

Spinning the CEO pay ratio disclosure

Audra Boone

Texas Christian University

Austin Starkweather

University of South Carolina

Joshua T. White

Vanderbilt University

September 19, 2022

UPDATE IN PROGRESS – PLEASE DO NOT CIRCULATE

Abstract

We examine the consequences of mandating disclosure about the pay gap between the CEO and the median employee at US firms. Reporting a high pay ratio is associated with adverse changes in employee morale and productivity, and this relation is strongest for the first few reporting years. Firms, especially those with a higher ratio, frequently use discretionary narrative portraying their employee relations or CEO compensation in a positive light. Many of these instances appear to be spin language that is intended to ameliorate negative attention, though some do provide additional context for their compensation practices and the ratio. Meanwhile, firms with a low ratio use their additional narrative to tout their reported figure. We find no evidence that spin attenuates the negative employee response to a high ratio disclosure. The media is more likely to report on high ratio firms but does also follow firms that have lower ratios within their industry.

JEL: G38, J31, J58, M12, M48, M52

Keywords: Pay ratio, human capital disclosure, mandatory disclosure, selective disclosure

Contact information for authors: Audra Boone (audra.boone@tcu.edu); Austin Starkweather (austin.starkweather@moore.sc.edu); Joshua White (josh.white@vanderbilt.edu). We thank Ben Bennett (discussant), Jeff Coles (discussant), Elena Simintzi (discussant), Ranjan Banerjee (discussant), Naveen Daniel, Diane Del Guercio, Alex Edmans, Arup Ganguly (discussant), Peter Haslag, Peter Iliev, Swami Kalpathy, Jon Karpoff, Omesh Kini, Craig Lewis, Michelle Lowry, Erick Mas, Ron Masulis, Veronika Pool, Subra Subrahmanyam, Angel Tengulov, Randall Thomas, Sean Wilkoff, Tracie Woidtke, Nan Yang, Shan Zhao, and seminar participants at City University of Hong Kong, Peking University HSBC Business School, Hong Kong Polytechnic University, University of Kansas, University of Illinois at Chicago, Georgia State University, Pennsylvania State University, Iowa State University, University of Texas at Austin, and Vanderbilt University, and conference participants at 2021 Eastern Finance Association Conference, 2020 Drexel Corporate Governance Conference, 7th SEC Conference on Financial Market Regulation, 2020 AAA Annual Meeting, 2020 FMA Annual Meeting, 10th Emerging Markets Finance Conference for helpful comments, and the 2022 Smokey Mountain Conference. Ziyue Pan provided excellent research assistance. We thank Andrew Chamberlain and Glassdoor for permission to use employee reviews in our analysis. We gratefully acknowledge financial support from the Financial Markets Research Center at Vanderbilt University.

1. Introduction

The US Securities and Exchange Commission's (SEC) recently has mandated or proposed several disclosures related to human capital issues. While these disclosures do not rely on standardized accounting principles or concepts of materiality, they can offer insights into how firms manage an increasingly important asset. One such regulation, instituted in 2018, is the CEO pay ratio rule, which mandates that firms annually report the pay of the median employee and the ratio of the chief executive officer's (CEO's) total compensation to this value. Importantly, it is one of the first *required* disclosures in the US concerning non-executive pay practices, and therefore, offers the opportunity to study how employees and the reporting firms respond to such information.

The pay ratio is potentially a salient metric due to its simplicity and ability to attract considerable attention from stakeholders and the media. Yet, some critics contend that the disclosure's saliency could come at the expense of not providing valuable information content (Bank and Georgiev, 2019). For example, differential industries and business models could limit the metric's comparability across firms (Edmans, 2017). Nevertheless, stakeholders could still endeavor to compare the ratio, leading to distorted economic decisions by firms or its stakeholders.

In this paper, we focus on the response by employees and the firm to the CEO pay ratio disclosure during the first four reporting years. The ratio essentially compares the pay of rank-and-file workers to the CEO, so its revelation may resonate with the employees more than the information on CEO pay alone. Perceived inequity can stem not only from employees comparing their income to that of the CEO, but also from their own pay being less than that of disclosed median employee. This concern is further exacerbated by the fact that the rule does not require the firm to reveal the nature of the job, location, or tenure of the median employee.

Using anonymous employee reviews, we find that workers become more dissatisfied with their own compensation package and the CEO's performance when firms report a higher ratio. This relation is strongest in the first few reporting years. These firms also experience relatively lower gains in employee productivity. The negative response is primarily found when firms report an unexpectedly high ratio, which suggests that employees are not simply reacting to the optics of vertical pay disparity. These findings support the notion that highly salient metrics (Bordalo et al., 2022), such as the pay ratio, can have consequences that were not intended by the regulators.

We next investigate whether managers try to influence the reception of the ratio through

the supplemental narrative. As part of the rule, the SEC permits, but does not require, firms to augment the basic disclosure with narrative text about labor relations and pay practices. To soften the employee response, especially when the ratio is higher, we posit that managers might selectively emphasize positive aspects of their employee relations in the disclosure. The SEC does not dictate what firms can discuss in the pay ratio narrative, so such information could be cheap talk, rather than virtuous signals of their actual practices, akin to greenwashing environmental disclosures (Marquis et al., 2016). Other firms, however, might have valid reasons for a higher ratio, and thus could use the narrative to explain their pay practices. Finally, firms with a lower ratio could use the narrative as an opportunity to tout their ratio and its components.

To explore the use of discretionary language in pay ratio disclosure, we construct a dictionary that captures words that either positively portray aspects of employee relations or compensation packages. After validating our dictionary via a survey, we show that firms with unexpectedly high ratios have lengthier disclosures and use more of this discretionary language. Indeed, some of these firms appear to “spin” their ratio by trying to justify their human resource practices. For example, some words associated with spin include “fulfilling”, “creative”, and “team”. The spin language reflects aspects of employee relations when worker pay is in the bottom quartile of the sample and CEO characteristics when their pay is in the top quartile.

We note that there are some firms that explain their higher ratios by including discussions about one-time CEO stock grants or other factors that lead to a greater disparity, especially if it is temporary. Further, lower ratio firms use language that touts their treatment with terms like “equitable” and “internally consistent”.

We next examine the interaction of the use of spin for firms with high ratios on employee outcomes. Managers of firms with a high ratio might anticipate the negative employee response prior to disclosing the information, which could explain their proclivity to spin the metric in a positive light. Some discussions prior to the implementation of the rule suggested that providing extraneous narrative could draw unwanted attention (Barrall, 2017). Thus, using spin language could ultimately create more scrutiny about a firm’s pay practices, rather than ameliorating criticism. Further, the ratio could be so salient that any qualitative narrative, even if accurate, would not be enough to overcome its emotive element.

Ex-post, we find no evidence that greater use of spin attenuates the negative employee outcomes when reporting a high ratio. In fact, our analyses suggest that spin could even exacerbate

morale and productivity declines, but we temper our interpretation of this result, as expected responses could factor into the spin decision. Our results, therefore, suggest that the metric is salient enough that supplemental information human capital and pay practices does not overcome its emotive element.

In additional analyses, we explore media coverage of the pay ratio disclosures, which is an alternative channel that could affect employees. The tone of a firm's media coverage—which we find frequently references the pay ratio—becomes more negative after reporting a high ratio, supporting predictions that high ratio disclosures would attract media attention.¹ However, this negative media coverage tends to focus on extreme values of the pay ratio overall or within the geographic footprint of the media outlet and does not discern between expectedly and unexpectedly high ratios. Moreover, we find no evidence linking the negative media tone to the employee outcomes, which is consistent with employees focusing more on the unexpected portion of the ratio rather than the expected value. Thus, the media does not appear to drive our results on the employee response.

Our paper sheds light on the effects of revealing information on employee wages in relation to CEO pay. Though some critics predicted that few stakeholders would care about the ratio, we find reductions in employee morale and lower productivity gains after the initial disclosure of a high ratio. This finding is consistent with predictions that reporting high ratios or low worker pay could harm morale (Edmans, 2020). Our results indicate that disclosing pay disparity is consequential and adds to work showing pay transparency impacts other outcomes like wages (Card et al., 2012; Mas, 2017) and firm performance (Green and Zhou, 2021).

Other contemporaneous work also examines the aspects of pay ratio reporting. For example, papers find that reporting a high ratio leads to lower short-term stock performance (Sandvik et al., 2021), especially when firms have shareholders with pro social views (Pan et al., 2022). Other work is mixed on the link between high pay ratios and investor views of CEO pay. Crawford et al. (2021) find that investors are less likely to support CEO pay when they have a higher pay ratio, but Knust and Oesch (2020) find no relation between pay ratios and shareholder advisory votes for very small companies. Jung et al. (2021) find that firms often report a supplemental lower pay ratio that tends to be informative rather than opportunistic.

¹ Some predicted a “deluge of stories comparing the compensation ratios for various CEOs. Reporters won't even have to do the math.” <https://hbswk.hbs.edu/item/will-transparency-in-ceo-compensation-have-unintended-consequences>.

Our paper offers unique evidence on the CEO pay ratio disclosure by providing textual analysis of the disclosure narrative and investigating how firms alter their ratio and disclosure in the second year. We contribute to the literature by showing that firms attempt to window dress mandatory human capital reporting in a way that is analogous to overstating environmental investments (Gibson et al., 2021) or their commitment to stakeholder welfare (Raghunandan and Rajgopal, 2021). Though companies tend to spin the disclosure of a high pay ratio, such tactics are not fruitful in mitigating the adverse employee outcomes.

Our results also add to work showing the real effects of mandatory CSR disclosures on firms and its stakeholders (e.g., Christensen et al., 2017). Though we do not take a normative stance on whether the SEC's pay ratio is a valid metric for capturing pay disparity, its reporting appears to have real consequences on the firm and its stakeholders. The SEC recently expanded its human capital disclosure requirements in 2020 but offered firms flexibility in constructing these disclosures (Klemesh et al., 2019; Engel, 2021; Batish et al., 2021). Thus, we believe our findings are important to academics, policymakers, and practitioners in understanding how firms and employees respond to new disclosure regulations in this rapidly evolving space.

2. Background and conceptual framework

2.1. Pay ratio disclosure rule

Congress mandated that the SEC promulgate rules requiring CEO pay ratio disclosure in Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. The pay ratio rule requires SEC-reporting firms to disclose the annual total compensation of the CEO and median employee, as well as the ratio of these two figures. While SEC reporting firms have long been required to disclose executive compensation to investors, information on employee pay and discussions of vertical pay disparity are new information for most investors and other stakeholders such as employees.

The SEC proposed the pay ratio disclosure rule in 2013.² After receiving 308,561 comment letters and holding 14 meetings with market participants, the SEC finalized the rule in 2015.³ All SEC-reporting firms, except those meeting the definition of (i) Emerging Growth Companies; (ii) Smaller Reporting Companies; (iii) Foreign-Private Issuers, or (iv) Canadian firms filing reports on Form 40-F, are required to disclose the pay ratio annually for fiscal years beginning on or after

² Pay Ratio Disclosure, Proposed Rule (10/1/2013), <https://www.sec.gov/rules/proposed/2013/33-9452.pdf>.

³ Pay Ratio Disclosure, Final Rule (8/15/2015), <https://www.sec.gov/rules/final/2015/33-9877.pdf>.

January 1, 2017. Thus, the first pay ratio disclosures occur in calendar year 2018 and contain information from fiscal year 2017.

The SEC rule requires firms to disclose the pay ratio, typically in the proxy statement. The rule does not prescribe a particular location within the proxy and allows managers the discretion to provide additional narrative that assists investors in understanding its context. To reduce compliance costs, the SEC affords flexibility in identifying the median employee. Firms can use payroll records or statistically sample its workforce using consistently applied compensation measure, as long as it discloses material adjustments, assumptions, or exclusions. Firms can choose a date within three months prior to the fiscal year end to identify the median employee.

Once the median employee is identified, firms can retain the same employee for up to three years and simply update the worker's reported pay, so long as there are no material changes in its employee population or pay practices. If managers determine that the original median employee's compensation is atypical, they can substitute a similar employee. In subsequent years, firms must disclose any methodology changes or adjustments along with the reason for making such changes.

The SEC rule defines employees as any worldwide full-time, part-time, seasonal, and temporary workers of the company and its subsidiaries. Consequently, contractors are excluded from the pool of workers. Firms are permitted to exclude some foreign workers from their calculation based on the *de minimis* exemption, which permits exclusion of foreign employees from the pay ratio calculation if they account for 5% or less of their total workforce. Other nuances apply when using this exemption, but it affords managers the flexibility to remove some lower-wage workers from the median employee calculation, thereby deflating the ratio.

The SEC allows firms to make cost-of-living adjustments for employees outside the CEO's jurisdiction (e.g., outside US), but firms must also disclose where the median employee resides, how they modified the compensation, and an alternative ratio without the modification. Finally, firms can annualize compensation for full- and part-time employees that were not employed for the entire fiscal year but are not permitted to annualize seasonal or temporary employee pay.

2.2 Empirical predictions

It is unclear whether and how employees would react to the pay ratio disclosure. Some critics suggested that the metric would offer negligible incremental information, as the CEO's compensation was already reported, and employees know their own pay level. Thus, the disclosure could have little to no impact on how employees view the firm.

In contrast, the salient nature of the pay ratio metric, due to its potentially surprising and prominent nature (Bordal et al. 2022), could influence employees' views of the firm's senior managers and compensation practices. For example, the optics of reporting a high vertical pay disparity could diminish employees view of the CEO's or their own compensation structure, leading to a decrease their job satisfaction. Indeed, compensation consultants note that, prior to the rule's implementation, managers were most concerned about employee perceptions of the ratio (Speidel and Ownbey, 2018).

While prior work shows a strong and robust link between employee satisfaction and firm performance (Edmans 2011, 2012; Huang et al., 2020), there is more debate about how the existence of and transparency of coworker pay disparity affects productivity. One possibility is that greater pay differentials reduce morale, leading to lower effort that stifles productivity (Loh, 2017). Some work outside the context of a pay ratio supports this claim by showing that coworker pay transparency can reduce job satisfaction (Card et al., 2012) and employee output (Breza et al., 2018). More recent studies find that pay inequality, in general, is negatively related to firm performance (Rouen, 2020; Green and Zhou, 2021).

A different possibility is that within-firm pay inequality and transparency encourages employees to work harder to get promoted (i.e., tournament-based incentives), leading to higher productivity.⁴ Some empirical research corroborates this view by showing a positive relation between pay disparity and productivity for firms that disclose employee wages prior to the pay ratio rule (Faleye et al., 2013). Other work links greater pay inequality to better firm performance (Cheng et al., 2017; Mueller et al., 2017). Given the conflicting results in extant literature, the relation between pay transparency and employee morale and productivity is an empirical question we explore using the first public dissemination of pay ratio values.

The contentious nature of the pay ratio rule and the fact that firms lobbied for greater flexibility in its computation suggests that managers likely care about the optics of the reported values.⁵ As such, managers could utilize the discretion afforded by the SEC to provide additional narrative that is informative, such as explaining why the ratios are abnormally high, or alternatively to put a positive slant on the ratio or its components (Loughran and McDonald, 2016). Barrall

⁴ The SEC notes that some of the comment letters on the rule contend that pay ratio disclosures would encourage companies to reduce vertical pay disparity, which could ultimately improve employee morale and productivity.

⁵ See, e.g., comments by CEOs at the Business Roundtable: <https://www.sec.gov/comments/pay-ratio-statement/cl13-1664780-148922.pdf>. The SEC received more than 300,000 comment letters, which we summarize in Appendix A.

(2017) advocates for concise disclosures to avoid sounding defensive or attract unwanted attention (Barrall, 2017). He notes, however, that providing supplemental information might be useful in some situations such as when management is concerned about the employee response. Thus, we examine whether firms with higher ratios provide longer disclosures with more positive language about human capital management and pay practices. It is also possible that even lower ratio firms might use extra language to tout their lower value.

If the disclosure narrative alters the perception of executive or employee pay or the disparity between the two, then firms that add more context and explain compensation practices could experience a better employee response even when reporting a high ratio. In contrast, some compensation consultants note that providing additional context can have the opposite effect by attracting negative attention towards the firm and its pay practices (Barrall, 2017; Lifshey, 2018). Further, recent evidence suggests that firms touting their corporate social responsibility (CSR) could be virtue signaling or trying to pre-empt negative attention (e.g., Raghunandan and Rajgopal, 2021), rather than reflecting their actual practices. In this case, the perceived window dressing could worsen the employee reception when reporting a high ratio. Therefore, how employees respond to management discussions of employee compensation is an empirical topic we examine in the context of pay ratio disclosure.

