

The Value of Employee Morale in Mergers and Acquisitions: Evidence from Glassdoor*

Kristina Lalova[‡]

Current version: February 2023

Abstract

In this paper, I define employee morale as employees' attitudes toward and perceptions of the tasks the employees have in the companies they work for and various firm dynamics. I explore how employee morale affects post-merger integration and performance and post-merger merged firm employee morale using various proxies. The paper makes several novel findings. Firms with similar employee morale are more likely to merge, achieve greater short-run and long-run post-merger synergies, perform greater takeover restructurings, and exhibit a higher likelihood of completion and rate of completion. Firms with high and similar morale achieve better post-merger integration than firms with low and similar morale and complementary morale. The high morale of target employees improves post-merger performance and morale of the acquiring company, while the low morale of target employees damages post-merger performance and morale of the acquiring company. Target companies with high employee morale take less time to be integrated into acquiring companies, regardless of the acquiring companies' employee morale. Acquiring companies value the employee morale profile of target companies and they tend to go after target companies with high level and low dispersion in dimensions of employee morale. Finally, the observed acquirer price runup reflects takeover rumors generated from acquirer employees.

Keywords: corporate takeovers, pre-merger and post-merger employees' perceptions, post-merger integration and performance, takeover restructurings

JEL Codes: G34, G41, M51

* I am grateful to Professor John Knopf (dissertation committee chair) for his continuous support and guidance. I would also like to thank Professors Jaideep Shenoy, Yiming Qian, and Lingling Wang (dissertation committee members), Professors Resul Cesur, Xiang Zheng, and Meng Gao, Professor Daniel Bradley (FMA European Meeting Doctoral Consortium chair), Yang Cao, Nazanin Babolmorad and other participants in the FMA European Meeting Doctoral Consortium, Professor Gabriele Lattanzio, Valeria Fedyk (discussant) and other participants in the World Finance Conference, Professor Jana Fidrmuc (discussant) and other participants in the Paris Financial Management Conference, and participants in the SGF Conference. I would like to thank Andrew Chamberlain (now at Udemy) and Glassdoor for allowing me to use and quote Glassdoor data in my research. I would also like to thank Dexin Zhou for advising on matching Glassdoor data to other databases.

[‡] Ph.D. Candidate at the University of Connecticut

I. Introduction

Greek philosophers have long been pondering on human-beings' desire for a good life. They have argued that humans are complex creatures who are not separate and distinct from other selves or from their social environment. Rather, humans are individual creatures who are constituted by their decisions and social creatures who are constituted by their interpersonal relationships. Since humans spend a large amount of their lives working in organizations, their happiness on the job has become a topic of discussion. Recent discussions on employees' well-being and workers' satisfaction have made us ponder on what makes for good organizations and happy employees in those organizations. A plethora of companies have committed themselves to lifting employees' spirits and allowing them to achieve happiness on the job.³ Whether employee morale has an impact on a firm's success and failure and the success and failure of its respective activities and transactions is an area in finance research, I believe, with potential in light of the above-mentioned recent societal discussions on the level and importance of employees' well-being and the ways in which companies can boost and promote it. More specifically, I examine whether companies with similar employee morale and similar levels of employee happiness in mergers and acquisitions achieve merger success.

Prior psychology literature has come up with three different definitions of morale. The first one addresses the classical "needs psychology" and the idea that basic and acquired needs lead to drives with acquired needs leading to humans' desire to achieve status and self-esteem through social interactions. The second approach to defining morale is related to a hierarchy of needs, which states that when basic needs are satisfied, "higher" needs emerge until they are satisfied as

³ The examples have been mentioned in the following article published on the online version of CNBC. The link to the article is the following: <https://www.cnbc.com/business/heres-how-companies-are-trying-keep-employee-morale-up-amid-covid-pandemic-9772411.htm>.

well (Maslow, 1946). The third approach to defining morale emphasizes the importance of interactions among members in a working group and that levels of motivation and morale are a result of the total work situation and its many dynamic interrelations which involve both the individual and the smaller groups in a larger social field (Mayo, 1933; Viteles, 1953). Those varying but connected definitions of morale serve as a starting ground for examining employees' perspectives and feelings toward the companies they work for through employee morale ratings and textual reviews on Glassdoor.

In this paper, I use Glassdoor employee morale reviews as a proxy for employees' perceptions of company dynamics and their satisfaction with firms' working conditions and their interactions with fellow colleagues. I use employee morale as my proxy, as it defines the attitudes of a group with regards to the tasks the employees have in the companies they work for. Going forward I use employee morale and satisfaction interchangeably. While prior literature has used the Glassdoor dataset, it has not utilized it in the context of M&A transactions. The purpose of the paper in that sense is to highlight the importance of employees' views of the companies they work for and to provide a novel approach to valuing the success and failure of merger and acquisition deals and to shine light on the information employees possess prior to those deals. To achieve this, I examine announcement effects of M&A deals, probability of mergers, companies' long-run operating performance, takeover restructurings, likelihood and rate of deal completion, integration between the two firms' employees, price runup prior to deal announcements, and post-merger merged firm morale using various employee happiness proxies.

The paper documents that firms with similar employee morale are more likely to merge, achieve greater return and higher operating performance synergies, perform greater takeover restructurings following the merger, and have a higher likelihood and a more rapid rate of deal

completion. Thus, mergers with high similarity in employee morale are more successful than mergers with low similarity in employee morale. When I split the mean of acquirer and target in quartiles, I generate four different types of deals – deals in which a high morale acquirer is merging with a high morale target, deals in which a high morale acquirer is merging with a low morale target, deals in which a low morale acquirer is merging with a high morale target, and deals in which a low morale acquirer is merging with a low morale target. Acquiring and target companies with high morale work best with each other, while acquiring and target companies with low morale work worst with each other. While mergers between high morale acquirers and low morale targets have a high probability of occurrence, the long-term performance of the merged company is damaged through the addition of target employees with low morale. While mergers between low morale acquirers and high morale targets have a low probability of occurrence, the long-term performance of the merged company is enhanced through the addition of target employees with high morale.

In addition, I document a few other novel findings. Target employees with high morale take less time to be integrated into the acquiring company both in deals in which acquiring companies have high and low employee morale. As the merger nears, level of morale in both acquirer and target becomes negatively associated with probability of merger, while dispersion of morale in both acquirer and target becomes positively associated with probability of merger. Both acquirer and target employees might become more stressed out due to longer work hours needed to assist in merger completion and/or divergent opinions on the advantages and disadvantages of the merger. Acquirers go after targets with high employee morale as viewed on the aggregate and as viewed by individual rating categories. This signifies that acquiring companies value the employee morale profile of target companies. I also find evidence on the informational value of employees’

attitudes prior to mergers. I conclude that the observed acquirer price runup reflects takeover rumors generated from acquiring companies' employees.

I also make the conclusion that the greater the distance between acquirer and target employee morale, as shown in prior tests, the lower the market reaction around the merger announcement date, but also that the lower the market reaction around the merger announcement date, the greater the raw difference in acquirer employee morale from year of announcement to year after announcement. This gives additional proof that mixing satisfied employees with unsatisfied employees impacts the post-merger acquirer employee morale negatively and leads to greater differences in acquirer employee morale from year of merger announcement to year after merger announcement. However, post-merger acquirer morale is impacted in the cases when a high employee morale acquirer acquires a low employee morale target and when a low employee morale acquirer acquires a high employee morale target. A low employee morale target pulls down the high employee morale of the acquiring company, while the high employee morale target pulls up the low employee morale of the acquiring company, though the effect disappears with time. Additionally, post merger-acquirer employee morale changes are more immediate in mergers in which a high employee morale target acquires a low employee morale target than in mergers in which a low employee morale acquirer acquires a high employee morale target. The paper contributes to several strands of literature as discussed in the paragraphs below.

Prior finance literature has not examined to a great extent the role of similarity in employees' attitudes and perceptions. Therefore, the paper documents the role of similarity using a novel setting that focuses on employees' interactions in the companies they work for. Still, some studies have focused on the impact of national culture on cross-border M&A deals ([Frijns et al., 2013](#); [Ahern et al., 2015](#); [Guiso et al., 2006](#)), while other studies have focused on the role of company

culture in merger outcomes (Guiso et al., 2015; Bereskin et al., 2018; Schrowang, 2018). Human capital relatedness also has an impact on merger outcomes.⁴ Several papers have come up with measures of the pairwise relatedness of firms' human capital, human capital's role in innovation following mergers, the benefits of internal labor markets in acquisitions, and human capital's role in the optimal scope of the firm (Lee et al., 2018; Fulghieri and Sevilir, 2011; Tate and Yang, 2016; Beaumont et al., 2019). Similar to the above-mentioned papers, this paper defines human capital relatedness through employee morale similarity and examines its impact on M&A outcomes. I use similarity of employees' ratings, level and dispersion of employees' ratings, and similarity between textual portions of employees' reviews in Glassdoor, and my paper builds on the above-mentioned papers and tries to fill the gap in our understanding of the role of employee morale similarity on M&A success.

Research utilizing Glassdoor has been growing due to its coverage of public firms and its presentation of employees' perceptions of various firm dimensions. For instance, papers have studied the association between financial reporting and job satisfaction, and have found support for employees' reviews being accurate assessments of and revealing value-relevant information about a firm's performance (Ji et al., 2017; Green et al., 2019). Other more recent papers utilizing the Glassdoor dataset focus on themes, such as employee sentiment, gender diversity, misconduct risk, maternity leave benefits, and the relationship between management's ability and a company's ESG efforts (Marchetti, 2019; Chen et al., 2022; Campbell and Shang, 2021; Liu et al., 2022; Welch and Yoon, 2021). In the spirit of previous Glassdoor research, my paper shines light on the importance of employees' attitudes (looking at level, dispersion, similarity of ratings, and similarity of textual

⁴ For the preparation of the Literature Review I have found the Greene, Kini, Shen, and Shenoy (2021) paper very helpful in summarizing the manner in which labor plays a role in mergers and acquisitions.

portions of reviews) on predicting target firms acquirers go after, predicting the success of mergers, and the value added to acquirer and target shareholders prior to deal announcement.

Finally, the paper adds life to the importance of the human element in firms and to the importance of employees' happiness for the success of financial transactions. For example, [Bach et al. \(2021\)](#) use employer-employee level data linked to individual health records to document that incidence of various health conditions increases following acquisitions. Additionally, [Tookes and Yimfor \(2021\)](#) use the investment advisory industry as a laboratory to test for evidence of improvements in employee misconduct following M&A events and show that similarities in misconduct are evidence of complementarities where the merged firm is capable of taking advantage of target and acquirer mechanisms for monitoring and disciplining employees. [Gehrke et al. \(2021\)](#) argue that mergers create internal labor markets where acquirers, whose employees are better educated, better paid, and more qualified, hire new employees who are much younger and less expensive. My paper builds on the above-mentioned papers and examines the impact of the internal labor force's distribution on labor restructuring in mergers and relates that to employees' overall morale and happiness in the companies they work for.

II. Hypotheses Development

Prior management literature has determined the importance of members of a group sharing cognitive constructs such as values, beliefs, or norms. [O'Reilly \(1989\)](#) argues that similar attributes of a group are needed to achieve effective coordination in a group. This can also be translated in a firm since a firm gathers employees from different walks of lives, education, parental upbringing, and so on. One can argue that similarity of employees' happiness would also lead to effective

coordination in mergers and acquisitions. Other researchers have explored the value of employees' happiness and have argued that having employees who feel compelled to go the extra mile should boost firm efficiency, something that eventually results in superior company performance (Schneider et al., 2003; Gavin and Mason, 2004; Kiewitz, 2004). Therefore, there is a benefit to go a step further and ask the question of whether happy employees work better with happy employees or not when two companies participate in a merger. Management literature on M&A integration has determined that the success of M&A deals depends heavily on achieving the right level of integration in terms of knowledge transfer and operations (Birkinshaw et al., 2010; Ranucci and Souder, 2015). In addition to knowledge transfer and operations contributing to post-merger integration, prior literature has also explored the different manners in which similarity between two merging companies will lead to a successful merger, whether that is a high degree of overlap in the two companies' technologies, operations, products, customers, or distribution channels (Chatterjee, 1986; Homburg and Bucerius, 2005; Seth, 1990; Singh and Montgomery, 1987). Those types of similarities across two businesses give acquirers the opportunity to improve their profitability and achieve economies of scale through the elimination of redundant activities or transfer of resources. Building on the findings in these papers, I would expect that firms with high similarity of employees' happiness toward the acquirers and targets employees work for would contribute to better post-merger integration and, therefore, would lead to better financial performance and higher value added to the shareholders of those firms.

Prior finance literature has examined different similarities between acquirers and targets that could enhance the performance of the merged company. Rhodes-Kropf and Robinson (2008) challenge the conventional wisdom of who buys whom and determine that like buys like in their new theory of mergers. They build on the property rights theory of the firm as introduced in

Grossman and Hart (1986), Hart and Moore (1990), and Hart (1995) and use the main argument in all three papers that complementary assets should be bound together under common ownership. This placing of assets under common ownership, therefore, reduces the hold-up problems and underinvestment from incomplete contracting. In this case, I consider the target's labor to be an asset for the acquiring company and examine how similarity between acquirer and target labor force's happiness impacts merger success and outcomes. Rhodes-Kropf and Robinson (2008) determine that mergers will create greater surplus if the partners match together based on market-to-book ratios. They show that in equilibrium firms with high market-to-book ratios, which have the best outside investment opportunities and create the most synergies, in their respective industries will choose to merge and, thus, market-to-book ratios are a reflection of what the market expects from future potential mergers. Lee, Mauer, and Xu (2018) develop a measure of human capital relatedness using data from the Occupational Employment Statistics (OES) of the Bureau of Labor Statistics (BLS) and find that the likelihood of a merger is strongly increasing in HCR, that combined acquirer and target firm announcement returns are strongly increasing in HCR similarity, and that post-merger operating performance is increasing in HCR as well. Taking these papers on the new theory of mergers, I build my first hypothesis and the following sub-hypotheses. I hypothesize that acquirers and targets with more similar employee morale are more likely to merge and achieve higher short-term and long-term synergies, carry out greater takeover restructurings because of greater overlap of employee morale, achieve greater speed of M&A deal completion, and have a higher likelihood of deal completion. In addition, acquirer companies with high morale match best with target companies with high morale, while companies with different employee morale don't match well, even though an acquirer with low morale acquiring a target with high morale improves the performance of the acquirer.

H1: Mergers between companies with similar employee morale achieve better post-merger integration and performance.

- **H1a:** Firms with similar employee morale are more likely to merge and achieve higher short-term and long-term synergies, but perform greater takeover employment restructurings.
- **H1b:** Mergers between acquirers and targets with similar employee morale are associated with a more rapid rate of deal completion and exhibit higher likelihood of completion, and target employees with high employee morale are more easily integrated into the acquirer.
- **H1c:** Companies with high similar morale work well together, while companies with low similar morale and companies with complementary morale don't work together as well.
- **H1d:** A low employee morale target pulls down the morale of the merged firm, while a high employee morale target pulls up the morale of the merged firm.

Prior finance literature has explored the importance of the level of employees' job satisfaction on the financial gains companies can achieve. [Green et al. \(2019\)](#) hypothesize that any information contained in employee reviews will be quickly incorporated into prices. Their main premise is that employee ratings can be impacted by the current firm environment. The authors determine that both the level and change in Glassdoor ratings signal value-relevant information to financial markets. Their analysis uncovers a statistically and economically significant relation between changes in employee satisfaction and stock returns. Another paper using the level of Glassdoor ratings is [Welch and Yoon \(2021\)](#). Using MSCI ESG Ratings and Glassdoor employee ratings of senior managers, the authors implement a calendar-time portfolio regression design. They conclude that firms with highly rated managers and high ESG exhibit significantly higher future stock returns than firms with low ratings on both or firms with only a high ESG or a high employee

opinion rating. Similar to these papers, there is a benefit to examine the impact of both the level and standard deviation of acquirer and target employee morale ratings on the value added to both acquirers' and targets' shareholders prior to merger announcements and to examine any changes in morale prior to the merger in both acquiring and target companies. Thus, taking these papers into account, I build my second hypothesis and the following sub-hypotheses. I hypothesize that acquirer employees (as proxied by level and dispersion in employee morale) carry information about an incoming merger reflected in price runup for those companies and that employee morale in acquiring and target companies changes as the merger nears.

H2: Level and dispersion of overall employee morale and level and dispersion of employee morale dimensions provide value-relevant information for merger occurrence and acquirer and target price runup.

- **H2a:** Companies with high level of acquirer and target employee morale and low variability of acquirer and target employee morale are more likely to participate in M&A deals, but as the merger nears, employees' perception level of acquirer and target companies decreases and dispersion increases.
- **H2b:** Acquiring companies value the employee morale profile of the target companies they bid for and choose companies with high level of and low dispersion of different employee morale dimensions.
- **H2c:** Both acquirer and target employees hold low level perceptions and high dispersion perceptions of employee morale dimensions, such as career opportunities and work-life balance, as the merger nears.
- **H2d:** The observed acquirer price runup reflects takeover rumors generated from acquirer employees.

III. Data and Measurement of Employee Morale

A. Data

I utilize four main datasets to form the main sample – Glassdoor, Refinitiv’s SDC, Compustat, and CRSP. Glassdoor is a job and recruiting website which helps employees, job seekers, employers, and recruiters in sharing and finding information about the company of their interest and post company reviews, interview questions and reviews, salary details, and any other career-related decision information. In this study, I focus on the information derived from employee satisfaction surveys. The Glassdoor database has been utilized in previous studies due to its coverage of public firms and its presentation of the perception of a firm’s morale from employees’ standpoint. The use of Glassdoor has some benefits over the use of databases, such as KLD, since it offers a more direct way to examine employees’ experience, doesn’t suffer from self-reported metrics, and allows for more flexibility and breadth to measure employee morale. It is possible that the Glassdoor database is overrepresented with information from a firm’s disgruntled and unhappy employees. Still, the oversampling of dissatisfied employees does not appear to be a problem in the database since it has been reported that the lowest number of submitted ratings represents one-star ratings. In my sample those ratings are rare. Furthermore, another fact to keep in mind is that only employees, who post reviews for their own companies, view the reviews of other firms’ employees which adds incentives for employees to post their reviews and eliminates the concern of the oversampling of dissatisfied employees.

Additionally, there has been a growing literature on the wisdom of the crowd in financial research and, in that case, I consider employees as a crowd whose wisdom is a signal about companies’ performance and is a signal to financial markets. Even though I don’t consider a typical channel of crowd wisdom, since employees review their own satisfaction with the companies they

work for in Glassdoor, I believe that averaging across many employees will mitigate the effect of any idiosyncrasies in the dataset. I also believe that employee morale causes and impacts a company's financial performance. I also believe that in an efficient market employees' views of the companies they work for will be incorporated into stock prices. The Glassdoor dataset allows me to also account for when that information is incorporated into a company's performance and into a company's stock price.

I utilize the SDC M&A data to download all deals from 2008 to 2020. Following prior finance literature, I include the following types of deals in my sample – completed mergers involving both U.S. acquirers and targets in which the acquirer owns less than 50% of the target firm prior to the bid, owns more than 90% after the acquisition, and mergers whose deal value exceeds \$1 million. I use the following approach to come up with the final sample. First, I merge the Glassdoor database with SDC M&A data based on the acquirer's and target's Internet addresses and do a fuzzy match on the acquirer's and target's names. The initial SDC sample of M&A deals spanning from 2008 to 2020 consists of 3,578 deals, while the merged sample includes 616 deals. The M&A-Glassdoor sample is merged with Compustat based on website address and name and then the resulting dataset is merged with CRSP using the Compustat-CRSP link table based on lpermno and permno.⁵ When merging with Compustat and CRSP to acquire financial and return information, the M&A sample drops to 255 deals in the period between 2008 and 2020. The final sample consists of 255 deals and 15,223 acquirer reviews and 7,273 target reviews as some deals drop due to missing Glassdoor data.

⁵ The approach mentioned to merge Glassdoor and Compustat has also been used by [Green et al. \(2019\)](#) where they also match on Internet address and do a fuzzy match. In a future draft, I will also fuzzy match to check for any missing financial information. In merging Glassdoor with only Compustat I get 1,491,582 reviews for 3,546 firms for firms present in Compustat in 2020. The authors in this paper get 3,906 firms with over one million reviews when merging.

For the pseudo sample, which I use to calculate the probability of a merger in Table 2, I match the main deal sample with other firms present in Compustat and CRSP based on the SIC-industry code and find one pseudo target to match with the actual acquirer based on the actual target's characteristics and one pseudo acquirer to match with the actual target based on the actual acquirer's characteristics. That results in 765 pseudo deals. Following [Bena and Li \(2014\)](#), for each actual deal-pair in every year, I form pseudo pairs by matching the actual acquirer with one matched pseudo-target based on the above-mentioned actual target's firm characteristics and by matching the actual target firm with one matched pseudo-acquirer based on the above-mentioned actual acquirer's characteristics. Unlike [Bena and Li \(2014\)](#), who find up to five pseudo companies for every acquirer and target, I find only one pseudo company to match on industry, size, and book-to-market.

