# Mergers and Non-contractible Benefits: The Employees' Perspective*

Wei Cai[†1], Andrea Prat[‡1], and Jiehang Yu[§1]

[1]Columbia University

May 2025

**ABSTRACT**

Incomplete contract theory, supported by anecdotal evidence, suggests that when a firm is acquired, workers may be adversely affected in non-contractible aspects of their work experience. This paper empirically investigates this prediction by combining M&A events from the Refinitiv database and web-scraped Glassdoor review data. We find that: (a) Controlling for pre-trends, mergers lead to lower satisfaction, especially on non-contractible dimensions of the employee experience (about 6% of a standard deviation); (b) The effect is stronger in the target firm than in the acquiring firm; (c) Textual analysis of verbal responses reveals that the lower satisfaction is associated to feelings of disappointment due to broken promises.

*We are grateful to Charles Angelucci, David Arnold, Wouter Dessein, Bob Gibbons, Suresh Naidu, Steve Tadelis, and participants to seminars at Duke and MIT for useful suggestions.

[†]wc2419@gsb.columbia.edu

[‡]ap3116@gsb.columbia.edu

[§]jyu29@gsb.columbia.edu

# 1 Introduction

Mergers and acquisitions are common corporate activities that have been acknowledged by both practitioners and scholars as drivers of change. A merger can affect various stakeholders, like customers, shareholders, and workers. A large body of work attempts to model and measure the effect of mergers on customers (and suppliers), often with the objective to provide guidance to antitrust authorities (Shapiro (2019)). Another substantive body of research investigates the financial impact of mergers on shareholders (Firth (1980); Agrawal et al. (1992); Moeller et al. (2005); Healy et al. (1992)). Another literature studies the effect of mergers on workers (Marinescu and Hovenkamp (2019); Naidu et al. (2018), Arnold (2019), Arnold et al. (2023)). If firms compete for the same talent pool, a merger can lead to less competition and lower wages.

However, the effect of a merger on workers may go beyond wages and may affect non-monetary aspects of the employee experience. A priori, the effect is ambiguous. For instance, a merger could provide employees, especially in the target firm, with more financial resources, allowing them to pursue their business strategy more effectively and thus leading to more job satisfaction. Anecdotally, this is what happened when Google acquired YouTube in 2006 (Hartmans and Leskin (2020)).

A merger could also create dissatisfaction. Take Amazon's acquisition of Whole Foods in 2018. Before the merger, Whole Foods was known for its decentralized and participative team work culture (Burkus (2016)). Bonuses were paid out on the basis of team data, and existing team members had the right to decide who joined the team. Employees were reportedly very happy with the system. However, following the merger, the Whole Foods approach was replaced by Amazon's trademark management style, based on a relentless to drive to optimize operational efficiency. Amazon rolled out a new inventory management system and held employees individually accountable through scorecards. Employee compliance was

ensured by frequent checks called 'walks' that may involve on-the-spot quizzes, in which employees are asked to recite their departments' sales goals, top-selling items, previous week's sales, and other information. According to Peterson (2018), interviews of current and former employees, morale was "crushed" by a system that was perceived as "punitive". One store supervisor reported: "The stress has created such a tense working environment. Seeing someone cry at work is becoming normal."

The phenomenon whereby mergers reduce the non-monetary benefits of workers has been theorized by Hart and Holmstrom (2010). A merger between two firms affects both transferable and non-transferable benefits. Transferable benefits include wages and other contractual employee benefits. Non-transferable benefits instead include private benefits of workers in the two firms, that encompass job satisfaction in a broad sense. They may stem from employees' preferences for certain technologies or certain processes, or how well the employees' human capital fits their current firm's needs, which affects the employees' future compensations and promotions. Employees may also derive utility from the fit between their values and the organizational values.

According to Hart and Holmstrom (2010), a key difference between transferable and non-transferable benefits is that the former is subject to a higher level of contractibility. Promises of non-contractible benefits can be reneged upon. A breach of promises "aggrieves" workers and induces them to exert less cooperation. The paper shows that integration reduces the owner's relative benefits from reneging on promises made to employees, thus making a breach more likely.

As Hart and Holmstrom (2010) note, this reasoning is connected to relational contracts (Baker et al (2001), where reneging temptation is shown to be higher under integration than under non-integration. Gibbons and Henderson (2012) use the Credit Suisse First Boston example to argue that a merger jeopardizes the *acquired firm's relational contract*. Due to credibility and clarity issues, the acquirer may choose not to honor the implicit contract that

was in place in the target company before the merger.

Thus, this theory suggests three sets of testable implications. First, a merger is likely to reduce employee satisfaction; the effect should be stronger for dimensions of the employee experience that relate to non-contractible, rather than contractible, benefits. Second, this effect should be stronger in the target firm rather than in the acquiring firm, as relational contracts are more likely to survive in the latter. Third, employees – particularly those in the target company – should feel a breach of promise with respect to the pre-merger situation. The goal of this paper is to explore these predictions empirically.

To examine how worker satisfaction changes after an M&A, we combine two data sources. We construct a sample of M&A events from 2008 to 2020 using the Refinitiv database. We measure worker satisfaction using web-scrapped Glassdoor review data. Specifically, we aggregate the "Overall Rating" in the reviews from "Current Employees" for each firm-year by taking the average. We then drop the mergers where either the acquiring or the target firm has less than 3 reviews in the three-year window around the merger. We also drop the mergers where either the acquiring or the target firm was involved in more than one merger in the three-year window around that merger. The final sample consists of 359 mergers.

First, we observe that mergers result in a significant reduction in worker satisfaction within the involved firms, with the overall satisfaction index decreasing by 4% of a standard deviation post-merger. Glassdoor ratings encompass various aspects, including compensation, work-life balance, culture, career opportunities, management, recommendation, outlook, and CEO approval. We categorize compensation and balance as "hard" dimensions due to their quantifiable and contractible nature, while the remaining categories are labeled "soft" dimensions, representing less tangible, non-contractible benefits. The drop in worker satisfacton is concentrated in the soft dimensions (6% of a standard deviation). All six individual soft factors display a significant negative change. The coefficients of the two hard dimensions are not significantly different from zero (and the point estimates are much

smaller).

Second, when we split merging firms into acquirors and targets, most of the action is on the latter. The estimated additional effect for soft dimensions for target firms is -0.121, or a 15% standard deviation decline. This finding is consistent with the theoretical prediction that relational contracts are more likely to survive in the acquiring firm.

Lastly, to investigate the mechanism behind this relative drop in post-merger employee satisfaction in target firms, we exploit the narrative component of the Glassdoor review dataset to understand if workers ascribe the decline in satisfaction to a breach of implicit contract. We ask an AI to produce realistic synthetic reviews that would be written by an employee who felt that the company had broken an implicit contract with its workers. We find that the similarity between the actual reviews and the synthetic reviews increases differentially in target firms after a merger. This relative increase is about 10% of a standard deviation in our similarity measure.

Our paper contributes to the existing literature in the following ways.

First, we contribute to the literature on the consequence of mergers. While most prior studies focus on the financial consequence of M&A and its impact on shareholders and consumers (Firth (1980); Agrawal et al. (1992); Moeller et al. (2005); Healy et al. (1992); Kim and Singal (1993); Focarelli and Panetta (2003)), we point out a previously understudied non-financial consequence of M&A, worker satisfaction, and shed light on the impact of M&A on another type of stakeholders, the employees. Our findings complement Arnold (2019), which shows that mergers that increase local labor market concentration reduce worker earnings. We shows that mergers can impact workers utility through a different channel. Moreover, by studying how employee perception evolve after an M&A, this study helps to uncover the underlying factors contributing to the success or failure of M&As and reconcile the conflicting findings regarding whether M&A generates or diminishes value for shareholders, as employee perception has been linked to improved stock market performance

in previous studies (Green et al. (2019); Guiso et al. (2015); Edmans (2011)). A recent study, Fairhurst et al. (2024), also studies employee satisfaction around mergers. However, the research question is different. While their work centers on acquiring firms and examines how employee morale contributes to merger success, our paper focuses on the erosion of non-contractible benefits within target firms.

Second, we contribute to the literature on employee perception. Existing literature finds that employee perception of the firm is positively associated with the firm's financial performance (Green et al. (2019); Guiso et al. (2015); Edmans (2011)). In addition, employee perception is commonly regarded as resistant to change and tends to remain stable unless triggered by specific events, such as corporate tax avoidance news, financial reporting pressure, or other corporate scandals (Lee et al. (2021); Ji et al. (2022); Gadgil and Sockin (2020)). This paper contributes by pointing out a major corporate event that is likely to change employee perception, M&A. We find that employee perception of the firm declines after an M&A, with smaller firms and firms with better pre-merger employee perception experiencing a larger decline.

# 2 Data and Descriptive Statistics

## 2.1 Data and Sample Construction

We start from the M&A data obtained from Refinitiv. The following sample selection restrictions are imposed. First, only completed deals (i.e., status flag = "C") are retained. Second, we drop the mergers that are actually investment deals, i.e., mergers where the acquiror is identified as a "Financial Acquiror", mergers that are identified as a "Special Purpose Acquisition", and mergers where the acquiror industry is "Investment & Commodity Firms, Dealers, Exchanges". Furthermore, mergers that are divestitures or spinoffs are excluded from the sample, i.e., mergers that are flagged as "Divestiture", mergers that are

flagged as "Spinoff", and mergers where the acquiror CUSIP number is identical to the target CUSIP number. To align with the start date in Glassdoor, we only keep the mergers occurring strictly after 2008. In addition, mergers are retained only if at least one firm involved is listed in Compustat after 2008. We match Refinitiv firms with Compustat firms using the 6-digit CUSIP.

