The Value of Employee Morale in Mergers and Acquisitions:

Evidence from Glassdoor[*]

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Abstract

In this paper, I define employee morale as employees' attitudes toward and perceptions of the tasks employees have in the companies they work for and various firm dynamics. I explore how employee morale affects merger probability, post-merger value, performance, integration, and 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 similar morale achieve better post-merger integration than those with dissimilar morale. The high morale of target employees, however, enhances 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. I find evidence that acquiring companies value the employee morale profile of target companies, that they bid for target companies with high morale, and that those target employees with high morale are more easily integrated into the acquiring company.

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 and whether the morale of target employees is important for post-merger success.

Prior psychology literature has come up with three different definitions of morale based on the classical "needs psychology", on the hierarchy of needs, and on the interactions among members in a working group (Maslow, 1946; Haire and Gottsdanker, 1951; Mayo, 1933; Viteles, 1953). Those varying but connected definitions of morale serve as a starting ground for examining the impact of employees' perspectives (those toward their connection and purpose in the companies they work for) on corporate takeover outcomes. More specifically, I focus on the interactions among members in a working group. The paper's setting allows me to provide evidence on the manner in which companies with similar employee morale operate when merging and on the manner in which high target morale can improve acquiring companies' performance and morale. In this paper, I use Glassdoor employee morale reviews as a proxy for employees' perceptions of company dynamics, their satisfaction with firms' working conditions, and their interactions with

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[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.cnbctv18.com/business/heres-how-companies-are-trying-keep-employee-morale-up-amid-covid-pandemic-9772411.htm.

fellow colleagues. I use employee morale as my proxy, as it defines the attitudes of a working 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, 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.

I test two main hypotheses – whether similar companies in terms of their employee morale achieve greater post-merger synergies and integration and whether high targets' employee morale is a necessary attribute for successful post-merger performance and integration. I follow prior M&A finance literature (Rhodes-Kropf and Robinson, 2008; Lee et al., 2018; Hoberg and Phillips, 2010; Bereskin et al., 2018) to test my two hypotheses. I test the impact of employee morale similarity on merger probability, post-merger short-term and long-term synergies, employment changes, duration and likelihood of deal completion, and and cross-sectional variation in post-merger integration. I conjecture that similar firms in terms of the morale of their employees will be more likely to announce mergers for the following two reasons. First, differences in morale of companies' management as well as those of rank-and-file employees might negatively affect the success of merger negotiations. Second, those differences could have an adverse impact on post-merger synergies and integration. I go a step further from these findings and test the second hypothesis whether controlling for dissimilarity, high target morale improves post-merger success and outcomes. I perform tests with the impact of target morale on post-merger value, performance, integration, and morale. I conjecture that although the impact of target morale on the acquiring company is not seen in the short term, it can be observed in the long term.

The paper documents that firms with similar employee morale are more likely to merge, achieve greater return and 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 between companies with similar employee morale achieve higher post-merger synergies and better post-merger integration than mergers between companies with dissimilar employee morale. I take it a step further and examine whether targets' employee morale is an important component for acquiring companies' post-merger success. 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. Additionally, 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. I also observe one pattern that both target and acquiring employees exhibit as the merger nears. As the merger nears, work-life balance perceptions of both acquirer and target employees become negatively associated with merger probability. 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.

I make a few other novel findings in this paper. The high morale of target employees enhances the post-merger performance of acquiring companies, while the low morale of target employees damages the post-merger performance of acquiring companies in the long term. However, I find no effect of target employees' happiness on the acquiring companies' performance in the short term. Moreover, I find evidence that mixing satisfied employees with unsatisfied employees impacts 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 as my proxies for human capital's morale. My paper builds on the above-mentioned papers and tries to fill the gap in our understanding of the role of employee morale in the success of corporate takeover deals.

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 at 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 impact of employees' attitudes (looking at level, dispersion, similarity of ratings, and similarity of textual portions of reviews) on merger probability, post-merger value, performance, integration, and merged firm morale.

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

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[4] For the preparation of this section, 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.

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 a firm's internal labor force on various outcomes in mergers and relates that to employees' overall morale and happiness in the companies they work for.

The remainder of the paper is organized as follows. Section II builds the two hypotheses tested in the paper (whether employee morale similarity impacts merger success and whether controlling for dissimilarity, high target employee morale improves merger success) based on prior literature. Section III describes the datasets used to test the hypotheses, the matching technique of the various datasets, the main employee morale proxy and additional employee morale proxies, and the sample's summary statistics. Section IV documents the various empirical tests and results related to the two hypotheses in Section II. Section V concludes and highlights the implications of the paper's results.

II.   Hypotheses Development

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. Prior finance literature has examined different similarities, in terms of market-to-book ratios, human capital, product descriptions, and ESG practices between acquirers and targets, that could enhance the performance of the merged company (Rhodes-Kropf and Robinson, 2008; Lee et al., 2018; Hoberg and Phillips, 2010; Bereskin et al., 2018). In a similar vein, prior management 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 performance and integration. More specifically, I find that acquirers and targets with similar employee morale are more likely to merge and achieve greater short-term and long-term synergies, carry out greater takeover restructurings, achieve greater speed of deal completion, and have a higher likelihood of deal completion.

> **H1:** Mergers between acquirers and targets with similar employee morale are more likely to merge and achieve greater post-merger synergies.

After establishing that similar companies in terms of employee morale achieve greater post-merger integration, I provide various evidence that targets' employee morale is an asset to acquiring companies. Prior management literature has determined the importance of members of a group sharing cognitive constructs such as values, beliefs, or norms. O'Reilly (1989) highlights the attributes of a group that are needed to achieve effective coordination. This can also be translated in a firm since a firm gathers employees from different walks of lives, education, parental upbringing, and so on. 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). 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). Therefore, there is a benefit to go a step further and ask the question of what targets' employee morale attributes are important for acquiring companies and allow them to achieve great post-merger integration and how pre-merger morale impacts post-merger morale. After documenting that companies with similar employee morale work well together, I examine whether companies with dissimilar employee morale work well together. I find that acquiring companies go after targets with high employee morale both in terms of aggregated ratings and various rating

categories. I also document that the high morale of target employees improves acquiring companies' long-term performance and morale.

> **H2:** Controlling for dissimilarity, high target morale improves the success (outcomes) of merger deals.

III. Data and Summary Statistics

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.

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.

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 510 pseudo deals and 255 actual 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

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[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. I am using a similar approach to match the companies on their website address and on their name both provided in Glassdoor. In merging Glassdoor with only Compustat I get 1,491,582 reviews for 3,546 firms for firms present in Compustat in 2020 (Note: those numbers are out of a total of 7,672,711 reviews for 484,374 companies from 2008 to 2020 based on the sample I have). The authors in this paper get 3,906 firms with over one million reviews when merging.

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)

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

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 and textual similarity between acquirer and target pros, cons, and feedback.

C. Summary Statistics

[Insert Table 1 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. Table A1 (in the Appendix) 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 various company stakeholders – 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 in this table, 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 employee morale similarity and the employee satisfaction score for both 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 impacts the success of merger deals, the manner in which employees' perceptions change in light of the deal, and the manner in which similar and dissimilar companies collaborate together. Table A1 also 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 1 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 through, and has its peak in 2019 during which some mega deals have taken place.

IV.   Empirical Tests and Results

In this section, I test the hypotheses developed in Section II. To test the first hypothesis, I follow prior M&A literature (Rhodes-Kropf and Robinson, 2008; Lee et al., 2018; Hoberg and Phillips, 2010; Bereskin et al., 2018). I test the impact of employee morale similarity on merger probability, short-term and long-term synergies, employment changes, duration and likelihood of deal completion, and cross-sectional variation in post-merger integration. I conjecture that similar firms in terms of the morale of their employees will be more likely to announce mergers for the following two reasons. First, differences in morale of companies' management as well as those of rank-and-file employees might negatively affect the success of merger negotiations. Second, those differences could have an adverse impact on post-merger synergies and integration. I go a step further from these findings and test the second hypothesis whether controlling for dissimilarity, high target morale improves post-merger success and outcomes. I perform tests with the impact of target morale on post-merger performance, integration, and morale. I conjecture that although the impact of high target morale on the acquiring company is not seen in the short term, it can be observed in the long term.

The findings in this section are consistent not only with finance and management literature, but also with psychology literature. Various psychology papers have shown that group identity is an important type of an individual's identity. Those papers have stressed the importance of interactions among members in a working group. For instance, Mayo (1933) highlights a technique that would allow people to work together in an industrial organization. He has also documented each individual's need and right to feel he is of economic value to the organization.[6] Viteles (1953) has emphasized 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

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[6] 'The Human Problems of Industrial Civilization', as documented by Elton Mayo (1933), also outlines that people's feeling of belonging to the whole and of contributing to communities' economic value is the most important aspect of human nature we have recklessly disregarded in our "triumphant industrial progress." The Human Problems of an Industrial Civilization | Nature

social field. The paper's setting allows me to provide evidence on the manner in which companies with similar employee morale operate when merging and on the manner in which high target morale can improve acquiring companies' performance and morale. The findings have implications for whether employees who feel like they belong to the whole are more productive and perform better.

A. Employee Morale Similarity and Merger Pair Likelihood

[Insert Table 2 here]

In this sub-section, I investigate the relation between companies' employee morale similarity and the likelihood of merger announcements. I conjecture that similar firms in terms of their morale are more likely to announce mergers. To test this, I document 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). The table reports results of logit regressions with employee morale proxies and 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 H1). 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).

