

# Pay Inequality, Job Satisfaction, and Firm Performance

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## Abstract

We find that within-firm base pay inequality is negatively associated with employee morale, consistent with fairness concerns. The relation is stronger for employees with bottom and top quartile pay, and wage increases improve morale even among high-salaried employees, consistent with both advantageous and disadvantageous aversion to pay inequality. Inequity aversion is greater for experienced employees and those living in democratic-leaning regions or close to headquarters. Total pay inequality is insignificantly related to morale, suggesting that incentive pay is considered more justified. Low base pay (high total pay) inequality corresponds with employer reviews that emphasize fairness and commitment (talent and reward). Base pay inequality is negatively related to firm performance with no significant relation for total pay inequality.

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## 1. Introduction

Income inequality has grown significantly in recent decades, with roughly one-third of the rise being attributed to increased pay variation within firms (Song et al., 2019). This trend has attracted attention from regulators, business leaders, and in the media and led to heightened interest in understanding the effects of pay dispersion on morale.<sup>1</sup> In this article, we study data from the largest US-based provider of crowd-sourced employer reviews to explore the relation between within-firm pay inequality, job satisfaction, and firm performance.

In traditional agency models workers choose effort levels conditioning only on their own wage. However, the notion that individuals care about relative pay has a long tradition in economics.<sup>2</sup> In recent years, bilateral bargaining experiments have provided strong support for the view that agents are concerned not only about material payoffs but also relative standings (Camerer and Thaler, 1995, survey the literature). Extensive experimental evidence has led to the development of economic models which feature an aversion to inequity (e.g. Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). While there is support for inequity aversion in specialized field settings (e.g., Card et al., 2012; Breza, Kaur, and Shamdasani, 2018), to date there is little large-scale evidence to bridge the validity gap of these models and their experimental foundations.

We analyze over 900 thousand salaries and one million employee-authored company reviews for more than 1,200 public US firms using data from Glassdoor. We measure base and total pay inequality within each firm using Gini coefficients, a widely-accepted measure of income

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<sup>1</sup> For example, see Alan Krueger’s (2012) speech as Chair of the Council of Economic Advisers on the “The Rise and Consequences of Inequality,” as well as media discussions following Joseph Stiglitz’s (2012) book “The Price of Inequality,” and Thomas Piketty’s (2014) book “Capital in the Twenty-First Century.” Concern from business leaders is apparent in Peter Georgescu’s *New York Times* (8/5/2015) op-ed “Capitalists, Arise: We Need to Deal with Income Inequality.”

<sup>2</sup> Common early references include Veblen (1899) and Marshall (1925). Clark, Frijters, and Shields (2008) provide a review. Relative pay is also addressed in well-established literatures in psychology, sociology, and organizational behavior. See Cook and Hegtvedt (1983), Gupta, Conroy, and Delery (2012), and Shaw (2014) for reviews from other disciplines.

inequality (e.g., Mehran, 1976; Deininger and Squire, 1996; Atkinson, Piketty, and Saez, 2011; Aghion et al. 2018). We also construct ratios of CEO compensation to median worker pay, which US firms are required to disclose beginning in 2018 as mandated by Section 953(b) of the Dodd-Frank Act. The job satisfaction data contain one-to-five star ratings for Overall employer quality as well as ratings for Career Opportunities, Compensation & Benefits, Work/Life Balance, Senior Management, and Culture & Values.

We observe considerable variation in within-firm pay inequality. For example, the median firm-level total pay Gini coefficient is 0.27, on par with the country Gini for Sweden, whereas the 90<sup>th</sup> percentile is 0.59, similar to the level for Namibia.<sup>3</sup> Moreover, the interquartile range for the ratio of total CEO to median worker pay varies from 69 to 170. Our focus is on whether variation in pay inequality within firms is associated with differences in employee morale and firm performance.

Pay disparity may be perceived as justified if higher compensation is associated with greater skill or effort. For example, Breza, Kaur, and Shamdasani (2018) document in a field study of Indian manufacturing workers that pay inequality harms morale and output only when coworkers' productivity is hard to observe, with no discernable effect when the greater productivity of higher paid coworkers is easily apparent. In our setting, we conjecture that incentive pay is more likely than base pay to be perceived as equitable compensation for higher productivity, and we hypothesize that base pay inequality may harm morale more so than total pay inequality.

Using employees' self-reported employer ratings as a proxy for workplace utility, we find strong support for the idea that employees are averse to base pay inequality. For example, after

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<sup>3</sup> <https://data.worldbank.org/indicator/si.pov.gini>

controlling for median firm pay, we find that a one standard deviation increase in base pay Gini is associated with a 0.19 standard deviation decrease in employer rating across firms. Importantly, the negative relation between pay inequality and morale does not hold when considering total compensation inequality, consistent with the framework of Breza, Kaur, and Shamdasani (2018).

Research from psychology finds support for both disadvantageous and advantageous inequity aversion, with subjects reacting negatively to receiving less or more than their peers.<sup>4</sup> We therefore conjecture that the relation between pay inequality and morale will be stronger among both lower and higher paid employees. Consistent with this view, we partition employees into pay quartiles and find that the job satisfaction of lower and upper paid employees is significantly more negatively related to base pay inequality than employees with incomes in the middle two quartiles.

Experimental evidence points toward considerable heterogeneity in aversion to inequity in the population. For example, Ho and Su (2009) find that only roughly half of subjects are fairness-minded. We consider two proxies for potentially increased aversion to inequity employees: the first measure is related to political ideology, and the second proxy is based on attention to inequality. We find that employee morale is more sensitive to base-pay inequality in democratic-voting regions, and the relation is also stronger in states with greater levels of Google search for the phrase “income inequality.”

We find that the relation between employee satisfaction and base-pay inequality is weaker for inexperienced employees, consistent with the evidence in Bellemar, Kroger, and van Soest (2008) that younger subjects exhibit lower aversion to inequity. In addition, we conjecture that

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<sup>4</sup> Experimental evidence suggests that disadvantageous inequity aversion develops in children as young as three years old, whereas advantageous inequity aversion emerges later around eight years old (e.g. LoBue et al., 2011; Qiu et al., 2017). Disadvantageous inequity aversion has also been documented in studies of animals, including elephants, dogs, and birds, but advantageous inequity aversion is apparent only among humans and apes. Brosnan and de Waal (2014) reviews the literature and discusses evolutionary underpinnings for inequity aversion.

working close to firm headquarters increases the salience of highly paid coworkers, and we find supportive evidence that working far from headquarters mitigates the effects of pay inequality on employee satisfaction.

Although the evidence of heterogeneity in aversion to pay inequality across employees helps mitigate concerns that the relation is driven by firm characteristics, we address endogeneity more carefully by examining how job satisfaction changes following plausibly exogenous shocks to pay inequality. Specifically, we study how employer ratings change following firm-level increases in the minimum wage following the Tax Cuts and Jobs Act of 2017. Using a propensity score matched difference-in-difference approach, we find that hourly workers at minimum wage hike firms significantly raise their assessments of Compensation & Benefits in the six months following the announcement, indicating that the wage increase represents a material effect on hourly workers' income. As expected, the change has no effect on the assessments of Compensation & Benefits for high (above median) salary employees. However, high salary employees nevertheless do raise their Overall ratings for their firm, consistent with reduced pay inequality improving employee morale.

We next explore the relation between pay inequality and corporate culture. Guiso, Sapienza, and Zingales (2015) categorize corporate culture into nine dimensions based on corporate mission statements. We analyze whether the net prevalence of cultural words in the free-response Pros and Cons section of employer reviews vary with levels of pay inequality. We find that base pay inequality is negatively related to the *Integrity* cultural dimension, which includes the cultural words "Fairness," "Honesty," and "Do the right thing." Base pay inequality is also negatively associated with the *Quality* dimension, which includes "Meet needs," "Make a difference," and "Exceed expectations." On the other hand, we find that total pay inequality is

positively associated with the *Innovation* cultural dimension, which includes “Excellence,” “Performance,” and “Results.” Total pay inequality is also positively related to *Respect*, which includes “Development,” and “Talent,” as well as the *Hard Work* dimension, which includes “Reward.” Taken together, the evidence supports the view disparity in base pay within firms is leads to fairness concerns and lower morale, whereas incentive pay is considered more justified due to its increased connection with productivity.

An important consequence of pay disparity is that it may affect employees’ effort level, and in our final analysis we examine the association between pay inequality and firm performance. The Equity Theory of Akerlof and Yellen’s (1990) posits that pay inequality engenders feelings of unfairness, which harms morale and reduces productivity. On the other end of the spectrum, Lazear and Rosen (1981)’s Tournament Theory focuses on the motivating aspects of pay inequality and suggests that greater disparity increases the value of promotions, which fosters increased effort and better performance. Empirically, firm performance has been shown to be both positively (Kale, Reis, and Venkateswaran, 2009) and negatively (Bebchuk, Cremers, and Peyer, 2011) associated with corporate pay disparity among executives. More closely related is Mueller, Ouimet, and Simintzi (2017b), who construct hierarchical measures of pay dispersion for rank and file employees at a sample of UK firms and find a positive association with performance.

We begin our performance analysis by documenting a significant positive relation between employee satisfaction and firm performance, consistent with previous work (e.g. Edmans, 2011; Edmans, Li, Zhang, 2017). Our emphasis is on the relation between within-firm pay inequality and firm performance. We find a significant negative relation between base pay inequality and return on assets and Tobin’s Q. For example, a one standard deviation increase in base pay Gini is

associated with ROA that is one-tenth of a standard deviation lower. In contrast, we observe no significant relation between total pay inequality and firm performance.

As with Mueller, Ouimet, and Simintzi (2017b), our performance analysis does not permit causal inferences due to the lack of cleanly identified shocks to pay inequality. However, the findings provide prima facie support for the Equity Theory notion that pay inequality within a firm can have a negative influence on performance. More generally, our findings are consistent with the experimental evidence in Breza, Kaur, and Shamdasani (2018) and support the interpretation that employees view base pay as compensation for unobservable effort, with disparity harming morale and productivity. While incentive-based pay disparity may play a positive signaling role, we find no evidence that it is associated with greater overall productivity.

Our findings have implications for recent SEC regulations that require firm disclosure of CEO pay ratios.<sup>5</sup> When repeating the job satisfaction analysis using ratios of CEO compensation to median worker pay, we find generally weaker results than when using Gini coefficients to measure income inequality. Although there is some evidence that base and total pay CEO ratios are negatively related to the Overall employer rating, and in particular views of Senior Management, the relation is driven primarily by the denominator. When CEO pay and median worker pay are considered separately, we find that median worker pay is significantly positively associated with all aspects of job satisfaction, while CEO pay is generally negative but insignificantly related to morale. Our findings question the efficacy of the newly SEC-mandated measure of pay disparity and suggest that CEO pay should not be overemphasized when measuring the income inequality within firms.<sup>6</sup>

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<sup>5</sup> <https://www.sec.gov/corpfin/pay-ratio-disclosure>

<sup>6</sup> We also gather data on firm-announced CEO pay ratios for 468 firms (announced through the first eight months of 2018). The cross-sectional correlation between the announced CEO Pay ratios and our constructed total CEO Pay ratio is 0.51. We find no evidence that employer ratings react negatively to CEO pay ratio announcements.

Our study contributes to a several strands of research. First, we extend the literature that addresses the relation between pay inequality and employee morale. Clark and Oswald (1996) find evidence that job satisfaction is negatively related to coworker pay in a sample of British workers, and Card et al. (2012) find similar evidence among University of California employees. On the other hand, Clark, Kristensen, and Westergaard-Nielsen (2009) find the opposite relation holds for a sample of Danish workers. More recently, Breza, Kaur, and Shamdasani (2018) finds that pay inequality increases absenteeism among Indian manufacturing workers when productivity is hard to observe. Our sample is orders of magnitude larger than existing studies and allows us to measure job satisfaction along a number of dimensions for a large cross-section of economically important U.S. firms. Our setting also allows us to distinguish between the effects of base and incentive pay when measuring pay inequality, and we explore the performance implications of pay inequality for employers.<sup>7</sup>

Our work is also related to studies that link job satisfaction and firm performance. Edmans (2011) and Edmans, Li, and Zhang (2017) argue that employee morale is an intangible asset that can foster employee productivity. We also observe a positive relation between job morale and firm performance in our sample, yet our emphasis is on the role of pay inequality and we add specifically to the literature on pay disparity and firm performance. Existing finance research on pay disparity emphasizes top executive pay. For example, Kale, Reis, and Venkateswaran (2009) find that tournament incentives, measured by the pay differential between the CEO and VPs, relate positively to firm performance. In contrast, Bebchuk, Cremers, and Peyer (2011) find that the CEO pay slice, the fraction of top five salaries accounted for by the CEO, is negatively related to firm

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<sup>7</sup> Several recent papers examine the underlying drivers of inequality within firms (e.g. Song et al., 2019, Mueller, Ouimet, and Simintzi, 2017a, Ma, Ouimet, and Simintzi, 2019). Our emphasis is on the consequences of inequality for morale and performance.



value, consistent with agency concerns. In recent work, Rouen (2019) finds that the portion of the CEO pay ratio that is explained (unexplained) by economic conditions and firm characteristics is positively (negatively) associated with firm performance. We consider a wide distribution of rank and file salary data to construct firm-level pay inequality measures, and we find evidence that base pay inequality is negatively associated with firm performance, with no significant relation for total pay inequality.

Mueller, Ouimet, and Simintzi (2017b) study hierarchical pay ratios at a sample of UK firms and find evidence of a positive association between pay disparity and performance, which they attribute to differences in ability across firms for a given skill level. Our Gini approach to measuring pay inequality implicitly captures differences in hierarchies across firms, which could potentially explain the differential cross-sectional relation with performance.<sup>8</sup> While our finding of a negative association between base pay inequality and firm performance is not definitive, it does suggest that concerns regarding the productivity impact of pay inequality should not be summarily dismissed.

## **2. The Glassdoor Sample**

Glassdoor is an employee review and rating website that launched in 2008. It hosts a database in which current and former employees voluntarily and anonymously review their companies, salaries, interview experience, senior management, and corporate benefits. In this study, we focus on the employee salary survey and employee satisfaction survey.

