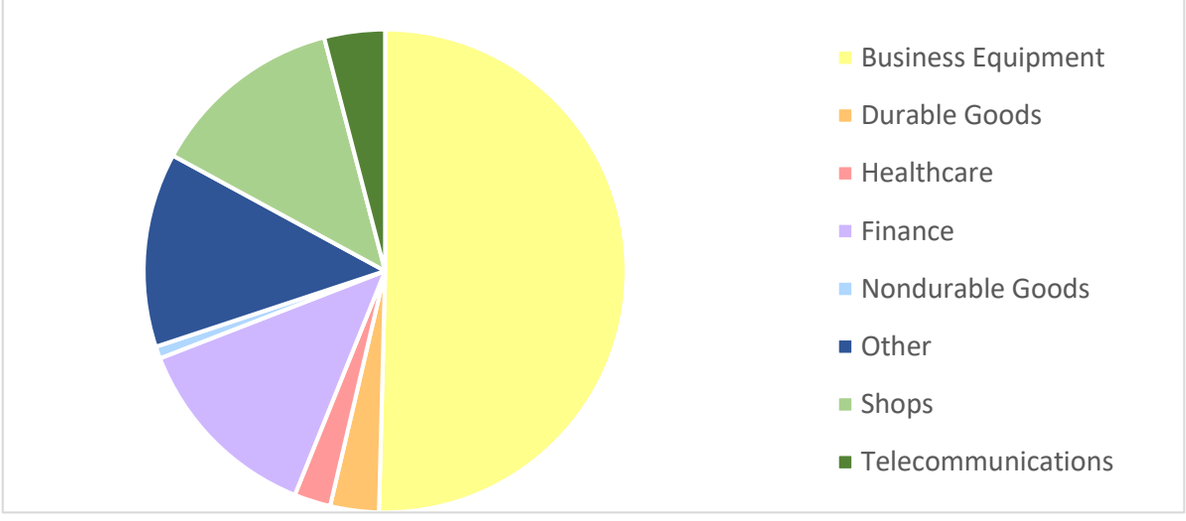
*Figure 4: Geographic Presence of Sample Firms in RTW and Non-RTW States*




*Source: own work.*

We assign the industry fields to the companies based on the Fama-French 12 industries classification. As illustrated in Figure 5, around one half of companies in the database operate in business equipment, while the other half of companies operate in 7 different industry categories (consumer durable goods, consumer nondurable goods, telecommunications, shops, health, business equipment, finance, others).

*Figure 5: Industry Distribution of the Final Sample*




*Source: own work.*

# 4 RESULTS

Our analysis focuses on layoff memos distributed to employees during major downsizing events at both U.S. and non-U.S. companies between March 27, 2020, and November 17, 2023. We select this period due to the heightened layoff activity triggered by the COVID-19 pandemic, which provides a unique window into corporate communication strategies during systemic crises. Furthermore, the global pandemic serves as a common exogenous shock, ensuring that the baseline sentiment analysis is comparable across affected firms.

## 4.1 Descriptive Analysis

In this chapter, we provide a detailed statistical overview of the dataset used for empirical analysis. The data consists of 123 layoff announcements issued by publicly traded U.S. companies. Data collected includes firm level financial information, word count and tone metrics from press releases, and market-based measures of investor reaction. The primary purpose of this descriptive analysis is to highlight the variation within the independent variables and provide a solid foundation for the regression models discussed in subsequent chapters. Table 6 provides a detailed statistical overview of these variables.

Firm size varies significantly within the dataset, exhibiting a strongly skewed distribution. While the average company in the sample employs approximately 91,888 people, the median firm employs only 4,172. This substantial difference is driven by a small number of large-scale corporations. The largest of these companies employs over 1.5 million people, resulting in a large standard deviation of 333,206.

In addition to the size of the layoffs, financial performance indicators show that companies experiencing layoffs are facing significant distress prior to the event. On average, the ROA is -6.02% with a median of -4.28%. These metrics indicate that the layoffs in this study are primarily reactive measures to financial distress, rather than proactive restructuring efforts undertaken by financially healthy firms.

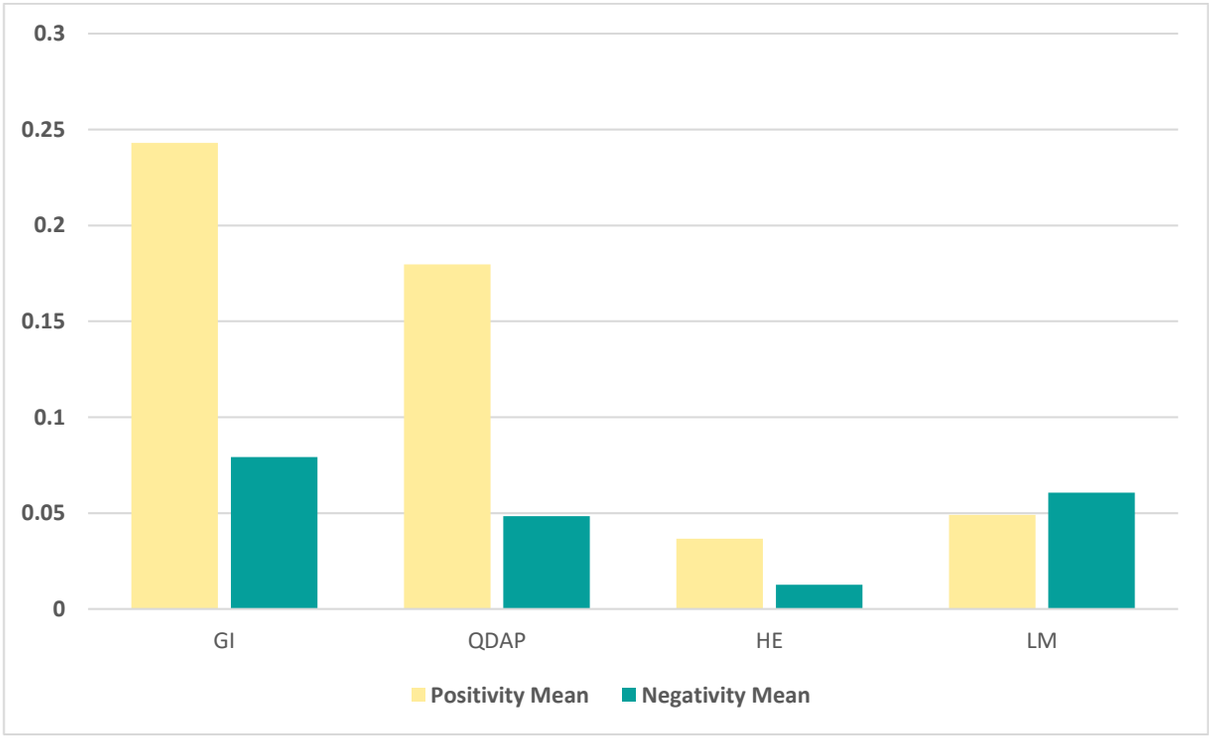
Similar to overall firm size, the scale of the layoffs is also highly skewed. The average number of employees laid off per announcement is 1,084 employees, whereas the median is significantly lower at 318. In relative terms, companies reduced their workforce by an average of 11.01%, with a median of 8.77%. This indicates that while the majority of announcements represent moderate scale restructuring, the dataset also captures several cases of massive workforce reductions.

The tone of the layoff announcements offers important insight into the ways managers communicate with stakeholders during times of crisis. While the underlying content of a layoff announcement is inherently negative, the textual analysis reveals an interesting paradox. On average, the overall sentiment (Tone) of the layoff announcements is nominally negative (−0.007), but the median tone is positive (0.052). This optimistic skew is further

supported by individual dictionary metrics. The GI sentiment score is positive on average (0.164), and when examining the components of the GI score, we see that the proportion of positive words (0.243) highly exceeds the proportion of negative words (0.079). Similar results are found for the HE and QDAP dictionaries. The only exception is the LM dictionary, which is specifically designed for use in financial settings and shows a slightly negative mean (-0.0116).

The fact that the tone of layoff announcements is generally positive, despite the inherently negative reality of workforce reduction, aligns with the theory of impression management. Impression management occurs when managers strategically exaggerate the tone of a disclosure to inflate a stock price, or to downplay the severity of a negative event to minimize the potential for adverse reactions from stakeholders. However, the clear difference between the general dictionaries (GI, QDAP) and the finance-specific (LM) dictionary highlights the importance of using context-aware language processing, since general dictionaries may misclassify neutral financial terms as negative (Luo & Zhou, 2020).

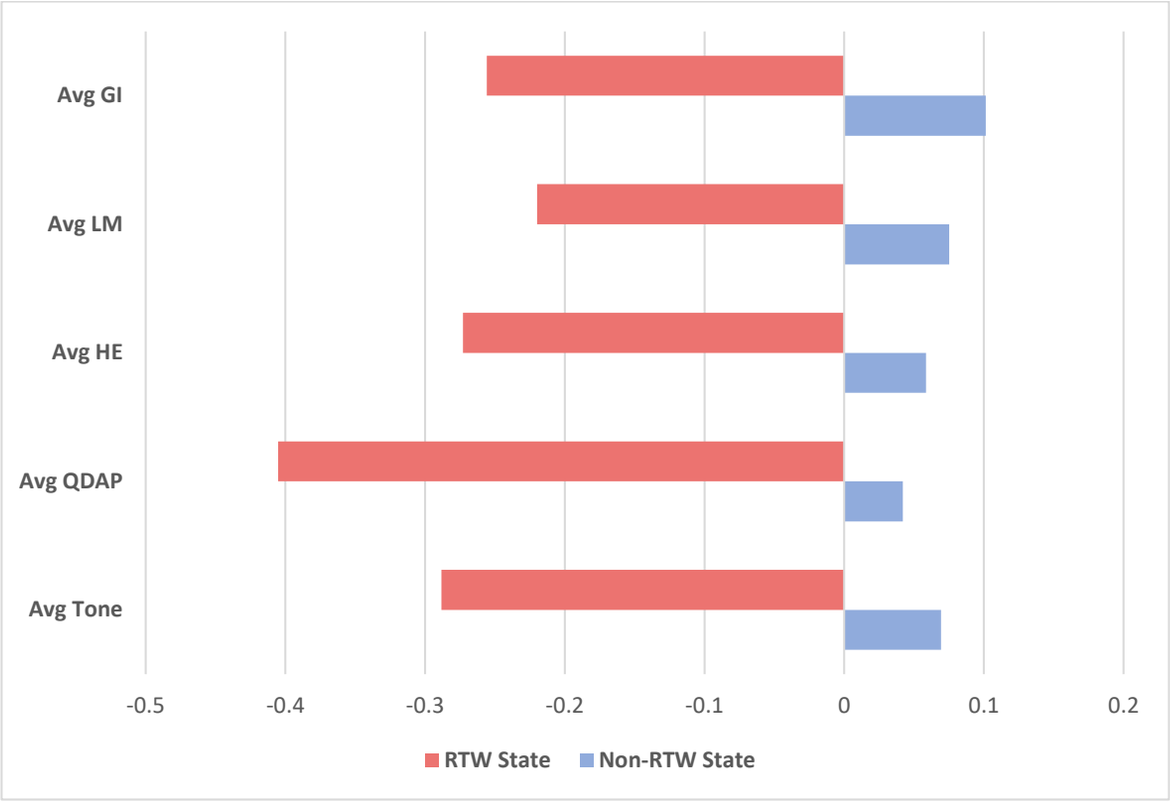
*Figure 6: Mean Frequency of Positive vs. Negative Words Across Dictionaries*




*Source: own work.*

We also examine these sentiment scores grouped by the institutional environment of the firms. Figure 7 illustrates the average mean sentiment across the four dictionaries and the composite Tone variable, grouped by RTW status. The chart shows a distinct division between the two regulatory environments. Firms located in non-RTW states exhibit a positive average sentiment across all dictionaries, whereas firms headquartered in RTW states exhibit a negative average sentiment.