3. Research design and data

3.1 Measures of pay disparity and compensation

Given the novelty of pay ratio disclosure, it is unclear what ratio value employees might consider to be high, so we implement multiple approaches. For our primary measure, we use the distribution of pay ratios and label firms with a pay ratio in the top quartile as having a *high pay ratio*, which equates to a ratio of 150 or greater in the first reporting year.⁶

In our tests, we compare disclosure and employee outcomes for firms with and without a high ratio. One concern with this approach is that differences in firm factors might drive the response rather than reporting a high ratio. We attempt to address these concerns by creating synthetic controls using entropy balancing (Hainmueller, 2012). Specifically, we reweight the controls such that the mean, standard deviation, and skewness of firm characteristics are highly

⁶ Certain pay-ratio thresholds might influence the optics of pay disparity between CEOs and employees as they do for earnings (Roychowdhury, 2006). Thus, we also test the sensitivity of this value using other key thresholds (e.g., 100, 200) and find similar results. In the Internet Appendix, we also show the findings are similar if we use a high industry pay ratio, high local pay ratio, or a continuous measure by taking the natural log of pay ratio.

similar between treatment (high ratio) and control (low ratio) firms.

In the Internet Appendix, we corroborate our results using a propensity score matched (PSM) sample approach. Although PSM can also attenuate bias due to differences in firm fundamentals, it requires a few design choices such as caliper width and matching with or without replacement (Roberts and Whited, 2013; Gong and Grundy, 2019). PSM also reduces the sample size by discarding unmatched firms. Entropy balancing does not require subjective design choices, imposes fewer constraints, and allows us to retain a larger sample.

Our second approach separates the pay ratio into expected and unexpected components. Observable differences across firms allow us to model predicted (or the expected) pay ratios, with some firms reporting unexpectedly high (or low) pay ratios. To ascertain whether firms and employees respond differentially to the expected or unexpected portion of the pay ratio, we follow Rouen (2020)—who studies pay ratio and firm performance prior to the SEC’s pay ratio rule—by first modeling expected CEO and employee pay as follows:

$$\ln(\text{CEO Pay}_{it}) = \alpha + \Phi_{it} + \text{Industry FE} + \epsilon_{it} \quad (1a)$$

$$\ln(\text{Median Employee Pay}_{it}) = \alpha + \varphi_{it} + \text{Industry FE} + \epsilon_{it} \quad (1b)$$

Our controls, Φ_{it} and φ_{it} , (defined in Appendix B) generally conform to Rouen’s estimations except for the following. We use the Fama-French 49 industries rather than 2-digit SIC codes for our fixed effects, although results are not sensitive to this choice. Since our sample includes non-US workers, we add the *de minimis exemption* and *foreign worker* indicators to our estimation. Our model also differs by using pay ratio reporting to the SEC rather than pre-disclosure census data.

For each firm year, we retain the fitted value from Eqs. (1a) and (1b) and denote these as expected CEO and median employee pay. Dividing the expected CEO and median employee pay generates an *expected pay ratio*, which we log transform. The *unexpected pay ratio* is then computed by taking the log of the reported pay ratio minus the log of the expected pay ratio. The model performs well as the *expected pay ratio* is 70% correlated with the reported pay ratio.

Using the CEO and median employee pay values provided by firms in the pay ratio disclosure, we also create values corresponding to the upper quartile of CEO pay for the first reporting year (*high CEO pay*) and the lowest quartile for median employee pay (*low employee pay*). In tests where we use *high CEO pay* or *low employee pay* as the variable of interest, we entropy balance on those measures rather than the *high pay ratio*.

3.2. Analysis of pay ratio disclosure properties

We analyze properties of the pay ratio disclosure to determine which actions managers take to potentially influence its reception. First, we evaluate the construction of the ratio. As noted in Subsection 2.1, firms have several choices when computing the median employee and their pay. We create a variable, *ratio adjustment*, that equals 1 if a firm utilizes the de minimis or M&A exemption or selects a date for identifying the median worker other than the fiscal year end. These choices have the greatest potential to impact the computation of the median employee’s reported compensation and are likely low-cost methods to pre-emptively manage perceptions of within-firm disparity. We expect firms with a high pay ratio to take more adjustments in order to reduce the reported ratio by increasing the reported median worker pay.

We next measure textual properties of pay ratio disclosure. We posit that firms might highlight positive attributes of employee relations or executive compensation in the disclosure narrative, particularly if they report a higher ratio. Further, firms could also use the narrative to explain why their values are particularly high or even low to offer consumers of the information better context. Using a Python script, we scrape the pay ratio disclosure from the proxy statement, which usually contains the header “Pay Ratio” or “CEO Pay Ratio.” We then manually verify that the scraped disclosure is complete, and hand collect missing information and disclosures not obtained by our script.

We generate a variable, *number of words*, which is a count of the total words in the pay ratio disclosure section. A higher word count could capture managerial intent to influence the perception of the pay ratio, resulting in longer descriptions. Longer disclosures, however, could simply proxy for more complex company or pay dynamics. For instance, firms utilizing the *de minimis* exemption might have longer disclosures from describing the employees that were excluded. In this sense, using more words in the disclosure narrative could be informative rather than represent opportunistic actions by managers.

To gauge whether managers provide factual, informative context or attempt to opportunistically influence the reception of the ratio, we generate a frequency distribution of all words used in the first year of pay ratio disclosure. We manually flag all language related to employee relations and culture or that justifies and explains the CEO’s pay based on recent stock performance or at-risk components. We then verify the context in which each flagged word is used and retain only words where most instances reflect such discretionary language. Our analysis

results in 98 unique words in the context of pay ratio, which are listed in Appendix C along with disclosure excerpts.

Most of the words we flag contain what we term “spin” language, which does not provide added context for the ratio value. For example, the word “talented” is sometimes used to describe employees in the narrative. Wynn Resorts reports a ratio of 909-to-1 and notes in their disclosure, *“Our talented and dedicated employees play an integral role in our overall success and we place great emphasis on creating an environment for our employees to excel and advance. We are committed to the development, health and well-being of our workforce through various programs, benefits and amenities.”*⁷

Other words, however, are more contextual and offer insights about the ratio’s underlying components. Terms like “temporary,” “one-time,” or “seasonal” can offer insights about the nature and composition of the workforce or explain one-time stock grants that boosted the recent CEO pay figure. Other words like “internally consistent” or “equitable” can offer insights about the approach firms take on pay structures within the firm that lead to a lower ratio overall.

We use a dictionary approach, rather than natural language processing techniques, because concerns of misclassification are limited in this setting. As Dyer et al. (2017) note, natural language processing approaches—such as Latent Dirichlet Allocation—can fail to capture the specific context of disclosure. Firms disclose the ratio in a specific section of the proxy statement, so the context is held constant in the corpus underlying our dictionary. That is, the pay ratio disclosure is limited to issues on CEO and median employee compensation or human capital. Thus, concerns of misidentifying spin due to noise are reduced because the topic identification is rather simple.

To validate our dictionary, we survey 102 US-based adults using Mechanical Turk. We ask each respondent to read 50 randomly selected sentences from actual pay ratio disclosures, of which 25 contain these discretionary words. The respondents, on average, correctly identify sentences that contain discretionary language 91% of the time (median of 96%). These results are statistically different from random chance at the 1% level. We provide survey design information and results in the Internet Appendix.

Once we identify all words that convey spin, we construct variables to measure the presence and intensity of spin. *Spin indicator* equals 1 if the pay ratio disclosure contains at least

⁷ See Wynn Resorts, Limited, SEC Form DEF 14A, April 18, 2018, available at <https://www.sec.gov/Archives/edgar/data/1174922/000119312518121082/d572661ddef14a.htm>. Appendix C provides examples of pay ratio disclosures.

one word from our spin dictionary and 0 otherwise. For each instance of spin, we also classify whether the language was referring to the CEO (*CEO spin*), employees (*employee spin*), or was ambiguous. For example, words like “diverse”, or “team” are used in discussions of employee pay, whereas words like “align” or “tremendous” are used more in reference to the CEO.

Spin words is a count of the number of spin words in a firm’s pay ratio disclosure. We do not scale *spin words* by the total *number of words* because high ratio firms might also use more total words to describe their ratio. However, all inferences are similar with a scaled measure of spin intensity, which we report in the Internet Appendix.

We test the properties of pay ratio disclosure using this equation:

$$PR\ disclosure_{it} = \alpha + \beta_1 Pay\ Ratio_{it} + X_{it} + Industry\ FE + \epsilon_{it}, \quad (2a)$$

where *ratio adjustment*, *number of words*, *spin indicator*, *spin words*, *CEO spin*, and *employee spin* are tested separately as the *PR disclosure* dependent variable. We use OLS with fixed effects for all indicator variables. The results are similar using a Probit regression, but Greene (2004) advises against this approach in the presence of fixed effects. For the count of the *number of words* and *spin words*, we follow the advice of Cohn et al. (2021) and employ a Poisson regression.

All regressions include a vector of control variables (X_{it}) described in Subsection 3.7, and industry fixed effects using the Fama-French 49 industries. A positive coefficient on β_1 would indicate that managers use more adjustments, words, and spin in the narrative when reporting a *higher pay ratio*, *expected pay ratio*, or *unexpected pay ratio* ($pay\ ratio_{it}$).

Similar to the tests of spin, we also examine whether the use of language portraying CEO or employee compensation in a positive light using a linear probability model:

$$Spin_{it} = \alpha + \beta_1 High\ CEO\ Pay_{it} + \beta_2 Low\ Employee\ Pay_{it} + X_{it} + Industry\ FE + \epsilon_{it}, \quad (2b)$$

where *high CEO pay* equals 1 when the firm’s CEO has reported pay in the top quartile of all firms that year, and otherwise 0. *Low employee pay* equals 1 if the firm’s median employee pay is in the lowest quartile of firms that year and otherwise 0. All other controls are identical to Eq. (2a).

3.3. Employee morale and productivity

Disclosing a high ratio could lower morale due to employees’ negative perceptions of the CEO’s or their own pay structure. To examine this possibility, we develop a Python script to collect anonymous employee ratings on Glassdoor.com. We create two variables. *CEO disapproval* equals 1 for employee ratings that disapprove, and 0 for approve, no opinion, or no response. The results are similar with alternative values for approve and no opinion. *Employee pay rating* takes

the value of 1 to 5 based on ratings of employee pay and benefits. We average these employee-level ratings at the firm level separately for the period 365 days before and after the pay ratio disclosure. We then test for changes in morale using OLS estimation of the following equation:

$$Morale_{i,t+1} = \alpha + \beta_1 Pay Ratio_{it} + \beta_2 Morale_{it} + X_{it} + Industry FE + \epsilon_{it}, \quad (3)$$

where i and t indicate firm and year, respectively. The variable of interest, *pay ratio* _{it} , includes computations outlined in Subsection 3.1. Morale regressions include lagged *CEO disapproval* _{it} and *employee pay rating* _{it} , controls (X_{it}) described in Subsection 3.7, and industry fixed effects using the Fama-French 49 industries. If reporting a high or unexpectedly high ratio negatively impacts morale, we expect a positive relation with subsequent *CEO disapproval* ($\beta_1 > 0$) and a negative relation with *employee pay rating* ($\beta_1 < 0$).

Reductions in morale could lead to a drop in productivity. Our primary measure of employee productivity is the natural log of sales per employee (e.g., Cronqvist et al., 2009), which maximizes the number of useable observations. We find similar results using total factor productivity in the Internet Appendix. If employees view the disclosure of a high pay ratio as reflecting unfair pay disparity, we expect any relatively lower productivity changes to occur in the fiscal year after the initial disclosure. Thus, we measure productivity in the first year of pay ratio reporting (*productivity* _{t}) and the subsequent year (*productivity* _{$t+1$}). We test the relation between disclosing the pay ratio and productivity changes by estimating this equation:

$$Productivity_{i,t+1} = \alpha + \beta_1 Pay Ratio_{it} + \beta_2 Productivity_{it} + X_{it} + Industry FE + \epsilon_{it}, \quad (4)$$

where i and t indicate firm and year, respectively. The variable of interest, *pay ratio*, includes computations outlined in Subsection 3.1. In addition to controls described in Subsection 3.7, X_{it} includes the fixed asset percentage (*fixed-to-total assets*), as work shows capital-intense firms are more productive (Cronqvist et al., 2009). Industry fixed effects use the Fama-French 49 industries.

3.4. Identification tests

Our primary research design analyzes the relation between a high pay ratio and the tendency to spin the disclosure or experience negative employee outcomes. While these tests establish a robust pattern in the data, our research design is subject to some limitations. First, we cannot distinguish between a response to the *disclosure* of a high pay ratio versus the underlying vertical pay disparity it is meant to reflect. Second, our analyses could suffer from omitted variable bias. Although the entropy balancing technique helps reduce bias in our coefficient estimates via

synthetic controls, the employee response could still be driven by factors absent from our specifications.

To address these concerns, we augment our analyses with three identification tests. These tests include (1) examining firms that voluntarily report aggregate employee wages prior to pay ratio rule; (2) a falsification test using firms that were exempt from pay ratio disclosure in the first fiscal year; and (3) a placebo test to capture any changes in employee outcomes prior to the rule.

3.4.1. Pre-rule labor expense disclosers

Our first identification test sheds light on whether prior reporting of employee wages influences the pay ratio disclosure and employee response. Approximately 20% of firms report aggregate wages in their financial statements prior to the pay ratio rule. When combined with executive compensation disclosures and the number of employees reported in 10-Ks, stakeholders could have inferred a pay ratio for these firms. Thus, for these firms, the eventual mandatory pay ratio disclosure provides less incremental information on vertical pay disparity.⁸

Managers of firms reporting prior aggregate wages might not feel compelled to spin a high pay ratio or provide more context on its construction. Similarly, if the negative employee outcomes solely reflect concerns of actual vertical pay disparity, and not just the disclosure, we would expect an attenuated response for firms where a high pay ratio could already be inferred. Alternatively, the new disclosure and related attention around reporting a high ratio could lead to a managerial or employee response, even if the high ratio is largely anticipated. In this case, even for firms that previously disclosed employee wages, we would expect managers of high ratio firms to spin the pay ratio narrative and employees to respond negatively to its disclosure.

To test this notion, we first identify firms that report aggregate wages prior to the pay ratio rule. The Compustat data item XLR contains annual values for total staff expenses. We create an indicator variable, *labor expense discloser*, that equals 1 if a firm has nonzero values of total staff expense in fiscal year 2016, which is one year prior to the pay ratio rule.

We then re-estimate Eqs. (2a), (3), and (4) after fully interacting *labor expense discloser* with all controls and fixed effects. In this test, a significant coefficient on *high pay ratio* \times *labor expense discloser* would indicate that the prior disclosure of employee wages influences the pay ratio disclosure properties or employee response. Conversely, a zero coefficient on this interaction

⁸ Following the methodology in Falaye et al. (2013), we find that aggregate employee wages can be used to construct a pay ratio that is 74% correlated with the eventually disclosed pay ratio.

would imply that, even when pay ratio information could be inferred, managers continue to use spin language and employees continue to respond negatively to a high pay ratio disclosure.

3.4.2. *Late adopter falsification test*

Our second identification test exploits the staggered nature of SEC compliance dates to identify firms that are late adopters.⁹ The pay ratio rule requires firms to disclose information for their first fiscal year starting on or after January 1, 2017. For most firms with a December fiscal year end, the corresponding disclosure occurs in the proxy in early 2018. However, firms with a fiscal year end between June and November were exempt from disclosing their pay ratio for fiscal year 2017 (FY17). For these firms, the first pay ratio disclosure did not occur until August 2018 or later and reflects CEO and employee compensation during fiscal year 2018 (FY18).

The exemption from providing a pay ratio disclosure for FY17 is solely related to pre-determined fiscal year end dates and should not correlate with reporting a high pay ratio. We exploit this setting by conducting the following falsification test. First, we categorize firms with a fiscal year end between June and November as *late adopters*.¹⁰ We then use their eventually disclosed pay ratio for FY18 to flag those with a *high pay ratio*. Finally, we re-estimate Eqs. (3) and (4) for this subsample to examine changes in the employee response around the proxy statement disclosure in the year before the actual pay ratio disclosure. For *late adopters*, we expect no relation between a *high pay ratio* in FY18 and changes in employee morale or productivity in the prior year (i.e., FY17 disclosure) as the ratio was unknown at this time. This result would provide additional evidence that the actual pay ratio disclosure elicits the employee response.

3.4.3. *Pre-rule placebo test*

Our third identification test uses a placebo pay ratio to examine whether there is an employee response prior to the mandatory pay ratio disclosure. For the subsample of firms in Execucomp, we obtain total CEO pay reported in the proxy statement in the year prior to mandatory pay ratio disclosure. Using the eventually disclosed median employee pay for the first reporting year, we create the variable, *implied pay ratio*, which is the pre-rule CEO pay in FY16 divided by eventually disclosed employee pay in FY17. Within this subsample, we create a variable, *high implied pay ratio*, that equals 1 for firms with a ratio in the top quartile, and

⁹ Prior work uses a similar approach in other settings, such as option vesting (Jochem et al., 2018).