### *2.1 Sample Selection*

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<sup>8</sup> Sample differences may also play a role. We analyze data from the United States, which exhibits greater income inequality than the UK (the Gini for UK was 0.34 in 2014 vs 0.42 for the US in 2016, the most recent data available). Our sample also tends to be comprised of large firms (the median number of employees in the UK sample of Mueller, Ouimet, and Simintzi (2017b) is 1,705 employees, compared 15,000 employees in our US sample).

Glassdoor users may derive utility from contributing to the public good, as individuals do when posting reviews to Amazon, contributing entries to Wikipedia, participating in open source coding environments, etc. (Lerner and Tirole, 2002). Glassdoor also encourages participation by requiring the submission of own-firm reviews before being able to access information for other firms.<sup>9</sup> Green, et al. (2018) find that changes in Glassdoor employer ratings predict future firm performance, consistent with the idea that reviews contain accurate assessments and reveal value-relevant information.<sup>10</sup>

We argue that employees learn about within-firm pay disparity using sources like Glassdoor, which is reasonable for our sample of Glassdoor users. More generally, workers may glean information about pay disparity within firms from conversations or inferences from peer consumption. We note that top executives are unlikely to review their firm or post salary data on Glassdoor, and therefore the sample primarily consists of rank and file employees (we examine the relation between CEO pay and morale in Section 3.2). Moreover, our sample is comprised of employees at large, publicly traded firms. As a result, pay tends to be higher than in the general population. For example, the median total pay in the Glassdoor sample is \$76,800 compared with \$47,000 in the US census data.<sup>11</sup> One benefit of the sample construction is that it may help increase the likelihood that other Glassdoor contributors are viewed as peers.

Liu, et al. (2019) assess the representativeness of the Glassdoor sample relative to US Census data. They document that Glassdoor oversamples the finance and professional service sectors relative to the industry distribution in the Census, and regionally Illinois and Utah are

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<sup>9</sup> Glassdoor attempts to mitigate misinformation by requiring email verification or linking to an active social network account. Further, the administrator of the site uses a two-step verification procedure, combining a machine learning algorithm and human screening, to detect suspicious activities.

<sup>10</sup> Green et al. (2018) also show that Glassdoor employer ratings are significantly correlated with MSCI ESG KLD's Employee Relation scores and Fortune magazine's Best Places to Work for designation.

<sup>11</sup> <https://www.census.gov/data/tables/time-series/demo/industry-occupation/median-earnings.html>

overrepresented whereas Kentucky and Connecticut are underrepresented (although the differences are relatively small). More importantly, Liu, et al. (2019) also find that younger and more educated workers are overrepresented in Glassdoor. In light of the experimental evidence in Bellemar, Kroger, and van Soest (2008) that inequity aversion is lower among younger and more educated subjects, and the general intuition that inequality is less painful for high wage workers, this suggests that aversion to pay inequality may be understated in the Glassdoor sample.

The main selection concern in our setting is that an omitted variable explains the decision to contribute a review and is also related to income inequality and employee satisfaction. For example, disgruntled employees that are unhappy with their pay and seeking other employment may be overrepresented in Glassdoor. Although their presence would support the notion of aversion to pay inequality, their overrepresentation could potentially overstate the level of inequity aversion in the full population. Inconsistent with severe oversampling of dissatisfied employees, we observe a strong central tendency in employer ratings, with one-star (the lowest rating) reviews being the least frequently submitted rating. Specifically, the frequency of one, two, three, four, and five stars in the sample respectively are 13%, 16%, 27%, 27%, and 14% (and similar numbers hold for other rating categories).<sup>12</sup> Although the Glassdoor sample is not randomly constructed, the sample size is more than 100 times larger than existing survey evidence on the morale effects of coworker pay (e.g. Clark, Kristensen, and Westergard-Nielsen, 2009), which allows to consider a variety of employee characteristics emphasized in experimental settings.

## *2.2 Glassdoor Salary Data*

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<sup>12</sup> As a robustness check to control for extreme reviews, in Section 4.1 we also consider a Winsorized approach where we replace one-star reviews with two-stars and five-star reviews with four-stars.

The Glassdoor salary survey contains the following required salary-related information: base pay and base pay period (i.e., per year, per hour, or per month), and whether and if so how much the contributor receives in tips/gratuities, sales commissions, cash or stock bonuses, or profit sharing. They also encourage the employee to provide her job title, years of experience, employment location, employment status (e.g., full-time or part-time), and whether the contributor is a current or former employee. The contributor may also optionally provide their gender information.

Our primary measure of within-firm pay inequality is the Gini coefficient, a widely accepted measure of income inequality (e.g., Mehran, 1976; Deininger and Squire, 1996; Atkinson, Piketty and Saez, 2011; Aghion et al. 2015). Specifically, let  $y_{i,j}$  be the income of employee  $i$  at firm  $j$  and index  $i = 1$  to  $n_j$  in non-decreasing order (i.e.  $y_{i,j} \leq y_{i+1,j}$ ). We then calculate the Gini coefficient for firm  $j$  as:

$$G_j = \frac{1}{n_j} \left( n_j + 1 - 2 \left( \frac{\sum_{i=1}^n (n_j + 1 - i) y_{i,j}}{\sum_{i=1}^n y_{i,j}} \right) \right). \quad (1)$$

Gini coefficients are bounded by 0 and 1, with 0 representing perfect income equality and 1 representing perfect inequality. We calculate  $G_j$  using two-year rolling windows and require at least thirty observations for each coefficient (i.e.  $n_j \geq 30$ ).<sup>13</sup>

We also consider a separate measure of income inequality based on CEO pay ratios. Specifically, we take the ratio of CEO total compensation (ExecuComp TDC1) divided by median total firm-level employee pay submitted to Glassdoor in a two-year rolling window. We also construct a similar CEO base pay ratio using SALARY in ExecuComp and base pay in Glassdoor. While Gini coefficients and CEO pay ratios both capture aspects of income inequality within the

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<sup>13</sup> The average autocorrelation in base pay Gini using non-overlapping two-year periods is 0.54.

firm, Gini coefficients utilize the entire distribution of employee salaries to measure dispersion and more closely measure inequality among rank and file employees. The CEO pay ratio captures the pay disparity between ordinary employees and the (likely) highest paid employee.

### *2.3 Glassdoor Employer Review Data*

Glassdoor employer reviews contain employees' one-to-five star overall rating of the firm (Rating), as well as optional star ratings for Career Opportunities, Compensation & Benefits, Work/Life Balance, Senior Management, and Cultures & Values. In addition to the star ratings, employees are also able to enter separate textual responses for Pros ("Share some of the best reasons to work at ...") and Cons ("Share some of the downsides of working at ..."). Glassdoor's guidelines stipulate that reviews should be about the company and cannot target any identified individuals. For each employee review, we are able to discern employee status (current or previous employee) and employee work location using data obtained from Glassdoor.<sup>14</sup> We calculate firm-year level ratings by averaging all the firm reviews in a given calendar year.

### *2.4 Sample Statistics*

The Glassdoor salary survey and the employee review sample spans from June 2008 to September 2018. Our main analyses are at the firm-year level, and Table 1 tabulates summary statistics and pairwise correlations for the variables used in our analysis. In Panel A, we tabulate moments and quartile distributions. The mean (median) number of observations to calculate the Gini coefficient is 243 (113). The base pay Gini coefficient has a mean and median of 0.21, and the interquartile range is 0.18 to 0.24. Total pay Gini tends to be larger and exhibits greater variation. The mean (median) Total Pay Gini is 0.34 (0.27), and the interquartile range is 0.22 to

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<sup>14</sup> We gather data on each firm's number of employees from Bloomberg, and we rely on Glassdoor when Bloomberg data is missing (reporting of number of employees in Glassdoor is relatively coarse).

0.41. Unsurprisingly, CEO pay ratios are considerably larger with measured using total pay. The mean (median) CEO base pay ratio is 16 (15), whereas the CEO total pay ratio has a mean (median) of 138 (111).

Figure IA.1 in the Internet Appendix plots the average firm-level base and total pay Gini coefficients for each of the Fama-French 12 industries. The industries with the highest average within-firm levels of base (total) income inequality are Finance with Gini's of 0.24 (0.34) and Telecom with 0.25 (0.34). Industries with the lowest pay inequality are Utilities, with Gini's of 0.17 (0.27) and Manufacturers with 0.19 (0.26). Notably, firms in the Business Equipment industry have the third lowest base pay inequality but the eighth lowest total pay inequality.

The mean (median) of overall Employer rating is 3.27 (3.28), with an interquartile range varying from 1 to 3.56, which indicates that firm-level ratings are not highly polarized. Among the rating subcategories, the highest is Compensation & Benefits, with a mean (median) of 3.33(3.35). The category that tends to have the lowest ratings is views of Senior Management, with a mean (median) of 2.87 (2.85). Green et al. (2018) provide more detailed summary statistics at the review level.

Panel B of Table 1 reports the pairwise correlations between each pair of variables, with Pearson correlations above the diagonal and Spearman rank correlations below. The four pay inequality measures are correlated. For example, the Pearson correlation between base and total pay Gini is 0.27, and the Pearson correlation between base pay Gini and the CEO base (total) pay ratio is 0.18 (0.27). The positive correlations indicate that these measures capture common information about a firm's compensation structure. On the other hand, base pay Gini is negatively correlated with the Overall employer rating (Pearson Correlation=-0.10), whereas total pay Gini

is positively correlated (Pearson Correlation=0.12) which suggest that employees may interpret base and incentive pay differently.

### 3. Pay Inequality and Employee Satisfaction

In this section, we explore the relation between firm-level pay inequality and measures of employee job satisfaction.

#### 3.1 Pay Inequality and Employer Ratings

We begin by examining how measures of pay inequality relate to Overall employer ratings. Specifically, we conduct the following panel regression:

$$\text{Overall Rating}_{i,t} = \alpha + \beta \text{Gini}_{i,t-1} + \gamma X_{i,t-1} + \epsilon_{i,t}, \quad (2)$$

where  $\text{Overall Rating}_{i,t}$  is the average star rating of firm  $i$  in year  $t$ . The main variable of interest is  $\text{Gini}_{i,t-1}$ , which measures pay inequality among employees for firm  $i$  measured using years  $t-2$  and  $t-1$ .  $X_{i,t-1}$  is a set of control variables that includes log of employee median pay (Median Pay), log of number of employees (Employees), log of market value of equity (Size), the ratio of book value of total debt (leverage), return on assets (ROA), and time and industry fixed effects. The time fixed effects are based on yearly frequency and the industry classification is based on Fama-French 12 industries.<sup>15</sup> We cluster standard errors by firm and year.

We control for median employee pay to account for the negative correlation between the median pay level and within-firm income inequality. It might be expected that well paid employees have higher job satisfaction. Thus, controlling for median pay allows us to separate the effect of the level of pay from the disparity in employee income. We include the number of employees as a control for firm size as in Muller, Ouimet, and Simintzi (2017b), and we also include market value

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<sup>15</sup> [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data\\_Library/det\\_12\\_ind\\_port.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html)

of equity, leverage, and a measure of profitability. To facilitate interpretation of the results, we standardize all continuous independent variables in the regressions.

The regression estimates are reported in Table 2. The first column reports the coefficient from a univariate regression with time fixed effects. In Panel A, the coefficient on the base pay Gini coefficient is significantly negative. Since a larger Gini coefficient indicates greater income inequality, our baseline result indicates that high base pay income inequality is associated with lower levels of employee satisfaction. Specifically, a one standard deviation increase in base pay Gini is associated with a 0.19 (0.078 / 0.42) standard deviation decrease in the Overall employer rating. Including industry fixed effects, which control for variation in pay inequality across industries, and controls for median pay and number of employees reduces the Gini coefficient but it remains statistically significant. Unsurprisingly, higher median pay is associated with greater job satisfaction and we also observe that the number of employees is positively related to satisfaction.

In Specifications 4 and 5 of Table 2, the coefficients on total pay inequality are significantly positive. When adding firm controls in Specification 6, the coefficient on total pay Gini falls and becomes statistically insignificant. The evidence indicates that job satisfaction is generally positively associated with total pay inequality, although the relation can largely be explained by firm characteristics (size, leverage, and profitability).

We next investigate how income disparity affects different dimensions of employee satisfaction. We use the same regression specification as in Equation (2) for the following job satisfaction dependent variables: Career Opportunities, Compensations & Benefits, Senior Management, Work/Life Balance, and Culture & Values. The panel regression estimates are reported in Table 3 with and without controls. In Panel A of Table 3, the estimates generally reveal



a negative relation between base pay inequality and various categories of employee satisfaction. However, there is varying significance across the rating categories. The negative relation is strongest for Compensation & Benefits and Career Opportunities, weaker for Senior Management, and insignificant for Culture & Values and Work/Life Balance after including controls. Perhaps unsurprisingly, assessments of Compensation & Benefits are strongly related to median pay, although controlling for this relation does not change the significance of the negative coefficient on base pay inequality.

Panel B of Table 3 reports the results for total pay inequality. We observe a positive and significant relation between total pay inequality and assessments of Career Opportunities but no significant relation with Compensation & Benefits after controlling for firm characteristics, consistent with disparity in total pay signaling the value of potential promotions rather than satisfaction with current levels of pay. We also observe significant positive coefficients for assessments of Senior Management and Culture and Values.

To sum up, the significant negative relation between base pay inequality and employer ratings along a variety of dimensions provides support for the hypothesis that inequity aversion harms employee morale. On the other hand, the insignificant relation between total pay inequality overall firm ratings, as well as the significant positive relation between total pay inequality and assessments of Career Opportunities and Senior Management, are consistent with incentive pay being viewed as justifiably related to greater productivity, consistent with the framework of Breza, Kaur, and Shamdasani (2018).

### *3.2 CEO Pay Ratio and Job Satisfaction*

We next consider the CEO pay ratio as a measure of within-firm pay inequality. In contrast to Gini coefficients, which measure income disparity among rank-and-file employees, CEO pay

ratio captures the disparity of the top and median income earners within a firm. The two pay inequality measures may capture different aspects of pay inequality, and we view this analysis as a way to further validate the relation between income inequality and job satisfaction. Additionally, the relation between the CEO pay ratio and morale may be of interest in its own right. In particular, beginning with reporting for fiscal year 2017, US publicly traded companies are required by the Dodd-Frank Wall Street Reform and Consumer Protection Act to disclose this ratio.