*Figure 7: Average Mean Sentiment in RTW vs. Non-RTW States Across Dictionaries*

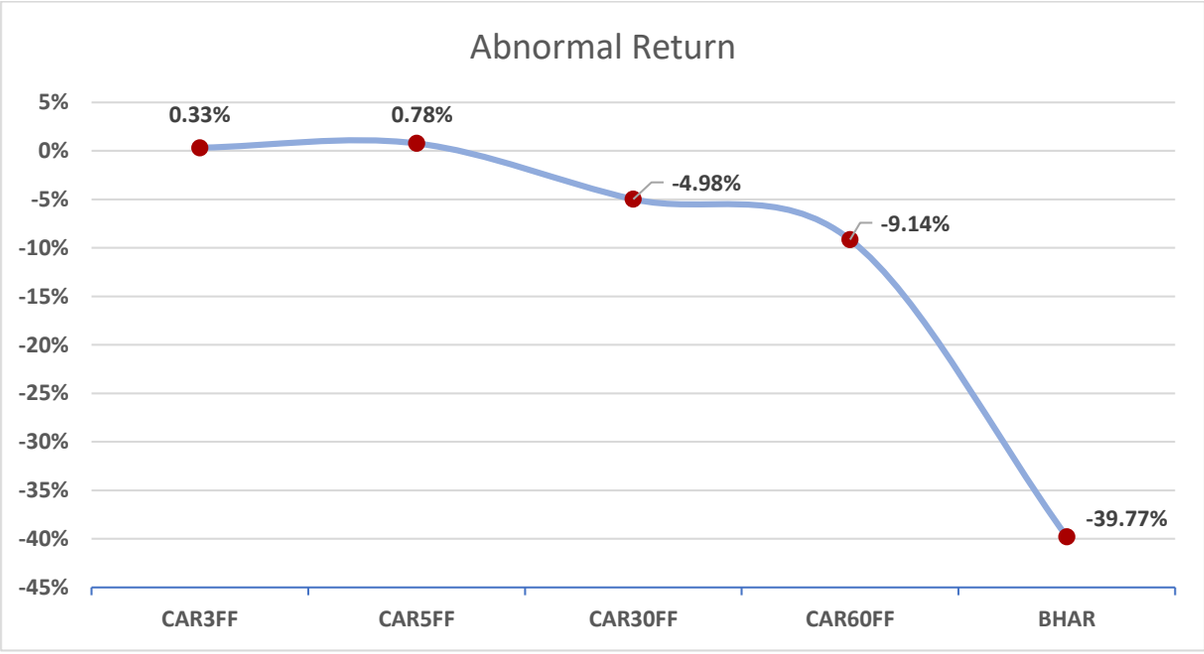



*Source: own work.*

Investor reaction to the layoff announcements exhibits a clear temporal reversal. Investors initially reacted to the layoffs in a cautiously optimistic manner immediately after the announcements. For example, the three-day CAR (CAR3FF) is 0.33% on average and rises to 0.78% over a five-day window (CAR5FF). As seen in Figure 8, this initial positive response suggests that investors may be interpreting layoffs in line with the efficiency hypothesis, viewing the layoffs as a necessary, proactive step to optimize future cash flows.

However, this market optimism disappears over longer periods. The average 30-day return (CAR30FF) drops to −4.98%, and the 60-day return (CAR60FF) falls to −9.14%. Moreover, the long-term performance, as measured by the BHAR, is substantially worse, with investors experiencing a −39.78% return over the following year.

*Figure 8: Investor Reaction Over Time (Short-term CAR vs. Long-term BHAR)*




*Source: own work.*

This reversal pattern is consistent with the behavioral finance literature, which demonstrate that investors often initially overreact to managerial optimism. While the initial positive narrative surrounding a layoff may cause investors to view the announcement favorably in the short-term, this mispricing eventually corrects itself.

*Table 6: Descriptive Analysis*

| | **Employees** | **X.Laid.Off** | **perc_laid** | **UniCov_Industry** | **UniCov_State** | **size** | **ROA** | **CAR3FF** | **CAR5FF** | **CAR30FF** | **CAR60FF** | **BHAR** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 91888.4083 | 1083.6917 | 0.1101 | 0.0353 | 0.5251 | 53902707.1047 | -6.0233 | 0.0033 | 0.0078 | -0.0498 | -0.0914 | -0.3977 |
| Standard Error | 30417.4536 | 216.4825 | 0.0082 | 0.0020 | 0.0115 | 12148480.1440 | 1.2225 | 0.0090 | 0.0117 | 0.0217 | 0.0309 | 0.0317 |
| Median | 4172 | 317.5000 | 0.0877 | 0.0239 | 0.5542 | 3442944 | -4.2750 | -0.0027 | 0.0037 | -0.0322 | -0.1128 | -0.4937 |
| Standard Deviation | 333206.5092 | 2371.4469 | 0.0898 | 0.0214 | 0.1256 | 133079932.2850 | 13.3923 | 0.0929 | 0.1215 | 0.2249 | 0.3199 | 0.3277 |
| Kurtosis | 15.2105 | 10.9165 | 1.2596 | 2.5069 | 3.5943 | 6.6447 | 2.2861 | 6.1584 | 4.6540 | 2.5429 | 2.8868 | -0.1429 |
| Skewness | 4.0879 | 3.4330 | 1.1501 | 1.9107 | -2.0547 | 2.8151 | -0.9650 | 1.0604 | 0.4769 | -0.3567 | 0.8536 | 0.7198 |
| Range | 1540965 | 11981 | 0.4035 | 0.0768 | 0.5945 | 527853577 | 85.2200 | 0.7300 | 0.9446 | 1.5895 | 2.0858 | 1.4444 |
| Minimum | 35 | 19 | 0.0001 | 0.0217 | 0.0929 | 423 | -64.7200 | -0.3169 | -0.4561 | -0.8862 | -0.8066 | -0.8977 |
| Maximum | 1541000 | 12000 | 0.4035 | 0.0985 | 0.6874 | 527854000 | 20.5000 | 0.4131 | 0.4885 | 0.7032 | 1.2791 | 0.5467 |
| Sum | 11026609 | 130043 | 13.2120 | 4.2346 | 63.0096 | 6468324852.5600 | -722.7900 | 0.3537 | 0.8309 | -5.3257 | -9.7824 | -42.5566 |

To be continued

*Table 6: Descriptive Analysis (cont.)*

| | **Tone** | **SentimentGI** | **NegativityGI** | **PositivityGI** | **SentimentHE** | **NegativityHE** | **PositivityHE** | **SentimentLM** | **NegativityLM** | **PositivityLM** | **RatioUncertaintyLM** | **SentimentQDAP** | **NegativityQDAP** | **PositivityQDAP** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | -0.0072 | 0.1638 | 0.0793 | 0.2431 | 0.0240 | 0.0126 | 0.0366 | -0.0116 | 0.0607 | 0.0491 | 0.0159 | 0.1312 | 0.0484 | 0.1796 |
| Standard Error | 0.0582 | 0.0038 | 0.0020 | 0.0036 | 0.0019 | 0.0007 | 0.0017 | 0.0026 | 0.0018 | 0.0017 | 0.0010 | 0.0035 | 0.0016 | 0.0033 |
| Median | 0.0516 | 0.1677 | 0.0789 | 0.2513 | 0.0233 | 0.0115 | 0.0356 | -0.0109 | 0.0599 | 0.0473 | 0.0142 | 0.1348 | 0.0473 | 0.1811 |
| Standard Deviation | 0.6381 | 0.0414 | 0.0224 | 0.0394 | 0.0204 | 0.0079 | 0.0182 | 0.0285 | 0.0195 | 0.0191 | 0.0111 | 0.0385 | 0.0174 | 0.0363 |
| Kurtosis | 0.7938 | 0.3451 | 0.2139 | 1.4039 | 3.2749 | 1.3732 | 3.1594 | 1.0017 | 0.7276 | 0.7686 | 4.7798 | 0.1993 | 1.4369 | 0.5812 |
| Skewness | -0.0177 | -0.0138 | 0.0656 | -0.8310 | 0.8708 | 1.0083 | 0.9264 | 0.1069 | -0.0165 | 0.4400 | 1.7667 | -0.2857 | 0.4728 | -0.4752 |
| Range | 3.7819 | 0.2156 | 0.1118 | 0.2452 | 0.1391 | 0.0370 | 0.1190 | 0.1757 | 0.1146 | 0.1077 | 0.0652 | 0.1925 | 0.1071 | 0.1974 |
| Minimum | -1.9670 | 0.0526 | 0.0236 | 0.0968 | -0.0201 | 0 | 0 | -0.0968 | 0 | 0 | 0 | 0.0321 | 0 | 0.0645 |
| Maximum | 1.8149 | 0.2682 | 0.1354 | 0.3419 | 0.1190 | 0.0370 | 0.1190 | 0.0789 | 0.1146 | 0.1077 | 0.0652 | 0.2246 | 0.1071 | 0.2619 |
| Sum | -0.8657 | 19.6582 | 9.5103 | 29.1685 | 2.8802 | 1.5073 | 4.3875 | -1.3953 | 7.2859 | 5.8907 | 1.9023 | 15.7449 | 5.8088 | 21.5537 |

*Source: own work.*

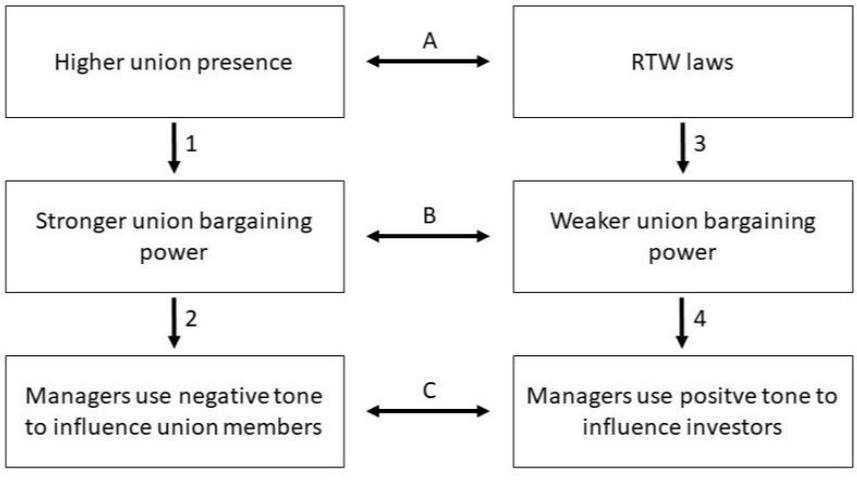
## 4.2 Impact of RTW Laws on Managers' Tone

The Model 1.1, which tests for Hypothesis 1, shows that RTW status is negatively and marginally significantly associated with the tone of layoff memos. The estimated coefficient of RTW law is -0.375 ($p = 0.057$), indicating that the companies in RTW states use a deflated tone when announcing layoffs compared to companies located in non-RTW states.