B. Employee Morale Similarity and Short-Term Synergies

[Insert Table 3 here]

In sub-section B, I investigate the relation between companies' employee morale similarity and short-term synergies (announcement cumulative abnormal returns). I conjecture that similar firms would experience a higher short-term merger synergies. To test this, I present the association between employee morale similarity and combined announcement returns using a value-weighted portfolio of acquirer and target returns. I also compute cumulative abnormal returns with an alternative portfolio of equal-weighted acquirer and target returns (results are presented in the Appendix), 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 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 Table 3, the CAR analysis is presented in a multivariate setting with the CAR for a value-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 value-weighted portfolio and is statistically significant at the 1% level in Table 3 for the value-weighted portfolio and at the 5% level for the equal-weighted portfolio (presented in the Appendix). 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 H1).

C. Employee Morale Similarity and Long-Term Synergies

[Insert Table 4 here]

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In sub-section C, I investigate the relation between employee morale similarity and long-term synergies (abnormal return on assets). I expect that similar firms experience higher expected long-term synergies. To test this, I use the following model.

(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. Equation (3) also includes the same pair controls and year and industry fixed effects 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 to 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 H1).

D. Employee Morale Similarity and Employment Changes

In sub-section D, I investigate the relation between employee morale similarity and employment changes in the years following the merger announcement. I expect those companies with higher similarity to let go of their employees likely due to an overlap of their employees' qualifications. To test this, I use the following model.

(4)

$$Employment\ Changes_{it+T}$$
$$= \beta_0 + \beta_1 EmployeeMoraleSimilarity_{it-1} + \beta_2 PairControls_{imt-1}$$
$$+ YearAndIndustry\ FEs_m + \varepsilon_{imt}$$

Equation (4) is set up similarly to equations (2) and (3) but with a different dependent variable. I define employment changes as the percentage change between post-merger employment (combined companies' employment in the years following the merger) and pre-merger employment (separate companies' employment in the year before the merger announcement). Table 5 explores the manner in which employees' attitudes are associated with employment changes. The main independent variables of interest remain Cosine_Sim, High_Cosine_Sim, and Low_Cosine_Sim. 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 (percentage change between combined companies' employment from year after merger to separate companies' employment in year before merger), while Models (3) and (4) show results of regressions with employment changes six years after the merger as the dependent variable (percentage change between companies' employment from six years after merger to separate companies' employment in year before merger). 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). 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 H1).

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

[Insert Table 6 here]

In this sub-section, I investigate the relation between employee morale similarity and duration and likelihood of deal completion. I conjecture that employee morale similarity leads to a more rapid rate of deal completion (days from deal announcement to deal completion) and a higher likelihood of deal completion (in comparison to deals that have been announced but fall through after the announcement). I report results of those tests in Table 6. In Panel A, I examine whether employee morale similarity between acquirers and targets affects deal completion time (using the main sample of 255 deals). I report 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 (results are presented in the Appendix), one can see that the higher the culture values and senior leadership, as perceived by both acquirer and target 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 (as perceived by both acquirer and target employees) is important for deal completion and that the success of mergers depends on managers' abilities and skills and on employees' attitudes toward senior management.

F. Textual Similarity of Acquirer and Target Pros, Cons, and Feedback Sections and Short-Term and Long-Term Synergies

[Insert Table 7 here]

[Insert Figure 2 here]

In sub-section F, I test the relation between textual similarity of acquirer and target pros, cons, and feedback sections in Glassdoor and short-term and long-term synergies. I expect that similarity between textual portions of acquirer and target morale leads to higher expected short-term and long-term post-merger value. To test this, I use equations (2) and (3) with textual similarity of acquirer and target pros, cons, and feedback sections (Sim_Pros, Sim_Cons, and Sim_Feedback, respectively) as the dependent variables and announcement cumulative abnormal returns and abnormal operating performance as my main independent variables of interest. Table 7 reports Cumulative Abnormal Returns (CARs) around merger announcement and abnormal ROA two 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 variable in Panel A is CARs in the [-3, +3] event window for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The dependent variable in Panel B is abnormal operating performance two 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_Pros, Sim_Cons, 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 are 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 2 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 posessing common patterns and to acquirer and target employees placing value to similar attributes of workplace dynamics.

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

[Insert Table 8 here]

[Insert Figure 3 here]

In this sub-section, I implement cross-sectional analyses to provide further evidence on the post-merger 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 8, 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 codes smaller than 5000 and define labor-intensive industries as those with SIC codes 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 Model (1) for capital-intensive industries and in Model (2) for labor-intensive industries in Panel A. In the main specification in Model (1) with CARs in the [-3, +3] event window, the coefficient on Cosine_Sim is positive and statistically significant at the 1% 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 two years after the merger in Panel B. I report the results in Model (1) for capital-intensive industries and the results in Model (2) for labor-intensive industries. In my main specifications with ROA two years after the merger, the impact of employee morale similarity on abnormal ROA is negative in capital-intensive industries, while the impact of employee morale similarity on abnormal ROA is positive in labor-intensive industries, although neither of the coefficients is statistically significant.

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 3 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. Looking at 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.

H. Probabiliy, Long-Term Synergies, and Duration of Deal Completion in Merger Groups

[Insert Table 9 here]

In this sub-section, I test the impact of high and low target morale on merger probability, long-term synergies, and duration of deal completion. I conjecture that high target morale leads to higher probability of merger announcement, long-term synergies, and duration of deal completion. To test this, I use the setup of Table 2 (probability of merger announcement), Table 4 (abnormal operating performance), and Table 6 (duration of deal completion). Table 9 reports results of 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).

In Panel A, 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 signifcant at the 1% level). The coefficients on Low_High_Mean and Low_Low_Mean are both positive but not statistically significant. 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 Panel B of the table remain High_High_Mean, High_Low_Mean, Low_High_Mean, and Low_Low_Mean. The coefficient on abnormal ROA in deals between companies with high acquirer morale and high target morale is positive two and three years after merger announcement. The coefficient on abnormal ROA in deals between companies with low acquirer morale and low target morale is negative two and three years after merger announcement. The coefficient on 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. The coefficient on 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. The coefficient on 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. The coefficient on 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 the coefficient on 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 Panel C 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 Panel C 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. The results in all panels of the table hold when controlling for employee morale similarity (results are presented in the Appendix). Overall, the results in Table 9 suggest that high morale target companies are an asset for the acquiring company (which is consistent with Hypothesis H2). 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 the morale of acquiring employees.

I. Level and Dispersion of Rating Categories and Probability of Merger

[Insert Table 10 here]

After documenting that high target morale leads to higher post-merger performance and integration, I test what target morale's attributes acquiring companies value. I conjecture that acquiring companies value the morale of target employees and that they bid for companies with high morale on the aggregate and as observed by various morale's attributes. To test this, I use equation (2) for probability of merger announcement relative to a pseudo-matched sample with the following main independent variables of interest – target's mean and standard deviation of career opportunities, compensation benefits, culture values, senior leadership, work-life balance, and overall rating (CO_Mean_T, CB_Mean_T, CV_Mean_T, SL_Mean_T, WL_Mean_T, and OR_Mean_T for mean values, respectively, and CO_SD_T, CB_SD_T, CV_SD_T, SL_SD_T, WL_SD_T, and OR_SD_T for standard deviation values, respectively). Table 10 provides

additional insight on the employee morale characteristics of the target companies acquirers go after. Panel A presents results of logit regressions with target ratings one year before merger announcement, while Panel B presents results of logit regressions with target ratings one month before merger announcement. I also provide additional insight on the employee morale dimensions of acquiring companies in Table A8 (in the Appendix).

The results in Panel A of Table A8 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 results in Panel A of Table 10 suggest that 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 different dimensions of morale acquiring and target companies possess. More specifically, 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 of Table A8 and Panel B of Table 10 give some insight into how different acquirer and target employee morale dimensions one month before merger announcement are associated with probability of merger. The results in Panel B ot Table A8 suggest that 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. 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 pseudo-matched 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. The results in Panel B of Table 10 suggest that level of target career opportunities, compensation benefits, culture values, senior leadership, and overall rating one month before merger announcement are positively associated with merger probability, while level of work-life balance is negatively associated with merger probability. 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), which is consistent with the findings for acquiring companies. The findings in this sub-section are related to the argument that acquirer and target employees possibly have busier schedules right before a merger takes places which is translated into acquirer employees' negative work-life balance and career opportunities perceptions and into target employees' negative work-life balance perceptions.

Taking into account the results in these two tables, 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 merging companies' acquirer and target employees show more negative percetions of morale dimensions, such as work-life balance and career opportunities, as the merger nears. The results in the table are consistent with Hypothesis H2. In additional tests, I also document that only acquiring employees possess information that is material to market participants and those pre-deal rumors are reflected in acquirer's pre-deal price runup (Table A9 and Table A10).

J. Post-Merger Morale

[Insert Table 11 here]

In this sub-section, I establish the relation between pre-merger morale and post-merger morale. I conjecture that the high morale of target employees improves the morale of acquiring companies. To test this, I perform various tests. In Table 11, 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 annoucement date, the greater the raw difference in acquirer employee morale from year of announcement to year after announcement. Less successful mergers, as observed in the market reaction of deal announcements (Table 3 shows that mergers with low employee morale similarity are less successful), experience greater differences in their morale. This gives additional proof that mixing satisfied employees and unsatisfied employees impacts 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 4 and Figure 5 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 11), though the coefficients are statistically insignificant. Figure 4 plots a histogram of predicted values from regressions in Models (1), (2), and (3) in Table 11. Figure 5 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

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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 6** and **Figure 7** here]

In Figure 6, 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 7, 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 dissimilar 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 H2).

K. Reverse Causality, Selection Bias, and Measurement Error

In addition, to reduce threats of reverse causality, I verify the robustness of the 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 control variables, such as firm characteristic similarity, geographical distance, cultural similarity, and product market similarity. 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 the Appendix.