We use the web-scraped Glassdoor review data to measure worker satisfaction. First, we eliminate the reviews with missing dates, retain only reviews from individuals identifying themselves as "Current Employees", and drop any duplicate reviews identified by matching the year, date, document length, and ratings.[1] Second, we convert the ratings in the raw data, initially represented as strings, into numeric variables. For dimensions reported as percentages (such as overall rating, balance, culture, diversity, opportunities, compensation, and management), the percentage sign is removed, and the values are converted to integers, then divided by 100 (e.g., "80%" $\Rightarrow$ 80 $\Rightarrow$ 0.8). As for the remaining three dimensions (recommends, outlook, and approval of CEO), the following conversion is applied: -2 $\Rightarrow$ NA, -1 $\Rightarrow$ 1, 0 $\Rightarrow$ 2, 1 $\Rightarrow$ 3. We then aggregate the ratings to firm-year-quarter by taking the average. This aggregated rating data is merged with firm information scraped from the firm's "overview" page, such as firm size. We manually look up the firm size if it is missing.

The Glassdoor review data is then combined with the merger data using an inner join, ensuring that only firms present in both datasets are retained. We compute the "period" of each year in the Glassdoor data as the number of quarters after the merger (negative for quarters before the merger occurred).

Additional sample restrictions are imposed as follows. First, mergers are retained only if both the acquiring and target firms have at least 1 review each quarter from one quarter before to one quarter after the merger. Second, in order to be able to identify pre-trends,

[1] As laid-off employees tend to view the company more negatively than current employees, our estimated effect of the merger on non-contractible benefits likely represents a lower bound.

mergers are retained only if both the acquiring and target firms were involved in only one merger in the merger year.

Finally, we perform the following steps. First, the data is transformed into a "long" format. In the original data, each observation represents a merger. In the long format, each observation represents a firm, with additional columns indicating the merger ID and a binary variable indicating whether the firm acted as the target or acquiror in that particular merger. Second, the rating variables are demeaned and standardized by industry-year-quarter. This involves computing the average rating across all firms (both targets and acquirors) within each industry-year-quarter. This industry-year-quarter average is then subtracted from the raw ratings to obtain the demeaned version. We then standardize the variables by dividing them by the standard deviation of ratings within each industry-year-quarter. Third, we compute the pre-merger average ratings for each firm, which is the average of the firm's ratings across the 12 periods before the merger quarter. Finally, we assign the firm's size to be equal to the midpoint of the firm size "bin" given in Glassdoor. That is, if Glassdoor reports that the size of a firm is 1 to 50 employees, we assign the firm's size to be 25.5. The size of the largest category (>10,000 employees) is set as 20,000.

The final sample consists of 361 mergers.

## 2.2 Descriptive Statistics

Table 1 reports the descriptive statistics of the Glassdoor overall rating and all sub-ratings of all firms in the sample. To ensure comparison, the ratings are standardized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation.

# 3 Empirical Results

## 3.1 Net Effect of Merger

We first examine the net effect of a merger on worker satisfaction by estimating the following equation:

$$Worker\,Satisfaction_{it} = \beta_0 + \beta_1 Post_{it} + \phi_i + \delta_t + \epsilon_{it} \tag{1}$$

Where $Worker\,Satisfaction_{it}$ takes the value of the aggregated overall rating of firm i in quarter t and the ratings of each of the following dimensions: compensation, balance, culture, opportunities, recommendation, management, outlook, and approval of CEO. To enable comparison, each rating is normalized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation. We refer to compensation and balance as the "hard" dimensions as they are more quantifiable than other dimensions and compute the hard rating as the average of compensation rating and balance rating, and the soft rating as the average of culture rating, opportunities rating, recommendation rating, management rating, outlook rating, and approval of CEO rating. We also compute the average of hard rating and soft rating as an additional outcome variable. $Post_{it}$ is an indicator variable equal to 1 if firm i has undergone the merger by quarter t and 0 otherwise. We also include firm fixed effects $\phi_i$ to account for time invariant firm heterogeneity and year-quarter fixed effects $\delta_t$ to account for macro-shocks common to all firms. The coefficient of interest is $\beta_1$.

The results are reported in Table 2. The results suggest that the merger generates a lump sum cost for the worker satisfaction in the firms involved. Specifically, worker satisfaction decreases by 4% standard deviation point after the merger. Moreover, the decline in worker satisfaction is driven by the soft dimensions. In Panel B, ratings on all soft dimensions

experience a significant decline following the merger.

To delve deeper into the trend of worker satisfaction before and after the merger, we follow Freyaldenhoven et al. (2021) and estimate the following equation:

$$Worker\,Satisfaction_{it} = \sum_{\tau=-12}^{12} \beta_\tau d_{it}^\tau + \phi_i + \delta_t + \epsilon_{it} \tag{2}$$

where $Worker\,Satisfaction_{it}$ takes the value of the overall rating, hard rating, and soft rating of firm i in year-quarter t demeaned at the industry level; $d_{it}^\tau$ is an indicator variable equal to 1 if period t is $\tau$ quarters relative to the year when firm i was involved in a merger. We group the periods earlier than -12 into period -12 and the periods later than +12 into period +12. $\phi_i$ is firm fixed effects and $\delta_t$ is quarter fixed effects. The results are reported in Table 3. Figure 2 graphically shows the change in worker satisfaction for all firms before and after the merger by plotting the estimated $\beta_\tau$ with their respective confidence intervals. The graph also indicates that the coefficients of $\beta_\tau\,(\tau < 0)$ are not significantly different from zero. This implies that worker satisfaction does not significantly change in the pre-period, thus providing some evidence for the parallel trend assumption.

Figure 2 suggests that the bulk of the merger effect starts 2 quarters after the transaction and increases until quarter 9, 10, or 11. This dynamic pattern – both the approximate time horizon and the gradualism – is detectable in most of our figures and regressions. It aligns with the received wisdom among merger practitioners. For instance, Milde et al. (2023) divides the post-merger integration process into three phases: Horizon 1 covers the first 100 days and "prioritizes business continuity"; Horizon 2 stretches from day 100 through years 2-3 and "focuses on integrating business processes and operations"; Horizon 3 goes from years 2-3 to years 4-5 and "aims to achieve the merger's strategic benefits on a larger scale." The article also claims (Exhibit 3) that over 60% of the process integration targets are achieved in the 6-24 months window.

## 3.2 Effect of Merger on Target Firms

### 3.2.1 Target Effect

We next investigate whether the decline in worker satisfaction is driven by the target or the acquiror by estimating the following equation:

$$Worker\,Satisfaction_{it} = \beta_0 + \beta_1 Post_{it} \times Target_{it} + \beta_2 Post_{it} + \beta_3 Target_{it} + \phi_i + \delta_t + \epsilon_{it} \quad (3)$$

Where $Target_{it}$ is an indicator variable equal to 1 if firm i is the target firm of the merger in quarter t and 0 otherwise. $Post_{it}$ is an indicator variable equal to 1 if firm i has undergone the merger by quarter t and 0 otherwise. $\phi_i$ is firm fixed effects and $\delta_t$ is quarter fixed effects.

The results are reported in Table 4. The coefficient of $Post_{it} \times Target_{it}$ is significantly negative for soft ratings, suggesting that the decline in the non-contractible benefits is driven by target firms. In terms of economic magnitude, the decline in target firms' soft ratings is over 15% standard deviation larger than the decline in acquiring firms' soft ratings.

Similar to Table 3, we estimate Equation 2 in the subsample of acquirers (targets) and report the results in Table 5. Figure 3 plots the estimated coefficients with their respective confidence intervals and graphically shows the change in worker satisfaction in target firms and acquiring firms before and after the merger. These graphs further corroborate the previous finding that the decline in worker satisfaction after the merger is driven by the target firms, which we term the "target effect". In addition, in both graphs, the coefficients in the pre-period are not significantly different from zero, thus providing some support for the parallel trend assumption.

### 3.2.2 Size Effect and Quality Effect

In our sample, the target firm is on average smaller than the acquiring firm and has better pre-merger ratings. Therefore, in this section, we explore whether the observed target

effect is driven by differences in firm size, pre-merger quality, or whether ownership itself also plays a significant role. Specifically, we calculate the relative size of the two firms before the merger, $Relative\ Size_{it}$, and their relative ratings, $Relative\ Quality_{it}$.

$Relative\ Size_{it}$ is constructed as follows. Let $s_{it}$ denote the size of firm i in quarter t. Let $\hat{s}_i = \frac{\sum_{t=T_{ij}-2}^{T_{ij}} s_{it}}{3}$ be the pre-merger average size of firm i, where $T_{ij}$ is the quarter when the merger between firm i and firm j occurs. The relative size of firm i is then given by $Relative\ Size_{it} = 2\frac{\hat{s}_j}{\hat{s}_j+\hat{s}_i} - 1$, which ranges from -1 to 1. That is, if firm i is on average larger (smaller) than firm j before the merger, $Relative\ Size_{it}$ is negative (positive). If firm i and firm j are of equal size before the merger, $Relative\ Size_{it}$ equals 0.

$Relative\ Quality_{it}$ is defined as the difference in the pre-merger average ratings of the two firms. That is, $Relative\ Quality_{it}$ is equal to $\hat{s}_i - \hat{s}_j$.

We then estimate the following equation:

$$\begin{aligned} Worker\ Satisfaction_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Post_{it} \times Relative\ Size_{it} \\ + \beta_3 Post_{it} \times Relative\ Quality_{it} + \beta_4 Post_{it} \times Target_{it} + \beta_5 Relative\ Size_{it} \\ + \beta_6 Relative\ Quality_{it} + \beta_7 Target_{it} + \phi_i + \delta_t + \epsilon_{it} \quad (4) \end{aligned}$$

Where $Post_{it}$ is an indicator variable equal to 1 if firm i has undergone the merger by year t and 0 otherwise. We also include firm fixed effects $\phi_i$ and quarter fixed effects $\delta_t$.

The results, shown in Table 6, reveal that the coefficients on $Post_{it} \times Relative\ Quality_{it}$ are significantly negative across all columns, indicating that the higher-quality firm in the merger consistently experiences a decline in worker satisfaction across all dimensions. Notably, the coefficient on $Post_{it} \times Target_{it}$ is significantly positive for hard ratings (driven by the compensation dimension) yet significantly negative for soft ratings (driven by the culture dimension) after controlling for size and quality effects. This suggests that employees in the target firm are financially compensated for a deteriorating workplace culture after owner-

ship transitions to the acquiring firm. In essence, these findings imply that ownership itself contributes to the erosion of non-contractible benefits following the merger.