Additionally, we introduce control variables to formulate the baseline Model 1.2 (financial year, industry, company size, magnitude of layoffs, and company's performance) to account for other factors that could otherwise explain the observed relationship. The regression provides similar results and improves on the initial Model 1.1, increasing $R^2$ from 3% to 19% and adjusted $R^2$ from 2% to 10%. The estimated coefficient of RTW law for Model 1.2 is now -0.437 ($p = 0.005$), confirming and further strengthening the confidence of Model 1.1 evidence regarding the manager's usage of less positive tone in RTW states.

These results, however, contradict the initial prediction that enacted RTW laws would lead to positive or less negative tone inflation, or more specifically, that the absence of RTW laws would increase unions' bargaining power and therefore motivate managers to participate in tone deflation. Instead, the results suggest that managers in RTW environments use a more deflated tone while addressing laid-off employees.

*Figure 9: Diagram Showing Logical Assumptions for Hypothesis 1*




*Source: own work.*

Based on previous regression results, we assess whether the theoretical construction of our hypothesis, as seen in Figure 9, is valid. In model 1.3, we replace RTW status as an independent variable with a direct measure of union affiliation, i.e., the state-level union coverage rate. This model stemmed from previous studies regarding measuring the impact of labor unions on the manager's tone during earnings press releases (Arslan-Ayaydin et al., 2020). The basis for this analysis lies in the evaluation of the first set of assumptions for

Hypothesis 1, that there is an inverse relationship (marked as A on Figure 9) between RTW laws and high union presence in how they influence managers' tone. If higher union affiliation would negatively affect tone, it would validate the first theoretically backed assumption (steps 1 and 2 on Figure 9) of the logical framework of Hypothesis 1, while rejecting the following assumptions that the higher union presence environment shares its communication strategies with the non-RTW environment (relationship A - C and consequently steps 3 and 4 on Figure 9). On the other hand, a positive relationship between union presence and tone would indicate that the initial assumptions based on previous research were incorrect (steps 1 and 2 on Figure 9) but validate the consistency of previous results obtained with both Model 1.1 and 1.2. That would consequently mean that the theory does not translate to this specific scenario as previously assumed, due to either data differentiation (layoff memos versus earnings press reports, conferences, interviews, etc.) or causal differences and end-recipients (addressing employees during downsizing events versus reporting on the company's operations and performance to investors).

The regression results of Model 1.3 show that union coverage is positively and significantly associated with tone, with a coefficient of 0.321 ($p = 0.047$). This suggests that managers operating in states with higher union presence lean towards using an inflated positive tone in their communication with employees during layoffs. The findings therefore confirm that the initial assumption (relationship A - C on Figure 9) that RTW environments share their negative relationship with tone with the environments of high union affiliation is incorrect; however, the results remain consistent throughout all tested models. This consistency of results suggests situational deviation from previous findings on the topic of tone management in RTW states associated with non-unionized environments, attributed to differences in data such as form of communication, end-recipient, cause of event, etc. Table 7 presents the regression results for Models 1.1 through 1.3.

*Table 7: Regression Results of Models 1.1 - 1.3 with Newey-West Standard Errors*

| **Managerial Tone and Right-to-Work Law**<br>*Dependent Variable: Tone* | | | |
|---|---|---|---|
| | *Model 1.1*<br>**RTW with no Controls** | *Baseline Model 1.2*<br>**RTW with Controls** | *Model 1.3*<br>**Union Coverage with Controls** |
| RTWYES | -0.375* | -0.437*** | |
| | (0.195) | (0.153) | |
| UniCov_State | | | 0.321** |
| | | | (0.160) |
| fyear2021 | | 0.070 | 0.089 |
| | | (0.271) | (0.267) |

To be continued

*Table 7: Regression Results of Models 1.1 - 1.3 with Newey-West Standard Errors (cont.)*

| | *Model 1.1* **RTW with no Controls** | *Baseline Model 1.2* **RTW with Controls** | *Model 1.3* **Union Coverage with Controls** |
|---|---|---|---|
| fyear2022 | | 0.226 | 0.221 |
| | | (0.180) | (0.180) |
| fyear2023 | | 0.562*** | 0.585*** |
| | | (0.165) | (0.161) |
| IndustryDurbl | | -0.479 | -0.471 |
| | | (0.381) | (0.401) |
| IndustryHlth | | -0.194 | -0.197 |
| | | (0.246) | (0.251) |
| IndustryMoney | | -0.082 | -0.047 |
| | | (0.214) | (0.218) |
| IndustryNoDur | | -0.438*** | -0.411*** |
| | | (0.131) | (0.130) |
| IndustryOther | | -0.186 | -0.178 |
| | | (0.172) | (0.172) |
| IndustryShops | | -0.156 | -0.158 |
| | | (0.127) | (0.123) |
| IndustryTelcm | | -0.092 | -0.083 |
| | | (0.230) | (0.226) |
| ROA | | 0.092 | 0.094 |
| | | (0.074) | (0.075) |
| log(size) | | -0.061** | -0.060** |
| | | (0.026) | (0.026) |
| perc_laid | | -0.376 | -0.337 |
| | | (0.617) | (0.634) |
| Constant | 0.087 | 0.710 | 0.836* |
| | (0.067) | (0.464) | (0.493) |
| | | | |
| Observations | 140 | 140 | 140 |
| $R^2$ | 0.028 | 0.187 | 0.178 |
| Adjusted $R^2$ | 0.021 | 0.096 | 0.086 |

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

*Source: own work.*

Tone itself, however, does not provide complete insight regarding the positivity and/or negativity of the manager's communication. By its definition, it gives a rough understanding of the magnitude of its inflation (deflation), but whether managers use more positive or less negative (more negative or less positive) words to achieve their respective tone remains unclear (Arslan-Ayaydin et al., 2020). For this purpose, we separate the overall tone variable into its positive and negative word proportion components for Model 1.2 and 1.3, arriving at two new sets of models. Models 1.4 and 1.5 test how the RTW environment impacts the manager's number of positive and negative words in layoff memos, respectively. Models 1.6 and 1.7 are identical, with the exception of replacing the independent variable of RTW status with union coverage.

The regression results of Models 1.4 and 1.5 show that RTW status corresponds to a significant decrease in the proportion of positive words (coefficient = -0.023, p = 0.020), while we confirm no significant effect on the use of a higher proportion of negative words. Similarly, for Models 1.6 and 1.7, higher union coverage is associated with an increase in the number of positive words (coefficient = 0.054, p = 0.032), with no significant relationship with the number of negative words detected. This means that in both cases, the managers choose only to adjust their tone with the proportion of positive words, rather than avoid or increase the number of negative words. Table 8 presents the regression results for Models 1.4 through 1.7.

*Table 8: Regression Results of Models 1.4 - 1.7 with Newey-West Standard Errors*

| **Positive and Negative Word Use**<br>*Dependent Variables: Positivity, Negativity* | | | | |
|---|---|---|---|---|
| | *Model 1.4*<br>**Positivity RTW** | *Model 1.5*<br>**Negativity RTW** | *Model 1.6*<br>**Positivity Union** | *Model 1.7*<br>**Negativity Union** |
| RTWYES | -0.023* | 0.0002 | | |
| | (0.010) | (0.006) | | |
| UniCov_State | | | 0.054* | -0.002 |
| | | | (0.025) | (0.014) |
| fyear2021 | -0.019 | -0.018 | -0.018 | -0.018 |
| | (0.021) | (0.010) | (0.021) | (0.010) |
| fyear2022 | -0.010 | -0.025** | -0.011 | -0.025** |
| | (0.011) | (0.009) | (0.011) | (0.009) |
| fyear2023 | 0.008 | -0.024** | 0.009 | -0.024** |
| | (0.008) | (0.009) | (0.008) | (0.009) |

To be continued

*Table 8: Regression Results of Models 1.4 - 1.7 with Newey-West Standard Errors (cont.)*

| | *Model 1.4* **Positivity RTW** | *Model 1.5* **Negativity RTW** | *Model 1.6* **Positivity Union** | *Model 1.7* **Negativity Union** |
|---|---|---|---|---|
| IndustryDurbl | -0.043 | -0.010 | -0.041 | -0.010 |
| | (0.031) | (0.010) | (0.031) | (0.010) |
| IndustryHlth | 0.007 | 0.011 | 0.006 | 0.011 |
| | (0.013) | (0.008) | (0.013) | (0.008) |
| IndustryMoney | 0.014 | 0.022*** | 0.016 | 0.022*** |
| | (0.012) | (0.005) | (0.012) | (0.005) |
| IndustryNoDur | -0.033*** | 0.008* | -0.032*** | 0.008* |
| | (0.008) | (0.004) | (0.008) | (0.004) |
| IndustryOther | -0.004 | 0.008 | -0.004 | 0.008 |
| | (0.009) | (0.006) | (0.008) | (0.006) |
| IndustryShops | 0.010 | 0.007 | 0.010 | 0.007 |
| | (0.007) | (0.005) | (0.007) | (0.005) |
| IndustryTelcm | -0.013 | 0.019 | -0.013 | 0.020 |
| | (0.015) | (0.013) | (0.015) | (0.013) |
| ROA | 0.0004 | -0.0001 | 0.0004 | -0.0001 |
| | (0.0004) | (0.0002) | (0.0004) | (0.0002) |
| log(size) | -0.004* | -0.0001 | -0.003* | -0.0001 |
| | (0.002) | (0.001) | (0.002) | (0.001) |
| perc_laid | -0.004 | 0.009 | -0.002 | 0.009 |
| | (0.039) | (0.013) | (0.039) | (0.013) |
| Constant | 0.303*** | 0.096*** | 0.269*** | 0.097*** |
| | (0.029) | (0.016) | (0.024) | (0.017) |
| Observations | 140 | 140 | 140 | 140 |
| $R^2$ | 0.180 | 0.201 | 0.178 | 0.201 |
| Adjusted $R^2$ | 0.088 | 0.112 | 0.085 | 0.112 |

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

*Source: own work.*

Table 9 summarizes notable results of the coefficients and p-values for all of the models testing Hypothesis 1 and its robustness, specifically regarding the impact of RTW status and union coverage on managerial tone, number of positive and negative words. Overall, the findings throughout multiple model regressions provide consistent evidence that the

manager's tone during layoffs is related to the union environment. Managers in environments with high union affiliation tend to inflate their tone in layoff memos more positively rather than less negatively, while managers in RTW states, where union bargaining power is presumed weaker, adopt a less positive tone instead of more negative. We therefore reject the Null Hypothesis, but Hypothesis 1 is not supported. These findings, however, provide a deeper understanding of situational differences in which managers alter their tones, deviating from the theoretical norm in relatable fields.

*Table 9: Summary of Regression Results for Tone, Positive, and Negative Words*

| Model / Key Variable | Overall Tone (Net) | Positive Words | Negative Words |
|---|---|---|---|
| **RTW (no controls)** | -0.375 (p = 0.057) (marginally significant, lower tone in RTW states) | — | — |
| **RTW (with controls)** | -0.437 (p = 0.006) (lower tone in RTW states) | -0.023 (p = 0.021) (fewer positive words) | 0.0002 (p = 0.989) (no effect) |
| **Union coverage (with controls)** | 0.321 (p = 0.047) (higher tone with higher union presence) | 0.054 (p = 0.042) (more positive words) | -0.002 (p = 0.960) (no effect) |

*Source: own work.*

### 4.3 Impact of RTW on Investor Reaction to Layoff Announcements

Models 2.1.1 - 2.1.4, testing for Hypothesis 2.1, show that across all short-term AR windows (3-day, 5-day, 30-day, and 60-day, respectively), the RTW law is mostly insignificant in its impact with regard to investor reaction. Despite Models 2.1.1 - 2.1.3 (while statistically insignificant) hinting towards a positive impact of RTW on AR, Model 2.1.4 shows a negative and the only marginally significant relationship with RTW laws (coefficient = -0.088, p = 0.070). Moreover, the adjusted $R^2$ for all models is particularly low, ranging from approximately 0.3% to 4%. The results do not provide statistically significant evidence to support the hypothesis that companies in non-RTW states enjoy a more positive short-term investor reaction to major layoffs, rather than those headquartered in RTW states. Therefore, we fail to reject the null hypothesis.