B. Employee Morale Similarity Measure

Consistent with prior research, I use the cosine similarity measure as introduced in [Jaffe \(1986\)](#) to determine the employee morale similarity between the target and the acquiring firm.

(1)

$$EmployeeMoraleSimilarity_{ijt} = \frac{X_{it}X'_{jt}}{(X_{it}X'_{it})^{0.5}(X_{jt}X'_{jt})^{0.5}}$$

To do so, I create vectors corresponding to firm i's and j's scores in each category and aggregate them to create the cosine similarity measure between acquirer and target for every pair in every year in the sample. The respective categories in Glassdoor are *Overall Rating*, *Career Opportunities*, *Compensation Benefits*, *Senior Leadership*, *Work-Life Balance*, and *Culture Values* in the range between 1 and 5 with 1 being the lowest rating and 5 being the highest rating an

employee can give to their employer. The cosine similarity measure ranges between 0 and 1 where it equals one for two firms (i, j) whose employee morale is identical, and zero for two firms whose employee morale profiles are orthogonal. To calculate the cosine similarity measure, I take a vector of the rating categories for both the acquirer and the target and measure the similarity between the two for every year. Since the vectors should include non-zero values, I drop any reviews where all ratings are zeros (missing) for either the acquirer or the target. Thus, the reviews in the sample drop because of the manner, in which the cosine similarity measure is calculated. In addition, I calculate the mean and dispersion of employee morale ratings using the standard deviation of acquirer, target, and merged firm ratings. I aggregate the individual ratings for each firm in every year and calculate the mean and standard deviation of the resultant values. I also use mean and standard deviation one month before merger announcement date. I also compute the textual similarity between acquirer and target pros, cons, and feedback.

C. Summary Statistics

[Insert Table 1 here]

[Insert Figure 1 and Figure 2 here]

Table 1 presents the summary statistics for the actual sample. Panel A of Table 1 presents acquirer and target firm characteristics which are consistent with M&A literature. As one can see, acquirers are larger than targets, have higher profitability, and exhibit lower R&D intensity than target firms. Panel B provides characteristics about sample deals (89% of the firms are in the same industry and 20% are high-tech firms), relative size (the mean target in the sample is 29% the size of the acquirer), and offer structure (52% are all-cash offers and 32% are tender offers). Panel C provides summary statistics on the level and dispersion of employee morale ratings and the cosine

similarity between acquirer and target ratings. Both level and dispersion of target and acquirer ratings increases from the year before to the actual deal year. Consistent with the definition of cosine similarity, the measure ranges between 0 and 1 with the mean value being 0.61. Panel D presents acquirer and target rating categories' statistics. The level of both acquirer and target ratings is similar but the standard deviation appears to be slightly higher for acquirers' ratings as the variability of acquirers' employee opinions seems to be greater one month before the merger announcement date. Panel E presents the correlations between my main proxy for employee morale in the paper – the similarity between acquirer and target ratings – and ESG ratings for the acquirer and target companies, respectively, in my deal sample. All ESG ratings included are related to the company's expressed responsibility toward its employees – overall ESG score, controversies score, employee satisfaction score, social pillar score, governance pillar score, human rights score, community score, product responsibility score, management score, and workforce score. As one can observe, even though the correlations between all of those measures and the employee morale similarity measure are positive, the correlations are very small. The smallest correlations are between the employee morale similarity and the employee satisfaction score between acquirer and target (0.0624 and 0.1223, respectively). It is logical that the correlations between the ESG scores and employee morale would be positive, but as explained below, there is a benefit to exploring the manner in which the similarity between employees' perceptions a year before the merger announcement impact the success of merger deals, the manner in which employees' emotions change in light of the deal, and the manner in which similar and complementary companies collaborate together. Figure 1 presents a heat map of the correlations between cosine similarity and ESG ratings for acquirer and target, respectively. Panel F presents the distribution of the deal sample by deal announcement year. The frequency of deals increases

over time but decreases in more recent years. Figure 2 plots the number of deals against deal value by deal announcement years. According to the sample, M&A deal value increases over time after The Great Recession, during which it has its trough, and has its peak in 2019 during which some mega deals have taken place.

IV. Results

A. Employee Morale Similarity and Merger Pair Likelihood

[Insert Table 2 here]

Table 2 reports the logit regression estimates of the following model:

(2)

$$Actual\ Deal_{ijmt} = \alpha + \beta_1 EmployeeMoraleSimilarity_{ijmt-1} + \beta_2 AcquirerControls_{imt-1} + \beta_3 TargetControls_{jmt-1} + \varepsilon_{ijmt}$$

The dependent variable is equal to 1 if the pair of the acquirer and target is an actual deal, and 0 otherwise (that means that the observation is a pseudo one). The main independent variables of interest are employee morale similarity and acquirer and target level and dispersion of ratings. In addition, I add acquirer and target controls which include acquirer's and target's book-to-market, ROA (following prior literature, I use the EBITDA divided by the book value of assets), leverage (the book value of leverage divided by the book value of assets), sales growth (this current year's sales divided by prior year's sales), cash and R&D intensity (cash and short-term investments and R&D divided by the book value of assets, respectively). Panel A reports results of logit regressions with employee morale proxies with control variables. Panel B reports results of logit regressions

with employee morale proxies without control variables. All models report the results relative to a control sample of pseudo deals matched based on year, industry, size, and book-to-market. Following Bena and Li (2014), each actual acquirer is matched with a pseudo target based on actual target's above-mentioned characteristics, while each actual target is matched with a pseudo acquirer based on actual acquirer's above-mentioned characteristics.

Model (1) in Panel A focuses on employee morale similarity as the main variable of interest. I find a positive and statistically significant coefficient (at the 1% level) on the `Cosine_Sim` variable. This provides evidence that the greater the similarity between acquirer and target employee morale ratings, the greater the probability that those two firms will engage in an actual merger relative to an industry-size-BTM matched pseudo sample (which is consistent with Hypothesis H1a). Models (2) and (3) focus on the level and standard deviation of acquirer and target ratings (ratings one year before the merger announcement date), respectively, as the main independent variables of interest. The coefficients on mean for both acquirer and target are positive and statistically significant at the 1% level, while the coefficients on standard deviation for both acquirer and target are negative and statistically significant at the 1% level for the acquirer and at the 5% level for the target. Taken together, the results suggest that level of acquirer and target ratings is positively associated with the likelihood of that pair actually merging relative to an industry-size-BTM matched control sample of hypothetical deals, while dispersion of acquirer and target ratings is negatively associated with the likelihood of that pair actually merging relative to an industry-size-BTM matched control sample of hypothetical deals. In Model (5), I combine all employee morale proxies and find a positive and statistically significant coefficient on the employee morale proxy (`Cosine_Sim`) at the 1% level (1.828) and the coefficient on acquirer standard deviation is negative

and statistically significant at the 1% level (-0.160). The results in regressions with control variables in Panel A hold in regressions without control variables in Panel B as a robustness check.

B. Employee Morale Similarity and Combined Announcement Returns

[Insert Table 3 and Table 15 here]

Table 3 presents the association between employee morale similarity and combined announcement returns using a value-weighted portfolio of acquirer and target returns. Table 15 presents an alternative portfolio of equal-weighted acquirer and target returns, though the main results are presented in Table 3 with CARs in the [-3, +3] event window. To calculate abnormal returns, I use a market model with the CRSP value-weighted return as the benchmark return, using days -219 through -20 relative to the merger announcement date ($t=0$) as the estimation period. Cumulative abnormal returns are calculated over the -3 to +3 trading-day period centered on $t=0$. In addition, I create deciles for both the employee morale similarity measure and take the top and bottom deciles to create high similarity and low similarity variables. Table 3 reports the results of OLS regressions for the 7-day abnormal returns centered at the deal announcement date for a value-weighted portfolio using acquirer and target returns. The deal characteristics used in the three models include indicator variables for firms incorporated in the same state, for firms in the same SIC-industry code, for firms belonging to high technology industries, for the deal being an all-cash deal or a tender offer, and for the relative size of the deal. The firm characteristics included, such as book-to-market, book leverage, and cash, have been shown in prior research to drive merger and acquisition deals.

In Tables 3 and 15, the CAR analysis is presented in a multivariate setting with the CAR for a value- and equal-weighted portfolio, respectively, which is an appropriate proxy for a merger's

short-term gains, as the dependent variable, the employee morale similarity measure as the main independent variable of interest, and the combined acquirer and target firm characteristics and deal variables as the control variables. All models include year and industry fixed effects. In Panel A High_Cosine_Sim and Low_Cosine_Sim take the value of 1 if the deal pair is in the top 10% or in the bottom 10% of the employee morale similarity measure, respectively. The coefficient on employee morale similarity is positive for both the equal- and value-weighted portfolios and is statistically significant at the 1% level in Table 3 for the value-weighted portfolio and at the 5% level in Table 15 for the equal-weighted portfolio. The coefficient on High_Cosine_Sim is positive and remains robust to using an equal-weighted portfolio of returns but is only statistically significant in Model (2) of Table 3 (at the 5% level – CARs are 12%), while the one for Low_Cosine_Sim is negative and remains robust to using an equal-weighted portfolio of returns but is statistically insignificant. In the [-3, 3] event window, high employee morale similarity mergers are associated with 2.12% greater combined announcement returns, while low employee morale similarity mergers are associated with 1.10% lower combined announcement returns. The results suggest that the higher the similarity between actual acquirer-target pairs, the higher the abnormal announcement return around the deal announcement (which is consistent with Hypothesis H1a).

C. Employee Morale Similarity and Long-Term Synergies

[Insert **Table 4** here]

The following model is used in the regressions in Table 4:

(3)

$$ROA_{imt+T} = \beta_0 + \beta_1 EmployeeMoraleSimilarity_{imt-1} + \beta_2 PairControls_{imt-1} \\ + YearAndIndustry FES_m + \varepsilon_{imt}$$

Abnormal operating performance is calculated as the return on assets, which is EBITDA scaled by assets in the beginning of the year, two and three years following the deal announcement minus the median ROA in the firm's SIC-industry code in the corresponding year. Panel A reports results of regressions with morale similarity proxies. The main independent variables of interest remain *Cosine_Sim*, *High_Cosine_Sim*, and *Low_Cosine_Sim* in Panel A. Equation (3) also includes the same pair controls and year and industry dummies as in the previous regressions. Models (1) and (2) present results for regressions with abnormal ROA of the merged firm two years after the merger announcement date as the dependent variable, while models (3) and (4) present results for regressions with abnormal ROA of the merged firm three years after the merger announcement date as the dependent variable. The results in Table 4 suggest that firms with greater (lower) employee morale similarity achieve greater (lower) abnormal profitability in comparison with the median firm in their respective industry. The coefficient on *Cosine_Sim* is positive and statistically significant at the 5% level which suggests that a one unit increase in employee morale similarity leads to a 35.1% increase in abnormal ROA two years after the merger announcement date. Firms with *High_Cosine_Sim* achieve 6.95% higher abnormal ROA (which is statistically significant at the 10% level), while firms with *Low_Cosine_Sim* achieve 8.07% lower abnormal ROA (which is statistically significant at the 10% level). The coefficients on *Cosine_Sim*, *High_Cosine_Sim*, and *Low_Cosine_Sim* in the three years following the merger announcement date are consistent with those in the two years following the merger announcement date but only the one for *High_Cosine_Sim* is statistically significant (high similarity firms achieve 5.28% higher ROA).

The results are consistent with the hypothesis that mergers with similar employee morale result in higher long-term synergies for the merged firm (Hypothesis H1a).

D. Employee Morale Similarity and Employment Changes

[Insert Table 5 here]

The following model is used in the regressions in Table 5:

(4)

$$\begin{aligned}
 & \textit{Employment Changes}_{it+T} \\
 &= \beta_0 + \beta_1 \textit{EmployeeMoraleSimilarity}_{it-1} + \beta_2 \textit{PairControls}_{imt-1} \\
 &+ \textit{YearAndIndustry FES}_m + \varepsilon_{imt}
 \end{aligned}$$

Table 5 explores the manner in which employees' attitudes are associated with employment changes. The table reports results of regressions with morale similarity proxies. The main independent variables of interest remain *Cosine_Sim*, *High_Cosine_Sim*, and *Low_Cosine_Sim* in Panel A. *Cosine_Sim* is the main independent variable of interest as in the previous tables. The same pair controls and year and industry fixed effects are included in the equation as in previous regressions. Models (1) and (2) show results of regressions with employment changes one year after the merger as the dependent variable, while Models (3) and (4) show results of regressions with employment changes six years after the merger as the dependent variable. The results suggest that the higher the similarity in acquirer-target pairs, the higher the employment changes in those firms. For example, looking at six years following the merger in Table 5, the coefficient on *Cosine_Sim* is positive and statistically significant at the 10% level (3.821), while the coefficient on *Low_Cosine_Sim* is negative and statistically significant at the 1% level (-1.726). More similar firms are more likely to let go of their employees and participate in labor restructurings. It is likely

that in deals with similar employee morale, employees have more similar qualifications and work experiences, or employees hold redundant job functions that get eliminated following the merger (which is consistent with Hypothesis H1a).

F. Employee Morale Similarity, Duration, and Likelihood of Deal Completion

[Insert Table 6 here]

I also examine whether employee morale similarity between acquirer and target affects deal completion time (using the main sample of 255 deals). Panel A reports results of deal completion duration with morale similarity, level, and variability in employee morale. The results in Panel A of Table 6 suggest that mergers between acquirers and targets with similar employee morale are associated with a more rapid rate of deal completion. Additionally, deals in which acquirers and targets have high level and low dispersion of employee morale are associated with a more rapid rate of deal completion. The results in Panel A suggest that in deals with similar employee morale, companies can spend more time on integration rather than on pondering the completion of the deal.

Panel B presents results of likelihood regressions with completed and uncompleted deals. The final sample spanning from 2008 to 2020 comes up to 318 deals with 63 uncompleted deals being added to the 255 completed deals. The results show that the higher the similarity between acquirer and target employee morale, the higher the likelihood of deal completion, while the lower the mean of acquirer and target employee morale, the higher the likelihood of deal completion (all results are statistically significant at the 1% level). When mean and standard deviation are split into categories, one can see that the higher the culture value and senior leadership, as perceived by employees, the higher the likelihood of deal completion. In addition, the lower the work-life balance and overall rating level and the higher the dispersion of those two categories, as perceived

by acquirer employees, the higher the likelihood of deal completion. The results suggest that senior leadership is important for deal completion and that the success of mergers depends on managers' abilities and skills and on employees' feelings and attitudes toward senior management.

G. Probability, Long-Term Synergies, and Deal Completion Time in Merger Groups

[Insert Table 7 here]

Panel A of Table 7 reports results of logit regressions with employee morale similarity and four groups of employee morale based on acquirer and target level, while Panel B reports results of logit regressions with four groups of employee morale based on acquirer and target level. Four groups based on acquirer and target level of employee morale (more specifically, High_High_Mean signifies an indicator variable equal to one if the deal falls in the highest quartile of acquirer morale mean and in the highest quartile of target morale mean; High_Low_Mean signifies an indicator variable equal to one if the deal falls in the highest quartile of acquirer morale mean and in the lowest quartile of target morale mean; Low_High_Mean signifies an indicator variable equal to one if the deal falls in the lowest quartile of acquirer morale mean and in the highest quartile of target morale mean; Low_Low_Mean signifies an indicator variable equal to one if the deal falls in the lowest quartile of acquirer morale mean and in the lowest quartile of target morale mean). Cosine_Sim signifies morale similarity, Mean_Acq and SD_Acq signify level and dispersion of acquirer employee morale, and Mean_T and SD_T signify level and dispersion of target employee morale

To better understand and interpret the results in Panels A and B, I create four groups based on quartiles of acquirer and target mean. I document that companies in the highest quartiles of acquirer and target mean are likely to merge (the coefficient on High_High_Mean is positive and

statistically significant at the 1% level), while acquirers in the highest quartile of acquirer mean and lowest quartile of target mean are not likely to merge (the coefficient on High_Low_Mean is negative and statistically significant at the 1% level). The coefficients on Low_High_Mean and Low_Low_Mean are both positive but not statistically significant. The results hold when all variables are included in the same regression and in models without employee morale similarity, as observed in Panel D. The results suggest that acquirers with high morale seek out targets with high morale, while also that acquirers with low morale seek out targets with high morale. It is unlikely that acquirers with high morale will seek out and merge with targets with low morale. I further explore the synergies that those groups achieve following the merger.

The main independent variables of interest in Panels C and D of the table remain High_High_Mean, High_Low_Mean, Low_High_Mean, and Low_Low_Mean. Abnormal ROA in deals between companies with high acquirer morale and high target morale is positive two and three years after merger announcement. Abnormal ROA in deals between companies with low acquirer morale and low target morale is negative two and three years after merger announcement. Abnormal ROA in deals between companies with high acquirer morale and low target morale is negative which confirms the results in regressions with cumulative abnormal returns. Abnormal ROA in deals between companies with low acquirer morale and high target morale is positive which adds proof that a company with low morale acquiring a company with high morale generates long-term synergies and is beneficial for the acquiring company in the long run. Abnormal ROA in deals between companies with high acquirer morale and low target morale is negative which adds proof that a company with high morale acquiring a company with low morale hurts the abnormal operating performance of the acquirer. Abnormal ROA in deals between companies with high acquirer morale and high target morale is positive which adds proof that a company with high

morale acquiring a company with high morale helps the abnormal operating performance of the acquirer and that a company with high morale works well with a company with high morale, while abnormal ROA in deals between companies with low acquirer morale and low target morale is negative which adds proof that a company with low morale acquiring a company with low morale doesn't necessarily change the performance dynamics in the acquiring company.

When examining the results in Panels E and F of the table, I conclude that deals in which both the acquirer and the target have high level of employee morale and that deals in which the acquirer has low morale and the target has high morale are positively associated with a more rapid rate of deal completion, while deals in which both the acquirer and the target have low level of employee morale and deals in which the acquirer has high morale and the target has low morale are negatively associated with a more rapid rate of deal completion. The results in Panels E and F suggest that target employees with high morale take less time to be integrated into the acquiring company both in deals in which acquiring companies have high and low employee morale, while target employees with low morale take more time to be integrated into the acquiring company both in deals in which acquiring companies have high and low employee morale. Overall, the results in Table 7 suggests that high morale target companies are an asset for the acquiring company. Target companies with high morale enhance the operating performance of low morale acquiring companies and target employees with high morale take less time to be integrated into acquiring companies regardless of their morale.

H. Short-Term and Long-Term Synergies with Textual Similarity Between Acquirer and Target Pros, Cons, and Feedback Sections

[Insert [Table 8](#) here]

[Insert Figure 3 here]

Table 8 reports Cumulative Abnormal Returns (CARs) around merger announcement and abnormal ROA one, two, and three years after merger announcement for the 255 actual deals in the sample using the cosine similarity between the pros, cons, and feedback sections of acquirer and target companies. The dependent variables in Panel A are CARs in the [-1, +1], [-3, +3], and [-5, +5] event windows for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The dependent variables in Panel B are abnormal operating performance one, two, and three years after merger announcement date. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs and abnormal ROA as the dependent variables with Sim_Pro, Sim_Con, and Sim_Feedback as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values and are included in the models but not reported in the tables. The results show that companies with more similar opinions of employees around the advantages, disadvantages, and feedback of working for their companies, achieve higher short-term synergies. Still, the results on abnormal ROA are inconclusive. The table shows that the main results using employee morale similarity (the cosine similarity between acquirer and target ratings) are robust to inclusion of textual cosine similarity measures. Figure 3 plots present bubble clouds of the most frequent words in the pros, cons, and feedback sections from acquirer and target written reviews in Glassdoor. As one can observe, the frequency of words of both acquirer and target are highly similar pointing to acquirer and target employees' reviews possessing common patterns and to acquirer and target employees placing value to similar attributes of workplace dynamics.

I. Cross-Sectional Variation in Post-Merger Integration Needs

[Insert Table 9 here]

[Insert Figure 4 here]

In this section, I implement cross-sectional analyses to provide further evidence on the integration channel. Specifically, I examine whether the impact of employee morale similarity on short-term and long-term synergies (cumulative abnormal returns and abnormal operating performance, respectively) is significantly stronger in situations in which post-merger integration would be of greater importance to the acquiring firm. In Panels A and B of Table 9, I examine whether certain industries in the sample exhibit greater sensitivity of expected merger synergies to my measure of employee morale. I perform cross-sectional regressions with cumulative abnormal returns as the dependent variable in Panel A and cross-sectional regressions with abnormal ROA as the dependent variable in Panel B.