We use Glassdoor and Compustat data to create base and total pay historical CEO Pay Ratios back to the year 2009. As a validity check, we collect a sample of 668 disclosed pay ratios for fiscal year 2017 (disclosed January-September of 2018). The cross-sectional correlation between the log CEO Pay Ratio disclosed by firms and our constructed log CEO total pay ratio is 0.55, which lends credence to our approach. Moreover, Glassdoor constructed measures of CEO pay ratios may be more relevant for the morale of US-based employees than the disclosed measures since median pay may be influenced by low-paid overseas workers that are unlikely to post reviews on Glassdoor.

We estimate the following panel regression specification to study the relation between CEO Pay Ratios and Employee Ratings:

$$Employee\ Rating_{i,t} = \alpha + \beta CEO\ Pay\ Ratio_{i,t-1} + \gamma X_{i,t-1} + \epsilon_{i,t}, \quad (3)$$

where CEO Pay Ratio is the log difference between CEO compensation and median employee salaries. We consider specifications with ratios constructed from both base and total pay. We include industry fixed effects and control for median pay, number of employees, firm size, leverage, and profitability (ROA). Standard errors are clustered by firm and year.

The results are reported in Table 4. In Panel A, we observe that the CEO base pay ratios are generally consistent with the base pay Gini results, with higher CEO pay ratios leading to lower

job satisfaction, although the results are statistically weaker. The relation is similar but statistically stronger for CEO total pay ratios. In Panel B of Table 4, four of the five categories and the overall rating are significantly negatively related to CEO total pay ratio. However, if we split the pay ratio into separate components for CEO pay and median pay, we see that the negative relation is largely driven by the denominator. Job satisfaction is strongly positively related to median pay and since this is inversely related to the CEO pay ratio, it produces the significant negative relation. Although the coefficients on CEO remain negative, only assessments of Senior Management and Career Opportunities are significantly negatively related to CEO total pay when including median pay separately.

We also consider whether employer ratings react negatively to firm-announced CEO pay ratios for the sample of 668 announcements from January to September of 2018. We find no evidence of a negative reaction on average or in relation to the magnitude of the announced ratio. The weak relation between CEO pay ratios and job satisfaction questions the informativeness of the newly SEC-mandated measure of pay disparity and suggests that CEO pay should not be overemphasized when measuring the income inequality within firms.

#### **4. Pay Inequality and Employer Ratings: Employee Characteristics**

The evidence of a negative relation between base pay inequality and employer ratings is consistent with aversion to inequity among workers. In this section, we explore the extent to which inequity aversion varies with employee characteristics.

##### *4.1 Income Level and Aversion to Pay Inequality*

Disadvantageous inequity aversion, in which subjects react negatively to receiving less than their peers, has been documented in children as young as three years old as well as several types of animals (e.g. LoBue et al., 2011; Brosnan and de Waal, 2003; Range, et al., 2009). Many

people also exhibit advantageous inequity aversion, i.e. reacting negatively to receiving more than peers, which tends to emerge later in children (at around eight years old), and has also been documented in apes (Qiu et al., 2017; Brosnan and de Waal, 2010). In our setting, we expect that the relation between employee satisfaction and pay inequality will be strongest among low paid employees, and we also conjecture that highly-paid employees will exhibit greater aversion to pay inequality than employees paid closer to the middle of the pay distribution.

In order to explore the effects of employee characteristics on the relation between morale and pay inequality, we switch from the firm-level analysis in Section 3 to a review-level analysis. Roughly half of the employees submitting information to Glassdoor include both satisfaction ratings and salary information, and we merge the data from these two sources based on the employee identity code in Glassdoor system. Our baseline regression is as follows:

$$Rating_{i,j,t} = \alpha + \beta Gini_{i,t-1} + \gamma X_{i,j,t-1} + \epsilon_{i,j,t}, \quad (4)$$

where *Rating* is for employee *j*, employed by firm *i*, in year *t*. *Base* and *Total Pay Gini* coefficients are estimated at the firm level, and we require at least 30 observations for consistency with our firm-level analysis. For this subset of reviews, we can obtain information regarding an employee's own pay, and we therefore include employee *j*'s own pay rather than the median pay a control variable. We also include the other control variables as in Equation (2), as well as time and industry fixed effects. Standard errors are clustered by firm and time.

The employee-level income analysis is reported in Table 5. We first confirm that our baseline result holds when switching from a firm-level to a review-level analysis. Specifically, we observe that *Overall* employer ratings are negatively related to base pay inequality and

insignificantly related to total pay inequality after controlling for an employee’s own pay.<sup>16</sup> Our emphasis is on whether the effects of income inequality on job satisfaction vary by relative pay level. Specifically, for each firm year we separate employees into pay quartiles based on base or total compensation. We then include interaction terms for the top and bottom compensation quartiles as follows:

$$Rating_{i,j,t} = \alpha + \beta_1 Gini_{i,t-1} + \beta_2 LowPay_{i,j,t} + \beta_3 HighPay_{i,j,t} + \beta_4 LowPay_{i,j,t} \times Gini_{i,t-1} + \beta_5 HighPay_{i,j,t} \times Gini_{i,t-1} + \gamma X_{i,j,t-1} + \epsilon_{i,j,t} \quad (5)$$

where *LowPay* and *HighPay* are indicator variables that equal one if an employee’s income is in a firm’s top and bottom quartile, respectively. The set of results are reported in Columns (2) and (4) of Table 5. The regressions examining Base Pay Inequality and Total Pay Inequality exhibit similar patterns. Overall, employees belonging to the top and the bottom quartiles view both types of pay inequality more negatively. The results are consistent with employees in the bottom quartile having stronger concerns of unfairness than earners in the middle group. Top earners also appear less satisfied with base pay disparity than employees in the middle of the pay distribution, consistent with experimental evidence of advantageous inequity aversion.

#### 4.2 Worker Experience and Aversion to Pay Inequality

Bellemar, Kroger, and van Soest (2008) find evidence that younger subjects exhibit lower aversion to inequity, and we conjecture that the relation between base-pay inequality and morale may be weaker among less experienced workers. We use the self-reported number of years of relevant experience as a proxy for employee experience. Similar to the previous regression, we estimate:

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<sup>16</sup> As a robustness check to control for the effects of ratings outliers, Table IA1 in the Internet Appendix replicates Specifications 1 and 3 of Table 5 after Winsorizing the data by replacing one-star ratings with two-stars and five-star ratings with four stars. The findings are robust to this adjustment.

$$Rating_{i,j,t} = \alpha + \beta_1 Gini_{j,t-1} + \beta_2 LowExp_{i,j,t} + \beta_3 HighExp_{i,j,t} + \beta_4 LowExp_{i,j,t} \times Gini_{j,t-1} + \beta_5 HighExp_{i,j,t} \times Gini_{j,t-1} + \gamma X_{i,j,t-1} + \epsilon_{i,j,t}, \quad (6)$$

where *LowExp* and *HighExp* are indicator variables that are equal to one if an employee is among the least and most experienced quartiles, respectively. We report the regression estimates in Table 6. The results indicate that the employees with the least experience tend to have higher Overall job satisfaction and view base pay inequality less negatively and total pay inequality more positively. While the most experienced employees tend to have the lowest Overall satisfaction ratings, they do not react differently to either type of pay inequality than the middle experience group. The results suggest that less experienced employees have fewer concerns regarding pay equity and are more motivated by the prospect of significant pay advancement later in their career stages.

#### 4.3 Political Ideology and Aversion to Pay Inequality

Not all subjects exhibit inequity aversion. For example, Ho and Su (2009) find that only roughly half of experimental subjects are fairness-minded. In this section, we consider whether political ideology is related to inequity aversion. In particular, we conjecture that the job satisfaction of employees located in more democratic-leaning areas will be more sensitive to pay inequality.

We measure employees' political ideology based on the presidential votes of the employee's metropolitan area, and we consider two measures of political orientation. First, we create a binary variable, *Democrat Indicator*, which equals 1 if the Democrat candidate carried the metropolitan area in the previous election cycle. The second measure, *Democrat Ratio*, is a continuous measure of the number of votes cast for the Democrat candidate over the Republican candidate. We conduct the following regression analysis to examine how political ideology affect employees' aversion to pay inequality:

$$Rating_{i,j,t} = \alpha + \beta_1 Gini_{i,t-1} + \beta_2 Democrat_{i,j,t} + \beta_3 Democrat_{j,t} \times Gini_{i,t-1} + \epsilon_{i,j,t}. \quad (7)$$

The regression results are reported in Table 7. We find significant support for the hypothesis that employees located in the Democratic areas tend to have stronger aversion to base pay inequality, as indicated in the negative coefficient of the interaction term for both *Democrat Indicator* and *Democrat Ratio*. On the other hand, there is not significant evidence that employees in the Democratic leaning area are more averse to total pay inequality.<sup>17</sup>

#### 4.4 Attention to Income Inequality and Aversion to Pay Inequality

We next explore the extent to which attention towards income inequality influences employees' attitudes toward pay inequality with their firms. We measure the attention using state-level search intensities for the phrase "income inequality." The data is obtained from Google Trends, and the index can vary between 0 and 100 (Table IA3 in the Internet Appendix reports the Google Trend Index for each state). We conduct the following regression analysis:

$$Rating_{i,j,t} = \alpha + \beta_1 Gini_{i,t-1} + \beta_2 Google\ Srch_{i,j,t} + \beta_3 Google\ Srch \times Gini_{i,t-1} + \epsilon_{i,j,t}. \quad (8)$$

We regression estimates are reported in Table 8. Employees in states with greater attention to income inequality tend to be less satisfied at work on average. More importantly, we find that search intensity magnifies employees' aversion to base pay inequality, with the coefficient on the interaction term being negative and significant at the 5% level. However, we do not observe a statistical relation for the total pay inequality measure, suggesting that variation in incentive pay does not lead to the same level of fairness concerns.

#### 4.5 Proximity to Headquarters and Aversion to Pay Inequality

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<sup>17</sup> We also explore the role of worker gender in Table IA2 in the Internet Appendix. While women workers rate their employers lower on average than men, interacting Gini with a female indicator variable results in an insignificant coefficient, suggesting no significant difference in the effects of pay inequality on morale across gender.

It is likely that workers will be more averse to pay inequality when peer salaries are more salient. Based on the idea that highly-paid employees are more likely to work near firm headquarters, we capture the salience of pay inequality using the distance between the employee and headquarters. The greater the geographic distance, the less likely the employee will interact with highly-paid coworkers.

We conduct the following analysis to examine how distance affects employee's aversion to pay inequality:

$$Rating_{i,j,t} = \alpha + \beta_1 Gini_{i,t-1} + \beta_2 HQ\ Distance_{i,j,t} + \beta_3 HQ\ Distance \times Gini_{i,t-1} + \epsilon_{i,j,t}, \quad (9)$$

where *HQ Distance* is measure of proximity to headquarters. We consider a continuous measure of distance as well as an indicator variable. Specifically, the continuous measure is  $\text{Log}(1+Distance)$ , where distance is measured in miles, and the *Distance* indicator variable is set equal to 1 if the distance between the employee and the firm's headquarters is greater than 100 miles.

The regression results are reported in Table 9. We find that the coefficient on the interaction between base pay inequality and the distance measure is significantly positive for both the continuous proxy and the binary proxy for geographic proximity. This finding indicates that the aversion to base pay inequality is lower for employees that live further from headquarters, consistent with reduced saliency. We observe no significant effects with total pay inequality.

## 5. Wage Increases and Employee Satisfaction

The results in Section 3.2 establish that high within-firm base pay inequality is associated with lower job satisfaction. Our analysis includes industry fixed effects, and the evidence that the aversion to pay inequality varies with employee characteristics helps mitigate concern that the effect is driven by firm characteristics. However, we address endogeneity concerns more carefully



by exploring the morale effects induced by plausibly exogenous shocks to firms' minimum wage. While affected employees are likely to raise their assessments of Compensation & Benefits, we hypothesize that employees who are not directly affected by this change may also positively respond to the news if they prefer more equal pay, consistent with advantageous inequity aversion.

We collect announcement dates for minimum wage increase announcements following the November 2017 enactment of the Tax Cuts and Jobs Act of 2017. The tax cut significantly lowered the tax bills of most US corporations, and we obtain announcement dates (in late 2017 or early 2018) for 41 firms that increased their minimum wage in response to the reduced tax bill.<sup>18</sup> We implement a difference-in-difference test as follows. First, we assign the firms that announced minimum wage increases as our treatment group, and other firms are placed in the control group. For the treatment group, we define the 180 days prior to the announcement as the pre-announcement period and days 0 to 180 as the post-announcement period.

### *5.1 Matching Procedure*

For each firm in the treatment group, we use a propensity score matching procedure to generate three distinct control firms for each firm in the treatment group. Our propensity score matching procedure is similar to that of Fang, Tian, Tice (2014). We match based treated firms and control firms using a logistic regression with the firms' median pay, number of employees, size, leverage, ROA, and the change in Overall rating and Compensation & Benefits in the 6-month period preceding the tax law change. We include changes in Overall rating and Compensation & Benefits in the matching procedure in order to satisfy the parallel trend assumption.

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<sup>18</sup> The 41 minimum wage increase firms are a subset of the 118 Russell 1000 firms that made tax cut use announcements in late 2017 or early 2018 obtained from <https://justcapital.com/reports/the-just-capital-rankings-on-corporate-tax-reform/>.

The results of the propensity score matching procedure are reported in Panel A of Table 10. We observe that four out of the five characteristics load up as statistically significant in the pre-matched sample. In particular, the treated firms tend to have higher pay and a larger number of employees. Additionally, these firms tend to experience declines in their overall rating in the 6-month period prior to the minimum wage increase. These results justify the use of the PSM procedure. We note that the coefficients are no longer significant in the post-matched sample, consistent with a successful characteristic match. Similarly, we also compare the pre- and post-matched samples using means  $t$ -tests and the comparisons are reported in Panel B of Table 10. We find that both the economic and statistical significance of the characteristic differences between the treated and control firms disappear after the propensity-score matching procedure.