Model 2.2, testing for Hypothesis 2.2, similarly confirms that there is no significant impact of RTW law on long-term AR, measured by 252-day BHAR. Despite no confirmed relationship with the independent variable of RTW status, the model fit (adjusted $R^2$ = 55%) is considerably improved compared to the regression models testing for short-term investors

reaction, suggesting appropriate selection of control variables. Notably, the percentage of laid-off employees has the largest coefficient of -0.920 (p = 0.002), in line with major downsizing within distressed firms typically resulting in negative investor reaction. For this reason, we further investigate the impact of major downsizing events in additional analysis. Table 10 presents the regression results for Models 2.1.1 through 2.1.4 and Model 2.2.

*Table 10: Regression Results of Models 2.1.1 - 2.1.4 and Model 2.2 with Newey-West Standard Errors*

| **Investor Reaction to Layoff Events with Regards to Right-to-Work Status**<br>*Dependent Variables: Abnormal Return* | | | | | |
|---|---|---|---|---|---|
| | *Model 2.1.1*<br>**3-day CAR** | *Model 2.1.2*<br>**5-day CAR** | *Model 2.1.3*<br>**30-day CAR** | *Model 2.1.4*<br>**60-day CAR** | *Model 2.2*<br>**BHAR** |
| RTWYES | 0.015 | 0.002 | 0.031 | -0.088* | 0.071 |
| | (0.032) | (0.030) | (0.043) | (0.050) | (0.064) |
| fyear2021 | -0.075** | -0.077* | -0.050 | -0.190* | 0.162** |
| | (0.037) | (0.043) | (0.072) | (0.102) | (0.073) |
| fyear2022 | -0.006 | 0.016 | -0.129 | -0.040 | -0.450*** |
| | (0.045) | (0.051) | (0.089) | (0.108) | (0.074) |
| fyear2023 | -0.031 | -0.048 | -0.047 | -0.062 | -0.159** |
| | (0.040) | (0.044) | (0.075) | (0.092) | (0.074) |
| IndustryDurbl | -0.078*** | -0.105*** | 0.007 | 0.207 | -0.004 |
| | (0.026) | (0.035) | (0.074) | (0.205) | (0.126) |
| IndustryHlth | -0.023 | 0.00000 | -0.224 | 0.053 | -0.095 |
| | (0.040) | (0.058) | (0.198) | (0.247) | (0.144) |
| IndustryMoney | -0.048** | -0.036 | -0.135** | -0.247*** | -0.158*** |
| | (0.023) | (0.037) | (0.060) | (0.061) | (0.040) |
| IndustryNoDur | -0.136*** | -0.169*** | -0.267*** | -0.638*** | 0.035 |
| | (0.031) | (0.035) | (0.069) | (0.072) | (0.034) |
| IndustryOther | -0.055** | -0.071** | -0.071 | -0.138 | -0.120** |
| | (0.026) | (0.035) | (0.057) | (0.173) | (0.056) |
| IndustryShops | -0.004 | -0.013 | 0.009 | -0.019 | -0.054 |
| | (0.029) | (0.028) | (0.046) | (0.048) | (0.062) |
| IndustryTelcm | -0.005 | -0.036 | 0.010 | -0.020 | -0.026 |
| | (0.021) | (0.029) | (0.102) | (0.131) | (0.083) |

To be continued

*Table 10: Regression Results of Models 2.1.1 - 2.1.4 and Model 2.2 with Newey-West Standard Errors (cont.)*

| | *Model 2.1.1* **3-day CAR** | *Model 2.1.2* **5-day CAR** | *Model 2.1.3* **30-day CAR** | *Model 2.1.4* **60-day CAR** | *Model 2.2* **BHAR** |
|---|---|---|---|---|---|
| ROA | -0.0001 | 0.001 | 0.001 | 0.005 | 0.003 |
| | (0.001) | (0.001) | (0.002) | (0.007) | (0.003) |
| log(size) | 0.010** | 0.008 | 0.005 | -0.011 | 0.028*** |
| | (0.005) | (0.005) | (0.008) | (0.010) | (0.010) |
| perc_laid | 0.298** | 0.360** | 0.265 | -0.038 | -0.920*** |
| | (0.135) | (0.173) | (0.405) | (0.604) | (0.243) |
| Constant | -0.147** | -0.103 | -0.046 | 0.204 | -0.425*** |
| | (0.074) | (0.079) | (0.163) | (0.204) | (0.161) |
| Observations | 123 | 123 | 123 | 123 | 123 |
| $R^2$ | 0.132 | 0.148 | 0.137 | 0.118 | 0.601 |
| Adjusted $R^2$ | 0.020 | 0.038 | 0.025 | 0.003 | 0.550 |

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

*Source: own work.*

## 4.4 Impact of Manager's Tone on Investor Reaction to Layoff Announcements

Models 3.1.1 - 3.1.4, testing for Hypothesis 3.1, show that the manager's tone is significantly and positively associated with short-term AR, with the exception of initial (+1 day, -1 day) reaction. In other words, investors react more positively to inflated managerial tone in layoff memos during major downsizing events.

While the managerial tone's impact on immediate investors' response measured by 3-day CAR is not statistically significant, tone has a significant and increasingly positive effect on 5-day (coefficient = 0.037, p = 0.035), 30-day (coefficient = 0.078, p = 0.001), and 60-day (coefficient = 0.103, p = 0.016) CARs. The insignificance of 3-day CAR can be attributed to news being distributed unevenly between investors, as opposed to other, previously studied forms of public managerial communication (earnings press releases, interviews, reports, etc.). Typically, such events are anticipated with an exact date, so consequently, the market receives and responds to the news simultaneously. Leaked and unexpected news, however, is distributed through different media channels in periods of a few days; therefore, capturing the very initial investor's response can be difficult and at times unreliable. With stated results we reject the Null Hypothesis in relation to Hypothesis 3.1, with the exception of initial investor reaction measured by 3-day CAR.

Despite previous results confirming a consistent and statistically significant positive relationship of managerial tone with investor reaction over the short- to medium-term, this relationship does not transition over to the long-term horizon. In the Model 3.2, the manager's tone becomes statistically insignificant, suggesting that the initially positive investor response to a more positive tone diminishes over time. Because of the latter, we fail to reject the Null Hypothesis 3.2. Table 11 presents the regression results for Models 3.1.1 through 3.1.4 and Model 3.2.

*Table 11: Regression Results of Models 3.1.1 - 3.1.4 and Model 3.2 with Newey-West Standard Errors*

| **Investor Reaction to Layoff Events with Regard to Managerial Tone**<br>*Dependent Variables: Abnormal Return* | | | | | |
|---|---|---|---|---|---|
| | *Model 3.1.1*<br>**3-day CAR** | *Model 3.1.2*<br>**5-day CAR** | *Model 3.1.3*<br>**30-day CAR** | *Model 3.1.4*<br>**60-day CAR** | *Model 3.2*<br>**BHAR** |
| Tone | 0.019 | 0.037** | 0.078*** | 0.103** | -0.035 |
| | (0.015) | (0.017) | (0.023) | (0.042) | (0.025) |
| fyear2021 | -0.075** | -0.071* | -0.043 | -0.157* | 0.143* |
| | (0.035) | (0.041) | (0.065) | (0.090) | (0.074) |
| fyear2022 | -0.010 | 0.007 | -0.146* | -0.068 | -0.438*** |
| | (0.044) | (0.048) | (0.085) | (0.103) | (0.076) |
| fyear2023 | -0.041 | -0.069 | -0.092 | -0.121 | -0.138* |
| | (0.039) | (0.043) | (0.066) | (0.095) | (0.077) |
| IndustryDurbl | -0.064*** | -0.083*** | 0.060 | 0.247 | -0.008 |
| | (0.024) | (0.028) | (0.069) | (0.167) | (0.123) |
| IndustryHlth | -0.019 | 0.008 | -0.207 | 0.071 | -0.100 |
| | (0.038) | (0.052) | (0.204) | (0.256) | (0.142) |
| IndustryMoney | -0.046** | -0.031 | -0.125** | -0.237*** | -0.161*** |
| | (0.022) | (0.036) | (0.056) | (0.057) | (0.040) |
| IndustryNoDur | -0.129*** | -0.153*** | -0.235*** | -0.587*** | 0.015 |
| | (0.030) | (0.031) | (0.063) | (0.063) | (0.033) |
| IndustryOther | -0.054** | -0.066** | -0.062 | -0.111 | -0.135** |
| | (0.025) | (0.033) | (0.054) | (0.168) | (0.053) |
| IndustryShops | -0.001 | -0.007 | 0.021 | -0.005 | -0.058 |
| | (0.027) | (0.025) | (0.044) | (0.052) | (0.060) |
| IndustryTelcm | -0.009 | -0.037 | 0.001 | -0.005 | -0.040 |
| | (0.021) | (0.027) | (0.103) | (0.130) | (0.086) |

To be continued

*Table 11: Regression Results of Models 3.1.1 - 3.1.4 and Model 3.2 with Newey-West Standard Errors (cont.)*

| | *Model 3.1.1* **3-day CAR** | *Model 3.1.2* **5-day CAR** | *Model 3.1.3* **30-day CAR** | *Model 3.1.4* **60-day CAR** | *Model 3.2* **BHAR** |
|---|---|---|---|---|---|
| ROA | -0.0001 | 0.001 | 0.0005 | 0.004 | 0.004 |
| | (0.001) | (0.001) | (0.002) | (0.006) | (0.003) |
| log(size) | 0.010** | 0.009* | 0.006 | -0.004 | 0.024** |
| | (0.005) | (0.005) | (0.008) | (0.010) | (0.011) |
| perc_laid | 0.289** | 0.352** | 0.238 | -0.035 | -0.933*** |
| | (0.134) | (0.162) | (0.377) | (0.566) | (0.236) |
| Constant | -0.140** | -0.110 | -0.041 | 0.117 | -0.364** |
| | (0.064) | (0.069) | (0.161) | (0.196) | (0.165) |
| Observations | 123 | 123 | 123 | 123 | 123 |
| $R^2$ | 0.144 | 0.181 | 0.183 | 0.145 | 0.602 |
| Adjusted $R^2$ | 0.033 | 0.075 | 0.077 | 0.034 | 0.551 |

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

*Source: own work.*

# 5 ADDITIONAL ANALYSIS

In this chapter, we expand upon our primary results by conducting additional analysis to test the robustness of our initial findings. First, we examine how the magnitude of layoff events, the institutional labor environment, and textual readability impact the relationship between managerial tone and investor reaction. Additionally, we evaluate the non-linear effects of managerial tone to determine if investors punish overly inflated tone during major downsizings.