First, I compare the effects of employee morale similarity for firms in capital-intensive industries and those in labor-intensive industries. To classify capital- or labor-intensive industries, I follow prior literature and define capital-intensive industries as those with SIC code smaller than 5000 and define labor-intensive industries as those with SIC code higher than or equal to 5000. I define a deal as capital- (labor-) intensive if the acquirer is from capital- (labor-) intensive industries. I run my analyses of short- and long-term merger synergies (as in Tables 3 and 4) for these subsamples. I report the results in Models (1), (5), and (9) for capital-intensive industries and in Models (2), (6), and (10) for labor-intensive industries in Panel A. In the main specification in Model (5) with CARs in the [-3, +3] event window, the coefficient on *Cosine_Sim* is positive and statistically significant at the 1% level, while in the other two with alternative event windows of [-1, +1] and [-5, +5] days around the merger announcement date, the coefficients are positive and statistically significant at the 5% level. Therefore, I find evidence that the effect of employee morale similarity will be greater in mergers with acquirers from capital-intensive industries. I do

the same analysis with abnormal operating performance one, two, and three years after the merger in Panel B. I report the results in Models (1), (5), and (9) for capital-intensive industries and in Models (2), (6), and (10) for labor-intensive industries. The findings with ROA are inconclusive whether the effect of employee morale similarity is stronger in capital- or labor-intensive mergers. In my main specifications with ROA two and three years after the merger, the impact of employee morale similarity is stronger in capital-intensive industries, even though the signs on the coefficients in Models (5) and (9) are the same. The coefficient on abnormal ROA one year after the merger is positive and statistically significant at the 1% level as can be seen in Model (1) of the table.

I also examine whether the effects of employee morale similarity are greater for deals in which acquirers and targets have greater operational overlap. I don't find any evidence that mergers in which acquirers and targets are in the same industry require stronger employee morale fit. Both within- and cross-industry mergers don't exhibit any significant results that employee morale similarity has a great impact on short-term synergies (as proxied by CARs using different event windows). The same applies to the results in cross-sectional regressions in within- and cross-industry mergers with abnormal ROA. Figure 4 shows the coefficients from cross-sectional regressions using the [-3, +3] event window for cumulative abnormal returns for capital- and labor-intensive industries and the abnormal ROA two years after the merger announcement date for capital- and labor-intensive industries. From the figure, one can see that the effect of employee morale similarity on CARs in the [-3, +3] event window is positive and statistically significantly different from zero, while the effect of employee morale similarity on abnormal ROA two years after the merger announcement is positive but not statistically significantly different from zero.

J. Level and Dispersion of Ratings and Level and Dispersion of Rating Categories and Probability of Merger

[Insert Table 10 and Table 11 here]

Tables 10 and 11 provide an analysis of the informational content of sum of rating categories and individual rating categories one and three months before merger announcement in probability of merger. To analyze the impact of level and dispersion in acquirer and target ratings one and three months before the merger on the probability of a merger, I estimate logistic regressions similar to those in Table 2. Similar to the variables in Table 2, the dependent variable in Table 10 is equal to 1 if the pair of the acquirer and target is an actual deal, and 0 otherwise (that means that the observation is a pseudo one). The main independent variables of interest are level and dispersion of acquirer and target ratings three months before merger announcement and one month before merger announcement. All models report the results relative to a control sample of pseudo deals matched based on year, industry, size, and book-to-market similar to the approach described in the explanation for Table 2. The results point to level in both acquirer and target morale being negatively associated with probability of merger as the merger announcement approaches, while dispersion in both acquirer and target morale being positively associated with probability of merger as the merger announcement approaches. The results hold both for regressions with level and dispersion one and three months before merger announcement. For example, looking at Panel A of the table, we can see that the coefficient on Mean_Acq is negative and statistically significant at the 5% level (-0.0367), while the coefficient on SD_Acq is positive and statistically significant at the 1% level (0.183). The coefficient on SD_T is positive and statistically significant at the 1% level (0.177), while the coefficient on Mean_T is negative but not statistically significant (-0.00964). The results in the table suggest that as the merger nears, level of morale in both acquirer

and target becomes negatively associated with probability of merger, while dispersion of morale in both acquirer and target becomes positively associated with probability of merger. Both acquirer and target employees might become more stressed out due to longer work hours needed to assist in merger completion and/or divergent opinions on the advantages and disadvantages of the merger. The results are consistent with Hypothesis H2a that companies with high level of acquirer and target employee morale and low variability of acquirer and target employee morale are more likely to participate in M&A deals, but as the merger nears acquirer and target companies with low level (high variability) of acquirer and target employee morale are more likely to participate in M&A deals.

Table 11 provides additional insight on the employee morale characteristics of the target companies acquirers go after and the employee morale characteristics of acquiring companies one year before merger announcement and one month before merger announcement. Table 11 has the same setup as Tables 2 and 9 and presents the results of a logistic regression of actual deals relative to a matched sample of pseudo deals. Panel A presents results of logit regressions with acquirer and target ratings one year before merger announcement, while Panel B presents results of logit regressions with acquirer and target ratings one month before merger announcement. The results in Panel A suggest that level of acquirer career opportunities (CO_Mean_Acq) and work-life balance (WL_Mean_Acq) one year before merger announcement are positively associated with merger probability, while level of acquirer compensation benefits, culture values, senior leadership, and overall rating are negatively associated with merger probability. The only statistically significant coefficient is the one on standard deviation of acquirer compensation benefits (it is positive and statistically significant at the 5% level). Level of target career opportunities, compensation benefits, culture values, senior leadership, work-life balance, and

overall rating one year before merger announcement are positively associated with merger probability (the coefficients for all different means are positive and statistically significant at the 5% and 10% levels), while dispersion of career opportunities, compensation benefits, culture values, senior leadership, work-life balance, and overall rating are negatively associated with merger probability (the coefficients for all standard deviations are negative but not statistically significant). The results give implications about the acquirer and target employee morale profile and what types of dimensions acquiring and target companies possess. Acquiring companies with high variability in individual dimensions of employee morale and high level of career opportunities and work-life balance but low level of compensation benefits, culture values, senior leadership, and overall rating are most likely to participate in M&A deals, while acquiring companies go after targets with high level of all dimensions of employee morale and low variability of all dimensions of employee morale. This points to acquiring companies valuing the employee morale profile of the target companies they acquire and that they go after target companies with high level of individual employee morale dimensions and low variability of individual employee morale dimensions.

Panel B gives some insight into how different employee morale dimensions of both acquirer and target one month before merger announcement are associated with probability of merger. Level of acquirer career opportunities and work-life balance one year before merger announcement are positively associated with merger probability, while level of acquirer career opportunities and work-life balance one month before merger announcement are negatively associated with merger probability. Variability of all different dimensions are positively associated with merger probability. The most notable results are for acquirer employees' perceptions of career opportunities and work-life balance (the coefficient on work-life balance level is negative and

statistically significant at the 1% level, while the coefficient on work-life balance standard deviation is positive and statistically significant at the 1% level, and the coefficient on career opportunities standard deviation is positive and statistically significant at the 1% level). Relative to a matched pseudo sample, employees working in companies, participating in M&A deals, experience lower levels of perceptions of work-life balance and career opportunities as the merger nears. This goes back to the argument that acquirer employees possibly have busier schedules right before a merger takes place which is translated into acquirer employees' work-life balance and career opportunities perceptions. Level of target career opportunities, compensation benefits, culture values, senior leadership, and overall rating one month before merger announcement is positively associated with merger probability, while level of work-life balance is negatively associated with merger probability. Variability of all target morale dimensions is positively associated with merger probability. The results for target morale dimensions one month before merger announcement are consistent with the results for target morale one year before merger announcement with the exception of coefficients on standard deviation. Variability in dimensions, such as career opportunities and work-life balance, becomes positively associated with merger probability as the merger nears (coefficients on CO_SD_T and WL_SD_T are positive and statistically significant at the 5% and 1% levels, respectively).

Taking into account the results in the table, employee morale in terms of all those different dimensions is an important aspect for the smooth integration between acquirer and target employees post the M&A deal and different dimensions of acquirer and target employee morale, such as perceptions of work-life balance and career opportunities from a year before to a month before merger announcement, change as the merger nears. The results in the table are consistent with Hypotheses 2Hb and 2Hc.

K. Level and Dispersion of Ratings and Level and Dispersion of Categories and Price Runup

[Insert Table 12 and Table 13 here]

Tables 12 and 13 are related to exploring whether workers' perception can predict returns and whether investors can trade on employees' insider information prior to merger deal announcements. In Table 12, acquirer and target price runups in the [-21, -4] and [-252, -4] event windows (one month and one year before the merger) are the dependent variables, while the level and standard deviation of acquirer and target ratings, and indicator variables for the high and low standard deviation of acquirer and target ratings are the independent variables of interest. Panel A displays results of regressions with acquirer ratings and abnormal returns, while Panel B displays results of regressions with target ratings and abnormal returns. Models (1) – (3) display results with returns over the one month before the merger announcement date, while Models (4) – (6) display results with returns over the one year before the merger announcement date in both Panel A and Panel B. The regressions also include control and deal variables, and year and industry fixed effects. The most notable results are contained in Panel A in the [-252, -4] event window. The coefficient on SD_Acq is negative and statistically significant at the 10% level – a one unit increase in SD_Acq leads to a 1.55% decrease in the CARs in the [-252, -4] event window. The coefficient on High_SD_Acq has the same sign – it is negative and statistically significant at the 5% level – a one unit increase in High_SD_Acq leads to a 7.30% decrease in acquirer cumulative abnormal returns in the [-252, -4] event window before the merger announcement date. The coefficient on Low_SD_Acq is positive and statistically significant at the 10% level (6.70%). The results in the table point to acquirer employees holding superior information of an incoming merger in comparison to target employees. Acquirer returns in the lowest decile of employee morale

variability are most informative in the [-252, -4] event window and information is reflected in acquiring companies' prices allowing for shareholders to trade on that information and achieve superior returns in the days before the deal announcement. Acquirer returns in the lowest and highest deciles of employee morale variability are most informative in the above-mentioned event window and shareholders in companies with more dispersed employee morale opinions relative to the average employee achieve lower returns. Prior literature has documented target price runup generated from various sources, while in this paper, I document that acquirer price runup one month and one year before the announcement bid reflects takeover rumors and information held by acquirer employees.

Table 13 presents results of regressions with acquirer and target returns over the year before the merger announcement date as predicted by the individual rating categories of acquirer and target ratings. Panel A shows results of regressions with CARs in the [-21, -4] event window as predicted by acquirer rating categories (both level and dispersion) one month before the merger announcement date, while Panel B shows results of regressions with CARs in the [-21, -4] event window as predicted by target rating categories (both level and dispersion) one month before the merger announcement date. The results in Panel A show that investors holding acquirer companies with high levels of career opportunities, senior leadership, and work-life balance (as seen and perceived by acquirer employees) achieve higher abnormal returns in the [-21, -4] event window. In addition, investors holding companies with low variability in acquirer senior leadership achieve higher abnormal returns and a one unit decrease in SL_SD_Acq leads to a 4.42% increase in CARs in the [-21, -4] event window before the merger announcement date. The coefficient on SL_SD_Acq is negative and statistically significant at the 1% level. The results in Panel B are not as informative as those in Panel A and no coefficients are statistically significant which is

consistent with the results in Panel B of Table 12. The results in Tables 12 and 13 are consistent with Hypothesis H2d and add additional explanatory power to the findings that acquirer employees have information about an upcoming merger which is reflected by acquiring companies' price runup.

V. Robustness Tests and Additional Analyses

A. Impact of Post-Merger Performance on Post-Merger Morale

[Insert Table 14 here]

In Table 14, I determine whether the market reaction around the merger, which signifies merger success, has an impact on the post-merger acquirer morale. In prior tables, I have already shown that the market reacts more negatively to deals in which acquirer and target employees exhibit greater differences in perceptions of companies' dynamics. Now, I ask an additional question if the success of the merger plays a role in the acquirer employee morale one year after the merger. I find that the market reaction in the seven days around the merger announcement is negatively associated with the raw difference in acquirer morale from year of merger to one year after merger, though the coefficients in Models (2), (3), (5), and (6) are not statistically significant. One can make the conclusion that the greater the distance between acquirer and target employee morale, as shown in prior tests, the lower the market reaction around the merger announcement date, but also that the lower the market reaction around the merger announcement date, the greater the raw difference in acquirer employee morale from year of announcement to year after announcement. This gives additional proof that mixing satisfied employees with unsatisfied employees impacts

the post-merger acquirer employee morale negatively and leads to greater differences in acquirer employee morale from year of merger announcement to year after merger announcement.

[Insert Figure 5 and Figure 6 here]

To support this finding, I also document that the greater the merger reaction, the greater the level of acquirer employee morale one year after merger announcement (Models (7), (8), and (9) in Table 14), though the coefficients are statistically insignificant. Figure 5 plots a histogram of predicted values from regressions in Models (1), (2), and (3) in Table 14. The histogram for Model (3), which includes both the market reaction and difference between acquirer and target from one year before to year of merger, has one peak around zero, and most closely resembles the behavior of the normal distribution. Figure 6 presents a test for discontinuity in the distribution of difference in employee morale from year of merger announcement to year after merger announcement outlined in the difference between the acquirer's and target's employee morale at year before merger announcement. One can observe a discontinuity where the difference between the acquirer and target employee morale is zero. The idea behind the test is that companies with greater and negative difference between acquirer and target morale experience greater post-merger acquirer employee morale changes from year of merger announcement to year after creating a discontinuity in the distribution of post-merger employee morale changes around the cutoff point of 0 (signifying the difference between acquirer and target employee morale). This asymmetry in post-merger acquirer changes around the cutoff difference between acquirer and target employee morale is consistent with prior findings that greater changes in employee morale between acquirer and target in the year before the merger lead to greater changes in the post-merger acquirer employee morale.

[Insert Figure 7 and Figure 8 here]

In Figure 7, I explore how the various groupings, signifying the difference between acquirer and target one year before the merger announcement, impact post-merger acquirer morale at the year of the merger, one year, two years, and three years after the merger. The post-merger acquirer morale of High Acquirer-High Target and Low Acquirer-Low Target mergers doesn't seem to be impacted greatly. However, the post-merger acquirer morale is impacted in the cases when a high employee morale acquirer acquires a low employee morale target and when a low employee morale acquirer acquires a high employee morale target. As one can see, a low employee morale target pulls down the high employee morale of the acquiring company, while the high employee morale target pulls up the low employee morale of the acquiring company, though the effect disappears with time. One could also conclude that the morale of the target has the greatest impact on the morale of the acquirer (either positively or negatively) within the first two years after which target employees get laid off and the morale of the acquiring company dominates over the morale of target employees. In Figure 8, I explore how the various groupings, signifying the difference between acquirer and target one year before the merger announcement, impact post-merger changes in acquirer morale from year of merger to year after merger, from one year after merger to two years after merger, from two years after merger to three years after merger, and from three years after merger to four years after merger. Changes in post-merger acquirer morale increase in mergers where acquirers and targets have a less similar employee morale. In addition, post-merger changes in acquirer morale are impacted in the first period (from year of merger announcement to one year after merger announcement) after which changes go down in mergers in which a high employee morale acquirer acquires a low employee morale target, while post-merger changes in acquirer morale are impacted after first period after which there is a jump in changes in period 2 (from year after merger announcement to two years after merger announcement) and a decrease in

changes thereafter in mergers in which a low employee morale acquirer acquires a high employee morale target. Overall, post merger-acquirer employee morale changes are more immediate in mergers in which a high employee morale target acquires a low employee morale target than in mergers in which a low employee morale acquirer acquires a high employee morale target (which is consistent with Hypothesis H1d).

B. Functional Form CARs Using Level and Dispersion and Additional Analyses

[Insert Table 16 and Table 17 here]

In addition to showing that results are robust in bivariate specifications and in equal-weighted return portfolios, I also include functional forms of those models to test for any non-linearities. The results in Tables 16 and 17 suggest that there is a non-monotonic relationship between various dimensions of employee morale and returns. As one can observe, the coefficient on level (overall level and several other dimensions, such as compensation benefits and work-life balance) is negative, while the coefficient on the squared form is positive (that is for using cumulative abnormal returns one month before the merger announcement date). Therefore, the relationship has a maximum point, or an optimal point. For some range (left to the maximum) the model finds a downward sloping straight line (negative direction/coefficient), while for another range (to the right of the maximum) the model finds an upward sloping straight line (positive direction/coefficient). Taken together, the results in Tables 16 and 17 point to a non-linear relationship between employee morale opinion categories and cumulative abnormal returns and show that the main results are robust to the inclusion of squared form variables. The paper can also explore the impact of the Covid-19 pandemic, which can act as an exogenous shock, in a difference-in-difference setting on different industries and the extent to which they have been

affected. For this purpose, I will also need all M&A deals that have occurred in 2021 and all ratings from 2021.

C. Reverse Causality, Selection Bias, and Measurement Error

[Insert Table 18 here]

In addition, to reduce the threats of reverse causality, I verify the robustness of results to the inclusion of industry and year fixed effects and the inclusion of acquirer and target firm characteristics as control variables and merged firm characteristics as control variables. I run bivariate models to add another layer of robustness in the paper. Even though it is unlikely that unobservable characteristics of Glassdoor data correlate with post-deal M&A outcomes and even though I have measured the distributional properties of employee morale generated prior to the M&A outcomes, it would be beneficial to add other robustness tests, such as similarity between acquirer and target firm characteristics. To address selection bias, or selection to participate in M&A deals due to employee morale similarity, level, or dispersion, I use a matching approach to identify counterfactual pseudo deals and estimate logistic regressions on a matched sample to estimate the probability of participation in M&A activity and acknowledge that the results in those regressions are consistent with regressions examining the long-term impact of employee morale similarity on merger outcomes. The results also hold and are robust to and when including the Inverse Mills ratio (generated from a Heckman two-stage model with the matched sample and uncompleted deal sample from probability regressions) in regressions with CARs. The results are reported in Table 18. The results in Table 3 are robust to the inclusion of the Inverse Mills ratio, though its coefficient in all specifications, is not statistically significant. Therefore, selection bias is not an issue in this case. It is also worth mentioning that it is possible that matching Glassdoor and SDC data might have oversampled deals involving larger companies that have more Glassdoor

reviews. Even though the results might not be generalizable to deals with smaller companies, the results are not biased within the truncated sample. Another concern that should be addressed in future drafts is whether low levels of employees' happiness translate into low productivity and if companies lay off those employees with low levels of happiness and low productivity. It is possible that restructuring post-M&As may mostly impact employees with poorer views of the companies they work for (who are likely to be those with low productivity). I could, additionally, create a DID analysis using failed mergers as the control group to help address the above concern. The empirical strategy, which will address endogenous selection and other threats to identification, of considering a sample of successful mergers in comparison to failed mergers will permit to examine employee morale in firms that attempt but fail to merge, as a counterfactual for how employee morale of workers in unsuccessful mergers would have evolved absent the business combination. Overall, any threats of endogeneity are mitigated due to ratings being voluntarily filled out by employees in the year before merger announcement by both acquirer and target employees and due to the decision of a merger not being simultaneously made by companies with the decisions of employees filling out reviews on Glassdoor.

VI. Conclusion

The paper provides insight into the impact employee morale similarity has on post-merger integration, the information employees hold prior to M&A deals, and the impact of pre-merger acquirer and target employee morale on post-merger merged firm employee morale. Dispersion of, level of and similarity between employee morale ratings and reviews provide a measure of information for merger probability, short-term and long-term synergies, employment changes,

merger deal completion time, and returns prior to the deal itself. The paper documents that firms with similar employee morale are more likely to merge, achieve greater return and greater operating performance synergies, including higher announcement returns and higher abnormal profitability, and experience greater employment changes following the merger. Deals in which firms have high similar employee morale work best with each other, while deals in which firms have low similar employee morale and complementary morale don't work together as well. Target employees with high morale take less time to be integrated into the acquiring company both in deals in which acquiring companies have high and low employee morale. The paper also sheds light on the employee morale characteristics of target employees that acquirers go after. Acquirers go after companies with low variability in targets' employee morale and high level in targets' employee morale. In addition, acquirers merge with companies with high level in and low dispersion in dimensions of employee morale. This points to acquiring companies valuing the employee morale of the target companies they seek out and merge with, as more similar and high morale would lead to better and easier post-merger integration. Variability of employee morale dimensions for both acquirer and target becomes positively associated with merger probability as the merger nears, while level of employee morale dimensions, such as career opportunities and work-life balance, becomes negatively associated with merger probability as the merger nears. An upcoming merger can be stressful for employees of both acquirer and target companies. This reflects that both acquirer and target employees become more uncertain in their views on the companies' work-life balance and career opportunities. Companies with similar morale experience a more rapid rate of completion and exhibit a higher likelihood of completion. Target companies with high employee morale take less time to be integrated into acquiring companies, regardless of the acquiring companies' employee morale. Acquiring companies value the employee morale

profile of target companies and they tend to go after target companies with high level and low dispersion in dimensions of employee morale. The observed acquirer price runup reflects takeover rumors generated from acquirer employees.

I also make the conclusion that the greater the distance between acquirer and target employee morale, as shown in prior tests, the lower the market reaction around the merger announcement date, but also that the lower the market reaction around the merger announcement date, the greater the raw difference in acquirer employee morale from year of announcement to year after announcement. This gives additional proof that mixing satisfied employees with unsatisfied employees impacts the post-merger acquirer employee morale negatively and leads to greater differences in acquirer employee morale from year of merger announcement to year after merger announcement. The post-merger acquirer morale is impacted in the cases when a high employee morale acquirer acquires a low employee morale target and when a low employee morale acquirer acquires a high employee morale target. A low employee morale target pulls down the high employee morale of the acquiring company, while the high employee morale target pulls up the low employee morale of the acquiring company, though the effect disappears with time. Additionally, post merger-acquirer employee morale changes are more immediate in mergers in which a high employee morale acquirer acquires a low employee morale target than in mergers in which a low employee morale acquirer acquires a high employee morale target. The paper adds onto M&A literature by providing a more direct way to measure the attitudes and opinions of employees, their impact on merger outcomes, the informational value of those attitudes and opinions, and the impact of pre-merger employee morale on post-merger employee morale.