## 5.2 *Difference-in-Difference Evidence*

For each matched firm, we focus on employee reviews submitted in the 180 days before and after the minimum wage increase. We then conduct a difference-in-difference analysis using treated and control firms. For this analysis, we merge the employee compensation information with employee review database. In particular, we conduct tests on two sets of employees. First, we examine the response by hourly wage workers, who are the direct beneficiaries of the wage increase. We are primarily interested in changes in the employer's Overall rating and the change in Compensation & Benefits rating. We consider the following specification:

$$Rating_{i,j,t} = \alpha + \beta_1 Treat_{i,t} + \beta_2 Post_{i,t} + \beta_3 Treat_{i,t} \times Post_{i,t} + \epsilon_{i,t}. \quad (10)$$

Employee Rating is for employee  $j$  employed by firm  $i$  in year  $t$ . Treat is an indicator variable that equals one if the firm belongs to the treatment group. Post is an indicator variable that equals one if the review is submitted during the post-announcement period. The emphasis is on  $\beta_3$ , which captures the change in rating following the wage hike announcement relative to matched firms.

The regression results are reported in Table 11. We first consider hourly workers, which are directly impacted by the wage increase, and we expect that their satisfaction should directly respond to this raise. Signaling an economically important wage increase, hourly workers significantly increase their assessments of Compensation & Benefits following the wage hike (0.176 stars). On the other hand, we do not find evidence that the wage hike leads to significant increases in hourly worker's Overall assessments of their firms. While the point estimate is positive (0.076 stars), it is statistically insignificant.

Although high (above median) salaried workers are not directly affected by the wage hike, we conjecture that their job satisfaction may increase as a result of the increased pay of their lower-paid coworkers. Consistent with no direct effect, high-salaried workers exhibit no increase in Compensation & Benefits ratings. On the other hand, we do observe that high-salaried workers increase their Overall levels of job satisfaction following the minimum wage high increase by 0.121 stars relative to the control group, and the estimate is statistically significant. The results support the view that highly paid salaried workers value pay equity within their firms.<sup>19</sup>

## **6. Pay Inequality and Firm Culture**

If employees exhibit inequity aversion on average, we would expect pay inequality within firms may to shape employee's sense of firm culture. In this section we explore the cultural dimensions in Guiso, Sapienza, and Zingales (2015) (GSZ), which they obtain through textual classification of S&P500 corporate mission statements. After performing an aggregation strategy for the 50 most recurring mission values, GSZ propose nine broad categories or units of meaning:

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<sup>19</sup> In Table IA.4 in the internet appendix, we report the results for the other job satisfaction categories. The results are generally consistent with the evidence in Table 8. For example, there is some evidence that hourly workers increase their assessments of Culture & Values following the wage hike (the coefficient on  $Treat \times Post$  is 0.111 and significant at the 10% level) but none of the other categories show a significant increase. High-salaried workers show a similar increase in assessments of Culture & Values (0.144 stars), as well as a significant increase in Work/Life Balance (0.402 stars).

Integrity, Teamwork, Innovation, Respect, Quality, Safety, Community, Communication, and Hard Work.

We take each Pros and Cons section of an employer review and search for words that GSZ associate with each cultural dimension. We subtract the total number of cultural words across reviews in the cons category from the pros category, and we scale by the number of reviews for a firm in a given year. For each cultural dimension, we regress the Pros and Cons textual measure on base or total pay inequality using the following panel regression:

$$Culture_{c,i,t} = \alpha + \beta Gini_{i,t-1} + \gamma X_{i,t-1} + \epsilon_{i,t} \quad (11)$$

where *Culture* stands for the culture dimension *c* for firm *i* in year *t*.

The results are presented in Table 12, where control variables are suppressed for brevity (and reported in Table IA5 in the Internet Appendix). We observe that base pay inequality is significantly negatively related to the *Integrity* cultural dimension, which includes the cultural words “Fairness,” “Honesty,” and “Do the right thing.” To get a sense of scale, the net usage of the culture words from the *Integrity* category is -0.022 per review, which suggests that on average roughly one out of every 45 reviews has one more *Integrity* word in the Cons section of the review than in the Pros section. A one standard deviation increase in base pay Gini leads to a decrease of 0.0019 *Integrity* words per review, roughly 8.6% relative to the mean. Base pay inequality is also negatively associated with the *Quality* dimension, which includes “Meet needs,” “Make a difference,” and “Exceed Expectations.” A one standard deviation increase in base pay Gini is associated with a reduction of 0.0112 net words in the *Quality* category, a change that is roughly 46% of the mean for the *Quality* category (-0.0243).

In contrast, total pay inequality is positively associated with the *Innovation* cultural dimension, which includes “Excellence,” “Performance,” and “Results,” with a one standard

deviation increase in total pay Gini leading to an increase in scaled net culture words that is 17.8% of the magnitude of the mean (-0.0428). Total pay inequality is also positively related to *Respect*, which includes “Development,” and “Talent,” as well as the *Hard Work* dimension, which includes “Reward,” with similar economic magnitudes. Taken together, the culture evidence provides support for the view that base pay inequality is judged as as unfair, while total pay inequality is viewed as warranted due to “hard work.”

## **7. Pay Inequality and Firm Performance**

An important implication of pay inequality within firms is that it may affect employees’ effort levels. Edmans (2011, 2012) and Edmans, Li, and Zhang (2017) argue that employee morale is an important intangible asset that can foster employee productivity, and they find evidence that strong employee morale, proxied by best place to work rankings, is associated with better firm performance. Akerlof and Yellen’s (1990) Equity Theory posits that pay inequality harms morale and reduces productivity. On the other hand, the Tournament Theory of Lazear and Rosen (1981) argues for a positive relation between pay inequality and performance, suggesting that greater disparity increases the value of promotions which fosters increased effort. In this section, we explore the effects of job satisfaction in general and pay inequality more specifically on measures of firm performance.

Our empirical approach is similar to Mueller, Ouimet, and Simintzi (2017b), who also examine the relation between firm performance and pay dispersion for a sample of UK firms. As with Mueller, Ouimet, and Simintzi (2017b), an important caveat to our performance analysis it that does not permit causal inferences due to the lack of cleanly identified shocks to pay inequality. Our analysis is intended to provide prima facie evidence regarding the relation between pay inequality and performance.

We explore the link between employee satisfaction and firm performance using the following panel regression specification:

$$Performance_{i,t} = \alpha + \beta Employee\ Rating_{i,t-1} + \gamma X_{i,t-1} + \epsilon_{i,t}. \quad (12)$$

We consider two measures of firm performance: return on assets (ROA) and Tobin's Q. Accounting variables are constructed using Compustat. ROA is defined as net income over total assets. Tobin's Q is defined as market equities plus book debt over total assets. The ROA ranges from 1.1% in quartile 1 to 8.1% in quartile 3, with a mean (standard deviation) of 4.5% (8.4%). Tobin's Q ranges from 1.15 in quartile 1 to 2.25 in quartile 3, with a mean (standard deviation) of 1.96 (1.28). We include time (year) and industry fixed effects as control variables in the regression, and standard errors are clustered at the year and firm level.

The results are reported in Table 13. We observe a strong positive association between employee ratings and both ROA and Tobin's Q, consistent with high employee morale being associated with better firm performance. The results are similar for each of the employer rating categories, with the exception being that Work/Life Balance is not significantly related to ROA and exhibits the smallest coefficient for Tobin's Q.

## *7.2 Pay Inequality and Firm Performance*

The evidence presented in Sections 3-5 indicates that high base pay inequality is associated with lower job satisfaction, consistent with the Equity Theory notion that pay inequality generates feeling of unfairness which could harm productivity. On the other hand, we observe that total pay Gini tends to be positively associated with assessments of Career Opportunities and views of Senior Management, consistent with Tournament Theory and suggesting that the prospect of a lucrative promotion could lead to greater effort and higher firm productivity. We attempt to distinguish between these hypotheses using the following panel regression:

$$Performance_{i,t} = \alpha + \beta Gini_{i,t-1} + \gamma X_{i,t-1} + \epsilon_{i,t}. \quad (13)$$

As above, we consider both ROA and Tobin's Q as proxies for firm performance. The results from the performance regressions are reported in Table 14. We observe that base pay Gini coefficients are negatively associated with firm performance. Column 1 reports the result of univariate regressions with Time and Industry fixed effects as a control. A one standard deviation increase in the base pay Gini coefficient is associated with a 0.8% lower ROA. Controlling for firm characteristics yields similar results. Moreover, a one standard deviation increase in pay inequality is associated with 19 bps decrease in firm's Tobin's Q (12 bps after controlling for firm characteristics), and the relation is highly statistically significant. On the other hand, we observe no significant relation between total pay inequality and measures of firm performance. The coefficients on total pay Gini are insignificantly different from zero in all of the specifications for both performance measures.

The evidence that base pay inequality is negatively related to firm performance contrasts with the positive relation documented by Mueller, Ouimet, and Simintzi (2017b) for their sample of UK firms. Mueller, Ouimet, and Simintzi (2017b) obtain data from a compensation consultant and construct firm-level base pay ratios by comparing pay for employees in top job hierarchies to those in lower hierarchies (and translate ratios into percentile ranks). Their emphasis is on capturing variation in talent for a given skill level, and their pay disparity measure controls for differences in hierarchies across firms by constructing hierarchy-based pay ratios. Our standard Gini approach implicitly captures differences in hierarchies across firms, which could potentially explain the differential cross-sectional relation with performance.

Sample differences may also play a role. Our sample is from the United States, which exhibits greater income inequality than the UK. In particular, the Gini coefficient for the UK was

34.1 in 2014 vs 41.5 for the US in 2016.<sup>20</sup> Our sample is also comprised of large US firms. For example, the median number of employees in the UK sample of Mueller, Ouimet, and Simintzi (2017b) is 1,705 employees, compared 15,000 employees in our US sample. We explore the role of size in our setting by splitting the Glassdoor/Compustat/CRSP merged sample into two groups based on the NYSE median market value of equity. We report the results for both large and small firms separately in internet appendix Tables IA6 and IA7. Supporting a size effect, for small firms we observe positive although insignificant coefficients on base pay Gini for each ROA and Tobin's Q regression specification. For large firms on the other hand, which comprise the considerable majority of the sample, we find a strong negative relation between base pay inequality and the performance measures across all specifications.

Although the performance analysis does not rise to the level of causal inference, the findings are generally supportive of the Equity Theory notion that pay inequality, particularly within large firms, can have a negative influence on performance. More generally, our findings are in line with the experimental evidence in Breza, Kaur, and Shamdasani (2018) and support the interpretation that employees view base pay as compensation for unobservable effort, with disparity harming morale and productivity. While incentive-based pay disparity may positively signal the value of job promotions, we find no evidence that it is associated with greater overall productivity.

## **8. Conclusion**

Using over 900 thousand salaries reported on the largest employee review cite, our study examines the relation between within-firm pay inequality and measures of employee satisfaction, firm culture, and firm performance. Using standard Gini coefficients as a measure of pay

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<sup>20</sup> <https://data.worldbank.org/indicator/si.pov.gini>



inequality, we find that pay inequality is strongly associated with job satisfaction. For example, a one standard deviation increase in base pay Gini is associated with a 0.19 standard deviation decrease in the Overall employer rating. The negative relation between base pay inequality and employee morale is strongest for evaluations of Career Opportunities and Compensation & Benefits but also holds for assessments of the firm's Senior Management.

On the other hand, the negative relation between employee morale and pay inequality no longer holds for total pay Gini, which considers both base pay and incentive pay. Taken together, the findings are consistent with employees regarding base pay as compensation for effort that is hard to observe and justify, with high base pay inequality harming employee morale. In contrast, pay disparity that includes incentive pay appears more justified as being related to differences in productivity.

To alleviate endogeneity concerns, we analyze employer ratings change following firm-level increases in the minimum wage following the Tax Cuts and Jobs Act of 2017. We document that hourly workers at minimum wage hike firms significantly raise their assessments of Compensation & Benefits in the 180 days following the announcement. At the same time, high salary employees raise their Overall ratings for their firm, consistent with reduced base pay inequality improving overall employee morale.

An analysis of the response Pros and Cons section of company reviews reveals a relation between pay inequality and aspects of firm culture. For example, base pay inequality is negatively related to the "Integrity" dimension, which includes the cultural words "Fairness," "Honesty," and "Do the right thing," whereas total pay inequality is positively associated with the "Respect" dimension, which includes "Development," and "Talent," and the "Hard Work" dimension which includes "Reward."

Finally, we document a negative relation between base pay inequality and firm performance, consistent with the harmful effects of lower job satisfaction on firm performance (e.g. Edmans, 2011; Edmans, Li, Zhang, 2017). In contrast, we observe no significant relation between total pay inequality and firm performance. We interpret these results as prima facie evidence in support of the Equity Theory notion that pay inequality within a firm can have a negative influence on performance. The findings support the experimental evidence in Breza, Kaur, and Shamdasani (2018) and are consistent with the interpretation that employees view base pay as compensation for unobservable effort, with disparity harming morale and productivity. While incentive-based pay disparity may play a positive signaling role, we find no evidence that it is associated with greater overall productivity.