## 5.1 Interaction Effect of Tone and Layoff Magnitude on Investor Reaction

As we conclude in the main analysis, managers adjust their tone upwards when addressing laid-off employees during downsizing events. In doing so, they are successful in their endeavors in mitigating negative market reaction in short- to mid-term (5-day, 30-day, and 60-day timelines). Since investors' sensitivity to tone increases when the disclosed news is highly negative (Triki et al., 2015; Druz et al., 2020), an opportunity arises in assessing managers' tone with regard to how it impacts market reaction during different scenarios. This motivates an additional analysis, to determine whether and how managerial tone impacts the investor response to more severe layoffs (i.e., increased magnitude of negative

events) by including an interaction term between tone and the percentage of laid-off employees:

$$AR = \alpha + \tau \times Tone + \lambda \times PercLaid_i + \gamma \times Tone_i \times PercLaid_i + \beta \times Controls_i + \varepsilon_i \quad (18)$$

where:

- $\varepsilon$ represents Newey–West standard errors, adjusted to account for heteroscedasticity and autocorrelation.

In this regression, we account for all relevant CAR timeframes measuring from short- to mid-term market reaction as well as 252-day BHAR for longer-term horizons.

Table 12 presents the regression results testing the interaction effect of tone and layoff magnitude on investor reaction. Similarly, as estimated coefficients for Tone in Models 3.1.1 - 3.1.4, the interaction coefficients in models testing in shorter time frames (3-day, 5-day, and 30-day timelines) are positive and statistically significant. Moreover, the coefficients are considerably larger compared to Models 3.1.1 - 3.1.4, indicating that a positive tone is more effective in mitigating negative investor reaction during more severe downsizing events, further strengthening the findings in already established literature (Demers & Vega, 2011; Boudt et al., 2018).

*Table 12: Interaction Effect of Tone and Layoff Magnitude on Investor Reaction*

| **Interaction Effect of Tone and Layoff Magnitude on Investor Reaction**<br>*Dependent Variable: Abnormal Return* | | | | | |
|---|---|---|---|---|---|
| | **3-day CAR** | **5-day CAR** | **30-day CAR** | **60-day CAR** | **BHAR** |
| Tone | -0.021 | -0.025 | 0.006 | 0.044 | 0.023 |
| | (0.023) | (0.024) | (0.032) | (0.049) | (0.048) |
| perc_laid | 0.325** | 0.407** | 0.303 | 0.018 | -0.985*** |
| | (0.132) | (0.174) | (0.339) | (0.547) | (0.219) |
| fyear2021 | -0.072*** | -0.067*** | -0.038 | -0.153** | 0.139* |
| | (0.025) | (0.024) | (0.038) | (0.069) | (0.073) |
| fyear2022 | -0.011 | 0.004 | -0.149*** | -0.071 | -0.436*** |
| | (0.029) | (0.030) | (0.048) | (0.081) | (0.073) |
| fyear2023 | -0.041 | -0.067** | -0.090** | -0.120* | -0.139* |
| | (0.029) | (0.028) | (0.041) | (0.064) | (0.076) |

To be continued

*Table 12: Interaction Effect of Tone and Layoff Magnitude on Investor Reaction (cont.)*

| | 3-day CAR | 5-day CAR | 30-day CAR | 60-day CAR | BHAR |
|---|---|---|---|---|---|
| IndustryDurbl | -0.079** | -0.106*** | 0.033 | 0.225 | 0.013 |
| | (0.031) | (0.039) | (0.062) | (0.206) | (0.135) |
| IndustryHlth | -0.022 | 0.002 | -0.213 | 0.066 | -0.096 |
| | (0.039) | (0.048) | (0.221) | (0.255) | (0.140) |
| IndustryMoney | -0.051* | -0.039 | -0.134** | -0.245*** | -0.153*** |
| | (0.026) | (0.035) | (0.054) | (0.062) | (0.038) |
| IndustryNoDur | -0.119*** | -0.136*** | -0.217*** | -0.571*** | -0.0004 |
| | (0.029) | (0.028) | (0.054) | (0.071) | (0.033) |
| IndustryOther | -0.058** | -0.073** | -0.071 | -0.118 | -0.128** |
| | (0.027) | (0.034) | (0.055) | (0.157) | (0.054) |
| IndustryShops | -0.0003 | -0.007 | 0.022 | -0.005 | -0.059 |
| | (0.031) | (0.030) | (0.053) | (0.058) | (0.056) |
| IndustryTelcm | -0.006 | -0.033 | 0.006 | -0.0001 | -0.044 |
| | (0.031) | (0.045) | (0.099) | (0.171) | (0.083) |
| ROA | -0.0004 | 0.0001 | -0.0002 | 0.003 | 0.004* |
| | (0.001) | (0.001) | (0.002) | (0.007) | (0.003) |
| log(size) | 0.010** | 0.009* | 0.006 | -0.004 | 0.024** |
| | (0.005) | (0.005) | (0.009) | (0.014) | (0.011) |
| Tone:perc_laid | 0.375** | 0.579*** | 0.675** | 0.550 | -0.542 |
| | (0.157) | (0.204) | (0.326) | (0.409) | (0.383) |
| Constant | -0.145** | -0.119 | -0.051 | 0.108 | -0.356** |
| | (0.064) | (0.072) | (0.155) | (0.209) | (0.160) |
| Observations | 123 | 123 | 123 | 123 | 123 |
| $R^2$ | 0.180 | 0.237 | 0.208 | 0.151 | 0.610 |
| Adjusted $R^2$ | 0.065 | 0.130 | 0.097 | 0.032 | 0.555 |

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

*Source: own work.*

## 5.2 Interaction Effect of Tone and RTW Status on Investor Reaction

Our prior hypothesis and respective models establish that managerial tone in layoff memos is influenced by RTW status and positively impacts the market reaction in the short-term.

However, our findings regarding the impact of RTW laws on the market perception remain inconsistent across the tested timeframes, resulting in generally insignificant estimates of effects on the investor. We therefore propose that there is a possibility that RTW status does not fully affect the investor in isolation. Leaning on previously discussed prior research, we apply two key findings. First, layoff events in unionized companies typically receive a positive (or less negative) market response compared to non-unionized companies (Abraham, 2006), while higher union negotiation power is associated with non-RTW status and vice-versa. Second, the adoption of RTW laws reduces the opportunistic manipulation of reporting (Arslan-Ayaydin et al., 2020). We use these findings to adjust our analysis by considering the joint effect of RTW laws and tone on the investor response.

With that in mind, we conduct an additional analysis to examine the interaction between managerial tone and RTW laws, in order to determine whether and how the RTW status moderates the effect of tone on the market response. Circling back to the rationale we built during hypothesis development based on the theoretical framework shown in Figure 9, we expect to observe a more deflated managerial tone, still having a positive effect (or less negative) on investor reaction in non-RTW states compared to states that adopted RTW law. To examine this, we re-evaluate the interaction model defined in formula (3) in Chapter 3.1, where we account for all relevant CAR timeframes measuring from short- to mid-term market reaction as well as 252-day BHAR for longer-term horizons.

Table 13 presents the regression results testing the interaction between tone and RTW status. The results show the statistical non-significance of the impact of the interaction term. This implies that managerial tone does not differ meaningfully between different RTW statuses. However, consistent with our previous findings, tone inflation alleviates negative market reaction in relevant timeframes (5-day, 30-day, and 60-day) with the exception of immediate (3-day) and long-term reaction (252-day).

*Table 13: Interaction Effect of Tone and Right-to-Work Status on Investor Reaction*

| **Interaction Effect of Tone and Right-to-Work Status on Investor Reaction**<br>*Dependent Variable: Abnormal Return* | | | | | |
|---|---|---|---|---|---|
| | **3-day CAR** | **5-day CAR** | **30-day CAR** | **60-day CAR** | **BHAR** |
| RTWYES | 0.023 | 0.015 | 0.048 | -0.057 | 0.046 |
| | (0.024) | (0.025) | (0.044) | (0.058) | (0.060) |
| Tone | 0.020 | 0.038** | 0.091*** | 0.102** | -0.020 |
| | (0.015) | (0.019) | (0.028) | (0.046) | (0.026) |
| fyear2021 | -0.071** | -0.068*** | -0.027 | -0.166** | 0.161** |
| | (0.028) | (0.026) | (0.041) | (0.075) | (0.072) |

To be continued

*Table 13: Interaction Effect of Tone and Right-to-Work Status on Investor Reaction (cont.)*

| | 3-day CAR | 5-day CAR | 30-day CAR | 60-day CAR | BHAR |
|---|---|---|---|---|---|
| fyear2022 | -0.011 | 0.007 | -0.152*** | -0.066 | -0.445*** |
| | (0.030) | (0.032) | (0.051) | (0.081) | (0.077) |
| fyear2023 | -0.043 | -0.069** | -0.094** | -0.119* | -0.141* |
| | (0.030) | (0.031) | (0.042) | (0.065) | (0.076) |
| IndustryDurbl | -0.068** | -0.084** | 0.013 | 0.246 | -0.064 |
| | (0.030) | (0.038) | (0.077) | (0.230) | (0.087) |
| IndustryHlth | -0.019 | 0.008 | -0.219 | 0.069 | -0.115 |
| | (0.044) | (0.060) | (0.216) | (0.251) | (0.135) |
| IndustryMoney | -0.046* | -0.031 | -0.130** | -0.238*** | -0.166*** |
| | (0.026) | (0.037) | (0.052) | (0.061) | (0.039) |
| IndustryNoDur | -0.127*** | -0.151*** | -0.228*** | -0.592*** | 0.023 |
| | (0.029) | (0.031) | (0.059) | (0.077) | (0.034) |
| IndustryOther | -0.050* | -0.064* | -0.057 | -0.119 | -0.130** |
| | (0.027) | (0.035) | (0.056) | (0.158) | (0.056) |
| IndustryShops | -0.001 | -0.008 | 0.022 | -0.005 | -0.057 |
| | (0.033) | (0.034) | (0.054) | (0.060) | (0.060) |
| IndustryTelcm | -0.004 | -0.034 | 0.011 | -0.017 | -0.030 |
| | (0.031) | (0.044) | (0.099) | (0.168) | (0.084) |
| ROA | -0.0002 | 0.001 | -0.0002 | 0.004 | 0.003 |
| | (0.001) | (0.001) | (0.002) | (0.007) | (0.003) |
| log(size) | 0.011** | 0.010* | 0.008 | -0.006 | 0.026** |
| | (0.005) | (0.005) | (0.010) | (0.014) | (0.011) |
| perc_laid | 0.296** | 0.356** | 0.256 | -0.050 | -0.915*** |
| | (0.129) | (0.177) | (0.334) | (0.552) | (0.235) |
| RTWYES:Tone | 0.001 | 0.003 | -0.081 | -0.026 | -0.101 |
| | (0.027) | (0.029) | (0.050) | (0.095) | (0.076) |
| Constant | -0.157** | -0.121 | -0.082 | 0.158 | -0.405** |
| | (0.067) | (0.075) | (0.158) | (0.217) | (0.168) |
| Observations | 123 | 123 | 123 | 123 | 123 |
| $R^2$ | 0.147 | 0.182 | 0.194 | 0.146 | 0.609 |
| Adjusted $R^2$ | 0.019 | 0.058 | 0.072 | 0.018 | 0.550 |

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

*Source: own work.*

We continue to investigate the topic with an already familiar proxy for RTW status used throughout our study, i.e., union coverage rate:

$$AR = \alpha + \theta \times UnionCov_i + \tau \times Tone + \varpi \times UnionCov_i \times Tone_i + \beta \times Controls + \varepsilon_i \quad (19)$$

where:

- $\varepsilon$ represents Newey–West standard errors, adjusted to account for heteroscedasticity and autocorrelation. Selected timeframes remain consistent with the previous model.

Table 14 presents the regression results for the second model, which narrate a different perspective. The interaction term is significant and positive in the 5-day and 30-day timeframes (CAR) and the 252-day period (BHAR), meaning that in the states with higher unionization affiliation, tone has a significantly more significant impact in terms of softening the market reaction to major downsizing. Interestingly, both variables (tone and state-level union coverage rate) are not significant without the joint context, with the exception of inflated tone having a negative impact on the long-term horizon.