References

- Ahern, K.R. and J. Harford**, 2014, The importance of industry links in merger waves. *Journal of Finance*, 69: 527–576.
- Bach, Laurent, Ramin P. Baghai, Marieke Bos, and Rui C. Silva**, 2021, How do acquisitions affect the mental health of employees? *Working Paper*.
- Beaumont, P., C. Hebert, and V. Lyonnet**, 2019, Build or buy? Human capital and corporate diversification. *Working Paper*.
- Bena, J. and K. Li**, 2014, Corporate innovations and mergers and acquisitions. *Journal of Finance*, 69: 1923–1960.
- Bereskin, F., Byun, S. K., Officer, M. S., and Oh, J. M.**, 2018, The effect of cultural similarity on mergers and acquisitions: evidence from corporate social responsibility. *Journal of financial and quantitative analysis*, 53(5): 1995-2039.
- Birkinshaw, J., Bresman, H. and Nobel, R.**, 2010, Knowledge transfer in international acquisitions: a retrospective, *Journal of International Business Studies*, 41 (1): 21-26.
- Campbell, Dennis and Ruidi Shang**, 2021, Tone at the bottom: measuring corporate misconduct risk from the text of employee reviews. *Management Science*: Accepted/Forthcoming.
- Chatterjee, S., Lubatkin, M., Schweiger, D. M., and Weber, Y.**, 1992, Cultural differences and shareholder value in related mergers: linking equity and human capital. *Strategic Management Journal*, 13: 319-334.
- Chen, J., Guohao Tang, Jiaquan Yao, and Guofu Zhou**, 2022, Employee sentiment and stock returns. *Working Paper*.
- Frijns, B., A. Gilbert, T. Lehnert, and A. Tourani-Rad**, 2013, Uncertainty avoidance, risk tolerance and corporate takeover decisions. *Journal of Banking and Finance*, 37: 2457–2471.
- Fulghieri, Paolo and Merih Sevilir**, 2011, Mergers, spinoffs, and employee incentives. *The Review of Financial Studies*, 24(7): 2207-2241.
- Gavin, J. and R. O. Mason**, 2004, The virtuous organization: the value of happiness in the workplace. *Organizational Dynamics*, 33(4): 379-392.
- Gehrke, Britta, Ernst Maug, Stefan Obernberger, and Christoph Schneider**, 2021, Post-merger restructuring of the labor force. *Working Paper*.

- Green, T. Clifton, Ruoyan Huang, Quan Wen, and Dexin Zhou**, 2019, Crowdsourced employer reviews and stock returns. *Journal of Financial Economics*, 134(1): 236-251.
- Greene, Daniel, Omesh Kini, Mo Shen, and Jaideep Shenoy**, 2021, Corporate takeovers and non-financial stakeholders. *Oxford Research Encyclopedias of Economics and Finance*.
- Grossman, SJ and OD Hart**, 1986, The costs and benefits of ownership: a theory of vertical and lateral integration. *Journal of Political Economy*, 94 (4): 691-719.
- Guiso, L., P. Sapienza, and L. Zingales**, 2006, Does culture affect economic outcomes? *Journal of Economic Perspectives*, 20: 23–48.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales**, 2015, The value of corporate culture. *Journal of Financial Economics*, 117(1): 60-76.
- Hart, Stuart L.**, 1995, A natural-resource-based view of the firm. *Academy of Management Review*, 20 (4): 986-1014.
- Hart and Moore**, 1990, Property rights and the nature of the firm. *Journal of Political Economy*, 98(6): 1119-1158.
- Homburg, C. and Bucerius, M.**, 2005, A marketing perspective on mergers and acquisitions: how marketing integration affects postmerger performance. *Journal of Marketing*, 69: 95-113.
- Ji, Y., Rozenbaum, O. and Welch, K. T.**, 2017, Corporate culture and financial reporting risk: looking through the Glassdoor. *Working Paper*.
- Kiewitz, C.**, 2004, Happy employees and firm performance: have we been putting the cart before the horse?. *Academy of Management Executive*.
- Lee, Kyeong Hun, David C. Mauer, and Qianying (Emma) Xu**, 2018, Human capital relatedness and mergers and acquisitions. *Working Paper*.
- Liu, Tim, Christos Makridis, Paige Ouimet, and Elena Simintzi**, 2021, Maternity benefits and gender diversity. *Working Paper*.
- Marchetti, Arianna**, 2019, Firms of a feather merge together: the coordination benefits of compatible cultures. *Working Paper*.
- Maslow, A. H.**, 1946, A theory of human motivation. in P. L. Harriman, ed., *Twentieth Century Psychology (New York, 1946)*, 22-48.
- Mayo, Elton**, 1933, The human problems of an industrial civilization. (Routledge New York, 1933).

- O'Reilly C. A.**, 1989, Corporations, culture, and commitment: motivation and social control in organizations. *California Management Review*, 31(4): 9–25.
- Ranucci, R. A. and Souder D.**, 2015, Facilitating tacit knowledge transfer: routine compatibility, trustworthiness, and integration in M&As, *Journal of Knowledge Management*, 19 (2): 257-276.
- Rhodes-Kropf, Matthew and David T. Robinson**, 2008, The market for mergers and the boundaries of the firm. *The Journal of Finance*, 63(3): 1169-1211.
- Schneider, B., P. J. Hanges, D. B. Smith, and A. N. Salvaggio**, 2003, Which comes first: employee attitudes or organizational financial and market performance?. *Journal of Applied Psychology*, 88(5): 836-851.
- Schrowang, Andrew**, 2019, The role of corporate cultural similarity in corporate acquisitions: does cultural similarity affect managerial learning? *Working Paper*.
- Seth, A.**, 1990, Value creation in acquisitions: a re-examination of performance issues. *Strategic Management Journal*, 11: 99-115.
- Singh, H. and Montgomery, C. A.**, 1987, Corporate acquisition strategies and economic performance. *Strategic Management Journal*, 8: 377-386.
- Tate, G. A. and L. Yang**, 2016, The human factor in acquisitions: cross-industry labor mobility and corporate diversification. *Working Paper*.
- Tookes, Heather and Emmanuel Yimfor**, 2021, Misconduct synergies. *Working Paper*.
- Viteles, M. S.**, 1953, Motivation and morale in industry. (W. W. Norton, New York, 1953).
- Welch, Kyle and Aaron Yoon**, 2021, Do high-ability managers choose ESG projects that create shareholder value? Evidence from employee opinions. *Review of Accounting Studies*.

Table 1: Summary Statistics

Table 1 reports summary statistics for the sample. Panel A provides summary statistics of acquirers and targets in the actual deal sample; Panel B provides additional statistics of the merged sample; Panel C provides statistics on acquirer and target overall level and dispersion of ratings in the Glassdoor data; Panel D provides statistics on acquirer and target individual categories of ratings in the Glassdoor data; Panel E provides correlations between acquirer and target ESG ratings and employee morale similarity measure; Panel F provides the distribution of deals by year. All definitions of the respective variables and their calculations are provided in Appendix 1. Figure 1 plots a heat map of the correlations between cosine similarity and acquirer and target ESG ratings, respectively, while Figure 2 reports a plot of number of deals and deal value per year.

Panel A. Acquirer and Target Characteristics

Variable	Observations	Mean	Standard Deviation
Assets_Acq	255	32414.26	140253.9
BTM_Acq	255	0.6998888	0.3272123
ROA_Acq	255	0.0904142	0.1619833
Sale_Growth_Acq	255	0.9510813	0.5045549
Cash_Acq	255	0.1589385	0.1846041
Book_Leverage_Acq	255	0.2615984	0.2312068
RDA_Acq	255	0.0304764	0.0915402

Variable	Observations	Mean	Standard Deviation
Assets_T	255	15089.24	89350.55
BTM_T	255	0.6853305	0.3656618
ROA_T	255	0.0409953	0.2809402
Sale_Growth_T	255	0.9250485	0.6486081
Cash_T	255	0.1776930	0.2047350
Book_Leverage_T	255	0.2301511	0.2387296
RDA_T	255	0.0506816	0.1733167

Panel B. Deal Characteristics

Variable	Observations	Mean	Standard Deviation
BTM	255	0.6926096	0.3111599
Book_Leverage	255	0.2458747	0.2066991
Cash	255	0.1683157	0.1800233
Relative_Size	255	0.2952821	0.5173782
Same_Industry	255	0.8352941	0.3716443
High_Tech	255	0.2000000	0.4007866
All_Cash	255	0.5215686	0.5005169
Tender_Offer	255	0.3215686	0.467997
Cosine_Sim	255	0.6113472	0.4369439

Panel C. Acquirer and Target Level and Variability Statistics

Variable	Observations	Mean	Standard Deviation
Year Before			
Mean_Acq	255	14.44255	3.152756
SD_Acq	255	6.334469	2.523270
Mean_T	255	18.48684	4.232642
SD_T	255	6.469790	2.534430
Month Before			
Mean_Acq	255	18.85014	4.777966
SD_Acq	255	6.013746	2.563724
Mean_T	255	18.77010	4.913600
SD_T	255	5.794728	2.507065
Three Months Before			
Mean_Acq	255	19.51821	4.565966
SD_Acq	255	6.513664	2.330496
Mean_T	255	19.89421	4.471480
SD_T	255	6.249660	2.197270

Panel D. Acquirer and Target Rating Categories' Statistics

Variable	Observations	Mean	Standard Deviation
Month Before			
CO_Mean_Acq	255	2.978345	0.947270
CB_Mean_Acq	255	3.320082	0.880525
CV_Mean_Acq	255	3.228228	1.217583
WL_Mean_Acq	255	3.305177	0.936180
SL_Mean_Acq	255	2.788475	1.020765
OR_Mean_Acq	255	3.229830	0.969862
CO_SD_Acq	255	0.969692	0.558567
CB_SD_Acq	255	0.859650	0.518561
CV_SD_Acq	255	1.117714	0.594652
WL_SD_Acq	255	0.988651	0.600053
SL_SD_Acq	255	1.112996	0.528988
OR_SD_Acq	255	0.965043	0.547937
CO_Mean_T	255	3.065394	0.847776
CB_Mean_T	255	3.134327	0.955245
CV_Mean_T	255	3.209108	1.106847
WL_Mean_T	255	3.248444	0.991199
SL_Mean_T	255	2.857681	1.029208
OR_Mean_T	255	3.255149	0.982603
CO_SD_T	255	0.950694	0.593483
CB_SD_T	255	0.816442	0.510718
CV_SD_T	255	1.053331	0.666287
WL_SD_T	255	1.019117	0.562407
SL_SD_T	255	1.016431	0.493908
OR_SD_T	255	0.938713	0.637676

Panel E. Correlations with ESG Ratings (from Refinitiv) for Acquirer and Target, respectively⁶

	Cosine_Sim	ESG	Controversy	Employees	Social_Pillar	Governance	H_Rights	Community	Product	Managerial	Workforce
Cosine_Sim	1										
ESG	0.1920	1									
Controversy	0.1596	0.8845	1								
Employees	0.0624	0.4516	0.2316	1							
Social_Pillar	0.1948	0.9561	0.7821	0.5250	1						
Governance	0.1739	0.9445	0.8201	0.4065	0.8979	1					
H_Rights	0.1303	0.8144	0.6084	0.5045	0.8934	0.7531	1				
Community	0.2098	0.9510	0.8134	0.4816	0.9684	0.9128	0.8032	1			
Product	0.2133	0.8807	0.7647	0.4182	0.9047	0.8315	0.7193	0.8629	1		
Managerial	0.1645	0.9142	0.8162	0.3517	0.8530	0.9881	0.7015	0.8771	0.7974	1	
Workforce	0.1840	0.9287	0.7275	0.5639	0.9680	0.8558	0.8290	0.9380	0.8478	0.8034	1

⁶ The ESG ratings used to calculate the correlation between ESG ratings and Glassdoor proxies come from Refinitiv. They are all related to the company's expressed responsibility toward its employees – overall ESG score, controversies score, employee satisfaction score, social pillar score, governance pillar score, human rights score, community score, product responsibility score, management score, and workforce score.

	Cosine_Sim	ESG	Controversy	Employees	Social_Pillar	Governance	H_Rights	Community	Product	Managerial	Workforce
Cosine_Sim	1										
ESG	0.1959	1									
Controversy	0.1603	0.9185	1								
Employees	0.1223	0.5727	0.3779	1							
Social_Pillar	0.2028	0.9771	0.8618	0.6117	1						
Governance	0.1921	0.9619	0.8728	0.5559	0.9514	1					
H_Rights	0.1503	0.9017	0.7881	0.5946	0.9378	0.8700	1				
Community	0.1971	0.9655	0.8655	0.6029	0.9839	0.9437	0.8913	1			
Product	0.2345	0.9166	0.8257	0.4857	0.9335	0.9189	0.8344	0.9037	1		
Managerial	0.1846	0.9408	0.8743	0.5309	0.9289	0.9916	0.8428	0.9216	0.9059	1	
Workforce	0.1948	0.9592	0.8099	0.6478	0.9671	0.9090	0.8804	0.9534	0.8670	0.8790	1

Panel F. Deals by Merger Announcement Date

Year	Number of Deals	Percentage of Sample
2008	10	3.92%
2009	14	5.49%
2010	10	3.92%
2011	14	5.49%
2012	21	8.24%
2013	26	10.20%
2014	18	7.06%
2015	25	9.80%
2016	33	12.94%
2017	17	6.67%
2018	32	12.55%
2019	26	10.20%
2020	9	3.53%
Total	255	100.00%

Figure 1: Heat Map of Correlation Matrix

Figure 1 presents heat maps of the correlation matrices for correlations between cosine similarity and acquirer ESG ratings (left) and between cosine similarity and target ESG ratings (right). It plots the relative heat level for correlations from 0 to 1 in steps of 0.2.

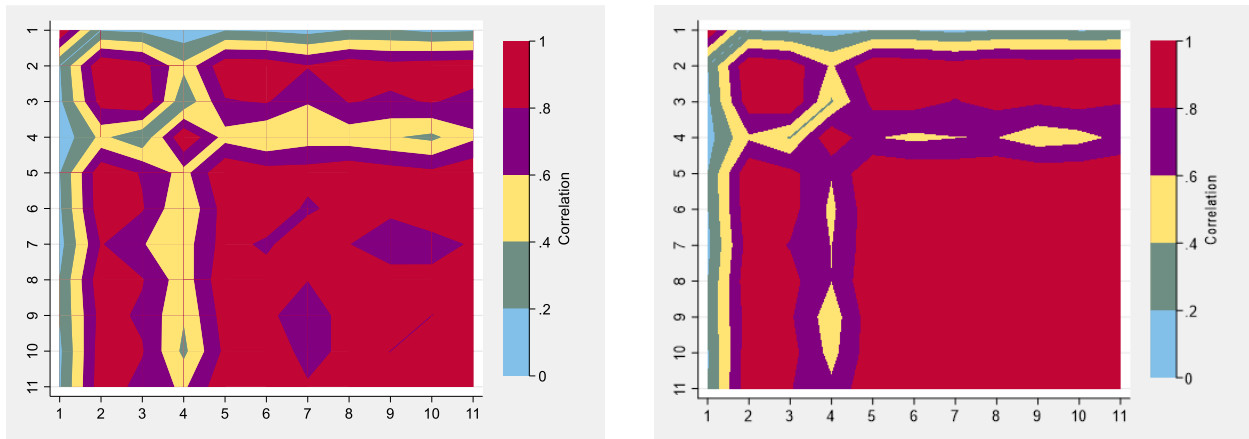


Figure 2: Number of Deals and Deal Value per Year

Figure 2 presents the distribution of number of deals per year (left) and the average deal value per year in millions as presented in SDC (right) over the paper sample for corporate takeover deals from 2008 through 2020.

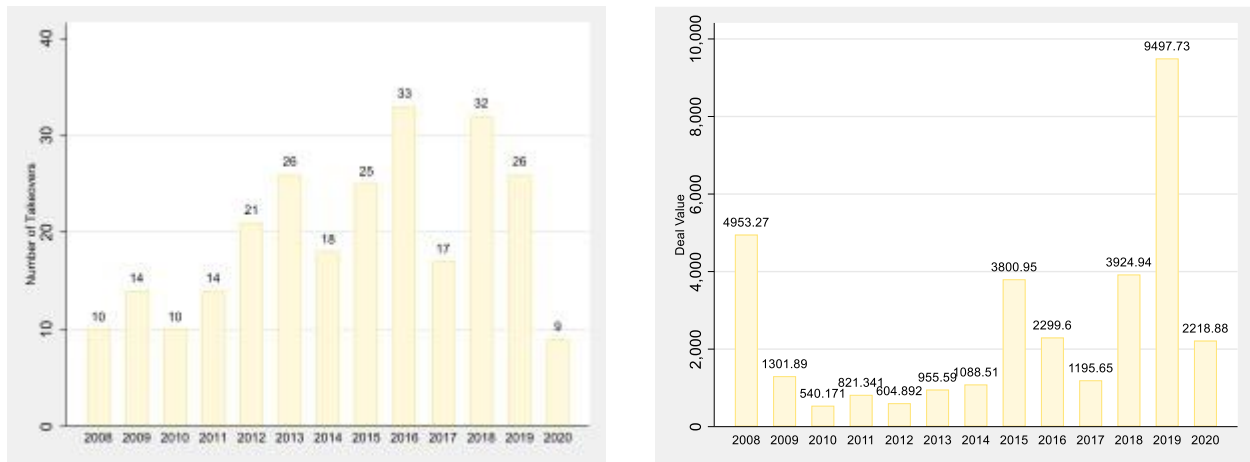


Table 2: Probability of a Merger One Year Before

Table 2 reports the results from conditional logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the employee morale similarity of the acquirer-target pair and other control variables. The dependent variable is a binary variable that takes the value of one if the observation is an actual merger deal, as defined in Table 1. This variable takes the value of zero if the observation is a pseudo firm-pair in the control group. I follow Bena and Li (2014) to pair each actual acquirer with a pseudo target based on the actual target's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual target firm) and to pair each actual target with a pseudo acquirer based on the actual acquirer's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual acquirer firm). The sample period is from 2008 to 2020. The acquirer and target controls are BTM, ROA, Book_Leverage, Sale_Growth, Cash, and RDA. Constant terms are reported. *T*-statistics are reported in parentheses. All results hold with and without deal fixed effects (the tables report results without deal fixed effects). In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability with Control Variables

	Industry-Size-BTM Match			
	(1)	(2)	(3)	(4)
Cosine_Sim	0.836***			1.828***
	(0.176)			(0.350)
Mean_Acq		0.0461***		-0.00736
		(0.0111)		(0.0142)
SD_Acq		-0.0976***		-0.160***
		(0.0140)		(0.0242)
Mean_T			0.0804***	0.0254
			(0.0133)	(0.0178)
SD_T			-0.0652**	0.0167
			(0.0306)	(0.0444)
<i>Acquirer Controls</i>				
ROA_Acq	-0.861	-1.022	-0.801	-1.085
	(0.895)	(0.860)	(0.907)	(0.945)
Sale_Growth_Acq	-0.165	-0.0668	-0.169	-0.0779
	(0.208)	(0.236)	(0.229)	(0.204)
Cash_Acq	-0.0972	0.104	-0.101	0.0113
	(0.557)	(0.542)	(0.543)	(0.574)
Book_Leverage_Acq	0.296	0.476	0.450	0.356
	(0.406)	(0.410)	(0.413)	(0.428)
RDA_Acq	-0.442	-0.787	-0.0766	-1.070
	(1.403)	(1.425)	(1.461)	(1.495)
BTM_Acq	0.121	-0.0861	-0.0509	0.0422
	(0.388)	(0.383)	(0.395)	(0.416)
<i>Target Controls</i>				
ROA_T	-0.588	-0.529	-0.582	-0.452
	(0.573)	(0.598)	(0.579)	(0.629)
Sale_Growth_T	-0.0534	0.0166	-0.0850	-0.0450
	(0.160)	(0.148)	(0.166)	(0.162)
Cash_T	-0.527	-0.286	-0.291	-0.635
	(0.535)	(0.532)	(0.528)	(0.608)
Book_Leverage_T	-0.495	-0.332	-0.540	-0.618
	(0.382)	(0.387)	(0.396)	(0.421)
RDA_T	-0.126	-0.490	-0.348	0.0136
	(0.949)	(0.966)	(0.946)	(1.010)
BTM_T	-0.626*	-0.595*	-0.658*	-0.716*
	(0.331)	(0.333)	(0.338)	(0.370)
Constant	-0.0153	0.183	0.0229	0.144
	(0.370)	(0.374)	(0.384)	(0.392)
Observations	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Probability without Control Variables