¹⁰ We find few differences in the firm characteristics of *late adopters* and the full sample, except for lower ROA and market-to-book. We do not expect these factors to attenuate the response to disclosing a high pay ratio.

otherwise 0. We then re-estimate tests of changes in employee morale and productivity using Eqs. (3) and (4) for the year prior to the first pay ratio disclosure. In this case, we expect a zero coefficient on *high implied pay ratio* as the actual pay ratio and narrative had not been disclosed. This result would suggest that the disclosure of a high pay ratio drives the employee response, rather than actual pay disparity between the CEO and employees.¹¹

3.5. *Ex-ante cross-sectional tests*

We expect managers to alter the pay ratio disclosure properties when reporting a high ratio. Certain factors, however, might make some high ratio firms less inclined to provide additional narrative or spin the disclosure. To test this notion, we augment our model of pay ratio disclosure from Eq. (2a) to include an interaction term that captures three factors that could influence the managerial approach to reporting a high ratio.

For these tests, we use ex-ante measures prior to the pay ratio disclosure to avoid research design problems with conditioning on post-treatment variables. We fully interact each of the cross-sectional variables described below with *high pay ratio* and all other controls and fixed effects. If these factors attenuate (exacerbate) the tendency to provide extraneous information or spin, we expect a negative (positive) interaction between *high pay ratio* and each cross-sectional factor.

Our first factor is prior labor law violations in the form of employer wage theft, which disproportionately affects low-wage workers.¹² Prior wage violations likely impact the perceived credibility of statements related to employee pay. Thus, managers of such firms might not spin a high ratio disclosure, as employees could view it as “greenwashing.” Conversely, firms with prior labor violations might be *more* concerned about employee perceptions and take stronger actions to justify higher ratios in the disclosure narrative. We follow Raghunandan (2021) in using wage theft violations enforced by the US Department of Labor (DOL). The DOL conducts mostly random on-site inspections to audit company actions, such as forcing employees to underreport hours or work through paid breaks, or misclassifying workers to avoid paying overtime. We generate the variable *wage violations*, which tallies the total number of wage violations over the prior three-year period. We then focus on the coefficient of *high pay ratio* \times *wage violations* in tests of pay ratio disclosure properties.

¹¹ We cannot use the late adopter falsification or pre-rule placebo tests to examine the properties of the pay ratio disclosure since it was not reported prior to the SEC’s rule.

¹² Raghunandan (2021) notes that wage theft is the largest form of theft in the US. Raghunandan notes that 17% of low-wage employees are subjected to wage theft, which equates to 24% of their earnings on average.

Our second factor is stock performance, which we measure using *total shareholder return (TSR)* over the prior year. Managers of better performing firms might view the CEO pay ratio is being justified because, on average, approximately two-thirds of executive pay is tied to stock performance for our sample. Therefore, firms with higher recent stock performance might resist the temptation to provide extraneous information when reporting a high ratio. We expect a negative coefficient on *high pay ratio* \times *TSR* in tests of pay ratio length and spin.

The third factor is the influence of compensation advisors. As noted previously, compensation consultants strongly advised their clients to avoid the provision of discretionary information in the pay ratio disclosure to avoid drawing unwanted scrutiny (Barrall, 2017). Thus, we hand collect information on compensation consultants from the proxy statement and examine their interaction with a reporting a high ratio on disclosure.

For this test, we use ex-ante *number of consultants*, rather than an indicator approach, for two reasons. First, prior academic literature links the presence of compensation consultants to the complexity of pay packages (Murphy and Sandino, 2020). We expect this complexity to extend to novel pay ratio disclosures. Second, the *number of consultants* provides a more granular assessment than an indicator as 90% of sample firms disclose the presence of at least one compensation consultant. If consultants attenuate managerial tendencies to provide additional information in the pay ratio disclosure, we expect a negative coefficient on *high pay ratio* \times *number of consultants* in tests of disclosure properties.

We also expect a heterogenous employee response to disclosing a high pay ratio based on two ex-ante cross-sectional factors. First, prior work links corporate social responsibility (CSR) ratings to reductions in adverse employee behavior (Flammer and Luo, 2017). To the extent that firms have strong pre-disclosure investments in employee dimensions of CSR, it could attenuate the negative employee response to reporting a high ratio.

To proxy for employee-related CSR, we follow prior work (e.g., Kim et al., 2012) in using information from the Kinder, Lydenberg, and Domini (KLD) database. KLD provides indicator variables across several employee dimensions of CSR, which they classify as strengths or concerns. We generate a variable, *KLD index*, that is the net value of the sum of KLD's employee strengths (cash profit sharing, employee involvement, health and safety, supply chain policies, human capital development, labor management, non-controversial sourcing, and other employee strengths) less employee concerns (union relations, health and safety, supply chain controversies,

child labor, and labor management relations). We use the KLD values from 2017 to prevent potential contamination of reporting the pay ratio. We modify Eqs. (3) and (4) by fully interacting *KLD index* with all controls and fixed effects. We expect a negative coefficient on *high pay ratio* \times *KLD index*, indicating that prior investments in employee-related CSR could attenuate the negative employee response to disclosing greater vertical pay disparity.

Second, we expect that employee interactions with customers could be the mechanism by which employee dissatisfaction with reporting a high ratio could influence productivity. Because our primary measure of productivity is the natural log of sales per employee, we expect productivity changes to be stronger in industries where employees are more likely to interact directly with consumers, thus increasing the likelihood that their discontent could negatively impact revenue. Of the Fama-French 49 industries, we define *customer facing* industries as those in entertainment services (7), personal services (33), retail (43), restaurants and hotels (44), and banking (45). Expanding the industry set to include consumer goods (9), communication (32), and business supplies (39) does not alter the conclusions. We then modify Eqs. (3) and (4) by fully interacting *customer facing industry* with all control variables. Because this variable is an industry measure, we do not include industry fixed effects. In tests of employee productivity, we expect a negative coefficient on *high pay ratio* \times *customer facing*. Importantly, we do not expect a differential interaction of high ratios and customer-facing industries on *CEO disapproval* or *employee pay rating* as these factors should not be influenced by customer interactions. Thus, we expect a zero coefficient on *high pay ratio* \times *customer facing* in tests of employee morale.

3.6. Ex-post influence of spin on employee outcomes

A natural question is whether spin can attenuate the negative influence of reporting a high pay ratio on employee outcomes. We examine this possibility in this equation:

$$Y_{it} = \alpha + \beta_1 \text{High Pay Ratio}_{it} + \beta_2 \text{Spin}_{it} + \beta_3 \text{High Pay Ratio}_{it} \times \text{Spin}_{it} + X_{it} + X_{it} \times \text{Spin}_{it} + \text{Industry FE} + \text{Industry FE} \times \text{Spin}_{it} + \epsilon_{it}, \quad (5)$$

where Y_{it} includes *CEO disapproval*, *employee pay rating*, *employee productivity*. We test the variable *spin* separately using the *spin indicator* and the natural log of 1 plus *spin words*. We fully interact *spin* with *high pay ratio* and all other controls and fixed effects. Controls are identical to Eqs. (3) and (4), but results are robust to controlling for cross-sectional factors that could influence the disclosure and employee response in Subsection 3.5. If spin attenuates negative employee outcomes, we expect a positive coefficient on β_3 for tests of *employee pay rating* and *employee*

productivity, and a negative coefficient on β_3 for tests of *CEO disapproval*.

3.7. Control variables

We follow extant literature by including the following controls in disclosure and employee outcome regressions: *size* using the natural log of total assets, growth opportunities using the *market-to-book* ratio, and *leverage* using total debt divided by assets. We control for performance using *return-on-assets*, *sales growth*, and *TSR* over the past year. Other controls include the percentage of *cash-to-assets* and *R&D-to-assets* (we zero out the missing R&D values), the percent of *institutional ownership* and a *union indicator*. Appendix B provides variable definitions.

3.8. Data

We construct our sample by obtaining pay ratio data for the Russell 3000 from Equilar, a large industry provider of executive compensation data. The data include the disclosed pay ratio and compensation for the CEO and median employee during calendar years 2018 and 2019. As noted in Subsection 2.1, the SEC exempts certain firms from disclosing pay ratios, thus our sample contains fewer than 3,000 observations each year. In reporting year two, we have data for 89% of the firms that reported their pay ratios in reporting year one. The final sample includes 4,669 pay ratio disclosures by 2,535 firms. We detail its construction in the Internet Appendix.

Equilar provides us with data on how firms construct median employee compensation, their use of any exclusions, and the date the employee is chosen relative to the fiscal year end. We obtain institutional ownership from Thomson Reuters Institutional (13f) Holdings. Financial and stock price data are from Compustat and CRSP. CEO age and tenure are from Execucomp, MSCI GMI, proxy statements, and Capital IQ.

SEC filing dates are from WRDS SEC Analytics Suite. We follow Huang et al. (2017) in generating a *union indicator* that equals 1 when the firm mentions having a union, collective bargaining agreement, or works council in its 10-K. We search the Bloomberg Terminal and Google for union information when it is not disclosed. We obtain data on right-to-work laws from Workplace Fairness, college education from the US Census Bureau's 2017 American Community Survey, and income from the Bureau of Labor and Statistics' Quarterly Census of Employment and Wages. Wage violations data are from Good Jobs First's Violation Tracker database.

4. Results

4.1. Summary statistics

Panel A of Table 1 presents statistics on the pay ratio and CEO and median employee pay for the first two reporting years. In the first reporting year (denoted as “RY1”), the mean (median) pay ratio is 153.1 (72.0). In the second reporting year (“RY2”), the mean (median) pay ratio rises to 173.8 (77.0). Figure 1 depicts the distribution of the ratios, with values winsorized at 500-to-1.

[Insert Table 1 and Figure 1 about here]

To understand the drivers of the ratio, we report statistics on the underlying components, CEO and median employee pay. In RY1, the average CEO earns \$6.8 million, while the median employee earns \$78,600. Mean CEO compensation rises to \$8.2 million in RY2, while median employee compensation rises to \$81,300. For firms that are in the sample in both years, the median value of CEO compensation rises by 6.1%, while employee compensation rises by 3.4%.

Figure 2 portrays the distribution of the *change* in the pay ratio from RY1 to RY2. It suggests that, while a large number of ratios change slightly, there were significant outliers, including 64 firms with increases of greater than 200% that are winsorized in the figure. Figure 3 illustrates that the changes in the ratio are largely driven by the change in CEO compensation, which exhibits much greater variability than median employee pay across the two years.

[Insert Figure 2 and Figure 3 about here]

Panel B of Table 1 reports the distribution of sample firm characteristics during RY1. The median firm has a market-to-book ratio of 1.3 and 82% institutional ownership. For performance, the median firm has a return on assets of 5.3% and TSR of 12.5% over the prior fiscal year. As a percentage of total assets, the average firm has 3.7% R&D, 15.6% cash, and 24.8% leverage. Approximately 38.1% of firms have at least some unionized employees.

Panel C reports the firm characteristics after entropy balancing the *high pay ratio* and *low pay ratio* subsamples across the mean, variance, and skewness of control variables. Our balancing approach uses the characteristics of high pay ratio firms to create synthetic controls that have highly similar properties other than the pay ratio.

4.2. Analysis of pay ratio disclosure

Table 2 presents analysis of the pay ratio disclosure for RY1. We test the relation between the ratio and the use of exemptions in computing the median employee compensation, the length of the associated narrative, and the use of spin. Panel A contains summary statistics. Overall, 53% of firms use a *ratio adjustment* when computing the median employee or their compensation, with the most common being choosing a date other than the fiscal year end to select the median worker.

For firms with a December or January fiscal year end, this choice likely deflates the ratio by excluding seasonal workers. *High pay ratio firms* are significantly more likely to use all forms of adjustments than *low pay ratio firms*. Therefore, while adjustments can boost the reported median worker pay and lower the reported ratio, firms frequently using them still report higher values.

[Insert Table 2 about here]

The average (median) pay ratio narrative contains 376 (351) words. Firms with a *high pay ratio* use 62 more words on average than firms with a *low pay ratio*. Approximately 21% of pay ratio disclosures use at least one word from our spin dictionary. Firms with a *high pay ratio* are more likely to use spin than *low pay ratio firms*. Results are similar using the count of *spin words* rather than the *spin indicator*, and when focusing on *employee spin* or *CEO spin*. These differences are all statistically different from zero at the 1% level in univariate tests.

Panel B presents regressions of the ratio adjustment and disclosure properties. Across our measures, there is a positive and significant relation between ratio adjustment activities and a *high pay ratio*. The results are also economically significant. For example, exponentiating the Poisson estimated coefficient in Column (3) indicates that firms reporting a *high pay ratio* have disclosures that are 13.4% longer—or use 50 additional words—on average. High ratio firms are 9.7% more likely to use spin language (Column 5), which is significant at the 1% level ($p=0.001$). This result is a 47% increase from the sample mean of 20.7% in Panel A. Moreover, exponentiating the coefficient in Column (6) shows that high ratio firms utilize 31.9% more *spin words* than low ratio firms. Thus, firms reporting a wider pay gap have substantially more pay ratio adjustments, longer disclosures, and exhibit a greater presence and intensity of using spin language.

Further, Panel B shows that the *unexpected pay ratio* is positively related to the use of exemptions and disclosure properties, suggesting that firms use more adjustments and include more narrative and spin when they potentially anticipate reporting an unexpectedly high value. The expected component is also positive and significant in all specifications, except for the number of spin words, which indicates that firms generally care about the optics of disclosing a high ratio even when it could be anticipated based on firm, CEO, and employee characteristics.

In Panel C, we explore whether firms differentially utilize spin language in pay ratio discussions of employees versus CEOs. For these tests, we include the indicators for having high CEO or low employee pay. We find that the positive association with *high pay ratio* is found in both types of spin. Whereas *employee spin* is related to both the unexpected and expected portion

of the ratio, *CEO spin* is only related to the unexpected component. Further, *employee spin* is more likely to be present when employee pay is in the bottom quartile but unrelated to *high CEO pay*. Likewise, *CEO spin* is only related to *high CEO pay* and not *low employee pay*.

Collectively, the results in Table 2 indicate that firms reporting higher pay ratios use more ratio adjustments and words to describe the pay ratio. These firms also have a greater propensity to spin the disclosure.¹³

4.3. Pay ratio and employee morale and productivity

Table 3 explores the relation between pay ratios and changes in employee morale and productivity. In tests of *CEO disapproval*, the coefficient on the *high pay ratio* in Column (1) is positive and significant at the 1% level, which indicates that reporting a high ratio is accompanied by an increase in employee disapproval of the CEO relative to firms that report a low pay ratio. The coefficient of 0.017 is also economically significant as it represents 32.7% of the sample mean of *CEO disapproval* (5.2%).

[Insert Table 3 about here]

In Column (3), the coefficient on *high pay ratio* is negative and statistically significant at the 1% level in the test of *employee pay rating*, which suggests employees are less favorable about their own remuneration when firms report a higher pay ratio. Both measures of employee morale are only statistically related to the *unexpected* component of the pay ratio in Columns (2) and (4), indicating that the relatively lower change in morale is driven by disclosing surprisingly high pay disparity.

In Column (5), the coefficient on *high pay ratio* is negative and significant at the 5% level, implying that reporting a high ratio leads to lower productivity gains relative to firms reporting a low ratio. The 3.1% lower productivity is economically meaningful and in line with the magnitude of other studies, such as the relation between management quality and employee productivity (Bloom et al., 2019). Column (6) indicates that relatively lower changes in employee productivity is related to reporting an unexpectedly high ratio, which suggests that employees respond to new information contained in the disclosure.

4.4. Identification tests

¹³ Additional narrative could attract SEC attention if firms provide misleading information. Using comment letter data, we find no evidence of SEC correspondence referencing the pay ratio disclosure during the first two reporting years.

Table 4 reports the results of our identification tests. In Panel A, we first test whether pre-rule disclosure of aggregate employee wages leads to a differential response to the mandatory reporting of a high pay ratio. The coefficients on *high pay ratio* \times *labor expense discloser* are not statistically different from zero in any tests of the disclosure properties or employee response. Thus, managers and employees appear to respond to the *disclosure* of the high pay ratio and not just the underlying vertical pay disparity it is meant to reflect.

[Insert Table 4 about here]

Panel B reports the falsification test for late adopters that were exempt from pay ratio reporting in FY17. Recall that we use their FY18 pay ratio disclosure to examine the employee response around the FY17 proxy disclosure (i.e., before the pay ratio is known). In Columns (1) to (3), the coefficients on the *high pay ratio* are not statistically different from zero across any tests of the employee response. Thus, *late adopters* with high pay ratios did not experience the same adverse employee outcomes during FY17 when they did not provide a pay ratio disclosure. We caveat that the smaller sample size could limit the power of these tests. However, the coefficients are the opposite sign of the main specifications in Table 3 for *CEO disapproval*, and *employee pay rating*. Thus, these results support the notion that the ratio disclosure elicits the employee response.