*Table 14: Interaction Effect of Tone and Union Coverage on Investor Reaction*

| **Interaction Effect of Tone and Union Coverage on Investor Reaction**<br>*Dependent Variable: Abnormal Return* | | | | | |
|---|---|---|---|---|---|
| | **3-day CAR** | **5-day CAR** | **30-day CAR** | **60-day CAR** | **BHAR** |
| UniCov_State | -0.057 | -0.049 | -0.022 | 0.231 | -0.140 |
| | (0.058) | (0.068) | (0.110) | (0.195) | (0.143) |
| Tone | -0.020 | -0.024 | -0.037 | 0.134 | -0.168** |
| | (0.022) | (0.025) | (0.060) | (0.089) | (0.086) |
| fyear2021 | -0.067** | -0.062** | -0.030 | -0.178** | 0.166** |
| | (0.028) | (0.027) | (0.043) | (0.076) | (0.072) |
| fyear2022 | -0.012 | 0.004 | -0.152*** | -0.067 | -0.445*** |
| | (0.030) | (0.032) | (0.051) | (0.080) | (0.077) |
| fyear2023 | -0.044 | -0.071** | -0.093** | -0.114* | -0.144* |
| | (0.030) | (0.031) | (0.044) | (0.067) | (0.077) |
| IndustryDurbl | -0.082*** | -0.107*** | 0.023 | 0.284 | -0.065 |
| | (0.029) | (0.038) | (0.072) | (0.218) | (0.094) |

To be continued

*Table 14: Interaction Effect of Tone and Union Coverage on Investor Reaction (cont.)*

| | **3-day CAR** | **5-day CAR** | **30-day CAR** | **60-day CAR** | **BHAR** |
|---|---|---|---|---|---|
| IndustryHlth | -0.023 | 0.0002 | -0.222 | 0.073 | -0.116 |
| | (0.043) | (0.060) | (0.216) | (0.249) | (0.135) |
| IndustryMoney | -0.048* | -0.033 | -0.124** | -0.226*** | -0.165*** |
| | (0.026) | (0.038) | (0.051) | (0.064) | (0.041) |
| IndustryNoDur | -0.126*** | -0.148*** | -0.228*** | -0.591*** | 0.025 |
| | (0.029) | (0.030) | (0.058) | (0.077) | (0.034) |
| IndustryOther | -0.051* | -0.064* | -0.064 | -0.122 | -0.131** |
| | (0.027) | (0.034) | (0.058) | (0.156) | (0.056) |
| IndustryShops | 0.0003 | -0.006 | 0.025 | -0.005 | -0.054 |
| | (0.033) | (0.034) | (0.054) | (0.060) | (0.061) |
| IndustryTelcm | -0.005 | -0.034 | 0.001 | -0.024 | -0.030 |
| | (0.031) | (0.043) | (0.099) | (0.169) | (0.084) |
| ROA | -0.0004 | 0.0004 | 0.00004 | 0.005 | 0.003 |
| | (0.001) | (0.001) | (0.002) | (0.007) | (0.003) |
| log(size) | 0.011** | 0.010** | 0.007 | -0.007 | 0.026** |
| | (0.005) | (0.005) | (0.010) | (0.014) | (0.012) |
| perc_laid | 0.304** | 0.371** | 0.269 | -0.063 | -0.888*** |
| | (0.129) | (0.176) | (0.331) | (0.544) | (0.231) |
| UniCov_State:Tone | 0.081 | 0.126* | 0.234* | -0.072 | 0.275* |
| | (0.056) | (0.067) | (0.125) | (0.193) | (0.165) |
| Constant | -0.124* | -0.099 | -0.042 | 0.045 | -0.329* |
| | (0.068) | (0.080) | (0.164) | (0.217) | (0.174) |
| Observations | 123 | 123 | 123 | 123 | 123 |
| $R^2$ | 0.154 | 0.193 | 0.195 | 0.150 | 0.612 |
| Adjusted $R^2$ | 0.027 | 0.071 | 0.073 | 0.022 | 0.554 |

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

*Source: own work.*

Due to the inconsistency of the results and weaker robustness, we cannot arrive at any firm conclusions regarding the assumption that the RTW status plays a notable role in how investors perceive managerial tone.

## 5.3 The Interaction Effect of Tone and Readability on Investor Reaction

Previous studies establish that both tone and readability play an important role in corporate disclosures, especially in influencing how investors perceive and react to firm performance. For example, larger textual complexity in annual reports can impose information processing costs on users and lead to incomplete market reactions (Fisher et al., 2019). These findings also suggest that tone and readability are not only significant when assessed individually but may also affect investor risk assessments jointly. The latter motivates the following analyses, starting with examining whether tone itself is influenced by readability, within the context of layoff announcements. We test for this relationship with a regression where tone acts as the dependent variable and FOG as the explanatory variable:

$$Tone = \alpha + \theta \times FOG + \varepsilon_i \tag{20}$$

where:

- $\varepsilon$ represents Newey–West standard errors, adjusted to account for heteroscedasticity and autocorrelation.

Table 15 presents the regression results evaluating the effect of readability on tone. The results show a statistically significant negative relationship between FOG and tone ($p = 2.168 * 10^{-5}$). This suggests that less readable memos (higher FOG scores) are associated with a more negative tone. To put it differently, managers may intentionally use a more complex language structure when communicating layoffs in a less positive way.

*Table 15: Effect of Readability on Tone*

| **Effect of Readability on Tone**<br>*Dependent variable: Tone* | |
|---|---|
| FOG | -0.0004*** |
| | (0.0001) |
| Constant | 0.113* |
| | (0.063) |
| Observations | 140 |
| $R^2$ | 0.028 |
| Adjusted $R^2$ | 0.021 |

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

*Source: own work.*

In an effort to further understand the means by which managerial tone impacts the investor through AR, we introduce the interaction term between tone and the FOG index. The logic behind the proposed interaction term is to determine whether the effectiveness of managerial

tone in terms of influencing the market response depends on the ease of memo readability. With the interaction term of tone and FOG, we assess whether tone becomes more (or less) influential depending on how readable (or unreadable) the communication in layoff memos is. For example, tone might have a stronger effect when considering memos that are communicated clearly and vice versa.

$$AR = \alpha + \nu \times FOG_i + \tau * Tone + \phi \times FOG_i \times Tone_i + \beta \times Controls + \varepsilon_i \quad (21)$$

where:

- $\varepsilon$ represents Newey–West standard errors, adjusted to account for heteroscedasticity and autocorrelation.

In this regression, we account for all relevant CAR timeframes measuring from short- to mid-term market reaction as well as 252-day BHAR for longer-term horizons.

Table 16 presents the regression results testing the interaction effect of tone and readability on investor reaction. The results show that the interaction term Tone × FOG is positive and statistically significant in the models' dependent variables for 3-day and 30-day CAR, as well as 252-day BHAR, indicating that tone becomes more impactful as the readability of the memo decreases (i.e., as FOG increases) in these specific timeframes. These results, although non-trivial, can be explained by tone playing a stronger role when the direct communication is not as clear. In simpler terms, managers might use a positive tone strategically in order to hide their complex messaging; therefore, the investor finds reassurance in a positive tone despite not obtaining a clear understanding regarding downsizing reasoning. It is important to underline that results are not consistent across models testing for short-term effects, and even when the statistical significance of the interaction term is confirmed, the coefficients of interaction terms across all models are minuscule (coefficients: $2 * 10^{-4}$ - $3 * 10^{-4}$).

*Table 16: Interaction Effect of Tone and Readability on Investor Reaction*

| **Interaction Effect of Tone and Readability on Investor Reaction**<br>*Dependent Variable: Abnormal Return* | | | | | |
|---|---|---|---|---|---|
| | **3-day CAR** | **5-day CAR** | **30-day CAR** | **60-day CAR** | **BHAR** |
| FOG | 0.0001** | 0.0001 | 0.0003*** | 0.0003 | 0.0002** |
| | (0.0001) | (0.0001) | (0.0001) | (0.0002) | (0.0001) |
| Tone | 0.0004 | 0.021 | 0.047 | 0.087* | -0.073*** |
| | (0.019) | (0.022) | (0.032) | (0.049) | (0.027) |

To be continued

*Table 16: Interaction Effect of Tone and Readability on Investor Reaction (cont.)*

| | 3-day CAR | 5-day CAR | 30-day CAR | 60-day CAR | BHAR |
|---|---|---|---|---|---|
| fyear2021 | -0.078*** | -0.073*** | -0.052 | -0.166** | 0.139* |
| | (0.028) | (0.027) | (0.043) | (0.069) | (0.075) |
| fyear2022 | -0.010 | 0.007 | -0.147*** | -0.069 | -0.439*** |
| | (0.030) | (0.031) | (0.050) | (0.079) | (0.079) |
| fyear2023 | -0.046 | -0.072** | -0.096** | -0.122* | -0.147* |
| | (0.031) | (0.031) | (0.046) | (0.067) | (0.078) |
| IndustryDurbl | -0.058*** | -0.079*** | 0.078 | 0.264 | -0.001 |
| | (0.021) | (0.030) | (0.073) | (0.199) | (0.112) |
| IndustryHlth | -0.014 | 0.011 | -0.196 | 0.080 | -0.093 |
| | (0.039) | (0.057) | (0.210) | (0.245) | (0.141) |
| IndustryMoney | -0.036 | -0.022 | -0.122** | -0.246*** | -0.135*** |
| | (0.029) | (0.042) | (0.052) | (0.061) | (0.045) |
| IndustryNoDur | -0.160*** | -0.172*** | -0.360*** | -0.710*** | -0.015 |
| | (0.042) | (0.040) | (0.072) | (0.121) | (0.050) |
| IndustryOther | -0.047* | -0.060* | -0.045 | -0.097 | -0.124** |
| | (0.027) | (0.035) | (0.057) | (0.157) | (0.052) |
| IndustryShops | 0.005 | -0.003 | 0.040 | 0.011 | -0.049 |
| | (0.033) | (0.035) | (0.050) | (0.058) | (0.060) |
| IndustryTelcm | -0.026 | -0.052 | -0.035 | -0.030 | -0.071 |
| | (0.031) | (0.037) | (0.092) | (0.168) | (0.060) |
| ROA | -0.0002 | 0.001 | 0.0003 | 0.004 | 0.004 |
| | (0.001) | (0.001) | (0.002) | (0.006) | (0.003) |
| log(size) | 0.009* | 0.008 | 0.004 | -0.005 | 0.021** |
| | (0.005) | (0.005) | (0.009) | (0.013) | (0.011) |
| perc_laid | 0.241** | 0.307* | 0.172 | -0.060 | -1.038*** |
| | (0.120) | (0.174) | (0.317) | (0.544) | (0.236) |
| FOG:Tone | 0.0002** | 0.0001 | 0.0003** | 0.0002 | 0.0003*** |
| | (0.0001) | (0.0001) | (0.0001) | (0.0002) | (0.0001) |
| Constant | -0.133** | -0.102 | -0.055 | 0.089 | -0.339** |
| | (0.066) | (0.074) | (0.147) | (0.206) | (0.163) |
| Observations | 123 | 123 | 123 | 123 | 123 |
| $R^2$ | 0.171 | 0.193 | 0.222 | 0.157 | 0.612 |
| Adjusted $R^2$ | 0.046 | 0.072 | 0.104 | 0.030 | 0.554 |

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

*Source: own work.*

## 5.4 Non-Linear Effects of Managerial Tone

Previous studies determine that investors, in general, are not able to detect attempted deceit through inflated managerial tone, shown in an initial positive market reaction. The market eventually adjusts to the downside accordingly, once a clear picture regarding the firm's performance is established. Short sellers, on the other hand, prove to be more successful at recognizing overly optimistic tone in targeted surprise earnings beat announcements. With that, they capitalize on the average investor's inability to distinguish between excessive use of managerial tone with in-the-money short positions. These findings mostly focus on positive event scenarios and are relate to managerial communication via earnings reports. Therefore, we seek to determine if the investors recognize and punish overly inflated tone during major downsizings. Additionally, we study these large layoff events in a specific time period from 2020 to early 2023, meaning that the common factor of layoff reasoning is, at the time, an ongoing pandemic. Consequently, we consider these as generally negative events across all observations, as in other settings, the market can interpret downsizing as positive news, especially in the case of strategic downsizing and restructuring.