	Industry-Size-BTM Match			
	(1)	(2)	(3)	(4)
Cosine_Sim	0.740*** (0.170)			1.756*** (0.345)
Mean_Acq		0.0427*** (0.0105)		-0.00903 (0.0139)
SD_Acq		-0.0955*** (0.0179)		-0.157*** (0.0239)
Mean_T			0.0748*** (0.0128)	0.0247 (0.0176)
SD_T			-0.0655** (0.0312)	0.0140 (0.0433)
Constant	-0.824*** (0.118)	-0.488*** (0.123)	-0.885*** (0.115)	-0.726*** (0.131)
Acquirer Controls	Yes	Yes	Yes	Yes
Target Controls	No	No	No	No
Observations	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Value-Weighted CARs in [-3, +3] Event Window

Table 3 reports Cumulative Abnormal Returns (CARs) around merger announcement for the 255 actual deals in the sample. The dependent variable is CAR, the 7-day cumulative abnormal announcement return for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with Cosine_Sim and groups sorted based on employee morale level of acquirer and target and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	CARs of Combined Acquirer and Target Portfolio in [-3, +3] Event Window		
	(1)	(2)	(3)
Cosine_Sim	0.129*** (0.0370)		
High_Cosine_Sim		0.0212** (0.0103)	
Low_Cosine_Sim			-0.0110 (0.00675)
Same_Industry	0.0306*** (0.00911)	0.0327*** (0.0101)	0.0254*** (0.00950)
Same_State	-0.0155 (0.00992)	-0.0151 (0.00961)	-0.00301 (0.00599)
High_Tech	-0.0387** (0.0172)	-0.0424** (0.0172)	-0.00134 (0.0171)
Relative_Size	0.00302 (0.00602)	0.00237 (0.00623)	0.00730 (0.00471)
All_Cash	0.0245** (0.0102)	0.0266** (0.0107)	0.0132** (0.00632)
Tender_Offer	0.0145 (0.00960)	0.0120 (0.00961)	0.0135** (0.00643)
BTM	0.0179 (0.0110)	0.0257** (0.0114)	0.00207 (0.00385)
Book_Leverage	-0.0905** (0.0390)	-0.0884** (0.0379)	-0.0142 (0.0201)
Cash	-0.0127 (0.0370)	-0.00772 (0.0347)	-0.0162 (0.0148)
Constant	-0.112** (0.0532)	-9.55e-05 (0.0355)	-0.00237 (0.0265)
Industry FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.537	0.491	0.230

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Abnormal Operating Performance

Table 4 reports the results of OLS regressions explaining industry-adjusted (abnormal) post-merger operating performance. Operating performance is defined as EBITDA scaled by the market value of assets at the beginning of the year, and abnormal operating performance is calculated as the operating performance (defined above) minus the median operating performance in the corresponding acquirer's SIC industry. The sample period is from 2008 to 2020. In the various Panels in Table 4, I estimate OLS regressions with abnormal ROA as the dependent variable with employee morale similarity and groups and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the market value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Abnormal ROA Two and Three Years Following Merger			
	(1)	(2)	(3)	(4)
Cosine_Sim	0.351** (0.136)		0.137 (0.0873)	
High_Cosine_Sim		0.0695* (0.0399)		0.0528* (0.0291)
Low_Cosine_Sim		-0.0807*** (0.0263)		-0.0322 (0.0223)
Same_Industry	-0.0144 (0.0284)	-0.000989 (0.0267)	-0.0362** (0.0167)	-0.0283* (0.0158)
Same_State	-0.0160 (0.0254)	-0.0197 (0.0251)	-0.0302* (0.0155)	-0.0333** (0.0144)
High_Tech	0.102** (0.0513)	0.101** (0.0488)	0.0582 (0.0362)	0.0613* (0.0338)
Relative_Size	-0.0254 (0.0193)	-0.0191 (0.0163)	-0.0201 (0.0140)	-0.0148 (0.0115)
All_Cash	-0.000586 (0.0466)	0.0211 (0.0494)	-0.0110 (0.0300)	0.00305 (0.0288)
Tender_Offer	-0.0408 (0.0377)	-0.0291 (0.0337)	-0.0621** (0.0253)	-0.0507** (0.0209)
BTM	-0.0464 (0.0773)	-0.0590 (0.0676)	-0.107*** (0.0354)	-0.125*** (0.0334)
Book_Leverage	0.0352 (0.0689)	-0.000685 (0.0664)	-0.0328 (0.0519)	-0.0618 (0.0458)
Cash	-0.0144 (0.0284)	0.0906 (0.0861)	0.0154 (0.0531)	-0.00796 (0.0561)
Constant	-0.310* (0.182)	0.0157 (0.103)	0.0488 (0.102)	0.183*** (0.0605)
Industry FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.381	0.408	0.591	0.616

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Employment Changes Following Merger

Table 5 reports the results of OLS regressions explaining employment changes. Specifically, employment change is calculated as the percentage change of employment one and six years after the deal announcement relative to the average employment of acquirer and target at the year of the merger announcement. The sample period is from 2008 to 2020. In the various Panels in Table 5, I estimate OLS regressions with employment change one and six years after merger announcement as the dependent variable with employee morale similarity and groups and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the market value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Employment Changes Following Merger Using Cosine Similarity				
	(1)	(2)	(3)	(4)
Cosine_Sim	26.14 (34.75)		3.821* (2.046)	
High_Cosine_Sim		5.034 (11.08)		-0.268 (0.360)
Low_Cosine_Sim		-0.153 (6.146)		-1.726*** (0.481)
Same_Industry	-10.65* (6.000)	-10.18 (6.474)	0.409* (0.243)	0.525** (0.228)
Same_State	-9.750 (10.90)	-9.380 (11.23)	0.0262 (0.208)	-0.0421 (0.207)
High_Tech	4.031 (9.364)	5.668 (9.701)	-0.911** (0.377)	-1.332*** (0.438)
Relative_Size	-6.486 (5.963)	-6.729 (6.272)	-0.516** (0.231)	-0.456** (0.204)
All_Cash	-2.764 (5.716)	-2.064 (5.305)	0.373 (0.240)	0.515** (0.222)
Tender_Offer	-0.295 (7.608)	0.556 (9.618)	-0.266 (0.377)	-0.412 (0.386)
BTM	-18.04* (9.873)	-20.99 (14.36)	-1.854* (0.954)	-1.162 (0.706)
Book_Leverage	-15.83 (12.02)	-16.68 (14.68)	-0.360 (0.883)	-0.412 (0.826)
Cash	49.67* (29.44)	49.99* (27.07)	-3.027*** (1.140)	-3.063*** (0.906)
Constant	5.659 (31.66)	30.77* (16.22)	-0.994 (1.568)	2.118** (0.827)
Industry FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.369	0.367	0.698	0.768

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Duration and Likelihood of Deal Completion

Table 6 reports the duration of deal completion. In Panel A, I report the results from a Cox Hazard model with similarity, mean, and standard deviation of ratings; in Panel B, I report the results from a likelihood completion regression with similarity, aggregated mean and standard deviation, and various categories of mean and standard deviation. All of the models in Panel A report the hazard ratios for deal completion time, estimated using a Cox proportional hazard model. The dependent variable in all those models is the number of days between the announcement date and the effective date of a deal measured for completed deals. In the models of Panel B, I perform a probit regression for the likelihood of deal completion relative to a sample of uncompleted deals from 2008 to 2020. Acquirer and target controls include RDA, BTM, Cash, Book_Leverage, and Sale_Growth. All variables are defined in Appendix 1. *T*-statistics are reported in parentheses. *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Cox Hazard with Similarity, Mean and Standard Deviation

Cox Hazard for Deal Completion Time

Main Effects

Cosine_Sim	0.72	(1.5)				0.976	(1.4)
Mean_Acq			0.0480**	(2.94)		0.0195	(0.82)
SD_Acq			-0.137***	(5.21)		-0.127***	(3.56)
Mean_T					0.0964***	(5.08)	0.0306 (1.08)
SD_T					0.0299	(0.45)	0.0452 (0.69)

Controls

ROA_Acq	-1.095	(0.64)	-0.997	(0.56)	-0.663	(0.36)	-1.313	(0.70)
Sale_Growth_Acq	-0.0189	(0.05)	0.106	(0.27)	-0.0771	(0.18)	0.164	(0.4)
Cash_Acq	1.399	(1.32)	1.583	(1.52)	0.948	(0.87)	1.477	(1.38)
Book_Leverage_Acq	-0.574	(1.03)	-0.941	(1.60)	-0.899	(1.49)	-0.842	(1.41)
RDA_Acq	-0.073	(0.02)	0.925	(0.24)	2.513	(0.59)	1.358	(0.34)
BTM_Acq	0.2	(0.36)	0.228	(0.43)	0.291	(0.49)	0.394	(0.71)
ROA_T	-1.898	(1.80)	-1.624	(1.64)	-1.595	(1.60)	-1.328	(1.29)
Sale_Growth_T	0.0422	(0.12)	0.0416	(0.12)	0.0486	(0.13)	-0.0423	(0.12)
Cash_T	-1.409	(1.45)	-0.918	(0.97)	-0.632	(0.63)	-0.987	(1.00)
Book_Leverage_T	0.931	(1.76)	1.563**	(2.63)	1.220*	(2.11)	1.571*	(2.57)
RDA_T	0.66	(0.25)	-1.41	(0.50)	-0.924	(0.31)	-0.144	(0.05)
BTM_T	-0.174	(0.36)	-0.168	(0.37)	-0.19	(0.38)	-0.229	(0.48)
Observations	255		255		255		255	

t-statistics in parentheses

="* p<0.05

** p<0.01

*** p<0.001"

Panel B. Likelihood

Respective Variable	Likelihood		
	Cosine _Similarity	Mean/ SD_Acq	Mean/ SD_T
	(1)	(2)	(3)
	1.310*** (0.338)	-0.0948*** (0.0241)	-0.0579*** (0.0200)
		0.932*** (0.129)	0.637*** (0.0706)
Constant	0.00776 (0.417)	0.159 (0.424)	0.211 (0.413)
Acquirer Controls	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes
Observations	318	318	318

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

(Panel B Continued)

Respective Variable	Likelihood		
	CO_Mean/SD_ Acq	CB_Mean/SD_ Acq	CV_Mean/SD_ Acq
	(4)	(5)	(6)
	0.0498 (0.136)	0.0811 (0.117)	0.167* (0.0949)
	0.363 (0.335)	0.372 (0.341)	0.396* (0.235)
Constant	0.208 (0.415)	0.162 (0.412)	0.0286 (0.406)
Acquirer Controls	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes
Observations	318	318	318

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

(Panel B Continued)	Likelihood		
	SL_Mean/SD	WL_Mean/SD	OR_Mean/SD
	_Acq	Acq	Acq
	(4)	(5)	(6)
Respective Variable	0.380***	-2.259***	-1.374***
	(0.139)	(0.367)	(0.417)
	-0.234	3.441***	2.524***
	(0.350)	(0.625)	(0.698)
Constant	0.0596	0.326	0.231
	(0.413)	(0.460)	(0.421)
Acquirer Controls	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes
Observations	318	318	318

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

(Panel B Continued)	Likelihood		
	CO_Mean/SD	CB_Mean/SD	CV_Mean/SD
	T	T	T
	(4)	(5)	(6)
Respective Variable	0.232	0.161	0.376**
	(0.167)	(0.143)	(0.166)
	0.0637	0.228	0.0173
	(0.384)	(0.402)	(0.366)
Constant	0.115	0.106	-0.0856
	(0.428)	(0.422)	(0.420)
Acquirer Controls	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes
Observations	318	318	318

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

(Panel B Continued)	Likelihood		
	SL_Mean/SD	WL_Mean/SD	OR_Mean/SD
	T (4)	T (5)	T (6)
Respective Variable	0.414*** (0.147)	-0.0177 (0.162)	0.179 (0.155)
	-0.231 (0.338)	0.501 (0.373)	0.206 (0.399)
Constant	-0.0145 (0.430)	0.219 (0.426)	0.0847 (0.427)
Acquirer Controls	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes
Observations	318	318	318

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

Table 7: Probability, Long-Term Synergies, and Deal Integration in Merger Groups

Table 7 reports results for probability, long-term operating performance, and rate of deal completion using various groupings based on quartiles of acquirer and target employee morale. I create the following groups: High morale acquirer merging with a high morale target (High_High_Mean); High morale acquirer merging with a low morale target (High_Low_Mean); Low morale acquirer merging with a high morale target (Low_High_Mean); and Low morale acquirer merging with a low morale target (Low_Low_Mean). Panels A and B report probability regressions consistent with the model in Table 2, Panels C and D report abnormal operating performance regressions consistent with the model in Table 4, and Panels E and F report rate of deal completion regressions consistent with the model in Table 6. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability with Similarity and with Groups

	Industry-Size-BTM Match				
	(1)	(2)	(3)	(4)	(5)
Cosine_Sim	0.611*** (0.189)	0.872*** (0.177)	0.813*** (0.176)	0.825*** (0.176)	0.597*** (0.193)
High_High_Mean	0.840*** (0.265)				0.854*** (0.268)
High_Low_Mean		-14.49*** (0.419)			-13.51*** (0.422)
Low_High_Mean			0.934 (0.734)		1.121 (0.730)
Low_Low_Mean				1.111 (1.218)	1.317 (1.202)
<i>Acquirer Controls</i>					
ROA_Acq	-0.901 (0.904)	-0.815 (0.898)	-0.868 (0.896)	-0.814 (0.895)	-0.815 (0.908)
Sale_Growth_Acq	-0.197 (0.219)	-0.176 (0.212)	-0.155 (0.206)	-0.164 (0.208)	-0.193 (0.220)
Cash_Acq	-0.133 (0.550)	-0.132 (0.569)	-0.0910 (0.556)	-0.0965 (0.557)	-0.158 (0.562)
Book_Leverage_Acq	0.349 (0.410)	0.312 (0.411)	0.318 (0.404)	0.297 (0.405)	0.391 (0.411)
RDA_Acq	-0.493 (1.420)	-0.420 (1.405)	-0.500 (1.402)	-0.350 (1.407)	-0.430 (1.427)
BTM_Acq	0.112 (0.393)	0.130 (0.388)	0.136 (0.389)	0.140 (0.390)	0.163 (0.394)
<i>Target Controls</i>					
ROA_T	-0.473 (0.585)	-0.609 (0.573)	-0.568 (0.573)	-0.589 (0.573)	-0.466 (0.585)
Sale_Growth_T	-0.0874 (0.165)	-0.0545 (0.161)	-0.0526 (0.160)	-0.0530 (0.160)	-0.0876 (0.165)
Cash_T	-0.465 (0.532)	-0.473 (0.548)	-0.542 (0.535)	-0.534 (0.535)	-0.439 (0.544)
Book_Leverage_T	-0.528 (0.386)	-0.497 (0.388)	-0.478 (0.381)	-0.488 (0.382)	-0.499 (0.391)
RDA_T	-0.0211 (0.961)	-0.179 (0.953)	-0.0849 (0.948)	-0.113 (0.949)	-0.00174 (0.962)
BTM_T	-0.596* (0.337)	-0.602* (0.331)	-0.655** (0.333)	-0.619* (0.331)	-0.600* (0.338)
Constant	-0.0117 (0.376)	0.0348 (0.373)	0.0269 (0.370)	0.0447 (0.375)	0.0556 (0.382)
Observations	765	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Probability with Groups

	Industry-Size-BTM Match				
	(1)	(2)	(3)	(4)	(5)
High_High_Mean	1.153*** (0.246)				1.171*** (0.247)
High_Low_Mean		-13.59*** (0.396)			-13.74*** (0.401)
Low_High_Mean			1.254* (0.710)		1.407** (0.710)
Low_Low_Mean				1.413 (1.159)	1.589 (1.160)
<i>Acquirer Controls</i>					
ROA_Acq	-0.924 (0.865)	-0.844 (0.832)	-0.884 (0.836)	-0.817 (0.833)	-0.835 (0.868)
Sale_Growth_Acq	-0.174 (0.218)	-0.116 (0.207)	-0.101 (0.203)	-0.111 (0.204)	-0.166 (0.217)
Cash_Acq	-0.131 (0.540)	-0.101 (0.552)	-0.0646 (0.543)	-0.0709 (0.542)	-0.149 (0.551)
Book_Leverage_Acq	0.410 (0.409)	0.371 (0.404)	0.392 (0.397)	0.368 (0.399)	0.448 (0.410)
RDA_Acq	-0.540 (1.428)	-0.490 (1.403)	-0.567 (1.401)	-0.385 (1.404)	-0.467 (1.433)
BTM_Acq	0.00209 (0.386)	-0.0445 (0.374)	-0.0225 (0.375)	-0.0208 (0.376)	0.0692 (0.386)
<i>Target Controls</i>					
ROA_T	-0.451 (0.581)	-0.640 (0.571)	-0.593 (0.569)	-0.620 (0.570)	-0.435 (0.581)
Sale_Growth_T	-0.0610 (0.155)	0.00770 (0.147)	0.00447 (0.147)	0.00569 (0.147)	-0.0632 (0.156)
Cash_T	-0.354 (0.524)	-0.330 (0.535)	-0.405 (0.522)	-0.392 (0.522)	-0.345 (0.536)
Book_Leverage_T	-0.455 (0.378)	-0.340 (0.370)	-0.342 (0.366)	-0.352 (0.367)	-0.414 (0.383)
RDA_T	-0.224 (0.953)	-0.572 (0.937)	-0.445 (0.927)	-0.489 (0.930)	-0.170 (0.952)
BTM_T	-0.502 (0.329)	-0.474 (0.319)	-0.538* (0.321)	-0.489 (0.320)	-0.521 (0.331)
Constant	-0.188 (0.369)	-0.243 (0.360)	-0.227 (0.358)	-0.208 (0.363)	-0.0991 (0.373)
Observations	765	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel C. Abnormal ROA with Similarity and with Groups

	Abnormal ROA Two Years Following Merger				
	(1)	(2)	(3)	(4)	(5)
Cosine_Sim	0.245* (0.131)	0.300*** (0.111)	0.295*** (0.110)	0.299*** (0.107)	0.243* (0.134)
High_High_Mean	0.0368 (0.0340)				0.0328 (0.0353)
High_Low_Mean		-0.0104 (0.0435)			-0.00584 (0.0420)
Low_High_Mean			0.0729 (0.0609)		0.0419 (0.0532)
Low_Low_Mean				-0.0286 (0.0475)	-0.00777 (0.0486)
Same_Industry	-0.0111 (0.0270)	-0.00788 (0.0278)	-0.00641 (0.0276)	-0.0118 (0.0285)	-0.0108 (0.0280)
Same_State	-0.0169 (0.0219)	-0.0179 (0.0223)	-0.0195 (0.0215)	-0.0171 (0.0222)	-0.0186 (0.0225)
High_Tech	0.0810* (0.0438)	0.0745* (0.0433)	0.0835* (0.0444)	0.0752* (0.0427)	0.0863* (0.0467)
Relative_Size	-0.0312 (0.0197)	-0.0275 (0.0211)	-0.0260 (0.0215)	-0.0301 (0.0214)	-0.0303 (0.0219)
All_Cash	-0.0152 (0.0397)	-0.0191 (0.0381)	-0.0145 (0.0394)	-0.0258 (0.0399)	-0.0149 (0.0428)
Tender_Offer	-0.0552 (0.0380)	-0.0484 (0.0419)	-0.0460 (0.0426)	-0.0441 (0.0455)	-0.0508 (0.0442)
BTM	-0.0336 (0.0539)	-0.0461 (0.0571)	-0.0456 (0.0568)	-0.0581 (0.0675)	-0.0384 (0.0648)
Book_Leverage	-0.0506 (0.0691)	-0.0651 (0.0733)	-0.0614 (0.0732)	-0.0653 (0.0731)	-0.0508 (0.0690)
Cash	0.189*** (0.0665)	0.181*** (0.0689)	0.183*** (0.0691)	0.192*** (0.0635)	0.193*** (0.0638)
Constant	-0.184 (0.136)	-0.227* (0.117)	-0.230** (0.114)	-0.214* (0.115)	-0.182 (0.137)
Industry FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255
R-squared	0.457	0.440	0.445	0.443	0.459

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Abnormal ROA Three Years Following Merger					
	(1)	(2)	(3)	(4)	(5)
Cosine_Sim	0.0984 (0.0768)	0.117* (0.0679)	0.107 (0.0674)	0.110 (0.0704)	0.103 (0.0735)
High_High_Mean	0.0105 (0.0184)				0.000694 (0.0188)
High_Low_Mean		0.00704 (0.0468)			0.00869 (0.0426)
Low_High_Mean			0.0730* (0.0374)		0.0719 (0.0462)
Low_Low_Mean				-0.0345 (0.0376)	-0.0335 (0.0349)
Same_Industry	-0.0339** (0.0158)	-0.0331** (0.0154)	-0.0314** (0.0148)	-0.0376** (0.0172)	-0.0360** (0.0171)
Same_State	-0.0328** (0.0162)	-0.0324** (0.0162)	-0.0352** (0.0161)	-0.0327** (0.0158)	-0.0343** (0.0160)
High_Tech	0.0378 (0.0312)	0.0355 (0.0308)	0.0454 (0.0326)	0.0373 (0.0305)	0.0464 (0.0327)
Relative_Size	-0.0255* (0.0139)	-0.0247* (0.0135)	-0.0228 (0.0144)	-0.0273* (0.0149)	-0.0258 (0.0169)
All_Cash	-0.0185 (0.0302)	-0.0195 (0.0293)	-0.0151 (0.0306)	-0.0278 (0.0321)	-0.0230 (0.0331)
Tender_Offer	-0.0689*** (0.0243)	-0.0677*** (0.0249)	-0.0639** (0.0259)	-0.0610** (0.0274)	-0.0588** (0.0287)
BTM	-0.0954*** (0.0354)	-0.0987*** (0.0363)	-0.0988*** (0.0355)	-0.114*** (0.0421)	-0.113*** (0.0390)
Book_Leverage	-0.0840* (0.0468)	-0.0876* (0.0474)	-0.0848* (0.0479)	-0.0889* (0.0484)	-0.0850* (0.0481)
Cash	0.0682 (0.0514)	0.0653 (0.0544)	0.0680 (0.0550)	0.0801 (0.0487)	0.0817 (0.0499)
Constant	0.0952 (0.102)	0.0791 (0.0903)	0.0829 (0.0894)	0.102 (0.105)	0.100 (0.109)
Industry FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255
R-squared	0.609	0.607	0.614	0.613	0.620