## Appendix

**Table A.1** Variable definitions

Variable	Description
Compensation Observations	Number compensation observations used to calculate Gini coefficient for a given firm in a given year.
Base Pay	Annual base pay amount reported in Glassdoor. For hourly workers, we annualize hourly wage by a factor of 2,080 (40 hours per week × 52 weeks).
Total Pay	The sum of annual base pay and annual incentive pay. Incentive pay includes cash bonus, stock bonus, sales commission, profit sharing, and tips.
Median Base Pay	Median base pay based on base pay reported to Glassdoor in year $t$ and $t-1$ .
Median Total Pay	Median total pay based on total pay reported to Glassdoor in year $t$ and $t-1$ .
Base Pay Inequality	Gini coefficient calculated based on base pay reported to Glassdoor in year $t$ and $t-1$ . We use the following formula to calculate the Gini coefficient: $G_j = \frac{1}{n_j} \left( n_j + 1 - 2 \left( \frac{\sum_{i=1}^n (n_j + 1 - i) y_{i,j}}{\sum_{i=1}^n y_{i,j}} \right) \right)$
	Where $y$ is the annual base pay for employee $i$ working for firm $j$ . We require at least 30 observations for an observation to be included in our analyses. We only consider annual salaried workers in our main analyses. In robustness, we also consider hourly waged workers.
Total Pay Inequality	Gini coefficient calculated using total pay reported to Glassdoor in year $t$ and $t-1$ .
CEO Base Pay	CEO salary reported in ExecuComp.
CEO Total Pay	CEO total pay is the data item TDC1 in ExecuComp.
CEO Base Pay Ratio	The ratio of CEO base pay and median base pay of employees. We require 30 salaries for an observation to be included. We use the logarithmic transformation of CEO Base Pay Ratio in our regression analyses.
CEO Total Pay Ratio	The ratio of CEO total pay and median total pay of employees. We require 30 salaries for an observation to be included. We use the logarithmic transformation of CEO Total Pay Ratio in our regression analyses.
Number of Employees	The number of employees for each firm from Bloomberg. If a value is not provided in Bloomberg, we replace it with the number reported in Glassdoor.
Overall Rating	The overall one-to-five star employer rating from the Glassdoor database. Glassdoor also provides subcategories of ratings, including Career Opportunities, Compensation & Benefits, Work/Life Balance, Culture & Values, and Senior Management. For firm-level analyses, we aggregate these ratings by taking the average of the rating for a firm in a given year. We require at least 30 reviews for a firm to be included in our analyses.
High Income / Low Income	High Income (Low Income) is an indicator variable that equals one if an employee is in the top (bottom) quartile in the salary distribution of a firm.
High Experience / Low Experience	High Experience (Low Experience) is an indicator variable that equals ones if an employee is in the top (bottom) quartile in the years of experience of a firm.
Democrat	Democrat is an indicator variable that equals 1 if the Democrat candidate carried the metropolitan area of the employee, where metropolitan areas are mapped to US counties. There are 929 metro areas in Glassdoor. For the 92 metro areas that map to more than one county, we sum votes across corresponding counties.
Democrat Ratio	Democrat Ratio measures the percentage of votes that went to the Democratic candidate. We map an employee's metropolitan area with corresponding US counties.

Google Search for “Income Inequality”	Google Search for “Income Inequality” is the state-level Google Trends index for the phrase “income inequality,” which ranges between 0 and 100. We exclude Washington DC.
Cultural Dimensions	Net scaled cultural words using the nine dimensions in Guiso, Sapienza, and Zingales (2015). We count the number of words from each culture category in GSZ in the Pros and Cons section of reviews (subtracting Cons from Pros and scaling by the number of reviews for a firm in a given year). The list of words included in each cultural dimension is displayed in Table 8.
ROA	ROA is defined as net income divided by total assets (from Compustat).
Tobin’s Q	Tobin’s Q is defined as $(\text{Market Equity} + \text{Total Assets} - \text{Book Equity}) / \text{Total Assets}$ (from Compustat).
Leverage	Book leverage of the firm, defined as book liabilities over book equity.
Size	Size is defined as the log market value of equity. Market value of equity is defined as price times number of shares outstanding.

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**Table 1. Summary Statistics**

The table reports sample summary statistics. Panel A reports the mean, standard deviation, and quartile information for our variables of interest. Panel B reports variable correlations, with the top triangle reporting Pearson correlations and the bottom triangle reporting Spearman rank correlations. Compensation Observations is the average number of Glassdoor compensation data points per firm used in calculating the inequality measures and median pay. Base (Total) Pay Inequality is the Gini coefficient calculated based on the base (total) pay for a company in a rolling two-year window. CEO Base (Total) Pay Ratio is the ratio of CEO base (total) compensation to median base or total employee compensation, where CEO compensation is taken from Execucomp (TDC1) and the median compensation is the median base (total) pay derived from Glassdoor. Median Base (Total) Pay is the median base (total) pay in a two-year rolling window. The Number of Employees is the number of people a firm employs obtained from Bloomberg and Glassdoor. Overall Rating is the average employer star rating from the Glassdoor review database in a given year (one star indicates lowest satisfaction; five stars indicate highest satisfaction). Subcategory ratings are reported similarly.

## Panel A: Moments and Quantiles

Variable	Mean	Standard Deviation	Q1	Median	Q3
Compensation Observations	243	411	58	113	248
Base Pay Inequality	0.21	0.05	0.18	0.21	0.24
Total Pay Inequality	0.34	0.17	0.22	0.27	0.41
CEO Base Pay Ratio	16.29	8.85	11	15.36	19.69
CEO Total Pay Ratio	138.1	130.4	68.6	111.4	170.3
Median Base Pay	73,637	22,146	56,610	71,120	87,655
Median Total Pay	80,425	25,139	62,000	76,827	94,010
Number of Employees	36,628	106,561	6,947	15,000	28,344
Overall Rating	3.27	0.42	2.99	3.28	3.56
Career Opportunities	3.06	0.39	2.79	3.05	3.32
Compensation & Benefits	3.33	0.47	3.00	3.35	3.66
Senior Management	2.87	0.43	2.58	2.85	3.14
Work/Life Balance	3.27	0.44	2.97	3.29	3.58
Culture & Values	3.24	0.49	2.90	3.24	3.58



**Table 1. Summary Statistics (continued)**

Panel B: Correlation Matrix

	Base Pay Inequality	Total Pay Inequality	CEO Base Ratio	CEO Total Ratio	Median Base Pay	Median Total Pay	Number of Employees	Overall Rating	Career Opp	Comp & Benefits	Senior Leadership	Work/Life Balance	Culture & Values
Base Inequality		0.27	0.18	0.27	-0.28	-0.22	0.08	-0.10	-0.10	-0.12	-0.07	-0.05	-0.06
Total Inequality	0.47		0.03	0.03	-0.06	0.03	-0.04	0.12	0.10	0.06	0.09	0.01	0.08
CEO Base Ratio	0.27	0.11		0.49	-0.47	-0.45	0.28	-0.12	-0.07	-0.17	-0.10	-0.20	-0.10
CEO Total Ratio	0.21	0.09	0.58		-0.47	-0.45	0.28	-0.12	-0.07	-0.17	-0.10	-0.20	-0.10
Median Base Pay	-0.30	-0.14	-0.56	-0.18		0.97	-0.04	0.32	0.23	0.52	0.21	0.38	0.24
Median Total Pay	-0.23	-0.06	-0.54	-0.18	0.97		-0.08	0.34	0.26	0.56	0.24	0.40	0.26
Employees	0.07	-0.02	0.37	0.45	-0.05	-0.09		0.01	0.07	0.03	-0.02	-0.12	-0.02
Overall Rating	-0.12	0.09	-0.14	0.04	0.31	0.33	0.00		0.89	0.74	0.91	0.72	0.92
Career Opp.	-0.11	0.07	-0.07	0.10	0.23	0.25	0.09	0.88		0.68	0.87	0.57	0.83
Comp & Benefits	-0.15	0.01	-0.20	0.06	0.51	0.54	0.04	0.72	0.66		0.63	0.56	0.63
Sen. Management	-0.07	0.07	-0.10	0.04	0.19	0.21	-0.01	0.90	0.85	0.60		0.71	0.91
Work/Life Bal	-0.07	-0.01	-0.25	-0.05	0.38	0.39	-0.12	0.70	0.55	0.54	0.69		0.77
Culture & Values	-0.08	0.06	-0.11	0.04	0.21	0.24	-0.03	0.91	0.81	0.60	0.91	0.75	

**Table 2. Pay Inequality and Employee Satisfaction**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. The key independent variable is Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. Specifications 1-3 (4-6) reports the results for Base (Total) Pay Inequality. Control variables include the log of median employee salary, the log of the number of employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base-Pay Inequality			Total-Pay Inequality		
	1	2	3	4	5	6
Base Pay Inequality	-0.078*** (-6.32)	-0.045*** (-4.02)	-0.031** (-2.98)	0.036** (2.41)	0.021** (2.42)	0.009 (0.86)
Median Pay		0.139*** (9.85)	0.089*** (5.94)		0.152*** (10.27)	0.101*** (6.58)
Number of Employees		0.031** (2.99)	-0.055*** (-3.85)		0.024** (2.35)	-0.049*** (-3.45)
Size			0.156*** (9.50)			0.092*** (8.73)
Leverage			-0.033** (-2.81)			-0.191*** (-3.36)
ROA			0.017 (1.75)			0.235* (2.02)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	5,515	5,513	5,513	5,515	5,513	5,513
R-squared	0.082	0.191	0.272	0.057	0.198	0.274

**Table 3. Pay Inequality and Components of Employee Satisfaction**

The table reports the results of panel regressions with components of employer ratings as the dependent variables, including Career Opportunities, Compensation & Benefits, Senior Management, Work/Life Balance, and Culture & Values. The key independent variable is Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company over a rolling two-year window. Panel A (B) reports the results for Base (Total) Pay Inequality. Control variables include the log of median employee salary, the log of the number of employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

**Panel A: Base Pay Inequality**

VARIABLES	Career Opportunities		Compensation & Benefits		Senior Management		Work/Life Balance		Culture & Values	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pay Inequality	-0.047*** (-4.56)	-0.038*** (-4.10)	-0.055*** (-4.220)	-0.042*** (-3.80)	-0.041*** (-3.511)	-0.024* (-2.15)	-0.014 (-1.16)	0.005 (0.39)	-0.038** (-2.69)	-0.016 (-1.15)
Median Pay		0.026* (1.94)		0.167*** (12.10)		0.041** (2.67)		0.124*** (7.68)		0.067** (3.56)
Employees		-0.036** (-2.80)		-0.077*** (-4.79)		-0.074*** (-4.49)		-0.091*** (-5.95)		-0.087*** (-4.76)
Size		0.167*** (11.01)		0.194*** (12.18)		0.147*** (8.26)		0.080*** (5.10)		0.166*** (8.41)
Leverage		-0.027** (-2.54)		-0.008 (-0.66)		-0.035** (-2.82)		-0.010 (-0.78)		-0.049** (-3.40)
ROA		0.007 (0.75)		-0.014* (-1.86)		0.019 (1.68)		0.009 (0.78)		0.017 (1.22)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	5,515	5,513	5,515	5,513	5,515	5,513	5,515	5,513	5,076	5,074
R-squared	0.089	0.230	0.225	0.465	0.065	0.166	0.146	0.245	0.042	0.156

**Table 3. Pay Inequality and Components of Employee Satisfaction (continued)**

Panel B: Total Pay Inequality

VARIABLES	Career Opportunities		Compensation & Benefits		Senior Management		Work/Life Balance		Culture & Values	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pay Inequality	0.051*** (3.57)	0.025** (2.85)	0.050** (2.37)	0.002 (0.19)	0.047** (2.97)	0.030** (2.85)	0.008 (0.46)	-0.009 (-0.68)	0.048** (2.64)	0.026* (2.23)
Median Pay		0.047*** (3.53)		0.191*** (13.62)		0.057*** (3.79)		0.122*** (7.69)		0.083*** (4.49)
Employees		-0.033** (-2.56)		-0.064*** (-4.07)		-0.069*** (-4.28)		-0.083*** (-5.48)		-0.080*** (-4.33)
Size		0.096*** (10.22)		0.111*** (11.34)		0.084*** (7.56)		0.048*** (4.74)		0.095*** (7.53)
Leverage		-0.177*** (-3.38)		-0.077 (-1.34)		-0.206*** (-3.36)		-0.037 (-0.61)		-0.263*** (-3.75)
ROA		0.141 (1.28)		-0.122 (-1.36)		0.275* (2.06)		0.101 (0.69)		0.249 (1.48)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	5,515	5,513	5,515	5,513	5,515	5,513	5,515	5,513	5,076	5,074
R-squared	0.088	0.231	0.221	0.479	0.065	0.171	0.145	0.243	0.044	0.162

**Table 4. CEO Pay Ratio and Employee Satisfaction**

The table reports the results of panel regressions with components of employer ratings as the dependent variables, including Overall Rating, Career Opportunities, Compensation & Benefits, Senior Management, Work/Life Balance, and Culture & Values. The key independent variable is the log of CEO Pay Ratio, which measures the disparity between top executive pay and median employee pay. In Panel A (B), the CEO Pay Ratio is constructed using base (total) pay for the CEO and employees. Control variables include the log of median employee salary, the log of the number of employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) fixed effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Panel A: Base Pay Ratio

VARIABLES	Overall Rating		Career Opportunities		Compensation & Benefits		Senior Management		Work/Life Balance		Culture & Values	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CEO Pay Ratio	-0.018 (-1.45)		-0.019 (-1.80)		-0.015 (-1.12)		-0.026* (-1.97)		-0.019 (-1.52)		-0.024 (-1.33)	
CEO Pay		-0.009 (-0.68)		-0.015 (-1.49)		0.004 (0.32)		-0.021 (-1.58)		-0.006 (-0.46)		-0.015 (-0.84)
Median Pay		0.310*** (5.52)		0.106* (2.22)		0.610*** (11.81)		0.163** (2.87)		0.424*** (6.72)		0.265*** (4.06)
Employees	-0.080*** (-4.63)	-0.064*** (-3.81)	-0.042** (-3.08)	-0.037** (-2.72)	-0.131*** (-7.29)	-0.097*** (-5.80)	-0.090*** (-5.29)	-0.082*** (-4.84)	-0.107*** (-5.89)	-0.084*** (-4.85)	-0.101*** (-4.72)	-0.088*** (-4.08)
Size	0.208*** (11.48)	0.174*** (9.70)	0.192*** (12.11)	0.181*** (11.37)	0.292*** (16.99)	0.223*** (13.32)	0.185*** (9.99)	0.168*** (8.90)	0.137*** (7.35)	0.090*** (4.79)	0.202*** (9.33)	0.173*** (7.56)
Leverage	-0.024* (-1.92)	-0.028* (-2.11)	-0.023 (-1.80)	-0.024 (-1.84)	0.006 (0.45)	-0.001 (-0.11)	-0.024 (-1.85)	-0.026* (-1.92)	0.011 (0.81)	0.006 (0.44)	-0.032* (-2.06)	-0.035* (-2.24)
ROA	0.018 (1.58)	0.025** (2.31)	0.015 (1.39)	0.017 (1.62)	-0.024** (-2.35)	-0.010 (-1.12)	0.027** (2.36)	0.030** (2.64)	0.010 (0.78)	0.020 (1.59)	0.029 (1.90)	0.035* (2.33)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	4,271	4,271	4,271	4,271	4,271	4,271	4,271	4,271	4,271	4,271	3,919	3,919
R-squared	0.273	0.297	0.269	0.271	0.434	0.508	0.195	0.201	0.216	0.258	0.165	0.177