So far, we established that tone is significantly and positively associated with investor reaction, with regression results of Models 3.1.1 through 3.1.4 in several CAR timeframes. To measure the non-linear effects of managerial tone on AR, we further develop the baseline model by introducing a cubic polynomial for the tone variable. Based on our previous findings, which indicate that tone has a significant effect on initial market response and that the effect diminishes over time, we perform the regression with regard to immediate market reaction measured by both the 3-day and 5-day CAR time windows.

$$AR = Tone + \mathrm{I}(Tone^2) + \mathrm{I}(Tone^3) + Controls \tag{22}$$

where:

- $\varepsilon$ represents Newey–West standard errors, adjusted to account for heteroscedasticity and autocorrelation.

Table 17 presents the regression results for the non-linear effects of managerial tone. The results reveal a statistically significant and positive linear effect of tone in line with the findings from previous models. For the model with a 3-day window, with AR as an explanatory variable, the estimated coefficient for linear tone is 0.056 ($p = 4.73 * 10^4$) and 0.093 for the 5-day window ($p = 1.35 * 10^4$). This indicates that a more inflated tone is consistently met with a more positive initial investor response. Interestingly, the cubic term for tone becomes negative and significant across both models, suggesting that excessive tone inflation results in a reversal of the effect on investor response, from positive to negative. In other words, managers are only successful in swaying investor perception and influencing their reaction when utilizing moderate tone inflation. As the use of tone becomes overly positive, the behavior is penalized with lower short-term ARs. This could occur due to investors' perception of managers being misleading or ingenuine amidst negative events. The

estimated coefficients of cubic terms for Tone for the 3-day and 5-day AR models are -0.022 (p = 0.017) and -0.034 (p = 0.003), respectively.

*Table 17: Investor Reaction to Layoff Events and Non-Linear Managerial Tone*

| **Investor Reaction to Layoff Events and Non-Linear Managerial Tone**<br>*Dependent Variable: Abnormal Return* | | |
|---|---|---|
| | **3-day CAR** | **5-day CAR** |
| Tone | 0.056*** | 0.093*** |
| | (0.016) | (0.024) |
| I(Tone2) | -0.009 | -0.013 |
| | (0.013) | (0.014) |
| I(Tone3) | -0.022** | -0.034*** |
| | (0.009) | (0.011) |
| fyear2021 | -0.070*** | -0.064** |
| | (0.027) | (0.026) |
| fyear2022 | -0.018 | -0.005 |
| | (0.031) | (0.031) |
| fyear2023 | -0.046 | -0.075** |
| | (0.030) | (0.030) |
| IndustryDurbl | -0.084*** | -0.115*** |
| | (0.030) | (0.038) |
| IndustryHlth | -0.032 | -0.012 |
| | (0.044) | (0.055) |
| IndustryMoney | -0.044 | -0.029 |
| | (0.029) | (0.040) |
| IndustryNoDur | -0.117*** | -0.134*** |
| | (0.029) | (0.028) |
| IndustryOther | -0.055** | -0.068* |
| | (0.028) | (0.035) |
| IndustryShops | -0.007 | -0.017 |
| | (0.032) | (0.032) |
| IndustryTelcm | -0.021 | -0.055 |
| | (0.030) | (0.042) |

To be continued

*Table 17: Investor Reaction to Layoff Events with Regards to Non-Linear Managerial Tone (cont.)*

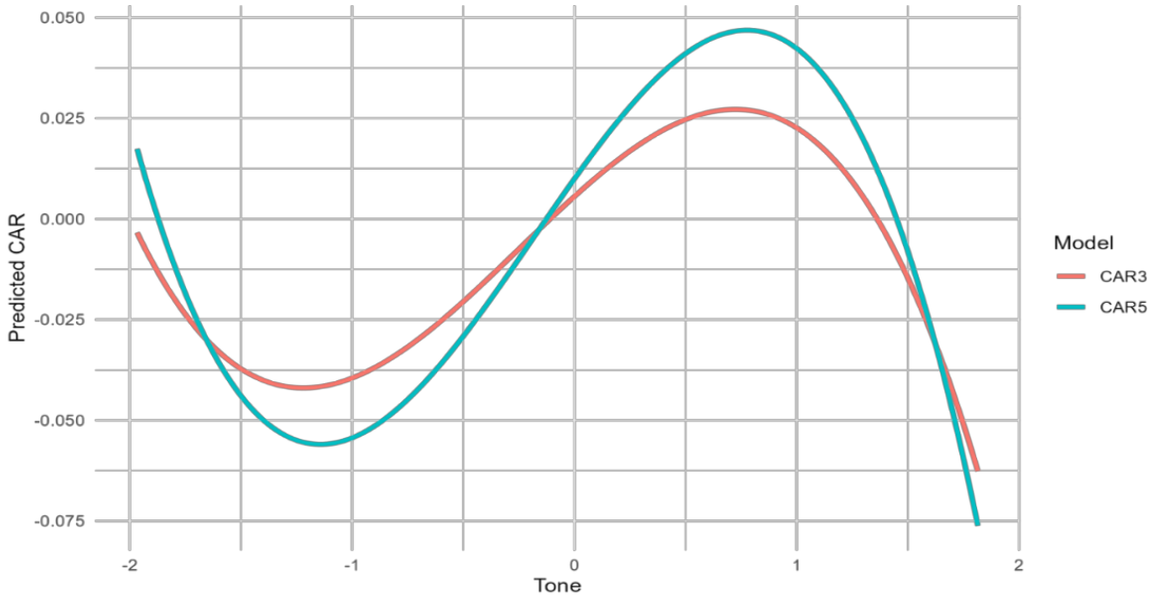
| | | |
|---|---|---|
| ROA | -0.0002 | 0.0005 |
| | (0.001) | (0.001) |
| log(size) | 0.010** | 0.009* |
| | (0.005) | (0.005) |
| perc_laid | 0.284** | 0.345** |
| | (0.125) | (0.166) |
| Constant | -0.121* | -0.083 |
| | (0.066) | (0.073) |
| Observations | 123 | 123 |
| $R^2$ | 0.177 | 0.229 |
| Adjusted $R^2$ | 0.052 | 0.113 |

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

*Source: own work.*

The plot in Figure 10 shows the predicted effect of managerial tone on short-term investor reaction, holding all control variables constant at their means as a polynomial function. We can observe the non-linear effect in both predicted short-term ARs as they initially rise with tone inflation but eventually peak and decline, as managerial tone becomes excessively used.

*Figure 10: Predicted 3-Day CAR and 5-Day CAR as a Function of Tone*




*Source: own work.*

## 5.5 Findings and Discussion

Our analyses for the first hypothesis in Chapter 4.2 provide intriguing, and perhaps the most complex results with regard to their interpretation. As we observe the impact of RTW status on managers' tone, we obtain results that contradict our initial assumptions that were backed by the theoretical framework (Figure 9). Nonetheless, results remain consistent throughout, introducing several models and explanatory variables (RTW status - union coverage). Managers in environments with high union affiliation tend to inflate their tone in layoff memos more positively rather than less negatively, while managers in RTW states, where union bargaining power is presumed weaker, adopt a less positive tone instead of a more negative one. Without repeating what has already been stated in the analysis, the key takeaway is that established literature that focuses on managerial tone within the reporting aspect differs from the studied scenario that investigates direct communication to employees with the presence of the public eye.

Potential explanations for this phenomenon can be attributed to data differentiation. Previous studies focus primarily on quarterly reports, letters to shareholders, and similar data. These are well thought-out documents that are being prepared for longer time periods, as opposed to layoff memos, which are of a more responsive nature. However, one can assume that managers realize the severity of the situation that is a major downsizing event and consider the likelihood of public exposure should the memo be leaked. The second explanation that is tied to the latter is the end recipient (shareholders vs. employees). Lastly, the cause of the event is to be considered as a probable cause of deviation from the studied norm. Managers report to shareholders with certain optimism regarding company performance and future outlook, with the exception of highly unionized environments, where the intent is to weaken the bargaining position of unions and signal less available gains for the unionized workers. In both cases, the cause remains the same, which is a fixed reporting obligation. In our case, the cause is an event that undermines employees' positions in the organization, with a reactive nature of communication.

We continue with the impact of RTW status on market reaction, analyzed in the following Chapter 4.3. As discussed before, investors usually react positively to union losses and negatively to union gains. However, when it comes to large layoff events, we obtain results that there is no significant difference when comparing RTW statuses of participating companies' headquarters. We interpret this deviation from the previous findings with two plausible reasons. First, this could be attributed to the nature of the event itself. Major layoffs do not result in only union loss but could also impact the performance of the organization itself if it is not labeled as restructuring. Which brings us to the next explanation; that the studied timeline was associated with major layoffs that occurred due to the global pandemic. Most of these companies were forced to downsize, which means that layoffs were most likely not interpreted as strategic efforts, so union loss was not occurring in isolation.

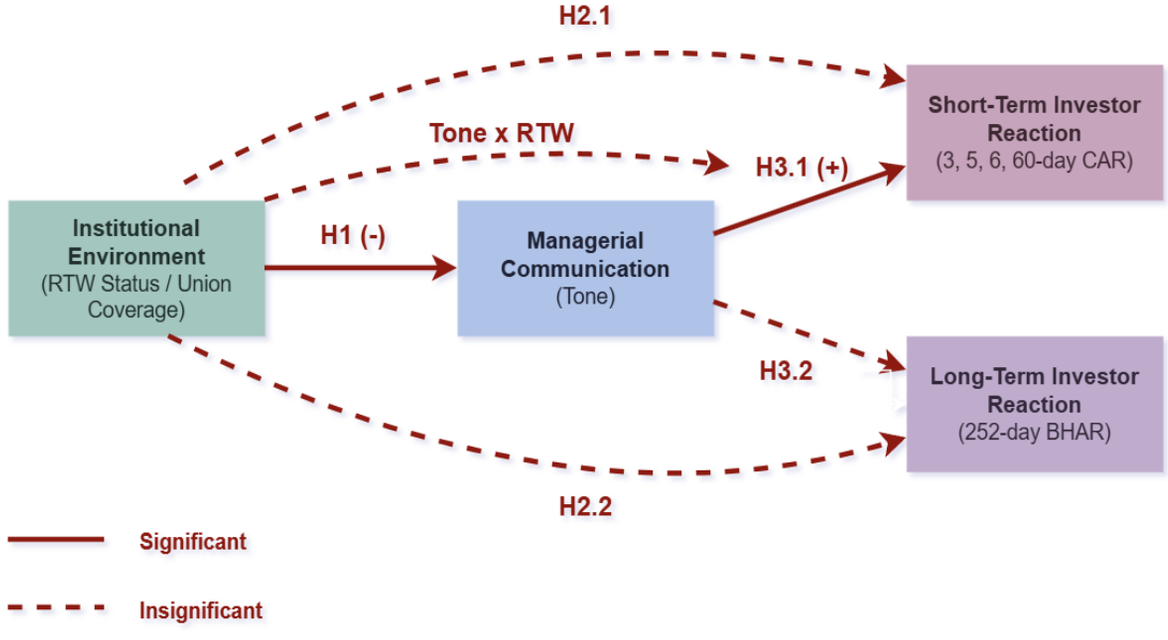
Arriving at our last hypothesis and its statistical evaluation in Chapter 4.4, we conclude that there is statistically significant evidence of positive market reaction in the 5-, 30-, and 60-day time frames to inflated tone. The exception of the immediate market reaction can be explained on the grounds of the time it takes for the memo to circulate through different news outlets. If we once again compare to existing theory, it was mostly built on financial and performance reporting, which are published on predetermined dates and are highly anticipated by the market. In our case, the news reaches different investors at different times due to unpredictability as well as uneven distribution of news, resulting in difficulties when determining the day zero of our event study.