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel D. Abnormal ROA with Groups

	Abnormal ROA Two Years Following Merger				
	(1)	(2)	(3)	(4)	(5)
High_High_Mean	0.0465 (0.0320)				0.0424 (0.0331)
High_Low_Mean		-0.0343 (0.0351)			-0.0230 (0.0340)
Low_High_Mean			0.0862 (0.0665)		0.0423 (0.0598)
Low_Low_Mean				-0.0334 (0.0502)	-0.00548 (0.0499)
Same_Industry	-0.0117 (0.0285)	-0.00742 (0.0292)	-0.00592 (0.0289)	-0.0122 (0.0310)	-0.0110 (0.0297)
Same_State	-0.0110 (0.0213)	-0.0121 (0.0231)	-0.0124 (0.0219)	-0.00940 (0.0224)	-0.0141 (0.0224)
High_Tech	0.0844 (0.0509)	0.0777 (0.0513)	0.0873 (0.0529)	0.0774 (0.0509)	0.0905* (0.0542)
Relative_Size	-0.0375* (0.0208)	-0.0339 (0.0221)	-0.0326 (0.0225)	-0.0376* (0.0225)	-0.0358 (0.0233)
All_Cash	-0.0184 (0.0412)	-0.0248 (0.0392)	-0.0192 (0.0407)	-0.0325 (0.0424)	-0.0177 (0.0448)
Tender_Offer	-0.0606 (0.0388)	-0.0514 (0.0424)	-0.0504 (0.0431)	-0.0482 (0.0466)	-0.0552 (0.0456)
BTM	-0.0328 (0.0543)	-0.0502 (0.0583)	-0.0487 (0.0582)	-0.0634 (0.0707)	-0.0373 (0.0660)
Book_Leverage	-0.0511 (0.0678)	-0.0717 (0.0742)	-0.0662 (0.0735)	-0.0709 (0.0738)	-0.0520 (0.0680)
Cash	0.211*** (0.0618)	0.208*** (0.0660)	0.209*** (0.0659)	0.220*** (0.0623)	0.215*** (0.0597)
Constant	0.0453 (0.0813)	0.0599 (0.0789)	0.0483 (0.0809)	0.0712 (0.0854)	0.0469 (0.0891)
Industry FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255
R-squared	0.439	0.412	0.416	0.414	0.441

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

	Abnormal ROA Three Years Following Merger				
	(1)	(2)	(3)	(4)	(5)
High_High_Mean	0.0144 (0.0173)				0.00476 (0.0182)
High_Low_Mean		-0.00230 (0.0404)			0.00141 (0.0376)
Low_High_Mean			0.0778** (0.0377)		0.0721 (0.0478)
Low_Low_Mean				-0.0363 (0.0378)	-0.0326 (0.0361)
Same_Industry	-0.0341** (0.0168)	-0.0329** (0.0165)	-0.0312* (0.0158)	-0.0377** (0.0184)	-0.0326 (0.0361)
Same_State	-0.0304* (0.0156)	-0.0301* (0.0162)	-0.0326** (0.0158)	-0.0299* (0.0155)	-0.0361** (0.0181)
High_Tech	0.0392 (0.0342)	0.0367 (0.0340)	0.0467 (0.0356)	0.0381 (0.0334)	-0.0324** (0.0159)
Relative_Size	-0.0281** (0.0134)	-0.0272** (0.0134)	-0.0251* (0.0144)	-0.0301** (0.0147)	0.0481 (0.0359)
All_Cash	-0.0198 (0.0311)	-0.0217 (0.0302)	-0.0168 (0.0313)	-0.0303 (0.0330)	-0.0281* (0.0166)
Tender_Offer	-0.0710*** (0.0249)	-0.0689*** (0.0255)	-0.0655** (0.0265)	-0.0625** (0.0281)	-0.0242 (0.0343)
BTM	-0.0952*** (0.0356)	-0.100*** (0.0367)	-0.0999*** (0.0358)	-0.116*** (0.0428)	-0.0606** (0.0297)
Book_Leverage	-0.0842* (0.0466)	-0.0902* (0.0472)	-0.0865* (0.0477)	-0.0909* (0.0482)	-0.112*** (0.0398)
Cash	0.0771 (0.0503)	0.0758 (0.0522)	0.0774 (0.0525)	0.0903* (0.0456)	-0.0855* (0.0476)
Constant	0.187*** (0.0625)	0.191*** (0.0621)	0.183*** (0.0644)	0.207*** (0.0697)	0.197*** (0.0692)
Industry FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255
R-squared	0.604	0.600	0.608	0.607	0.615

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel E. Rate of Deal Completion with Similarity and with Groups

Cox Hazard for Deal Completion Time

Main Effects

Cosine_Sim	0.559	(1.12)	0.74	(1.54)	0.732	(1.52)	0.718	(1.5)
High_High_Mean	0.500*	(2.39)						
High_Low_Mean			-44.91	(0.1)				
Low_High_Mean					0.335	(0.69)		
Low_Low_Mean							-43.19	(0.12)

Controls

ROA_Acq	-1.175	(0.68)	-1.145	(0.67)	-0.998	(0.58)	-1.161	(0.68)
Sale_Growth_Acq	-0.0983	(0.24)	-0.0103	(0.03)	0.00853	(0.02)	-0.0176	(0.04)
Cash_Acq	0.996	(0.92)	1.335	(1.25)	1.49	(1.39)	1.381	(1.3)
Book_Leverage_Acq	-0.61	(1.07)	-0.609	(1.09)	-0.582	(1.06)	-0.57	(1.03)
RDA_Acq	-0.165	(0.04)	-0.142	(0.04)	-0.264	(0.07)	-0.114	(0.03)
BTM_Acq	0.193	(0.34)	0.204	(0.37)	0.221	(0.4)	0.201	(0.36)
ROA_T	-1.703	(1.66)	-1.844	(1.75)	-1.891	(1.79)	-1.894	(1.80)
Sale_Growth_T	0.0727	(0.19)	0.035	(0.1)	0.0176	(0.05)	0.0459	(0.13)
Cash_T	-0.942	(0.94)	-1.371	(1.39)	-1.491	(1.52)	-1.41	(1.45)
Book_Leverage_T	0.968	(1.81)	0.953	(1.81)	0.942	(1.78)	0.907	(1.71)
RDA_T	0.485	(0.17)	0.672	(0.25)	0.865	(0.32)	0.641	(0.24)
BTM_T	-0.172	(0.36)	-0.148	(0.31)	-0.197	(0.41)	-0.168	(0.35)
Observations	255		255		255		255	

t-statistics in parentheses

="* p<0.05

** p<0.01

*** p<0.001"

Panel F. Rate of Deal Completion with Groups

Cox Hazard for Deal Completion Time

Main Effects

High_High_Mean	0.546**	(2.64)						
High_Low_Mean			-44.83	(0.001)				
Low_High_Mean					0.305	(0.63)		
Low_Low_Mean							-35.19	(0.006)

Controls

ROA_Acq	-1.162	(0.67)	-1.161	(0.68)	-1.026	(0.60)	-1.177	(0.69)
Sale_Growth_Acq	-0.19	(0.47)	-0.12	(0.31)	-0.0995	(0.25)	-0.123	(0.32)
Cash_Acq	1.004	(0.93)	1.389	(1.3)	1.526	(1.43)	1.428	(1.35)
Book_Leverage_Acq	-0.601	(1.06)	-0.596	(1.09)	-0.566	(1.04)	-0.562	(1.03)
RDA_Acq	0.435	(0.11)	0.599	(0.15)	0.422	(0.11)	0.609	(0.16)
BTM_Acq	0.193	(0.33)	0.205	(0.37)	0.216	(0.39)	0.201	(0.36)
ROA_T	-1.804	(1.76)	-1.976	(1.87)	-2.03	(1.93)	-2.023	(1.92)
Sale_Growth_T	0.161	(0.43)	0.147	(0.42)	0.129	(0.37)	0.154	(0.44)
Cash_T	-0.937	(0.94)	-1.42	(1.45)	-1.521	(1.57)	-1.453	(1.51)
Book_Leverage_T	0.799	(1.6)	0.718	(1.48)	0.708	(1.45)	0.684	(1.4)
RDA_T	-0.305	(0.11)	-0.302	(0.12)	-0.106	(0.04)	-0.315	(0.12)
BTM_T	-0.197	(0.41)	-0.183	(0.38)	-0.225	(0.47)	-0.2	(0.42)
Observations	255		255		255		255	

t-statistics in parentheses

= " * p<0.05

** p<0.01

*** p<0.001 "

Table 8: Short-Term and Long-Term Synergies with Textual Similarity Between Acquirer and Target Pros, Cons, and Feedback Sections

Table 8 reports Cumulative Abnormal Returns (CARs) around merger announcement and abnormal ROA one, two, and three years after merger announcement for the 255 actual deals in the sample using the cosine similarity between the pros, cons, and feedback sections of acquirer and target companies. The dependent variables in Panel A are CARs in the [-1, +1], [-3, +3], and [-5, +5] event windows for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The dependent variables in Panel B are abnormal operating performance one, two, and three years after merger announcement date. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs and abnormal ROA as the dependent variables with Sim_Pro, Sim_Con, and Sim_Feedback as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values and are included in the models but not reported in the tables. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. CARs

CARs in the [-1, +1] Event Window			
	Sim_Pro	Sim_Con	Sim_Feedback
	(1)	(2)	(3)
Cosine_Sim	0.0468*	0.0473*	0.0188
	(0.0267)	(0.0274)	(0.0173)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.509	0.507	0.811

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

(Panel A Continued)

CARs in the [-3, +3] Event Window			
	Sim_Pro	Sim_Con	Sim_Feedback
	(4)	(5)	(6)
Cosine_Sim	0.0367**	0.0357**	0.0353
	(0.0169)	(0.0166)	(0.0242)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.665	0.662	0.764

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

(Panel A Continued)

CARs in the [-5, +5] Event Window

	Sim_Pro (7)	Sim_Cons (8)	Sim_Feedback (9)
Cosine_Sim	0.0330* (0.0189)	0.0316* (0.0190)	0.0249 (0.0310)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.543	0.539	0.655

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

Panel B: Abnormal ROA

Abnormal ROA 1 Year After

	Sim_Pro (1)	Sim_Cons (2)	Sim_Feedback (3)
Cosine_Sim	-0.0480 (0.0442)	-0.0529 (0.0471)	-0.0824 (0.0788)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.358	0.362	0.364

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

(Panel B Continued)

Abnormal ROA 2 Years After

	Sim_Pro (4)	Sim_Cons (5)	Sim_Feedback (6)
Cosine_Sim	0.0697 (0.0658)	0.0575 (0.0561)	0.0262 (0.0847)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.306	0.300	0.290

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

(Panel B Continued)

Abnormal ROA 3 Years After

	Sim_Pros	Sim_Cons	Sim_Feedback
	(7)	(8)	(9)
Cosine_Sim	-0.0231 (0.0525)	-0.0175 (0.0568)	-0.104 (0.0744)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.415	0.414	0.435

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

Table 9: Cross-Sectional Variation in Integration Needs

Table 9 examines the cross-sectional variations in the effects of employee morale similarity on merger outcomes. Panel A examines the effect of employee morale similarity on combined announcement returns (short-term synergies), analogous to the tests in Table 3. In columns (1), (2), (5), (6), (9), and (10), I run separate specifications on mergers occurring in labor-intensive industries and those occurring in capital-intensive industries. Labor-intensive industries are those with SIC code greater than or equal to 5000, while capital-intensive industries are defined as those with SIC code less than 5000. In columns (3), (4), (7), (8), (11), and (12), I run separate specifications for deals involving within-industry mergers and cross-industry mergers based on their SIC code classification. Panel B examines the effect of employee morale similarity on abnormal operating performance (long-term synergies), analogous to the tests in Table 4 for both capital-intensive and labor-intensive industries and for within-industry and cross-industry mergers. Figure 4 reports coefficients from regressions in Table 7 for capital- and labor-intensive industries, Panels A and B. First row reports plotted coefficients from regressions with cumulative abnormal returns in the 3, 7, and 11 days around merger announcement, respectively, for capital-intensive and labor-intensive, while the second row reports plotted coefficients from regressions with cumulative abnormal returns in the 3,7, and 11 days around merger announcement, respectively, for within-industry and cross-industry mergers. The third row reports plotted coefficients from regressions with abnormal operating performance one, two, and three years, respectively, after merger announcement for capital-intensive and labor-intensive industries, while the fourth row reports plotted coefficients from regressions with abnormal operating performance one, two, and three years, respectively, after merger announcement for within-industry and cross-industry mergers. Figure 4 plots coefficients of the main specifications (the cumulative abnormal returns in the [-3, +3] event window and abnormal operating performance two years after the merger announcement) for capital-intensive and labor-intensive industries. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. CARs

	CARs in the [-1, +1] Event Window			
	Capital-Intensive (1)	Labor-Intensive (2)	Within-Industry (3)	Cross-Industry (4)
Cosine_Sim	0.657** (0.263)	-0.0291 (0.0975)	0.0411 (0.0881)	0.0123 (0.0203)
Merged Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.773	0.605	0.719	0.673

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

(Panel A Continued)

CARs in the [-3, +3] Event Window

	Capital-Intensive (5)	Labor-Intensive (6)	Within-Industry (7)	Cross-Industry (8)
Cosine_Sim	0.784*** (0.286)	-0.0185 (0.0594)	0.0287 (0.0755)	0.0170 (0.0199)
Merged Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.750	0.561	0.717	0.649

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

(Panel A Continued)

CARs in the [-5, +5] Event Window

	Capital-Intensive (9)	Labor-Intensive (10)	Within-Industry (11)	Cross-Industry (12)
Cosine_Sim	0.658** (0.272)	-0.0797 (0.0962)	0.0495 (0.0867)	-0.0403 (0.0554)
Merged Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.808	0.519	0.677	0.647

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

Panel B: Abnormal ROA

Abnormal ROA 1 Year After

	Capital-Intensive (1)	Labor-Intensive (2)	Within-Industry (3)	Cross-Industry (4)
Cosine_Sim	0.673** (0.263)	-0.123 (0.164)	-0.298* (0.152)	-0.0227 (0.0424)
Merged Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.849	0.435	0.661	0.716

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

(Panel B Continued)	Abnormal ROA 2 Years After			
	Capital- Intensive	Labor- Intensive	Within- Industry	Cross- Industry
	(5)	(6)	(7)	(8)
Cosine_Sim	-0.886 (0.882)	0.0296 (0.147)	0.280 (0.260)	0.0557 (0.0525)
Merged Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.785	0.338	0.437	0.782

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

(Panel B Continued)	Abnormal ROA 3 Years After			
	Capital- Intensive	Labor- Intensive	Within- Industry	Cross- Industry
	(9)	(10)	(11)	(12)
Cosine_Sim	-1.050** (0.452)	0.0651 (0.136)	0.0360 (0.128)	0.00876 (0.0267)
Merged Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.849	0.712	0.613	0.741

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

Figure 4: Plots of Coefficients from Cross-Sectional Regressions

Figure 4 shows the coefficients from cross-sectional regressions using the [-3, +3] event window for cumulative abnormal returns for capital-intensive industries and labor-intensive industries (left) and the coefficients from cross-sectional regressions using the abnormal ROA two years after the merger announcement date for capital-intensive industries and labor-intensive industries (right). Just as in CAR and ROA regressions, I include merger controls and merged firm controls and industry and year fixed effects.

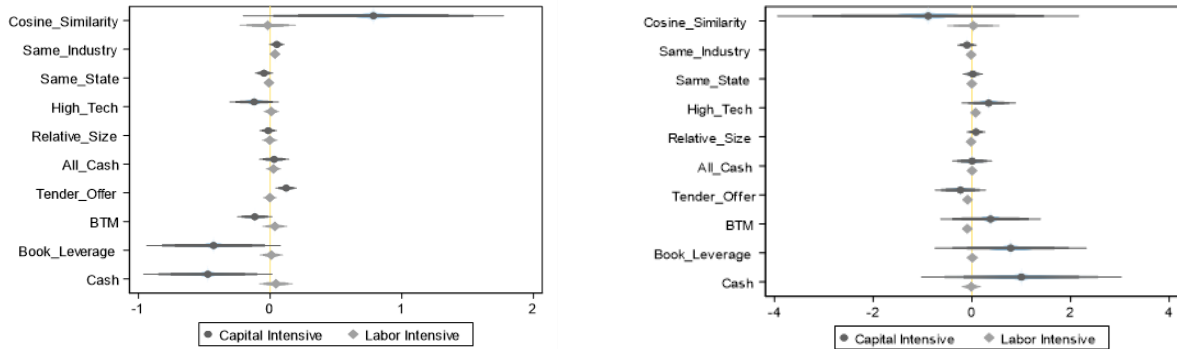


Table 10: Probability of a Merger One and Three Months Before

Table 10 reports the results from conditional logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the overall mean and standard deviation of ratings three months before (Panel A) and one month before (Panel B) merger announcement of the acquirer-target pair and other control variables. The dependent variable is a binary variable that takes the value of one if the observation is an actual merger deal, as defined in Table 1. This variable takes the value of zero if the observation is a pseudo firm-pair in the control group. I follow Bena and Li (2014) to pair each actual acquirer with a pseudo target based on the actual target's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual target firm) and to pair each actual target with a pseudo acquirer based on the actual acquirer's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual acquirer firm). The sample period is from 2008 to 2020. The acquirer and target controls are BTM, ROA, Book_Leverage, Sale_Growth, Cash, and RDA. Constant terms are reported. *T*-statistics are reported in parentheses. All results hold with and without deal fixed effects (the tables report results without deal fixed effects). In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability of a Merger Three Months Before

	Industry-Size-BTM Match			
	(1)	(2)	(3)	(4)
Mean_Acq	-0.0367**		-0.0375**	
	(0.0144)		(0.0152)	
SD_Acq	0.183***		0.176***	
	(0.0434)		(0.0446)	
Mean_T		-0.00964		-0.0134
		(0.0146)		(0.0148)
SD_T		0.177***		0.171***
		(0.0472)		(0.0466)
<i>Acquirer Controls</i>				
ROA_Acq	-0.843	-0.875		
	(0.866)	(0.910)		
Sale_Growth_Acq	-0.137	-0.163		
	(0.210)	(0.212)		
Cash_Acq	-0.111	-0.122		
	(0.539)	(0.549)		
Book_Leverage_Acq	0.285	0.259		
	(0.402)	(0.408)		
RDA_Acq	-0.198	-0.0880		
	(1.429)	(1.453)		
BTM_Acq	0.0658	0.124		
	(0.375)	(0.379)		
<i>Target Controls</i>				
ROA_T	-0.734	-0.756		
	(0.592)	(0.575)		
Sale_Growth_T	-0.00676	-0.0318		
	(0.151)	(0.155)		
Cash_T	-0.555	-0.529		
	(0.522)	(0.525)		
Book_Leverage_T	-0.423	-0.613		
	(0.382)	(0.388)		
RDA_T	-0.435	-0.405		
	(0.965)	(0.950)		
BTM_T	-0.473	-0.486		
	(0.324)	(0.325)		
Constant	0.151	0.0842	-0.555***	-0.670***
	(0.364)	(0.368)	(0.0979)	(0.0962)
Observations	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Probability of a Merger One Month Before Merger

	Industry-Size-BTM Match			
	(1)	(2)	(3)	(4)
Mean_Acq	-0.00673 (0.0154)		-0.00195 (0.0148)	
SD_Acq	-0.0260 (0.0460)		-0.0240 (0.0450)	
Mean_T		-0.0117 (0.0163)		-0.0136 (0.0161)
SD_T		0.0278 (0.0490)		0.0272 (0.0484)
<i>Acquirer Controls</i>				
ROA_Acq	-0.842 (0.831)	-0.856 (0.835)		
Sale_Growth_Acq	-0.109 (0.206)	-0.117 (0.206)		
Cash_Acq	-0.0644 (0.544)	-0.0612 (0.543)		
Book_Leverage_Acq	0.366 (0.405)	0.360 (0.400)		
RDA_Acq	-0.494 (1.402)	-0.518 (1.399)		
BTM_Acq	-0.0622 (0.376)	-0.0543 (0.374)		
<i>Target Controls</i>				
ROA_T	-0.653 (0.574)	-0.607 (0.570)		
Sale_Growth_T	0.00821 (0.147)	0.00545 (0.147)		
Cash_T	-0.375 (0.525)	-0.381 (0.523)		
Book_Leverage_T	-0.349 (0.369)	-0.350 (0.366)		
RDA_T	-0.575 (0.937)	-0.502 (0.934)		
BTM_T	-0.487 (0.319)	-0.494 (0.318)		
Constant	0.291 (0.365)	0.275 (0.361)	-0.416*** (0.0952)	-0.437*** (0.0934)
Observations	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Probability of a Merger Using Rating Categories