**Table 4. CEO Pay Ratio and Employee Satisfaction (continued)**

Panel B: Total Pay Ratio

VARIABLES	Overall Rating		Career Opportunities		Compensation & Benefits		Senior Management		Work/Life Balance		Culture & Values	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CEO Pay Ratio	-0.030** (-2.80)		-0.026** (-2.81)		-0.023 (-1.59)		-0.034** (-3.05)		-0.032* (-2.23)		-0.041** (-2.67)	
CEO Pay		-0.020 (-1.77)		-0.021* (-2.30)		-0.002 (-0.17)		-0.028** (-2.42)		-0.018 (-1.26)		-0.032 (-1.94)
Median Pay		0.097*** (5.82)		0.044** (3.10)		0.191*** (12.26)		0.058*** (3.37)		0.122*** (6.63)		0.088*** (4.46)
Employees	-0.079*** (-4.50)	-0.056** (-3.33)	-0.042** (-3.00)	-0.032** (-2.31)	-0.129*** (-7.23)	-0.083*** (-5.07)	-0.090*** (-5.19)	-0.077*** (-4.46)	-0.105*** (-5.79)	-0.076*** (-4.44)	-0.099*** (-4.55)	-0.080** (-3.61)
Size	0.212*** (11.95)	0.169*** (9.44)	0.196*** (12.34)	0.177*** (11.09)	0.295*** (17.40)	0.205*** (12.60)	0.190*** (10.31)	0.166*** (8.71)	0.141*** (7.66)	0.086*** (4.59)	0.207*** (9.90)	0.169*** (7.45)
Leverage	-0.022 (-1.76)	-0.026* (-1.99)	-0.021 (-1.69)	-0.023 (-1.78)	0.007 (0.54)	-0.001 (-0.12)	-0.023 (-1.77)	-0.026* (-1.88)	0.012 (0.96)	0.007 (0.57)	-0.029 (-1.88)	-0.033* (-2.09)
ROA	0.018 (1.58)	0.025** (2.36)	0.015 (1.39)	0.018 (1.70)	-0.025** (-2.42)	-0.009 (-1.04)	0.026** (2.34)	0.030** (2.69)	0.010 (0.74)	0.019 (1.56)	0.029 (1.92)	0.035* (2.41)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	4,286	4,286	4,286	4,286	4,286	4,286	4,286	4,286	4,286	4,286	3,931	3,931
R-squared	0.276	0.301	0.271	0.276	0.434	0.517	0.198	0.206	0.220	0.258	0.169	0.183

**Table 5. Employee Income and the Effects of Pay Inequality on Employee Satisfaction**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. The emphasis is on how the relation between job satisfaction and firm-level pay inequality is influenced by their income level. Low (High) Income is an indicator variable that equals 1 if an employee's income is in the firm's quartile 1 (quartile 4). Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base Pay Inequality		Total Pay Inequality	
	(1)	(2)	(3)	(4)
Pay Inequality	-0.032** (-2.29)	-0.019 (-1.23)	0.010 (0.82)	0.016 (1.21)
Low Income		-0.012 (-1.06)		-0.025 (-1.64)
Low Income × Pay Inequality		-0.028** (-2.79)		-0.009** (-2.35)
High Income		-0.049*** (-3.49)		-0.056** (-2.27)
High Income × Pay Inequality		-0.016* (-2.00)		-0.016 (-1.74)
Own Pay	0.053*** (6.94)	0.064*** (4.84)	0.067*** (5.42)	0.078*** (3.50)
Employees	-0.055** (-2.66)	-0.055** (-2.63)	-0.063** (-2.67)	-0.062** (-2.63)
Size	0.182*** (7.86)	0.180*** (7.89)	0.101*** (6.03)	0.099*** (6.01)
Leverage	-0.049* (-2.02)	-0.049* (-2.03)	-0.297** (-2.38)	-0.297** (-2.38)
ROA	0.015 (0.97)	0.015 (1.01)	0.244 (1.13)	0.251 (1.14)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	392,603	392,603	392,603	392,603
R-squared	0.030	0.031	0.031	0.031

**Table 6. Work Experience and the Effects of Pay Inequality on Employee Satisfaction**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. The emphasis is on how the relation between job satisfaction and firm-level pay inequality is influenced by work experience. Low (High) experience is an indicator variable that equals 1 if an employee's work experience is in the firm's quartile 1 (quartile 4). Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base Pay Inequality	Total Pay Inequality
	(1)	(2)
Pay Inequality	-0.034** (-2.43)	0.003 (0.246)
Low Experience	0.154*** (19.36)	0.151*** (15.25)
Low Experience × Pay Inequality	0.024*** (3.83)	0.012*** (3.30)
High Experience	-0.120*** (-8.86)	-0.118*** (-8.54)
High Experience × Pay Inequality	0.000 (0.05)	0.010* (2.01)
Own Pay	0.093*** (10.66)	0.102*** (5.39)
Employees	-0.049** (-2.42)	-0.046** (-2.24)
Size	0.177*** (7.80)	0.173*** (7.69)
Leverage	-0.048* (-2.00)	-0.052** (-2.23)
ROA	0.017 (1.16)	0.020 (1.35)
Fixed Effects	Time, Industry	Time, Industry
Observations	399,167	399,167
R-squared	0.018	0.019



**Table 7. Political Ideology and the Effects of Pay Inequality on Employee Satisfaction**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. We measure regional political ideology based on the votes casted in the past presidential election of the employee's county, with Democrat representing the county-level support for the Democrat candidate. *Democrat* is an indicator variable that equals 1 if the Democrat candidate carried the county. *Democrat Ratio* measures the percentage of votes that went to the Democratic candidate. Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base-Pay Inequality		Total-Pay Inequality	
	Democrat Indicator	Democrat Ratio	Democrat Indicator	Democrat Ratio
Pay Inequality	-0.020 (-1.30)	-0.008 (-0.49)	0.016 (1.34)	0.019 (1.39)
Democrat	-0.031** (-2.33)	-0.035** (-2.48)	-0.036** (-2.82)	-0.038** (-2.97)
Pay Inequality × Democrat	-0.021** (-2.23)	-0.032** (-2.60)	-0.003 (-0.345)	-0.007 (-0.56)
Own Pay	0.059*** (8.38)	0.055*** (7.63)	0.077*** (5.45)	0.074*** (5.44)
Employees	-0.061** (-2.96)	-0.060** (-2.91)	-0.058** (-2.79)	-0.057** (-2.74)
Size	0.189*** (8.58)	0.187*** (8.48)	0.184*** (8.25)	0.182*** (8.15)
Leverage	0.016 (1.10)	0.016 (1.10)	0.020 (1.33)	0.020 (1.33)
ROA	-0.057** (-2.48)	-0.057** (-2.48)	-0.063** (-2.82)	-0.063** (-2.82)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	336,846	336,846	336,846	336,846
R-squared	0.031	0.031	0.032	0.032

**Table 8. Internet Search Trends and the Effects of Pay Inequality on Employee Satisfaction**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. *Google Search for "Income Inequality"* is the state-level Google Trends index for the phrase "income inequality," which ranges between 0 and 100. We drop employees located in Washington, DC. Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base Pay Inequality	Total Pay Inequality
	(1)	(2)
Pay Inequality	-0.035** (-2.40)	0.018 (1.48)
Google Search for "Income Inequality"	-0.034** (-2.86)	-0.039** (-2.74)
Pay Inequality × Google Search	-0.031** (-2.23)	0.010 (1.08)
Own Pay	0.055*** (7.30)	0.073*** (5.23)
Employees	-0.064** (-3.08)	-0.061** (-2.90)
Size	0.192*** (8.37)	0.187*** (8.17)
Leverage	-0.055** (-2.38)	-0.061** (-2.69)
ROA	0.011 (0.82)	0.015 (1.07)
Fixed Effects	Time, Industry	Time, Industry
Observations	371,637	371,637
R-squared	0.031	0.031

**Table 9. Proximity to Headquarters and the Effects of Pay Inequality on Employee Satisfaction**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. *Distance from Headquarters* is measured in two ways. *Log(1+Distance)* is a continuous measure of the number of miles between the headquarter county and the employee's county. *Distance >100* is an indicator variable that equals 1 if the distance is greater than 100 miles. Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base-Pay Inequality		Total-Pay Inequality	
	Log (1+Distance)	Distance >100 miles	Log (1+Distance)	Distance >100 miles
Pay Inequality	-0.053** (-3.10)	-0.052*** (-3.22)	0.003 (0.17)	0.005 (0.30)
Distance from Headquarters	-0.018*** (-7.52)	-0.116*** (-7.42)	-0.018*** (-7.27)	-0.118*** (-7.47)
Pay Inequality × Distance	0.005* (2.09)	0.031** (2.46)	0.002 (1.17)	0.011 (0.99)
Own Pay	0.046*** (5.89)	0.042*** (5.57)	0.067*** (5.32)	0.062*** (5.11)
Employees	-0.069*** (-3.27)	-0.048** (-2.32)	-0.065** (-3.08)	-0.045* (-2.19)
Size	0.194*** (8.07)	0.180*** (8.17)	0.189*** (7.90)	0.176*** (8.06)
Leverage	-0.049* (-2.05)	-0.045* (-1.93)	-0.055** (-2.36)	-0.051** (-2.24)
ROA	0.002 (0.14)	0.016 (1.14)	0.005 (0.34)	0.019 (1.31)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	356,862	392,603	356,862	392,603
R-squared	0.033	0.032	0.034	0.033

**Table 10. Propensity Score Match Diagnostics for Hourly Wage Increase Firms**

We table presents diagnostic results from propensity score matching hourly wage increase firms with control firms. Treated is an indicator variable that equals one if the company announced an hourly wage increase following the 2017 tax cut. For the treatment group, we consider reviews submitted in a window 120 days before and after the announcement. Post is an indicator variable that equals one if the review is submitted after the wage increase announcement. For the control group (firms without a wage hike announcement), the pre and post periods are measured relative to January 1, 2018 (announcements are concentrated at the end 2017 and the beginning of 2018). In Panel A, the Pre-Match Treatment Regression is a logit regression on Treated including all available Glassdoor firms. The Post-Match Treatment Regression only includes Treated and Propensity-Score Matched Firms. *t*-statistics based on standard errors clustered by firm are reported in parentheses. Panel B reports sample means and tests of differences in means. \*, \*\*, and \*\*\*, indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pre-match Propensity Score Regression and Post-match Diagnostic Regression

Sample	Regression Coefficients							Observations	Pseudo R-squared
	Median Pay	Number of Employees	Log (Size)	Leverage	ROA	Change in Overall Rating	Change in Comp & Benefits		
Pre-Match Treat. Regression	-5.431*** (-5.128)	0.733*** (3.577)	0.828*** (3.981)	2.360 (1.550)	-8.860** (-2.191)	-1.354*** (-2.586)	0.446 (0.872)	830	0.365
Post-Match Treat. Regression	-1.180 (-0.946)	0.253 (1.058)	0.081 (0.305)	1.862 (0.993)	-2.750 (-0.418)	-0.534 (-0.854)	0.731 (1.092)	109	0.051

Panel B: Firm characteristics before and after propensity score matching

	Pre-Match Sample				Post-Match Sample			
	Treated	Control	Treated-Control	t-value	Treated	Control	Treated-Control	t-value
Median Pay	10.97	11.15	-0.17***	4.55	10.97	11.03	-0.05	1.18
Employees	11.01	9.50	1.51***	-6.40	11.01	11.16	-0.15	0.56
Size	10.64	9.10	1.54***	8.78	10.64	10.83	-0.19	0.86
Leverage	0.76	0.62	0.15	5.35	0.76	0.76	0.01	-0.27
ROA	0.04	0.05	0.00	-0.49	0.05	0.05	-0.01	1.17
Change in Overall Rating	-0.12	0.06	-0.18***	3.15	-0.12	-0.11	-0.01	0.08
Change in Comp & Benefits	-0.01	0.02	-0.03	0.51	-0.01	-0.05	0.03	-0.41

**Table 11. The Effect of Hourly Wage Increases on Employee Satisfaction**

We table presents difference-in-difference analysis of employer ratings for Hourly Wage Increase firms relative to propensity-score matched control firms. Treated is an indicator variable that equals one if the company announced an hourly wage increase following the 2017 tax cut. For the treatment group, we consider all reviews submitted in a window 120 days before and after the announcement. Post is an indicator variable that equals one if the review is submitted after the wage increase announcement. For the control group (firms without a wage hike announcement), the pre and post periods are measured relative to January 1, 2018 (announcements are concentrated at the end 2017 and the beginning of 2018). Each review-level regression includes Industry (Fama-French 12 industries) fixed effects, and *t*-statistics based on standard errors clustered by firm are reported in parentheses below each coefficient. \*, \*\*, and \*\*\*, indicate significance at the 10%, 5%, and 1% levels, respectively.