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 difference-in-differences 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.

V.   Conclusion

The paper provides insight into the impact employee morale similarity has on post-merger value, performance, integration, and morale. 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 perform greater employment changes following the merger, and achieve greater speed of completion and higher likelihood of completion. Deals in which firms possess similar employee morale work best with each other, while deals in which firms possess dissimilar employee morale don't work together as well.

The paper also sheds light on the question whether target employees with high morale are an asset to the acquiring company. I first examine the employee morale characteristics of target employees that acquirers go after. I document that acquirers go after target companies with high morale. 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. These two latter findings point to acquiring companies valuing the employee morale of the target

companies they seek out and merge with, as similar and high morale would lead to better and easier post-merger integration. Additionally, I document a similar pattern in acquring and target employees' perceptions as the merger deal announcement nears. Employees' work-life balance and career opportunities perceptions become negative in anticipation of the merger. An upcoming merger can be stressful for both acquirer and target employees which is reflected into their perceptions of work-life balance and career opportunities.

I provide evidence that 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. This impact of targets' employee morale is significant for acquiring companies' performance in the long term, but not in the short term. The high morale of target employees enhances the low morale of acquiring companies, while the low morale of target employees damages the high morale of acquiring companies. The paper adds onto the corporate takeover literature by providing a 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 morale and performance. The paper has implications on how a company's labor satisfaction and happiness transmit into other companies and how the coordination among employees with various levels of happiness impacts a company's performance.

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Table 1: Summary Statistics

Table 1 reports summary statistics for the sample. Panel A provides summary statistics of acquiriers 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. All definitions of the respective variables and their calculations are provided in the Online Appendix.

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

Figure 1: Number of Deals and Deal Value per Year

Figure 1 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.
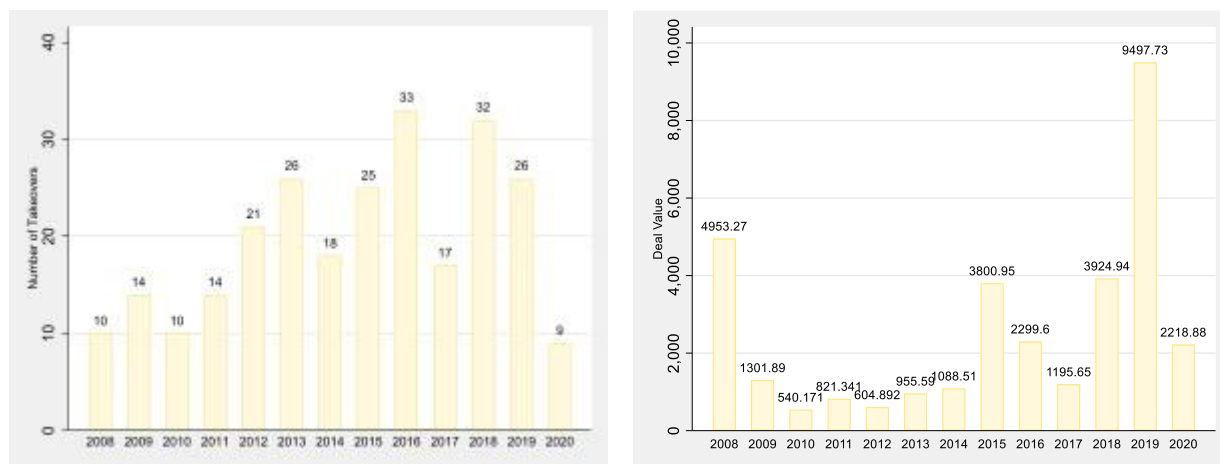
Table 2: Probability of a Merger One Year Before

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. 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.

	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)
Acquirer Controls				
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)
Target Controls				
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

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 table 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***	0.0327***	0.0254***
	(0.00911)	(0.0101)	(0.00950)
Same_State	-0.0155	-0.0151	-0.00301
	(0.00992)	(0.00961)	(0.00599)
High_Tech	-0.0387**	-0.0424**	-0.00134
	(0.0172)	(0.0172)	(0.0171)
Relative_Size	0.00302	0.00237	0.00730
	(0.00602)	(0.00623)	(0.00471)
All_Cash	0.0245**	0.0266**	0.0132**
	(0.0102)	(0.0107)	(0.00632)
Tender_Offer	0.0145	0.0120	0.0135**
	(0.00960)	(0.00961)	(0.00643)
BTM	0.0179	0.0257**	0.00207
	(0.0110)	(0.0114)	(0.00385)
Book_Leverage	-0.0905**	-0.0884**	-0.0142
	(0.0390)	(0.0379)	(0.0201)
Cash	-0.0127	-0.00772	-0.0162
	(0.0370)	(0.0347)	(0.0148)
Constant	-0.112**	-9.55e-05	-0.00237
	(0.0532)	(0.0355)	(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 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****		0.137	
	(0.136)		(0.0873)	
High_Cosine_Sim		**0.0695***		**0.0528***
		(0.0399)		**(0.0291)**
Low_Cosine_Sim		**-0.0807****		-0.0322
		(0.0263)		(0.0223)
Same_Industry	-0.0144	-0.000989	-0.0362**	-0.0283*
	(0.0284)	(0.0267)	(0.0167)	(0.0158)
Same_State	-0.0160	-0.0197	-0.0302*	-0.0333**
	(0.0254)	(0.0251)	(0.0155)	(0.0144)
High_Tech	0.102**	0.101**	0.0582	0.0613*
	(0.0513)	(0.0488)	(0.0362)	(0.0338)
Relative_Size	-0.0254	-0.0191	-0.0201	-0.0148
	(0.0193)	(0.0163)	(0.0140)	(0.0115)
All_Cash	-0.000586	0.0211	-0.0110	0.00305
	(0.0466)	(0.0494)	(0.0300)	(0.0288)
Tender_Offer	-0.0408	-0.0291	-0.0621**	-0.0507**
	(0.0377)	(0.0337)	(0.0253)	(0.0209)
BTM	-0.0464	-0.0590	-0.107***	-0.125***
	(0.0773)	(0.0676)	(0.0354)	(0.0334)
Book_Leverage	0.0352	-0.000685	-0.0328	-0.0618
	(0.0689)	(0.0664)	(0.0519)	(0.0458)
Cash	-0.0144	0.0906	0.0154	-0.00796
	(0.0284)	(0.0861)	(0.0531)	(0.0561)
Constant	-0.310*	0.0157	0.0488	0.183***
	(0.182)	(0.103)	(0.102)	(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 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		**3.821***	
	(34.75)		**(2.046)**	
High_Cosine_Sim		5.034		-0.268
		(11.08)		(0.360)
Low_Cosine_Sim		-0.153		**-1.726***
		(6.146)		**(0.481)**
Same_Industry	-10.65*	-10.18	0.409*	0.525**
	(6.000)	(6.474)	(0.243)	(0.228)
Same_State	-9.750	-9.380	0.0262	-0.0421
	(10.90)	(11.23)	(0.208)	(0.207)
High_Tech	4.031	5.668	-0.911**	-1.332***
	(9.364)	(9.701)	(0.377)	(0.438)
Relative_Size	-6.486	-6.729	-0.516**	-0.456**
	(5.963)	(6.272)	(0.231)	(0.204)
All_Cash	-2.764	-2.064	0.373	0.515**
	(5.716)	(5.305)	(0.240)	(0.222)
Tender_Offer	-0.295	0.556	-0.266	-0.412
	(7.608)	(9.618)	(0.377)	(0.386)
BTM	-18.04*	-20.99	-1.854*	-1.162
	(9.873)	(14.36)	(0.954)	(0.706)
Book_Leverage	-15.83	-16.68	-0.360	-0.412
	(12.02)	(14.68)	(0.883)	(0.826)
Cash	49.67*	49.99*	-3.027***	-3.063***
	(29.44)	(27.07)	(1.140)	(0.906)
Constant	5.659	30.77*	-0.994	2.118**
	(31.66)	(16.22)	(1.568)	(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 resuts 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. 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

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

Table 7: Short-Term and Long-Term Synergies with Textual Similarity Between Acquirer and Target Pros, Cons, and Feedback Sections

Table 7 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 is CARs in the [-3, +3] event window for a value-weighted portfolio of the acquirer and target centered on the deal announcement date. The dependent variable in Panel B is abnormal operating performance two 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_Pros, Sim_Cons, 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 desciptions 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 [-3, +3] Event Window		
	Sim_Pros (1)	Sim_Cons (2)	Sim_Feedback (3)
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 B: Abnormal ROA

	Abnormal ROA 2 Years After		
	Sim_Pros (1)	Sim_Cons (2)	Sim_Feedback (3)
Cosine_Sim	0.0697	0.0575	0.0262
	(0.0658)	(0.0561)	(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
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 2: Word Clouds of Word Frequencies in Pros, Cons, and Feedback for Acquirer and Target, Respectively

Figure 2 presents word clouds of the most frequent words in the pros sections (first row) for acquirer (left) and target (right), in the cons sections (second row) for acquirer (left) and target (right), in the feedback sections (third row) for acquirer (left) and target (right). They show the words that employees value the most in terms of descriptions of pros, cons, and feedback for their employers in Glassdoor.