## 3.3 Breach of Implicit Contract

In this section, we conduct textual analysis to Glassdoor employee reviews to investigate whether the decline in employee satisfaction is driven by firms' breaking their implicit contracts with the employees.

### 3.3.1 Text Pre-Processing

We begin by tokenizing the reviews into individual words or tokens using the NLTK package.[2] All tokens are converted to lowercase, and non-alphabetic tokens are removed. To standardize word forms, we apply Porter stemming, which reduces words to their root forms.[3]

Since phrases can be essential in conveying nuances of organizational capital, we then use the 'Phrases' function from Gensim to identify potential bigrams—pairs of consecutive words that frequently co-occur.[4] This function scans the tokenized text to detect commonly occurring word pairs. When training the bigram model, we set min_count=10 to filter out words and bigrams that appear fewer than 10 times in the dataset, removing rare or potentially uninformative pairs. Additionally, we set the threshold parameter to 10, which controls the strength of association between word pairs. This parameter helps ensure that selected bigrams are not only frequent but also contextually meaningful, resulting in a coherent and relevant model output.

[2] https://www.nltk.org/index.html
[3] https://www.nltk.org/howto/stem.html
[4] https://radimrehurek.com/gensim/models/phrases.html

### 3.3.2 Word Embedding

We perform word embedding on the pre-processed Glassdoor reviews to understand the meaning of the reviews. The basic concept of the word embedding model is that words that occur in similar contexts have similar meanings (Harris (1954)). The word embedding model is often implemented using the Word2Vec algorithm developed by Mikolov et al. (2013).

We use Gensim Word2Vec to train the word embedding model.[5] We set the vector size to 300 to capture a wide array of semantic relationships while maintaining computational efficiency. The window size is set to 5, indicating that the model considers five words/bigrams before and after the target word/bigram in the text to learn the word associations. Furthermore, we train the model for 20 iterations. Each iteration helps the model adjust the word vectors to better capture the nuances of their meanings and contextual relationships. This number of iterations is chosen to strike a balance between model accuracy and training time, ensuring that the embeddings are well-trained without overfitting the training data.

### 3.3.3 ChatGPT Based Measure

To quantify the extent to which a review reflects an employee's complaint about their company breaching an implicit contract, we use ChatGPT to generate synthetic reviews that simulate such complaints. Appendix A provides the ChatGPT prompt and the synthetic reviews.

We then tokenize the synthetic reviews using a similar method as described in Section 3.3.1 and obtain the embedding vector of each token in the synthetic reviews using the model trained in Section 3.3.2. For each synthetic review, we average the vectors of its tokens to obtain a score vector for the review. We then average the review-level vectors to obtain a representative vector for "breaking implicit contract".

[5] https://radimrehurek.com/gensim/models/word2vec.html

$$v = \frac{1}{N}\sum_{k=1}^{N}(\frac{1}{B_k}\sum_{b_k=1}^{B_k} v_b)$$

where $k = 1, 2, ..., N$ are the synthetic reviews indicating breach of implicit contract, $b_k = 1, 2, ..., B_k$ are the bigrams in each synthetic review $k$, and $v_{b_k}$ is the embedding vector of bigram $b_k$.

To apply the representative vectors to real employee reviews, we first calculate the score vector of the cons section of real review m, $v_{m_{cons}}$, by averaging the vectors of all tokens in the cons section of review $m$. After that, we calculate the similarity between each "cons" review and the representative vector for breach of implicit contract, $sim_{m_{cons}}$.

$$v_{m_{cons}} = \frac{1}{B_{m_{cons}}}\sum_{b_{m_{cons}}}^{B_{m_{cons}}} v_{b_{m_{cons}}}$$

$$sim_{m_{cons}} = \frac{v_{m_{cons}} \cdot v_{weak}}{|v_{m_{cons}}|\,|v_{weak}|}$$

To derive a firm-year measure, we average these similarity scores for all reviews pertaining to a firm in a specific year-quarter and derive the final measure, named *Breach of Implicit Contract*.

### 3.3.4 Typical Words

In addition to calculating cosine similarity, we identify the "typical" words in ChatGPT-generated synthetic reviews. "Typicity" is defined as the ratio of a word's frequency in the synthetic reviews to its frequency in average real reviews. Appendix B presents the top 50 typical words and bigrams. For each real review, we calculate the sum of the frequencies of words appearing in the top 50 typical words list. This review-level measure is then aggregated to the firm-year-quarter level by averaging across all reviews, resulting in the

variable # Typical Words.

### 3.3.5 Do Employees Express Complaints about Their Company Breaching an Implicit Contract?

To investigate whether employees express complaints about their company breaching an implicit contract, we estimate the following equation:

$$Breach\ of\ Implicit\ Contract_{it} = \beta_0 + \beta_1 Post_{it} + \phi_i + \delta_t + \epsilon_{it} \tag{5}$$

where $Breach\ of\ Implicit\ Contract_{it}$ is the measure derived in Section 3.3.3. $Post_{it}$ is an indicator variable equal to 1 if firm i has undergone the merger by quarter t and 0 otherwise. We also include firm fixed effects $\phi_i$ to account for time-invariant firm heterogeneity and quarter fixed effects $\delta_t$ to account for macro-shocks common to all firms. The coefficient of interest is $\beta_1$.

The results are reported in Column 1 of Table 7. The coefficient of $Post_{it}$ is significantly positive, suggesting that employees express more complaints about their companies' breaking the implicit contract after the merger.

To shed further light on whether such an effect is stronger for target firms, we estimate the following equation:

$$Breach\ of\ Implicit\ Contract_{it} = \beta_0 + \beta_1 Post_{it} \times Target_{it} + \beta_2 Post_{it} + \beta_3 Target_{it} + \phi_i + \delta_t + \epsilon_{it} \tag{6}$$

where $Target_{it}$ is an indicator variable equal to 1 if firm i is the target firm of the merger in quarter t and 0 otherwise.

The results are reported in Column 2 of Table 7. The significantly positive coefficient for $Post_{it} \times Target_{it}$ indicates that the increase in employee complaints about breaches of

implicit contracts after the merger is more pronounced in target firms.

We also repeat the same analysis with # Typical Words as the outcome and report the results in Table 8. The findings remain consistent.

# 4 Conclusion

Mergers are triggers for changes, affecting both the transferrable and non-transferrable benefits of the two firms (Hart and Holmstrom 2010). Using web-scrapped Glassdoor review data, we investigate the change in non-transferrable benefits, specifically employee satisfaction, following a merger. We find that mergers generate a lump sum cost for both firms in terms of employee satisfaction, driven by the decline in the less quantifiable, "soft" dimensions of Glassdoor ratings, such as culture, career opportunities, or management, etc. We also find that the negative impacts more pronounced in target firms. Furthermore, textual analysis of Glassdoor employee reviews indicates that the decrease in satisfaction stems from feelings of disappointment due to perceived breaches of trust and unkept promises.

Our findings shed new light on the non-financial consequences of mergers, providing important managerial implications for practitioners looking to evaluate the comprehensive cost and benefit of a merger, or a potential merger. The paper also offers insights into the determinants of employee satisfaction, which is usually considered as sticky and resilient to changes unless triggered by some major events such as mergers.

# References


Agrawal, A., Jaffe, J. F., Mandelker, G. N., 1992. The post-merger performance of acquiring firms: a re-examination of an anomaly. The Journal of finance 47, 1605–1621, publisher: Wiley Online Library.

Arnold, D., 2019. Mergers and Acquisitions, Local Labor Market Concentration, and Worker Outcomes.

Arnold, D., Milligan, K. S., Moon, T., Tavakoli, A., 2023. Job Transitions and Employee Earnings After Acquisitions: Linking Corporate and Worker Outcomes.

Burkus, D., 2016. Why Whole Foods Builds Its Entire Business On Teams. Forbes, June 8.

Edmans, A., 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices. Journal of Financial economics 101, 621–640, publisher: Elsevier.

Fairhurst, D. J., Feng, H., Gao, X., 2024. Mergers, Employee Satisfaction, and Merger Outcomes: Evidence from Glassdoor Ratings. Available at SSRN 4984561 .

Firth, M., 1980. Takeovers, shareholder returns, and the theory of the firm. The Quarterly Journal of Economics 94, 235–260, publisher: MIT Press.

Focarelli, D., Panetta, F., 2003. Are mergers beneficial to consumers? Evidence from the market for bank deposits. American Economic Review 93, 1152–1172, publisher: American Economic Association.

Freyaldenhoven, S., Hansen, C., Pérez, J. P., Shapiro, J. M., 2021. Visualization, identification, and estimation in the linear panel event-study design. Tech. rep., National Bureau of Economic Research.

Gadgil, S., Sockin, J., 2020. Caught in the act: How corporate scandals hurt employees. Available at SSRN 3638358 .

Green, T. C., Huang, R., Wen, Q., Zhou, D., 2019. Crowdsourced employer reviews and stock returns. Journal of Financial Economics 134, 236–251, publisher: Elsevier.

Guiso, L., Sapienza, P., Zingales, L., 2015. The value of corporate culture. Journal of financial economics 117, 60–76, publisher: North-Holland.

Harris, Z. S., 1954. Distributional structure. Word 10, 146–162, publisher: Taylor & Francis.

Hart, O., Holmstrom, B., 2010. A theory of firm scope. The quarterly journal of economics 125, 483–513, publisher: MIT Press.

Hartmans, A., Leskin, P., 2020. The untold story of Google's $1.65 billion acquisition of YouTube, from those who lived it. Business Insider .

Healy, P. M., Palepu, K. G., Ruback, R. S., 1992. Does corporate performance improve after mergers? Journal of financial economics 31, 135–175, publisher: Elsevier.