In Columns (4) to (6), we conduct the placebo test to ascertain whether high ratio firms experience changes prior to the pay ratio rule enactment. As noted, we generate a *high implied pay ratio* using information on pre-disclosure CEO pay and the eventually disclosed median employee pay. We then test for changes in employee morale and productivity in the year prior to the first pay ratio disclosure. In all three tests, the variable *high implied pay ratio* is not significantly related to changes in employee outcomes. These results provide further evidence that firms with high vertical pay disparity did not experience the same adverse employee outcomes in the year before first disclosing the pay ratio. Taken together, the findings in Table 4 further support the notion that the *disclosure* of a high pay ratio likely drives the changes in the employee outcomes, and not simply the pay disparity that the SEC intended the ratio to reflect.

4.5. Cross-sectional tests

In this subsection, we examine several factors that could influence the propensity to alter the properties of pay ratio disclosure or the employee response for firms reporting a high pay ratio. In Panel A of Table 5, we examine the role of prior wage violations. Columns (1) and (2) show no effect of *high pay ratio* \times *wage violations* on ratio adjustments or pay ratio length. However, in

tests of pay ratio length and spin in Columns (3) and (4), we find negative coefficients on *high pay ratio* \times *wage violations* that are significant at the 5% level or better. Thus, the presence of prior labor law violations appears to attenuate the tendency of high ratio firms to spin the pay ratio disclosure.

[Insert Table 5 about here]

In Panel B, we test the influence of stock returns on the pay ratio disclosure. Column (1) shows that stock returns have no discernable influence on discretionary ratio adjustments. In Columns (2) to (4), however, the coefficient on *high pay ratio* \times *TSR* is negative and significant at the 5% or 10% level. This result indicates that high ratio firms with better prior stock performance moderate their propensity to use additional language and spin the ratio disclosure.

Next, we examine the potential moderating influence of compensation consultants on pay ratio disclosure in Panel C. The coefficient on *high pay ratio* \times *number of consultants* is negative and significant at the 5% or 10% level for tests of *ratio adjustment*, *spin indicator*, and *spin words*. Thus, high ratio firms with a greater presence of compensation consultants tend to take fewer disclosure actions to spin the pay ratio disclosure, which is consistent with anecdotal evidence of consultants advising firms to limit disclosure narrative that could attract attention.

Turning to cross-sectional factors influencing the employee response, we first examine whether prior investments in employee-related CSR attenuate the negative response to disclosing a high pay ratio. Recall that we use the *KLD index*, which is a net value of KLD's employee strengths less weaknesses. In Column (2) of Panel D, we find no interaction effect between *high pay ratio* and *KLD index* in tests of *employee pay rating*. In Columns (1) and (3), however, we find that higher values of the *KLD index* helps offset increases in *CEO disapproval* and decreases in *employee productivity* after reporting a high ratio. Thus, better ex-ante employee-related CSR ratings have a moderating effect on the employee response to reporting a high ratio.

In Panel E, our last cross-sectional test examines the potential influence of customer-facing industries on the employee response to a high ratio disclosure. As predicted, the coefficient on *high pay ratio* \times *customer facing* is not statistically different from zero for tests of *CEO disapproval* and *employee pay rating* in Columns (1) and (2). The coefficient on the interaction, however, is negative and significant at the 1% level for tests of *employee productivity* in Column (3). This result suggests that when employees are dissatisfied with vertical pay disparity, their displeasure can spillover to customer interactions and reduce revenue per worker.

4.6. Ex-post relation between spin with employee outcomes

In this subsection we examine whether spin language in the pay ratio disclosure can mitigate the negative employee response to disclosing a high ratio. In Table 6, we estimate Eq. (5) to examine changes in employee outcomes after interacting *high pay ratio* with the *spin indicator* in Panel A and with number of *spin words* in Panel B. If spin attenuates the negative employee response, we expect a positive coefficient on the interaction term for tests of *employee pay rating* and *employee productivity*, and a negative coefficient in tests of *CEO disapproval*.

[Insert Table 6 about here]

In Panels A and B, the coefficients on the interaction term of *high pay ratio* \times *spin* are insignificant for *CEO disapproval*. This interaction term, however, is negative and significant at the 5% level for changes in *employee pay rating*. Moreover, in Panel B, the coefficient on *high pay ratio* \times *spin words* is negative and significant at the 5% level in tests of *employee productivity*. These signs are the opposite of what we would expect if spin language mitigated the negative employee outcomes. In fact, the negative interaction suggests that spin exacerbates the adverse employee reaction to a high ratio. However, we caveat this interpretation due to potential selection bias. It is possible that when firms anticipate negative employee outcomes, they are more likely to window dress their disclosure. Still, these results fail to support the notion that spin attenuates the relation between high ratios and negative employee outcomes.

5. Changes in reporting year two

Our analyses thus far examine the initial reporting of pay ratios, which corresponds to the first occasion that stakeholders learn of median employee pay and the pay ratio for all firms. In this section, we explore changes to pay ratio properties and disclosure in RY2.

5.1. Changes in pay ratio construction

Given the negative employee response to reporting a high ratio—and the inability to attenuate this response via spin—we posit that firms reporting a high pay ratio in RY1 might take actions to deflate the ratio in RY2. We thus examine the propensity to report increases in employee pay or declines in CEO pay in the second reporting year.

We hand collect whether firms change the median employee in RY2 and examine whether this decision correlates with RY1 ratios. We categorize changes in the median employee selection as *change employee* (15%); *same employee* (67%), and *not clear* (18%). Panel A of Table 7 shows that high pay ratio firms from the first year have a 12-percentage point greater propensity to

explicitly change their median employee in RY2 and that these firms report almost 10% higher median employee pay, thereby deflating the pay ratio. The results are similar in a regression framework with standard controls.

[Insert Table 7 about here]

Further, we hand collect the reasons mentioned for changing the median employee and create five categories: (1) acquisition or change in workforce composition (30%); (2) unusual pay of original median employee or change in circumstance (15%); (3) median employee no longer employed (29%); (4) median employee got raise or promotion (11%); and (5) no reason or methodology change (16%). As shown in Panel B, high ratio firms in RY1 are more than twice as likely (24% vs 10%) to provide no reason for why they change the selected median employee in RY2. This associates with a 24% greater increase in the median employee pay versus firms that provide a reason for changing the median employee, further deflating the ratio.

It is also possible for the ratio to decline due to a decrease in CEO pay. Because this approach is costly for the CEO, and the labor market generally determines CEO wages (Cremers and Grinstein, 2014), we do not expect this to be a viable strategy for mitigating the ratio. However, given that high ratio firms often have higher CEO total pay, we could still observe declines or lower increases due to reversion due to one-time stock or option awards and incentive pay structures. Thus, in Panel C of Table 7, we report changes in CEO pay stratified based on the first year reported ratio. Given the volatility in CEO pay, we largely focus on changes in the median pay. We find that high ratio firms from RY1 have smaller increases in total compensation in RY2, which is driven by both smaller increases in equity-based pay and a slight decline in the median non-equity compensation.

5.2. Changes in pay ratio disclosure

We explore whether firms alter their disclosure, including the length and use of spin based on changes in the reported ratio. For these tests, we create a variable, $\Delta \text{ pay ratio}$, which is the percent change in the ratio, winsorized at the 1% level in each tail. We take the absolute value of the change so that when we partition the sample into increasing or decreasing ratios, the coefficients reflect larger changes. Regressions with $Abs(\Delta \text{ pay ratio})$ as the variable of interest include controls for the lagged dependent variable and the same controls as Eq. (2a).

[Insert Table 8 about here]

In Table 8, the coefficients on the lagged dependent variable are positive and highly

significant, indicating that the properties of pay ratio disclosure are quite “sticky” in this setting (Skinner, 2003). In other words, the initial disclosure policy set in RY1 significantly influences the pay ratio narrative in RY2.

The coefficients on $Abs(\Delta \text{ pay ratio})$ show that the narrative length changes in response to variation in the reported pay ratio. For example, Column (1) shows that larger pay ratio changes correspond to larger changes in the *number of words* in the disclosure. Columns (2) and (3) show that the length of the pay ratio narrative tends to increase or decrease in the same direction as the change in the pay ratio. Columns (4) to (6) show that the presence of spin language is also sticky. We observe no relation between the extensive margins of spin and changes in the pay ratio. However, the results in Columns (8) and (9) indicate that the intensive margins are sensitive to variation in the ratio. We see some strengthening of spin intensity when pay ratios increase (Column 8), and strong evidence of a decrease in spin intensity when pay ratios decline (Column 9). These results suggest that firms alter their pay ratio narrative based on changes in the pay ratio, but some aspects of the disclosure remain sticky.

6. Additional tests

6.1. Media coverage

When the ratios are first published, one immediate consequence could be to attract media coverage. Bank and Georgiev (2019) argue that the intuitive nature of a pay ratio has the potential to resonate with the public and draw more media attention than other compensation-related disclosures. For example, prior work finds that media coverage of firms with higher CEO pay tends to be negative (Kuhnen and Niessen, 2012). Core et al. (2008) find this negative coverage is related to excess, rather than raw, executive pay, suggesting the media are sophisticated in covering compensation. We expect that reporting higher pay ratios results in a deterioration in the sentiment of media articles covering the firm during proxy season. If changes in media sentiment are related, however, to the unexpected component of the ratio, it would indicate a nuanced approach. If declines in media sentiment do not correlate with unexpectedly high ratios, it could indicate a sensationalized “name and shame” approach by reporters covering pay ratio disclosures.

We measure changes in the sentiment of media coverage using data from RavenPack News Analytics for the 30 calendar days after the initial proxy statement disclosure and compare this coverage to the same period in the prior year. To assess the sentiment of media coverage, we follow

Shi et al. (2016) by generating a weighted event sentiment score (*WESS*) that weights the tone of news stories based on the novelty of the article. It is calculated as follows:

$$WESS_{i,t} = \frac{1}{T} \sum \frac{(ESS_{i,\tau} - 50)ENS_{i,\tau}}{100}, \quad (6)$$

where i and t indicate firm and year, T is the total number of news stories, *ESS* is RavenPack's Event Sentiment Score, *ENS* is RavenPack's event novelty score, and τ is the time when story is received. We average *WESS* for all stories during the 30-day period and label this value as *media sentiment*, which we test in this regression using OLS:

$$Media\ Sentiment_{it} = \alpha + \beta_1 Pay\ Ratio_{it} + \beta_2 Media_{it-1} + X_{it} + Industry\ FE + \epsilon_{it}, \quad (7)$$

where i and t indicate firm and year, respectively. We include the lagged values of media sentiment in the prior year, the controls (X_{it}) described in Subsection 3.7, and industry fixed effects using the Fama-French 49 industries. The variable of interest, *pay ratio*, includes *high pay ratio* and the log transformed values of *unexpected pay ratio* and *expected pay ratio*. We also test an additional measure to capture media coverage of local firms. If the pay ratio is in the top quartile of firms in the same core-based statistical area, we designate the firm has having a *high local pay ratio*.

[Insert Table 9 about here]

In Table 9, the coefficient on *high pay ratio* in Column (1) is negative and significant at the 5% level, indicating that media sentiment becomes lower for firms disclosing a high pay ratio relative to those with a low ratio. The coefficient on *high pay ratio* is meaningful as it represents 12.6% of the sample average of *media sentiment*. Similarly, the coefficient on *high local pay ratio* in Column (2) is negative and significant at the 5% level. Neither the expected nor unexpected component of the pay ratio in Column (3) are statistically related to media sentiment. We interpret these findings as showing that the media tends to focus on extremely high pay ratio values, regardless of whether that ratio is related to underlying firm fundamentals. In untabulated analyses we find no link between declines in media sentiment around pay ratio disclosure and changes in employee morale or labor productivity.

Ideally, we could confirm that the articles in RavenPack reference the pay ratio, but this type of keyword search is not possible in this dataset. Thus, we search for articles in Factiva around the pay ratio disclosure. For firms with a *high pay ratio* and declines in *media sentiment*, we find a number of news articles referencing pay ratios or low median employee pay versus firms in the same geographic location. We provide examples of these articles in the Internet Appendix.

6.2. Robustness tests

In the Internet Appendix, we conduct several robustness tests with additional controls or exclusions. We examine alternative measures of the pay ratio including the log transformed value, a *high industry pay ratio* based on the top quartile of the firm's industry distribution, and a *high local pay ratio* variable described in Subsection 6.1. The pay ratio disclosure and employee outcomes are generally similar using these alternative measures of the pay gap.

We confirm that the results are robust to controlling for one-time compensation grants. We also exclude CEOs paid less than \$1,000 per year from our tests of disclosure properties and employee outcomes and find similar results. Further, we obtain similar results when controlling for the CEO pay slice versus other executives, the number and percentage of foreign employees when disclosed, the level of vertical integration, and for organizational complexity using the number of operating segments. We also verify that our findings do not reflect the amount or type of information in the CD&A section of the proxy statement.

Additionally, we conduct an event study of the 3-day $[-1,+1]$ and 7-day $[-1,+5]$ abnormal announcement returns around the date in which the pay ratio is first released (day 0) to examine whether the market reacts to the pay ratio disclosure. These tests follow the approach of Pan et al. (2021), who report a negative market response to the disclosure of a ratio in the top tercile of the distribution, especially when shareholders have prosocial preferences. We caution, however, that measuring the market response to pay ratio disclosure is noisy due to other information being simultaneously released in the proxy statement.

We find a negative and significant relation between *high pay ratio* and returns in the 7-day window. However, these results are sensitive to the model specification. The 7-day returns become insignificant when including firm controls and industry fixed effects. None of the 3-day returns are statistically different from zero. Given the noisy setting and sensitivity of these results to model specification, we are cautious to conclude that disclosing a high ratio generates negative returns.

7. Conclusion

Our study examines the SEC's recently mandated CEO pay ratio disclosure rule. The novelty of the disclosure affords a unique setting to assess how firms and employees respond to the new information about vertical pay disparity and employee pay. We find that firms avail themselves of exemptions and other choices that can help boost reported median employee pay and lower the ratio, but such firms, on average, still tend to have higher ratio values. High ratio

firms provide longer discretionary narratives that describe the pay ratio and tend to include spin language that portrays their employee relations or CEO in a positive light. Those firms that have better prior performance, more compensation consultants, and prior wage-related labor violations are less likely to use spin even if they have a higher ratio.

Firms reporting a higher ratio experience declines in employees' view of the CEO's performance and their own pay, particularly when the reported ratio is unexpectedly high. These firms also experience lower gains in employee productivity, especially in industries where employees could directly impact sales, such as those that interact frequently with customers. Placebo and falsification tests suggest that employees are responding to the disclosure of the ratio and not just the existence of the vertical pay disparity. Prior investments in employee-related CSR help attenuate the negative employee response to a high ratio. Overall, the employee tests reinforce that notion that mandatory human capital disclosure is consequential for key stakeholders.

Using more spin language does not attenuate the adverse response by employees to reporting a high pay gap. Thus, attempts to assuage negative perceptions of pay practices using discretionary disclosure are not fruitful in this setting. This finding implies that employees see through attempts to window dress human capital disclosure, which is akin to firms attempting to window dress environmental practices (i.e., greenwashing) but failing to back up those statements with actual actions (Gibson et al., 2021). In the second reporting year, firms continue to make choices that help minimize the reported pay inequality and reduce spin proportionally when their pay ratio declines.

More broadly, our study contributes to the growing literature on CSR and human-capital related disclosures (e.g., Dhaliwal et al., 2011; Christensen et al., 2017; Batish et al., 2021). Recent demands by institutional investors, regulators, and organizations such as the Sustainability Accounting Standards Board call for greater transparency on firms' human capital practices. Thus, our study helps inform policymakers, researchers, and corporate leaders how managers and stakeholders respond to mandatory disclosures on dimensions of human capital management.