Pros Sections for Acquirer and Target, Respectively

Cons Sections for Acquirer and Target, Respectively

Feedback Section for Acquirer and Target, Respectively

Table 8: Cross-Sectional Variation in Integration Needs

Table 8 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) and (2), 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 codes greater than or equal to 5000, while capital-intensive industries are defined as those with SIC codes less than 5000. In columns (3) and (4), 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. *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 [-3, +3] Event Window			
	Capital-Intensive **(1)**	**Labor-Intensive** **(2)**	**Within-Industry** **(3)**	**Cross-Industry** **(4)**
Cosine_Sim	**0.784*****	-0.0185	0.0287	0.0170
	(0.286)	(0.0594)	(0.0755)	(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 B: Abnormal ROA

	Abnormal ROA 2 Years After			
	Capital-Intensive **(1)**	**Labor-Intensive** **(2)**	**Within-Industry** **(3)**	**Cross-Industry** **(4)**
Cosine_Sim	-0.886	0.0296	0.280	0.0557
	(0.882)	(0.147)	(0.260)	(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

Figure 3: Plots of Coefficients from Cross-Sectional Regressions

Figure 3 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.
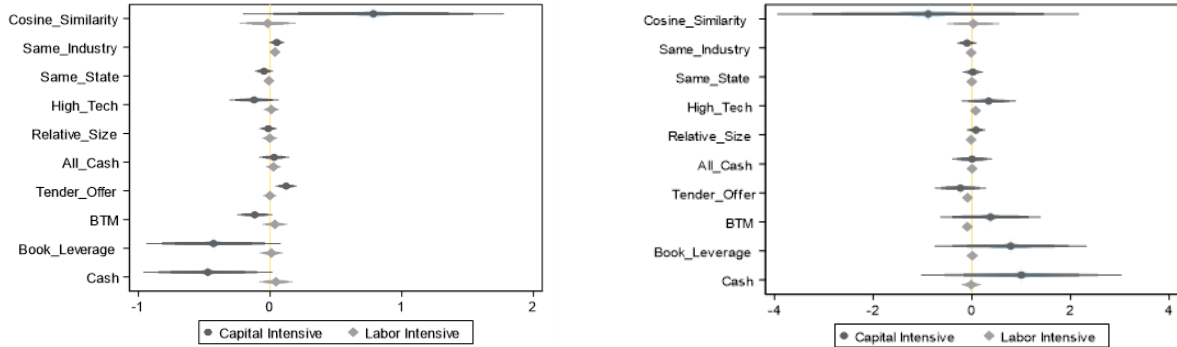
Table 9: Probability, Long-Term Synergies, and Deal Integration in Merger Groups

Table 9 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). Panel A reports probability regressions consistent with the model in Table 2, Panel B reports abnormal operating performance regressions consistent with the model in Table 4, and Panel C reports 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.

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Panel A. Probability with Groups

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

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

Panel B. Abnormal ROA with Groups

	Abnormal ROA Two Years Following Merger				
	(1)	(2)	(3)	(4)	(5)
High_High_Mean	0.0465				0.0424
	(0.0320)				(0.0331)
High_Low_Mean		-0.0343			-0.0230
		(0.0351)			(0.0340)
Low_High_Mean			0.0862		0.0423
			(0.0665)		(0.0598)
Low_Low_Mean				-0.0334	-0.00548
				(0.0502)	(0.0499)
Same_Industry	-0.0117	-0.00742	-0.00592	-0.0122	-0.0110
	(0.0285)	(0.0292)	(0.0289)	(0.0310)	(0.0297)
Same_State	-0.0110	-0.0121	-0.0124	-0.00940	-0.0141
	(0.0213)	(0.0231)	(0.0219)	(0.0224)	(0.0224)
High_Tech	0.0844	0.0777	0.0873	0.0774	0.0905*
	(0.0509)	(0.0513)	(0.0529)	(0.0509)	(0.0542)
Relative_Size	-0.0375*	-0.0339	-0.0326	-0.0376*	-0.0358
	(0.0208)	(0.0221)	(0.0225)	(0.0225)	(0.0233)
All_Cash	-0.0184	-0.0248	-0.0192	-0.0325	-0.0177
	(0.0412)	(0.0392)	(0.0407)	(0.0424)	(0.0448)
Tender_Offer	-0.0606	-0.0514	-0.0504	-0.0482	-0.0552
	(0.0388)	(0.0424)	(0.0431)	(0.0466)	(0.0456)
BTM	-0.0328	-0.0502	-0.0487	-0.0634	-0.0373
	(0.0543)	(0.0583)	(0.0582)	(0.0707)	(0.0660)
Book_Leverage	-0.0511	-0.0717	-0.0662	-0.0709	-0.0520
	(0.0678)	(0.0742)	(0.0735)	(0.0738)	(0.0680)
Cash	0.211***	0.208***	0.209***	0.220***	0.215***
	(0.0618)	(0.0660)	(0.0659)	(0.0623)	(0.0597)
Constant	0.0453	0.0599	0.0483	0.0712	0.0469
	(0.0813)	(0.0789)	(0.0809)	(0.0854)	(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				0.00476
	(0.0173)				(0.0182)
High_Low_Mean		-0.00230			0.00141
		(0.0404)			(0.0376)
Low_High_Mean			**0.0778****		0.0721
			(0.0377)		(0.0478)
Low_Low_Mean				-0.0363	-0.0326
				(0.0378)	(0.0361)
Same_Industry	-0.0341**	-0.0329**	-0.0312*	-0.0377**	-0.0326
	(0.0168)	(0.0165)	(0.0158)	(0.0184)	(0.0361)
Same_State	-0.0304*	-0.0301*	-0.0326**	-0.0299*	-0.0361**
	(0.0156)	(0.0162)	(0.0158)	(0.0155)	(0.0181)
High_Tech	0.0392	0.0367	0.0467	0.0381	-0.0324**
	(0.0342)	(0.0340)	(0.0356)	(0.0334)	(0.0159)
Relative_Size	-0.0281**	-0.0272**	-0.0251*	-0.0301**	0.0481
	(0.0134)	(0.0134)	(0.0144)	(0.0147)	(0.0359)
All_Cash	-0.0198	-0.0217	-0.0168	-0.0303	-0.0281*
	(0.0311)	(0.0302)	(0.0313)	(0.0330)	(0.0166)
Tender_Offer	-0.0710***	-0.0689***	-0.0655**	-0.0625**	-0.0242
	(0.0249)	(0.0255)	(0.0265)	(0.0281)	(0.0343)
BTM	-0.0952***	-0.100***	-0.0999***	-0.116***	-0.0606**
	(0.0356)	(0.0367)	(0.0358)	(0.0428)	(0.0297)
Book_Leverage	-0.0842*	-0.0902*	-0.0865*	-0.0909*	-0.112***
	(0.0466)	(0.0472)	(0.0477)	(0.0482)	(0.0398)
Cash	0.0771	0.0758	0.0774	0.0903*	-0.0855*
	(0.0503)	(0.0522)	(0.0525)	(0.0456)	(0.0476)
Constant	0.187***	0.191***	0.183***	0.207***	0.197***
	(0.0625)	(0.0621)	(0.0644)	(0.0697)	(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

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 10: Probability of a Merger Using Rating Categories

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 individual rating categories' mean and standard deviation of 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 2. 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 Target Rating Categories One Year Before Merger

	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 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	0.0987	0.0771	0.0819	0.270	0.155
	(0.369)	(0.366)	(0.367)	(0.369)	(0.368)	(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	0.103	0.103	0.0748	0.140	0.128
	(0.369)	(0.368)	(0.369)	(0.369)	(0.370)	(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 11: Merger Performance, Differences in and Level of Acquirer Employee Morale

Table 11 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***		**-0.380***
	(0.129)		**(0.127)**
CAR [-3,+3]		-28.64	-33.03
		(24.75)	(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***		**0.290***
	(0.106)		**(0.109)**
CAR [-3,+3]		-16.19	-13.04
		(16.32)	(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	15.29	10.62
	(30.61)	(28.73)	(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 4: Histograms of Predicted Values for Models (1), (2), and (3) (from Table 13)
Figure 4 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.
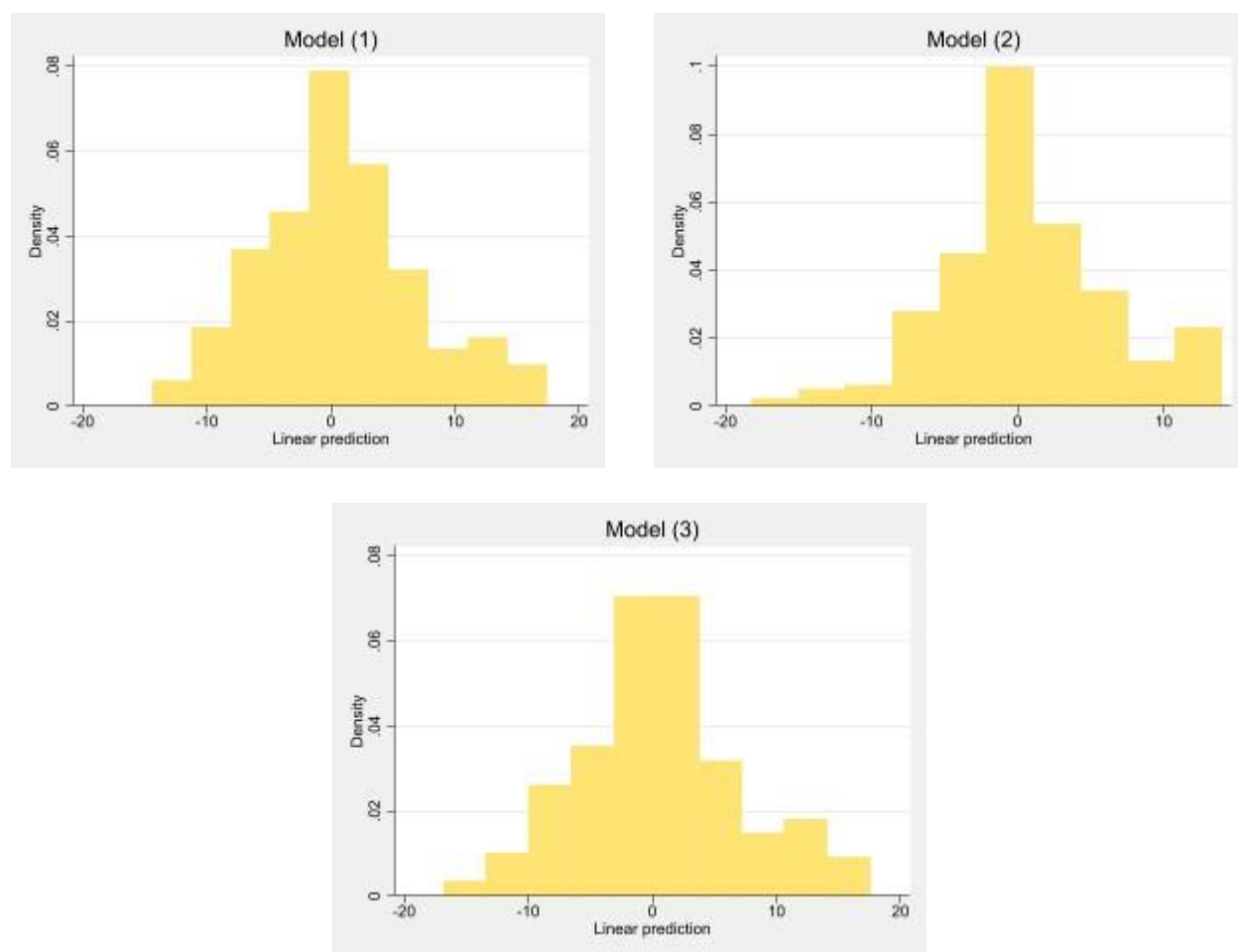
Figure 5: Discontinuity Test