Ji, Y., Rozenbaum, O., Welch, K., 2022. Who Experiences Financial Reporting Pressure? Available at SSRN 4094290 .

Kim, E. H., Singal, V., 1993. Mergers and market power: Evidence from the airline industry. The American Economic Review pp. 549–569, publisher: JSTOR.

Lee, Y., Ng, S., Shevlin, T., Venkat, A., 2021. The effects of tax avoidance news on employee perceptions of managers and firms: Evidence from glassdoor. com ratings. The Accounting Review 96, 343–372, publisher: American Accounting Association.

Marinescu, I., Hovenkamp, H., 2019. Anticompetitive mergers in labor markets. Ind. LJ 94, 1031, publisher: HeinOnline.

Mikolov, T., Yih, W.-t., Zweig, G., 2013. Linguistic regularities in continuous space word representations. pp. 746–751.

Milde, J., Govers, J., Barrett, C., Di Vittorio, C., 2023. Technology's Central Role in Post-Merger Integration. BCG .

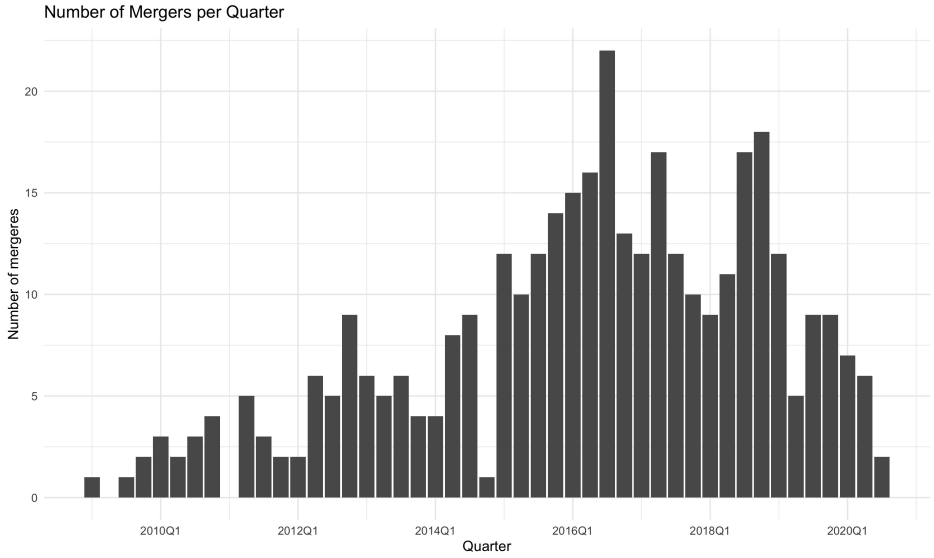
Moeller, S. B., Schlingemann, F. P., Stulz, R. M., 2005. Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. The journal of finance 60, 757–782, publisher: Wiley Online Library.

Naidu, S., Posner, E. A., Weyl, G., 2018. Antitrust remedies for labor market power. Harvard law review 132, 536–601, publisher: JSTOR.

Peterson, H., 2018. 'Seeing someone cry at work is becoming normal': Employees say Whole Foods is using'scorecards' to punish them. Business Insider .

Shapiro, C., 2019. Protecting competition in the American economy: Merger control, tech titans, labor markets. Journal of Economic Perspectives 33, 69–93, publisher: American Economic Association 2014 Broadway, Suite 305, Nashville, TN 37203-2418.

**Figure 1.** Number of Mergers per Quarter

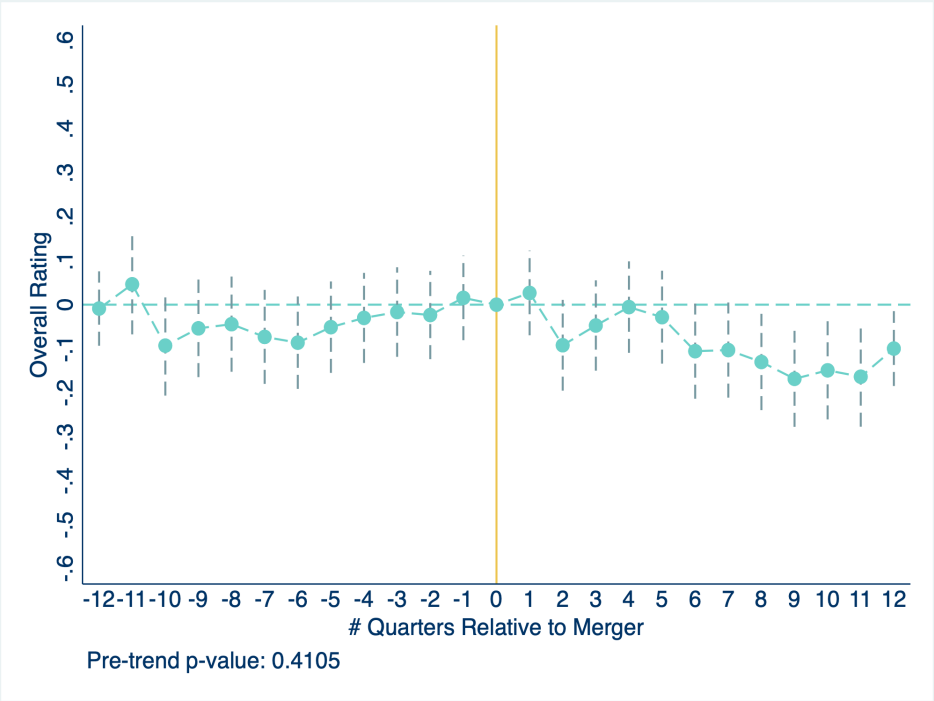



This figure presents the descriptive statistics on the number of mergers each year.

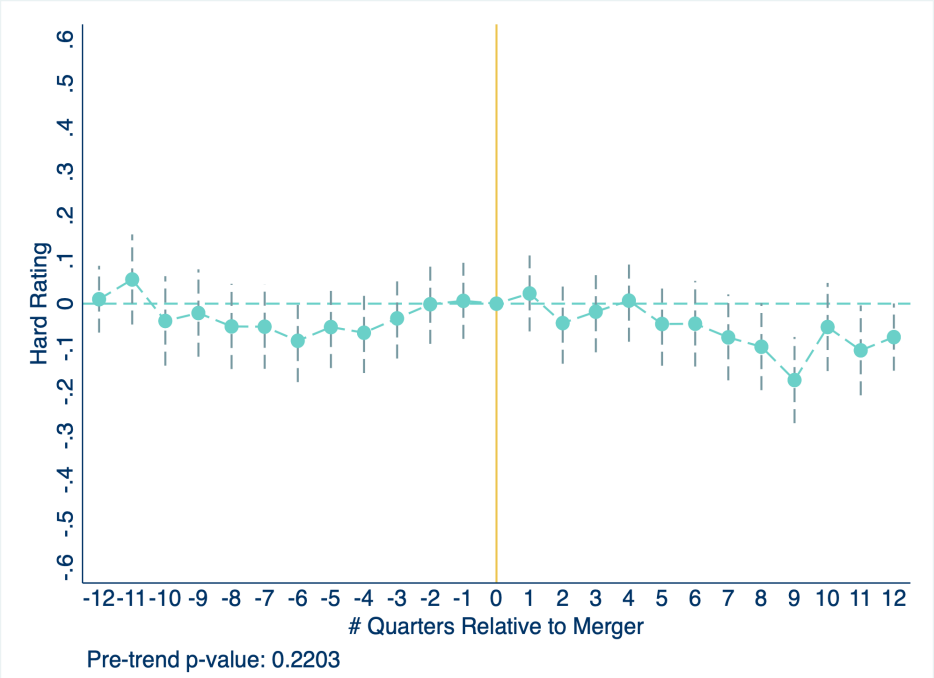
**Figure 2.** Quarter-by-Quarter Effect of Merger

This figure presents the estimated quarter-by-quarter effect of merger on all firms using an event study regression. The outcome variable is overall rating. Period 0 is the quarter when the merger occurs. The bars around the point estimates represent 95 percent confidence intervals.