References

- Agrawal, A., Hacamo, I., Hu, Z., 2021. Information dispersion across employees and stock returns. *Review of Financial Studies*, 34, 4785-4831.
- Bank, S., Georgiev, G., 2019. Securities disclosure as soundbite: The case of CEO pay ratios. *Boston College Law Review*, 60, 1123-1203.
- Barrall, J., 2017. 10 Consensuses on CEO pay ratio planning. *Harvard Law School Forum on Corporate Governance*. <https://corpgov.law.harvard.edu/2017/12/04/10-consensuses-on-ceo-pay-ratio-planning/>.
- Batish, A., Gordon, A., Kepler, J., Larcker, D., Tayan, B., Yu, C., 2021. Human capital disclosure: What do companies say about their ‘most important asset’? Working paper, Rock Center for Corporate Governance at Stanford University. <https://ssrn.com/abstract=3840412>.
- Bloom, N., Brynjolfsson, E., Foster, L., Jarmin, R., Patnaik, M., Saporta-Eksten, I., Van Reenen, J., 2019. What drives differences in management practices? *American Economic Review*, 109, 1648-83.
- Bordalo, P., N. Gennaioli, N., Shleifer, A., 2022. Salience. *Annual Review of Economics*, 14, 521-544.
- Breza, E., Kaur, S., Shamdasani, Y., 2018. The morale effects of pay inequality. *Quarterly Journal of Economics*, 133, 611-663.
- Card, D., Mas, A., Moretti, E., Saez, E., 2012. Inequality at work: The effect of peer salaries on job satisfaction. *American Economic Review*, 102, 2981-3003.
- Cheng, Q., Ranasinghe, T., Zhao, S., 2017. Do high CEO pay ratios destroy firm value? Working paper, Singapore Management University. <https://ssrn.com/abstract=2861680>.
- Christensen, H., Floyd, E., Liu, L., Maffett, M., 2017. The real effects of mandated information on social responsibility in financial reports: Evidence from mine-safety records. *Journal of Accounting and Economics*, 64, 284-304.
- Cohn, J., Liu, Z., Wardlaw, M., 2021. Count data in finance. Working paper. <https://ssrn.com/abstract=3800339>.
- Core, J., Guay, W., Larcker, D., 2008. The power of the pen and executive compensation. *Journal of Financial Economics*, 88, 1-25.
- Crawford, S., Nelson, K., Rountree, B., 2021. Mind the gap: CEO-employee pay ratios and shareholder say-on-pay votes. *Journal of Business Finance and Accounting*, 48, 308-337.
- Cremers, K.J.M., Grinstein, Y. (2014). Does the market for CEO talent explain controversial CEO pay practices? *Review of Finance*, 18, 921-960.
- Cronqvist, H., Heyman, F., Nilsson, M., Svaleryd, H., Vlachos, J., 2009. Do entrenched managers pay their workers more? *Journal of Finance*, 64, 309-339.
- Dhaliwal, D. S., Li, O. Z., Tsang, A., Yang, Y. G. 2011. Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review*, 86, 59-100.
- Dyer, T., Lang, M., Stice-Lawrence, L., 2017. The evolution of 10-K textual disclosure: Evidence from Latent Dirichlet Allocation. *Journal of Accounting and Economics*, 64, 221-245.
- Edmans, A., 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, 101, 621-640.
- Edmans, A., 2012. The link between job satisfaction and firm value, with implications for corporate social responsibility. *Academy of Management Perspectives*, 26, 1-19.
- Edmans, A., 2017. *Comment Letter to the SEC on Pay Ratio Final Rule, File No. S7-07-13*. <https://www.sec.gov/comments/pay-ratio-statement/cll3-2243333-160868.pdf>.
- Edmans, A., 2020. *Grow the pie: How great companies deliver both purpose and profit*. Cambridge University Press.

- Engel, M., 2021. New human capital disclosure requirements. *Harvard Law Forum on Corporate Governance* <https://corpgov.law.harvard.edu/2021/02/06/new-human-capital-disclosure-requirements/>
- Faleye, O., Reis, E., Venkateswaran, A., 2013. The determinants and effects of CEO-employee pay ratios. *Journal of Banking & Finance*, 37, 3258-3272.
- Flammer, C., Luo, J., 2017. Corporate social responsibility as an employee governance tool: Evidence from a quasi-experiment. *Strategic Management Journal*, 38, 163-183.
- Gibson, R., Glossner, S., Krueger, P., Matos, P., Steffen, T., 2021. Do responsible investors invest responsibly? ECGI Working Paper. <https://ssrn.com/abstract=3525530>.
- Gong, N., Grundy, B., 2019. Can socially responsible firms survive competition? An analysis of corporate employee matching grant schemes. *Review of Finance*, 23, 199-243.
- Green, T., Zhou, D., 2021. Pay inequality, job satisfaction, and firm performance. Working paper, Baruch College. <https://ssrn.com/abstract=3415937>.
- Greene, W., 2004. The behaviour of the maximum likelihood estimator of limited dependent variable models in the presence of fixed effects. *The Econometrics Journal* 7, 98-119.
- Hainmueller, J., 2012. Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis* 20, 25-46.
- Huang, Q., Jiang, F., Lie, E., Que, T., 2017. The effect of labor unions on CEO compensation. *Journal of Financial and Quantitative Analysis*, 52, 553-582.
- Huang, K., Li, M., Markov, S., 2020. What do employees know? Evidence from a social media platform. *The Accounting Review* 95, 199-226.
- Huettner, F., Sunder, M., 2012. Axiomatic arguments for decomposing goodness of fit according to Shapley and Owen values. *Electronic Journal of Statistics*, 6, 1239-1250.
- Jochem, T., Ladika, T., Sautner, Z., 2018. The retention effects of unvested equity: Evidence from accelerated option vesting. *Review of Financial Studies*, 31, 4142-4186.
- Jung, S., Kim, N., Ryu, H., Shin, J., 2021. Why do firms utilize the flexibility allowed in CEO-employee pay ratio disclosure? *Accounting Horizons*, 35, 83-106.
- Kim, Y., Park, M., Wier, B., 2012. Is earnings quality associated with corporate social responsibility? *The Accounting Review*, 87, 761-796.
- Klemesh, S., Neill, B., Smith, J., 2019. How and why human capital disclosures are evolving. *Harvard Law School Forum on Corporate Governance*. <https://corpgov.law.harvard.edu/2019/11/15/how-and-why-human-capital-disclosures-are-evolving/>.
- Knust, L., Oesch, D., 2020. On the consequences of mandatory CEO pay ratio disclosure. Working paper, University of Zurich. <https://ssrn.com/abstract=3540009>.
- Kuhnen, C., Niessen, A., 2012. Public opinion and executive compensation. *Management Science*, 58, 1249-1272.
- Lifshey, D., 2018. CEO pay ratio disclosure round two: Top 10 things to worry about. Pearl Meyer. <https://www.pearlmeyer.com/blog/ceo-pay-ratio-disclosure-round-two-top-ten-things-to-worry-about>.
- Loh, J., 2017. Could the pay ratio disclosure backfire? Examining the effects of the SEC's pay ratio disclosure rule. *Texas A&M Law Review*, 4, 417-448.
- Loughran, T., McDonald, B., 2016. Textual analysis in accounting and finance: A survey. *Journal of Accounting Research*, 54, 1187-1230.
- Marquis, C., Toffel, M.W. and Zhou, Y., 2016. Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organization Science*, 27(2), 483-504.
- Mas, A., 2017. Does transparency lead to pay compression? *Journal of Political Economy*, 125, 1683-21.

- Mueller, H., Ouimet, P., Simintzi, E., 2017. Within-firm pay inequality. *Review of Financial Studies*, 30, 3605-3635.
- Murphy, K., Jensen, M., 2018. The politics of pay: The unintended consequences of regulating executive compensation. *Journal of Law, Finance, and Accounting*, 3, 189-242.
- Murphy, K., Sandino, T., 2020. Compensation consultants and the level, composition, and complexity of CEO pay. *The Accounting Review*, 95, 311-341.
- Pan, Y., Pikulina, E., Siegel, S., Wang, T., 2021. Do equity markets care about income inequality? Evidence from pay ratio disclosure. Working paper. <https://ssrn.com/abstract=3521020>.
- Raghunandan, A., 2021. Financial misconduct and employee mistreatment: Evidence from wage theft. *Review of Accounting Studies*, 26, 867-905.
- Raghunandan, A., Rajgopal, S., 2021. Do socially responsible firms walk the talk? Working paper, London School of Economics. <https://ssrn.com/abstract=3609056>.
- Roberts, M. R., Whited, T. M. 2013. Endogeneity in empirical corporate finance. In *Handbook of the Economics of Finance* (Vol. 2, pp. 493-572). Elsevier.
- Rouen, E., 2020. Rethinking measurement of pay disparity and its relation to firm performance. *The Accounting Review*, 95, 343-378.
- Roychowdhury, S., 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42, 335-370.
- Sandvik, J., LaViers, L., Xu, D., 2021. Fairness is in the eye of the investor: CEO pay ratio voluntary disclosures and investor reactions. Working paper, Tulane University. <https://ssrn.com/abstract=3617262>.
- Shi, Y., Liu, W., Ho, K., 2016. Public news arrival and the idiosyncratic volatility puzzle. *Journal of Empirical Finance*, 37, 159-172.
- Skinner, D.J., 2003. Should firms disclose everything to everybody? A discussion of “Open vs. closed conference calls: the determinants and effects of broadening access to disclosure”. *Journal of Accounting and Economics*, 34, 181-187.
- Song, J., Price, D. J., Guvenen, F., Bloom, N., Von Wachter, T. 2019. Firming up inequality. *Quarterly Journal of Economics*, 134(1), 1-50.
- Speidel, E., Ownbey, L., 2018. CEO pay ratios are in: Here’s what we’ve learned so far. Aon plc. <https://radford.aon.com/insights/articles/2018/ceo-pay-ratio-findings>.
- Vaseghi, M., Marcogliese, P., Bieber, E., 2020. Incorporating human capital management disclosures into a company’s annual report. *Harvard Law School Forum on Corporate Governance*. <https://corpgov.law.harvard.edu/2020/10/31/incorporating-human-capital-management-disclosures-into-a-companys-annual-report/>.

Appendix A

Summary of pay ratio comment letters submitted to the SEC.

The SEC proposed the Pay Ratio Disclosure rule on September 18, 2013. The rule was finalized on August 5, 2015. During the rulemaking process, the SEC received 308,561 comment letters and held 14 meetings with unions, academics, shareholder groups, advocacy groups, and other market participants. This appendix provides a brief summary of the comments on the rule. We categorize commenters into nine types: private individuals, union, lobbyist, investment professional, compensation consultant, corporate, academic, politician, and other. In Table A-1, we summarize the number of letters received from each group and the percentage whose comments are for, against, or are neutral with respect to the proposed Pay Ratio Disclosure rule. We also summarize the number of meetings between members of these groups and SEC staff or commissioners, categorized by the SEC division or the political affiliation of the commissioner. In Table A-2, we provide examples of common arguments in comment letters partitioned by their support or opposition to the proposed rule, as well as the topics of comment discussions.

Table A-1. Summary of SEC comment letters and meetings regarding the Pay Ratio Disclosure rule.

<i>Commenter Type</i>	<i>Description</i>	Comment Letters				Meetings	
		<i>N</i>	<i>For (%)</i>	<i>Neutral (%)</i>	<i>Against (%)</i>	<i>N</i>	<i>SEC Division or Commissioner</i>
1. Private individual	Private investors, workers, individual union members	308,402	308,348 (>99%)	30 (<1%)	23 (<1%)	0	
2. Union	Union organizations, trusts or pensions	12	12 (100%)	0 (0%)	0 (0%)	1	Division of Corporation Finance
3. Lobbyist	Trade organizations, advocacy groups	39	14 (36%)	5 (13%)	20 (51%)	10	Commissioners Dem. (8), Rep. (2)
4. Investment professional	Investment manager, advisor, or lobbyist	40	37 (93%)	3 (8%)	0 (0%)	0	
5. Compensation consultant	Compensation consultants and attorneys	13	1 (8%)	7 (54%)	5 (38%)	0	
6. Corporate	Corporations, consultants, law firms	33	4 (12%)	14 (42%)	15 (45%)	2	Commissioners Dem. (0), Rep. (2)
7. Academics	Business and law scholars	10	5 (50%)	2 (20%)	3 (30%)	1	Division of Economic and Risk Analysis
8. Politicians	Congress members, federal and state officials	7	6 (86%)	0 (0%)	1 (14%)	0	
9. Other	Not related to pay ratio rule	5	n/a	n/a	n/a	0	
TOTAL		308,561	308,427 (99.96%)	61 (0.02%)	67 (0.02%)	14	

Note: Of the 308,402 comment letters by ‘private individuals’, 307,012 were one of 13 generic form types, potentially submitted via website petitions. All of these comments were in favor of the Pay Ratio Disclosure rule. We identified the origin of three of the form types as petitions from the Teamsters Union of Ohio (20 letters), the AFL-CIO (36,299 letters), and a progressive advocacy group, Credo Action (75,333 letters). Of the 1,390 remaining comment letters that were not a generic form types, the majority were in favor of the proposed rule. In a few letters, individuals did not indicate whether they approved or disapproved of the proposed rule but argued that the rule needed to be strengthened before passage. Even though these individuals indicate a preference for wage transparency, we classify these comment letters were classified as ‘Neutral’ to err on the side of caution.

Appendix A (continued)

Table A-2. Excerpts of comments supporting and opposing the Pay Ratio Disclosure Rule.

Panel A: Comment-letter arguments <i>for</i> the Pay Ratio Disclosure rule
<ul style="list-style-type: none"> • “...CEO-to-worker pay ratio disclosure is valuable information for the investing public.” • “...large pay disparities contribute to an unethical culture within corporations.” • “...companies integrating best environmental, social, and governance practices into their strategy and operations will build long-term sustainable value for all stakeholders and provide higher risk-adjusted returns to shareholders.” • “The proposed rule will promote capital formation as investors can more clearly see details of asset being purchased...” • “High pay disparities inside a company can be detrimental to employee motivation and productivity, increase turnover and have a negative impact on a company’s overall performance.”
Panel B: Comment-letter arguments <i>against</i> the Pay Ratio Disclosure rule
<ul style="list-style-type: none"> • “Our cost of compliance will be significant.” • “...we do not believe that the proposed pay ratio rules will provide investors with useful or accurate information” • “The Pay Ratio provides a highly misleading and potentially harmful disclosure which contradicts the goals of the federal securities laws.” • “The only argument I can foresee to disclose pay ratio is to provide some kind of public embarrassment to firms that have high ratios of CEO pay to median employee pay.”
Panel C: Common topics in comment letters on the Pay Ratio Disclosure rule
<ul style="list-style-type: none"> • Whether the pay ratio should be ‘filed’ or ‘furnished’; furnished disclosures have lower levels of liability under the Securities Act • Whether certain employees, such as foreign, seasonal, part-time, should be included in the ratio • Whether firms should have discretion in choosing date to determine median employee • Whether to provide additional data: total enterprise pay, number of full- and part-time and foreign employees, pay ratio for subsidiaries • Whether statistical sampling should be permitted • Which firms should be required to provide the Pay Ratio (e.g., should smaller firms should be exempt from the disclosure)

Appendix B

Variable definitions.

Compensation variables

<i>CEO pay</i>	Total compensation of the CEO reported in the pay ratio disclosure
<i>Median employee pay</i>	Total compensation of the median employee reported in the pay ratio disclosure
<i>Pay ratio</i>	Disclosed ratio of CEO pay to the median employee pay
<i>High pay ratio</i>	Equals 1 if the pay ratio is greater than or equal to 150-to-1; otherwise, 0
<i>Low pay ratio</i>	Equals 1 if the pay ratio is less than 150-to-1; otherwise, 0
<i>Expected pay ratio</i>	Ratio of the modeled components of expected CEO pay from Eq. (1a) and expected median employee pay from Eq. (1b)
<i>Unexpected pay ratio</i>	Natural log of expected pay ratio less the natural log of the reported pay ratio
<i>High industry pay ratio</i>	Equals 1 if the pay ratio is at or above the 75th percentile of the industry pay ratio; otherwise, 0
<i>High local pay ratio</i>	Equals 1 if the pay ratio is at or above the 75th percentile of firms in the same core-based statistical area (CBSA); otherwise, 0
<i>One time award</i>	Equals 1 if the firm references a one-time stock or option award in the pay ratio disclosure; otherwise, 0

Text analysis variables

<i>De minimis exemption</i>	Equal 1 if the firm excludes up to 5% of its non-US employees from the median worker computation
<i>M&A exclusion</i>	Equal 1 if the firm excludes employees from a recent acquisition from the median worker computation
<i>Median employee date</i>	Firm choice of the fiscal date in which the median employee pay was identified
<i>Ratio adjustment</i>	Equals 1 if the firm uses the de minimis or M&A exemption or a date other than the fiscal year end for the median worker; else 0
<i>Number of words</i>	Length of the pay ratio disclosure using a count of the number of words
<i>Spin indicator</i>	Equals 1 if the pay ratio disclosure contains at least one word from the spin dictionary; otherwise, 0
<i>Spin words</i>	Count of the number of spin words in the pay ratio disclosure

Employee variables

<i>CEO disapproval</i>	Equals 1 if employees disapprove the CEO's performance on Glassdoor.com; else 0 for approve, no opinion, or no response
<i>Employee pay rating</i>	Average employee rating of a firm's "Compensation & Benefits" on a scale of one-to-five stars on Glassdoor.com
<i>Employee productivity</i>	Natural log of total annual sales divided by the number of employees from Compustat

Control variables

<i>Size</i>	Natural log of the book value of total assets from Compustat
<i>Union indicator</i>	Equals 1 if the firm discloses a union, works council, or collective bargaining agreement in its 10-K; otherwise, 0
<i>Market-to-book</i>	US market capitalization from CRSP divided by book value of equity from Compustat
<i>Return-on-assets</i>	Return on assets (ROA) is operating income divided by total assets from Compustat
<i>Institutional ownership</i>	Percent of shares held by institutional investors based on 13-F filings
<i>R&D to assets</i>	Research and development (R&D) expenses divided by total assets from Compustat; else 0 if missing R&D data
<i>Cash to assets</i>	Cash and short-term investments divided by total assets from Compustat
<i>Leverage</i>	Total debt divided by total assets from Compustat
<i>Sales growth</i>	Average growth in total sales over past three fiscal years
<i>TSR</i>	Total stock return (TSR) over trailing 1-year period based on share price appreciation and annualized dividend yield
<i>Fixed-to-total assets</i>	Net property, plant, and equipment (PP&E) divided by total assets from Compustat; we use gross PP&E when the net value is missing