# 6 CONCLUSION

With our work, the primary goal is to introduce an alternative approach for gathering textual data (i.e., layoff memos) that showcases the relationship of managerial tone and investors' perception in the context of RTW environments. With that, we are determined to provide some much-needed insight into the ongoing academic debate regarding the economic benefits of RTW implications from a different perspective. To achieve that, we evaluate 3 main hypotheses that address the use of managerial tone within RTW environments, the investor reaction to negative news in RTW states, and the investor reaction to tone inflation.

To visually represent our empirical results, Figure 11 maps the interactions between our main variables, while Table 13 summarizes our theoretical predictions versus empirical findings.

*Figure 11: Empirical Path Diagram of Hypotheses and Main Findings*




*Source: own work.*

*Table 18: Summary of Hypotheses and Main Findings*

| Hypothesis | Description of Hypothesis | Findings | Conclusion |
|---|---|---|---|
| **H1** | Companies headquartered in RTW states are more likely to use a positive or neutral tone in layoff memos compared to companies in non-RTW states. | Firms in RTW states actually use a more deflated (negative) tone. Higher union coverage aligns with more inflated tone. | **Not Supported** |
| **H2.1** | Companies in non-RTW states experience a more positive short-term investor reaction to major layoffs compared to those in RTW states. | RTW status has no statistically significant impact on short-term abnormal returns across the 3, 5, 30, and 60-day windows. | **Not Supported** |
| **H2.2** | Companies in non-RTW states experience a more positive long-term investor reaction to major layoffs compared to those in RTW states. | RTW status has no significant impact on long-term BHAR. | **Not Supported** |
| **H3.1** | Tone inflation in layoff memos positively impacts short-term investor response. | Positive tone mitigates negative market reactions (5, 30, and 60-day CAR), though not the immediate 3-day CAR. Excessive tone inflation eventually reverses this effect. | **Partially Supported** |
| **H3.2** | Tone inflation in layoff memos positively impacts long-term investor response. | The initial positive impact of managerial tone diminishes over time and becomes statistically insignificant in the long run. | **Not Supported** |

*Source: own work.*

We find that managers use tone differently in the context of layoff memos compared to previous studies. Managers of companies headquartered in RTW states tend to use a deflated managerial tone when announcing layoffs compared to those in non-RTW states. Replacing RTW status with union coverage rate by state paints a similar picture, showing that managers in companies headquartered in highly unionized states use a more inflated tone and vice versa. In this regard, managers prefer to alter the number of positive words when inflating or deflating their tone, rather than negative words. This aligns with further findings that the market in general reacts positively to an inflated tone. This holds especially true when the

layoffs become more severe, as positive tone offsets negative market reaction by a significant margin. There is, however, a certain threshold to which investors tolerate tone inflation. Excessive positive managerial tone might lead to diminishing returns as well as negative market reaction, as investors recognize and punish managers for being misleading. Perhaps the most valuable conclusion is that while managers adjust their tone depending on RTW status, investors do not react selectively to layoffs based on RTW status, but rather to the tone that is being used.

Our contribution to studies of RTW law economic implications is threefold. First, we introduce layoff memos as a unique textual data source for analyzing managerial tone, further extending pre-existing research, which mostly focused on earnings press releases. Second, we merge the two research streams of RTW laws and tone management, providing an alternative view on an almost decade old academic debate through behavioral finance. Third, we employ robust econometric models throughout our event study to measure investor reaction with the addition of a long-term assessment.

Nonetheless, some limitations within our work must be taken into consideration. The dataset relies on publicly available or leaked documents and may therefore suffer from selection bias. Moreover, data gathering process is extensive and unavoidably manual, which means that certain errors may have occur during this process. Our final dataset also consists of a relatively small representation of RTW state firms, which may reduce the power of statistical inference for those subgroups.

Our suggestion for future work is broad but applies mostly to the field of behavioral finance. The specific topic of RTW status and layoff events serves as a demonstration of using data that researchers previously overlooked. Established literature stems from common data samples, which are clear ways for managers to reach shareholders by communicating thoughtfully and with specific intent. Managers and other people of interest to stakeholders communicate in many other ways that do not receive the same amount of attention. Researchers are therefore urged to listen carefully and observe alternative communication channels to formulate new textual databases to provide much needed insight into either pre-existing or novel research topics.

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# APPENDICES

**Appendix 1: Detailed List of Sample Firms and Layoff Events.**

| State/Company | Industry | Number of Layoff Events | Total Number of Laid-Off Employees |
|---|---|---|---|
| **Arizona** | | **4** | **2,634** |
| Carvana | Shops | 1 | 1,500 |
| GoDaddy | Business Equipment | 2 | 981 |
| Offerpad | Finance | 1 | 153 |
| **California** | | **68** | **59,748** |
| 8x8 | Telecommunications | 2 | 355 |
| Affirm | Finance | 2 | 560 |
| Airbnb | Business Equipment | 1 | 1,900 |
| Alteryx | Business Equipment | 1 | 320 |
| Amplitude | Business Equipment | 1 | 99 |
| AppFolio | Business Equipment | 1 | 149 |
| Asana | Business Equipment | 1 | 180 |
| Better Therapeutics | Health | 1 | 19 |
| Beyond Meat | Nondurable Goods | 1 | 200 |
| Blend | Business Equipment | 1 | 340 |
| Confluent | Business Equipment | 1 | 221 |
| Cue Health | Health | 1 | 326 |
| Dropbox | Business Equipment | 2 | 815 |
| eBay | Shops | 1 | 500 |
| Electronic Arts | Business Equipment | 2 | 980 |
| Enovix | Durable Goods | 1 | 185 |
| Getaround | Other | 1 | 29 |
| GitLab | Other | 1 | 130 |
| Google | Business Equipment | 2 | 12,075 |
| Informatica | Business Equipment | 1 | 450 |
| Intuit | Business Equipment | 1 | 715 |
| Invitae | Other | 1 | 1,000 |
| Lending Club | Finance | 1 | 225 |
| Lucid Motors | Durable Goods | 1 | 1,300 |
| Matterport | Business Equipment | 1 | 170 |
| MeridianLink | Business Equipment | 1 | 61 |
| Meta | Business Equipment | 2 | 21,000 |
| NetApp | Business Equipment | 1 | 960 |
| Netflix | Other | 2 | 330 |
| New Relic | Business Equipment | 3 | 525 |
| Okta | Business Equipment | 2 | 324 |
| Opendoor | Finance | 1 | 550 |
| Oportun | Finance | 1 | 155 |
| PagerDuty | Telecommunications | 1 | 82 |
| PayPal | Finance | 1 | 2,000 |

To be continued

| State/Company | Industry | Number of Layoff Events | Total Number of Laid-Off Employees |
|---|---|---|---|
| Planet | Business Equipment | 1 | 117 |
| Qualcomm | Business Equipment | 2 | 1,411 |
| RingCentral | Business Equipment | 1 | 390 |
| Robinhood | Finance | 3 | 1,203 |
| Roku | Telecommunications | 1 | 200 |
| Salesforce | Business Equipment | 1 | 1,000 |
| SentinelOne | Business Equipment | 1 | 105 |
| Snap | Business Equipment | 3 | 1,470 |
| Splunk | Business Equipment | 2 | 825 |
| Stitch Fix | Shops | 1 | 330 |
| Sweetgreen | Shops | 1 | 298 |
| Udemy | Other | 1 | 144 |
| Upwork | Other | 1 | 137 |
| Workday | Other | 1 | 525 |
| Yelp | Business Equipment | 2 | 1,063 |
| Zoom | Business Equipment | 1 | 1,300 |
| **Colorado** | | **1** | **109** |
| Inspirato | Finance | 1 | 109 |
| **Florida** | | **1** | **200** |
| Chewy | Shops | 1 | 200 |
| **Georgia** | | **2** | **512** |
| SecureWorks | Business Equipment | 2 | 512 |
| **Illinois** | | **4** | **4,600** |
| GoHealth | Finance | 1 | 800 |
| Groupon | Other | 3 | 3,800 |
| **Maryland** | | **1** | **592** |
| 2U | Business Equipment | 1 | 592 |
| **Massachusetts** | | **8** | **14,086** |
| CarGurus | Shops | 1 | 130 |
| Definitive Healthcare | Business Equipment | 1 | 55 |
| Editas Medicine | Other | 1 | 53 |
| HubSpot | Business Equipment | 1 | 500 |
| Rapid7 | Business Equipment | 1 | 470 |
| TCR2 | Other | 1 | 10,258 |
| Wayfair | Shops | 2 | 2,620 |
| **Michigan** | | **1** | **840** |
| Rivian | Durable Goods | 1 | 840 |

To be continued

| State/Company | Industry | Number of Layoff Events | Total Number of Laid-Off Employees |
|---|---|---|---|
| **New York** | | **12** | **5,812** |
| BuzzFeed | Other | 1 | 180 |
| Kaltura | Business Equipment | 1 | 77 |
| LivePerson | Business Equipment | 1 | 193 |
| Olo | Other | 1 | 81 |
| Peloton | Business Equipment | 3 | 4,084 |
| Rent the Runway | Shops | 1 | 230 |
| SiriusXM | Telecommunications | 1 | 475 |
| Teladoc Health | Health | 1 | 300 |
| Vimeo | Business Equipment | 2 | 192 |
| **North Carolina** | | **2** | **300** |
| LendingTree | Finance | 1 | 200 |
| nCino | Business Equipment | 1 | 100 |
| **Oregon** | | **1** | **1,300** |
| Vacasa | Other | 1 | 1,300 |
| **Pennsylvania** | | **1** | **38** |
| Century Therapeutics | Business Equipment | 1 | 38 |
| **Texas** | | **4** | **8,231** |
| BigCommerce | Business Equipment | 1 | 180 |
| Dell | Business Equipment | 1 | 6,650 |
| Stitch Fix | Shops | 1 | 1,172 |
| Tesla | Durable Goods | 1 | 229 |
| **Utah** | | **1** | **270** |
| Qualtrics | Business Equipment | 1 | 270 |
| **Washington** | | **12** | **30,771** |
| Amazon | Shops | 6 | 27,760 |
| F5 | Business Equipment | 1 | 623 |
| Leafly | Business Equipment | 1 | 40 |
| Qualtrics | Business Equipment | 1 | 780 |
| Redfin | Finance | 3 | 1,568 |
| **Total** | | **123** | **130,043** |

*Source: own work.*