(a) Overall Rating



(b) Hard Rating



(c) Soft Rating

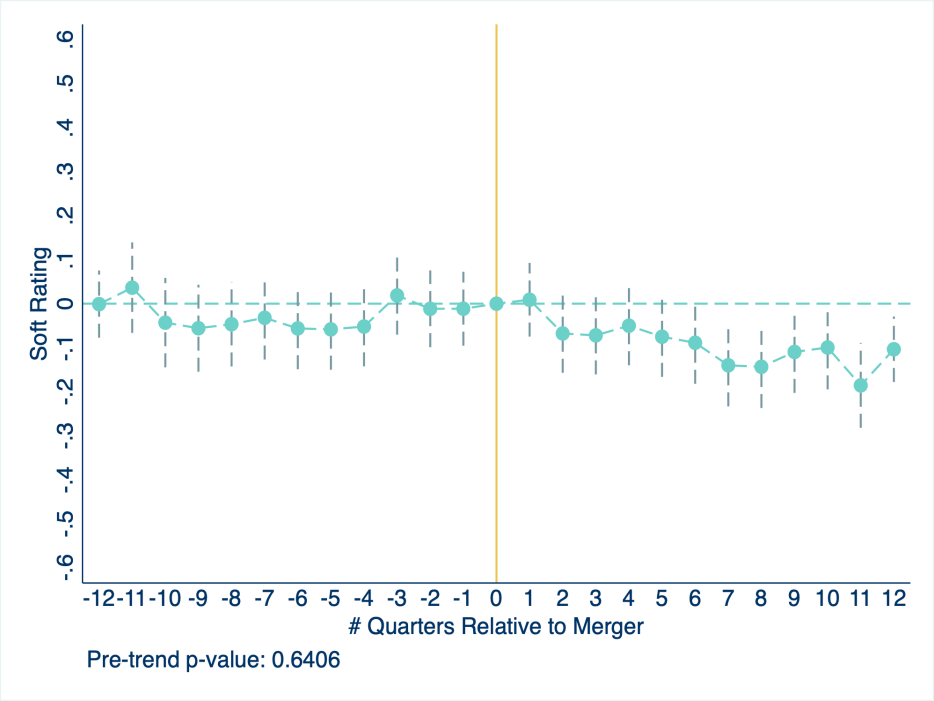
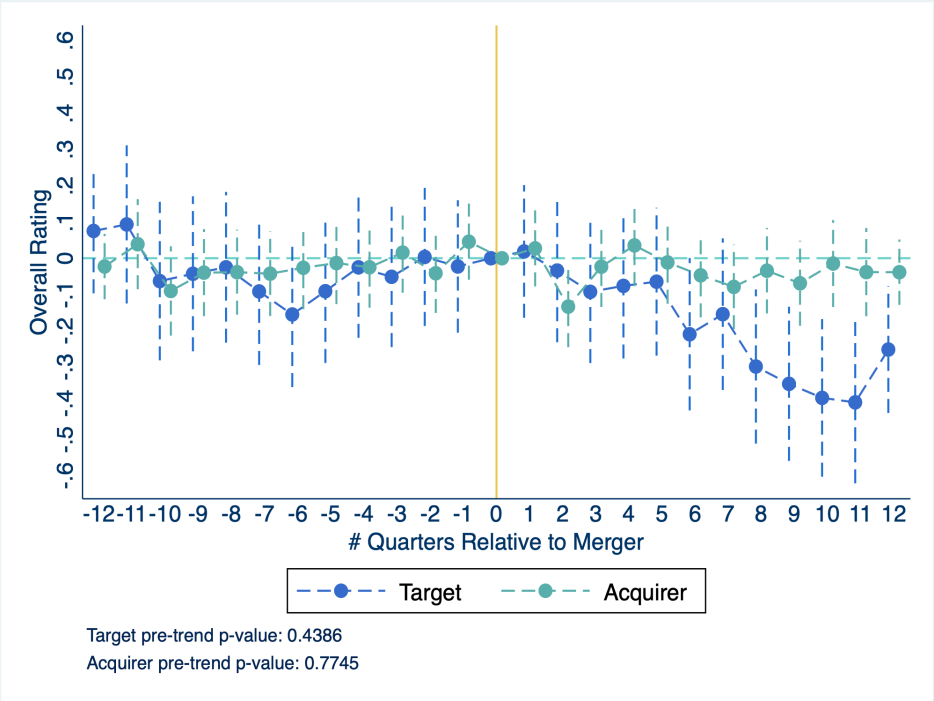


**Figure 3.** Quarter-by-Quarter Effect of Merger in Targets and Acquirers




This figure presents the estimated quarter-by-quarter effect of merger in target firms and acquiring firms separately using an event study regression. The outcome variable is overall rating. Period 0 is the quarter when the merger occurs. The bars around the point estimates represent 95 percent confidence intervals.

**Table 1.** Summary statistics

This table presents summary statistics of the variables used in the analysis.

| | count | mean | median | sd | min | max |
|---|---|---|---|---|---|---|
| Overall Rating | 19146 | -0.000 | 0.054 | 0.945 | -4.639 | 2.972 |
| Hard Rating | 18773 | -0.000 | 0.021 | 0.859 | -3.894 | 2.791 |
| Soft Rating | 15309 | -0.002 | 0.050 | 0.788 | -3.803 | 2.285 |
| Balance | 18803 | -0.000 | 0.040 | 0.945 | -4.141 | 3.419 |
| Compensation | 18810 | -0.000 | 0.056 | 0.945 | -3.773 | 3.206 |
| Culture | 16148 | -0.000 | 0.061 | 0.949 | -4.386 | 3.016 |
| Opportunities | 18811 | -0.000 | 0.041 | 0.945 | -4.698 | 3.175 |
| Management | 18810 | 0.000 | 0.005 | 0.945 | -3.588 | 3.363 |
| Recommendation | 18338 | 0.000 | 0.140 | 0.945 | -3.943 | 2.456 |
| Outlook | 15945 | 0.000 | 0.098 | 0.949 | -4.532 | 2.718 |
| Approval of CEO | 17944 | 0.000 | 0.117 | 0.944 | -4.851 | 2.662 |
| Target | 19146 | 0.393 | 0.000 | 0.488 | 0.000 | 1.000 |
| Relative Size | 17344 | -0.058 | 0.000 | 0.571 | -0.997 | 0.997 |
| Relative Quality | 15226 | 0.000 | 0.000 | 0.122 | -0.500 | 0.500 |

**Table 2.** Net Effect of Merger

This table presents the results from tests estimating the net effect of merger. To enable comparison, each rating is normalized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation. All regressions include firm and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

(a) Panel A

| | (1) Overall Rating | (2) Hard Rating | (3) Soft Rating |
|---|---|---|---|
| Post | -0.040** | -0.016 | -0.054*** |
| | (0.020) | (0.018) | (0.018) |
| Constant | 0.020* | 0.008 | 0.029** |
| | (0.012) | (0.011) | (0.011) |
| Observations | 19146 | 18793 | 15305 |
| Adjusted $R^2$ | 0.203 | 0.236 | 0.259 |

(b) Panel B

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Hard | | Soft | | | | | |
| | Balance | Compensation | Culture | Opportunities | Management | Recommendation | Outlook | Approval of CEO |
| Post | -0.028 | -0.006 | -0.049** | -0.042** | -0.050** | -0.057*** | -0.110*** | -0.085*** |
| | (0.020) | (0.019) | (0.021) | (0.020) | (0.020) | (0.021) | (0.022) | (0.021) |
| Constant | 0.014 | 0.003 | 0.028** | 0.021* | 0.025** | 0.029** | 0.062*** | 0.043*** |
| | (0.012) | (0.011) | (0.014) | (0.012) | (0.012) | (0.012) | (0.014) | (0.012) |
| Observations | 18825 | 18834 | 16149 | 18828 | 18833 | 18351 | 15944 | 17963 |
| Adjusted $R^2$ | 0.206 | 0.265 | 0.250 | 0.201 | 0.217 | 0.164 | 0.174 | 0.178 |

**Table 3.** Quarter-by-Quarter Effect of Merger

This table presents the results from tests estimating the quarter-by-quarter effect of the merger. To enable comparison, each rating is normalized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation. periodmk is an indicator variable equal to 1 if year-quarter t is k quarters before the merger, and periodk is an indicator variable equal to 1 if year-quarter t is k quarters after the merger. All regressions include firm and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

(a) Panel A

| | (1) Overall Rating | (2) Hard Rating | (3) Soft Rating |
|---|---|---|---|
| periodm12 | -0.009 | 0.010 | -0.001 |
| | (0.043) | (0.039) | (0.039) |
| periodm11 | 0.046 | 0.055 | 0.036 |
| | (0.058) | (0.052) | (0.052) |
| periodm10 | -0.093 | -0.039 | -0.043 |
| | (0.058) | (0.052) | (0.052) |
| periodm9 | -0.054 | -0.021 | -0.056 |
| | (0.057) | (0.051) | (0.050) |
| periodm8 | -0.044 | -0.052 | -0.047 |
| | (0.055) | (0.049) | (0.049) |
| periodm7 | -0.073 | -0.052 | -0.032 |
| | (0.054) | (0.049) | (0.048) |
| periodm6 | -0.086 | -0.084* | -0.056 |
| | (0.054) | (0.048) | (0.047) |
| periodm5 | -0.051 | -0.053 | -0.058 |
| | (0.053) | (0.048) | (0.047) |
| periodm4 | -0.030 | -0.066 | -0.052 |
| | (0.052) | (0.047) | (0.046) |
| periodm3 | -0.017 | -0.033 | 0.019 |
| | (0.052) | (0.047) | (0.046) |
| periodm2 | -0.023 | -0.001 | -0.012 |
| | (0.051) | (0.046) | (0.045) |
| periodm1 | 0.015 | 0.006 | -0.011 |
| | (0.049) | (0.044) | (0.043) |
| period1 | 0.027 | 0.023 | 0.009 |
| | (0.049) | (0.044) | (0.043) |
| period2 | -0.092* | -0.044 | -0.068 |
| | (0.053) | (0.047) | (0.046) |
| period3 | -0.047 | -0.018 | -0.072 |
| | (0.052) | (0.047) | (0.045) |
| period4 | -0.005 | 0.007 | -0.050 |
| | (0.053) | (0.048) | (0.046) |
| period5 | -0.028 | -0.046 | -0.075 |
| | (0.054) | (0.048) | (0.047) |
| period6 | -0.106* | -0.046 | -0.089* |
| | (0.055) | (0.050) | (0.048) |
| period7 | -0.103* | -0.077 | -0.140*** |
| | (0.055) | (0.050) | (0.048) |
| period8 | -0.130** | -0.098* | -0.143*** |
| | (0.056) | (0.050) | (0.048) |
| period9 | -0.169*** | -0.174*** | -0.110** |
| | (0.056) | (0.050) | (0.048) |
| period10 | -0.149*** | -0.053 | -0.100** |
| | (0.057) | (0.051) | (0.049) |
| period11 | -0.164*** | -0.106** | -0.186*** |
| | (0.058) | (0.052) | (0.049) |
| period12 | -0.100** | -0.076* | -0.104*** |
| | (0.043) | (0.039) | (0.038) |
| Constant | 0.056 | 0.038 | 0.060** |
| | (0.035) | (0.032) | (0.031) |
| Observations | 19146 | 18793 | 15305 |
| Adjusted $R^2$ | 0.204 | 0.237 | 0.260 |