Appendix B (continued)

Identification test variables

<i>Labor expense disclosers</i>	Equals 1 for firms with nonzero values of total staff expense (Compustat item XLR) in fiscal year 2016; else 0
<i>Late adopters</i>	Equals 1 for firms exempt from Fiscal Year 2017 pay ratio disclosures due to fiscal year ends between June and November; else 0
<i>Implied pay ratio</i>	Pre-rule ratio calculated as CEO pay in Fiscal Year 2016 divided by median employee pay in Fiscal Year 2017

Cross-sectional variables

Wage violations	Count of the number of employer wage violations over the past three years using US Department of Labor enforcement data
Number of consultants	Count of the number of unique compensation consultants hired by the board from the CD&A section of the proxy statement
KLD index	Sum of employee strengths less employee concerns in the Kinder, Lydenberg, and Domini (KLD) database
Customer facing	Equals 1 for firms in the FF49 entertainment services, personal services, retail, restaurants & hotels, and banking industries; else 0

Modeled CEO pay variables (Eq. 1a)

<i>Size</i>	Natural log of total assets
<i>Adjusted ROA</i>	Industry adjusted return on assets
<i>ROA variance</i>	Five-year standard deviation of adjusted ROA
<i>CEO tenure</i>	Natural log of CEO tenure in years
<i>CEO age</i>	Natural log of CEO's age in years
<i>Return_t</i>	Annual stock return in the current year
<i>Return_{t-1}</i>	Annual stock return in the prior year
<i>Return variance</i>	Five-year standard deviation of stock returns
<i>Loss</i>	Equals 1 if the firm reports negative net income; else 0
<i>Book-to-market</i>	Book-to-market value of equity
<i>Leverage</i>	Total debt-to-assets

Modeled employee pay variables (Eq. 1b)

<i>Adjusted RNOA</i>	Industry adjusted return on net operating assets (RNOA)
<i>RNOA variance</i>	Five-year standard deviation of adjusted RNOA
<i>College graduate</i>	Percent of college graduates within the Metropolitan Statistical Area (MSA) closest to company headquarters
<i>Ind-region comp</i>	Average industry-level compensation for the nearest MSA
<i>Right to work</i>	Indicator equal to 1 if the headquarter state has a "Right to Work" law; else 0
<i>Revenue change</i>	Yearly change in sales
<i>Age</i>	Natural log of the number of years the firm has data available in CRSP
<i>Employee productivity</i>	Total sales divided by the number of employees
<i>Capital intensity</i>	Capital expenditures divided by total sales
<i>R&D intensity</i>	R&D expenses divided by total sales
<i>Foreign workers</i>	Equals 1 if the firm discloses non-zero foreign workers in its annual report; otherwise 0
<i>De minimis exemption</i>	Equals 1 if the firm utilizes a <i>de minimis</i> exemption; else 0

Appendix C

Spin dictionary and examples.

Table C-1. List of spin words and frequency in CEO pay ratio disclosures.

Spin word	Frequency	Firms	Spin word	Frequency	Firms
abilities	3	2	motivate	184	103
ability*	16	12	motivated	8	5
align	89	60	opportunities	66	40
amazing*	2	1	pay for performance	35	21
anomalous*	86	62	pay with performance	5	3
anomaly*	8	6	philosophy	200	122
attract	47	76	responsibilities*	79	49
attracting	9	5	responsibility	17	10
atypically	5	5	responsible	11	9
balance	36	25	retain	106	69
balanced	2	2	retaining	12	7
balances*	11	6	revitalized	2	1
benchmark	10	5	reward	82	47
benchmarked*	31	17	rewarded*	2	1
benchmarking	12	7	rewarding	10	6
benchmarks	4	2	rewards*	37	10
capabilities	3	2	rigorous	6	3
career	6	3	robust	5	3
careers*	6	3	shareholder	111	64
challenging	2	2	shareholders	154	50
commensurate	11	6	skills	12	7
creative*	8	5	specialized*	11	6
critical	29	18	stewardship	4	2
culture	11	8	strategic	17	12
cultures	4	2	strategically*	2	1
demonstrate	5	3	strategies	26	16
demonstrated	1	1	strategy	27	18
demonstrates	4	2	strive*	64	36
demonstrating	2	1	strives	14	8
diverse*	79	45	success	78	50
diversification*	1	1	successful	10	8
diversified*	5	3	successfully	6	5
diversity	15	9	sustainable*	5	3
dramatically	6	3	talent	51	30
empower*	3	2	talented	31	15
empowering*	6	4	talents*	4	2
encourage*	39	23	team	83	53
encourages*	4	2	teammate*	40	2
encouraging*	5	4	teammates	40	3
enjoys*	5	3	transformation	4	4
equitable	240	135	transformative	2	2
equitably*	4	3	transforming	1	1
essential	12	8	transparency	4	2
exceptional	7	5	transparent	2	2
flexible	20	13	tremendous	2	2
fulfilling*	2	1	turnaround	5	3
holistically	2	1	uniquely	5	3
incentivize	9	7	uniqueness*	2	1
incentivized	9	5	TOTAL	2,624	1,548
integral*	4	2			

* Indicates spin is associated with employees in more than 90% of observations

Appendix C (continued)

Table C-2. Select excerpts from use of spin words in CEO pay ratio disclosure.

Spin word	Excerpt from pay ratio disclosure
abilities	providing opportunities for all employees to contribute, develop new skills and abilities, and manage their careers
ability	our success depends on its ability to attract, motivate and retain highly qualified, talented and creative employees
amazing	benefits to ensure we attract and retain people who will enable us to deliver our “Most Amazing Personal Service” to our customers
attract	to attract and retain talent, we pay competitively and tailor employee benefits in each jurisdiction
attracting	a competitive wage in those locations aimed at attracting and retaining qualified employees using local benchmarks
balance	company’s compensation programs and practices were designed with the appropriate balance of risk and reward
balanced	a performance-based system that provides a balanced foundation for strong and effective leadership into the future
balances	we invest in our employees at all levels in the company by rewarding performance that balances risk and reward
capabilities	requires a wide range of member capabilities and expertise to carry product from design and fabrication through delivery
commensurate	our objective is to provide competitive compensation commensurate with an employee’s position and geographic location
creative	our success depends on its ability to attract, motivate and retain highly qualified, talented and creative employees
culture	committed to a strong pay for performance culture that stresses “at risk” compensation
demonstrate	to motivate the company’s employees and create shareholder value. to demonstrate the company’s commitment to that principle
demonstrated	the company believes its compensation philosophy and process yield an equitable result, as demonstrated below
demonstrates	we believe our CEO pay ratio for 2017 demonstrates our pay-for-performance philosophy
demonstrating	demonstrating commitment to balance equitable compensation stewardship with competitively based compensation
diverse	comprehensive total rewards program to attract, retain, and reward highly qualified, diverse and productive employees
diversification	diversification should be considered by readers who would compare our CEO pay ratio to those within our peer or industry group
diversified	some companies in our peer groups given the composition of our workforce across our uniquely diversified company
diversity	median of local labor markets within our diverse industry segments is essential to ensuring a productive, engaged workforce
empower	company mission: value our customers, empower our employees, care for our communities, and deliver for our shareholders
empowering	rewarding performance that balances risk and reward, empowering professional growth and development
encourage	benefit programs are broadly similar across the organization to encourage and reward all employees who contribute to our success
encourages	promotes fiscally responsible pay decisions, encourages efficient use of our resources
encouraging	compensation level, and reflect the importance of (1) paying for performance; (2) encouraging firm wide orientation and culture
enjoys	employees enjoy a comprehensive compensation, benefit and company and/or state-sponsored retirement package
equitable	the company believes its compensation philosophy and process yield an equitable result
exceptional	strives to provide competitive base pay, market-leading benefits, and an exceptional work environment
holistically	designed to attract and engage talent, and reward performance, viewed holistically across individual, team, and business results
integral	our talented and dedicated employees play an integral role in our overall success
motivate	pay must be internally consistent and equitable to motivate our employees to create shareholder value
motivated	success is also highly dependent upon the retention of experienced, motivated and loyal employees at all levels of our organization
opportunities	we provide opportunities for professional growth and development, and offer affordable benefits and programs
pay for performance	we compete for talent, and reflect the company’s commitment to maintaining a pay for performance CEO pay philosophy
pay with performance	our compensation committee has determined that this estimated ratio does not link pay with performance
philosophy	we believe our compensation philosophy and process yield an equitable result for all of our employees
responsibilities	compensation of every employee reflects their talents, skills, responsibilities and experience and is competitive in our peer group
responsibility	appropriate given each employee’s job complexity level of responsibility in the organization

Appendix C (continued)

Table C-2. Select excerpts from use of spin words in CEO pay ratio disclosure (continued)

Spin word	Excerpt from pay ratio disclosure
responsible	the program also promotes fiscally responsible pay decisions
retain	labor markets in which our various employee segments operate to ensure that we can attract and retain the best talent for each role
retaining	actively support recruiting, motivating and retaining talented employees at all levels within our organization
revitalized	past three years, the brand has been revitalized, successfully completing a transition from turnaround to growth
reward	across the organization to encourage and reward all employees who contribute to our success
rewarded	we believe it is important to be consistent in how employees are rewarded
rewarding	feels strongly and is committed to investing in our employees at all levels by rewarding performance
rewards	based compensation that drives and rewards performance
rigorous	more than 91% of our CEO's annual compensation is tied to rigorous performance conditions
robust	direct compensation opportunity is "at risk" based on the company's performance against robust objective targets
shareholder	executive pay must be internally consistent and equitable to motivate our employees to create shareholder value
shareholders	shareholders should keep in mind that the rule was not designed to facilitate comparisons of pay ratios among different companies
skills	compensation of every employee reflects their talents, skills, responsibilities and experience and is competitive in our peer group
specialized	individual's role and responsibilities as well as his or her experience, education, specialized training
stewardship	balance equitable compensation stewardship with competitively based compensation that drives and rewards performance
strategic	incentivize key executives, and aligned the vesting to measures that are critical to the achievement of long-term strategic plan
strategically	100 countries through a network of more than 30 manufacturing and distribution facilities strategically located around the globe
strategies	pay ratios may vary significantly among companies due to differences in business strategies and workforce composition
strategy	our compensation strategy's essential objective is to compensate all employees appropriately and competitively
strive	we strive to ensure the compensation of every employee reflects their talents, skills, responsibilities and experience
strives	strives to establish fair and competitive employee compensation programs in each local market within our global operations
success	overall structure of our compensation and benefit programs are designed to reward all employees who contribute to our success
successful	enhance our overall performance and profitability through the successful execution of our short- and long-term business strategies
successfully	cash and equity compensation that we paid to our CEO in 2017 in order to successfully recruit him to our company
sustainable	within our diverse industry segments is essential to ensuring a productive, engaged workforce and a sustainable business
talent	markets in which we compete for talent, and reflect the company's commitment to maintaining a pay for performance philosophy
talented	in each local market within our global operations to effectively attract, retain, and motivate our talented workforce
talents	we strive to ensure the compensation of every employee reflects their talents, skills, responsibilities and experience
team	committee believes executive pay must be consistent and equitable to motivate our team members to create shareholder value
teammate	to determine the annual total compensation of our median teammate and our CEO
teammates	relationship of the annual total compensation of our teammates and the annual total compensation of our CEO
transformation	to induce her to join us in support of our transformation efforts
transformative	importance and critical nature of the performance goals, given the divestiture and the transformative nature of the corporate changes
transforming	transforming us into a new fee-based, capital-efficient business model
tremendous	CEO recruitment package had a tremendous effect on the above pay ratio

Appendix C (continued)

Table C-3. Example of pay ratio disclosure without spin.

Chief Executive Officer Pay Ratio

We determined that the 2017 median annual total compensation of all our employees who were employed as of December 31, 2017, other than our CEO, Dan McCarthy, was \$101,408; Dan McCarthy's 2017 annual total compensation was \$6,038,195; and the ratio of these amounts was 60:1. As of December 31, 2017, our total population consisted of 22,700 employees. To identify the median compensated employee, we used a Consistently Applied Compensation Measure (CACM) defined as annual base salary as of December 31, 2017.

See Frontier Communications, Proxy Statement, March 27, 2018, at <https://www.sec.gov/Archives/edgar/data/20520/000119312518096628/d503822ddef14a.htm>.

Table C-4. Example of pay ratio disclosure that includes spin.

PAY RATIO DISCLOSURE

The SEC's rules for identifying the median compensated employee and calculating the pay ratio based on that employee's annual total compensation allow companies to adopt a variety of methodologies, to apply certain exclusions, and to make reasonable estimates and assumptions that reflect their employee populations and compensation practices. As a result, the pay ratio reported by other companies may not be comparable to the pay ratio reported below, as other companies may have different employee populations and compensation practices and may utilize different methodologies, exclusions, estimates and assumptions in calculating their own pay ratios.

The pay ratio reported below is a reasonable estimate calculated in a manner consistent with SEC rules based on our payroll records and the methodology described below. For these purposes, we determined the median compensated employee using taxable income for 2017, which we annualized for any employee who did not work for the entire year unless designated as a temporary employee. We determined that, as of December 31, 2017, our employee population consisted of approximately 25,200 employees, with approximately 52% working in Macau as an employee of Wynn Macau, Limited or one of its subsidiaries. In identifying the median employee, we made a cost-of-living adjustment using the International Monetary Fund's implied purchasing power conversion rate of 5.49 with respect to employees located in Macau.

Using this methodology, we determined that the median employee was a full-time, salaried employee located in Las Vegas. The 2017 annual total compensation of our median compensated employee, other than our 2017 CEO, was \$44,437; the 2017 annual total compensation of our CEO during 2017, Mr. Wynn, was \$34,522,695; and the ratio of these amounts was 1-to-777.

To identify the median employee without a cost-of-living adjustment, we converted the compensation paid in Macau currency to U.S. dollars by applying a Macau patacas to U.S. dollars exchange rate using the noon buying rate of exchange of Macau patacas to U.S. dollars of 8.0518 on December 31, 2017. The 2017 annual total compensation of our median compensated employee, other than our 2017 CEO, without the cost-of-living adjustment was \$37,963; and the ratio of this amount to Mr. Wynn's 2017 annual total compensation was 1-to-909.

We believe the employee population for gaming and hospitality industries includes a large percentage of "steady extra workers". These are permanent workers who are paid hourly and obtain hours based on business volumes (e.g., coverage during peak times such as when large conventions are in town) and personal needs of the employee. As of December 31, 2017, approximately 13% of our employee population of 25,200 consisted of steady extra workers, most of whom are eligible for medical and other benefits. Based on SEC's rules, these permanent workers are included in the employee population used in calculating the median employee compensation and may impact comparability of our median employee compensation amount with that in other industries.

Our talented and dedicated employees play an integral role in our overall success and we place great emphasis on creating an environment for our employees to excel and advance. We are committed to the development, health and well-being of our workforce through various programs, benefits and amenities. Please refer to "Our People and Our Stewardship" for additional information.

See Wynn Resorts, Proxy Statement, April 18, 2018, at <https://www.sec.gov/Archives/edgar/data/1174922/000119312518121082/d572661ddef14a.htm>.

Figure 1

Pay ratio histograms by reporting year.

This figure plots the distribution of CEO pay ratios for reporting year one (Panel A) and reporting year two (Panel B).

Pay ratios greater than 500-to-1 are winsorized at this value in both panels.