Variables	Hourly Wage Employees		Salaried Employees (Annual Pay > Median)	
	Overall Rating	Compensation & Benefits	Overall Rating	Compensation & Benefits
Treat	-0.121*** (-3.26)	-0.292*** (-7.03)	-0.236*** (-5.25)	-0.160*** (-4.26)
Post	-0.028 (-0.63)	-0.166*** (-3.31)	-0.004 (-0.08)	0.016 (0.33)
Treat × Post	0.076 (1.44)	0.176*** (2.86)	0.121** (1.97)	0.032 (0.56)
Fixed Effects	Industry	Industry	Industry	Industry
Observations	23,619	20,869	17,204	15,708
R-squared	0.004	0.013	0.010	0.008

**Table 12. Pay Inequality within Firms and Corporate Culture**

The table reports the results of regressions of measures of culture on pay inequality. Nine categories of representative corporate culture words are taken from Guiso, Sapienza, and Zingales (2015). Each year for each firm, we calculate the difference in the number of culture words in the Pros and Cons sections of employer reviews and scale by the number of reviews. The key independent variable is Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company over a rolling two-year window. Panel A (B) reports the results for Base (Total) Pay Inequality. Control variables include the log of median employee salary, the log of the number of employees, the log of market equity, book leverage, and return on assets. We also control for Time (year) and Industry (Fama-French 12 industries) effects are included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Dependent Variable: Cultural Dimension		Base Pay Inequality	Total Pay Inequality	Controls	Fixed Effects	Obs.	Adj-R <sup>2</sup>
Integrity / Ethics / Accountability / Trust / Honesty / Responsibility / Fairness / Do the right thing / Transparency / Ownership	(1)	-0.191** (-2.67)	0.188** (2.81)	No	Time, Industry	5,515	0.011
	(2)	-0.164* (-2.03)	0.086** (2.44)	Yes	Time, Industry	5,513	0.024
Teamwork / Collaboration / Cooperation	(3)	-0.022 (-0.628)	0.023 (0.57)	No	Time, Industry	5,515	0.019
	(4)	-0.008 (-0.24)	0.042 (1.28)	Yes	Time, Industry	5,513	0.039
Innovation / Creativity / Excellence / Improvement / Passion / Pride / Leadership / Growth / Performance / Efficiency / Results	(5)	0.175 (0.87)	0.876*** (6.38)	No	Time, Industry	5,515	0.043
	(6)	0.133 (0.69)	0.942*** (6.39)	Yes	Time, Industry	5,513	0.044
Respect / Diversity / Inclusion / Development / Talent / Employees / Dignity / Empowerment	(7)	-0.384 (-1.84)	0.908*** (4.19)	No	Time, Industry	5,515	0.025
	(8)	-0.150 (-0.66)	0.545** (2.80)	Yes	Time, Industry	5,513	0.055
Quality / Customer / Meet needs / Commitment / Make a difference / Dedication / Value / Exceed expectations	(9)	-1.127*** (-6.65)	-0.540 (-1.60)	No	Time, Industry	5,515	0.092
	(10)	-0.970*** (-6.21)	-0.597* (-2.25)	Yes	Time, Industry	5,513	0.111
Safety / Health / Work-Life balance / Flexibility	(11)	-0.273 (-1.345)	-0.240 (-1.13)	No	Time, Industry	5,515	0.059
	(12)	-0.125 (-0.62)	-0.349* (-2.09)	Yes	Time, Industry	5,513	0.074
Community / Environment / Caring / Citizenship	(13)	-0.294 (-1.40)	0.372 (1.81)	No	Time, Industry	5,515	0.028
	(14)	-0.183 (-0.85)	0.410** (2.45)	Yes	Time, Industry	5,513	0.035
Communication / Openness	(15)	-0.121 (-1.393)	0.193* (1.97)	No	Time, Industry	5,515	0.025
	(16)	-0.027 (-0.33)	0.096 (1.32)	Yes	Time, Industry	5,513	0.042
Hard work / Reward / Fun / Energy	(17)	0.015 (0.11)	0.406** (3.25)	No	Time, Industry	5,515	0.068
	(18)	0.012 (0.09)	0.607*** (5.42)	Yes	Time, Industry	5,510	0.091

**Table 13. Employee Satisfaction and Firm Performance**

The table reports the results from firm-year panel regressions of firm performance on employer reviews. The dependent variable is firm performance, measured using return on assets (ROA) and Tobin's Q. The independent variables are the Glassdoor employer ratings averaged over the previous two years. Each regression includes time (year) and industry (Fama-French 12 Industries) fixed effects, and *t*-statistics based on firm and time-clustered standard errors are reported in the parentheses below the coefficients. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

VARIABLES	Overall Rating		Career Opportunities		Compensation & Benefits		Senior Management		Work Life Balance		Culture & Values	
	ROA	Tobin's Q	ROA	Tobin's Q	ROA	Tobin's Q	ROA	Tobin's Q	ROA	Tobin's Q	ROA	Tobin's Q
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Rating	0.011*** (4.96)	0.328*** (7.75)	0.011*** (5.45)	0.354*** (7.85)	0.005** (2.39)	0.278*** (6.03)	0.010*** (4.67)	0.344*** (8.42)	0.000 (0.17)	0.194*** (5.17)	0.009*** (3.97)	0.351*** (8.22)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	5,515	5,443	5,515	5,443	5,515	5,443	5,515	5,443	5,515	5,443	5,076	5,006
R-squared	0.091	0.242	0.091	0.256	0.079	0.217	0.089	0.254	0.007	0.200	0.090	0.250

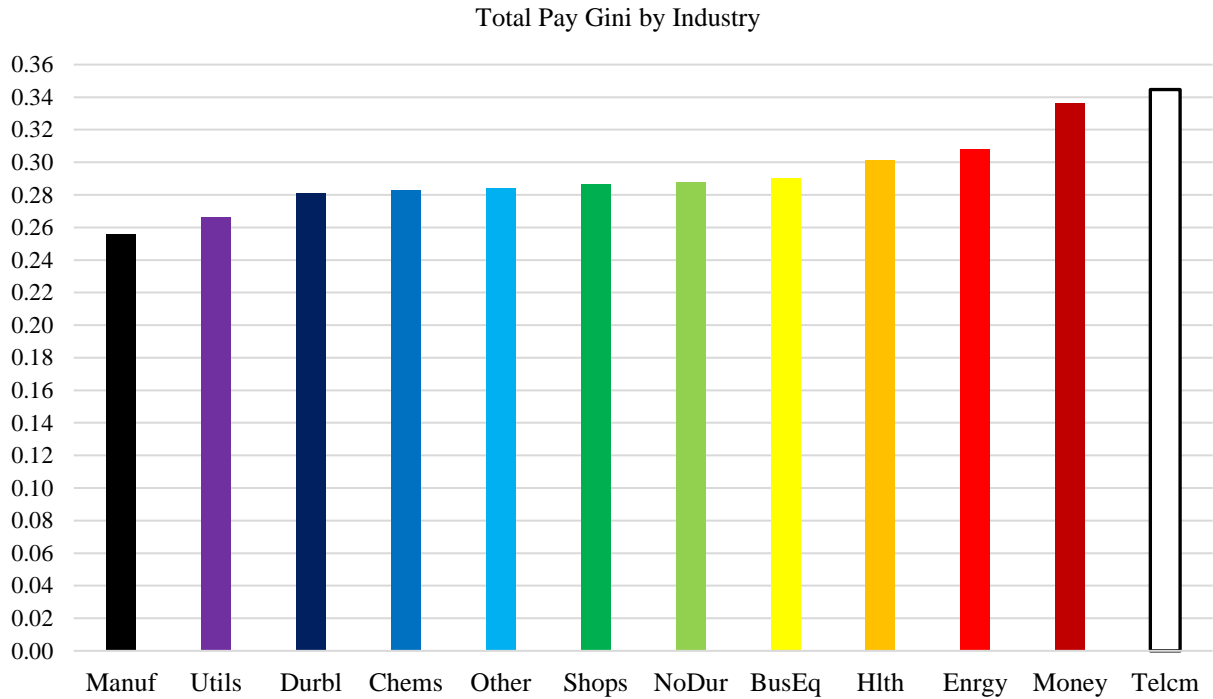
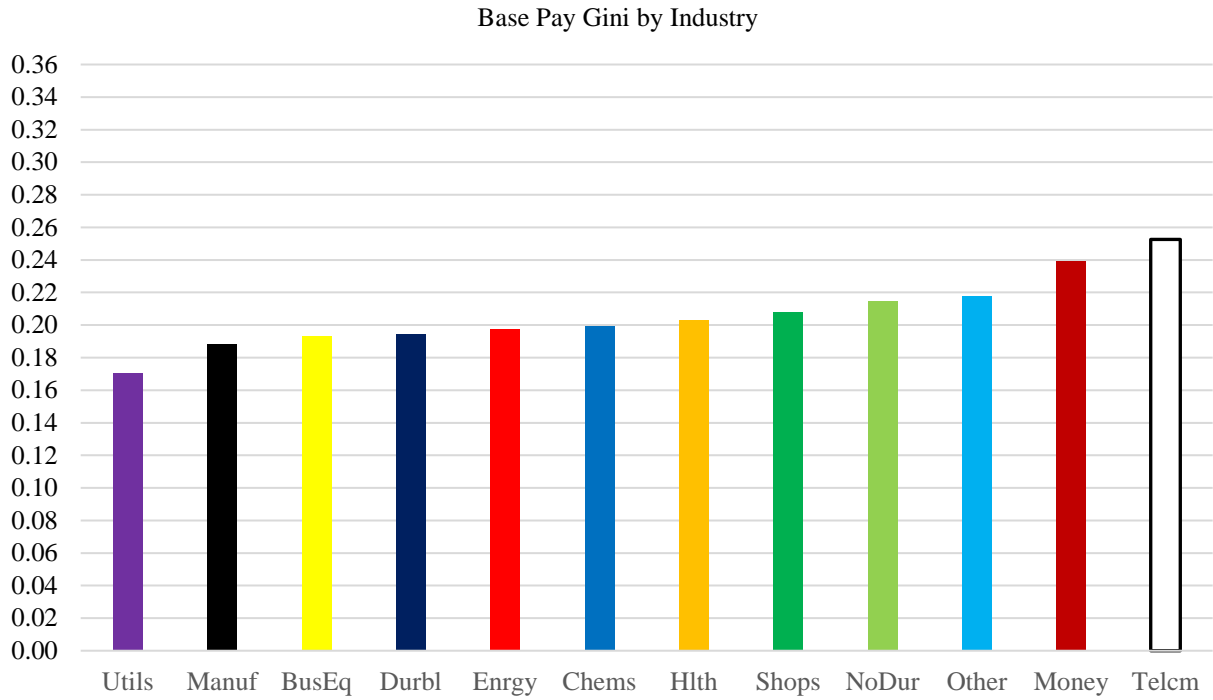
**Table 14. Pay Inequality and Firm Performance**

The table reports the results from firm-year panel regressions of firm performance on measures of pay inequality. The dependent variable is firm performance, measured using return on assets (ROA) and Tobin's Q. The key independent variable is Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company over a rolling two-year window. Panel A (B) reports the results for Base (Total) Pay Inequality. Control variables include log median employee salary, log number of employees, the log of market equity, book leverage, and return on assets. We also include time (year) and industry fixed (Fama-French 12 industries) effects. *t*-statistics based on firm and time-clustered standard errors are reported in the parentheses below the coefficients. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base-Pay Inequality				Total-Pay Inequality			
	ROA	ROA	Tobin's Q	Tobin's Q	ROA	ROA	Tobin's Q	Tobin's Q
Pay Inequality	-0.008*** (-4.50)	-0.008*** (-5.37)	-0.190*** (-5.36)	-0.118*** (-3.54)	-0.002 (-0.80)	-0.007** (-3.07)	0.033 (1.35)	0.024 (1.51)
Median Pay		-0.011** (-3.18)		-0.079 (-1.50)		-0.013*** (-3.77)		-0.033 (-0.86)
Employees		0.000 (0.00)		-0.324*** (-6.68)		-0.001 (-0.34)		-0.369*** (-8.48)
Size		0.020*** (11.42)		0.292*** (9.55)		0.038*** (11.01)		0.480*** (10.56)
Leverage		-0.079*** (-6.87)		-0.998*** (-5.45)		-0.017*** (-8.54)		-0.195*** (-5.81)
Fixed Effects	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry	Time, Industry
Observations	5,317	5,189	5,257	5,180	5,317	5,189	5,257	5,180
R-squared	0.057	0.187	0.145	0.259	0.033	0.163	0.113	0.232



**Figure IA1. Pay inequality by industry.** The figures plot the average firm-level Gini coefficients for each industry using the Fama-French 12 industry classification.



**Table IA1. Pay Inequality on Employee Satisfaction: Winsorized Evidence**

The table reports the results of panel regressions with the average Overall Rating as the dependent variable. To downplay the role of extreme ratings, we renumber each one-star rating as a two-star rating, and each five-star rating as a four-star rating. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base Pay Inequality	Total Pay Inequality
	(1)	(2)
Pay Inequality	-0.025** (-2.693)	0.003 (0.406)
Own Pay	0.038*** (7.604)	0.048*** (5.358)
Employees	-0.025* (-1.822)	-0.024 (-1.717)
Size	0.111*** (8.054)	0.109*** (7.842)
Leverage	0.015 (1.482)	0.017 (1.679)
ROA	-0.028* (-1.841)	-0.032* (-2.136)
Fixed Effects	Time, Industry	Time, Industry
Observations	392,603	392,603
R-squared	0.029	0.029

**Table IA2. Employee Gender and Attitude towards Pay Inequality**

The table reports the results of panel regressions with the average overall employer rating as the dependent variable. The key independent variables are related to Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company in a rolling two-year window. The emphasis is on how the relation between job satisfaction and firm-level pay inequality is influenced by their genders. Female is an indicator variable that equals one if an employee is self-identified as a female. Control variables include the log of Own pay, the log of the number of Employees, the log of market equity, book leverage, and return on assets. Time (year) and Industry (Fama-French 12 industries) effects are also included. Below each coefficient estimate are reported t-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

Variables	Base Pay Inequality	Total Pay Inequality
	(1)	(2)
Pay Inequality	-0.033* (-2.09)	0.010 (0.67)
Female	-0.059*** (-6.33)	-0.055*** (-5.04)
Female × Pay Inequality	0.012 (1.34)	-0.007 (-0.46)
Own Pay	0.049*** (5.33)	0.071*** (6.09)
Employees	-0.064** (-2.94)	-0.060** (-2.78)
Size	0.191*** (8.22)	0.184*** (7.93)
Leverage	-0.047* (-1.97)	-0.052** (-2.23)
ROA	0.013 (0.80)	0.016 (1.03)
Fixed Effects	Time, Industry	Time, Industry
Observations	251,286	251,286
R-squared	0.031	0.032

**Table IA3. Google Trend Index for “Income Inequality” by State.**

The Table reports the state-level Google Trend Index for the search phrase “Income Inequality.” The Index ranges from 0 to 100.

State	Google Trend Index	State	Google Trend Index
Vermont	80	Tennessee	19
Rhode Island	48	Georgia	18
Massachusetts	42	South Carolina	17
Connecticut	39	Alabama	17
Hawaii	33	Florida	17
New Hampshire	33	Texas	17
Arkansas	32	Kentucky	16
Maine	32	Delaware	16
New York	30	Missouri	15
California	30	Louisiana	15
Iowa	29	Nebraska	14
Minnesota	29	Nevada	14
Maryland	28	West Virginia	13
Oregon	28	Mississippi	12
Virginia	26	Oklahoma	12

**Table IA4. The Effect of Hourly Wage Increases on Dimensions of Job Satisfaction**

The table presents difference-in-difference analysis of employer ratings for Hourly Wage Increase firms relative to propensity-score matched control firms. Treated is an indicator variable that equals one if the company announced an hourly wage increase following the 2017 tax cut. For the treatment group, we consider all reviews submitted in a window 180 days before and after the announcement. Post is an indicator variable that equals one if the review is submitted after the wage increase announcement. For the control group (firms without a wage hike announcement), the pre and post periods are measured relative to the announcement date of the corresponding firm in the treatment group. Each review-level regression includes Industry (Fama-French 12 industries) fixed effects, and *t*-statistics based on standard errors clustered by firm are reported in parentheses below each coefficient. \*, \*\*, and \*\*\*, indicate significance at the 10%, 5%, and 1% levels, respectively.