Table 11 reports the results from conditional logit regressions of the likelihood of an observation being an actual (as opposed to hypothetical) merger on the individual rating categories' mean and standard deviation of both acquirer and target one year before (Panel A) and one month before (Panel B) merger announcement of the acquirer-target pair and other control variables. The dependent variable is a binary variable that takes the value of one if the observation is an actual merger deal, as defined in Table 1. This variable takes the value of zero if the observation is a pseudo firm-pair in the control group. I follow Bena and Li (2014) to pair each actual acquirer with a pseudo target based on the actual target's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual target firm) and to pair each actual target with a pseudo acquirer based on the actual acquirer's characteristics (the hypothetical match is in the same industry, is closest in market value of equity and in book-to-market to the deal's actual acquirer firm). The sample period is from 2008 to 2020. The acquirer and target controls are BTM, ROA, Book_Leverage, Sale_Growth, Cash, and RDA. Constant terms are reported. *T*-statistics are reported in parentheses. All results hold with and without deal fixed effects (the tables report results without deal fixed effects). In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Probability Using Acquirer and Target Rating Categories One Year Before Merger

	Industry-Size-BTM Match					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	0.0458 (0.119)					
CO_SD_Acq	0.315 (0.327)					
CB_Mean_Acq		-0.104 (0.114)				
CB_SD_Acq		0.846** (0.409)				
CV_Mean_Acq			-0.0269 (0.114)			
CV_SD_Acq			0.359 (0.304)			
SL_Mean_Acq				-0.00948 (0.119)		
SL_SD_Acq				0.364 (0.293)		
WL_Mean_Acq					0.0117 (0.113)	
WL_SD_Acq					0.421 (0.320)	
OR_Mean_Acq						-0.0277 (0.107)
OR_SD_Acq						0.496 (0.318)
Constant	0.481 (0.930)	0.649 (0.958)	0.653 (0.934)	0.541 (0.932)	0.497 (0.933)	0.538 (0.942)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	765	765	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Industry-Size-BTM Match						
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	0.288**					
	(0.126)					
CO_SD_T	-0.235					
	(0.339)					
CB_Mean_T		0.202*				
		(0.109)				
CB_SD_T		-0.213				
		(0.369)				
CV_Mean_T			0.203*			
			(0.116)			
CV_SD_T			-0.386			
			(0.316)			
SL_Mean_T				0.212*		
				(0.125)		
SL_SD_T				-0.123		
				(0.301)		
WL_Mean_T					0.203*	
					(0.111)	
WL_SD_T					-0.151	
					(0.327)	
OR_Mean_T						0.225**
						(0.112)
OR_SD_T						-0.170
						(0.331)
Constant	0.205	0.228	0.480	0.308	0.331	0.229
	(0.979)	(0.985)	(0.941)	(0.959)	(0.944)	(0.972)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	765	765	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Probability Using Acquirer and Target Rating Categories One Month Before Merger

	Industry-Size-BTM Match					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	-0.0814 (0.0798)					
CO_SD_Acq	0.825*** (0.233)					
CB_Mean_Acq		0.0616 (0.0756)				
CB_SD_Acq		0.421* (0.249)				
CV_Mean_Acq			0.0783 (0.0819)			
CV_SD_Acq			0.427* (0.224)			
SL_Mean_Acq				0.133* (0.0740)		
SL_SD_Acq				0.195 (0.204)		
WL_Mean_Acq					-0.335*** (0.0904)	
WL_SD_Acq					1.438*** (0.248)	
OR_Mean_Acq						-0.0178 (0.0717)
OR_SD_Acq						0.622*** (0.220)
Constant	0.207 (0.369)	0.0987 (0.366)	0.0771 (0.367)	0.0819 (0.369)	0.270 (0.368)	0.155 (0.364)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	765	765	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Industry-Size-BTM Match						
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	0.118 (0.0842)					
CO_SD_T	0.552** (0.238)					
CB_Mean_T		0.158** (0.0839)				
CB_SD_T		0.425 (0.279)				
CV_Mean_T			0.161** (0.0799)			
CV_SD_T			0.423* (0.220)			
SL_Mean_T				0.213*** (0.0816)		
SL_SD_T				0.253 (0.226)		
WL_Mean_T					-0.120 (0.0834)	
WL_SD_T					1.179*** (0.242)	
OR_Mean_T						0.0483 (0.0731)
OR_SD_T						0.749*** (0.228)
Constant	0.0985 (0.369)	0.103 (0.368)	0.103 (0.369)	0.0748 (0.369)	0.140 (0.370)	0.128 (0.366)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	765	765	765	765	765	765

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Acquirer and Target Price Runup Using Level and Standard Deviation

Table 12 reports Cumulative Abnormal Returns in the one month and one year before merger announcement (to signify the price runup in acquirer and target firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for acquirer firm (Panel A) and target firm (Panel B) using the overall mean and standard deviation of acquirer and target ratings individually as the main independent variables. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with mean and standard deviation of acquirer and target ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Acquirer CARs

	CARs Using Event Windows ([-21, -4] and [-252, -4] Event Ranges) Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
Mean_Acq	0.000421 (0.00172)			0.00379 (0.00374)		
SD_Acq	-0.00287 (0.00369)			-0.0155* (0.00816)		
High_Mean_Acq		-0.00770 (0.0120)			0.0177 (0.0317)	
High_SD_Acq		0.0206 (0.0192)			-0.0730** (0.0354)	
Low_Mean_Acq			-0.00389 (0.0124)			0.0510 (0.0437)
Low_SD_Acq			-0.00741 (0.0134)			0.0670* (0.0391)
Same_Industry	0.0295* (0.0163)	0.0314* (0.0162)	0.0304* (0.0161)	0.0706** (0.0291)	0.0816** (0.0347)	0.0734** (0.0326)
Same_State	-0.0271*** (0.00994)	-0.0256** (0.00981)	-0.0270*** (0.00998)	0.00177 (0.0244)	0.00853 (0.0233)	0.00346 (0.0235)
High_Tech	0.0222 (0.0268)	0.0218 (0.0240)	0.0236 (0.0243)	0.156 (0.142)	0.157 (0.136)	0.164 (0.137)
Relative_Size	0.000191 (0.00643)	-0.000796 (0.00713)	-0.00176 (0.00671)	0.00578 (0.0301)	-0.000882 (0.0328)	0.000393 (0.0303)
All_Cash	0.0156 (0.0175)	0.0137 (0.0180)	0.0140 (0.0177)	-0.0722* (0.0383)	-0.0762* (0.0415)	-0.0780** (0.0391)
Tender_Offer	-0.0123 (0.0152)	-0.0114 (0.0156)	-0.0114 (0.0153)	-0.0159 (0.0294)	-0.0122 (0.0314)	-0.0120 (0.0292)
BTM	0.0213 (0.0188)	0.0201 (0.0197)	0.0215 (0.0194)	-0.118 (0.0889)	-0.119 (0.0927)	-0.118 (0.0901)
Book_Leverage	0.138*** (0.0355)	0.128*** (0.0321)	0.127*** (0.0305)	0.0515 (0.0758)	0.00614 (0.0782)	0.0113 (0.0786)
Cash	0.0220 (0.0400)	0.0228 (0.0378)	0.0229 (0.0364)	0.184* (0.109)	0.189* (0.109)	0.194* (0.109)
Constant	-0.0881 (0.0616)	-0.0895 (0.0656)	-0.0868 (0.0652)	0.0108 (0.0728)	-0.00836 (0.0843)	0.00756 (0.0793)
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255	255
R-squared	0.247	0.239	0.245	0.232	0.209	0.213

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Target CARs

CARs Using Event Windows [-21, -4] and [-252, -4] Event Ranges						
Before Merger						
	(1)	(2)	(3)	(4)	(5)	(6)
Mean_T	-0.0038 (0.00127)			0.00223 (0.00344)		
SD_T	-0.00176 (0.00431)			-0.0134 (0.0111)		
High_Mean_T		0.00691 (0.0139)			0.0155 (0.0295)	
High_SD_T		-0.00376 (0.0170)			-0.0318 (0.0448)	
Low_Mean_T			0.00797 (0.0126)			-0.0498 (0.0326)
Low_SD_T			0.00252 (0.0192)			0.0255 (0.0427)
Same_Industry	0.0293* (0.0165)	0.0327** (0.0163)	0.0310* (0.0168)	0.0634** (0.0308)	0.0787** (0.0333)	0.0746** (0.0357)
Same_State	-0.0264** (0.0102)	-0.0254** (0.00995)	-0.0250** (0.00997)	0.00828 (0.0241)	0.00874 (0.0236)	0.0107 (0.0233)
High_Tech	0.0228 (0.0251)	0.0241 (0.0247)	0.0226 (0.0236)	0.159 (0.140)	0.155 (0.141)	0.162 (0.138)
Relative_Size	-0.000252 (0.00623)	-0.00156 (0.00745)	-0.000307 (0.00654)	0.00444 (0.0295)	-0.00262 (0.0327)	0.00208 (0.0304)
All_Cash	0.0156 (0.0182)	0.0151 (0.0186)	0.0145 (0.0181)	-0.0683* (0.0380)	-0.0814** (0.0396)	-0.0777** (0.0391)
Tender_Offer	-0.0122 (0.0156)	-0.0122 (0.0158)	-0.0112 (0.0161)	-0.0156 (0.0306)	-0.00937 (0.0308)	-0.0121 (0.0317)
BTM	0.0218 (0.0200)	0.0206 (0.0206)	0.0210 (0.0195)	-0.112 (0.0920)	-0.126 (0.0938)	-0.117 (0.0937)
Book_Leverage	0.138*** (0.0343)	0.128*** (0.0318)	0.127*** (0.0314)	0.0482 (0.0777)	0.0197 (0.0733)	0.0105 (0.0765)
Cash	0.0217 (0.0393)	0.0182 (0.0380)	0.0219 (0.0385)	0.183* (0.110)	0.214** (0.108)	0.188* (0.113)
Constant	-0.0892 (0.0629)	-0.0918 (0.0661)	-0.0900 (0.0669)	0.00737 (0.0739)	-0.00200 (0.0816)	0.000343 (0.0815)
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255	255
R-squared	0.244	0.239	0.239	0.220	0.205	0.202

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 13: Acquirer and Target Price Runup Using Rating Categories

Table 13 reports Cumulative Abnormal Returns (CARs) in the one month and one year before merger announcement (to signify the price runup in acquirer and target firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for acquirer firm (Panel A) and target firm (Panel B) using the individual categories' mean and standard deviation of acquirer and target ratings individually as the main independent variables. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with mean and standard deviation of acquirer and target ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Acquirer CARs

	Acquirer CARs Using Event Windows ([-21, -4] Event Range) Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	0.00910* (0.00490)					
CO_SD_Acq	-0.0177 (0.0119)					
CB_Mean_Acq		0.00489 (0.00385)				
CB_SD_Acq		-0.0243 (0.0176)				
CV_Mean_Acq			0.00717 (0.00440)			
CV_SD_Acq			-0.0209 (0.0147)			
SL_Mean_Acq				0.0267*** (0.00875)		
SL_SD_Acq				-0.0442** (0.0180)		
WL_Mean_Acq					0.00808** (0.00380)	
WL_SD_Acq					-0.0248 (0.0155)	
OR_Mean_Acq						-0.0112 (0.00771)
OR_SD_Acq						0.00346 (0.0142)
Constant	-0.0963 (0.0609)	-0.0868 (0.0621)	-0.0787 (0.0631)	-0.0779 (0.0580)	-0.0921 (0.0631)	-0.0812 (0.0643)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	No	No	No	No	No	No
Industry and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255	255
R-squared	0.255	0.256	0.261	0.293	0.264	0.256

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Target CARs

Target CARs Using Event Windows ([-21, -4] Event Range) Before Merger						
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	0.00327 (0.00547)					
CO_SD_T	-0.0104 (0.0154)					
CB_Mean_T		0.00451 (0.00353)				
CB_SD_T		-0.0170 (0.0189)				
CV_Mean_T			0.00438 (0.00380)			
CV_SD_T			-0.0205 (0.0137)			
SL_Mean_T				0.00203 (0.00505)		
SL_SD_T				-0.00797 (0.0135)		
WL_Mean_T					-0.000248 (0.00351)	
WL_SD_T					7.17e-05 (0.0133)	
OR_Mean_T						-0.00242 (0.00632)
OR_SD_T						0.00648 (0.0168)
Constant	-0.0946 (0.0662)	-0.0931 (0.0652)	-0.0910 (0.0639)	-0.0912 (0.0643)	-0.0903 (0.0648)	-0.0875 (0.0644)
Acquirer Controls	No	No	No	No	No	No
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255	255
R-squared	0.242	0.248	0.260	0.241	0.238	0.240

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Robustness Tests

Table 14: Merger Performance, Differences in and Level of Acquirer Employee Morale

Table 14 reports the raw and absolute difference in acquirer employee morale from year of merger announcement to year after merger announcement for the 255 acquiring companies in the sample from 2008 through 2020. The dependent variable is the raw difference in acquirer employee morale from year of to year after merger announcement (Models (1), (2), and (3)), the absolute difference in acquirer employee morale from year of to year after merger announcement (Models (4), (5), and (6)), and the level of acquirer employee morale one year after merger announcement (Models (7), (8), and (9)). The models estimate OLS regressions with the above mentioned dependent variables with raw difference between acquirer and target employee morale from year before merger announcement to year of merger announcement and market reaction around the seven days around the merger announcement and other merger control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	Raw_Difference_in_Acq		
	(1)	(2)	(3)
Raw_Difference_Acq_T	-0.372*** (0.129)		-0.380*** (0.127)
CAR [-3,+3]		-28.64 (24.75)	-33.03 (22.53)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.382	0.325	0.392
Observations	255	255	255

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.

	Abs_Difference_in_Acq		
	(4)	(5)	(6)
Abs_Difference_Acq_T	0.293*** (0.106)		0.290*** (0.109)
CAR [-3,+3]		-16.19 (16.32)	-13.04 (15.80)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.275	0.224	0.278
Observations	255	255	255

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

	Mean_Acq		
	CAR [-1,+1] (7)	CAR [-3,+3] (8)	CAR [-5,+5] (9)
CAR	11.90 (30.61)	15.29 (28.73)	10.62 (22.79)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.149	0.150	0.149
Observations	255	255	255

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

Figure 5: Histograms of Predicted Values for Models (1), (2), and (3) (from Table 13)

Figure 5 presents the distribution of predicted values from regressions with impact of difference between acquirer and target employee morale from year before to year of merger announcement and market reaction around merger announcement on difference between acquirer employee morale at year of merger announcement and acquirer employee morale at one year after merger announcement. The table presents the histogram of predicted values from the regressions in Models (1), (2), and (3) from Table 13.

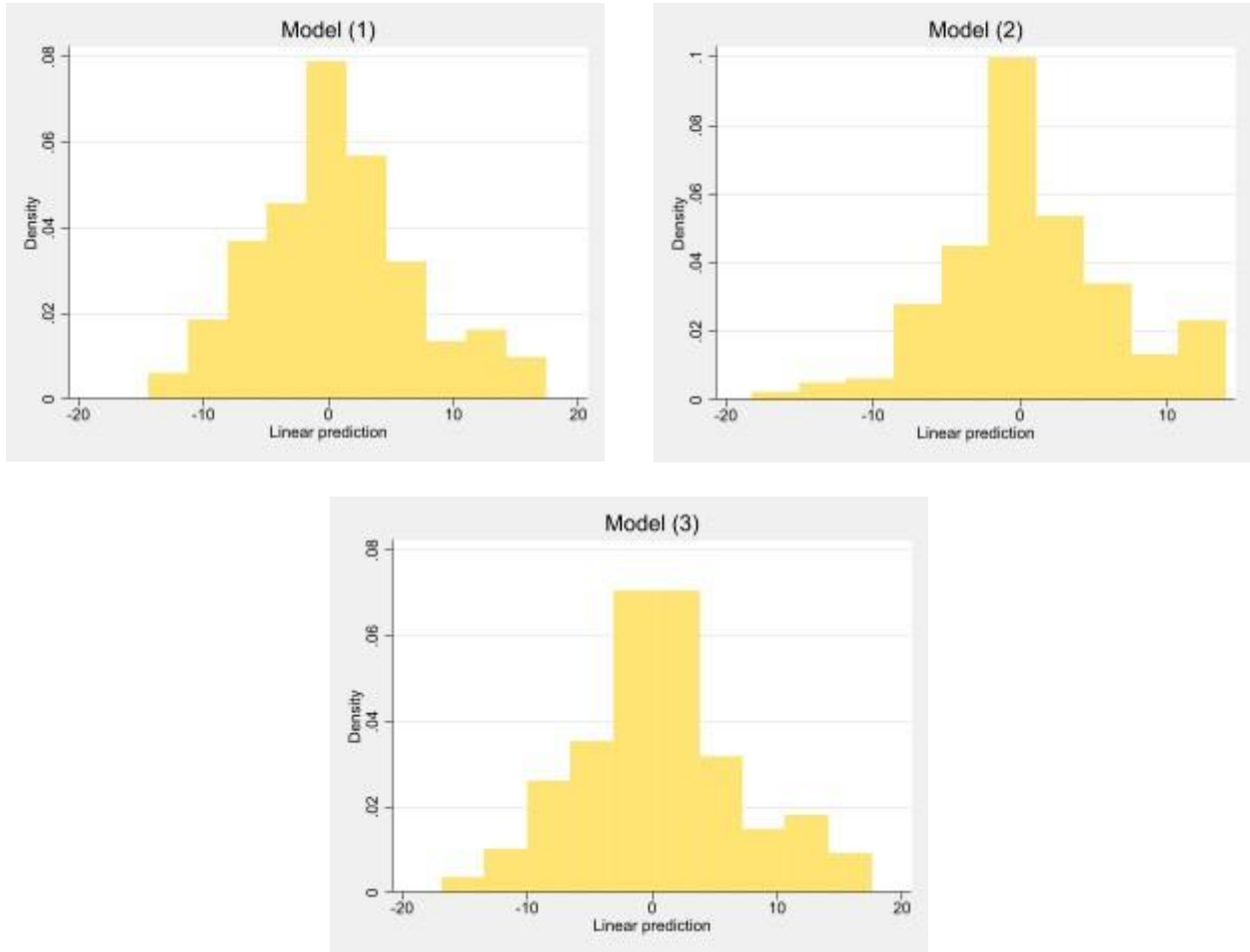


Figure 6: Discontinuity Test

Figure 6 presents a test for discontinuity in the distribution of difference in employee morale from year of merger announcement to year after merger announcement outlined in the difference between the acquirer's and target's employee morale at year before merger announcement. The difference between acquirer's and target's employee morale at year before merger announcement and the difference between acquirer morale from year of to year after merger announcement are scaled by the sample standard deviation.

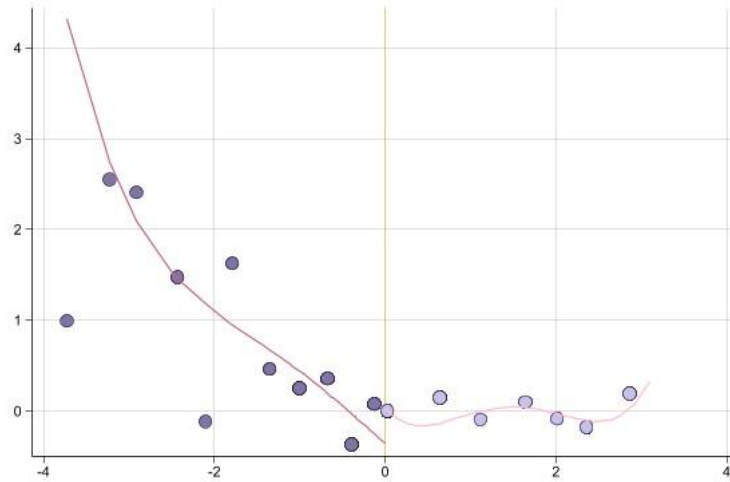


Figure 7: Coefficient Plots from Regressions of Pre-Merger Ratings on Post-Merger Ratings

Figure 7 presents coefficient plots from regressions of various groupings (high and low similarity between acquirer and target employee morale, high employee morale acquirer merging with high employee morale target, high employee morale acquirer merging with low employee morale target, low employee morale acquirer merging with high employee morale target, and low employee morale acquirer merging with low employee morale target), signifying the difference between acquirer and target employee morale one year before the merger announcement, on post-merger level of acquirer morale at the year of the merger (year 0), one year (year 1), two years (year 2), and three years after the merger (year 3).