Figure 5 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.
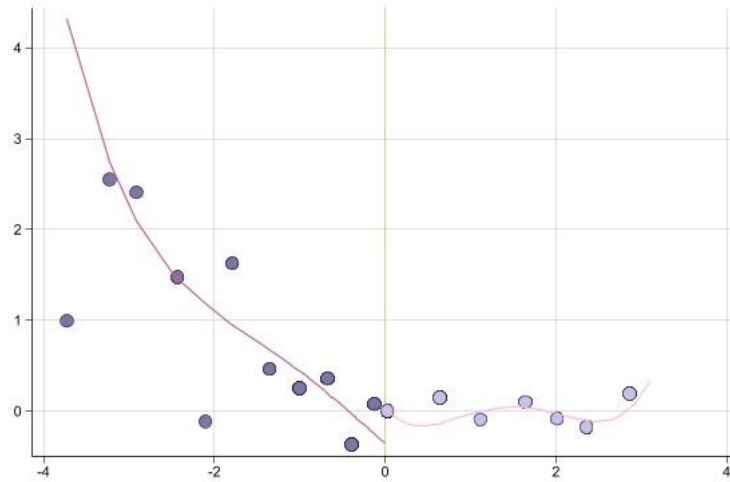
Figure 6: Coefficient Plots from Regressions of Pre-Merger Ratings on Post-Merger Ratings

Figure 6 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).
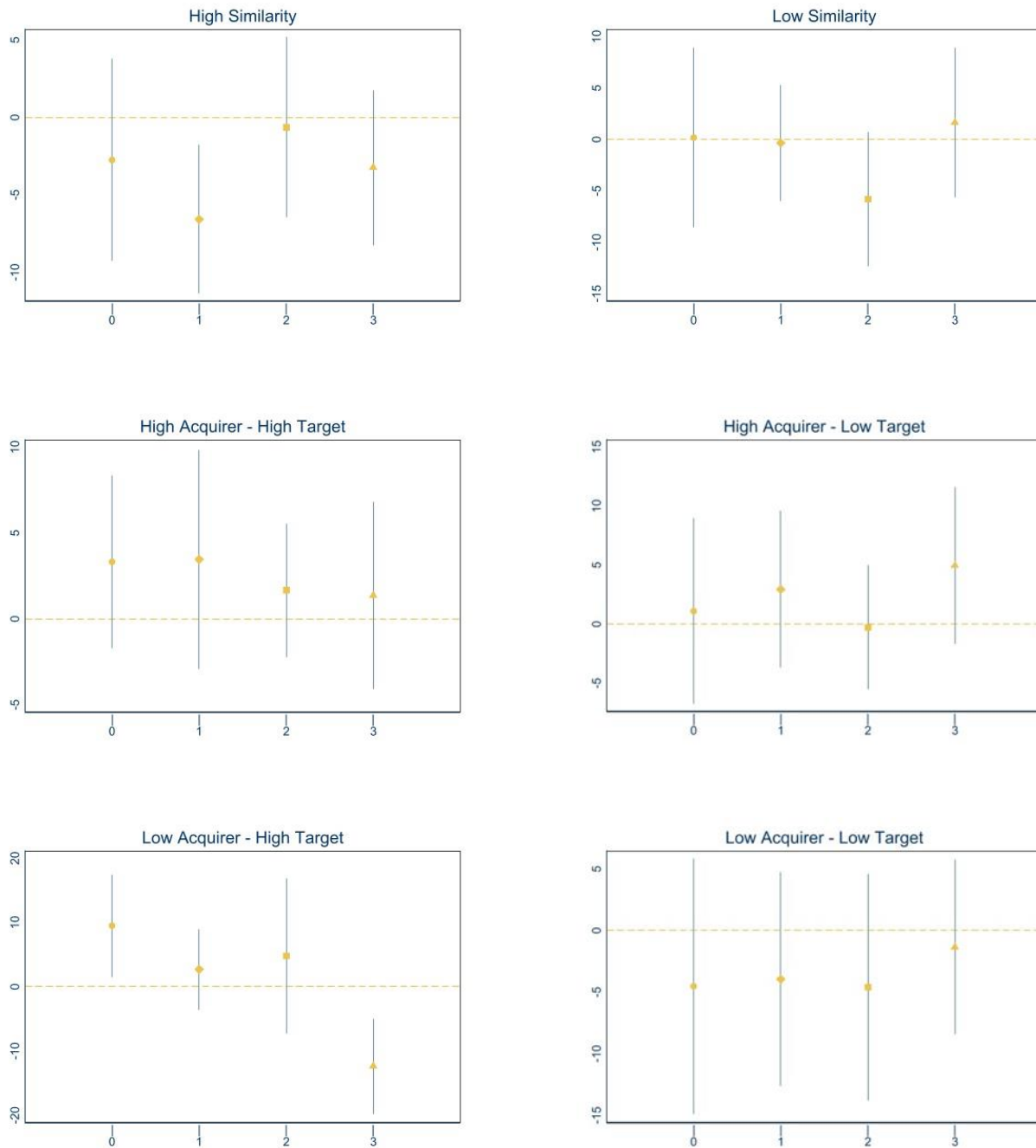
Figure 7: Coefficient Plots from Regressions of Pre-Merger Ratings on Post-Merger Rating Changes
Figure 7 presents coefficient plots from regressions of various groupings (high and low similarity between acquirer and target employee morale, high employee morale acquirer merging with high employee morale 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 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).
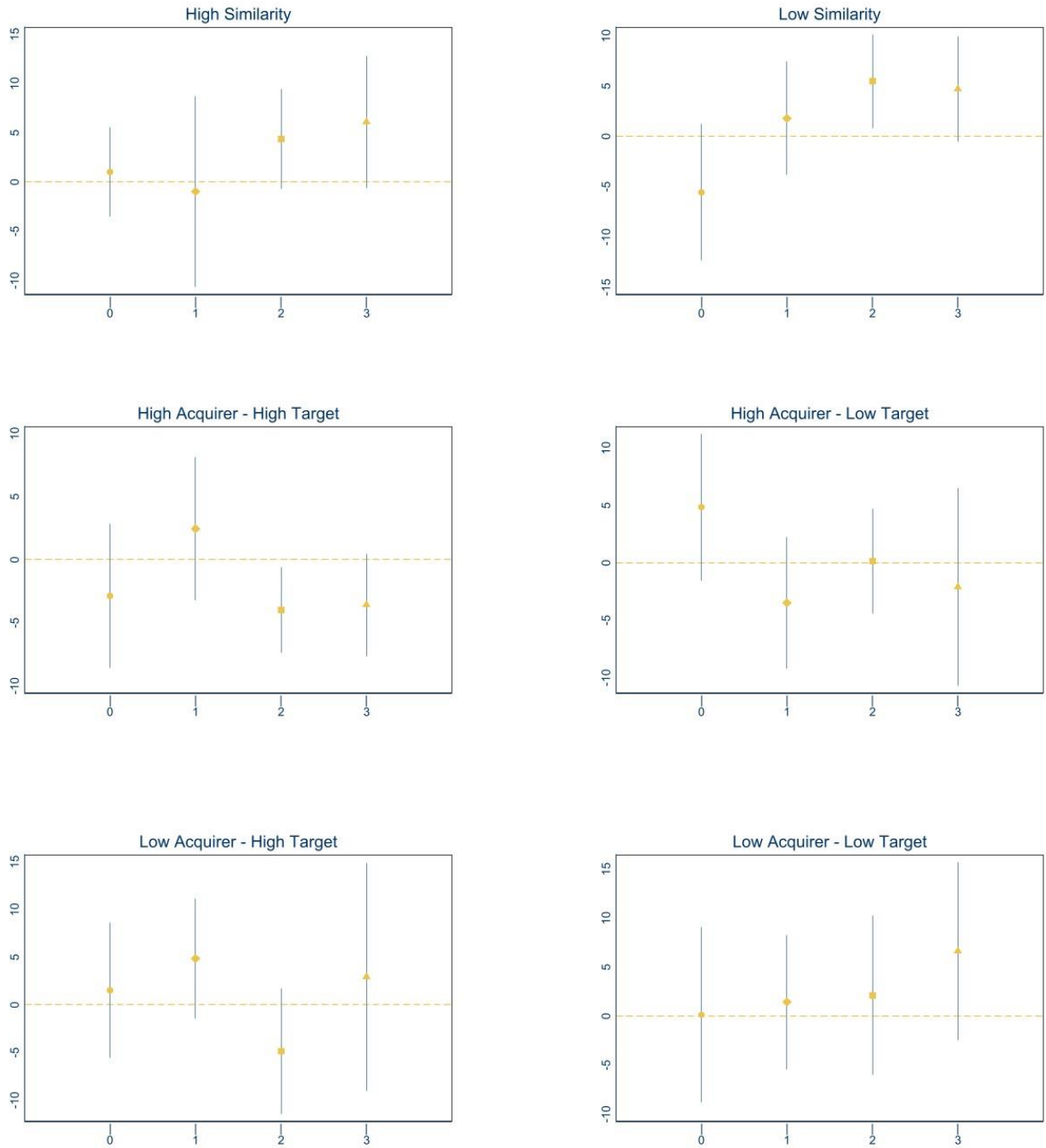
Online Appendix