(b) Panel B

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Hard | | Soft | | | | | |
| | Balance | Compensation | Culture | Opportunities | Management | Recommendation | Outlook | Approval of CEO |
| periodm12 | 0.028 | 0.005 | -0.004 | -0.015 | 0.034 | -0.029 | 0.029 | -0.003 |
| | (0.043) | (0.042) | (0.046) | (0.044) | (0.043) | (0.045) | (0.048) | (0.045) |
| periodm11 | 0.077 | 0.047 | 0.045 | 0.029 | 0.061 | 0.066 | 0.081 | -0.007 |
| | (0.059) | (0.056) | (0.062) | (0.059) | (0.058) | (0.061) | (0.065) | (0.061) |
| periodm10 | -0.025 | -0.047 | -0.049 | -0.105* | -0.038 | -0.121** | 0.031 | -0.100 |
| | (0.058) | (0.056) | (0.061) | (0.058) | (0.058) | (0.060) | (0.064) | (0.061) |
| periodm9 | 0.026 | -0.060 | -0.030 | -0.060 | -0.039 | -0.025 | -0.011 | -0.061 |
| | (0.057) | (0.055) | (0.060) | (0.057) | (0.056) | (0.059) | (0.063) | (0.059) |
| periodm8 | -0.041 | -0.048 | -0.041 | -0.085 | -0.031 | 0.041 | 0.023 | -0.032 |
| | (0.055) | (0.053) | (0.057) | (0.056) | (0.055) | (0.057) | (0.061) | (0.058) |
| periodm7 | -0.053 | -0.039 | -0.075 | -0.095* | -0.059 | -0.012 | 0.037 | 0.014 |
| | (0.055) | (0.053) | (0.057) | (0.055) | (0.054) | (0.057) | (0.060) | (0.057) |
| periodm6 | -0.078 | -0.081 | -0.059 | -0.076 | -0.026 | -0.084 | -0.048 | -0.046 |
| | (0.054) | (0.052) | (0.056) | (0.054) | (0.053) | (0.056) | (0.059) | (0.056) |
| periodm5 | -0.051 | -0.044 | -0.082 | -0.042 | -0.046 | -0.060 | -0.048 | -0.055 |
| | (0.053) | (0.051) | (0.055) | (0.053) | (0.053) | (0.055) | (0.058) | (0.055) |
| periodm4 | -0.043 | -0.079 | -0.072 | -0.065 | -0.047 | -0.056 | -0.047 | -0.057 |
| | (0.052) | (0.050) | (0.054) | (0.053) | (0.052) | (0.054) | (0.057) | (0.055) |
| periodm3 | -0.024 | -0.033 | 0.020 | -0.057 | -0.004 | 0.028 | 0.062 | 0.034 |
| | (0.052) | (0.050) | (0.054) | (0.052) | (0.052) | (0.054) | (0.057) | (0.054) |
| periodm2 | 0.038 | -0.033 | -0.001 | -0.031 | -0.005 | -0.012 | -0.020 | -0.053 |
| | (0.051) | (0.049) | (0.053) | (0.052) | (0.051) | (0.053) | (0.056) | (0.053) |
| periodm1 | 0.008 | 0.013 | -0.037 | -0.020 | -0.008 | 0.075 | -0.005 | -0.023 |
| | (0.049) | (0.048) | (0.050) | (0.050) | (0.049) | (0.051) | (0.053) | (0.051) |
| period1 | 0.018 | 0.033 | 0.012 | -0.033 | 0.012 | 0.026 | -0.048 | -0.044 |
| | (0.049) | (0.048) | (0.050) | (0.050) | (0.049) | (0.051) | (0.053) | (0.051) |
| period2 | -0.086 | 0.003 | -0.085 | -0.077 | -0.067 | -0.025 | -0.090 | -0.144*** |
| | (0.053) | (0.051) | (0.053) | (0.053) | (0.052) | (0.055) | (0.057) | (0.055) |
| period3 | -0.016 | -0.014 | -0.037 | -0.048 | -0.061 | -0.071 | -0.099* | -0.144*** |
| | (0.053) | (0.051) | (0.053) | (0.053) | (0.052) | (0.055) | (0.057) | (0.055) |
| period4 | 0.037 | -0.017 | -0.059 | -0.048 | -0.037 | -0.001 | -0.085 | -0.070 |
| | (0.053) | (0.051) | (0.054) | (0.054) | (0.053) | (0.055) | (0.057) | (0.055) |
| period5 | -0.024 | -0.061 | -0.097* | -0.072 | -0.066 | -0.087 | -0.125** | -0.110* |
| | (0.054) | (0.052) | (0.055) | (0.054) | (0.054) | (0.056) | (0.058) | (0.057) |
| period6 | -0.033 | -0.055 | -0.089 | -0.083 | -0.036 | -0.120** | -0.096 | -0.105* |
| | (0.056) | (0.053) | (0.056) | (0.056) | (0.055) | (0.057) | (0.059) | (0.058) |
| period7 | -0.086 | -0.063 | -0.140** | -0.153*** | -0.127** | -0.087 | -0.199*** | -0.160*** |
| | (0.056) | (0.054) | (0.056) | (0.056) | (0.056) | (0.057) | (0.059) | (0.058) |
| period8 | -0.074 | -0.103* | -0.137** | -0.138** | -0.104* | -0.146** | -0.137** | -0.159*** |
| | (0.056) | (0.054) | (0.057) | (0.057) | (0.056) | (0.058) | (0.060) | (0.058) |
| period9 | -0.188*** | -0.143*** | -0.166*** | -0.169*** | -0.197*** | -0.113* | -0.142** | -0.049 |
| | (0.056) | (0.054) | (0.056) | (0.056) | (0.056) | (0.058) | (0.059) | (0.058) |
| period10 | -0.060 | -0.042 | -0.101* | -0.122** | -0.112** | -0.129** | -0.137** | -0.096 |
| | (0.057) | (0.055) | (0.057) | (0.057) | (0.057) | (0.059) | (0.061) | (0.060) |
| period11 | -0.090 | -0.120** | -0.176*** | -0.181*** | -0.159*** | -0.181*** | -0.247*** | -0.251*** |
| | (0.058) | (0.056) | (0.058) | (0.059) | (0.058) | (0.060) | (0.062) | (0.060) |
| period12 | -0.073* | -0.075* | -0.111** | -0.125*** | -0.114*** | -0.083* | -0.132*** | -0.138*** |
| | (0.044) | (0.042) | (0.045) | (0.044) | (0.043) | (0.045) | (0.047) | (0.045) |
| Constant | 0.029 | 0.039 | 0.068* | 0.073** | 0.047 | 0.049 | 0.068* | 0.074** |
| | (0.035) | (0.034) | (0.036) | (0.035) | (0.035) | (0.037) | (0.038) | (0.037) |
| Observations | 18825 | 18834 | 16149 | 18828 | 18833 | 18351 | 15944 | 17963 |
| Adjusted $R^2$ | 0.206 | 0.265 | 0.250 | 0.201 | 0.217 | 0.165 | 0.175 | 0.179 |

**Table 4.** Target Effect

This table presents the results from tests estimating the effect of merger on the target firms. To enable comparison, each rating is normalized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation. All regressions include firm and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

(a) Panel A

| | (1) Overall Rating | (2) Hard Rating | (3) Soft Rating |
|---|---|---|---|
| Post × Target | -0.032 | 0.032 | -0.121*** |
| | (0.027) | (0.025) | (0.026) |
| Post | -0.029 | -0.029 | -0.014 |
| | (0.023) | (0.020) | (0.020) |
| Target | -0.034 | -0.068 | -0.001 |
| | (0.064) | (0.058) | (0.058) |
| Constant | 0.034 | 0.035 | 0.031 |
| | (0.028) | (0.025) | (0.025) |
| Observations | 19146 | 18793 | 15305 |
| Adjusted $R^2$ | 0.203 | 0.236 | 0.260 |

(b) Panel B

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Hard | | Soft | | | | | |
| | Balance | Compensation | Culture | Opportunities | Management | Recommendation | Outlook | Approval of CEO |
| Post × Target | 0.015 | 0.050* | -0.097*** | -0.050* | -0.030 | -0.039 | -0.169*** | -0.180*** |
| | (0.028) | (0.027) | (0.030) | (0.028) | (0.028) | (0.029) | (0.032) | (0.029) |
| Post | -0.034 | -0.025 | -0.015 | -0.025 | -0.040* | -0.044* | -0.050** | -0.023 |
| | (0.023) | (0.022) | (0.024) | (0.023) | (0.022) | (0.023) | (0.025) | (0.023) |
| Target | -0.072 | -0.065 | -0.001 | -0.037 | -0.046 | -0.016 | 0.025 | -0.016 |
| | (0.065) | (0.062) | (0.069) | (0.065) | (0.064) | (0.067) | (0.073) | (0.067) |
| Constant | 0.042 | 0.029 | 0.029 | 0.036 | 0.043 | 0.035 | 0.054* | 0.050* |
| | (0.028) | (0.027) | (0.030) | (0.028) | (0.028) | (0.029) | (0.032) | (0.028) |
| Observations | 18825 | 18834 | 16149 | 18828 | 18833 | 18351 | 15944 | 17963 |
| Adjusted $R^2$ | 0.206 | 0.265 | 0.250 | 0.201 | 0.217 | 0.164 | 0.176 | 0.180 |