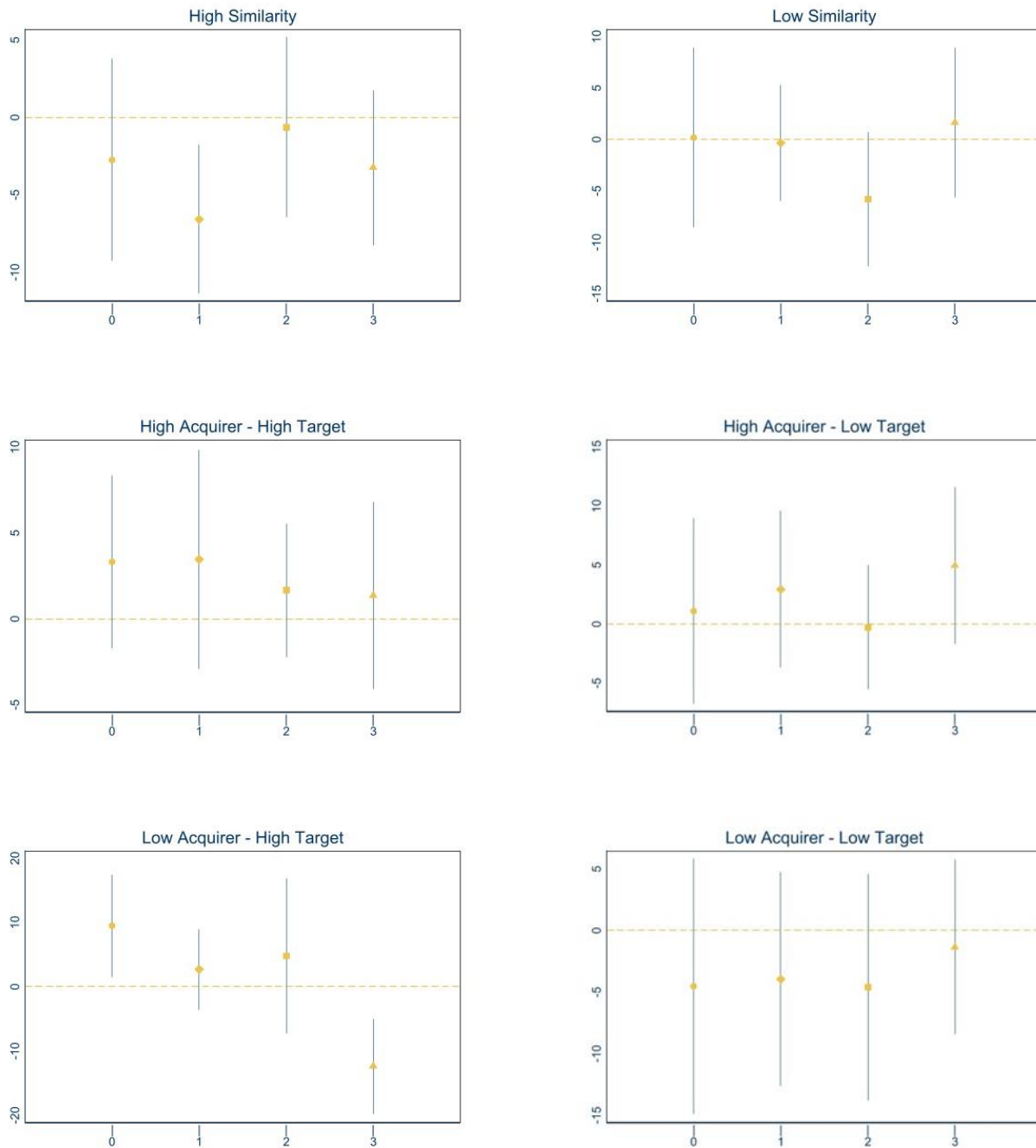


Figure 8: Coefficient Plots from Regressions of Pre-Merger Ratings on Post-Merger Rating Changes

Figure 8 presents coefficient plots from regressions of various groupings (high and low similarity between acquirer and target employee morale, high employee morale acquirer merging with high employee morale target, high employee morale acquirer merging with low employee morale target, low employee morale acquirer merging with high employee morale target, and low employee morale acquirer merging with low employee morale target), signifying the difference between acquirer and target employee morale one year before the merger announcement, on post-merger changes of acquirer morale from year of merger to year after merger (period 0), from one year after merger to two years after merger (period 1), from two years after merger to three years after merger (period 2), and from three years after the merger to four years after merger (period 3).

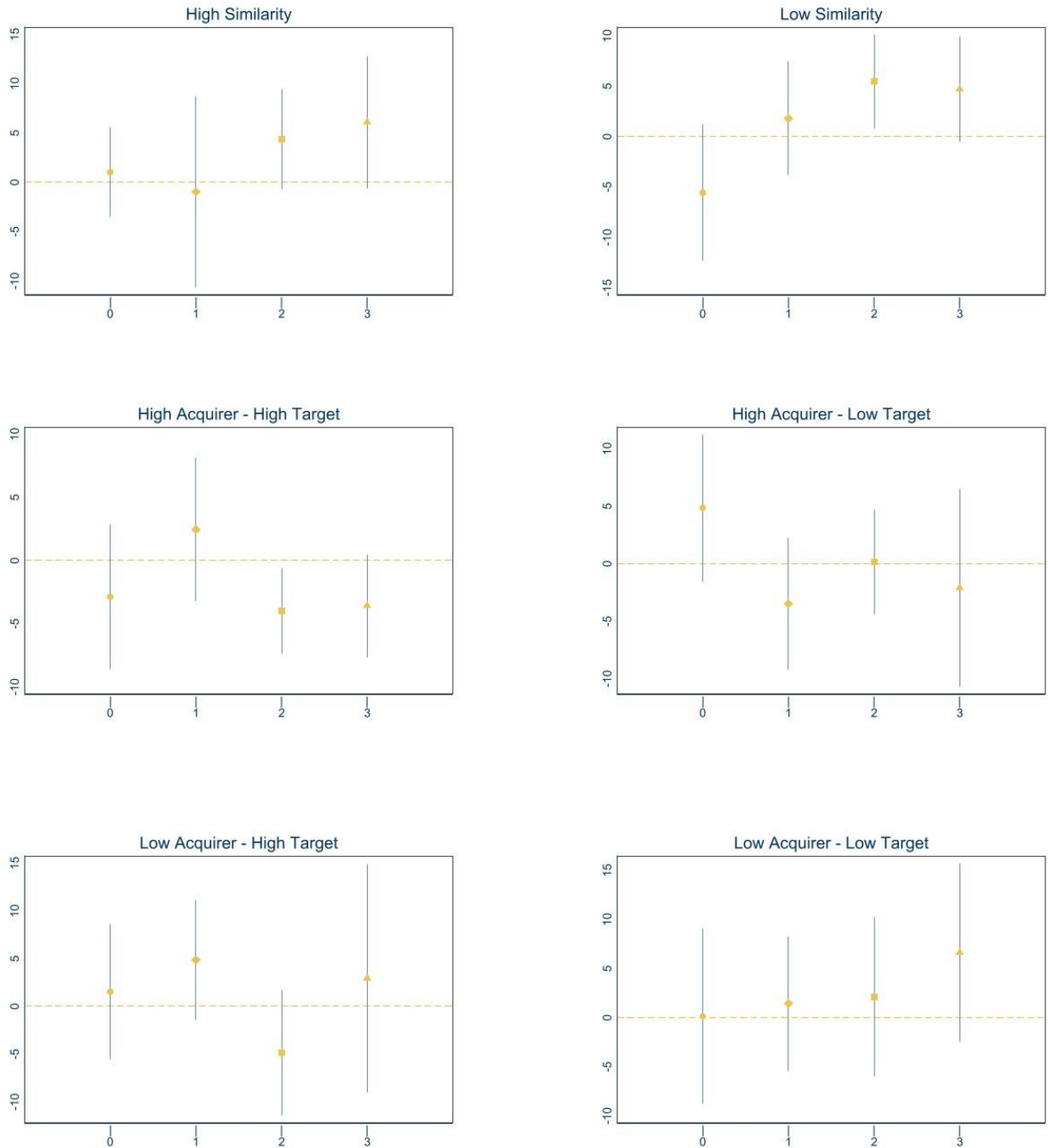


Table 15: Equal-Weighted CARs in [-3, +3] Event Window

Table 15 reports Cumulative Abnormal Returns (CARs) around merger announcement for the 255 actual deals in the sample. The dependent variable is CAR, the 7-day cumulative abnormal announcement return for an equal-weighted portfolio of the acquirer and target centered on the deal announcement date. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with Cosine_Sim and groups sorted based on employee morale level of acquirer and target and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

CARs of Combined Acquirer and Target Portfolio			
	(1)	(2)	(3)
Cosine_Sim	0.181** (0.0867)		
High_Cosine_Sim		0.00448 (0.0166)	
Low_Cosine_Sim			0.0197 (0.0323)
Same_Industry	0.0795*** (0.0244)	0.0603*** (0.0222)	0.0624*** (0.0215)
Same_State	-0.00663 (0.0192)	0.0125 (0.0136)	0.0130 (0.0135)
High_Tech	-0.0484 (0.0402)	0.0146 (0.0296)	0.0176 (0.0312)
Relative_Size	-0.0196 (0.0201)	0.00475 (0.0172)	0.00445 (0.0170)
All_Cash	0.0315 (0.0262)	0.00282 (0.0148)	0.00446 (0.0129)
Tender_Offer	0.00436 (0.0194)	0.0238* (0.0137)	0.0248* (0.0148)
BTM	0.0678** (0.0316)	0.0193 (0.0267)	0.0140 (0.0225)
Book_Leverage	-0.132** (0.0628)	-0.0412 (0.0431)	-0.0477 (0.0449)
Cash	-0.0787 (0.0728)	-0.114*** (0.0341)	-0.117*** (0.0338)
Constant	-0.222*** (0.0825)	-0.0245 (0.0419)	-0.0234 (0.0414)
Industry FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Observations	255	255	255
R-squared	0.512	0.204	0.208

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 16: Functional Form CARs Using Level and Standard Deviation

Table 16 reports functional models for Cumulative Abnormal Returns (CARs) before merger announcement for the acquirer and the target in the 255 actual deals in the sample. The dependent variable is CAR one month (column (1)) and one year (column (2)) before merger announcement date for acquirer and one month (column (3)) and one year (column (4)) before merger announcement date for target. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with overall mean and standard deviation of acquirer ratings (columns (1) and (2)) and overall mean and standard deviation of target ratings (columns (3) and (4)) and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

	CARs Using Event Windows ([-21, -4] and [-252, -4] Event Ranges) Before Merger			
	(1)	(2)	(3)	(4)
Mean	-0.000380 (0.00479)	0.00993 (0.0124)	-0.000880 (0.00385)	0.00359 (0.0122)
SD	-0.00212 (0.0144)	-0.00666 (0.0296)	-0.00189 (0.0125)	-0.0200 (0.0398)
Mean_Sqrd	0.00000389 (0.000144)	-0.000373 (0.000463)	0.00000359 (0.000107)	-0.00000359 (0.000316)
SD_Sqrd	-0.00000528 (0.00113)	-0.00114 (0.00225)	0.0000039 (0.000969)	0.000666 (0.00337)
Same_Industry	0.0294* (0.0162)	0.0732** (0.0299)	0.0285 (0.0174)	0.0641* (0.0331)
Same_State	-0.0273*** (0.00992)	0.00249 (0.0241)	-0.0266*** (0.0101)	0.00850 (0.0239)
High_Tech	0.0216 (0.0264)	0.163 (0.143)	0.0231 (0.0253)	0.160 (0.143)
Relative_Size	0.000320 (0.00642)	0.00258 (0.0304)	0.000179 (0.00656)	0.00406 (0.0307)
All_Cash	0.0151 (0.0176)	-0.0698* (0.0379)	0.0157 (0.0181)	-0.0674* (0.0369)
Tender_Offer	-0.0123 (0.0152)	-0.0154 (0.0291)	-0.0117 (0.0158)	-0.0155 (0.0305)
BTM	0.0214 (0.0188)	-0.119 (0.0897)	0.0223 (0.0181)	-0.115 (0.0950)
Book_Leverage	0.139*** (0.0352)	0.0391 (0.0768)	0.138*** (0.0352)	0.0510 (0.0748)
Cash	0.0238 (0.0443)	0.176 (0.111)	0.0239 (0.0419)	0.182 (0.111)
Constant	-0.0879 (0.0623)	0.0105 (0.0738)	-0.0895 (0.0640)	0.00586 (0.0748)
Industry FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	255	255	255	255
R-squared	0.248	0.239	0.244	0.220

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 17: Functional Form CARs Using Rating Categories

Table 17 reports functional models for Cumulative Abnormal Returns (CARs) before merger announcement for the acquirer and the target in the 255 actual deals in the sample. The dependent variable is CAR one month (column (1)) and one year (column (2)) before merger announcement date for acquirer and one month (column (3)) and one year (column (4)) before merger announcement date for target. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with individual mean and standard deviation of acquirer ratings (columns (Panel A) and individual mean and standard deviation of target ratings (Panel B) and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values. Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Acquirer CARs

	Acquirer CARs Using Event Windows ([-21, -4] Event Range) Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_Acq	0.0153 (0.0206)					
CO_SD_Acq	-0.0457 (0.0599)					
CO_Mean_Sqrd_Acq	-0.00383 (0.00400)					
CO_SD_Sqrd_Acq	0.0211 (0.0282)					
CB_Mean_Acq		-0.0155* (0.00800)				
CB_SD_Acq		0.0984** (0.0494)				
CB_Mean_Sqrd_Acq		0.00231 (0.00179)				
CB_SD_Sqrd_Acq		-0.0731** (0.0315)				
CV_Mean_Acq			-0.0147 (0.0186)			
CV_SD_Acq			0.00695 (0.0511)			
CV_Mean_Sqrd_Acq			0.00334 (0.00316)			
CV_SD_Sqrd_Acq			-0.00896 (0.0218)			
SL_Mean_Acq				0.0127 (0.0392)		
SL_SD_Acq				-0.0445* (0.0247)		
SL_Mean_Sqrd_Acq				-0.0123 (0.0172)		
SL_SD_Sqrd_Acq				0.0283* (0.0143)		
WL_Mean_Acq					-0.0300** (0.0151)	
WL_SD_Acq					0.0282 (0.0381)	
WL_Mean_Sqrd_Acq					0.00653** (0.00300)	
WL_SD_Sqrd_Acq					-0.0120 (0.0174)	
OR_Mean_Acq						-0.00962 (0.0188)
OR_SD_Acq						0.0116 (0.0391)
OR_Mean_Sqrd_Acq						0.00127 (0.00326)
OR_SD_Sqrd_Acq						-0.0163 (0.0196)
Constant	-0.0938 (0.0650)	-0.0894 (0.0584)	-0.0922 (0.0619)	-0.0947 (0.0659)	-0.0892 (0.0596)	-0.0921 (0.0654)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Target Controls	No	No	No	No	No	No
Industry and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255	255
R-squared	0.254	0.302	0.257	0.257	0.260	0.262

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Panel B. Target CARs

	Target CARs Using Event Windows ([-21, -4] Event Range) Before Merger					
	(1)	(2)	(3)	(4)	(5)	(6)
CO_Mean_T	-0.00546 (0.0150)					
CO_SD_T	-0.0445 (0.0537)					
CO_Mean_Sqrd_T	0.00207 (0.00314)					
CO_SD_Sqrd_T	0.0223 (0.0239)					
CB_Mean_T		-0.00755 (0.0169)				
CB_SD_T		-0.0174 (0.0631)				
CB_Mean_Sqrd_T		0.00128 (0.00353)				
CB_SD_Sqrd_T		0.0165 (0.0341)				
CV_Mean_T			0.00814 (0.0128)			
CV_SD_T			0.0165 (0.0322)			
CV_Mean_Sqrd_T			-0.00198 (0.00258)			
CV_SD_Sqrd_T			-0.0215 (0.0179)			
SL_Mean_T				0.00436 (0.0238)		
SL_SD_T				0.00134 (0.0582)		
SL_Mean_Sqrd_T				-0.00234 (0.00472)		
SL_SD_Sqrd_T				-0.00297 (0.0252)		
WL_Mean_T					-0.0117 (0.0170)	
WL_SD_T					0.00674 (0.0501)	
WL_Mean_Sqrd_T					0.00252 (0.00325)	
WL_SD_Sqrd_T					-0.00446 (0.0213)	
OR_Mean_T						-0.0143 (0.0159)
OR_SD_T						0.0158 (0.0545)
OR_Mean_Sqrd_T						0.00273 (0.00291)
OR_SD_Sqrd_T						-0.0110 (0.0219)
Constant	-0.0986 (0.0683)	-0.0955 (0.0648)	-0.0886 (0.0642)	-0.0881 (0.0636)	-0.0875 (0.0641)	-0.0883 (0.0649)
Acquirer Controls	No	No	No	No	No	No
Target Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	255	255	255	255	255
R-squared	0.250	0.243	0.265	0.251	0.242	0.250

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 18: Cumulative Abnormal Returns with Inverse Mills Ratio from Heckman Two-Stage Regression

Table 18 reports models for Cumulative Abnormal Returns (CARs) around merger announcement date for the 255 actual deals in the sample. The dependent variable is CAR in the 3, 7, and 11 days around the merger announcement date, as indicated in the table labels. The sample period is from 2008 to 2020. The Panels estimate OLS regressions with CARs as the dependent variable with cosine similarity as the main variable of interest and inclusion of Inverse Mills ratio from two-stage Heckman model estimated from probability with pseudo matched sample (columns (1), (2), and (3) in Panel A) and Inverse Mills ratio from two-stage Heckman model estimated from likelihood with uncompleted deal sample (columns (4), (5), and (6) in Panel B) and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's and target's values (they are included in the regressions but are not presented in the paper). Detailed descriptions of those variables are in Appendix 1. *T*-statistics are reported in parentheses. In all Panels *, **, and *** refer to significance at the 10%, 5%, and 1% level, respectively.

Panel A. Inverse Mills from Probability with Pseudo Matched Sample

	CARs		
	[-1, +1] Event Window (1)	[-3, +3] Event Window (2)	[-5, +5] Event Window (3)
Cosine_Sim	0.102* (0.0557)	0.0678 (0.0718)	0.0270 (0.0879)
Inverse_Mills	-0.00302 (0.00265)	-0.00225 (0.00338)	-0.00261 (0.00368)
Constant	-0.0764 (0.0678)	-0.0958 (0.0822)	-0.0510 (0.107)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.546	0.495	0.498

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

Panel B. Inverse Mills from Likelihood with Uncompleted Deal Sample

(Table 16 Continued)	CARs		
	[-1, +1] Event Window (4)	[-3, +3] Event Window (5)	[-5, +5] Event Window (6)
Cosine_Sim	0.135*** (0.0419)	0.0926 (0.0572)	0.0554 (0.0731)
Inverse_Mills	0.0108 (0.0171)	0.00864 (0.0164)	0.00930 (0.0159)
Constant	-0.120** (0.0557)	-0.128* (0.0662)	-0.0884 (0.0948)
Merged Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
R-squared	0.539	0.492	0.494

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

Appendix: Variable Definitions

Variable	Definition
Cosine_Sim	The distance between the acquirer's and target's Glassdoor ratings based on the different rating subcategories over the year before the merger, which is used as a proxy for employee morale similarity.
High_Cosine_Sim	1 if cosine similarity falls in the highest decile of the measure, and 0 otherwise.
Low_Cosine_Sim	1 if cosine similarity falls in the lowest decile of the measure, and 0 otherwise.
Mean	The average of the sum of all rating subcategories, or the average of individual rating subcategories one year before, three months before, or one month before merger announcement, which is used as a proxy for employee morale level of acquirer and target.
SD	The variation or dispersion of all rating subcategories, or the variation or dispersion of individual rating subcategories one year before, three months before, or one month before merger announcement, which is used as a proxy for employee morale variability of acquirer and target.
High_High_Mean	1 if both acquirer and target means fall in the highest quartiles of the respective measures, and 0 otherwise.
High_Low_Mean	1 if the acquirer mean falls in the highest quartile of the measure and if the target mean falls in the lowest quartile of the measure, and 0 otherwise.
Low_High_Mean	1 if the acquirer mean falls in the lowest quartile of the measure and if the target mean falls in the highest quartile of the measure, and 0 otherwise.
Low_Low_Mean	1 if the acquirer mean falls in the lowest quartile of the measure and if the target mean falls in the lowest quartile of the measure, and 0 otherwise.
Same_Industry	1 if the acquirer and the target firm operate in the same 2-digit SIC industries, and 0 otherwise.
Same_State	1 if the acquirer and the target firm are headquartered in the same state, and 0

High_Tech	otherwise. 1 if the acquirer and the target firm operate in high-tech industries, and 0 otherwise.
All_Cash	1 if the deal is finance by cash only, and 0 otherwise.
Tender_Offer	1 if the merger is a tender offer, and 0 otherwise.
Relative_Size	Deal value divided by the market capitalization of the acquirer.
BTM	Book value of equity divided by market value of equity.
Book_Leverage	Book value of debt (including short-term liabilities and long-term debt) divided by book value of total assets.
Cash	Cash and short-term investments divided by book value of total assets.
RDA	Research and development (R&D) expenditure divided by book value of total assets.