for

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

By Kristina Lalova

Table A1: Correlations with ESG Ratings for Acquirer and Target, Respectively[7], and Yearly Deal Distribution

Table A1, Panel A presents correlations between ESG ratings (obtained from Refinitiv) and employee morale similarity. The various variables signigy the following ESG dimensions – overall ESG rating (ESG), controversy score (Controversy), employee satisfaction score (Employees), social pillar score (Social_Pillar), governance score (Governance), human rights score (H_Rights), community score (Community), product score (Product), senior management score (Managerial), and workforce score (Workforce). Table A1, Panel B presents the distribution of announced and finalized deals by year.

	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

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[7] 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

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 A1: 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.
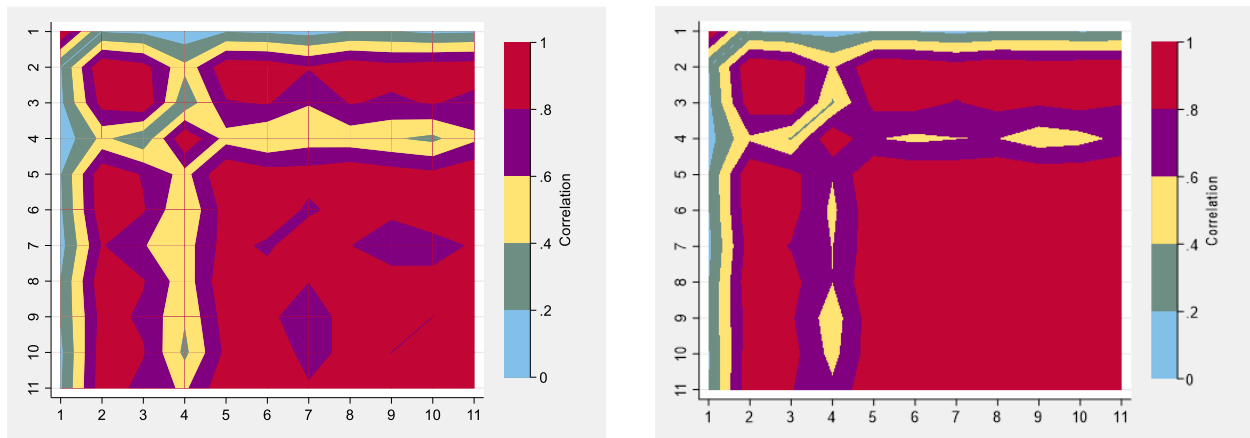
Table A2: Probability of a Merger One Year Before

Table A2 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 without control variables. Results are consistent with those in Table 2. 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 2. This variables 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. 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.

	Industry-Size-BTM Match			
	(1)	(2)	(3)	(4)
Cosine_Sim	**0.740***			**1.756***
	(0.170)			**(0.345)**
Mean_Acq		**0.0427***		-0.00903
		(0.0105)		(0.0139)
SD_Acq		**-0.0955***		**-0.157***
		(0.0179)		**(0.0239)**
Mean_T			**0.0748***	0.0247
			(0.0128)	(0.0176)
SD_T			**-0.0655**	0.0140
			(0.0312)	(0.0433)
Constant	-0.824***	-0.488***	-0.885***	-0.726***
	(0.118)	(0.123)	(0.115)	(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 A3: Probability, Long-Term Synergies, and Deal Integration in Merger Groups

Table A3 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 with addition of the employee morale similarity measure as a control variable. 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***	0.872***	0.813***	0.825***	0.597***
	(0.189)	(0.177)	(0.176)	(0.176)	(0.193)
High_High_Mean	0.840***				0.854***
	(0.265)				(0.268)
High_Low_Mean		-14.49***			-13.51***
		(0.419)			(0.422)
Low_High_Mean			0.934		1.121
			(0.734)		(0.730)
Low_Low_Mean				1.111	1.317
				(1.218)	(1.202)
Acquirer Controls					
ROA_Acq	-0.901	-0.815	-0.868	-0.814	-0.815
	(0.904)	(0.898)	(0.896)	(0.895)	(0.908)
Sale_Growth_Acq	-0.197	-0.176	-0.155	-0.164	-0.193
	(0.219)	(0.212)	(0.206)	(0.208)	(0.220)
Cash_Acq	-0.133	-0.132	-0.0910	-0.0965	-0.158
	(0.550)	(0.569)	(0.556)	(0.557)	(0.562)
Book_Leverage_Acq	0.349	0.312	0.318	0.297	0.391
	(0.410)	(0.411)	(0.404)	(0.405)	(0.411)
RDA_Acq	-0.493	-0.420	-0.500	-0.350	-0.430
	(1.420)	(1.405)	(1.402)	(1.407)	(1.427)
BTM_Acq	0.112	0.130	0.136	0.140	0.163
	(0.393)	(0.388)	(0.389)	(0.390)	(0.394)
Target Controls					
ROA_T	-0.473	-0.609	-0.568	-0.589	-0.466
	(0.585)	(0.573)	(0.573)	(0.573)	(0.585)
Sale_Growth_T	-0.0874	-0.0545	-0.0526	-0.0530	-0.0876
	(0.165)	(0.161)	(0.160)	(0.160)	(0.165)
Cash_T	-0.465	-0.473	-0.542	-0.534	-0.439
	(0.532)	(0.548)	(0.535)	(0.535)	(0.544)
Book_Leverage_T	-0.528	-0.497	-0.478	-0.488	-0.499
	(0.386)	(0.388)	(0.381)	(0.382)	(0.391)
RDA_T	-0.0211	-0.179	-0.0849	-0.113	-0.00174
	(0.961)	(0.953)	(0.948)	(0.949)	(0.962)
BTM_T	-0.596*	-0.602*	-0.655**	-0.619*	-0.600*
	(0.337)	(0.331)	(0.333)	(0.331)	(0.338)
Constant	-0.0117	0.0348	0.0269	0.0447	0.0556
	(0.376)	(0.373)	(0.370)	(0.375)	(0.382)
Observations	765	765	765	765	765