**Table 5.** Quarter-by-Quarter Effect of Merger in Target and Acquiring Firms

This table presents the results from tests estimating the quarter-by-quarter effect of the merger in the subsamples of target firms and acquiring firms separately. To enable comparison, each rating is normalized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation. periodmk is an indicator variable equal to 1 if year-quarter t is k quarters before the merger, and periodk is an indicator variable equal to 1 if year-quarter t is k quarters after the merger. Columns 1, 3, and 5 (2, 4, and 6) use the sub sample of target (acquiring) firms. All regressions include firm and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Overall Rating | | Hard Rating | | Soft Rating | |
| | Target | Acquirer | Target | Acquirer | Target | Acquirer |
| periodm12 | 0.075 | -0.023 | 0.005 | 0.041 | 0.154* | -0.044 |
| | (0.088) | (0.046) | (0.081) | (0.041) | (0.085) | (0.041) |
| periodm11 | 0.093 | 0.039 | 0.014 | 0.098* | 0.215** | -0.044 |
| | (0.111) | (0.063) | (0.102) | (0.056) | (0.105) | (0.056) |
| periodm10 | -0.063 | -0.090 | -0.014 | -0.041 | 0.072 | -0.084 |
| | (0.112) | (0.063) | (0.102) | (0.055) | (0.104) | (0.055) |
| periodm9 | -0.043 | -0.040 | -0.164* | 0.086 | 0.004 | -0.064 |
| | (0.109) | (0.061) | (0.100) | (0.054) | (0.101) | (0.054) |
| periodm8 | -0.025 | -0.039 | -0.073 | -0.025 | 0.026 | -0.064 |
| | (0.106) | (0.060) | (0.097) | (0.053) | (0.098) | (0.052) |
| periodm7 | -0.092 | -0.043 | -0.079 | -0.022 | 0.048 | -0.059 |
| | (0.103) | (0.060) | (0.095) | (0.052) | (0.097) | (0.052) |
| periodm6 | -0.155 | -0.026 | -0.204** | 0.003 | -0.017 | -0.067 |
| | (0.102) | (0.058) | (0.093) | (0.051) | (0.094) | (0.051) |
| periodm5 | -0.091 | -0.013 | -0.110 | -0.008 | -0.070 | -0.035 |
| | (0.101) | (0.058) | (0.092) | (0.051) | (0.093) | (0.050) |
| periodm4 | -0.025 | -0.025 | -0.142 | -0.010 | -0.056 | -0.039 |
| | (0.099) | (0.057) | (0.090) | (0.050) | (0.092) | (0.049) |
| periodm3 | -0.051 | 0.016 | -0.104 | 0.019 | 0.013 | 0.029 |
| | (0.099) | (0.056) | (0.090) | (0.050) | (0.090) | (0.049) |
| periodm2 | 0.004 | -0.041 | -0.005 | 0.002 | 0.039 | -0.041 |
| | (0.097) | (0.056) | (0.089) | (0.049) | (0.088) | (0.048) |
| periodm1 | -0.023 | 0.046 | 0.022 | -0.003 | -0.017 | -0.004 |
| | (0.093) | (0.054) | (0.085) | (0.047) | (0.085) | (0.046) |
| period1 | 0.019 | 0.027 | -0.026 | 0.049 | -0.001 | 0.008 |
| | (0.093) | (0.054) | (0.086) | (0.047) | (0.085) | (0.046) |
| period2 | -0.034 | -0.134** | -0.034 | -0.054 | -0.019 | -0.104** |
| | (0.101) | (0.057) | (0.092) | (0.050) | (0.092) | (0.048) |
| period3 | -0.093 | -0.023 | -0.076 | 0.015 | -0.149 | -0.036 |
| | (0.100) | (0.057) | (0.092) | (0.050) | (0.091) | (0.048) |
| period4 | -0.076 | 0.035 | -0.042 | 0.035 | -0.143 | -0.008 |
| | (0.102) | (0.057) | (0.094) | (0.050) | (0.093) | (0.048) |
| period5 | -0.065 | -0.012 | -0.102 | -0.014 | -0.145 | -0.047 |
| | (0.104) | (0.058) | (0.096) | (0.051) | (0.095) | (0.049) |
| period6 | -0.210* | -0.047 | -0.082 | -0.023 | -0.162* | -0.059 |
| | (0.107) | (0.059) | (0.099) | (0.052) | (0.098) | (0.050) |
| period7 | -0.154 | -0.079 | -0.168* | -0.026 | -0.272*** | -0.083 |
| | (0.107) | (0.060) | (0.100) | (0.052) | (0.097) | (0.050) |
| period8 | -0.299*** | -0.034 | -0.248** | -0.013 | -0.287*** | -0.081 |
| | (0.109) | (0.060) | (0.101) | (0.053) | (0.098) | (0.050) |
| period9 | -0.347*** | -0.069 | -0.373*** | -0.058 | -0.270*** | -0.037 |
| | (0.108) | (0.060) | (0.100) | (0.053) | (0.097) | (0.050) |
| period10 | -0.385*** | -0.015 | -0.178* | 0.017 | -0.250** | -0.040 |
| | (0.111) | (0.061) | (0.102) | (0.054) | (0.101) | (0.051) |
| period11 | -0.398*** | -0.038 | -0.252** | -0.029 | -0.447*** | -0.065 |
| | (0.114) | (0.062) | (0.105) | (0.055) | (0.101) | (0.052) |
| period12 | -0.252*** | -0.039 | -0.208** | -0.013 | -0.239*** | -0.075* |
| | (0.089) | (0.046) | (0.082) | (0.040) | (0.085) | (0.039) |
| Constant | 0.094 | 0.029 | 0.114* | -0.014 | 0.102* | 0.042 |
| | (0.067) | (0.038) | (0.061) | (0.034) | (0.062) | (0.033) |
| Observations | 7526 | 11620 | 7270 | 11523 | 5652 | 9653 |
| Adjusted $R^2$ | 0.182 | 0.228 | 0.200 | 0.280 | 0.232 | 0.290 |

**Table 6.** Size Effect and Quality Effect

This table presents the results from tests estimating the cross-sectional effect of relative size and relative quality. To enable comparison, each rating is normalized by subtracting the industry-year-quarter mean and dividing by the industry-year-quarter standard deviation. All regressions include firm and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

(a) Panel A

| | (1) Overall Rating | (2) Hard Rating | (3) Soft Rating |
|---|---|---|---|
| Post × Target | -0.010 | 0.076* | -0.111** |
| | (0.049) | (0.043) | (0.046) |
| Post × Relative Size | -0.031 | -0.025 | 0.007 |
| | (0.041) | (0.037) | (0.039) |
| Post × Relative Quality | -1.779*** | -1.284*** | -1.503*** |
| | (0.131) | (0.117) | (0.129) |
| Post | -0.038 | -0.046 | -0.007 |
| | (0.034) | (0.031) | (0.032) |
| Target | -0.058 | -0.097 | 0.017 |
| | (0.094) | (0.083) | (0.086) |
| Relative Size | -0.007 | 0.022 | 0.006 |
| | (0.078) | (0.069) | (0.072) |
| Relative Quality | 1.334*** | 0.977*** | 1.099*** |
| | (0.242) | (0.214) | (0.217) |
| Constant | 0.048 | 0.052 | 0.017 |
| | (0.049) | (0.043) | (0.044) |
| Observations | 13544 | 13276 | 10809 |
| Adjusted $R^2$ | 0.212 | 0.245 | 0.268 |

(b) Panel B

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Hard | | Soft | | | | | |
| | Balance | Compensation | Culture | Opportunities | Management | Recommendation | Outlook | Approval of CEO |
| Post × Target | 0.048 | 0.105** | -0.090* | -0.030 | -0.009 | -0.035 | -0.052 | -0.078 |
| | (0.049) | (0.047) | (0.054) | (0.049) | (0.049) | (0.051) | (0.057) | (0.051) |
| Post × Relative Size | -0.011 | -0.038 | 0.003 | -0.030 | -0.021 | 0.002 | -0.092* | -0.079* |
| | (0.041) | (0.040) | (0.045) | (0.042) | (0.041) | (0.043) | (0.047) | (0.043) |
| Post × Relative Quality | -1.256*** | -1.297*** | -1.586*** | -1.373*** | -1.609*** | -1.527*** | -1.567*** | -1.379*** |
| | (0.133) | (0.127) | (0.148) | (0.133) | (0.132) | (0.138) | (0.156) | (0.140) |
| Post | -0.048 | -0.047 | -0.014 | -0.036 | -0.046 | -0.035 | -0.095** | -0.063* |
| | (0.035) | (0.033) | (0.037) | (0.035) | (0.035) | (0.036) | (0.039) | (0.036) |
| Target | -0.099 | -0.095 | -0.011 | -0.060 | -0.062 | -0.018 | 0.009 | -0.007 |
| | (0.094) | (0.090) | (0.102) | (0.094) | (0.094) | (0.097) | (0.108) | (0.096) |
| Relative Size | 0.022 | 0.021 | 0.026 | 0.001 | 0.004 | 0.001 | 0.050 | 0.018 |
| | (0.078) | (0.075) | (0.086) | (0.078) | (0.078) | (0.080) | (0.090) | (0.079) |
| Relative Quality | 0.981*** | 0.964*** | 1.129*** | 1.159*** | 1.157*** | 1.086*** | 1.016*** | 0.936*** |
| | (0.243) | (0.232) | (0.259) | (0.244) | (0.243) | (0.250) | (0.272) | (0.247) |
| Constant | 0.063 | 0.042 | 0.039 | 0.041 | 0.037 | 0.035 | 0.062 | 0.043 |
| | (0.049) | (0.047) | (0.053) | (0.049) | (0.048) | (0.050) | (0.056) | (0.049) |
| Observations | 13297 | 13303 | 11406 | 13299 | 13301 | 12973 | 11250 | 12688 |
| Adjusted $R^2$ | 0.208 | 0.278 | 0.262 | 0.199 | 0.217 | 0.173 | 0.185 | 0.189 |

**Table 7.** Breach of Implicit Contract

This table reports the results from tests estimating whether employees express more complaints about their companies' breaking the implicit contract after the merger. *Breach of Implicit Contract* is defined in Section 3.3.3. *Post* is an indicator variable equal to 1 if the firm has merged by year-quarter t. *Target* is an indicator variable equal to 1 if the firm is the target firm in the merger. All regressions include firm fixed effects and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

| | (1) | (2) |
|---|---|---|
| | Breach of Implicit Contract | Breach of Implicit Contract |
| Post | 0.008*** | 0.003 |
| | (0.002) | (0.002) |
| Post × Target | | 0.009*** |
| | | (0.003) |
| tar | | -0.001 |
| | | (0.007) |
| Constant | 0.054*** | 0.054*** |
| | (0.001) | (0.004) |
| Observations | 23651 | 23651 |
| Adjusted $R^2$ | 0.215 | 0.215 |

**Table 8.** Breach of Implicit Contract (# Typical Words)

This table reports the results from tests estimating whether employees express more complaints about their companies' breaking the implicit contract after the merger. *# Typical Words* is the average number of typical words in an employee review of firm i in year-quarter t, defined in Section 3.3.4. *Post* is an indicator variable equal to 1 if the firm has merged by year-quarter t. *Target* is an indicator variable equal to 1 if the firm is the target firm in the merger. All regressions include firm fixed effects and year-quarter fixed effects. *, **, *** indicate statistics significance at the 0.10, 0.05, and 0.01 levels, respectively, using a two-tailed t-test.

| | (1) | (2) |
|---|---|---|
| | # Typical Words | # Typical Words |
| Post | 0.014*** | 0.008*** |
| | (0.002) | (0.002) |
| Post × Target | | 0.013*** |
| | | (0.003) |
| tar | | -0.004 |
| | | (0.007) |
| Constant | 0.020*** | 0.022*** |
| | (0.001) | (0.004) |
| Observations | 23779 | 23779 |
| Adjusted $R^2$ | 0.043 | 0.044 |

# Appendix A

Prompt to ChatGPT

Theory suggests that after an M&A, the firm breaks the implicit contract with its workers, leading to a decline in employee satisfaction. Could you provide 100 sample employee reviews indicating that the company breaks the implicit contract with its workers? Each review is one or two sentences long.