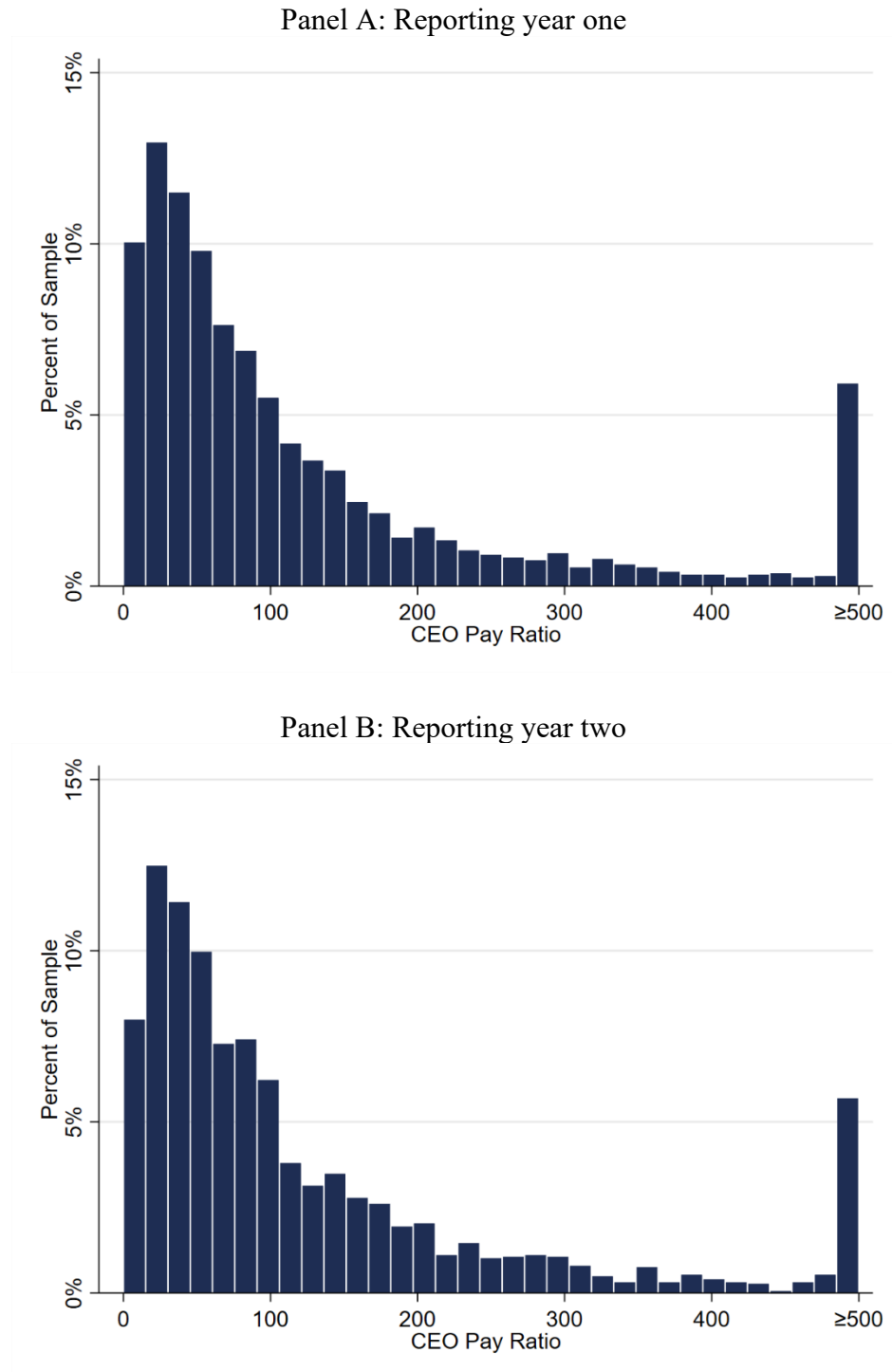


Figure 2

Change in pay ratio from reporting year one to reporting year two.

This figure displays the distribution of the change in the CEO pay ratios from reporting year one to reporting year two. Values that change more than 200% are winsorized at this value for the graph.

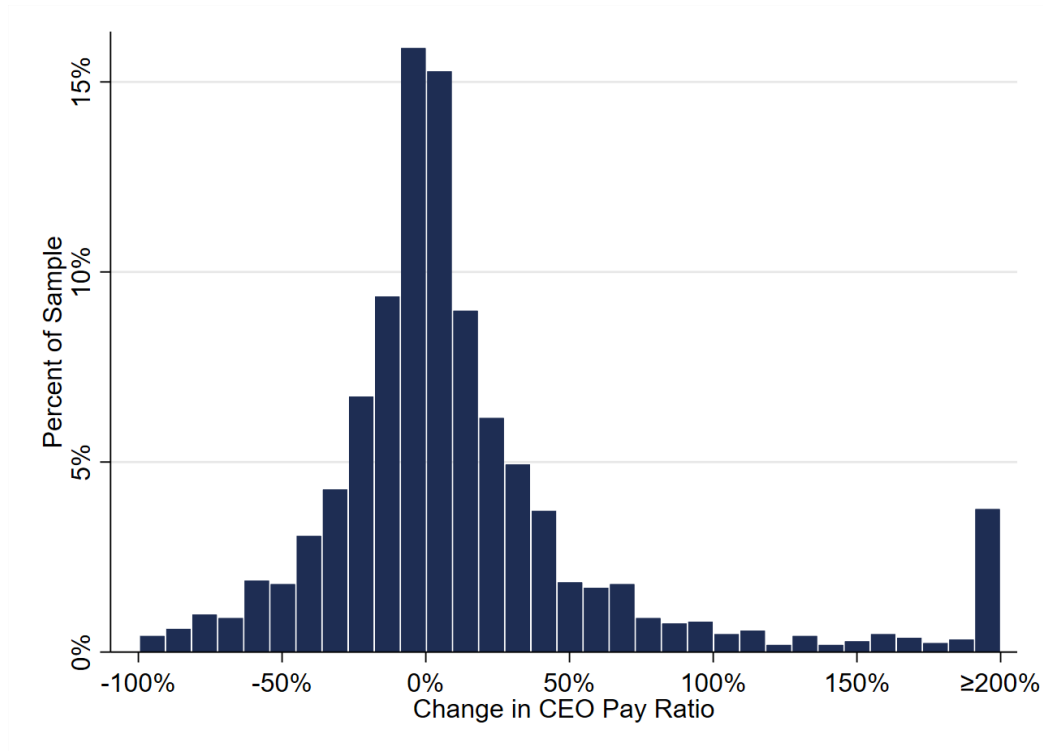


Figure 3

Change in pay from reporting year one to reporting year two.

This figure plots the change in CEO pay (Panel A) and median employee pay (Panel B) from reporting year one to reporting year two. Values that change more than 100% are winsorized at this value for these graphs.

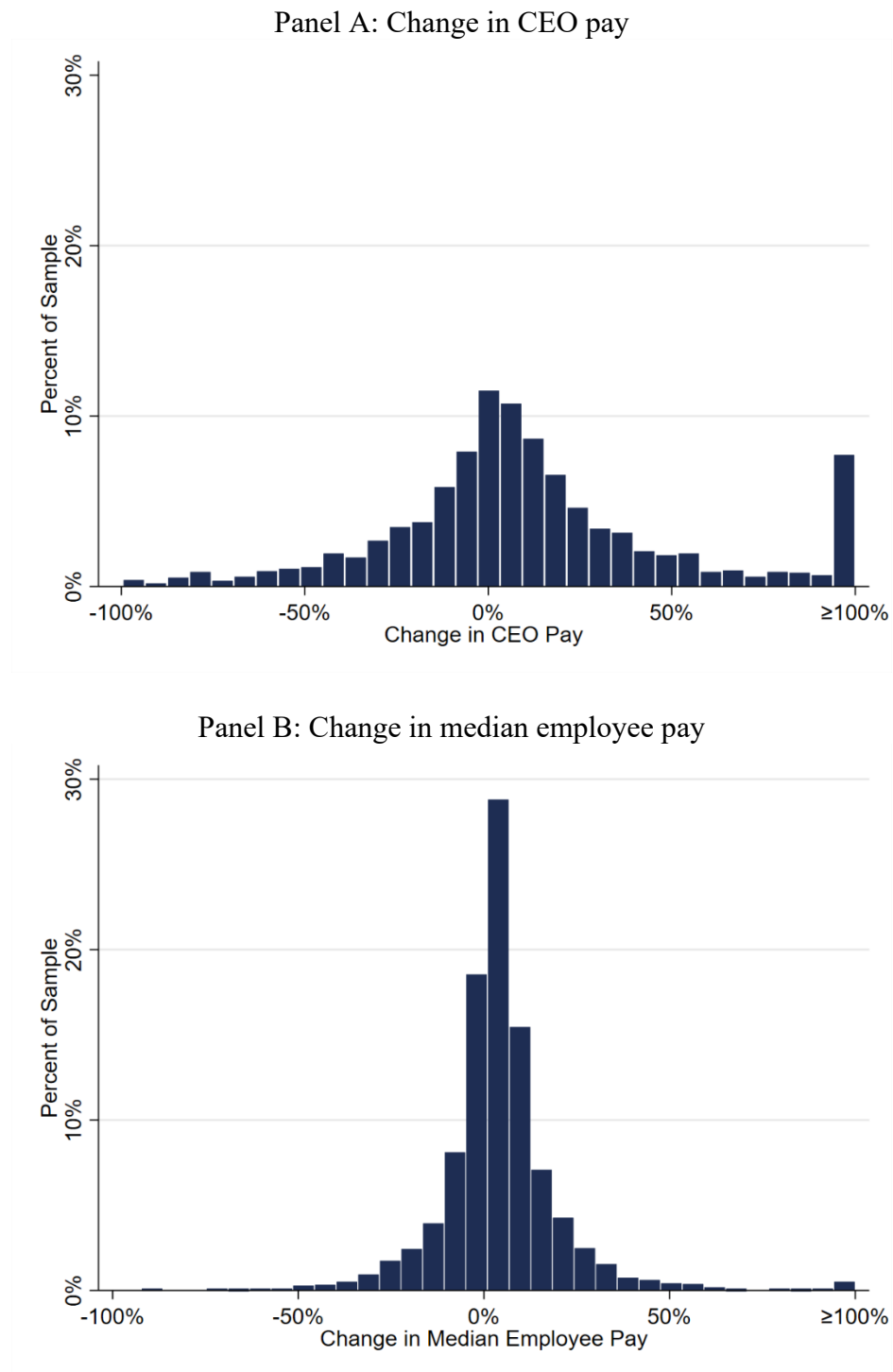


Table 1**Summary statistics.**

This table presents summary statistics. Panel A reports the mean, standard deviation, bottom quartile, median, top quartile, and number of observations (*N*) for compensation statistics. Percent changes from reporting year one (RY1) to reporting year two (RY2) in the pay ratio, CEO pay, and median employee pay are winsorized at the 1% level in each tail. Panel B presents full sample summary statistics for control variables. Panel C reports control variables after entropy balancing the mean, variance, and skewness of the firm characteristics between high and low pay ratio firms. We define variables in Appendix B.

Panel A: Compensation statistics						
	Mean	SD	P25	Median	P75	N
CEO Pay Ratio						
<i>Reporting year one (RY1)</i>	153.1	306.5	33.0	72.0	150.0	2,401
<i>Reporting year two (RY2)</i>	173.8	900.3	37.0	77.0	160.0	2,268
Total Compensation (\$000s)						
<i>CEO Pay RY1</i>	6,799	7,937	2,319	4,707	8,583	2,401
<i>CEO Pay RY2</i>	8,165	48,569	2,777	5,063	9,144	2,268
<i>Median Employee Pay RY1</i>	78.6	62.5	42.7	62.0	96.1	2,401
<i>Median Employee Pay RY2</i>	81.3	65.2	45.3	64.4	98.6	2,268
Change from RY1 to RY2 (%)						
<i>CEO Pay Ratio</i>	23.7	103.3	-13.2	2.8	25.5	2,132
<i>CEO Pay</i>	26.1	98.9	-9.1	6.1	27.0	2,132
<i>Median Employee Pay</i>	4.0	14.8	-2.2	3.4	9.5	2,135

Panel B: Firm characteristics of full sample (RY1)					
	Mean	SD	P25	Median	P75
<i>Size</i>	8.0	1.8	6.8	7.9	9.0
<i>Union indicator (%)</i>	38.1	48.6	0.0	0.0	100.0
<i>Market-to-book</i>	1.8	2.0	0.8	1.3	2.1
<i>Return-on-assets (%)</i>	4.7	12.9	2.0	5.3	10.2
<i>Institutional ownership (%)</i>	75.3	22.4	65.7	81.5	91.6
<i>R&D to assets (%)</i>	3.7	12.3	0.0	0.0	2.3
<i>Cash to assets (%)</i>	15.6	19.8	2.6	7.3	20.1
<i>Leverage (%)</i>	24.8	24.6	4.3	21.1	37.4
<i>Sales growth (%)</i>	13.2	31.2	1.8	7.7	16.9
<i>TSR (%)</i>	18.5	46.2	-5.0	12.5	33.7

Panel C: Firm characteristics after entropy balancing						
	High Pay Ratio (N=603)			Low Pay Ratio (N=1,798)		
	Mean	Variance	Skewness	Mean	Variance	Skewness
<i>Size</i>	8.99	2.84	0.50	8.99	2.84	0.51
<i>Union indicator</i>	0.58	0.24	-0.32	0.58	0.24	-0.32
<i>Market-to-book</i>	1.81	2.18	2.53	1.81	2.18	2.53
<i>Return-on-assets</i>	0.10	0.01	0.77	0.10	0.01	-0.21
<i>Institutional ownership</i>	0.81	0.03	-1.91	0.81	0.03	-1.91
<i>R&D to assets</i>	0.02	0.00	3.11	0.02	0.00	3.72
<i>Cash to assets</i>	0.13	0.02	1.90	0.13	0.02	1.90
<i>Leverage</i>	0.30	0.07	4.38	0.30	0.07	4.38
<i>Sales growth</i>	0.10	0.05	5.75	0.10	0.05	5.75
<i>TSR</i>	0.20	0.15	1.93	0.20	0.15	1.93

Table 2**Analysis of pay ratio disclosure.**

This table presents the textual analysis of pay ratio disclosure. Panel A presents summary statistics. Panel B uses OLS to test the relation between a high pay ratio and a *ratio adjustment* and *spin indicator*; and a Poisson regression to test the count of the *number of words* and *spin words* in the disclosure. In Panel B, we generate synthetic controls by entropy balancing covariates between high and low pay ratio firms. Panel C tests the use of employee spin and CEO spin. In Panel C, we also entropy balance high and low pay ratio (high CEO pay and low employee pay). All regressions include control variables and industry fixed effects (Fama-French 49 industries) with robust standard errors. *t*-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

Panel A: Univariate tests								
	All firms		High pay ratio		Low pay ratio		Difference	<i>t</i> -statistic
Computation								
<i>De minimis exemption</i>	30.1		43.6		25.5		18.1***	8.50
<i>M&A exclusion</i>	7.6		10.8		6.6		4.2***	3.38
<i>Non-fiscal year end date</i>	36.5		50.1		32.0		18.1***	8.09
<i>Ratio adjustment</i>	52.7		68.5		47.4		21.0***	9.11
Disclosure								
<i>Number of words</i>	375.5		422.0		359.9		62.1***	8.57
<i>Spin indicator</i>	20.7		27.9		18.2		9.6***	5.07
<i>Spin words</i>	0.48		0.60		0.43		0.17***	2.73
<i>Employee spin</i>	10.6		16.1		8.8		7.3***	5.06
<i>CEO spin</i>	3.3		5.1		2.7		2.5***	2.95
Panel B. Regression analyses								
	Ratio adjustment		Number of words		Spin indicator		Spin words	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>High pay ratio</i>	0.080** (2.35)		0.126*** (4.74)		0.097*** (3.33)		0.276** (1.96)	
<i>Ln(unexpected pay ratio)</i>		0.029** (2.27)		0.062*** (5.35)		0.037*** (3.59)		0.143*** (2.63)
<i>Ln(expected pay ratio)</i>		0.147*** (3.82)		0.083** (2.31)		0.088*** (2.78)		0.330 (1.44)
Controls, Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entropy balanced	Yes	No	Yes	No	Yes	No	Yes	No
N (Firms)	2,400	2,211	2,400	2,211	2,400	2,211	2,381	2,182
Adjusted (Pseudo) R ²	0.134	0.133	0.109	0.087	0.065	0.021	0.046	0.052
Panel C: Employee versus CEO spin								
	Employee Spin			CEO Spin				
	(1)	(2)	(3)	(4)	(5)	(6)		
<i>High pay ratio</i>	0.058** (2.57)			0.032** (2.30)				
<i>Unexpected pay ratio</i>		0.025*** (3.41)			0.012* (1.85)			
<i>Expected pay ratio</i>		0.049** (2.19)			0.001 (0.06)			
<i>Low employee pay</i>			0.048** (2.52)			-0.010 (-0.75)		
<i>High CEO pay</i>			-0.002 (-0.07)			0.022* (1.75)		
Controls, Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entropy Balanced	Yes	No	Yes	Yes	Yes	No	No	No
N (Firms)	2,400	2,211	2,400	2,400	2,400	2,211	2,400	2,400
Adjusted R ²	0.040	0.016	0.023	0.035	0.004	0.021		

Table 3**Pay ratio disclosure and employee outcomes.**

This table presents changes in employee outcomes by estimating Eqs. (3) and (4) using OLS. Columns (1) to (4) test changes in ratings by employees on Glassdoor.com of *CEO disapproval* and *employee pay rating*. Columns (5) and (6) presents changes in *employee productivity*. In tests where *high pay ratio* is the variable of interest, we generate synthetic controls by entropy balancing covariates between high and low pay ratio firms. All regressions include lagged dependent variables, control variables specified in Subsection 3.7, and industry fixed effects using the Fama-French 49 industries. *t*-statistics are reported in parentheses based on robust standard errors. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

	CEO disapproval		Employee pay rating		Employee productivity	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>High pay ratio</i>	0.017*** (3.82)		-0.078*** (-2.74)		-0.031** (-2.10)	
<i>Ln(unexpected pay ratio)</i>		0.005*** (2.58)		-0.061*** (-4.00)		-0.021** (-2.51)
<i>Ln(expected pay ratio)</i>		0.009 (0.90)		-0.030 (-0.38)		-0.067 (-0.65)
Lagged dependent variable	Yes	Yes	Yes	Yes	Yes	Yes
Controls, Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Entropy balanced	Yes	No	Yes	No	Yes	No
N (Firms)	2,005	1,870	1,983	1,851	2,147	2,013
Adjusted R ²	0.451	0.357	0.483	0.287	0.967	0.901

Table 4

Identification tests.