Variables	Hourly Wage Employees				High Salaried Employees (Annual Pay > Median)			
	(1) Career Opportunities	(2) Senior Management	(3) Work Life Balance	(4) Culture & Values	(5) Career Opportunities	(6) Senior Management	(7) Work Life Balance	(8) Culture & Values
Treat	-0.155*** (-3.61)	-0.171*** (-3.60)	-0.067 (-1.49)	-0.097** (-2.19)	-0.210*** (-4.12)	-0.211*** (-4.18)	-0.109** (-2.15)	-0.193*** (-3.45)
Post	-0.011 (-0.23)	-0.002 (-0.04)	0.017 (0.31)	0.068 (1.27)	0.037 (0.61)	0.065 (1.06)	-0.028 (-0.50)	0.068 (1.06)
Treat × Post	0.103 (1.61)	0.103 (1.53)	0.094 (1.50)	0.111* (1.79)	-0.018 (-0.26)	0.104 (1.47)	0.402*** (5.75)	0.144* (1.93)
Fixed Effects	Industry	Industry	Industry	Industry	Industry	Industry	Industry	Industry
Observations	20,910	20,354	20,918	20,622	15,721	15,644	15,698	15,363
R-squared	0.006	0.004	0.006	0.006	0.023	0.007	0.014	0.008

**Table IA5. Pay Inequality within Firms and Corporate Culture**

The table reports the results of regressions of measures of culture on pay inequality. Nine categories of representative corporate culture words are taken from Guiso, Sapienza, and Zingales (2015). Each year for each firm, we calculate the difference in the number of culture words in the Pros and Cons sections of employer reviews and scale by the number of reviews. The key independent variable is Base (Total) Pay Inequality measured using the Gini coefficient calculated from base (total) pay observations for a company over a rolling two-year window. Panel A (B) reports the results for Base (Total) Pay Inequality. Control variables include the log of median employee salary, the log of the number of employees, the log of market equity, book leverage, and return on assets. We also control for Time (year) and Industry (Fama-French 12 industries) effects are included. Below each coefficient estimate are reported *t*-statistics based on firm and time-clustered standard errors. \*, \*\*, and \*\*\*, indicate significance of the difference in returns and alphas at the 10%, 5%, and 1% levels, respectively.

## Panel A: Base Pay Inequality

Dependent Variable: Cultural Dimension	Independent Variables						Fixed Effects	Obs.	Adj-R <sup>2</sup>
	Pay Inequality	Median Pay	Employees	Size	Leverage	ROA			
Integrity / Ethics / Accountability / Trust / Honesty / Responsibility / Fairness / Do the right thing / Transparency / Ownership	(1)	-0.191** (-2.67)					Time, Industry	5,515	0.025
	(2)	-0.182** (-2.32)	0.328** (2.57)	0.215 (1.71)	0.266* (1.99)	-0.119 (-1.04)	0.039 (0.31)	Time, Industry	5,513
Teamwork / Collaboration / Cooperation	(3)	-0.022 (-0.628)					Time, Industry	5,515	0.044
	(4)	-0.017 (-0.43)	0.181*** (4.11)	-0.194*** (-6.37)	0.096 (1.83)	-0.033 (-0.81)	-0.107*** (-4.02)	Time, Industry	5,513
Innovation / Creativity / Excellence / Improvement / Passion / Pride / Leadership / Growth / Performance / Efficiency / Results	(5)	0.175 (0.87)					Time, Industry	5,515	0.056
	(6)	0.257 (1.19)	-1.166*** (-5.58)	-0.603** (-2.97)	1.273*** (6.35)	-0.473** (-2.33)	-0.276 (-1.18)	Time, Industry	5,513
Respect / Diversity / Inclusion / Development / Talent / Employees / Dignity / Empowerment	(7)	-0.384 (-1.84)					Time, Industry	5,515	0.061
	(8)	-0.296 (-1.31)	1.600*** (4.02)	-0.534 (-1.86)	2.037*** (6.35)	-0.303 (-1.19)	-0.354 (-1.31)	Time, Industry	5,513
Quality / Customer / Meet needs / Commitment / Make a difference / Dedication / Value / Exceed expectations	(9)	-1.127*** (-6.65)					Time, Industry	5,515	0.117
	(10)	-0.989*** (-6.48)	1.530*** (6.12)	-0.392* (-1.97)	-0.015 (-0.07)	-0.098 (-0.50)	0.225 (1.73)	Time, Industry	5,513
Safety / Health / Work-Life balance / Flexibility	(11)	-0.273 (-1.35)					Time, Industry	5,515	0.080
	(12)	-0.195 (-0.97)	1.496*** (5.54)	-0.315 (-1.01)	0.206 (0.54)	0.011 (0.05)	0.228 (1.55)	Time, Industry	5,513

Community / Environment / Caring / Citizenship	(13)	-0.294 (-1.40)						Time, Industry	5,515	0.045
	(14)	-0.038 (-0.17)	0.189 (0.63)	-1.374*** (-5.20)	1.389*** (4.12)	-0.652** (-3.18)	-0.019 (-0.08)	Time, Industry	5,513	0.025
Communication / Openness	(15)	-0.121 (-1.39)						Time, Industry	5,515	0.048
	(16)	-0.073 (-0.84)	0.537*** (4.98)	-0.086 (-0.83)	0.418** (2.87)	-0.125 (-1.64)	-0.019 (-0.27)	Time, Industry	5,513	0.068
Hard work / Reward / Fun / Energy	(17)	0.015 (0.11)						Time, Industry	5,515	0.100
	(18)	0.167 (1.16)	-0.677*** (-4.35)	-0.989*** (-5.32)	0.262 (1.72)	-0.422*** (-3.52)	-0.217* (-2.06)	Time, Industry	5,510	0.091

Panel B: Total Pay Inequality

Dependent Variable: Cultural Dimension	Independent Variables							Fixed Effects	Obs.	Adj-R <sup>2</sup>
	Pay Inequality	Median Pay	Employees	Size	Leverage	ROA	Time, Industry			
Integrity / Ethics / Accountability / Trust / Honesty / Responsibility / Fairness / Do the right thing / Transparency / Ownership	(1)	0.188** (2.81)						Time, Industry	5,515	0.011
	(2)	0.086** (2.44)	0.394* (2.11)	0.235** (2.54)	0.216* (1.91)	-0.156 (-1.09)	0.057 (0.43)	Time, Industry	5,513	0.024
Teamwork / Collaboration / Cooperation	(3)	0.023 (0.57)						Time, Industry	5,515	0.019
	(4)	0.042 (1.28)	0.201*** (3.48)	-0.166*** (-5.06)	0.041 (0.84)	-0.029 (-0.89)	-0.096*** (-3.72)	Time, Industry	5,513	0.039
Innovation / Creativity / Excellence / Improvement / Passion / Pride / Leadership / Growth / Performance / Efficiency / Results	(5)	0.876*** (6.38)						Time, Industry	5,515	0.043
	(6)	0.942*** (6.39)	-0.856*** (-3.88)	-0.591** (-2.90)	1.046*** (5.88)	-0.493** (-2.37)	-0.208 (-0.94)	Time, Industry	5,513	0.044
Respect / Diversity / Inclusion / Development / Talent / Employees / Dignity / Empowerment	(7)	0.908*** (4.19)						Time, Industry	5,515	0.025
	(8)	0.545** (2.80)	1.965*** (5.06)	-0.366 (-1.27)	1.734*** (5.41)	-0.388 (-1.52)	-0.285 (-1.11)	Time, Industry	5,513	0.055
Quality / Customer / Meet needs / Commitment / Make a difference / Dedication / Value / Exceed expectations	(9)	-0.540 (-1.60)						Time, Industry	5,515	0.092
	(10)	-0.597* (-2.25)	1.499*** (5.59)	-0.389 (-1.86)	0.044 (0.20)	-0.227 (-1.17)	0.236 (1.84)	Time, Industry	5,513	0.111

Safety / Health / Work-Life balance / Flexibility	(11)	-0.240 (-1.13)						Time, Industry	5,515	0.059
	(12)	-0.349* (-2.09)	1.269*** (4.80)	-0.286 (-0.88)	0.299 (0.77)	0.007 (0.04)	0.192 (1.30)	Time, Industry	5,513	0.074
Community / Environment / Caring / Citizenship	(13)	0.372 (1.81)						Time, Industry	5,515	0.028
	(14)	0.410** (2.45)	0.130 (0.42)	-1.390*** (-5.36)	1.354*** (4.14)	-0.678** (-3.32)	-0.003 (-0.01)	Time, Industry	5,513	0.035
Communication / Openness	(15)	0.193* (1.97)						Time, Industry	5,515	0.025
	(16)	0.096 (1.32)	0.612*** (5.34)	-0.038 (-0.35)	0.349* (2.21)	-0.143* (-1.87)	-0.006 (-0.08)	Time, Industry	5,513	0.042
Hard work / Reward / Fun / Energy	(17)	0.406** (3.25)						Time, Industry	5,515	0.068
	(18)	0.607*** (5.42)	-0.566*** (-3.69)	-1.001*** (-5.65)	0.154 (0.98)	-0.432*** (-3.69)	-0.182 (-1.84)	Time, Industry	5,510	0.091



**Table IA6. Base Pay Inequality and Firm Performance: Firm Size Subsamples**

We investigate the relation between employee income inequality and firm performance in high and low market capitalization firms. We first split the sample merged by CRSP, Compustat, and Glassdoor, by sample median. We then require the sample to have 30 observations in calculating income disparity statistics. The dependent variable is firm performance, measured using return on assets (ROA) and Tobin's Q (TOBINQ). The key independent variable is Base pay GINI coefficient, which measures the disparity of employee income. Control variables include log median employee salary and log number of employees. We also include time (year) and industry fixed (Fama-French 12 industries) effects. T-statistics based on time-clustered standard errors are reported in the parentheses below the coefficients. \*, \*\*, and \*\*\*, indicate significance at the 10%, 5%, and 1% levels, respectively.

## Panel A: Small Firms

Variables	ROA			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Pay Inequality	0.003 (0.686)	-0.001 (-0.247)	-0.005 (-1.504)	-0.003 (-0.056)	0.013 (0.268)	0.023 (0.541)
Median Pay			0.009 (0.936)			-0.233*** (-3.428)
Employees			-0.015 (-1.810)			-0.104 (-1.643)
Size			0.033*** (4.281)			0.290*** (4.172)
Leverage			-0.008 (-1.361)			-0.012 (-0.261)
Fixed Effects	Time	Time, Industry	Time, Industry	Time	Time, Industry	Time, Industry
Observations	806	805	777	796	791	771
R-squared	0.019	0.062	0.140	0.014	0.138	0.166

## Panel B: Large Firms

Variables	ROA			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Pay Inequality	-0.011*** (-4.499)	-0.010*** (-4.546)	-0.009*** (-4.747)	-0.313*** (-9.029)	-0.303*** (-8.003)	-0.227*** (-6.247)
Median Pay			0.001 (0.461)			-0.183*** (-4.154)
Employees			-0.010*** (-3.906)			-0.045 (-0.780)
Size			0.018*** (9.941)			0.269*** (6.222)
Leverage			-0.019*** (-9.111)			-0.265*** (-5.972)
Fixed Effects	Time	Time, Industry	Time, Industry	Time	Time, Industry	Time, Industry
Observations	4,511	4,510	4,388	4,461	4,460	4,385
R-squared	0.033	0.142	0.239	0.087	0.260	0.335

**Table IA7. Total Pay Inequality and Firm Performance: Firm Size Subsamples**

We investigate the relation between employee income inequality and firm performance in high and low market capitalization firms. We first split the sample merged by CRSP, Compustat, and Glassdoor, by sample median. We then require the sample to have 30 observations in calculating income disparity statistics. The dependent variable is firm performance, measured using return on assets (ROA) and Tobin's Q (TOBINQ). The key independent variable is total pay GINI coefficient, which measures the disparity of employee income. Control variables include log median employee salary and log number of employees. We also include time (year) and industry fixed (Fama-French 12 industries) effects. T-statistics based on time-clustered standard errors are reported in the parentheses below the coefficients. \*, \*\*, and \*\*\*, indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Small Firms						
Variables	ROA			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Pay Inequality	-0.000 (-0.079)	-0.001 (-0.478)	-0.007** (-2.861)	-0.049 (-1.604)	-0.026 (-1.056)	-0.025 (-1.054)
Median Pay			0.007 (1.080)			-0.307*** (-5.714)
Employees			-0.025*** (-4.003)			-0.109* (-2.074)
Size			0.041*** (5.702)			0.295*** (6.624)
Leverage			-0.014** (-3.199)			-0.051 (-0.939)
Fixed Effects	Time	Time, Industry	Time, Industry	Time	Time, Industry	Time, Industry
Observations	806	805	777	796	791	771
R-squared	0.019	0.062	0.140	0.014	0.138	0.166
Panel B: Large Firms						
Variables	ROA			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Pay Inequality	-0.004 (-1.180)	-0.006*** (-4.081)	-0.006* (-2.189)	0.022 (0.574)	0.026 (1.014)	0.052** (2.902)
Median Pay			-0.001 (-0.631)			-0.358*** (-7.781)
Employees			-0.008** (-3.024)			-0.029 (-0.797)
Size			0.019*** (8.171)			0.322*** (7.851)
Leverage			-0.019*** (-11.396)			-0.243*** (-6.760)
Fixed Effects	Time	Time, Industry	Time, Industry	Time	Time, Industry	Time, Industry
Observations	4,511	4,351	4,411	4,461	4,461	4,408
R-squared	0.010	0.586	0.150	0.014	0.161	0.274