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

Panel B. Abnormal ROA with Similarity and with Groups

	Abnormal ROA Two Years Following Merger				
	(1)	(2)	(3)	(4)	(5)
Cosine_Sim	**0.245***	**0.300*****	**0.295*****	**0.299*****	**0.243***
	(0.131)	**(0.111)**	**(0.110)**	**(0.107)**	**(0.134)**
High_High_Mean	0.0368				0.0328
	(0.0340)				(0.0353)
High_Low_Mean		-0.0104			-0.00584
		(0.0435)			(0.0420)
Low_High_Mean			0.0729		0.0419
			(0.0609)		(0.0532)
Low_Low_Mean				-0.0286	-0.00777
				(0.0475)	(0.0486)
Same_Industry	-0.0111	-0.00788	-0.00641	-0.0118	-0.0108
	(0.0270)	(0.0278)	(0.0276)	(0.0285)	(0.0280)
Same_State	-0.0169	-0.0179	-0.0195	-0.0171	-0.0186
	(0.0219)	(0.0223)	(0.0215)	(0.0222)	(0.0225)
High_Tech	0.0810*	0.0745*	0.0835*	0.0752*	0.0863*
	(0.0438)	(0.0433)	(0.0444)	(0.0427)	(0.0467)
Relative_Size	-0.0312	-0.0275	-0.0260	-0.0301	-0.0303
	(0.0197)	(0.0211)	(0.0215)	(0.0214)	(0.0219)
All_Cash	-0.0152	-0.0191	-0.0145	-0.0258	-0.0149
	(0.0397)	(0.0381)	(0.0394)	(0.0399)	(0.0428)
Tender_Offer	-0.0552	-0.0484	-0.0460	-0.0441	-0.0508
	(0.0380)	(0.0419)	(0.0426)	(0.0455)	(0.0442)
BTM	-0.0336	-0.0461	-0.0456	-0.0581	-0.0384
	(0.0539)	(0.0571)	(0.0568)	(0.0675)	(0.0648)
Book_Leverage	-0.0506	-0.0651	-0.0614	-0.0653	-0.0508
	(0.0691)	(0.0733)	(0.0732)	(0.0731)	(0.0690)
Cash	0.189***	0.181***	0.183***	0.192***	0.193***
	(0.0665)	(0.0689)	(0.0691)	(0.0635)	(0.0638)
Constant	-0.184	-0.227*	-0.230**	-0.214*	-0.182
	(0.136)	(0.117)	(0.114)	(0.115)	(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	**0.117***	0.107	0.110	0.103
	(0.0768)	**(0.0679)**	(0.0674)	(0.0704)	(0.0735)
High_High_Mean	0.0105				0.000694
	(0.0184)				(0.0188)
High_Low_Mean		0.00704			0.00869
		(0.0468)			(0.0426)
Low_High_Mean			**0.0730***		0.0719
			(0.0374)		(0.0462)
Low_Low_Mean				-0.0345	-0.0335
				(0.0376)	(0.0349)
Same_Industry	-0.0339**	-0.0331**	-0.0314**	-0.0376**	-0.0360**
	(0.0158)	(0.0154)	(0.0148)	(0.0172)	(0.0171)
Same_State	-0.0328**	-0.0324**	-0.0352**	-0.0327**	-0.0343**
	(0.0162)	(0.0162)	(0.0161)	(0.0158)	(0.0160)
High_Tech	0.0378	0.0355	0.0454	0.0373	0.0464
	(0.0312)	(0.0308)	(0.0326)	(0.0305)	(0.0327)
Relative_Size	-0.0255*	-0.0247*	-0.0228	-0.0273*	-0.0258
	(0.0139)	(0.0135)	(0.0144)	(0.0149)	(0.0169)
All_Cash	-0.0185	-0.0195	-0.0151	-0.0278	-0.0230
	(0.0302)	(0.0293)	(0.0306)	(0.0321)	(0.0331)
Tender_Offer	-0.0689***	-0.0677***	-0.0639**	-0.0610**	-0.0588**
	(0.0243)	(0.0249)	(0.0259)	(0.0274)	(0.0287)
BTM	-0.0954***	-0.0987***	-0.0988***	-0.114***	-0.113***
	(0.0354)	(0.0363)	(0.0355)	(0.0421)	(0.0390)
Book_Leverage	-0.0840*	-0.0876*	-0.0848*	-0.0889*	-0.0850*
	(0.0468)	(0.0474)	(0.0479)	(0.0484)	(0.0481)
Cash	0.0682	0.0653	0.0680	0.0801	0.0817
	(0.0514)	(0.0544)	(0.0550)	(0.0487)	(0.0499)
Constant	0.0952	0.0791	0.0829	0.102	0.100
	(0.102)	(0.0903)	(0.0894)	(0.105)	(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

Cox Hazard for Deal Completion Time

Main Effects

	(1)		(2)		(3)		(4)	
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
="* $p<0.05$
** $p<0.01$
*** $p<0.001$"

Table A4: Likelihood of Deal Completion

Table A4 reports the results from a likelihood completion regressions with mean and standard deviation of rating categories for acquirer and target. 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.

	Likelihood		
	CO_Mean/SD_ Acq (1)	CB_Mean/SD_ Acq (2)	CV_Mean/SD_ Acq (3)
Respective Varaible	0.0498	0.0811	**0.167***
	(0.136)	(0.117)	**(0.0949)**
	0.363	0.372	**0.396***
	(0.335)	(0.341)	**(0.235)**
Constant	0.208	0.162	0.0286
	(0.415)	(0.412)	(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

	Likelihood		
	SL_Mean/SD _Acq (4)	WL_Mean/SD_ Acq (5)	OR_Mean/SD_ Acq (6)
Respective Varaible	**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

	Likelihood		
	CO_Mean/SD_T (7)	CB_Mean/SD_T (8)	CV_Mean/SD_T (9)
Respective Varaible	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

	Likelihood		
	SL_Mean/SD_T (10)	WL_Mean/SD_T (11)	OR_Mean/SD_T (12)
Respective Varaible	0.414***	-0.0177	0.179
	(0.147)	(0.162)	(0.155)
	-0.231	0.501	0.206
	(0.338)	(0.373)	(0.399)
Constant	-0.0145	0.219	0.0847
	(0.430)	(0.426)	(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 A5: **Short-Term and Long-Term Synergies with Textual Similarity Between Acquirer and Target Pros, Cons, and Feedback Sections Using Alternative CAR and ROA Measures**

Table A5 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] 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 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_Pros, Sim_Cons, 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 desciptions 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_Pros (1)	Sim_Cons (2)	Sim_Feedback (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 [-5, +5] Event Window		
	Sim_Pros (4)	Sim_Cons (5)	Sim_Feedback (6)
Cosine_Sim	**0.0330***	**0.0316***	0.0249
	(0.0189)	**(0.0190)**	(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_Pros **(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 3 Years After		
	Sim_Pros **(4)**	**Sim_Cons** **(5)**	**Sim_Feedback** **(6)**
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 A6: Cross-Sectional Variation in Integration Needs Using Alternative CAR and ROA Measures

Table A6 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), and (6), 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 codes greater than or equal to 5000, while capital-intensive industries are defined as those with SIC codes less than 5000. In columns (3), (4), (7), and (8), 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 opertating 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. *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****	-0.0291	0.0411	0.0123
	(0.263)	(0.0975)	(0.0881)	(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 [-5, +5] Event Window			
	Capital-Intensive **(5)**	**Labor-Intensive** **(6)**	**Within-Industry** **(7)**	**Cross-Industry** **(8)**
Cosine_Sim	**0.658****	-0.0797	0.0495	-0.0403
	(0.272)	(0.0962)	(0.0867)	(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****	-0.123	**-0.298***	-0.0227
	(0.263)	(0.164)	**(0.152)**	(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 3 Years After			
	Capital-Intensive (5)	Labor-Intensive (6)	Within-Industry (7)	Cross-Industry (8)
Cosine_Sim	**-1.050****	0.0651	0.0360	0.00876
	(0.452)	(0.136)	(0.128)	(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

Table A7: Probability of a Merger One and Three Months Before

Table A7 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 2. This variables 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)
Acquirer Controls				
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)		
Target Controls				
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		-0.00195	
	(0.0154)		(0.0148)	
SD_Acq	-0.0260		-0.0240	
	(0.0460)		(0.0450)	
Mean_T		-0.0117		-0.0136
		(0.0163)		(0.0161)
SD_T		0.0278		0.0272
		(0.0490)		(0.0484)
Acquirer Controls				
ROA_Acq	-0.842	-0.856		
	(0.831)	(0.835)		
Sale_Growth_Acq	-0.109	-0.117		
	(0.206)	(0.206)		
Cash_Acq	-0.0644	-0.0612		
	(0.544)	(0.543)		
Book_Leverage_Acq	0.366	0.360		
	(0.405)	(0.400)		
RDA_Acq	-0.494	-0.518		
	(1.402)	(1.399)		
BTM_Acq	-0.0622	-0.0543		
	(0.376)	(0.374)		
Target Controls				
ROA_T	-0.653	-0.607		
	(0.574)	(0.570)		
Sale_Growth_T	0.00821	0.00545		
	(0.147)	(0.147)		
Cash_T	-0.375	-0.381		
	(0.525)	(0.523)		
Book_Leverage_T	-0.349	-0.350		
	(0.369)	(0.366)		
RDA_T	-0.575	-0.502		
	(0.937)	(0.934)		
BTM_T	-0.487	-0.494		
	(0.319)	(0.318)		
Constant	0.291	0.275	-0.416***	-0.437***
	(0.365)	(0.361)	(0.0952)	(0.0934)
Observations	765	765	765	765

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

Table A8: Probability of a Merger Using Rating Categories

Table A8 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 acquirer 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 2. 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 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	0.649	0.653	0.541	0.497	0.538
	(0.930)	(0.958)	(0.934)	(0.932)	(0.933)	(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

Panel B. Probability Using Acquirer 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	0.0987	0.0771	0.0819	0.270	0.155
	(0.369)	(0.366)	(0.367)	(0.369)	(0.368)	(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

Table A9: Acquirer Price Runup Using Level and Standard Deviation

Table A9 reports Cumulative Abnormal Returns in the one month and one year before merger announcement (to signify the price runup in acquirer firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for acquirer firms using the overall mean and standard deviation of acquirer 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 ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's values. Detailed desciptions 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)	(5)	(6)
Mean_Acq	0.000421			0.00379		
	(0.00172)			(0.00374)		
SD_Acq	-0.00287			**-0.0155***		
	(0.00369)			**(0.00816)**		
High_Mean_Acq		-0.00770			0.0177	
		(0.0120)			(0.0317)	
High_SD_Acq		0.0206			**-0.0730****	
		(0.0192)			**(0.0354)**	
Low_Mean_Acq			-0.00389			0.0510
			(0.0124)			(0.0437)
Low_SD_Acq			-0.00741			**0.0670***
			(0.0134)			**(0.0391)**
Same_Industry	0.0295*	0.0314*	0.0304*	0.0706**	0.0816**	0.0734**
	(0.0163)	(0.0162)	(0.0161)	(0.0291)	(0.0347)	(0.0326)
Same_State	-0.0271***	-0.0256**	-0.0270***	0.00177	0.00853	0.00346
	(0.00994)	(0.00981)	(0.00998)	(0.0244)	(0.0233)	(0.0235)
High_Tech	0.0222	0.0218	0.0236	0.156	0.157	0.164
	(0.0268)	(0.0240)	(0.0243)	(0.142)	(0.136)	(0.137)
Relative_Size	0.000191	-0.000796	-0.00176	0.00578	-0.000882	0.000393
	(0.00643)	(0.00713)	(0.00671)	(0.0301)	(0.0328)	(0.0303)
All_Cash	0.0156	0.0137	0.0140	-0.0722*	-0.0762*	-0.0780**
	(0.0175)	(0.0180)	(0.0177)	(0.0383)	(0.0415)	(0.0391)
Tender_Offer	-0.0123	-0.0114	-0.0114	-0.0159	-0.0122	-0.0120
	(0.0152)	(0.0156)	(0.0153)	(0.0294)	(0.0314)	(0.0292)
BTM	0.0213	0.0201	0.0215	-0.118	-0.119	-0.118
	(0.0188)	(0.0197)	(0.0194)	(0.0889)	(0.0927)	(0.0901)
Book_Leverage	0.138***	0.128***	0.127***	0.0515	0.00614	0.0113
	(0.0355)	(0.0321)	(0.0305)	(0.0758)	(0.0782)	(0.0786)
Cash	0.0220	0.0228	0.0229	0.184*	0.189*	0.194*
	(0.0400)	(0.0378)	(0.0364)	(0.109)	(0.109)	(0.109)
Constant	-0.0881	-0.0895	-0.0868	0.0108	-0.00836	0.00756
	(0.0616)	(0.0656)	(0.0652)	(0.0728)	(0.0843)	(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

Table A10: Acquirer Price Runup Using Rating Categories

Table A10 reports Cumulative Abnormal Returns (CARs) in the one month before merger announcement (to signify the price runup in acquirer firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and for acquirer firms using the individual categories' mean and standard deviation of acquirer 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 ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of acquirer's values. Detailed desciptions 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.