This table reports several identification tests. In Panel A, we create an indicator variable, *labor expense discloser*, which equals 1 if the firm reports pre-rule staff expense data in Compustat. We fully interact *labor expense discloser* with all control variables, where the variable of interest is *high pay ratio* \times *labor expense discloser*. In Panel B, we conduct a falsification and placebo test. In Columns (1) to (3), we categorize firms with a fiscal year ending in June to November as *late adopters* and repeat our analyses of employee outcomes for the period where they were exempt from disclosure. For these tests, we utilize their reported pay ratio from the eventual disclosure. In Columns (4) to (6) of Panel B, we use CEO compensation data from 2016 and median employee pay data from 2017 to construct a pre-rule implied pay ratio. Firms with a pre-rule implied pay ratio in the top quartile are labeled *high implied pay ratio*. All employee regressions include lagged dependent variables and thus the coefficient on the high ratio reflects a change in the dependent variable. In all tests, we generate synthetic controls by entropy balancing covariates between high and low ratio firms. All regressions include industry fixed effects (Fama-French 49 industries) with robust standard errors. *t*-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

Panel A: Pre-rule labor expense disclosers							
	Ratio adjustment	Number of words	Spin indicator	Spin words	CEO disapproval	Employee pay rating	Employee productivity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>High pay ratio</i> \times <i>Labor expense discloser</i>	-0.071 (-0.78)	0.029 (0.39)	-0.079 (-1.03)	0.126 (0.30)	0.018 (1.41)	0.014 (0.23)	0.019 (0.34)
<i>High pay ratio</i>	0.087** (2.31)	0.152*** (4.96)	0.135*** (4.52)	0.359** (2.01)	0.014*** (3.17)	-0.074** (-2.41)	-0.056*** (-2.69)
<i>Labor expense discloser</i>	0.048 (0.16)	-0.059 (-0.28)	0.265 (1.17)	1.139 (1.09)	0.009 (0.28)	0.189 (0.73)	0.159 (1.40)
Lagged dependent variable	No	No	No	No	Yes	Yes	Yes
Controls, Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N (Firms)	2,400	2,400	2,400	2,381	2,005	1,983	2,147
Adjusted (Pseudo) R ²	0.128	0.085	0.021	0.055	0.331	0.282	0.904
Panel B: Falsification and placebo tests							
	Late adopter falsification			Pre-rule placebo			
	CEO disapproval	Employee pay rating	Employee productivity	CEO disapproval	Employee pay rating	Employee productivity	
	(1)	(2)	(3)	(4)	(5)	(6)	
<i>High pay ratio</i>	-0.014 (-1.00)	0.079 (0.99)	-0.009 (-0.33)				
<i>High implied pay ratio</i>				0.009 (1.10)	-0.026 (-0.63)	0.010 (0.69)	
Lagged dependent variable	Yes	Yes	Yes	Yes	Yes	Yes	
Controls, Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	
Entropy balanced	Yes	Yes	Yes	Yes	Yes	Yes	
N (Firms)	243	242	251	1,044	1,038	1,077	
Adjusted R ²	0.848	0.557	0.986	0.607	0.523	0.977	

Table 5**Cross-sectional tests.**

This table presents a cross-sectional analysis of factors that could influence the disclosure and employee response to reporting a high pay ratio. In all five panels, we fully interact the cross-sectional factors with all control variables specified in Subsection 3.7. We then focus on the coefficient of interest, which is the interaction of *high pay ratio* and each of the cross-sectional factors. Panels A to C test properties of the pay ratio disclosure. Panels D and E examine the employee response to the pay ratio disclosure. In Panel A, the variable of interest is *high pay ratio* \times *wage violations*, where *wage violations* is a count of the number of employer wage theft violations over the past three years using US Department of Labor enforcement data. Panel B focuses on the interaction of *high pay ratio* \times *total stockholder return (TSR)*. In Panel C, the variable of interest is the interaction of *high pay ratio* with *number of consultants*, which is a count of the number of compensation consultants disclosed in the proxy statement. In Panel D, the variable of interest is the interaction of *high pay ratio* with the *KLD index*, which is the net of firm-level ratings of employee strengths and concerns in the Kinder, Lydenberg, and Domini (KLD) database. In Panel E, the variable of interest is the interaction of *high pay ratio* with an indicator variable representing a *customer facing* industry, which include Fama-French industries 7 (entertainment services), 33 (personal services), 43 (retail), 44 (restaurants and hotels), and 45 (banking). In all tests, we generate synthetic controls by entropy balancing covariates between high and low ratio firms. All employee regressions include lagged dependent variables. *t*-statistics are reported in parentheses based on robust standard errors. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

Panel A: Wage violations				
	Ratio adjustment	Number of words	Spin indicator	Spin words
	(1)	(2)	(3)	(4)
<i>High pay ratio</i> \times <i>Wage violations</i>	-0.026 (-0.87)	-0.031 (-1.63)	-0.039** (-2.18)	-0.234*** (-2.67)
<i>High pay ratio</i>	0.080** (2.12)	0.165*** (5.58)	0.131*** (4.55)	0.507*** (2.94)
<i>Wage violations</i>	0.162* (1.67)	0.141** (2.56)	-0.114* (-1.85)	-0.349 (-0.62)
Controls, Industry FE	Yes	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes	Yes
N (Firms)	2,399	2,399	2,399	2,380
Adjusted (Pseudo) R ²	0.112	0.107	0.058	0.080

Panel B: Stock performance				
	Ratio adjustment	Number of words	Spin indicator	Spin words
	(1)	(2)	(3)	(4)
<i>High pay ratio</i> \times <i>TSR</i>	-0.042 (-0.55)	-0.103* (-1.79)	-0.114* (-1.68)	-0.684** (-2.20)
<i>High pay ratio</i>	0.083** (2.25)	0.178*** (6.24)	0.147*** (5.03)	0.594*** (3.28)
<i>TSR</i>	-0.175 (-0.53)	0.221 (0.86)	0.346 (1.16)	2.243* (1.86)
Controls, Industry FE	Yes	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes	Yes
N (Firms)	2,399	2,399	2,399	2,380
Adjusted (Pseudo) R ²	0.110	0.113	0.056	0.082

Table 5 (Continued)

Panel C: Compensation consultants				
	Ratio adjustment	Number of words	Spin indicator	Spin words
	(1)	(2)	(3)	(4)
<i>High pay ratio</i> × <i>Number of consultants</i>	-0.094* (-1.91)	-0.042 (-0.89)	-0.077* (-1.77)	-0.468** (-2.15)
<i>High pay ratio</i>	0.144** (2.29)	0.191*** (3.41)	0.203*** (3.82)	0.942*** (3.25)
<i>Number of consultants</i>	-0.344* (-1.85)	0.072 (0.32)	0.031 (0.18)	0.507 (0.57)
Controls, Industry FE	Yes	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes	Yes
N (Firms)	2,399	2,399	2,399	2,380
Adjusted (Pseudo) R ²	0.137	0.121	0.064	0.086

Panel D: KLD index of employee-related CSR			
	CEO disapproval	Employee pay rating	Employee productivity
	(1)	(2)	(3)
<i>High pay ratio</i> × <i>KLD index</i>	-0.008** (-2.29)	-0.013 (-0.62)	0.020* (1.89)
<i>High pay ratio</i>	0.021*** (4.18)	-0.064** (-2.07)	-0.035** (-2.52)
<i>KLD index</i>	0.019 (0.91)	-0.053 (-0.40)	-0.089** (-1.96)
Lagged dependent variable	Yes	Yes	Yes
Controls, Industry FE	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes
N (Firms)	1,916	1,894	2,147
Adjusted R ²	0.488	0.533	0.968

Panel E: Customer interaction			
	CEO disapproval	Employee pay rating	Employee productivity
	(1)	(2)	(3)
<i>High pay ratio</i> × <i>Customer facing</i>	0.007 (0.74)	0.032 (0.61)	-0.077*** (-3.23)
<i>High pay ratio</i>	0.015*** (3.26)	-0.111*** (-3.89)	-0.012 (-0.90)
<i>Customer facing</i>	-0.067** (-2.02)	0.034 (0.15)	0.118* (1.69)
Lagged dependent variable	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Industry FE	No	No	No
Entropy balanced	Yes	Yes	Yes
N (Firms)	2,005	1,983	2,147
Adjusted R ²	0.443	0.467	0.966

Table 6

Ex-post relation between spin and employee outcomes.

This table tests interaction of spin and pay ratio levels with employee outcomes. Using Eq. (5), we interact *high pay ratio* measure with *Spin*, which is the *spin indicator* in Panel A and the natural log of one plus the number of *spin words* in Panel B. In all tests, we fully interact the spin variables with all controls and fixed effects. All regressions use OLS and include lagged dependent variables and other standard controls, and industry fixed effects (Fama-French 49 industries). In all tests, we generate synthetic controls by entropy balancing covariates between high and low ratio firms. We report *t*-statistics based on robust standard errors in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

Panel A: Spin indicator			
	CEO disapproval	Employee pay rating	Employee productivity
	(1)	(2)	(3)
<i>High pay ratio</i> × <i>Spin indicator</i>	-0.008 (-0.87)	-0.161** (-2.46)	-0.025 (-1.24)
<i>High pay ratio</i>	0.019*** (3.65)	-0.049* (-1.78)	-0.021 (-1.57)
<i>Spin indicator</i>	0.017 (0.37)	0.134 (0.40)	-0.095 (-1.29)
Lagged dependent variable	Yes	Yes	Yes
Controls, Industry FE	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes
N (Firms)	1,916	1,894	2,147
Adjusted R ²	0.484	0.525	0.967

Panel B: Spin words			
	CEO disapproval	Employee pay rating	Employee productivity
	(1)	(2)	(3)
<i>High pay ratio</i> × <i>Spin words</i>	-0.006 (-0.80)	-0.075* (-1.81)	-0.033** (-2.17)
<i>High pay ratio</i>	0.019*** (3.80)	-0.064** (-2.33)	-0.019 (-1.41)
<i>Spin words</i>	0.006 (0.17)	-0.271 (-1.05)	-0.090 (-1.47)
Lagged dependent variable	Yes	Yes	Yes
Controls, Industry FE	Yes	Yes	Yes
Entropy balanced	Yes	Yes	Yes
N (Firms)	1,916	1,894	2,147
Adjusted R ²	0.485	0.522	0.967

Table 7**Change in pay ratio construction in reporting year 2.**

This table presents changes in the construction of the pay ratio in reporting year 2 (RY2). Panel A summarizes changes in the selection of the median employee. Panel B presents the reasons cited by firms for changing their median employee. In Column (1) of these panels, we report the percent change (%Δ) in the selection of the median employee in RY2 based on the choice and disclosed reason for the change. We partition the sample based on the designation of a *high pay ratio* and *low pay ratio* in reporting year 1 (RY1) in Columns (2) and (3). We conduct univariate two-tailed *t*-tests of the difference in Column (4). Columns (5) to (7) tabulate the percent change in the median employee's reported pay in RY2 for firms with a high pay ratio in RY1 based on each selection choice. Panel C reports tests of changes in CEO total pay and the equity and non-equity components. Similar to Panels A and B, we partition the sample into high and low pay ratio firms based on RY1. We winsorize the percent change in CEO pay at the 1% level in each tail. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively

Panel A: Changes in median employee selection and reported pay							
	%Δ Median Employee Selected				%Δ Median Employee Pay High Pay Ratio Firms		
	All firms (N=2,127)	High pay ratio (N=549)	Low pay ratio (N=1,578)	Difference	Yes	No	Difference
Selection choice	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Change employee</i>	15.0	23.7	11.9	11.8***	14.0	4.0	9.9***
<i>Same employee</i>	67.4	66.5	67.7	-1.2	3.8	11.5	-7.7***
<i>Not clear</i>	17.7	9.8	20.4	-10.6***	5.5	6.5	-1.0

Panel B: Reasons for changing median employee							
	Median Employee Changers				%Δ Median Employee Pay High Pay Ratio Firms		
	All changers (N=318)	High ratio changers (N=130)	Low ratio changers (N=188)	Difference	Yes	No	Difference
Reasons	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Acquisition or change in workforce makeup</i>	30.2	20.0	37.2	-17.2***	15.6	6.0	9.7*
<i>Unusual pay or change in circumstance</i>	15.4	16.9	14.4	2.6	3.3	6.5	3.2
<i>Original median employee left</i>	28.6	30.8	27.1	3.6	10.4	6.1	4.4
<i>Original median employee got raise or promotion</i>	11.0	9.2	12.2	3.0	2.5	6.5	-4.0
<i>No reason or methodology change</i>	15.7	23.9	10.1	13.7***	29.1	5.0	24.1***

Table 7 (Continued)

Panel C: Changes in CEO pay				
	%Δ CEO Pay			
	All firms	High pay ratio	Low pay ratio	Difference
	(1)	(2)	(3)	(4)
<i>Total compensation</i>				
<i>Mean</i>	26.2	4.6	33.7	-29.1***
<i>Median</i>	6.1	0.2	8.0	-7.8***
<i>Equity compensation</i>				
<i>Mean</i>	21.6	13.7	25.4	-11.7**
<i>Median</i>	3.7	2.5	5.0	-2.5***
<i>Non-Equity compensation</i>				
<i>Mean</i>	13.1	8.4	15.1	-6.7*
<i>Median</i>	0.0	-3.5	1.2	-4.6***

Table 8

Change in the properties of the pay ratio disclosure in reporting year two.

This table presents tests of the changes in properties of pay ratio disclosure in reporting year two (RY2). The variable of interest, *Abs(Δ pay ratio)*, is the absolute value of the change in the pay ratio from reporting year one (RY1) to RY2. All regressions include the *lagged dependent variable*, which is the value from RY1. Thus, the coefficients on *Abs(Δ pay ratio)* represent a change. Columns (1), (4), and (7) report the results for all firms. We also partition the sample into firms with an increase in the pay ratio (Columns 2, 5, and 8) and those with a pay ratio decrease (Columns 3, 6, and 9). We use similar controls and industry fixed effects (Fama-French 49 industries) with robust standard errors as the tests from reporting year one in Eq. (2a). *t*-statistics are reported in parentheses. Recall that we use a Poisson regression for estimates of the *number of words* and *spin words*, and an OLS regression for *spin indicator*. Note that the number of observations differs across columns due to how a Poisson treats fixed effects. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

	Number of words			Spin indicator			Spin words		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pay ratio change:	All	Increase	Decrease	All	Increase	Decrease	All	Increase	Decrease
<i>Abs(Δ pay ratio)</i>	0.021*** (3.24)	0.021*** (3.12)	-0.109** (-2.25)	0.001 (0.12)	0.002 (0.18)	0.001 (0.12)	0.058 (1.45)	0.056* (1.67)	-0.861** (-2.50)
<i>Lagged dependent variable</i>	0.002*** (26.13)	0.002*** (16.28)	0.002*** (22.22)	0.751*** (37.46)	0.781*** (30.44)	0.751*** (37.46)	0.325*** (18.11)	0.344*** (16.64)	0.366*** (14.92)
Controls, Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N (Firms)	1,903	1,036	865	1,900	1,035	865	1,860	1,014	805
Adjusted (Pseudo) R ²	0.481	0.460	0.543	0.581	0.597	0.581	0.408	0.422	0.458

Table 9**Media coverage and pay ratio disclosure.**

This table presents changes in *media sentiment* by estimating Eq. (7) using OLS. The variable of interest is *high pay ratio* in Column (1), *high local pay ratio* in Column (2), and the log transformed values of the *expected pay ratio* and *unexpected pay ratio* in Column (3). In Columns (1) and (2), we generate synthetic controls by entropy balancing covariates between high and low pay ratio firms overall and local, respectively. All regressions include lagged dependent variables to represent a change, control variables specified in Subsection 3.7, and industry fixed effects using the Fama-French 49 industries. *t*-statistics are reported in parentheses based on robust standard errors. ***, **, and * denote statistical significance at the 1%, 5% and 10% level, respectively. We define variables in Appendix B.

	(1)	(2)	(3)
<i>High pay ratio</i>	-0.117** (-2.24)		
<i>High local pay ratio</i>		-0.112** (-2.17)	
<i>Ln(unexpected pay ratio)</i>			-0.032 (-1.07)
<i>Ln(expected pay ratio)</i>			0.063 (0.64)
Lagged dependent variable	Yes	Yes	Yes
Controls, Industry FE	Yes	Yes	Yes
Entropy balanced	Yes	Yes	No
N (Firms)	2,295	2,135	2,122
Adjusted R ²	0.108	0.121	0.042