Synthetic Reviews

| |
|---|
| Since the merger, management has completely disregarded previous agreements with staff. |
| Promises made before the acquisition have not been kept. |
| The new leadership has broken trust by changing policies without consulting employees. |
| Benefits we used to enjoy have been cut without explanation after the M&A. |
| There's a clear lack of respect for the commitments made to employees before the merger. |
| Our workload has doubled, but compensation remains the same since the acquisition. |
| Post-merger, the company culture has shifted negatively, ignoring employee needs. |
| We were assured our roles were secure, but layoffs happened soon after the M&A. |
| The implicit understanding of flexible hours has been revoked without notice. |
| Career advancement opportunities promised before the merger have disappeared. |
| The company no longer values employee input like it did before the acquisition. |
| Since the merger, overtime has become mandatory, violating our previous agreements. |
| Our voices are ignored, and decisions are made unilaterally after the acquisition. |
| The new management has broken the unwritten rules that made this a great place to work. |
| Job security has diminished significantly since the merger. |
| They've gone back on their word regarding remote work policies post-acquisition. |
| Employee welfare seems to be the last priority after the merger. |
| Promises of bonuses and raises have not been fulfilled since the acquisition. |
| There's been a disregard for maintaining the supportive work environment we had before. |
| The merger has led to a breakdown in trust between staff and management. |
| Benefits have been slashed without any prior notice after the M&A. |
| The open-door policy is gone; management is unapproachable since the acquisition. |

Continued on next page

Synthetic Reviews (Continued)

| |
|---|
| Our implicit agreement on work-life balance has been ignored post-merger. |
| They've implemented stricter policies that conflict with our initial understanding. |
| Communication has deteriorated significantly after the merger. |
| Employee recognition programs have been discontinued since the acquisition. |
| Our concerns about the changes are not being heard by the new leadership. |
| The supportive culture has been replaced with a more cutthroat environment post-M&A. |
| They promised no major changes, but everything feels different now. |
| We were told our jobs were safe, but now we're facing layoffs. |
| The company has reneged on its commitments to career development. |
| Post-merger, there's a lack of transparency about company decisions. |
| The new policies conflict with what was previously agreed upon with employees. |
| There's no longer any flexibility in scheduling, contrary to prior practice. |
| They've broken the trust by altering our roles without discussion. |
| Employee morale has plummeted due to unfulfilled promises after the acquisition. |
| Our input is no longer valued in the decision-making process. |
| They've increased performance targets without additional support. |
| The company culture feels hostile since the merger. |
| We feel undervalued and overworked post-acquisition. |
| Benefits that were standard before are now being taken away. |
| Management has become distant and unresponsive after the M&A. |
| There's a sense of instability that wasn't here before the merger. |
| They've disregarded the company's core values in favor of profits. |
| Our previously agreed-upon bonuses have been canceled without explanation. |
| Workload expectations have increased unreasonably since the acquisition. |
| Employee feedback is no longer solicited or considered. |
| Promises of technological upgrades have not been kept post-merger. |
| They've eliminated the training programs that were essential for our growth. |
| We were assured of certain benefits, but they've been withdrawn. |
| There's been a significant cut in resources we rely on to do our jobs. |
| Our implicit agreement on job roles has been altered without consent. |

Continued on next page

Synthetic Reviews (Continued)

| |
|---|
| The supportive team environment has deteriorated after the merger. |
| They've imposed new rules that conflict with our established work practices. |
| Management decisions now prioritize cost-cutting over employee well-being. |
| The autonomy we once had has been stripped away post-acquisition. |
| They've failed to honor the unwritten promises that kept us motivated. |
| Employee development opportunities have diminished significantly. |
| The company's mission has shifted away from what we originally joined for. |
| There's a lack of respect for the expertise of long-standing employees. |
| Our suggestions for improvement are ignored since the merger. |
| They've changed our compensation structure to our detriment. |
| The work-life balance we valued is no longer supported. |
| They've broken the implicit understanding of fair treatment. |
| Post-merger, there's been a noticeable decline in workplace morale. |
| Our roles have been redefined without proper communication or consent. |
| The trust between employees and management has eroded. |
| They've disregarded the importance of employee satisfaction. |
| We no longer feel secure in our positions after the acquisition. |
| Promises of maintaining company culture have not been upheld. |
| They've introduced policies that conflict with our values. |
| The collaborative environment has been replaced with competitiveness. |
| They've overlooked the commitments made to employees during the merger talks. |
| Our compensation is no longer aligned with industry standards. |
| They've eliminated key benefits that were part of our employment package. |
| Employee support systems have been dismantled since the acquisition. |
| Our workloads have increased without additional compensation. |
| They've centralized decision-making, leaving us out of the loop. |
| There's been a shift towards micromanagement post-merger. |
| They've broken the implicit promise of job stability. |
| Employee grievances are not being addressed appropriately. |
| The new policies undermine our ability to perform effectively. |

Continued on next page

Synthetic Reviews (Continued)

| |
|---|
| They've cut back on essential resources needed for our work. |
| There's a disconnect between management and staff after the merger. |
| Our career progression paths have been altered unfavorably. |
| They've failed to integrate the two company cultures successfully. |
| We feel like just another number since the acquisition. |
| They've gone back on their word regarding employee benefits. |
| Communication transparency has decreased significantly. |
| They've ignored our concerns about the rapid changes. |
| There's been an increase in mandatory overtime without additional pay. |
| They've broken the unwritten rule of respecting personal time. |
| Employee turnover has increased due to dissatisfaction. |
| They've shifted priorities away from employee development. |
| The sense of community we had is fading away. |
| They've reduced our autonomy in making decisions. |
| There's a lack of support from management for frontline staff. |
| They've implemented policies that contradict our prior agreements. |
| Our input on projects is no longer valued. |
| They've neglected to honor long-standing traditions important to staff. |
| There's been a noticeable decline in overall job satisfaction. |
| They've failed to recognize and reward hard work post-merger. |
| We feel overburdened and underappreciated since the acquisition. |
| They've disrupted the balance between work demands and personal life. |
| The implicit trust we had in management has been broken. |
| They've undermined the collaborative spirit that once existed. |
| There's a pervasive sense of uncertainty about the future. |
| They've altered compensation packages unfavorably without discussion. |
| Employee engagement has dropped due to neglect of our needs. |
| They've failed to maintain the integrity of the company's mission. |
| We no longer feel aligned with the company's direction after the merger. |
| They've compromised the values that attracted us to the company. |

# Appendix B

Typical Words

| Rank | Bigram | Typicity |
|---|---|---|
| 1 | implicit | 0.0750 |
| 2 | unwritten_rule | 0.0134 |
| 3 | unfulfil_promis | 0.0112 |
| 4 | withdrawn | 0.0096 |
| 5 | reneg | 0.0090 |
| 6 | fade_away | 0.0082 |
| 7 | unilater | 0.0071 |
| 8 | alter | 0.0066 |
| 9 | unwritten | 0.0054 |
| 10 | redefin | 0.0053 |
| 11 | unfavor | 0.0053 |
| 12 | strip_away | 0.0052 |
| 13 | upheld | 0.0046 |
| 14 | consent | 0.0044 |
| 15 | stricter | 0.0040 |
| 16 | agre_upon | 0.0039 |
| 17 | revok | 0.0034 |
| 18 | dismantl | 0.0028 |
| 19 | agreement | 0.0026 |
| 20 | complet_disregard | 0.0022 |
| 21 | overburden | 0.0022 |
| 22 | plummet | 0.0022 |
| 23 | solicit | 0.0021 |
| 24 | discontinu | 0.0018 |
| 25 | merger | 0.0016 |
| 26 | unapproach | 0.0016 |
| 27 | grievanc | 0.0015 |

Continued on next page

Typical Words (Continued)

| | | |
|---|---|---|
| 28 | honor | 0.0015 |
| 29 | assur | 0.0015 |
| 30 | disregard | 0.0015 |
| 31 | deterior | 0.0014 |
| 32 | pervas | 0.0014 |
| 33 | undermin | 0.0014 |
| 34 | underappreci | 0.0012 |
| 35 | contrari | 0.0011 |
| 36 | unrespons | 0.0011 |
| 37 | broken | 0.0011 |
| 38 | diminish | 0.0011 |
| 39 | breakdown | 0.0010 |
| 40 | neglect | 0.0010 |
| 41 | dissatisfact | 0.0010 |
| 42 | loop | 0.0009 |
| 43 | impos | 0.0009 |
| 44 | erod | 0.0008 |
| 45 | previous | 0.0008 |
| 46 | explan | 0.0008 |
| 47 | frontlin | 0.0008 |
| 48 | significantli | 0.0008 |
| 49 | distant | 0.0007 |
| 50 | acquisit | 0.0007 |