	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	-0.0868	-0.0787	-0.0779	-0.0921	-0.0812
	(0.0609)	(0.0621)	(0.0631)	(0.0580)	(0.0631)	(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

Table A11: Target Price Runup Using Level and Standard Deviation

Table A11 reports Cumulative Abnormal Returns in the one month and one year before merger announcement (to signify the price runup in target firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for target firms using the overall mean and standard deviation of 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 target ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of target's values. Detailed desciptions 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)	(5)	(6)
Mean_T	-0.0038			0.00223		
	(0.00127)			(0.00344)		
SD_T	-0.00176			-0.0134		
	(0.00431)			(0.0111)		
High_Mean_T		0.00691			0.0155	
		(0.0139)			(0.0295)	
High_SD_T		-0.00376			-0.0318	
		(0.0170)			(0.0448)	
Low_Mean_T			0.00797			-0.0498
			(0.0126)			(0.0326)
Low_SD_T			0.00252			0.0255
			(0.0192)			(0.0427)
Same_Industry	0.0293*	0.0327**	0.0310*	0.0634**	0.0787**	0.0746**
	(0.0165)	(0.0163)	(0.0168)	(0.0308)	(0.0333)	(0.0357)
Same_State	-0.0264**	-0.0254**	-0.0250**	0.00828	0.00874	0.0107
	(0.0102)	(0.00995)	(0.00997)	(0.0241)	(0.0236)	(0.0233)
High_Tech	0.0228	0.0241	0.0226	0.159	0.155	0.162
	(0.0251)	(0.0247)	(0.0236)	(0.140)	(0.141)	(0.138)
Relative_Size	-0.000252	-0.00156	-0.000307	0.00444	-0.00262	0.00208
	(0.00623)	(0.00745)	(0.00654)	(0.0295)	(0.0327)	(0.0304)
All_Cash	0.0156	0.0151	0.0145	-0.0683*	-0.0814**	-0.0777**
	(0.0182)	(0.0186)	(0.0181)	(0.0380)	(0.0396)	(0.0391)
Tender_Offer	-0.0122	-0.0122	-0.0112	-0.0156	-0.00937	-0.0121
	(0.0156)	(0.0158)	(0.0161)	(0.0306)	(0.0308)	(0.0317)
BTM	0.0218	0.0206	0.0210	-0.112	-0.126	-0.117
	(0.0200)	(0.0206)	(0.0195)	(0.0920)	(0.0938)	(0.0937)
Book_Leverage	0.138***	0.128***	0.127***	0.0482	0.0197	0.0105
	(0.0343)	(0.0318)	(0.0314)	(0.0777)	(0.0733)	(0.0765)
Cash	0.0217	0.0182	0.0219	0.183*	0.214**	0.188*
	(0.0393)	(0.0380)	(0.0385)	(0.110)	(0.108)	(0.113)
Constant	-0.0892	-0.0918	-0.0900	0.00737	-0.00200	0.000343
	(0.0629)	(0.0661)	(0.0669)	(0.0739)	(0.0816)	(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 A12: Target Price Runup Using Rating Categories

Table A12 reports Cumulative Abnormal Returns (CARs) in the one month and one year before merger announcement (to signify the price runup in target firms) for the 255 actual deals in the sample. The dependent variable is CAR one month and one year before merger announcement for target firms using the individual categories' mean and standard deviation of 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 target ratings and other control variables as independent variables. BTM, Book_Leverage, and Cash are calculated as the (market) value-weighted average of target's values. Detailed desciptions 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.

	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	-0.0931	-0.0910	-0.0912	-0.0903	-0.0875
	(0.0662)	(0.0652)	(0.0639)	(0.0643)	(0.0648)	(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

Table A13: Equal-Weighted CARs in [-3, +3] Event Window

Table A13 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***	0.0603***	0.0624***
	(0.0244)	(0.0222)	(0.0215)
Same_State	-0.00663	0.0125	0.0130
	(0.0192)	(0.0136)	(0.0135)
High_Tech	-0.0484	0.0146	0.0176
	(0.0402)	(0.0296)	(0.0312)
Relative_Size	-0.0196	0.00475	0.00445
	(0.0201)	(0.0172)	(0.0170)
All_Cash	0.0315	0.00282	0.00446
	(0.0262)	(0.0148)	(0.0129)
Tender_Offer	0.00436	0.0238*	0.0248*
	(0.0194)	(0.0137)	(0.0148)
BTM	0.0678**	0.0193	0.0140
	(0.0316)	(0.0267)	(0.0225)
Book_Leverage	-0.132**	-0.0412	-0.0477
	(0.0628)	(0.0431)	(0.0449)
Cash	-0.0787	-0.114***	-0.117***
	(0.0728)	(0.0341)	(0.0338)
Constant	-0.222***	-0.0245	-0.0234
	(0.0825)	(0.0419)	(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 A14: Functional Form CARs Using Level and Standard Deviation

Table A14 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 deviatiation 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	0.00993	-0.000880	0.00359
	(0.00479)	(0.0124)	(0.00385)	(0.0122)
SD	-0.00212	-0.00666	-0.00189	-0.0200
	(0.0144)	(0.0296)	(0.0125)	(0.0398)
Mean_Sqrd	0.00000389	-0.000373	0.00000359	-0.00000359
	(0.000144)	(0.000463)	(0.000107)	(0.000316)
SD_Sqrd	-0.00000528	-0.00114	0.0000039	0.000666
	(0.00113)	(0.00225)	(0.000969)	(0.00337)
Same_Industry	0.0294*	0.0732**	0.0285	0.0641*
	(0.0162)	(0.0299)	(0.0174)	(0.0331)
Same_State	-0.0273***	0.00249	-0.0266***	0.00850
	(0.00992)	(0.0241)	(0.0101)	(0.0239)
High_Tech	0.0216	0.163	0.0231	0.160
	(0.0264)	(0.143)	(0.0253)	(0.143)
Relative_Size	0.000320	0.00258	0.000179	0.00406
	(0.00642)	(0.0304)	(0.00656)	(0.0307)
All_Cash	0.0151	-0.0698*	0.0157	-0.0674*
	(0.0176)	(0.0379)	(0.0181)	(0.0369)
Tender_Offer	-0.0123	-0.0154	-0.0117	-0.0155
	(0.0152)	(0.0291)	(0.0158)	(0.0305)
BTM	0.0214	-0.119	0.0223	-0.115
	(0.0188)	(0.0897)	(0.0181)	(0.0950)
Book_Leverage	0.139***	0.0391	0.138***	0.0510
	(0.0352)	(0.0768)	(0.0352)	(0.0748)
Cash	0.0238	0.176	0.0239	0.182
	(0.0443)	(0.111)	(0.0419)	(0.111)
Constant	-0.0879	0.0105	-0.0895	0.00586
	(0.0623)	(0.0738)	(0.0640)	(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 A15: Functional Form CARs Using Rating Categories

Table A15 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 deviatiation 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	-0.0894	-0.0922	-0.0947	-0.0892	-0.0921
	(0.0650)	(0.0584)	(0.0619)	(0.0659)	(0.0596)	(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	-0.0955	-0.0886	-0.0881	-0.0875	-0.0883
	(0.0683)	(0.0648)	(0.0642)	(0.0636)	(0.0641)	(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 A16: Cumulative Abnormal Returns with Inverse Mills Ratio from Heckman Two-Stage Regression

Table A16 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***	0.0678	0.0270
	(0.0557)	(0.0718)	(0.0879)
Inverse_Mills	-0.00302	-0.00225	-0.00261
	(0.00265)	(0.00338)	(0.00368)
Constant	-0.0764	-0.0958	-0.0510
	(0.0678)	(0.0822)	(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 A16 Continued)	CARs		
	[-1, +1] **Event Window** **(4)**	[-3, +3] **Event Window** **(5)**	[-5, +5] **Event Window** **(6)**
Cosine_Sim	**0.135*****	0.0926	0.0554
	(0.0419)	(0.0572)	(0.0731)
Inverse_Mills	0.0108	0.00864	0.00930
	(0.0171)	(0.0164)	(0.0159)
Constant	**-0.120****	**-0.128***	-0.0884
	(0.0557)	**(0.0662)**	(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

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

	otherwise.
High_Tech	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.